Master's Thesis Internship – Master Sustainable Business and Innovation

The Next Step for P2P Carsharing: How to Reach Early Majority?

Sander Ots
Student number: 5976480
Email: s.ots@students.uu.nl
Tel: +372 55 38 516

Internship: Institute of Transport Economics
Internship supervisor: Vibeke Nenseth
Email: Vibeke.Nenseth@toi.no
Tel: +47 92 043 407

Supervisors: Prof. Dr. Koen Frenken
MSc. Toon Meelen

Universiteit Utrecht

Faculty of Geosciences

Abstract

The aim of this thesis is to offer advice to the peer-to-peer (P2P) carsharing industry on how they can reach an early majority. Rogers, “Diffusion of Innovations” (2003) in combination with Davis’ (1993) theory were used to explain the characteristics of early adopters and majority. The study was two-fold. First, descriptive statistics were presented, and ordinal logistic regression were performed on the survey data, which were conducted among Norway’s largest carsharing platform, Nabobil users, and had 1731 responses. The survey was used to understand the current profile of P2P carsharing users. Additionally, five interviews with platform representatives and experts in Norway and The Netherlands were performed to find out their ideas on how to scale up. The results confirmed current theory and understanding. The two main finding were that enough providers are needed at neighborhood levels to attract renters and frictionless process with easy-to-use booking system and keyless access are expected by both renters and providers.

Executive summary

Introduction

The aim of the research was to find out what peer-to-peer (P2P) carsharing platforms should do to scale-up in future, both from renters' (the ones who rent cars from the platform) and providers' (the ones who rent out their private cars to other users) perspectives.

The main research question of this study was "*How could P2P carsharing platforms involve early majority?"* which is answered with the help of following sub-questions:

- *What is the profile of frequent P2P carsharing users?*
- *For what purpose are frequent renters using P2P carsharing?*
- *What are the barriers for renters not to use P2P carsharing more frequently?*
- *What possibilities do platform representatives and experts see to increase P2P carsharing usage?*

Theory

Rogers "Diffusion of Innovations" (2003) theory is mainly used to explain the different characteristics of early adopters and majority, and how to attract the next user group. In addition, a literature review of carsharing is provided.

Methodology

The study is two-fold. First, quantitative analysis is performed on the survey data, which was conducted among Norwegian platform Nabobil users and had 1731 responses. Descriptive statistics were presented, and ordinal regression analysis was performed to find out the frequency of carsharing users, what people are using carsharing for, and what are the main barriers to using it more frequently. Second, interviews with platform representatives and experts in Norway and The Netherlands were performed to find out what would increase carsharing usage.

Results

The results were that frequent providers are most likely men, between 36-45 years old, highly-educated, working full-time, with higher than average income, and have at least one child. They see it as an environmentally-friendly service and it makes financial sense to them. They are not providing their cars on other platforms and they do not have good access to public transport. They are mostly living outside of Oslo, and half of them are not in any of the five biggest cities. The frequency of use was influenced positively by being a woman, being motivated to make money, knowing other carsharing users, and using their car often by themselves. Negative factors are being older than 51 and using public transport often.

Frequent renters are more likely men, between 26-35 years old, highly-educated, working full-time, with a higher than average income, they do not have children, and they live in cities. They use carsharing because it makes financial sense and are not using other carsharing services. As an alternative they would use other platforms or traditional car rental services. They have good public transport access, do not own a car but have owned one before. The frequency of use was positively influenced by middle-income, experience of using other sharing platforms, and knowing other people who are using carsharing. Negative

factors include having good access to a car or owning one and using a carsharing car for holiday purpose.

Carsharing cars are used mainly to go on a holiday or make major purchases. The majority of rentals are up to three days and cars are driven around 100 km per day. Two main barriers of not using the service more often were the availability of cars and the price.

Platforms and experts saw that to reach new users, the most critical point is to have enough supply in the neighborhood – cars should be reachable within a short walk. Next, user groups are potentially the ones who have two cars at the moment. From the marketing side, two of the most mentioned strategies were showing people examples and emphasizing how expensive it is to own a car. From a technological point of view, keyless access has an important role in P2P carsharing in the near future. All in all, the main idea is to make the service as accessible and frictionless as possible.

Discussion

Four main points were given as advice for P2P carsharing platforms. First, the number of cars within walking distance can be achieved with direct targeting of potential providers, working together with companies who are not using the cars on evenings and weekends, and cooperating with private lease companies. Second, the rental process should be as easy and frictionless as possible to attract new customers. This means less direct contact with owners which can be achieved with keyless access and easy-to-use booking systems without the need to wait for an answer from the provider. Third, knowing other people who are doing carsharing is a strong factor for both renters' and providers' frequency of use, which means that direct personal recommendations (i.e., "refer-a-friend" program) may work the best in terms of attracting potential new customers. Fourth, cost conscious early majority requires clear understanding that carsharing is cheaper for them than owning their own car, which means that delivering this message effectively is important to reach them.

Conclusion

There are two main things that platforms can do to reach early majorities. First, enough providers are needed in neighborhoods to attract renters and give them a strong alternative to private car ownership. Second, a frictionless process with easy-to-use booking systems and keyless access are expected by both the renters and providers. These will help to attract new users and increase the use frequency of existing users as well.

Table of Content

1. Introduction

Private car ownership has become a controversial topic. At a local level, air pollution and consequences to human health have become more known in recent years, mainly as they cause thousands of deaths every year in cities all over the world (Lelieveld, Evans, Fnais, Giannadaki, & Pozzer, 2015). Additionally, global climate change is directly related to transportation. Carbon-fueled transport is responsible for 23% of energy-related greenhouse gas emissions of which three quarters come from road vehicles (Ribeiro, Kobayashi, & Beuthe, 2007).

Private passenger car utilization is low, as on average, a car is only used 5% of the time (Shoup, 1997). In addition to the environmental problems mentioned above, underutilization of private vehicles results in extensive land use for parking and general transportation infrastructure in urban areas, which otherwise could be used for improving public space. A potential solution to tackle these problems is carsharing.

The first known carsharing program was implemented in Zurich, Switzerland in 1948 (Millard-Ball, 2005), but rapid growth in the industry has only been in the last decade (Münzel, Boon, Frenken, Blomme, & Linden, 2017). Carsharing is defined as "a system that allows people to rent locally available cars at any time and for any duration" (Frenken, 2015, p. 9).

Carsharing is seen as one of the solutions to reduce personal car ownership and its negative consequences, while still offering a freedom and convenience comparable to a private car. Carsharing also has positive environmental effects. For instance, one shared car can replace 9-13 private cars (Cervero & Tsai, 2004; de Luca & Di Pace, 2015; Martin, Shaheen, & Lidicker, 2010). On average, households where carsharing is used, travel 27% less by car, compared to households where it is not used (Martin & Shaheen, 2011), and emit 13% to 18% less CO_2 emissions (Nijland & Meerkerk, 2016).

There are two common business models in carsharing: business-to-consumer (B2C) and peer-to-peer (P2P). B2C carsharing companies own a fleet of cars by themselves and therefore need high utilization rates of vehicles in order to be profitable. Alternatively, on P2P carsharing platforms, people rent out their private cars to other users (from here on referred to as providers). They often see it as saving on car ownership costs, rather than additional income, and therefore accept lower utilization rates (Wilhelms, Henkel, & Falk, 2017). As a consequence, P2P carsharing is often cheaper for a renter than B2C carsharing.

There are number of scientific studies about B2C carsharing. To be precise, a literature review conducted by Degirmenci and Breitner (2014) identified 93 articles about B2C carsharing. The consensus is that carsharing is better for the environment, urban land use, and is economically viable for a majority of city inhabitants. Despite that, it is still a relatively small niche and only a few percent of people are using it (Dütschke & Peters, 2017).

In less than a decade, P2P carsharing has grown rapidly. In many countries, the number of cars available in P2P platforms is much higher than for B2C carsharing vehicles (Crow-KpVV, 2017; Nenseth, 2018). Despite this, scientific knowledge of P2P carsharing is still in its infancy (Dill, Howland, & McNeil, 2016). Particularly this concerns the question of how P2P carsharing could further scale-up in the future, as it has many environmental and social benefits which were discussed above. To reduce this knowledge gap, this study focuses on P2P carsharing.

1.1. The case

The first part of this study is focusing on the P2P carsharing market in Norway. A large-scale survey (N=1731) was conducted among Norway's biggest P2P carsharing platform, Nabobil, in November 2017, making this the largest sample of P2P carsharing users on one country so far. In addition to the empirical dataset, the Norwegian P2P carsharing market is growing fast with two existing platforms newly launched in 2018 (Hans Vidar Levinsen, 2018), while the participation rates are average in Europe (Andreotti et al., 2017). The second part of the study is looking the broader picture of P2P carsharing. Several interviews were conducted with the platform executives and experts in Norway and The Netherlands to identify the possibilities for platforms to scale up.

Nabobil started in September of 2015 (Ohr, 2016), and has grown rapidly since then. Currently, they have more than 5 000 cars and 80 000 rental sessions completed (Nabobil, 2018). Beginning August 2017, Nabobil offers a smart lock system called Nabobil Keyless (Nabobil, 2017), which makes it possible for a car provider to rent out their car without meeting a renter. This service has now seen more than 100 users (Nabobil, 2018).

1.2. Research questions

According to the "Diffusion of Innovations" theory (Rogers, 2003), there are several user segments that subsequently adopt an innovation (innovators, early adopters, early majority, late majority, and laggards). P2P carsharing users are considered early adopters at the moment (Dill et al., 2016). Studies describe the transition from early adopters to early majorities as a particularly difficult phase in the scaling of innovation (Moore, 1999). Crossing this chasm is crucial for innovation to become widespread. This leads to the main research question of this study:

How could P2P carsharing platforms involve early majority?

In order to answer that question, several sub questions are used. First, current users and their motivations to use carsharing were examined. It is important to study current users, their habits, and problems they experience to better understand upscaling barriers. Specifically, the focus is on frequent users, as these are the ones who platforms are the most interested in (Frusch, 2018). By communication in their social circles, the current users are also active in further diffusing the innovation (Rogers, 2003). However, as early majority is different user segment, it is not possible to only rely on the knowledge of current users. Therefore, experts' views were studied. To summarize, the first three sub-questions were answered based on survey data while the fourth was answered with the information gathered from interviews:

- *What is the profile of frequent P2P carsharing users?*
- *For what purpose are frequent renters using P2P carsharing?*
- *What are the barriers for renters not to use P2P carsharing more frequently?*
- *What possibilities do platform representatives and experts see to increase P2P carsharing usage?*

The aim of this research is to give recommendations for P2P carsharing platforms on what they can do to reach early majority. The main addition to the current knowledge is a comprehensive profile of both carsharing renters and providers. One recent study has

profiled P2P carsharing users (Wilhelms, Merfeld, & Henkel, 2017), but there is not yet a more complete understanding of why people use P2P carsharing and what the prerequisites are to using it more often. In addition, there are no studies that describe the purposes for people to rent cars from P2P platforms and what the barriers are. Lastly, all this was studied with a survey of a large sample size.

1.3. Thesis structure

The next section is the theoretical background, defining the most relevant concepts and discussing previous studies. It is followed by a description of methodology that is going to be used to answer the research questions. Then the results of the study are presented, after which comes discussion and then conclusion.

2. Theory

In this chapter, the main concepts and theories are explained to understand P2P carsharing and create a theoretical foundation for the study. First, Rogers' innovation adoption theory is explained. Second, the definition for sharing economy is given. Third, the carsharing adoption literature, and fourth, previous studies of P2P carsharing are discussed. The chapter ends with hypotheses for the thesis.

2.1. Innovation adoption

"Diffusion of Innovations" by Rogers (2003), first introduced in 1962, had three valuable contributions to the innovation adoption theory. First, he described the qualities that make innovation spread. Second, he emphasized the importance of conversations, which reduces risks and uncertainty of adopting the innovation. Third, Rogers introduced five different user segments who all have different needs and therefore, entrepreneurs should take that into account when approaching them. The first and third are relevant for this study and discussed further.

2.1.1. Qualities which make innovations spread

There are five qualities that determine if the innovation is successful or not: relative advantage, compatibility with existing values and practices, simplicity and ease of use, trialability, and observability of the results.

Relative advantage is the degree that determines how much the innovation is better than the one it supersedes. It is viewed from the user's point of view and the advantages could be economic advantage, convenience, satisfaction and/or social status. There are no rules for what constitutes relative advantage, but it depends on particular user group. The higher the advantage is, the more rapid the adoption will be.

Compatibility with existing values and practices means that the innovation has to be consistent with the values, needs, and past experiences of the potential user groups. Simplicity and ease of use means that innovations that are simple to understand are adopted much quicker than the ones that need new skills. If the innovation is triable, potential users are much more likely to adopt it. For example, if people can try an electric car for a longer period of time to see how it fits their needs, they are more willing to buy one for themselves. Observable results mean that if people are able to see the results of an innovation, they are more likely to adopt it. Additionally, it facilitates peer discussion, which is discussed in the next chapter.

2.1.2. Different user segments

Rogers (2003) describes five different user segments: innovators, early adopters, early majorities, late majorities, and laggards. Each group acts differently, and it is important to address all the segments while the innovation develops.

Innovators are the ones who spend a lot of time developing new ideas and talking about them. However, their obsession may look too idealistic for a majority who are more pragmatic. Nevertheless, their contribution is crucial, as they give valuable feedback on how to make the product more suitable for larger segments.

Early adopters come on board when the benefits start to become apparent. They understand quickly how the innovation connects with their personal needs. Typical early adopters have higher than average incomes and education and they are more socially

respected. Additionally, they love to talk about their successes which is a critical point of reaching the majority.

Early majority is pragmatic with moderately progressive ideas. They need a solid proof of benefits. They are risk adverse and cost sensitive, so they need cost neutrality or rapid payback time. They hate complexity and need guaranteed performance.

Late majority is conservative and pragmatic. They are uncomfortable with new ideas and are afraid that they will not fit in. Thus, they follow the mainstream. They would like to think that other conservative folks think it is normal to use the innovation.

Laggards see high risks in adopting a product or behavior. In early stages of development, laggards' views can be ignored, but when platforms are starting to work with the late majority, their criticisms needs to be addressed, as the late majority share some of the same fears.

In addition to Rogers, Moore (1999) pointed out that there is a chasm between early adopters and early majority. This is because innovators and early adopters have very different characteristics, needs, and interests than the majority. Therefore, for a successful adoption, innovation has to cross the chasm by keeping in mind the majority's needs and developing it accordingly.

How these theories are applied to carsharing is looked at further in this chapter, but first the concept of sharing economy is discussed.

2.2. Sharing economy

The sharing economy has received lots of attention in the last decade. It is defined by Frenken, Meelen, Arets, and van de Glind (2015) as "consumers granting each other temporary access to under-utilized physical assets ("idle capacity"), possibly for money" (para. 3).

Not all carsharing fits under a sharing economy definition. B2C services like Car2go can be looked at as part of the product-service economy (renting goods from a company while it retains ownership of it, (Frenken & Schor, 2017)). However, P2P carsharing is truly part of the sharing economy, as people rent out (granting temporary access) their car while they are not using it (under-utilized physical asset) and earn money by doing it. Figure 1 shows how B2C and P2P carsharing fits into the sharing economy framework.

Despite increased awareness about the sharing economy and P2P services among the general public, adoption of it is lagging behind. 90% of Europeans know about the sharing economy, but much less are actually participating – 9% are providing their assets on the platforms and 19% are renting from others (Andreotti et al., 2017). This means that there is room for expansion.

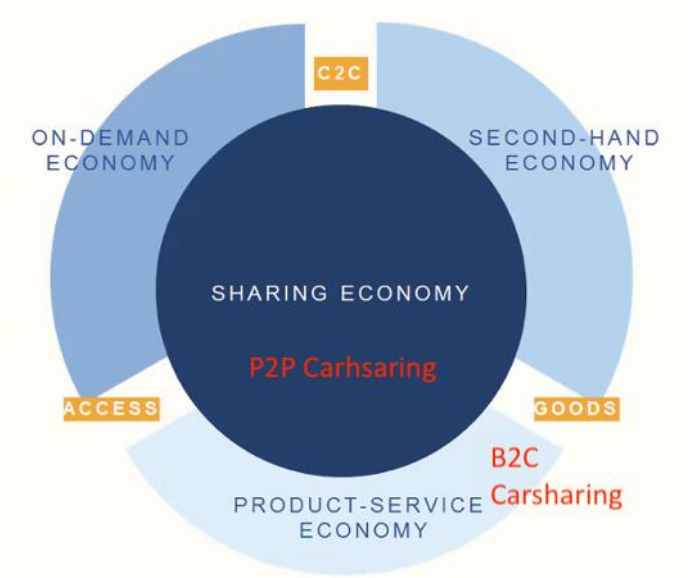

Figure 1. Carsharing in the framework of sharing economy and related concepts (Frenken et al., 2015).

2.3. Carsharing

After the introduction of Rogers' innovation adoption theory, the definition of sharing economy and the place of carsharing in it, the carsharing adoption literature is overviewed and previous studies about P2P carsharing are discussed. As there are no specific studies about P2P carsharing adoption, B2C adoption literature is used.

2.3.1. Carsharing adoption

Dütschke and Peters (2017) conducted an online survey about carsharing adoption in Germany with 1548 respondents. They used Rogers' (2003) "Diffusion of Innovation" model and found out that 5.3% of the people are using carsharing, 4.6% are likely to use it in the near future and 21.2% of them are interested in using it, while 68.9% of are not, including significantly older individuals and those with lower educational degrees, compared to people who are interested. Important factors influencing carsharing adoption in the study where compatibility, ease of use, and social norms. Carsharing must be compatible with peoples' mobility patterns and available in the places where they live. Social norms and perception also influence the use of carsharing. Ease of use is a third positive factor contributing to increased use of carsharing. It is assumed that easier booking, receiving and returning a vehicle will facilitate the adoption.

Additionally, Seign and Bogenberger (2012a) have looked into the success factors of free floating electric carsharing systems (E-carsharing) using Rogers' model. They conducted 34 interviews with multiple stakeholders (platforms, electric vehicle manufacturers, users etc.). Stakeholders agreed that crucial factors for carsharing success are population density, availability of multimodal transport (public transport, cycling infrastructure, walkability), low private car usage, availability of cars within walking distance, ease of use of the platform and cars. On the other hand, good public transport can have a negative effect on carsharing as it reduces the need for the service. From the user's perspective, typically they have higher education and above average incomes. The average age of users is young but there are also exceptions, thus no strong correlation with age was found. Carsharing adopters usually live

in a household with no more than one child. In terms of personal characteristics, they are open, networked, technologically competent, driven by economic reasons, and ecologically aware. However, none of the them mentioned sustainability as their primary motive, but as a positive side benefit.

2.3.2. P2P carsharing

There is contradictory information about P2P carsharing market potential. On the one hand, 9.8 million people are expected to rent out their car in P2P carsharing platforms in the EU and US by 2025, and nearly 50% of car owners are willing to consider sharing their vehicle (Freese & Schönberg, 2014; Frost & Sullivan, 2015). On the other hand, only 19% of the German driver's license holders would provide their vehicles on such a platform (Wilhelms, Merfeld, et al., 2017). Therefore, it raises the question of how much the willingness to rent our personal cars for P2P carsharing is influenced by geographical or other influential factors.

Prieto, Balatas and Stan (2017) conducted a survey among car owners in London, Madrid, Paris, and Tokyo to find sociodemographic factors related to the use of carsharing. They asked 2733 respondents about their willingness to use B2C or P2P carsharing. The results were that males, who are single and live in the city center have an increased likelihood to use P2P carsharing. Older people, however, are less likely to use it. As the survey was international, Japanese, Spanish, and British are less likely to use P2P carsharing compared to French. Interestingly, being highly educated, working or owning a car and being a main user of the car has no influence on the intention of using P2P carsharing. Furthermore, they concluded that as P2P carsharing appeals to a wider range of customers, it is a more promising service than B2C carsharing.

Wilhelms, Henkel and Falk (2017) focused on car providers' participation motives by conducting 20 interviews with German peer-providers. There were four main participation motivators: economic interest, quality of life, incentive to help others, and sustainability. Economic interest is mainly connected to reduction of fixed costs of owning a car. For some not so frequent drivers, savings on maintenance costs were also mentioned, as cars which stand idle for too long have additional repair costs. People, who improve their quality of life with participation in carsharing, spend their additional income on other things or they see it as an opportunity to buy a better car. The ones whose main motive is to help others will get a good feeling if their car is helping to create nice experiences for others. Sustainability, however, is more of a positive side effect for participants, than the primary driver. Additionally, the survey participants mentioned the importance of increased convenience and reduced transaction costs, which would make renting out a vehicle easier for peer-providers.

According to Wilhelms, Merfeld and Henkel (2017), renters typically use P2P carsharing about once a month. In their opinion, it is filling a gap between traditional car rental and very short-term B2C rental. They identified four types of renters: budgeters (consider it cheaper than car rental), convenience-lovers (want to save time and reduce hassle), status conscious (signaling their status with specific car), and assurance-seekers (looking for a specific mobility experience). Furthermore, they developed five recommendations for P2P asset sharing ventures to increase their participation. These were: "(1) Set your unique positioning; (2) Identify your target audience; (3) Acquire strategic partners; (4) Develop a clear customer journey to attract new users; (5) Engage with customers on social media" (Wilhelms et al., 2017, pp. 778–779). Overall, they conclude that P2P sharing platforms get a

fierce competition from different sides: option of owning a product, B2C services and public sector.

A study done by Dill, Howland and McNeil (2016) explored the factors that would influence the level of participation. They concluded that demographics like age, gender, and income have a role in initially signing-up for the platform but are only weakly related to the frequency of use. Although they did not find the difference in the level of participation of renters' rate based on their experience of using the platform, the quality of the service influences whether people join the platform or not. Additionally, they found that owning a car would have a negative effect for renters' level of participation. Owners, who are participating to a greater extent will drive less and use other modes of transport. They concluded that P2P carsharing could reduce the number of kilometers driven by cars more than B2C carsharing due to the change in provider behavior.

2.4. Hypotheses

To sum it up, P2P carsharing has grown fast and is already serving certain people's mobility needs. The availability, convenient access, possibility to use other transport modes, and price all seem to be important factors to determine the success of P2P platforms. Additionally, as early adopters are spreading the word of their successes and failures with P2P carsharing, it is important to give them the best experience possible. Therefore, synthesizing the previous discussion, the hypotheses for this study are following:

1. *Frequent carsharing users match with the typical early adopter profile.*

Early adopters usually have higher than average incomes and education, they are willing to take risks and are more socially respected (Rogers, 2003). Previous study by Dill and colleagues (2016) has found that carsharing users match with this description at the moment. The focus is on frequent users as they are most interesting for the platforms and they have incorporated the service into their lifestyle.

2. *Good access to public transport increases the likelihood of P2P carsharing.*

Carsharing has to be compatible with peoples' mobility patterns in order to be a strong alternative for private car ownership (Dütschke & Peters, 2017; Rogers, 2003). As P2P carsharing is mainly used for longer trips (a day or more), people's everyday travel needs have to be covered with other modes of transport, such as public transport, cycling, or walking (Seign & Bogenberger, 2012b).

3. *Both car providers and renters are economically motivated to use carsharing.*

Saving money by renting a car from a P2P platform compared to regular car rental or earning money by renting out ones' own car seems to be the main motivators for participating in carsharing (Dill et al., 2016; Philip, Ozanne, & Ballantine, 2015). According to Rogers (2003), it is a relative advantage for renters compared to traditional car rentals or B2C carsharing, and for car providers, as they can reduce the fixed costs of a car by sharing it.

4. *Sustainability has a positive side effect but is not the main motivation for using carsharing.*

Many studies have found that sustainability is not a main driver for using carsharing, but still have some importance for people who are using carsharing (Seign & Bogenberger, 2012a; Wilhelms, Merfeld, et al., 2017).

5. *Non-availability of cars within walking distance is one of the main barriers for renters to increase their carsharing usage.*

It is crucial for renters that they should reach a car with a 300-500 meter walking distance (Seign & Bogenberger, 2012b). As P2P carsharing is still in its very early stages of development, offering of a suitable car in a convenient distance may not be realistic for most people, this can be one of the main barriers.

6. *Straightforward digital platform and keyless access will increase both renters' and providers' usage of P2P carsharing.*

Simplicity and ease of use is one of the important factors of adoption (Rogers, 2003). The easier the booking, getting and returning a vehicle is, the more likely it will be adopted (Dütschke & Peters, 2017).

3. Methodology

In this section, data collection and analysis methods are discussed. The study is two-fold, using both quantitative and qualitative data. First, data collection methods are described and then data analysis is explained according to the headlines of the research sub-questions.

3.1. Data collection

The study used survey data, which were analyzed descriptively and with regression analysis using an ordinal logistic regression model. Additionally, semi-structured interviews were conducted with platform representatives and industry experts to answer the fourth sub-question.

3.1.1. Survey data collection

The survey was conducted by the Institute of Transport Economics in Norway without author involvement. The online survey was done of users of the biggest carsharing platform in Norway called Nabobil. All the 1731 responses were from November 2017. The survey was comprehensive with 70 questions (Appendix 1), including questions about carsharing usage, car ownership, travel behavior, important life events, personal characteristics, social behavior, and demographics. Survey data was used to answer the first three sub-questions about users' frequency of carsharing, why people are using carsharing, and to understand the barriers of not using it more frequently.

3.1.2. Interview data collection

People, who are working in a field, often seek ways to reach new users. Therefore, semi-structured interviews with P2P platform representatives and experts in Norway and The Netherlands were conducted. The reason why these countries were chosen were that, on one hand, both countries have well established P2P carsharing markets with a leading platform and at least one smaller player. Additionally, there were already established contacts with platform representatives and experts in those countries. All interviews were conducted in April and May 2018.

Most of the interviewees were chosen based on the knowledge of supervisors and authors (Table 1). One interviewee was also chosen based on the recommendation of another interviewee. There were three platform representatives and two experts. Two of the platform representatives were CEO's and one was a Vice President, Growth & International.

All interviews were conducted face-to-face and were 25-50 minutes long. They started with the general introduction of the interviewer and research. Then the interviewees were asked to introduce themselves and their position in the company. After that specific questions about carsharing were asked. The exact interview guide can be found in Appendix 2.

The first aim of the interviews was to discuss user characteristics and barriers in more detail which provides the context to the survey findings. The second aim was to capture their ideas about what possibilities they see, and how the P2P carsharing market can increase in the future. These results were used to answer the fourth sub-question: "*What possibilities do platform representatives and experts see to increase P2P carsharing usage?*"

Table 1. Interviewees.

#	Date	Name	Company	Position	Country
1	20.04	Henrik Hatlebrekke	StartupLab Oslo	Program Manager in MobilityLab	Norway
2	24.04	Even Tangen Heggernes	Nabobil	CEO	Norway
3	03.05	Nils Petter Nordbø	Hyre	CEO	Norway
4	16.05	Martijn Arets	Utrecht University	International Platform Expert	Netherlands
5	17.05	Martijn Frusch	SnappCar	VP Growth & International	Netherlands

3.2. Data analysis

3.2.1. What is the profile of frequent carsharing users?

3.2.1.1. Descriptive statistics

To answer this question, first, descriptive statistics were presented, and then ordinal logistic regression analysis was performed using SPSS Statistic 25 software. Users were divided between Renters, Providers and Not used (Figure 2). Renters are the ones who are renting the cars through the platform from the providers. Not used group were the ones who had signed up to the platform but had not used the service. Additionally, providers and renters were divided between frequent and rare users. Frequent users were the ones who claimed that they use the service at least 3-6 times a year, whereas rare users were using it less.

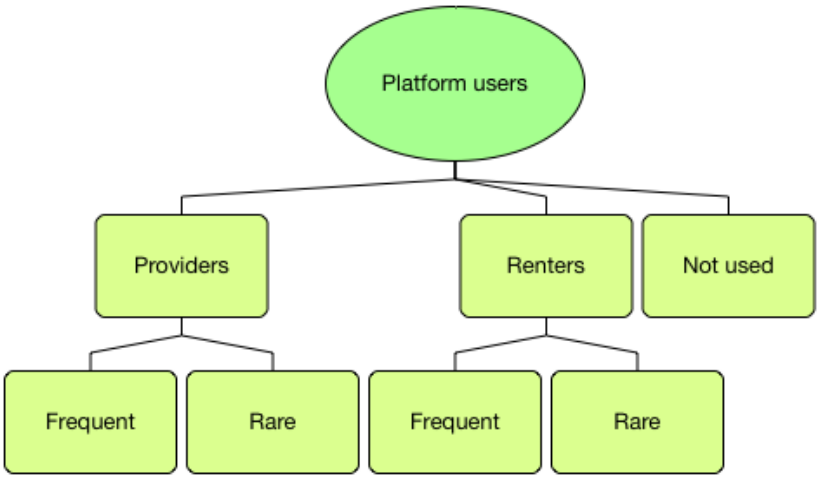

Figure 2. Platform user's division in the analysis.

There were 60 respondents who had used Nabobil both as a renter and provider. As the questionnaire was developed in a way that they got both renters' and providers' questions, they were analyzed in both sections which will increase the number of answers by 60, making the total number of respondents 1790.[1] They were divided between frequent and rare users because they had different questions about being a provider and a renter.

[1] One general outlier was identified. Respondent number 1336 was excluded from the analysis because he completed the 71 questions questionnaire in less than 3 minutes, claimed that he was 99 years old, responded the same answer for most of the Likert scale questions (also the reverse questions) and stated that he drove 4475 km in his last rental within 5 days.

Among the users, 29 of them were frequent and 31 rare providers, whereas 40 were frequent and 20 were rare renters.

There was a technical error with filtering when respondents first answered the questionnaire. This means that some people answered questions that they should not have or, on the contrary, they did not get the questions they should have. These occasions were mentioned in footnotes where it reduced the number of cases or may have influenced the results.

Six different type of variables were analyzed. First were demographics, under which sex, age and immigration background were presented. Second, were socio-economic factors like education, occupational status, income, and number of children in household.

Third, four carsharing related questions were incorporated in the analysis. To understand how users view carsharing, several statements were presented to them on a Likert scale from one to seven. Most of these were presented for all groups (providers, renters, and not used group), except two which needed actual renting experience like “Using carsharing is more convenient than having your own car” and “Carsharing is easily accessible for me” (Table 9). In addition, questions about whether people use other carsharing platforms other than Nabobil were asked. Moreover, questions about alternatives for carsharing were used which would help to explain what carsharing is competing with and whether it could fulfill some of these needs. The exact question was: “Imagine that you are not using the Nabobil. What would be your most likely or least likely option?” and a Likert scale from 1 to 7 was provided for responses.

Fourth, availability of public transport and car ownership were analyzed. Public transport access was assessed with two questions. First, the distance to the closest or most appropriate public transport stop with options of less than 500 meters, 500-1000 meters and over 1000 meters was assessed. The second question was about how often the public transport leaves from the stop with options: 6 times in hour or more, 4-5 times in an hour and less than 4 times per hour. The answers were coded into two new variables. Under the “Good” variable were respondents who had a stop less than 500 meters away from their home and frequency at least 4 times in hour. “Not good” were the rest: the ones who have a stop more than 500 meters and/or the frequency is less than 4 times per hour. Three questions about car ownership of renters were also assessed: do they own a car in the household, are they planning to buy in the next 12 months, and have they had a car before. There were also questions for those who do not own a car at the moment about how many cars they owned before becoming a member of Nabobil. However, due to the filtering error in the beginning of the questionnaire, 69 frequent and 100 rare users did not get this question, which was more than half of the people who should have got it. Therefore, it was decided to not use this question in the analysis.

Fifth, in order to evaluate the influence of population density, people who are living in the five biggest cities (Statistics Norway, 2017b) were identified. As respondents gave their postal codes and all the cities are in a certain postal code range, new variables were created based on that.

Sixth, respondent’s openness to new innovations were examined. There were three claims about how likely people are willing to adopt new technologies in the survey. These were “I thrive the best with people who are open to change and new ideas”, “I welcome all the new technical innovations”, and “Computers and other modern technology seems scary for me”, with a Likert scale from one to seven for responses. The answers to the last

question were reversed, as it is a control variable. The mean of these three answers were presented in the results.

3.2.1.2. Regression analysis

Ordinal logistic regression model was used in order to understand what the significant factors influence the frequency of carsharing use are. SPSS Statistics 25 was used to perform the analysis. The main dependent variable had three categories: frequent, rare and not used. The independent variables were chosen based on the hypotheses. Some variables like age education, income, and access to a car had only a few responses and therefore, different answer options were grouped together. There were also two different type of variables – factors (F) and covariates (C). Factors are categorical variables, including dummies while covariates are continuous. Factors reference categories (ref) are indicated in Table 2. As the Likert scale variables had more than five categories, they were inserted as covariates (Norman, 2010; Sullivan & Artino, 2013). The exact allocation of the variables to hypotheses (Hyp) is shown in Table 2.

Three different models were used for both renters and providers, thus six models in total. The main reason for using different models were that the not used group did not answer all questions, specifically the ones which need actual use experience. However, these questions are still important to test the hypotheses and identify the factors that would influence carsharing usage. The Model 1 includes all three groups in dependent variable (not used, rare, and frequent), but lack some of the variables. The Model 2 has the same set of independent variables but groups together the rare and frequent group. This model is used to test the Model 1 results and see whether there is an influence dividing the renters between rare and frequent users. The Model 3 do not have not used group in the dependent variable and thus compares the rare and frequent users on all the independent variables. The same applied for both renters and providers, and model names are followed with either R (renters) or P (providers).

Some cases were lost due to income, access to car, and car ownership variables. With income variables, 4.7% of the people did not want to state or know their income and were excluded from the analysis. 4.4% of the renters who chose that the access to a car question was not relevant to them were also excluded. With the car ownership variable there was a filtering error when the survey first released, and 64 people did not get the question.

3.2.1. For what purpose are frequent renters using P2P carsharing?

To answer this question, only frequent users were analyzed descriptively. The reason is that the frequent users' responses are not affected with one-time users who have just wanted to try out the service. As platforms are interested in attracting returning customers (Frusch, 2018), it is more important to see for what purposes this type of customers are using the service.

To answer this question, responses of three questions from the survey are useful: "For what purpose do you usually use cars from Nabobil?" (people were allowed to mark up to three answers); "What was the purpose of your last rental?"; and "Approximately how long was your last trip?" The offered multiple choice responses for renting incentives were the same for all questions, including: to and from work/study; business purposes during the workday; bring/collect children; bring/collect other people for different purposes; grocery shopping; major purchases; leisure trips (cinema, fitness, visiting friends/family, etc.);

holiday or weekend; and other. The longevity of the last trip was asked in number of days and kilometers driven.

Table 2. Independent variables in the regression analysis.

Hyp	Variable	Explanation	Answers	F/C
1	Sex	Sex	Woman	F
			Man (ref)	
	Age	Age	> 51	F
			36 - 50	
			< 35 (ref)	
	Education	Education	≥ 5 years university	F
			3 years university	
			No university (ref)	
	Income	Household income before tax (NOK)	> 1,500,000	F
			500,000 - 1,500,000	
			< 500,000 (ref)	
	Children	Number of children	#	C
	Live in city	Lives in one of the five biggest cities	Yes	F
			No (ref)	
	Open to innov.	Open to new innovations (mean of three questions)	Likert scale	C
	AirBnb	Have rented accommodation from AirBnb or similar platform	Yes	F
			No (ref)	
	Used other platforms	Have used other sharing platforms	Yes	F
			No (ref)	
2	PT last week	No. of times travelled by public transport last week	#	C
	Bike last week	No. of times travelled by bike last week	#	C
	PT access	Good public transport access	Good	F
			Not good (ref)	
	Own a bike	Owning a bike or having a bike sharing subscription	Yes	F
			No (ref)	
3	Make it cheaper	Will use more carsharing if incentives/subsidies will make it cheaper	Likert scale	C
	Saving money	Importance of saving money with carsharing	Likert scale	C
	Make money	Want to save/make money with their car	Likert scale	C
4	Environ. friendly	Importance of travelling more environmentally friendly with carsharing	Likert scale	C
	Global warming	Concern about global warming and climate change	Likert scale	C
	Sustain. Transp.	Want to contribute to more sustainable transport	Likert scale	C
5	More cars	More cars in neighborhood will increase carsharing	Likert scale	C
6	Keyless access	Increase car sharing usage - Less direct contact with the owner (e.g. Keyless access)	Likert scale	C
Control variables	Access car	Access to car without carsharing	Good access	F
			Somewhat access	
			No access (ref)	
	Make car available	Want to make car available to more people	Likert scale	C
	Knowing other	Knowing other households who use carsharing	Yes	F
			No (ref)	
	Car last week	Number of times travelled by car last week	#	C
	Own a car	Own or lease a car in household	Yes	F
			No (ref)	
	Purpose holiday	Using carsharing car for holiday or leisure	Yes	F
			No (ref)	

3.2.2. What are the barriers for renters not to use P2P carsharing more frequently?

For this research question, the following survey question was used: “Is there anything special that would increase the use of carsharing for you?” Respondents had to answer to these questions on a Likert scale of one to seven. Answer options were the following: fixed parking spaces for sharing cars in the community; access to public transport lanes; increased availability of shared cars in the neighborhood; incentives/subsidies for car sharing which will make it cheaper; less direct contact with the owner (e.g. Keyless access); access to newer and better cars; easier access to extra accessories (dog cage, bicycle rack, a child seat, etc.); or open answer (other). The mean scores of the answers and standard deviations were calculated and the barriers with the highest mean scores were determined to be the ones which hold people back the most. Additionally, open answers from other sections were also analyzed.

In addition, people who have registered to the platform but have not yet used the service were examined. The question was: “What is the reason why you have not rented a car at Nabobil.no?”, with answer options: I have not needed; prices are too high; I have not found suitable car/model near me; I have tried to hire, but were refused by the provider; Me/household have access to a car now and no longer need to hire; Me/household has acquired new car and no longer need to rent a car; I do not know enough about the scheme; I do not trust the insurance offered; or open answer (other). The frequency table of these results were presented and also open answers from other’s sections.

3.2.3. What possibilities do platform representatives and experts see to increase P2P carsharing usage?

Interview data was used to answer this question. Interviews were recorded (with permission) and transcribed (Appendix 3). Next, transcripts were coded using NVivo software. Some predefined codes were used from the questions (Appendix 2) like “Frequent user”, “Reaching the majority”, “Technological innovations”, “Use cases”. However, additional codes were added during the process by breaking down the predefined codes (for example dividing “Technological innovations” into “Keyless access” and “Instant booking”) and others were added as they were mentioned by several interviewees like “Quality of the service”.

Thematic analysis was used to work through the codes (Bryman, 2012). When revising and rereading the codes, themes were identified which were mentioned by multiple interviewees. When possible, the themes were connected with each other and visually represented in the form of a mind map. This resulted in two broader topics about users and barriers and reaching the majority, all of which were written together with extracts from the interviews.

4. Results

Here the results from survey and interview data are presented. All the results are presented under the headings of the relevant sub-research questions.

4.1. What is the profile of frequent carsharing users?

Table 3 represents the number of people in different user groups. The explanation of different groups can be found in the Methodology section. Half of the respondents are renters while 22% are providers. The proportions of frequent and rare users are different among providers and renters, where much more providers tend to be frequent users than renters. 30% of people also answered the questionnaire but have not used the platform.

Table 3. Number of people in different user groups.

	Provider		Renter		Not used		
	N	%	N	%	N	%	
Frequent	253	14%	322	18%			
Rare	138	8%	548	31%			
Total	391	22%	870	49%	529	30%	1790

4.1.1. Descriptive statistics

4.1.1.1. Demographics

There are much more men than women, both on the providers' and renters' side (Figure 1). However, on the renters' side there are proportionally more women than on the providers' side. The not used group is in between, as there are 70% men and 30% women.

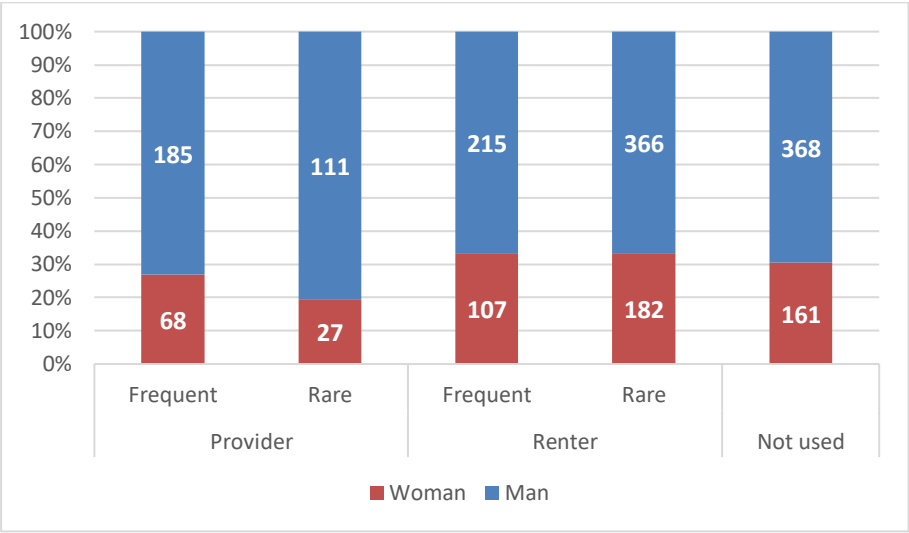

Figure 3. Sex.

Age wise, renters tend to be younger than providers (Figure 4). The largest number of frequent users are between 36-45 for providers and 26-35 for renters. Also, there are higher proportions of 46-55 years old for providers. This means that providers tend to be older than renters.

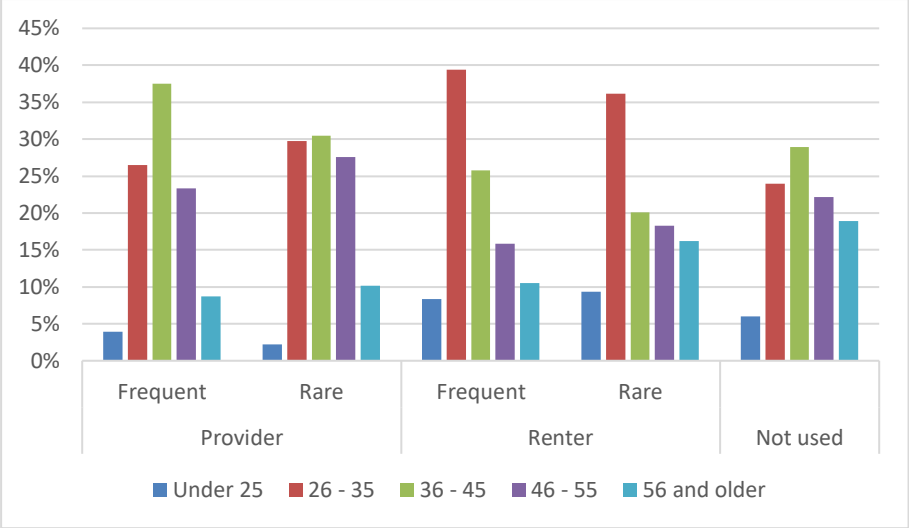

Figure 4. Age.

In all groups, less than 20% of people have an immigration background, although almost two times more renters have it compared to providers (Table 4).

Table 4. "Have you or one of your parents been immigrated to Norway?"

	Provider		Renter		Not used
	Frequent	Rare	Frequent	Rare	
No	89%	83%	81%	84%	86%
Yes	11%	17%	19%	16%	14%

4.1.1.2. Socio-economic status

There is a much larger number of highly-educated people among users of carsharing than the Norwegian average, where 43% of 25-64 years olds have tertiary education (OECD, 2017). Renters have the highest share of highly-educated people, 84% within both frequent and rare users (Table 5). On the other side are the frequent providers, where 75% of people have higher-education, which is still significantly higher than the national average. In the not used group 80% has higher-education.

Table 5. Education.

	Provider		Renter		Not used
	Frequent	Rare	Frequent	Rare	
Elementary	3%	4%	2%	1%	2%
Secondary school	22%	17%	15%	15%	19%
University with up to 3 years	32%	39%	39%	36%	31%
University with 5 years or more	43%	40%	45%	48%	48%
Higher education combined	75%	79%	84%	84%	80%

The majority of the people are fully employed in all groups. There are two times more students among renters than providers (Table 6). Overall, the differences between groups are fairly small.

Table 6. Occupation.

	Provider		Renter		Not used
	Frequent	Rare	Frequent	Rare	
Fully employed, full-time	85%	85%	80%	79%	80%
Fully employed, part-time	6%	4%	7%	5%	6%
Student	4%	4%	8%	9%	5%
Other	5%	8%	4%	7%	9%

The income question was about the household earnings before tax. Table 7 shows that renters have a higher share of lower income households. Therefore, it can be assumed that the average income of renters' household is lower than providers. The median Norwegian household income was 497 600 kroner after tax in 2016 (Statistics Norway, 2017c). The not used group has the highest share of the high-income households.

Table 7. Household income before tax (Norwegian kroner).

	Provider		Renter		Not used
	Frequent	Rare	Frequent	Rare	
Under 250,000	1%	4%	4%	8%	4%
250,000 – 499,999	13%	12%	16%	13%	16%
500,000 – 749,999	22%	22%	25%	26%	17%
750,000 – 999,999	25%	17%	21%	16%	18%
1,000,000 – 1,449,999	23%	23%	22%	23%	24%
1,500,000 and over	13%	14%	9%	8%	15%
Not telling	2%	5%	2%	4%	5%
Do not know	0%	2%	0%	1%	1%

Table 8 shows the number of children in the household in different groups. There are 18 – 22% more providers' households who have at least one child, compared to renters. There is very little difference between frequent and rare providers while the rare renters have less children than the frequent.

Table 8. Households, who are having children.

	Provider		Renter		Not used
	Frequent	Rare	Frequent	Rare	
No children	47%	48%	65%	69%	58%
A child	17%	17%	14%	14%	17%
Two children	26%	23%	15%	12%	19%
Three or more children	10%	12%	6%	5%	6%

4.1.1.3. Perception about Carsharing

In this paragraph, perceptions about carsharing, usage of other carsharing platforms, and alternatives are shown. Table 9 represents claims about carsharing and the mean scores from the Likert scale of 1 to 7. Most of the providers see carsharing as an environmentally-friendly service, which makes financial sense and fits with their identity. They see it as somewhat social. Safety is not an issue for them. For renters, carsharing also makes financial sense and most people agree that it is accessible for them. They see it a bit less of an environmentally-friendly service, which is more convenient than owning their own car and

fits with their identity. It is much less social for them than for providers and safety is even less of a concern.

Table 9. "Please consider following statements about carsharing." (Means from Likert scale 1 to 7).

	Provider		Renter		Not used
	Frequent	Rare	Frequent	Rare	
It is social	4.17	3.47	3.01	2.79	3.38
It is more convenient than having your own car	N/A	N/A	4.63	4.2	N/A
It is environmentally-friendly	5.81	5.00	4.99	4.73	5.29
It fits with my identity	5.23	4.36	4.54	4.04	4.14
It makes financial sense	5.81	5.20	5.55	5.21	5.12
It is unsafe	2.74	3.19	2.06	2.16	2.87
It is easily accessible for me	N/A	N/A	5.41	4.83	N/A

Most of the people are not using other carsharing platforms (Table 10). However, renters are more likely to do that, 10% more of the frequent renters are using other services than frequent providers and 11% of the rare renters compared to rare providers. There were no other P2P carsharing platforms provided as an option, but many people mentioned P2P carsharing GoMore in other sections, which recently launched in Norway.

Additional findings from the other sections were that five people stated that they were former members of collective carsharing platforms, which are popular in Norway. However, it is unclear, if they stopped using the other platform because of becoming a member of Nabobil or not.

Table 10. "Are you or someone in your household users of other carsharing platforms?"[2]

	Provider		Renter		Not used
	Frequent	Rare	Frequent	Rare	
No	86%	93%	76%	82%	83%
Yes	14%	7%	24%	18%	17%

The question about the alternatives if people are not the users of Nabobil carsharing platform were asked (Figure 5). The results show that renting a car from a car rental company, from friends or acquaintances or other carsharing platforms are all the most likely options of what people will use as an alternative. The differences between rare and frequent users are small, being the biggest on buying a car option.

[2] Answers were corrected before the analysis. There was a technical error and some respondents were not able to mark the "No" answer and they marked it as "Other". These responses were manually changed into "No".

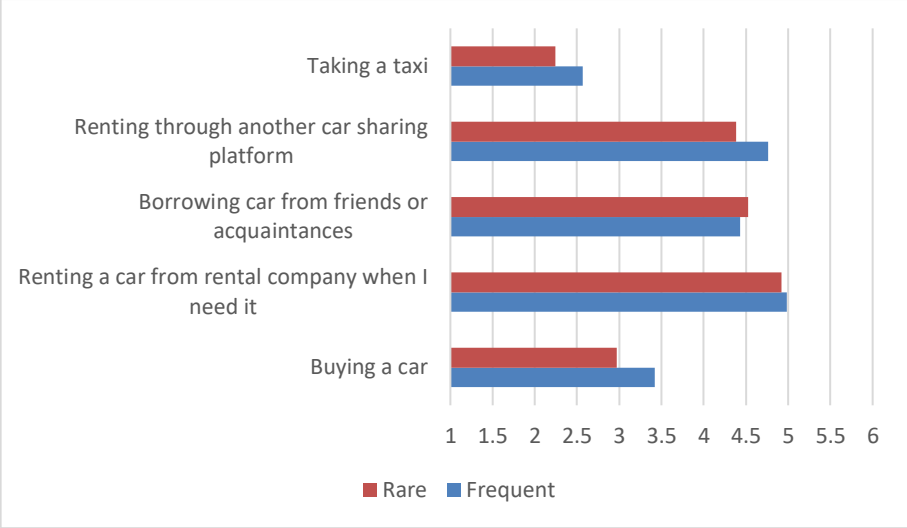

Figure 5. "Imagine that you are not using the Nabobil. What would be your most likely or least likely option?" (Means from Likert scale from 1 to 7).

4.1.1.4. Transportation

Renters overall have much better access to public transport compared to providers (Figure 6). In both frequent and rare groups, 20-21% more renters have good access to public transport. Overall, 7-8% less rare users have good public transport access than frequent users, which means that people who are using carsharing more often also have better access to public transport. Half of the people who have not used the service have good access to public transport.

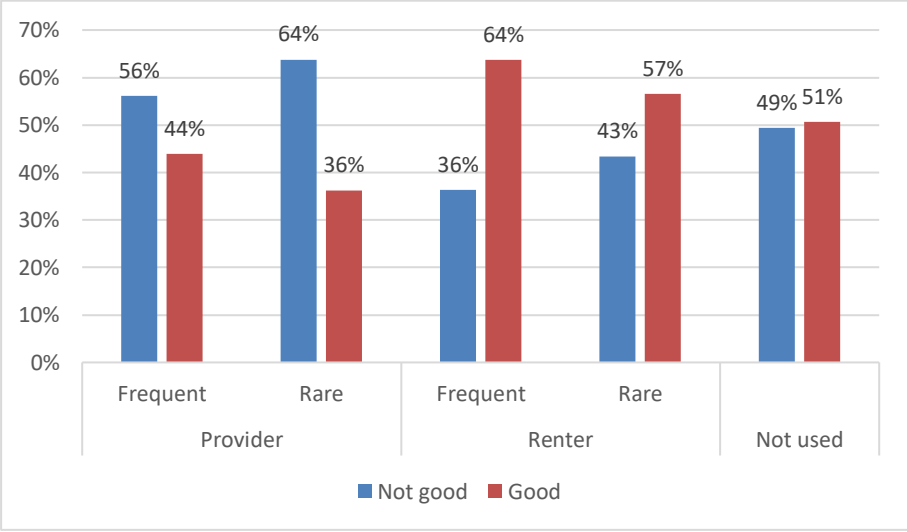

Figure 6. Public transport access.

Car ownership was also examined. Figure 7 shows that one third of the frequent renters have a car in their household. 12% more of the rare users have a car in their household and 22% more of the people who have not used the service have a car. This could explain why rare and not used groups have used the service less frequently or have not used it at all.

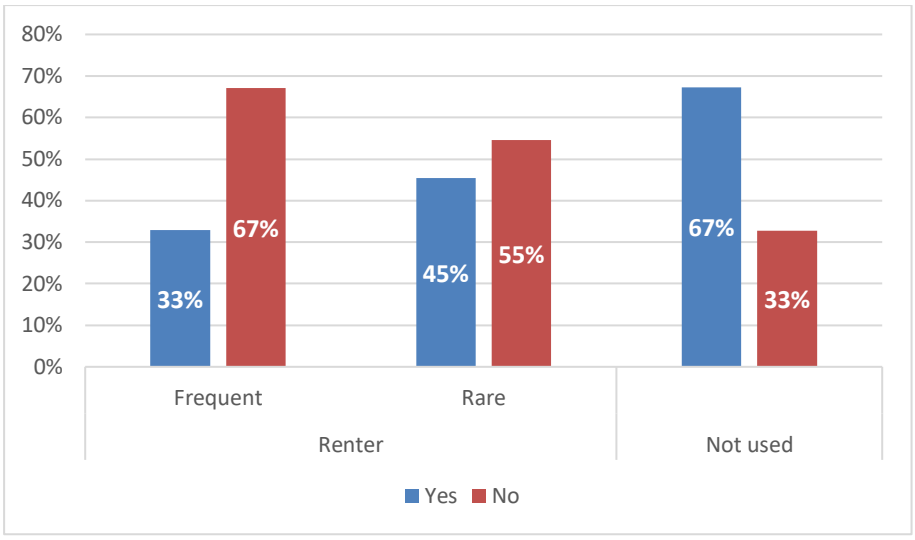

Figure 7. Share of the renters who are having a car in household.[3]

Still, 30% of frequent, 21% of rare and 31% of not used people, who have not owned a car, are planning to buy one in next 12 months (Figure 8). This means that the number of households without a car may decline in the future.

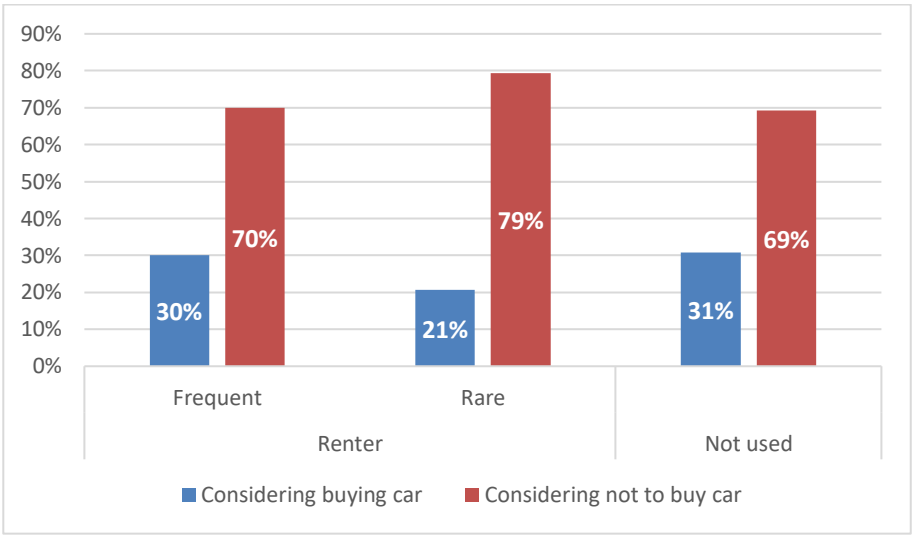

Figure 8. "Are you planning to buy a car in next 12 months?"

Additionally, people who stated that they do not have a car, also answered the question “Have you or someone in your household previously owned a car?” In all groups, more than 60% of the people have had a car before. The main reasons, which was an open answer, were that they do not need it (used it rarely, living in Oslo where the public transport is good, problems with parking), it is expensive to own a car, it is not environmentally-friendly, or they are using car collective services.

[3] People, who are using the service in both ways are excluded from this question because all of them have a car in their household.

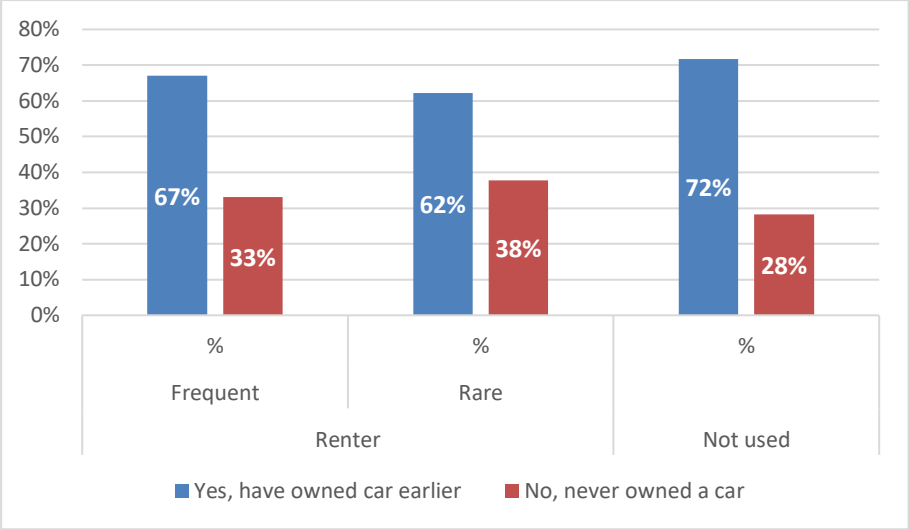

Figure 9. "Have you or someone in your household previously owned a car?".

4.1.1.5. Geographic factors

Much more renters live in cities compared to providers (Table 11). 65-70% of the renters live in the city versus 39-50% of the providers. This means that there is more demand for cars in the city and less supply, whereas in smaller cities and in the countryside, it is the other way around.

Table 11. Number of respondents living in the five biggest cities and other areas.

	Provider		Renter		Not used
	Frequent	Rare	Frequent	Rare	
Oslo	36%	35%	58%	53%	41%
Bergen	4%	1%	2%	4%	3%
Trondheim	6%	1%	5%	5%	4%
Stavanger	2%	1%	4%	2%	3%
Drammen	2%	1%	1%	1%	1%
Cities sum	**50%**	**39%**	**70%**	**65%**	**52%**
Other	50%	61%	30%	35%	48%

4.1.1.6. Innovation adoption

The sum of the mean scores of three questions about innovation adoption is presented in Table 12. The mean scores are high and do not differ much, although providers seem to be a bit more open to new innovations and frequent users are more open than rare users.

Table 12. Innovation adoption mean of three questions.

	Provider		Renter		Not used
	Frequent	Rare	Frequent	Rare	Yes
Innovation adoption	5.88	5.79	5.84	5.68	5.75

To sum up the descriptive statistics, a characterization of the typical user profile can now be provided. Frequent providers are most likely men, between 36-45 years old, highly-educated, working full-time, having higher than average income, and at least one child. They

see it as an environmentally-friendly service and it makes financial sense to them. They are not providing their car on other platforms and they do not have good access to public transport. They are mostly living outside of Oslo, and half of them are not in any of the five biggest cities.

Frequent renters are more likely men, between 26-35 years old, highly-educated, working full-time, having a bit higher than average income, do not have children, and live in cities. They use carsharing because it makes financial sense and are not using other carsharing services. If this platform would not be available for them, they would use other platforms or traditional car rental services. They have good public transport access, do not own a car but have owned one before.

To further understand what factors influence the frequency of carsharing use, results from the ordinal logistic regression analysis are shown in the next chapter.

4.1.2. Regression analysis

Three different user groups which were introduced before (frequent, rare, and not used group) are also used in the regression analysis. The aim of this analysis is to see what factors influence the frequency of carsharing use in order to better understand who the frequent users are. The difference between this and the previous chapter is that regression analysis enables us to find out the actual factors that influence the frequency, rather than showing the characteristics of frequent users.

Table 13 provides descriptive statistics of all the variables used in the regression analysis with means and standard deviations. These were mostly discussed already in the previous chapter, and some of them, like the rental purposes and barriers, are presented in the following two chapters. The exact explanation of the variables and the reference categories can be seen in Table 2. Due to the logic of how ordinal regression works in SPSS, which always takes the last category as a reference category, the dummy variables were coded in a way that the answer Yes is 0 and No is 1. The categorical variables that have multiple options are coded decreasingly. For example, the highest age group is coded as 1 and the lowest as 3, so the lowest age group is the reference category.

Error! Reference source not found. shows the ordinal regression results for renters. Only a few independent variables have a significant influence on the dependent variable. Age has a significant negative influence in model 2R for people 51 and over which means that they are less likely to become a renter. A middle income between 500,000 and 1,500,00 has a highly significant positive effect for frequency of carsharing use in models 1R and 2R. Additionally, households with incomes over 1,500,000 also has a positive effect on model 2R. Having children positively influences frequency of use in model 3R.

Table 13. Descriptive statistics of all the variables.[4]

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Model 1R dep. Not used (1), Rare (2), Frequent (3)	1399	1	3	1.85	0.766
Model 2R dep. Not used (0), Renter (1)	1399	0	1	0.62	0.485
Model 3R dep. Rare (0), Frequent (1)	870	0	1	0.37	0.483
Model 1P dep. Not used (1), Rare (2), Frequent (3)	920	1	3	1.70	0.872
Model 2P dep. Not used (0), Renter (1)	920	0	1	0.43	0.495
Model 3P dep. Rare (0), Frequent (1)	391	0	1	0.65	0.478
Sex	1730	0	1	0.69	0.463
Age	1730	1	3	2.14	0.774
Education	1730	1	3	1.72	0.760
Income	1648	1	3	1.84	0.736
Children	1730	0	5	0.72	1.027
Live in city	1730	0	1	0.42	0.493
Open to innov.	1730	1	7	5.76	0.903
AirBnb	1730	0	1	0.57	0.495
Other platforms	1730	0	1	0.92	0.265
PT last week	1730	1	8	2.76	1.650
Bike last week	1730	1	8	1.88	1.347
PT access	1730	0	1	0.47	0.499
Own a bike	1730	0	1	0.15	0.359
Make it cheaper	1151	1	7	5.18	1.800
Saving money	870	1	7	5.68	1.579
Make money	391	1	7	5.98	1.252
Environ. friendly	870	1	7	3.96	2.088
Global warming	1730	1	7	5.21	1.840
Sustain. transp.	391	1	7	4.58	1.828
More cars	1151	1	7	4.78	1.862
Keyless access	1151	1	7	3.92	1.980
Access car	1413	1	3	1.94	0.589
Make car available	391	1	7	4.00	1.821
Knowing other	1730	0	1	0.43	0.495
Car last week	1730	1	8	2.80	1.694
Own a car	1455	0	1	0.46	0.499
Purpose holiday	1730	0	1	0.72	0.450

[4] The number of cases is not always consistent due to the filtering error explained in the Methodology.

Table 14. Renters regression results.

Dependent variable	Model 1R		Model 2R		Model 3R	
Not used	x		x			
Rare	x		x		x	
Frequent	x				x	
Number of valid cases[5]	1185		1185		777	
Independent variables	Estimate	Sig.	Estimate	Sig.	Estimate	Sig.
Sex - woman	-0.092		-0.154		-0.012	
Age (ref: < 35) - > 51	-0.153		-0.326	*	0.126	
Age - 36 - 50	0.019		-0.139		0.239	
Education (ref: no university) - ≥ 5 years university	-0.275		-0.123		-0.321	
Education - 3 years university	0.062		0.189		-0.035	
Income (ref: < 500,000) - > 1,500,000	0.243		0.311	*	0.049	
Income - 500,000 - 1,500,000	0.433	***	0.482	***	0.244	
Children	-0.004		-0.104		0.180	*
Live in city	-0.184		-0.266		0.044	
Open to innov.	-0.005		-0.074		0.069	
AirBnb	0.354	***	0.393	***	0.161	
Other platforms	0.167		-0.077		1.004	***
PT last week	0.087	**	0.078	*	0.077	
Bike last week	0.076	*	0.052		0.096	*
PT access	0.163		0.156		0.161	
Own a bike	-0.247		-0.252		-0.085	
Make it cheaper					0.007	
Saving money					0.063	
Environ. friendly					0.034	
Global warming	0.048		0.092	**	-0.090	*
More cars					0.050	
Keyless access					0.035	
Access car (ref: no access) - good	-0.497	**	-0.461	**	-0.614	**
Access car - somewhat	-0.042		-0.001		-0.217	
Knowing other	0.716	***	0.672	***	0.577	***
Car last week	-0.040		-0.026		-0.040	
Own a car	-0.646	***	-0.734	***	-0.265	
Purpose holiday					-0.484	***
Nagelkerke Pseudo R-Square	0.164		0.173		0.125	
*significance at the 0.1 level; **significance at the 0.05 level; ***significance at the 0.01 level						

The people who have rented an accommodation from AirBnb or other similar services are more likely to be frequent carsharing users. The ones who have used other sharing platforms are also more likely to be frequent carsharing users, according to model 3R. The more people use public transport, the more likely they are to be frequent carsharing users, according to model 1R and 2R. Bike usage is also positively significant in models 1R and 3R. Being concerned about global warming has mixed results – according to model 2R it has a positive effect but in model 3 it has a negative effect. This means that the ones who are concerned about global warming are more likely to become a renter but less likely to

[5] As explained in the Methodology section, some cases were lost due to income, access car, and car ownership variables.

become a frequent renter. People, who are more concerned about global warming are also slightly more likely to be a renter (model 2R). Good access to a car has a significant negative effect in all models, as people who have access to a car are less likely to use carsharing. Owning a car, however, has significant negative effects in models 1R and 2R, but not in model 3R. Knowing other households who use carsharing has a significant positive effect in all models. Although holiday or leisure purposes are the most common use cases for carsharing (Figure 10), it has a strong negative effect of becoming a frequent carsharing user.

Comparing different models, the significance of different variables is fairly similar between model 1R and 2R, and five variables have the same or almost the same significance level. Model 3R, however, has three variables significant with model 1R and two with model 2R. As model 3R is comparing significance between rare and frequent users, it means that becoming a renter is influenced by different factors than becoming a frequent user. Nagelkerke Pseudo R-Square level is rather low in all of the models, being the highest in model 2R. This means that the chosen variables do not explained the frequency of carsharing use well.

Error! Reference source not found. represents the regression results for providers. First, women are more likely to frequently share their car (model 3P). Second, people who are over 51 are less likely to share their cars, according to model 1P and 2P. Third, using public transport more often has a negative effect on providing the cars (model 1P and 2P), as well as having good access to it (model 2P). Fourth, providers, whose motivation of making money with carsharing is higher, are also more likely to be frequent users, as well as wanting to make their car available to people. As with renters, knowing other households who use carsharing also has a positive effect on sharing cars. Interestingly, people who are using their car more often are also willing to share it more. This has a small significant effect in models 1P and 2P.

Similarly, to the renter models, in models 1P and 2P almost all the variables have the same independent variables. The Nagelkerke Pseudo R-Square level is lower in providers' models than it was on renters' models.

Overall, mostly different set of variables explained frequency of renters' use than frequency of providers'. Significant positive factors that influence renters' frequency were middle- or high-income, having children, experience of using AirBnb or other sharing platforms, using public transport or bikes more often, being concerned about global warming (model 2R), and knowing other people who are using carsharing. Negative factors are having good access to a car or owning one and going on holiday with a carsharing car. Providers' frequency of sharing a car is influenced positively by being a woman, being motivated to make money and wanting to make a car available for wider audiences, knowing other carsharing users, and using cars more often. Negative factors are being older than 51 and using public transport more often. In the following chapter, the most common use cases of P2P carsharing cars are presented.

Table 15. Providers regression results.

Dependent variable	Model 1P		Model 2P		Model 3P	
Not used	x		x			
Rare	x		x		x	
Frequent	x				x	
Number of cases[6]	873		873		375	
Independent variables	Estimate	Sig.	Estimate	Sig.	Estimate	Sig.
Sex - woman	-0.106		-0.192		0.553	**
Age (ref: < 35) - > 51	-0.412	**	-0.452	**	0.143	
Age - 36 - 50	0.076		0.042		0.329	
Education (ref: no university) - ≥ 5 years university	-0.305		-0.338		-0.007	
Education - 3 years university	-0.227		-0.161		-0.394	
Income (ref: < 500,000) - > 1,500,000	-0.041		-0.076		0.156	
Income - 500,000 - 1,500,000	0.307		0.296		0.220	
Children	0.082		0.089		0.041	
Live in city	0.072		0.018		0.336	
Open to innov.	0.092		0.081		0.029	
AirBnb	0.061		0.174		-0.387	
Other platforms	0.330		0.201		0.547	
PT last week	-0.138	**	-0.122	**	-0.094	
Bike last week	-0.013		0.000		-0.063	
PT access	-0.250		-0.297	*	0.203	
Own a bike	0.122		0.182		-0.137	
Make money					0.263	***
Global warming	0.050		0.063		-0.057	
Sustain. transp.					-0.100	
Make car available					0.181	**
Knowing other	0.469	***	0.479	***	0.213	
Car last week	0.123	**	0.153	***	-0.054	
Nagelkerke Pseudo R-Square	0.096		0.117		0.112	
*significance at the 0.1 level; **significance at the 0.05 level; ***significance at the 0.01 level						

4.2. For what purpose are frequent renters using P2P carsharing?

To answer this question, only frequent carsharing renters are analyzed (N=322). There were two questions about the purpose of the rental. The first was about the purposes behind people using cars from Nabobil, where they were allowed to mark up to three answers. It is referred to as "intended purpose" later on. Second was the purpose of the last rental. Additionally, the number of days and kilometers driven in the last rental were asked. For intended purposes, there were 609 responses marked, which means that on average people marked 1,89 purposes. For the last purpose, there were 322 responses.

As we see on the Figure 10, renters are using shared cars mainly to go for a holiday, do leisure trips or major shopping. In both questions, "Holiday or weekend" ranks the highest, mentioned 223 as the intended purpose and 117 as the last purpose. The second is "Major purchases", which has 121 responses on overall purposes and 53 as a last purpose. The

[6] As explained in the Methodology section, some cases were lost due to income variables.

thirdly ranked leisure trips were mentioned 88 times overall and 44 times last. The rest were mentioned less, like other, business purposes, bring/collect children or other people, to and from work/study, and grocery shopping.

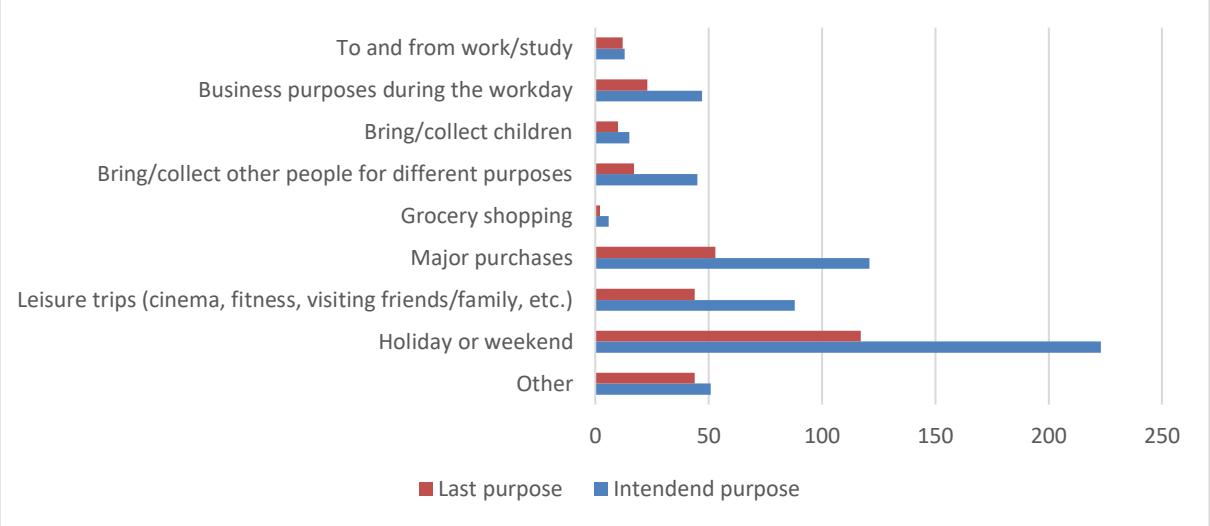

Figure 10. Purposes behind people using P2P carsharing. (On the intended purpose question, up to three options were allowed).

On the latter of two questions about the length of the last trip in days and kilometers, the ones who responded zero to either of the questions were excluded, because the minimum rental period in Nabobil is one day. Therefore, seven respondents were excluded, and the sample size was N=315. The mean days of the last carsharing usage is 3.4 days (Table 16). However, the 5% trimmed mean is 2.3 days. This is because of the few long-term rentals, which were up to 100 days, but as is seen in Table 17, 95% of the rentals are up to seven days. Therefore, it is more reasonable to look 5% trimmed mean, which would exclude 5% of the smallest and 5% of the highest number of variables. The mean of kilometers driven is 318 and trimmed mean is 263. The average frequent renter uses a car by 94 km a day or 112 km a day (if trimmed mean is used). It is calculated by dividing the mean of kilometers driven by the mean of days. This is significantly higher than the 34 km that average passenger cars drove in a day in Norway in 2016 (Statistics Norway, 2017a).

Table 16. Descriptive statistics of last carsharing usage.

	Number of days	Number of kilometers driven
Mean	3.37	317.62
5% Trimmed Mean	2.34	262.57
Median	2.00	200.00
Std. Deviation	7.26	428.90
Minimum	1	1
Maximum	100	5000

Table 17 shows that 81% of the rentals are 3 days or less and 95% are up to a week. This aligns well with the purposes which are mainly short term (expect holiday). As 43% of the people are using a car for one day, there is a chance that renting by the hour may be beneficial for them.

Table 17. The length of the last trip in number of days.

Days	Frequency	Percent	Cumulative percentage
1	135	43%	43%
2	42	13%	56%
3	80	25%	81%
4	19	6%	87%
5	8	3%	90%
6	3	1%	91%
7	12	4%	95%
8 or more	16	5%	100%
Total	278	100%	

To sum up, carsharing cars are used mainly for holidays or major purchases. The majority of the rentals are up to three days and cars are driven around 100 km per day. Next the barriers that are holding back the increase of carsharing usage are discussed.

4.3. What are the barriers for renters not to use P2P carsharing more frequently?

This section is divided into two subsections: first the barriers for frequent users are presented and then the reasons from the people who have not used the service are examined.

4.3.1. Barriers for frequent users

First, the question about the factors that could increase the carsharing usage for people is analyzed. Again, frequent carsharing renters (N=322) are the sample. The respondents were asked to assess the importance of the factors on a Likert scale from one to seven and the means and standard deviation from the responses are presented in Table 18.

The most important factors are the incentives which will make carsharing cheaper and the availability of cars in the neighborhood with means of 5.57 and 5.20 respectively. Additionally, the fixed parking spaces for shared cars in the community were third one with mean score of 4.58. Access to newer and better cars and less direct contact with the owner were mentioned fourth and fifth, both with means just above four. The least important were access to public transport lanes (which, however, has the highest standard deviation meaning that it is important for some people) and easier access to extra accessories.

Table 18. The factors that would increase carsharing usage for renters.

	Mean	Std. Deviation
Incentives/subsidies for carsharing which will make it cheaper	5.57	1.543
Increased availability of shared cars in the neighborhood	5.20	1.742
Fixed parking spaces for shared cars in the community	4.58	1.969
Less direct contact with the owner (e.g. Keyless access)	4.11	1.808
Access to newer and better cars	4.10	1.790
Access to public transport lanes	3.68	2.038
Easier access to extra accessories (dog cage, bicycle rack, a child seat, etc.)	3.13	1.756

In addition to the fixed answers, there were 60 open responses. Again, price was mentioned most often (N=15), which holds people back from using the service more frequently. Second, inconvenient booking system or the mobile app was mentioned eleven

times. Better and quicker booking systems without the need to wait for the acceptance from the owner is expected. Third, more flexibility on pick-up and delivery with keyless access was mentioned six times. Fourth, seven people see a problem with the access to the cars. Some mentioned the availability of (suitable) cars as a barrier, others would like to get cars delivered or pick them up from the airport. Fifth, four people are not satisfied with the quality of the service: two specifically with the insurance provided and two with quality or cleanliness of the provided cars. Both of them expected better quality assurance by the platform of the listed vehicles. Sixth, three people have encountered troubles with parking when returning the car, so fixed parking spaces would be appreciated by them.

4.3.2. Reasons why people have not used the service

As one third of the respondents have signed up for the Nabobil platform but had not used the service (N=529), the reasons of this were analyzed. There was a multiple-choice question, which were only shown for the people who had not taken advantage of Nabobil services. The question was asked from the renters' perspective.

In Table 19 there are responses from the multiple-choice questions. The main reason why people have not used the service yet is that they have not needed it (57%). The second reason was that the household has access to a car now (11%). Third, there has not been suitable cars near the user (7%), and fourth, the prices were too high (6%). The rest constituted a 5% or less share of the overall sample.

Table 19. Answers to the question "What is the reason why you have not rented a car from Nabobil?".

	Frequency	Percent
I have not needed	304	57%
Prices are too high	34	6%
I have not found suitable car/model near me	36	7%
I have tried to hire, but were refused by the provider	27	5%
Me/household have access to a car now and no longer need to hire	57	11%
Me/household has acquired new car and no longer need to rent a car	14	3%
Do not know enough about the scheme	19	4%
I do not trust the insurance offered	5	1%
Other	33	6%
Total	529	100%

As there was not an option that the respondent was interested in becoming a provider, 10 people indicated on the other section that they were interested of becoming a provider. From the renter's perspective, most people in other sections mentioned that they are using other opportunities to get access to a car, either B2C carsharing (N=5), car rental (N=2) or borrowing a car from friends (N=1). Additionally, some people were too young to rent a car from Nabobil (N=6). Three respondents mentioned that it took too long for provider response or that they did not get any response at all. Two people also mentioned that they have not used the service because the process of getting a car is too difficult (having to meet the provider). One person said that they have not found an opportunity to rent a car by the hour and another had just forgotten to use it. In two cases the reasoning was not clear.

To conclude, among people who need to use carsharing, two main barriers are the availability of cars and the price which hinders them to use it or use it more often. The possible solutions for this were discussed with experts and platform representatives and are presented in the next chapter.

4.4. What possibilities do platform representatives and experts see to increase P2P carsharing usage?

In this chapter results from the interviews are discussed. This section is divided into six main themes that appeared in the semi-structured interviews.

4.4.1. Users and barriers

Interviewees were asked to profile the frequent carsharing user, both from the renter and the provider side. In their opinion renters are typically younger people, who live in bigger cities. Usually, they do not have a car in the household. Providers tend to be a bit older than renters. One interviewee stated that people usually buy a car when they have a child, and after that they also become potential providers. Other groups of providers are people who have 2-3 cars and do it for fun, as they do not necessarily need the extra income from sharing their cars. Some interviewees also mentioned that smaller cars in cities are the most popular ones and the average car in their platform is rented out more than 10 times a year. The results are summarized in Figure 11.

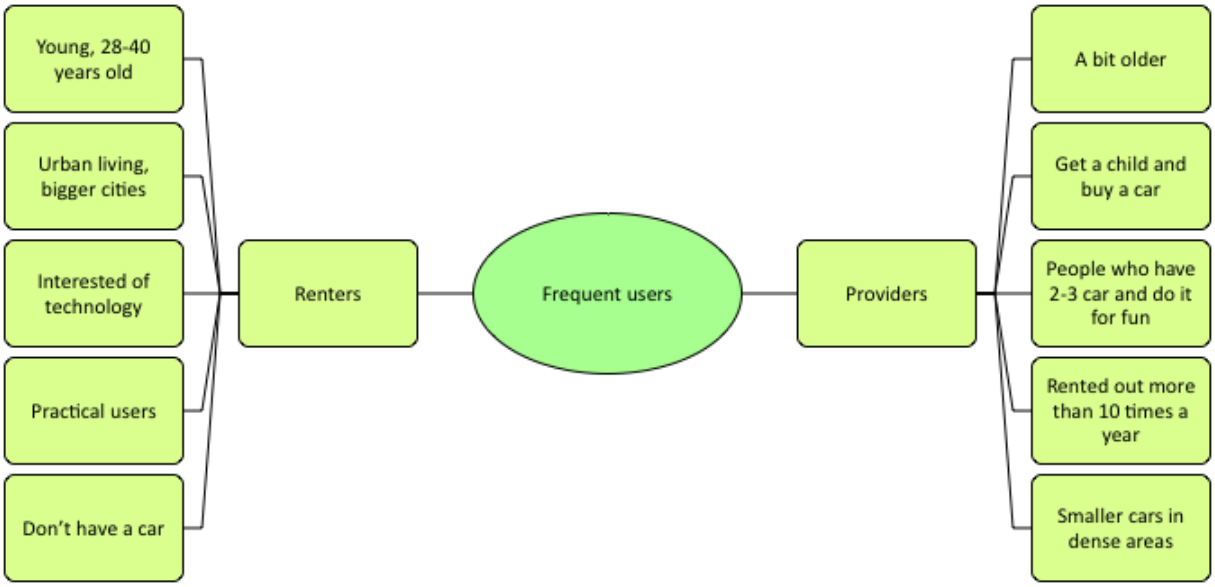

Figure 11. Frequent carsharing user.

To increase the usage of carsharing, it is also important to understand what people are using it for (Figure 12). There were two common use cases discussed, which all interviewees mentioned. One was weekend breaks. People use the cars to escape from the city, visit their parents, or go for a holiday. This was especially strong in the Norwegian context because of the strong cabin culture. Second thing that people use cars to transport bigger goods, specifically going to Ikea. It was also asked of one interviewee why people are not using the delivery service instead, and he mentioned that it is more expensive than taking a carsharing car. Additional use cases were when public transport was not good. This includes the cases where it takes too long, people have too much things to carry, it is too expensive, or the destination is not reachable with public transport at all.

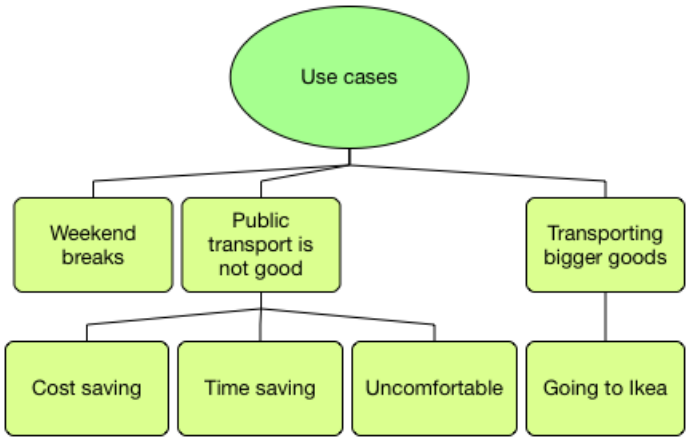

Figure 12. Carsharing use cases.

The main barrier that was brought up was that the cars are not close enough. All the interviewees agreed that there should be enough cars within walking distance, otherwise the service will not work. One interviewee stated that in Oslo, even with all carsharing services combined, it is still not good. New users who are coming will see that it is working but still not as well that they would like in order to sell their car. One of the platform representatives, on the other hand, stated that they now have enough cars almost everywhere in Oslo and they are comfortable to start active marketing to the renters. Another barrier that was mentioned was that providers often do not respond or do not answer quickly enough. This makes it difficult to solely rely on P2P carsharing service.

Interviewees were asked about supply and demand balance. All agreed that the supply is the main problem in order to scale up. Some respondents said that it is important to focus on neighborhoods or postal code levels in this question. Certain neighborhoods may already have enough supply while others have almost nothing. One of the platforms is partnering with private lease companies which offers an opportunity to lease a car at a cheaper price if it is offered on the platform a few times per month. This way they can increase the number of cars on the platform. Another platform representative said that it is seasonal. They have two spikes around Christmas and Easter when everybody is travelling, and they have huge lack of supply. But during the summer it is almost balanced. He also mentioned that it is fascinating how the market is controlling itself, that if there is a huge rise in demand, the supply follows.

To summarize, frequent carsharing renters are young people who are living in cities, while providers are a bit older. The cars are used to go for a holiday or buy bigger goods. The main barrier is that the supply of cars is not enough. All the results are aligned with survey results.

4.4.2. Reaching the majority

All the factors to reach majority were grouped under three themes: governmental support, next user groups, and marketing, all of which are explained in this chapter.

The important thing that some of the interviewees pointed to was governmental support. The importance of governmental actions can increase or reduce the speed of carsharing adoption. The main incentive at the local level is the allocation of public parking spaces, whether shared cars get some advantages or not. For example, in Oslo there are 600 dedicated parking spots for shared cars but only for B2C cars. For P2P platforms it means that they have to buy cars by themselves as well, otherwise the competitors will get a huge

advantage. Other mechanisms that governments can use are taxation or legislation. All in all, interviewees agreed that governments have the power to make sharing cheaper and easier than car ownership.

One of the most mentioned potential user groups from the renters' side are the households who have two cars. These cars are used occasionally, are often not as good as the first cars and may also be shared on a carsharing platform. One interviewee mentioned that some people are using the strategy that they rent out their second car which is not very well maintained. If it would need some major repair, they are not planning to do it. After the car breaks down completely, they have a choice to either buy a new one or start using carsharing as a renter. Another interviewee also mentioned the possibility to offer mobility solutions to low-income people who do not have access to a car. This could be done together with governments. For example, Amsterdam City Council is already working together with a meal sharing platform to provide meals for low-income people. One of the platform representatives brought up that their main focus is on geographical expansion rather than focusing on specific user groups. However, he also saw potential not only on people who do not have a car but may not have a car for their specific need. For instance, if they need a bigger car for transporting goods or people. Additionally, more of the same users was also mentioned, as most of the platforms still only have a small share of the early adopters as active users. Moreover, people who are growing up at the moment would be "the least difficult sell".

There are different ways to market to new users. From the provider side, one interviewee saw a potential in company cars which are used during the business hours, while private individuals are often using the vehicles on the evenings and weekends. Another interviewee thought that it is not easy for platforms to get these fleet owners on board, as it takes a lot of time to make such a decision in the company and it has a lot of hidden costs which private individuals often do not consider (communication, handing over the keys). One respondent mentioned that it is easier to market to renters because providers need much more trust to offer their car on the platform. Another said that they specifically approach renters who failed to use the platform before due to the lack of cars or rejection from the provider, as they have added 3000 new cars in the past six months. It was also mentioned that it is important to work with the perception around carsharing: "Carsharing up until now has been some kind of boring, cost-conscious type of thing people are looking into. But now, especially among the younger segments, carsharing becomes a very attractive alternative to own a car." In addition, he said that to market to older people there should be more focus on convenience than cost, as older people are usually wealthier. In addition, example use cases can be used to demonstrate how people can use carsharing in their life. One interviewee said that they used the Ikea example for one of the pilot projects, as using the carsharing car is cheaper than to get the goods delivered, and it also gives the opportunity to drive a "brand new cool electric vehicle". Moreover, showing the actual total ownership cost of the car would help to show potential renters how expensive it is to own one and would direct them to see carsharing as a potential alternative. Figure 13 summarizes all the factors and ideas on how to reach the majority.

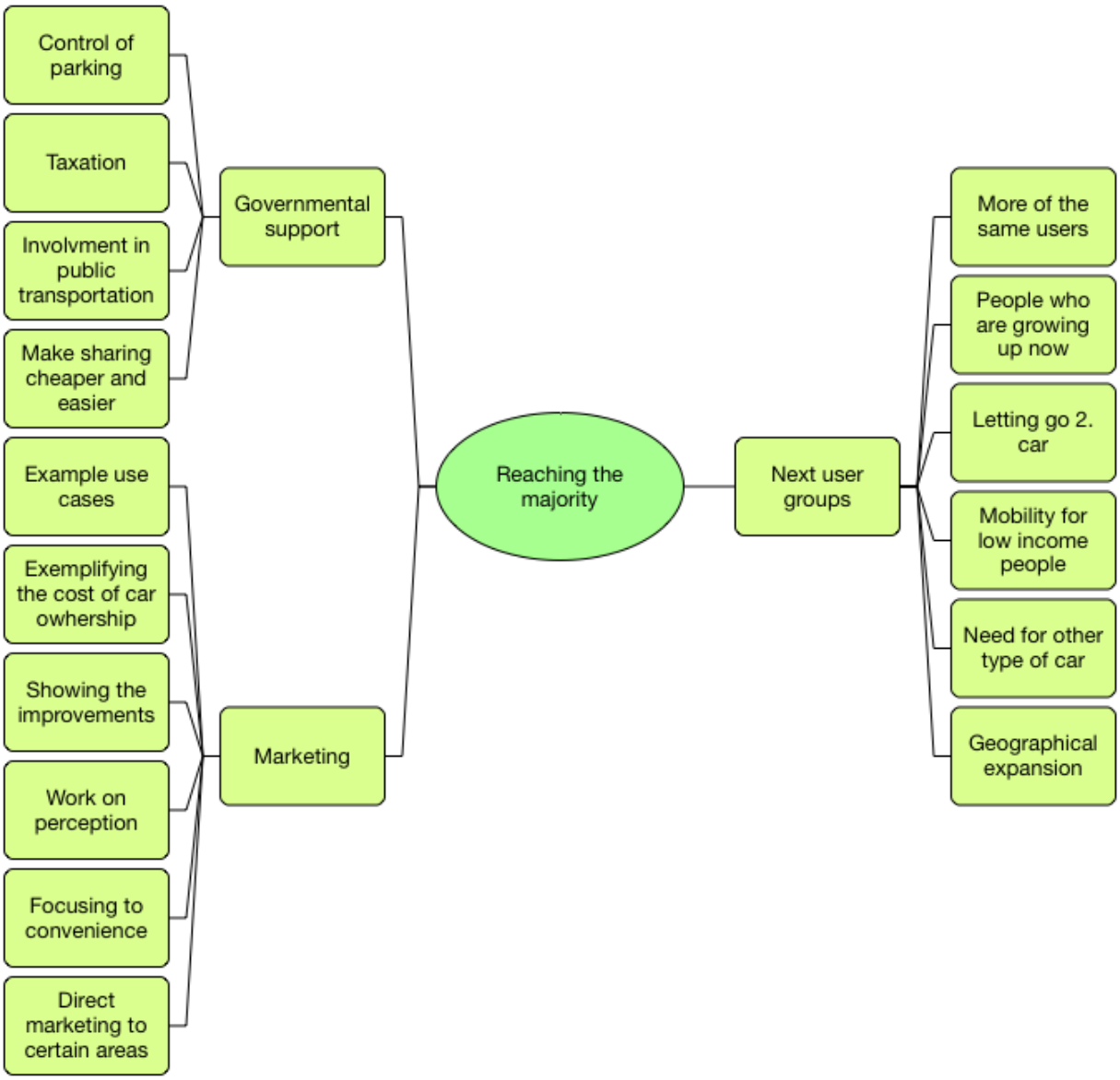

Figure 13. Factors that influence reaching the majority.

4.4.2.1. Technological innovations

All the interviewees emphasized the importance of keyless access in the future. Some thought that it is going to be default, other saw that there is definitely room for cars without keyless access as well, as not all the providers are willing to install keyless technology into their cars. The latter opinion was from the platform representatives who already have thousands of providers without keyless access on their platform.

The main barrier at the moment is the price of the technology. All platforms are asking a monthly fee for the hardware which usually means that the car has to be rented out 1-2 days more in a month to cover the costs. Interviewees saw that the bigger change will come when car manufacturers will give access to the software in the car to the third parties, as the necessary hardware is already in the car. For now, only Volvo has done it and it is already in use in grocery delivery services.

In addition to the costs, there are also some other disadvantages with keyless technology. One interviewee brought up that there are a lot of users who are not sharing their car very often and handing over the keys is not a problem for them, as they are home anyway at that time. In his opinion, it can be frictionless with people being involved as long as they are willing to communicate. Other interviewees thought that if there is less personal connection, renters would take it more as a rental car which are usually not treated very well. Additionally, more luxurious and expensive car owners may not want keyless technology as much, as they would like to see who they are giving their expensive asset to. Moreover, there may be cultural differences between countries which means that in some countries people are more open to this technology than others. Last but not least, one interviewee brought up that the keyless technology is platform specific at the moment, which means that if providers would like to share their car on multiple platforms, they also have to install separate hardware into their car, which is unlikely to happen because of the cost. This means that providers of one platform are locked-in if they install the hardware into their cars.

There are also some other innovations that are influencing the carsharing market. For example, one platform representative said that they are using artificial intelligence to predict the rental session. Their model will predict with 92% accuracy which car the potential renter would rent. With this technology, less people should be declined.

Summarizing, one thing that came up in all interviews were the carsharing quality of the service compared to private car ownership. All these services still involve much more hassle because the personal car is always there and ready to use. To tackle it, there should be enough supply of cars within walking distance from the home or workplace and the rental process should be as frictionless as possible, starting with easy-to-use application to keyless access. In addition, the next user groups are potentially the ones who have two cars at the moment. The two most mentioned strategies from the marketing side were showing people example use cases and emphasizing how expensive it is to own a car.

5. Discussion

In this chapter the results are linked with hypotheses, which is followed by reflection and advice for the business. The reflection includes limitations and recommendations for future research and under advice for business four main findings are discussed.

5.1. Hypotheses

The findings of this study can now be discussed according to the hypotheses as developed in the theory section.

1. *Frequent carsharing user match with typical early adopter profile. – Confirmed*

According to Rogers (2003) early adopters have higher than average income and education. This was confirmed, as carsharing users from both sides are highly educated and have higher than average income. Still, there are some differences between renters and providers. Renters are younger, are living in the cities, are mostly working but more likely students than providers, and do not have a child. The providers are older than renters, less likely to live in cities, and have higher income.

2. *Good access to public transport increases the likelihood of P2P carsharing – Partly confirmed*

People's every day commuting needs have to be covered with either public transport, cycling or walking options (Seign & Bogenberger, 2012b). From the renters' side, more than half of them have good access to public transport and the more they use public transport, the more likely they are to become frequent carsharing users. However, public transport access did not have significant effects on renters' carsharing frequency. On the other side, most of the providers do not have good access to public transport and their usage and access is negatively correlated with their frequency of carsharing use.

The reason why this hypothesis was partly rejected may also be that it does not always mean that people have to have good public transport access in order to satisfy their everyday commuting needs with other means of transport. It can also work with weaker public transport access, biking or walking. Times of biking in the last week was also in the analysis and it had a significant positive effect on renters but no significance on providers. This, however, may give different results in the summer, as the questionnaire was conducted in November and Norway does not have the most pleasant weather for biking that time of the year.

3. *Both car providers and renters are economically motivated to use carsharing. – Confirmed*

Other studies have found that saving money by renting a car from P2P platform compared to regular car rental, or earning some by renting out their own car seem to be the main motivators for participating in carsharing (Dill et al., 2016; Philip et al., 2015). For renters, the most important thing that would increase their carsharing usage were incentives or subsidies that would make it cheaper. The regression analysis of this study also confirmed that providers are more likely to share their car more frequently if making money is one of their main motivations. Hence, it can be confirmed that economic motivation is important for both sides.

4. *Sustainability has a positive side effect but is not the main motivation for using carsharing. – Confirmed*

It has been found before that sustainability is not a main driver for using carsharing, but may still have some importance (Seign & Bogenberger, 2012a; Wilhelms, Merfeld, et al.,

2017). From this research, it came out that providers see it more as an environmentally-friendly service than renters. From the regression analysis it came out that people who are concerned about global warming are more likely to become a renter All in all, sustainability does not have a great importance of using carsharing more often.

5. *Non-availability of cars within walking distance is one of the main barriers for renters to increase their carsharing usage. – Confirmed*

According to Seign and Bogenberger (2012a) the car should be reachable with 300-500 meters. This came out in this study as well. Increased number of shared cars in the neighborhood was mentioned as one of the two most important factors that would increase carsharing usage. In addition, it also came out from the interviews, where the platform representatives mentioned that they are focusing on the supply at the neighborhood level. This is important for both attracting new users and getting existing users to use the service more frequently.

6. *Straightforward digital platform and keyless access will increase both renters' and providers' usage of P2P carsharing. – Confirmed*

One of the important factors for adoption is simplicity and ease of use (Rogers, 2003), and the easier the booking, getting and returning a vehicle is, the more likely it is to be adopted (Dütschke & Peters, 2017). Both survey data and interviews supported this hypothesis. The booking system and keyless access were mentioned as the second and third biggest barrier of not using carsharing more frequently. This aligns well with the interviewees opinion that the friction to get the car should be minimized. They expect that keyless access will have great importance, some even think that it is going to be default option in the future. If cars would have keyless access, renting by the hour can be also possible which means that P2P carsharing will compete more directly with B2C carsharing, where the rental periods are shorter.

5.2. Reflection

Like every research, this study also has its limitations. In this section these along with the suggestions for further research are discussed.

One of the main limitations of the study was that the Nagelkerke Pseudo R-Square level in regression analysis was low in all models. This means that the frequency of use is influenced by other factors (for example, the number of cars in the neighborhood or easiness to use) than the variables chosen for the regression analysis. This needs further research to better understand what exactly influences the frequency of use.

Additionally, in models 1 and 2 the comparison against not used group may not be the best, as this is the mix of potential renters and providers. It was not specifically asked on which side of the service they were interested in. This can be also justified with the descriptive statistics where in most cases the not used group results were in between providers and renters. However, it is reasonable to say that more than half of the not used group people are potential renters, as more than two times more renters answered the questionnaire than providers. It means that the not used group should have more of the renters' characteristics than providers'. Further analysis comparing the frequency of use against smaller segments than frequent, rare and not used, or using number of times used can give better clarity on what would influence the frequency of carsharing use.

There is more demand and less supply in the bigger cities, while outside of them it is the other way around. However, platform representatives were not too assured about that. It may be that their focus is on the cities, which were said also by one platform

representative, and they are not really looking at how the service is working in the less urbanized areas. Still, as all the platforms said that they are looking at how the service is working in the neighborhood level, it may be beneficial to also look into the smaller cities where they already may have enough supply and try to get the renters on board. This is something that needs further exploration.

The questionnaire was developed and executed before the research. This means that the research was designed around the questionnaire by finding what can be explained with this set of questions. In some cases, it would have been beneficial to have some additional questions. However, overall the questions were well thought out and it was a good dataset for the study.

5.3. Advice to business

The main purpose of this study was to give recommendations for P2P carsharing platforms about what they can do to reach early majority. This section concludes the main findings of the study.

First, there have to be enough cars within walking distance from people's homes because the service only works if the cars are reachable with a short walk (Table 18 and Heading 4.4.1). A few ways to reach that is to target potential providers in neighborhoods where there are not enough cars, work together with companies who are not using their cars in the evenings and weekends, and cooperate with private lease companies with the obligation to rent out a car a few days a month.

Second, as early majority hates complexity (Rogers, 2003), the rental process should be as easy and frictionless as possible to attract new customers (Heading 4.4.2). There are two components to it – less direct contact with owner which can be achieved with keyless access, and easy-to-use booking system without the need to wait for the answer from the provider.

Third, knowing other people who are doing carsharing is a strong factor on both renter and provider sides (**Error! Reference source not found.** and **Error! Reference source not found.**). It means that direct personal recommendations may work the best in terms of attracting potential new frequent customers. This is often executed through "refer-a-friend" programs, where a person who recommends a new customer to the platform will get a discount on using the service next time.

Fourth, as early majorities are cost conscious (Rogers, 2003), they need clear understanding that the carsharing is cheaper for them than owning their own car (Heading 4.4.2). This is often the case for people who are not using the car every day, so delivering this message effectively is important reach the early majority.

6. Conclusion

The P2P carsharing is rather new and there has not been much research conducted on this. The aim of this two-fold study was to find out what P2P platforms could do to reach early majority. Four research sub-questions were proposed and the short answers to these are presented below:

- *What is the profile of frequent P2P carsharing users?* Frequent carsharing users are mostly men and typical early adopters – highly educated and higher than average income, renters are younger than providers.
- *For what purpose are frequent renters using P2P carsharing?* Two main reasons are going for a holiday and making major purchases.
- *What are the barriers for renters not to use P2P carsharing more frequently?* The main barriers are the availability of cars, the price and the easiness of using the service.
- *What possibilities do platform representatives and experts see to increase P2P carsharing usage?* There should be enough cars in walking distance from people's homes and the rental process should be as easy and frictionless as possible with keyless access and easy-to-use booking systems.

The answer the main research question "*How P2P carsharing platforms could involve early majorities?",* there are two main things that platforms can do. First, enough providers are needed at the neighborhood level to attract renters and give them a strong alternative for private car ownership. Second, frictionless process with easy-to-use booking and keyless access are expected by both the renters and providers. These will help to attract new users and increase the usage of old users as well.

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Appendix 1 – Nabobil questionnaire

ID: Background

Random	Random Variable
◆ **range:***	
◆ **afilla:**sys_random c Complete in automatically	☐☐☐☐☐☐☐ 1

Start_date	Date of questionnaire
◆ **range:***	
◆ **afilla:**sys_date c Complete this form automatically	☐☐☐☐☐☐☐☐ 1

Start_time	Start of questionnaire
◆ **range:***	
◆ **afilla:**sys_timenowf c Complete this form automatically	☐☐☐☐☐☐☐ 1

Sex	To begin with - a little about you **Sex**
◆ **range:***	
Woman 	○ 1
Man 	○ 2

Age	How old are you?
◆ **range:**15: 100	
Enter age	☐☐☐ 1

Occupation	What do you consider as your main occupation?
◆ **range:***	
Fully employed, full-time	○ 1
Fully employed, part-time	○ 2
Student	○ 3
Other	○ 4

Driving_license	What year did you take a driving license?
◆ **range:**1900: 2017	

Driving_license	What year did you take a driving license?
year	☐☐☐☐☐☐☐☐ 1

ID: bildelingssurvey2011

How_long_using	How long have you been using the Nabobil.no?	
◆ **range:***		
Less than a month	○	1
1-3 months	○	2
4-6 months	○	3
7- 12 months	○	4
Longer than one year	○	5

Ways_using	In what ways do you use Nabobil.no?	
◆ **range:***		
I rent out my own car	○	1
I rent car from others	○	2
I both rent out and rent from others	○	3
I have not yet taken advantage of Nabobil.no/ passive member	○	4

Know_first	From where did you get to know the scheme first?	
◆ **range:***		
Friends or family	○	1
Social Media	○	2
Advertising	○	3
Acquaintances	○	4
Media Coverage / newspapers	○	5
Searched forward the information itself	○	6
Other	○	7

Know_other	Do you know other households who use car sharing?	
◆ **range:***		
Yes	○	1
no	○	2

Other_platforms	Are you or someone in your household users or members of other sharing platforms?
◆ **range:***	

Other_platforms	Are you or someone in your household users or members of other sharing platforms?	
Hertz Bilpool	☐	1
Bilkollektivet	☐	2
Move About	☐	3
Bildeleringen	☐	4
Others:	Open	
• **exclusive:**yes no	○	5

Reasons_renter	How important are the following factors for you of being member of Nabobil.no?							
• **filter:**\ Benytte.a = 2; 3 • **range:***								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
I want to meet people	○	○	○	○	○	○	○	1
Car sharing is more convenient than owning my own car	○	○	○	○	○	○	○	2
I want to travel more environmentally friendly	○	○	○	○	○	○	○	3
Car sharing gives me greater freedom of choice	○	○	○	○	○	○	○	4
I can save money by sharing	○	○	○	○	○	○	○	5
Car sharing gives me access to a car when I need it	○	○	○	○	○	○	○	6

Other_factors	Are there other reasons that are not mentioned on the previous page?	
• **filter:**\ Benytte.a = 2; 3		
Please specify:	Open	

Reasons_not_used	What is the reason why you have not rented a car from Nabobil.no?	
• **filter:**\ Benytte.a = 4 • **range:***		
I have not needed	○	1
Prices are too high	○	2
I have not found suitable car/model near me	○	3
I have tried to hire, but were refused by the provider	○	4
Me/household have access to a car now and no longer need to hire	○	5
Me/household has acquired new car and no longer need to rent a car	○	6

Reasons_not_used	What is the reason why you have not rented a car from Nabobil.no?	
Do not know enough about the scheme	○	7
I do not trust the insurance offered	○	8
Others:		Open

Reasons_provider	What is the reason why you rent out your car through Nabobil.no?							
• **filter:**\ Benytte.a = 1 3 • **range:***								
	1 Very little important	2	3	4	5	6	7 Very Important	
	1	2	3	4	5	6	7	
I want to make my car available to more people	○	○	○	○	○	○	○	1
I want to save/make money on with my car	○	○	○	○	○	○	○	2
I want to contribute to a more sustainable transport system	○	○	○	○	○	○	○	3

Reasons_provider_other	Are there other reasons that are not mentioned on the previous page?	
• **filter:**\ Benytte.a = 1 3		
Please specify:		Open

Use_renter	How often do you use Nabobil.no?	
• **filter:**\ Benytte.a = 2; 3 • **range:***		
More than once a week	○	1
More than once a month	○	2
Between 3-6 times a year	○	3
Rarer	○	4

Times_use	How many times overall you have used Nabobil.no?	
• **filter:**\ Bruk_leie.a = 4 • **range:***		
Times:	☐	1

Use_provider	Think about how much you have on average used Nabobil the past six months. Approximately how often have you rented your car through this scheme?	
• **filter:**\ Benytte.a = 1 3 • **range:***		
More than once a week	○	1
More than once a month	○	2
Between 3-6 times a year	○	3

Use_provider	Think about how much you have on average used Nabobil the past six months. Approximately how often have you rented your car through this scheme?	
Rarer		○ 4

Purpose	For what purpose do you usually use cars from Nabobil? Mark up to three answers	
• **filter:**\ Benytte.a = 2; 3 • **range:**# 1: 3		
• **root:**r To and from work/study		☐ 1
Business purposes during the workday		☐ 2
Bring/collect children		☐ 3
Bring/collect other people for different purposes		☐ 4
Grocery shopping		☐ 5
Major purchases		☐ 6
Leisure trips (cinema, fitness, visiting friends/family, etc.)		☐ 7
Holiday or weekend		☐ 8
• **root:**n Other		☐ 9

Purpose_last	What was the purpose of your last rental?	
• **filter:**\ Benytte.a = 2; 3 • **range:***		
• **root:**r To and from work/study		○ 1
Business purposes during the workday		○ 2
Bring/collect children		○ 3
Bring/collect other people for different purposes		○ 4
Grocery shopping		○ 5
Major purchases		○ 6
Leisure trips (cinema, fitness, visiting friends/family, etc.)		○ 7
Holiday or weekend		○ 8
• **root:**n Other		○ 9

Days/km_last	Approximately how long was your last trip?	
• **filter:**\ Formal_siste.a =? • **range:***		
Number of days		☐☐☐☐ 1
Number of kilometers driven		☐☐☐☐ 2

Alternative	What is your alternative for renting a car from Nabobil?
• **filter:**\ Benytte.a = 2; 3	

Alternative	What is your alternative for renting a car from Nabobil?	
◆ **range:***		
Renting a car from conventional car rental	○	1
Borrowing car from friends/family	○	2
Using private/household car	○	3
Renting a car in another car sharing scheme	○	4
Take taxi	○	5
Other, enter	Open	
Do not know	○	6

ID: Okt_bruk

Increase_CS	Is there anything special that would increase the use of car sharing for you?							
◆ **filter:**\ Benytte.a = 2; 3 ◆ **range:***								
	1 In a very small extent	2	3	4	5	6	7 In a very large extent	
	1	2	3	4	5	6	7	
Fixed parking spaces for sharing cars in the community	○	○	○	○	○	○	○	1
Access to public transport lanes	○	○	○	○	○	○	○	2
Increased availability of shared cars in the neighborhood	○	○	○	○	○	○	○	3
Incentives/ subsidies for car sharing which will make it cheaper	○	○	○	○	○	○	○	4
Less direct contact with the owner (eg. Keyless access)	○	○	○	○	○	○	○	5
Access to newer and better cars	○	○	○	○	○	○	○	6
Easier access to extra accessories (dog cage, bicycle rack, a child seat, etc.)	○	○	○	○	○	○	○	7

Increase_CS_other	Are there other things that could increase your use of carsharing, which was not mentioned on the previous page?	
◆ **filter:**\ Benytte.a = 2; 3		
Others:	Open	

ID: Transportation Resources

Car_own	Do you own (or lease) a car in your household?	
• **filter:**\ Benytte.a = 2; 4 • **range:***		
Yes		○ 1
no		○ 2

Nr_cars	How many cars are in your household in total?	
• **filter:**\ Bilhold.a = 1 | (\ Benytte.a = 1 | \ Benytte.a = 3) • **range:***		
A car		○ 1
Two cars		○ 2
Three or more cars		○ 3

Type_car	What type of car is in your household?	
• **filter:**\ Bilhold_ant.a = 1 • **range:***		
Gasoline		○ 1
Diesel		○ 2
EV		○ 3
Hybrid		○ 4
Plug-in hybrid		○ 5
Other		○ 6
Do not know		○ 7

Type_cars	What type of car(s) are in your household?	
• **filter:**\ Bilhold_ant.a = 2; 3 • **range:***		
Gasoline		☐ 1
Diesel		☐ 2
EV		☐ 3
Hybrid		☐ 4
Plug-in hybrid		☐ 5
Other		☐ 6
• **exclusive:**yes Do not know		○ 7

Former_car_own	Have you or someone in your household previously owned car?	
• **filter:**\ Bilhold.a = 2 • **range:***		
Yes, have owned car earlier		○ 1
No, never owned a car		○ 2

Reason_no_car	What is the reason you no longer own a car?
• **filter:**\ TidlBilhold.a = 1	
Write in your own words:	Open

Changing_car_owners	Are you or anyone in your household planning to buy or sell a car in the next 12 months?	
• **filter:**\ Bilhold.a = 1 • **range:***		
Considering selling car	○	1
Considering selling and buying another car	○	2
Consider buying additional car	○	3
Have no plans to change	○	4

Buying_car	Are you planning to buy a car over the next 12 months?	
• **filter:**\ Bilhold.a = 2 • **range:***		
Considering buying a car	○	1
Considering not to buy a car	○	2

Type_new_vehicle	What type of car are you considering buying?	
• **filter:**\ NyBil.a = 2; 3 | \ NyBil_1.a = 1 • **range:***		
Gasoline	○	1
Diesel	○	2
EV	○	3
Hybrid	○	4
Plug-in hybrid	○	5
Other	○	6
Do not know	○	7

Reason_buying	What is the reason why you are planning to buy a car in the next 12 months?
• **filter:**(\ NyBil.a = 2; 3 | \ NyBil_1.a = 1)	
Write in your own words	Open

Cars_before	How many cars did you have before you were Nabobil user?	
• **filter:**\ TidlBilhold.a = 1 | \ Bilhold.a = 1 • **range:***		
Number of cars	☐☐	1

Access_car	Do you have access to a car through family or friends?
• **filter:**\ Benytte.a = 2; 3; 4 • **range:***	

Access_car	Do you have access to a car through family or friends?	
Yes, good access	○	1
Yes, I borrow occasionally	○	2
Have a little access	○	3
Do not have an access	○	4
Not relevant	○	5

Bike	Do you own or use any of the following bike types?	
◆ **range:***		
Regular bike	☐	1
Electrical bicycle	☐	2
Cargo bicycle	☐	3
Subscribe to a city bike scheme	☐	4
◆ **exclusive:**yes Do not bike	○	5

Public_transp_stop	How far is public transport stop from your house which you normally use or which may be most appropriate to use?	
◆ **range:***		
Under 500 meters	○	1
Between 500-1000 meters	○	2
More than 1,000 meters	○	3

Public_transp_freq	Approximately how often the public transport leaves from your stop?	
◆ **range:***		
6 times in hour or more	○	1
4-5 times in hour	○	2
Less than 4 times in hour	○	3

Parking	How good access do you have for parking where you live?							
◆ **range:***								
	Very poor access	2	3	4	5	6	Very good access	
	1	2	3	4	5	6	7	
Access:	○	○	○	○	○	○	○	1

ID: GenerelImob

Transp_car/publicT/bike	Approximately how many times did you travelled last week with ....
◆ **range:***	

Transp_car/publicT/bike	Approximately how many times did you travelled last week with								
	0 times	1-3 times	4-6 times	7-10 times	11-15 times	16-20 times	21-29 times	30 times or more	
	1	2	3	4	5	6	7	8	
Car	○	○	○	○	○	○	○	○	1
Public transport	○	○	○	○	○	○	○	○	2
Bicycle	○	○	○	○	○	○	○	○	3

Car_km	Approximately how many kilometers did you drove by car last week?
• **range:***	
Number of kilometers:	☐☐☐ 1

Pref_mode_work	What mode of transport you usually prefer ...								
• **filter:**\ Hovedbes.a = 1; 2 • **range:***									
	By foot	Bicycle	Electrical bicycle	Moped/ motorcycle	Car	Public transport	Car sharing	Other	
	1	2	3	4	5	6	7	8	
... to and from work?	○	○	○	○	○	○	○	○	1

Pref_mode_study	What mode of transport you usually prefer ...								
• **filter:**\ Hovedbes.a = 3 • **range:***									
	By foot	Bicycle	Electrical bicycle	Moped/ motorcycle	Car	Public transport	Car sharing	Other	
	1	2	3	4	5	6	7	8	
... to and from the place of education?	○	○	○	○	○	○	○	○	1

Pref_mode	What mode of transport you usually prefer ...								
• **range:***									
	By foot	Bicycle	Electrical bicycle	Moped/ motorcycle	Car	Public transport	Car sharing	Other	
	1	2	3	4	5	6	7	8	
…to everyday shopping?	○	○	○	○	○	○	○	○	1
…to everyday shopping?	○	○	○	○	○	○	○	○	2
…to leisure activities?	○	○	○	○	○	○	○	○	3
…to visit friends?	○	○	○	○	○	○	○	○	4
…to weekend getaways?	○	○	○	○	○	○	○	○	5

ID: Vane Strength Trans

Transp_behavior	Please consider the following claim:							
◆ **range:***								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
Using the car on my daily travels is something I do without thinking about	○	○	○	○	○	○	○	1
Using the car on my daily travels is something I do automatically	○	○	○	○	○	○	○	2
Using the bike on my daily travels is something I do without thinking about	○	○	○	○	○	○	○	3
Using the bike on my daily travels is something I do automatically	○	○	○	○	○	○	○	4
Using public transport on my daily travels is something I do without thinking about	○	○	○	○	○	○	○	5
Using public transport on my daily travels is something I do automatically	○	○	○	○	○	○	○	6

ID: Without car sharing

Behavior_after	To what extent do you agree or disagree with the following statements: After I became a user of Nabobil …							
◆ **filter:**\ Benytte.a = 2; 3 ◆ **range:***								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
I walk/cycle less	○	○	○	○	○	○	○	1
I use less public transport	○	○	○	○	○	○	○	2
I save money on transportation	○	○	○	○	○	○	○	3
I can go to the places I previously could not reach	○	○	○	○	○	○	○	4
I use more car	○	○	○	○	○	○	○	5

Alternative	Imagine that you are not using the Nabobil. What would be your most likely or least likely option?							
◆ **filter:**\ Benytte.a = 2; 3 ◆ **range:***								
	1 Very unlikely	2	3	4	5	6	7 Very likely	
	1	2	3	4	5	6	7	
Buying a car	○	○	○	○	○	○	○	1
Renting a car from rental company when I need it	○	○	○	○	○	○	○	2
Borrowing car from friends or acquaintances	○	○	○	○	○	○	○	3
Renting through another car sharing platform	○	○	○	○	○	○	○	4
Taking a taxi	○	○	○	○	○	○	○	5

Claims_CS	Please consider the following statements about car sharing							
◆ **filter:**\ Benytte.a = 2; 3 ◆ **range:***								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
It is social	○	○	○	○	○	○	○	1
It is more convenient than having your own car	○	○	○	○	○	○	○	2
It is environmentally friendly	○	○	○	○	○	○	○	3
It fits with my identity	○	○	○	○	○	○	○	4
It makes financial sense	○	○	○	○	○	○	○	5
It is unsafe	○	○	○	○	○	○	○	6
It is easily accessible for me	○	○	○	○	○	○	○	7

ID: Life Events

Life_events	Tick (can tick several boxes) if you have experienced any of the following events over the last five years	
Began to study	☐	1
Moved to where I live now	☐	2
Changed jobs	☐	3
Moved together with partner / shared housing	☐	4
Have my / our first child	☐	5

Life_events	Tick (can tick several boxes) if you have experienced any of the following events over the last five years	
Have my / our second or more children	☐	6
Children in the household began in kindergarten or school	☐	7
Moved from partner	☐	8
I or my household member started with new leisure activity that require transportation	☐	9
Other important life events:	Open	

Significance_LE	How significant have these events had been to you or anyone in your household who has registered in Nabobil?						
◆ **filter:**\ Livshend.a =% ◆ **range:***							
	1 No significance	2	3	4	5 Great importance	Do not know	
	1	2	3	4	5	6	
Began to study	○	○	○	○	○	○	1
Moved to where I live now	○	○	○	○	○	○	2
Changed jobs	○	○	○	○	○	○	3
Moved together with partner / shared housing	○	○	○	○	○	○	4
Have my / our first child	○	○	○	○	○	○	5
Have my / our second or more children	○	○	○	○	○	○	6
Household Children began in kindergarten or school	○	○	○	○	○	○	7
Moved from partner	○	○	○	○	○	○	8
I or my household member started with new leisure activity that require transportation	○	○	○	○	○	○	9
Other important life events:						Open	

LE_time	How long ago was it since these events occurred?						
◆ **filter:**\ Livshend.a =% ◆ **range:***							
	Less than one year ago	1-2 years ago	2-3 years ago	3-4 years ago	4-5 years ago	More than 5 years ago	
	1	2	3	4	5	6	
Began to study	○	○	○	○	○	○	1
Moved to where I live now	○	○	○	○	○	○	2
Changed jobs	○	○	○	○	○	○	3

LE_time	How long ago was it since these events occurred?						
Moved together with partner / shared housing	○	○	○	○	○	○	4
Have my / our first child	○	○	○	○	○	○	5
Have my / our second or more children	○	○	○	○	○	○	6
Household Children began in kindergarten or school	○	○	○	○	○	○	7
Moved from partner	○	○	○	○	○	○	8
I or my household member started with new leisure activity that require transportation	○	○	○	○	○	○	9
Other important life events:						Open	

ID: Opprett_holdbarhet

CS_experience	Think about the last time you used Nabobil **How did you experienced the following conditions**							
◆ **filter:**\ Benytte.a = 2; 3 ◆ **range:***								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
I felt safe when I use booking system	○	○	○	○	○	○	○	1
I felt safe when I brought and delivered the car	○	○	○	○	○	○	○	2

ID: UrbMiljoHoldn

Information
Furthermore, the survey we want to gain insight about your attitudes and preferences of various aspects in society.

Rural_urban	On a scale from rural to urban, where would you like to stay?							
◆ **range:***								
	Countryside						In the center of a major city	
	1	2	3	4	5	6	7	
Drag the block to where it suits you:	○	○	○	○	○	○	○	1

Urbanity	Below are some statements about life in the city. Where do you agree or disagree with the following:							
◆ range:*								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
The good level of sports and cultural events is important for me to stay in city	○	○	○	○	○	○	○	1
The diversity of different people in the city is important for me	○	○	○	○	○	○	○	2
Being able to choose among a wide variety commodities and services is important for me to stay in the city	○	○	○	○	○	○	○	3
City life is stressful and restlessness for me	○	○	○	○	○	○	○	4
It is first and foremost good job opportunities that makes me live in the city	○	○	○	○	○	○	○	5

Environment	Below are some claims about the environment and climate. Do you agree or disagree with the following?							
◆ range:*								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
It is more important to protect the environment than one-sidedly go for economic growth	○	○	○	○	○	○	○	1
I am concerned about global warming and climate change	○	○	○	○	○	○	○	2
I am concerned with nature conservation and preserving biodiversity	○	○	○	○	○	○	○	3
I'm willing to reduce my consumption to protect the environment and resources	○	○	○	○	○	○	○	4
Strengthening environmental protection is an	○	○	○	○	○	○	○	5

Environment	Below are some claims about the environment and climate. Do you agree or disagree with the following?
important socio-political task	

ID: Personilighet_bigfive

Character	How well do these statements describe you as a person?							
◆ **range:***								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
I presume the best of people	○	○	○	○	○	○	○	1
I have a forgiving nature	○	○	○	○	○	○	○	2
I tend to find fault with other people	○	○	○	○	○	○	○	3
I am skeptical to others people's intentions	○	○	○	○	○	○	○	4

Trust	To what extent would you say that most people are trustworthy, or that one must be very careful in dealing with others?	
◆ **range:***		
Most are to be trusted	○	1
One must be very careful	○	2

Groups_trust	Please indicate to what extent you generally trust the people within these various groups?				
◆ **range:***					
	1 No confidence	2 Not very much	3 To some extent	4 Complete confidence	
	1	2	3	4	
People in your family	○	○	○	○	1
Neighbors	○	○	○	○	2
People you know personally	○	○	○	○	3
People you meet for the first time	○	○	○	○	4
People who have a different religion	○	○	○	○	5
People who have another nationality	○	○	○	○	6

Sociality	How well describes the following statements you as a person?							
◆ **range:***								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
I easily accept help from others	○	○	○	○	○	○	○	1

Sociality	How well describes the following statements you as a person?							
I often help other people	○	○	○	○	○	○	○	2
I know who my neighbors are	○	○	○	○	○	○	○	3
I like to receive compliments	○	○	○	○	○	○	○	4

ID: Okonomisk_materialistisk

Hedonism	Please consider the following claims:							
◆ **range:***								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
I miss some material goods in order to live the way I want	○	○	○	○	○	○	○	1
I try to get hold of to impress others	○	○	○	○	○	○	○	2
Great house, expensive car and nice clothes usually arouses admiration from others	○	○	○	○	○	○	○	3

Finances	Please consider the following claims:							
◆ **range:***								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
I have good control of my personal finances	○	○	○	○	○	○	○	1
I actively know what things costs and what pays for me	○	○	○	○	○	○	○	2
I always try to save money where I can	○	○	○	○	○	○	○	3

ID: Hold Innovation

Innov_adopt	Do you agree or disagree with the following statements?							
◆ **range:***								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
I thrive the best with people who are open to change and new ideas	○	○	○	○	○	○	○	1

Innov_adopt	Do you agree or disagree with the following statements?							
I welcome all the new technical innovations	○	○	○	○	○	○	○	2
Computers and other modern technology seems scary for me	○	○	○	○	○	○	○	3

ID: Car Battery

Car_mentality	Please consider the following claims of car use and car ownership:							
◆ **range:***								
	1 Strongly disagree	2	3	4	5	6	7 Totally agree	
	1	2	3	4	5	6	7	
I am interested in cars and technological innovations in the automotive industry	○	○	○	○	○	○	○	1
It is expensive to own a car, and it pays rare	○	○	○	○	○	○	○	2
I identify myself as a motorist	○	○	○	○	○	○	○	3
Difficulties finding a parking space in town makes it less convenient and profitable to own a car	○	○	○	○	○	○	○	4
The car's role is changing, and it will be less important in the future	○	○	○	○	○	○	○	5

ID: CC

Sharing_platforms	Have you taken advantage of these services via the Internet web/apps in past 12 months?	
◆ **range:***		
Purchased/sold/swapped or given away used goods (Finn.no; Shpock or similar)	☐	1
Short-term equipment rental (Leieting.no or similar)	☐	2
Purchased food leftovers/homemade food (Too Good To Go or similar)	☐	3
Rented a short-term private accommodation (Airbnb, etc.)	☐	4
Hiring someone to do a task/offer a service (Finn.no small jobs, or the like)	☐	5
◆ **exclusive:**yes I have not taken advantage of such services	○	6

ID: Address

Address	What is your address where you live? (This information will be kept confidential and will not be identifiable in relation to individuals).
Address	Open

Zip_code	
◆ range:*	
Zip code	☐☐☐☐ 1

ID: Background2

Education	What is your highest level of education?
◆ range:*	
Elementary (10-year primary, 7-year elementary school or the like)	○ 1
Secondary school (general education, vocational or other)	○ 2
University / college with up to 3 years duration	○ 3
University / college with 5 years duration or more	○ 4

Income	What is your household gross income, (income before tax)?
◆ range:*	
Under 250,000	○ 1
250,000 - 499,999	○ 2
500,000 - 749,999	○ 3
750,000 - 999,999	○ 4
1,000,000 - 1,449,999	○ 5
1,500,000 and over	○ 6
Not Telling	○ 7
Do not know	○ 8

Household	How many children and adults (including you) are there in your household?
Children, 0-6 years	☐☐ 1
Children, 7-12 years	☐☐ 2
Child, 13-18	☐☐ 3
Adults (over 18 years)	☐☐ 4

Immigration	Have you or one of your parents immigrated to Norway?
◆ range:*	
no	○ 1
Yes - fill in the country here	Open

Politics	**What did you vote for last parliamentary elections?**
	◆ **filter:**\ Nasjonalitet.a = 2 If you are not a Norwegian citizen, what would you have been if you could?

◆ **range:***

Arbeiderpartiet (Social Democrats)	○ 1
Fremskrittspartiet (Progress Party)	○ 2
Høyre (Conservative Party)	○ 3
Kristelig Folkeparti (Christian Democrats)	○ 4
Miljøpartiet De Grønne (Green Party)	○ 5
Rødt (Red Party)	○ 6
Senterpartiet (Centrists)	○ 7
Sosialistisk Venstreparti (Socialist Left Party)	○ 8
Venstre (Liberal Party)	○ 9
Other / None of these	○ 10
Do not want to answer	○ 11
I didn't vote	○ 12

Comments	**Do you have any comments on the survey?**
Comment:	Open

End	**End of interview**

◆ **range:***

◆ **afilla:**sys_timenowf c

Complete this form automatically ☐☐☐☐☐☐ 1

iPad	Everyone who responded to the survey can win an iPad Pro. In order to participate, we need your email address. Your email address will not be connected to the answers you have given in this survey **Want to participate in the raffle?**

◆ **range:***

Yes	○ 1
◆ **ship:**exit no	○ 2

Email	**Please enter your email address here:**

◆ **filter:**\ NesteUnd.a = 1

e-mail: Open

Information
Thank you for your participation!

Appendix 2 – Interview guide

This is the interview guide for experts. The same questions were asked from platforms, only the questions were reformulated towards their platform.

Introduction of interviewer

I'm studying Sustainable Business and Innovation at Utrecht University and did my master thesis internship at the Norwegian Transport Research Institute, where I studied P2P carsharing. I'm interested in sustainable transport solutions, especially in carsharing and electric vehicles.

Introduction of the research

I'm doing a two-fold study. First, I analyze the data from the questionnaire, which was conducted among Nabobil users, in order to profile frequent carsharing users and see from their perspective, what can be done to increase carsharing usage. Second, I'm conducting interviews with platforms representatives and experts to validate the results and get additional insights. The aim of the study is to come up with business advice, what P2P platforms could do to scale up and reach early majorities.

General questions:

- Can introduce yourself briefly?
- Since when you have been working in ___?
- What did you do before?

Specific questions:

1. Who is the frequent P2P carsharing user?
2. Is there more shortage of supply or demand of the cars?
    a. If yes, how to tackle this issue?
3. What are people using carsharing for?
4. Carsharing is still a niche. Half of the population has never heard of it and only a few percent of the population are active users. Still, as it has many environmental and social benefits, the question is how to reach the majority? Who are the next potential user groups?
    a. How could platforms reach out to them?
    b. What kind of innovations and strategies should they use?
    c. How should the marketing strategy be different?
    d. What about pricing? Should it be different? (For example, possibility to rent by the hour?)
5. How are technology influencing carsharing in the future (for example keyless access)?
    a. Are there any other technologies that can influence carsharing in future?
    b. What is the role of the carsharing if we have fully autonomous cars?
6. Who would you see the biggest competitor for P2P carsharing, if we left out other carsharing platforms?

7. What is your opinion about companies supplying cars on a P2P platform?
    a. Should they have any restrictions?

Do you have any questions or comments?

Appendix 3 – Interview transcripts

1. Henrik Hatlebrekke interview

Name: Henrik Hatlebrekke
Organization: StartupLab Oslo
Position: Program Manager in MobilityLab
Date: 20.04.2018
Comments: The reason why timestamps are not correct is that the audio file were split into three and different software's were used.

01:33 Sander:
I would ask first some general questions about you: how long have you been working here in the MobilityLab?

01:41 Henrik:
We started it in the end of June 2017, and I came on board full speed from 1st of September last year.

[00:00:00] - Sander
And what did you do before?

[00:00:01] - Henrik
I was a management consultant in Capgemini Consulting working with the MNAs in the telecom industry. I was part of two big acquisitions and integrations. It was fun, but I didn't want to do that for the rest of my life.

[00:00:25] - Sander
So, let's dive into the topic now. In your opinion, you have seen some developments in carsharing, who is the frequent carsharing user at the moment? Both, from the renter and provider side.

[00:00:40] - Henrik
Who is the...? What was the question?

[00:00:43] - Sander
Who is the typical carsharing user?

[00:00:45] - Henrik
The user?

[00:00:46] - Sander
Yeah.

[00:00:47] - Henrik

In my point of view, young people, quite technology interested at least. Doesn't have to be extremely competent, just interested. And urban living is very important part in my point of view. Quite young, at least on the user side. That's the biggest, that was a question, right?

[00:01:16] - Sander

Yeah. Users side, but also providers who are providing cars.

[00:01:20] - Henrik

I think on the providers side you have many of the same people that have been users but typically you get a kid or something and then you buy a car and then you think why I shouldn’t deploy that car on Nabobil, for instance. But also, I've seen just from personal experience that the providers are often older people not really old, but to some extent. I mean, all my friends and all their friends are using some kind of carsharing like Nabobil. Everyone is using Nabobil. My parents and their friends, they're not using it, but some are actually plugging it into the platform and just to see, this is new and cool. We have three cars we don't use any of them. So that's kind of the typical user. Yeah, I'll try to stick to the questions.

[00:02:17] - Sander

Okay, and...

[00:02:19] - Henrik

Totally without evidence of course, which goes for all my answers. Pure speculations.

[00:02:29] - Sander

I just collect like answers from different people and then maybe get some overview of what people are thinking of that. Do you also see the dividing point, the age before people are more like renters and maybe after certain age they are more providers?

[00:02:52] - Henrik

I think one of the major triggers in Norway to buy a car is... I think we kind of have to narrow this down now to urban society because if you even just go to Lilleström or if you go, for instance, to Jäilo, the place right in the middle of Norway between Bergen and Oslo. You're not going to have a car sharing service there working very well now. Because everyone has a car and you need one, otherwise you would freeze to death going from A to B. And you're not going to walk five kilometers to pick up a sharing car. So, talking about urban society. I think the major trigger to buy a car in Norway is when you get a kid. So, that's typically it happens 30 to 35, as of now, in the cities, around that. And that's typically when people buy a car and I think that has to do with the protection of the children or something like that. But I'm assuming that's when you also become a provider. Typically, on your first car. If you buy a car for the first time now, you have been thinking a lot about the

cost. It's too high. You've been thinking about the alternatives. They are too bad. So, you end up buying the car, but you are kind of bitter. But you have also discovered Nabobil, Hyre all this stuff, and you are going to plug it in and reduce the monthly cost on this car. I would love to see the transformation rate on young new car buyers that are buying their first car in the nature of 30 to 35. I think in urban cities, they have a really high conversion rate, the highest of probably any groups. And then of course you have all these old people that are well-off one or two or three cars just do it almost for fun, thinking it's more interesting. It's not really so much about the financials.

[00:05:32] - Sander
That's something that I have seen in my database, so people who are younger than 35, there much more renters and on provider side the biggest group is between 35 and 50.

[00:05:47] - Henrik
That's very interesting!

[00:05:50] - Sander
So, it's exactly what's your notion is. But in your experiences are more shortage of cars or more shortage of renters.

[00:06:05] - Henrik
That's a very good question! I've been thinking a lot about that because you have the egg and the chicken and all those theories. If you ask from Evan in Nabobil, he would say: "The supply is going to come once the demand comes." The hardest part is getting those renters that want to rent a car. But also, I think that's kind of just half the truth because a lot of people, myself included, checked the service and if there are not enough good cars that match those criteria's you want, and they are close enough at the right price and available, all those things, of course that's going to kind of keep the demand down. Because if there was, just a stupid hypothetical number, but if there were a million cars available on Nabobil in Oslo and I would have just around this building a hundred cars that I could go into, any one of them. Naturally, that would affect the demand because that's the quality of the service is so much better. But now the quality of the service or the services, even the combined services, combining Nabobil, Hyre, and all those others is quite poor, still. You don't get the right price. You know, it's a fair price but you look at another car. This is 400 for 24 hours and you end up with another car that is 700 for 24 hours. Relatively, that's bad price. And for seven hundred you're almost closing in on Hertz or Avis or any of those. So, the car is not close enough. And sometimes, especially on Nabobil, if it's last minute, you send out the request, either you don't get an answer, or you get a no. And that really pisses me off. So, I think it's the chicken and the egg, because the quality of the service needs to be good enough, so that the people are... I mean, that is also going to trigger the demand. But I totally agree with Even that once the demand is there, people are going to plug in their cars. But as now it's kind of staggering because of that. So, people are checking it out, working okay, but not it's not like Holy shit this is so good. I really need to get rid of my old car and just start using this as my sole transportation source.

[00:09:20] - Sander

If you are coming back to this cities and rural area division, do you see also is there a difference between supply and demand?

[00:09:32] - Henrik

I think that it really comes down to quality and if you go out to the rural area that quality that we're talking about, which is all those things, the easiness of using it, also the price and all that, but the most of everything just the easiness of using it. Once you go out to the rural areas that service is just becoming much poorer. And if you're closest car is two kilometers away, you're going to end up take a taxi or a bus to get it. And then the whole point is just, it's just stupid.

[00:10:13] - Sander

But even maybe smaller cities, not five biggest, but smaller cities with 50 000 habitants. My finding has been that in bigger cities there's much more renters than suppliers, and in rural areas or smaller cities it's the opposite. There's much more supply and much less demand.

[00:10:43] - Henrik

I'm not going to try to explain that because that's your job. But the fact is that the number of cars per inhabitant in the rural areas is much higher. It's natural. Their public transportation system sucks. There is more space, so everyone has a parking. I don't have parking in my apartment and if I'm going to spend like 20 minutes looking for a parking lot every day that's going to piss me off too. And I don't like being pissed off, so that's why I don't have a car. So just by the fact that there are much more cars per person, per capita, sure. In my mind at least insinuate that there is more supply of course. But, I don't know. It's interesting, because I don't think we have reached that level of quality in the service even in the urban cities. That is really going to make it take off. The challenge is much more difficult in rural areas because one of the key factors is the density of available cars. So, for me to be sure that I can have Nabobil over this weekend and go to the mountains, it needs to be at least 10 cars just really close to my apartment. I don't want to carry my skis and all that shit on the bus. It needs to be really close and so the density is an important factor and the density just by de facto is much lower in rural areas. So that's why we call it rural areas, because it's less people there. So, I think that's going to be an even tougher challenge. And I think also the car sharing companies are understanding this, they are trying to break through in the cities first.

[00:13:01] - Sander

Yeah, it's totally makes sense. Much more people there. What purposes people are using carsharing like P2P carsharing?

[00:13:20] - Henrik

Especially one case is all those cases where public transportation is no good to you, which means you're traveling further or longer or in a more complex pattern for example, you're going from meeting to meeting to meeting and then picking up something and then back, those types of situations. And if you have big objects, you are going to Ikea, you are picking up, say, you're babysitting, and picking up a kid. You have always millions of things that comes with the kid. All the equipment. I think it definitely all those special cases where the public transportation is just no good to you. So at least when I talk to people, one of the first cases people mention is actually going to Ikea. As the IKEA bus, if you're carrying hundred kilos of wardrobe. That's like worse than torture.

[00:14:38] - Sander
Isn't it cheaper to order the delivery service from Ikea?

[00:14:45] - Henrik
You could, but that's actually quite a crappy solution. If you're ordering really big things, then it makes sense. You don't want to carry this couch four floors up. But I don't know, it's one of the cases that people mentioned most often to me. Let's say you are also doing... Norwegians probably love to invest in their homes and apartments. So, they fix everything all the time. So, tear down walls, build up new, never stops. So, you're going there and getting new toilet, or you are getting this shower cabinet, or you are getting just materials. In those cases, it's kind of much more effective to have a car. You just go there you get the stuff and you go back. If you're ordering delivery from all these different places, it's just cramped logistics. So, in those cases I see people use the Nabobil or some use BilKollektiv. And the other case that people are talking the most about this, over weekends, you are going to the mountains. Public transportation won't do or not good. Going to, for example, Jäilo, the train ticket is six-seven hundred per person per way. So, if you're two that's like 2400 kroner just going back and forth. And you could easily get a car for less than that over the weekend. And then you have the flexibility, if you can pick it up easily then you just throw everything in and you can drive all the way to the cabin. Otherwise you take the train and then you take the taxi and it just gets extremely expensive. And renting a car from Hertz or Avis or any of those, that's like torture as well. The user experience it's so bad, I literally want to kill myself. So, I've been asking some questions, how can your service be so poor, and I didn't get any good answers. So, I don't really see what they are thinking about. Big companies with good talented people or we must assume and they're doing something like Hertz Carpool, I think it’s really good initiative but the average... Just, you know, me want to rent the car over the weekend and I am deciding to do it on Wednesday, Thursday or even Friday. So, it's kind of not on demand but it's quite late on, in those cases, you actually need to physically go there and talk to them Can I have a car? We don't have any. Ok, thanks I'll take a taxi to the next office, maybe you could call them, but trying to enter it through your phone. I don't know if you tried it? If you haven't tried, you should because it's like a really good comedy, trying to order. Try it today it's Friday. You should try to order a car from Hertz through your phone. It's a great comedy. You should bring popcorn.

[00:18:31] - Sander

I had one experience, I booked it online. It was okay.

[00:18:36] - Henrik
On web it's much better but it's not good. But it's at least better.

[00:18:39] - Sander
I went to Alta to drive to the Nordkapp in the middle of February and we ordered the car. But I had to stand 45 minutes in line in Alta airport.

[00:18:54] - Henrik
Oh yeah, but that's nothing.

[00:18:56] - Sander
I only had three people in front of me. And I was like how it can take so much time.

[00:19:02] - Henrik
And remember one thing, that is their niche where they are good. So that is the rental car that is an extension of your flight. That's when they are actually quite good or at least that's their niche. But inner city I just needed car type of services... I'm not joking. It's a comedy.

[00:19:32] - Sander
Okay now we're getting to one of my main points. So, based on the literature, carsharing still is in the niche market, maybe a few percent of people who are using it.

[00:19:49] - Henrik
What is it, four percent?

[00:19:49] - Sander
Few, it depends maybe two to five, who are actually using it actively. The rest is... Even half of the population have never heard of it.

[00:20:02] - Henrik
Yeah, makes sense.

[00:20:02] - Sander
So, but still it has some environmental and social benefits, but these you already know. The question is, how to reach these majorities? So, as you said, right now there are young highly educated people who are using the service, who are urbanized. But what would be the next user group who can also use the service. Let's look the renter side first.

[00:20:33] - Henrik
Next user group. My first answer would be more of the same users but the next user group? I don't know, especially those that are growing up now. I think they have a

completely different view on cars and car ownership. I think they think it's strange. And why should they spend such a grand portion of their money on a car that they hardly ever use. I think that user group is going to come by itself. That's going to be the least difficult sell. The question actually boils down to what's easiest, growing geographically or growing in terms of, how you call it, social demography? No, like the age of people. How do you call that in English?

[00:21:48] - Sander
Yeah, it's part of demographics.

[00:21:48] - Henrik
So, having more of those 35 to 50 that are now renting out their car, just for fun, actually trying and using it. I think that's probably or at least in my mind, a more natural group than very rural areas. Because the challenge is completely different. But if you look at cities, for instance you look at the Drammen. So it's half an hour from Oslo. Probably like you said it's 50 to 52 thousand. In those areas, it should definitely be feasible to reach the same kind of urbanized young educated people. But, I don't know. What about those... This is just extremely speculative but what about those young people that or not using it now for some reason, because they are not taking any interest in technology. They are not, like you say, highly educated, just to a certain extent urbanized. I don't know what should push them into it. Trying to think a little bit about that.

[00:23:26] - Sander
That would be my next question. What strategies should be used to reach them out?

[00:23:33] - Henrik
I think it's, you said in the beginning it shouldn't be about politics. It's kind of hard to not mention the politics. From my point of view working with mobility 24/7. You almost never get around governmental involvement. It's just the way because public transportation by default is public or publicly owned, at least in this area in Norway. They control all the public parking spaces. They control the whole taxation system, which in the end is going to... In terms of carsharing it's not so relevant right now. But it could be. You can rent out your home. up until 20 000 NOK tax free. You use Airbnb you can rent it out up to 20 000. And after that it's taxed. Those laws on sharing your car are not so clear. I think you can rent it up until that same amount. But you can't combine those two. So, you can't make 40 000 on your house and your car. All those things, either we like it or not it's going to be part of how much speed carsharing is going to get. So, the one suggestion they're working on now where they will reserve 600 parking lots in the city center for carsharing cars. If that goes through that's probably going to mean 600 more cars on the carsharing platforms or at least it's going to be much easier for those that are doing it now. So, whether we like it or not those things really affect the speed on the development

[00:25:53] - Sander
Is it for proposed only business to consumer and P2P carsharing or are they only for...

[00:26:01] - Henrik

I haven't really read the political suggestion in detail but to me it sounds a bit strange if it's also peer to peer. Because then you just plug in your car on a peer to peer platform and you get access to a car sharing parking lot and you don't even have to rent it out. So, I don't know it's going to be hard to measure and control. But either way, it's a step in the right direction.

[00:26:36] - Sander

I like your point that providers who are actually using it right now. So, they are familiar with the technology, they know how it works. They could also be potential renters in future.

[00:26:47] - Henrik

Definitely. I rented several cars on Nabobil from guys at Frogner that are 50 plus. They think it's really fun, they are like I just invest in Nabobil and you understand that they obviously don't need those 1800 NOKs you're giving them over the weekend. You need it much more or I need it much more. But they think it's fun, right, and at some point, they're going to get rid of that second car. Even if that's because something happens to it and you have a repair cost of 50 to 100 thousand. You are like, I'm just going to throw this car away. And that's actually a strategy that I'm hearing a lot of people are taking now. They're saying I have this old diesel or gas car, I'm not going to get a new one, but I'm not going to sell it either for a crappy price and then go over to all the services or only have one car. I want to drive it until it dies. So, that's actually a strategy that a lot of people are taking. Many of those cars are plugged into sharing platforms and once they die because they will, because they are putting the least money they can into those cars. It's going to be interesting what those people do, because then they don't really have that second car for that crappy car and they will be forced to take the decision to buy a new car or lease a new car at a high cost or will I now switch from being a provider to a carsharing consumer. This is going to follow.

[00:28:44] - Sander

How the marketing to these people should be also different than it is done now? Like, how platforms should market to reach them?

[00:29:03] - Henrik

I actually discussed this a lot that with Even. Again, I think he's a great partner for discussing these things.

[00:29:09] - Sander

I'm going to have interview with him on Tuesday.

[00:29:11] - Henrik

Say hi from me and say that you shouldn't steal all my thoughts. But, he's one of the sharpest minds on the platform of sharing space not just cars long history from the Airbnb, and it's just really good resource. But the marketing part or how-to kind of convince people.

I think it's got a lot to do with the how to change people's behavior. It's really difficult, especially when it's about a behavior that goes back as long as anyone of us has lived. I mean we grew up in a car, we have everything we've told our parents and how we live our lives, car is really imprinted in that. It's almost like convincing people to live on the street or without a house. I mean, it's a really tough sell. Just what I'm saying in my point of view, one approach we took, when we launched this pilot here with these two sharing cars, was trying to, because we sent up a lot of newsletters and stuff to the people working on the forces Forskningsparken (Science Park) so some 2000 people and two cars, so it shouldn't be that difficult to fill up. But still, so the approach we took was we need to give them, the potential users, examples and use cases for how or when to use it, rather than saying here is a sharing car and then just assume that people will download the app, register, and start taking that car to meetings, instead of taking a taxi or instead of taking the public transport. We use the IKEA as an example. Are you picking up some things at Ikea, don't want to pay those, I don't know how much it is 400 or what, to get it delivered. Use this car, it is going to cost you 200 kroner. Also, you get to drive brand new cool electric vehicle. So, kind of give them those examples where you understand that hey this is actually very simple. And one thing will be, or another thing would be to exemplify how insanely expensive it is to own a car and just breaking it down to it. You could easily use Nabobil every weekend and still be better off. That's not entirely true. But those types of examples because assuming that people that don't care about car sharing services are going to figure out those examples or arguments themselves. I think that's completely overestimating normal people.

Sander: [00:02:56] Let's look technology as well. How would you think the technology would influence the carsharing in future? Like you mentioned already the keyless access.

Henrik: [00:03:04] So the keyless is the biggest thing right now and it's going to be further on. [00:03:14] It's going to be a default. [1.3] It's going to be a requirement, just [00:03:21] because of the quality of service, the easiness of use on both sides. [11.0] It's much easier for you offering a car if you don't have to talk to any person. You don't have to be there and give them the key and inspect the car and all this stuff. It just kind of works. So, I think that it's going to be a default going forward. Now it's kind of a little bit in between. Hyre, that is coming up. They have put it as the default. So, no keyless, no sharing. Oslo ByBil, that is coming up now. They have put it as a default. So, I think the only one that not having it as a default is a kind of historic legacy. You have 10 000 cars on the platform. All of the sudden you have this off the shelf technology that you can buy quite cheaply, install quite easily, and plug in to your application quite easily. I mean take some effort but it's not that big of an investment. It is an investment per vehicle but still, it's not it's not that big of an investment. It's not that difficult to implement technically. So, the problem is if you have all those cars on the platform already they don't have the hardware. We see some different models, Hyre is offering it free for their hundred first customers or something like that. In Nabobil you rent the equipment. They promise you more income on the vehicle because it's just easier. But I think it's definitely going to be a default. One interesting thing I have been thinking a lot about is, as this requires some hardware that is every system as of now, each and every system is a bit different. It's not like if you installed the Nabobil hardware, you're

not going to be able to plug that same hardware on the platform of Hyre. And it might be that they are able to, depends on how they integrate it technically, it might be that they're able to split it. So, you would have double up hardware but that means the double of cost, double the ugliness in the car, double the everything. It's just super stupid. And if you want to plug in your car into five sharing platforms, it's just a broken system before it's even established yet. So, you kind of have to choose to do you want to be with Hyre or do you want to be on Nabobil if you're doing the keyless. And I don't know if that is kind of the way of going forward because at some point this is going to be default in the car and you're not going to have to take the financial decision do I want to have this installed or not. It's going to be there. [00:06:56] It's going to be a question for Hyre talking to Volkswagen, [6.9] saying, guys we want to have access to the hardware system. And they're going to connect and they're going to pay whatever it costs. That's another model that needs to be put up. But at the same, time Nabobil in beyond there. And [00:07:18] different services that require the same hardware but that is not carsharing. [5.7] For instance, you know Kolonial, the online shop for groceries? It's the biggest online grocery store in Norway, they have this service together with Volvo, where you can order your food, and have it delivered in your car. But that means giving Kolonial access to your car. And they just put it in the trunk. This fantastic service, you just put in the license plate and where it is, you order one ton of food. And when you come to your really nice Volvo, the trunk is full of fresh nice food. Damn, that's a good service. But again, it requires the hardware connection. And there's going to be more services like this. That access point is going to be removed from the stupid OBD2 port hacked together with some keyless. It's different approaches. It depends on the type of car you have. So, if you have keyless where you can just put the key, then you need to overrun the chipset which is another process. So, all of that is just being hacked right now. That's not how it's going to be. It's going to be [00:08:45] you buy the access from the car manufacturer [4.1] with your kind of I agree to this because I want the service. That's also going to boost the whole thing because then one car can be on many platforms.

Sander: [00:09:02] So, in the end you have like before you go to your cabin you have rented your car, you have your grade of beer and groceries in the boot already and then you're off and go.

Henrik: [00:09:14] And you have rented a pair of skis and somebody put it on the roof and you are just... Yes, but I think this development is going to take a lot of time, but all the technicalities are there. It's just a matter of when. The hardware even for Volkswagen or any other serious car producer is there. That's why you beep the car. It's something as simple as that. But it's about taking that and making it accessible in the cloud and allowing other ones to get access to it. We're not there now. You should see how people are hacking it. I know at least five companies that are doing it now just here in Norway, using more or less the same hardware two or three big suppliers. But people are literally putting some tape on it, that's where we are now.

Sander: [00:10:27] One last question. What would be the purpose of carsharing if we have fully autonomous cars?

Henrik: [00:10:34] What is the purpose?

Sander: [00:10:37] How it fits to the model if we have level 5 autonomous cars driving around?

Henrik: [00:10:42] Well, first thing is the service that I am extremely concerned or not concerned, but very focused on the quality of the service, so the quality of the service is going to rocket. You'll be picked up whenever you want, wherever you want and it's going to be really accurate and trustable. So, the service is going to be extremely good and then it doesn't matter who owns it. There will of course be if you are super wealthy and you want this extremely luxurious nice autonomous vehicle that is only yours. You don't want other poor people to be in your car. Okay, that might be very few people cup of tea, but for the rest of us it's just not going to make sense to own the car. You don't want it to tie up the financial, it's a heavy investment and it's going to be probably even more expensive when it's autonomous. And it just doesn't make sense because the sole reason why owning a car is so popular today is that it's nothing that can beat the quality of the service. It's right there, it's yours, sometimes you get a ticket, it's annoying but it's your own fault. But [00:12:22] the quality of the service is just the best there is. [2.9] Even if you had no limit, use as much taxi as you want. That's crap service compared to having your own car, taxi drivers are idiots, they don't find you, the booking system is broken. You would have to pay for every transaction at least how the system is here in Norway now. I think that's going to be the end of car ownership, just because of the quality of the service. It just doesn't make sense to own it anymore. And when those economics become so clear to people.

Sander: [00:13:01] I think the quality of the service is really good point that you made.

Henrik: [00:13:08] I'm preaching that all the time. If you combine all the services out there today, all the carsharing services, all the rental cars. I have them all on my phone, I have like fifty mobility apps on my phone, and the quality of service is light years away from owning your own good car. Convenience of that, especially if you have a parking lot close to you. It's just unbeatable. So, imagine you live in a house outside Oslo and you have two cars in your garage. It's really difficult to beat that. So that's still, until you have the density of autonomous shared cars, that ownership is still going to have a better level of service than autonomous because you have to wait for the autonomous car. If you just go into the garage, it's instant. Of course, then you have the problem if you're just going one way you have to leave your own car, so it's a bit more complex. But my point is just that the level of service of having a car is extremely good. I don't like to say it, I don't even have my own car and I'm working with all these start-ups that are trying to kill car ownership, but I'm just trying to be very clear on what you are competing against. It's a god damn good product!

Sander: [00:14:54] Thank you very much! Do you have any questions to me?

Henrik: [00:14:54] So when will it be possible to have any kind of insight or have a look of what you do?

Sander: [00:15:06] I'm submitting my work in the end of June. So, after that.

2. Even Heggernes interview

Name: Even Tangen Heggernes
Organization: Nabobil
Position: CEO
Date: 24.04.2018

[00:00:04] - Even

So, my name is Even Heggernes and I'm the CEO of Nabobil. I've been with the company since the launch in the fall of 2015. Prior to that I was four years at Airbnb. So, I've been working in the digital marketplace sharing economy platforms for seven years now and Nabobil has had quite some growth since we launched. And we have now more than 70,000 bookings. We have rented out cars for more than 100 million NOKs. The growth is still strong and we're expecting to double now in 2018.

[00:00:50] - Sander

It's a really big growth.

[00:00:55] - Even

So yeah, I think we hit the spot in the market that was empty. I think that also was a good timing, more and more people are now considering the private car hold. I think that's the main driver for what we're doing that more and more people are letting go probably in the beginning car number two and more and more people are actually waiting to actually acquire a car. So many people in our generation investing in that car when you turn 30 and you kids, people are now maybe waiting a bit longer than they used to do before.

[00:01:34] - Sander

So maybe you also have a help from other companies like Bilkollektive and other companies...

[00:01:34] - Even

They have been around for many years, right? So, I'm not sure that now it's helping. I don't see them as a competitor. I see them as something that we work together. But since they have been up and running 15 years now, I think that's just a sign that, not to speak negatively about anyone, that's just a sign that their business model is not scalable. Because I think that's what the strength of the peer-to-peer model is that first of all, we don't make the investment. So, I don't have to calculate how many people will need to use one car in order to break even. Private people are putting their own car on the platform. So, I don't make a capital investment. Secondly, that means that we can have cars everywhere: smaller cities, every single neighborhood, places where we don't have a critical mass or demand. All in all, I think in the end there will be one winner. I can say, fortunately or unfortunately, but the digital economy is showing that winner takes it all in terms of the different segments. And I think that will happen with cars as well that we as an end user will only allow one app where we get a hold of a car. I don't think it's good enough for us to have one app for this brand or one app for a group of cars. We need a one-stop-shop.

[00:03:01] - Sander
Who is the frequent user in your platform?

[00:03:08] - Even
So I always like to split supply and demand in two, since they are two different players. So on the car's supply side, we see that the average user is actually a frequent user. The average user now or the average car owner is renting out now his car more than ten times on a 12 month rolling bases. And that means that they are touching base with my platform about once a month, which is not still a lot. But of average of twelve is high. What I believe is that there's still a lot of potential in our supply side because for instance in Q4, we see that our demand is dropping due to the seasonality, also the size of the platform. So, if we had the constant demand in October, November, and December, we could have rented out even more. On the demand side, we see that more and more people are turning into what we call super users. So, we see our graph it's kind of like this [making a U shape with a hand] with a lot of people using it one time. And some people are using it two, three, four, and five times. And we see now it's spiking again people that are using our service several times a month even. And those are people that are telling us that they have let go other car or that something changed, got a new job instead of buying a car, they are now using Nabobil.

[00:04:47] - Sander
And what are they using it for?

[00:04:47] - Even
Mostly, the traffic on our site is leisure travel, going out of town. Typically, Thursday/Friday to Sunday.

[00:04:58] - Sander
So, holidays like going to the cabin...

[00:05:01] - Even
Yeah, and the cabin culture in Norway is very strong. So, it's a good fit for the market.

[00:05:08] - Sander
Is there more shortage of supply or demand on cars?

[00:05:14] - Even
I think that goes a bit with seasonality. We have two extreme spikes in Christmas and Easter. Those are the few days a year where everyone is traveling at the same time. In Norway, we also have what we call autumn and winter holiday, where schools are closing down for one week in October and one week in February-March. But those weeks differ in different parts of the country, instead concentrating to the same time. That's why we see that in Easter and Christmas, we have a huge shortage of cars. So, for like Thursday to Sunday over Easter, we could have had thousands of more cars and we could have rented

them out. But as of now like May and June and July, it's pretty balanced. It's fascinating how the market is controlling by itself, that we see when we have this huge rise in demand, we see the supply is following. And I think that is because people are talking about it, telling people that I've rented out my car, and I earned this much money and then other people are adding their cars as well.

[00:06:29] - Sander
I have also seen in my database that there are some difference in between urban and rural areas. In rural areas you may have a bit more supply and less demand and in urban areas it's exactly opposite.

[00:06:37] - Even
Yeah, but I think that what's important when you think about digital platform like ours, is that before you can even start talking about demand, you need to reach critical mass. And I think a critical mass not in the city capacity but down to actually each neighborhood, even down to one street. If I don't have enough cars in my own neighborhood, Nabobil is not working for me how it should be. Even though I know that in that neighborhood it's great, it doesn't matter if it's not enough in my street. That's why we need to build street by street, neighborhood by neighborhood, city by city, country by country.

[00:07:24] - Sander
So, we are actually targeting yourself in certain neighborhoods where you see you have enough cars?

[00:07:30] - Even
Yes

[00:07:30] - Sander
It comes down to my main point here. Carsharing is still a niche. TOI did also the general study in the public and half of the population have never heard of carsharing...

[00:07:47] - Even
So, I can show you exactly an ad that we put up today. This is Oslo in Nabobil right now. So, we are now pretty much covering the whole city and this point when we can start to really advertise because now I'm quite secure that you will get the car no matter where you are.

[00:08:11] - Sander
And what your target is, how far is the car? 300 meters? 500 meters?

[00:08:18] - Even
I don't have an exact distance but I'm always saying that it's walking distance. As long as there are cars walking distance from where you live, it's good enough.

[00:08:30] - Sander
So less than a kilometer?

[00:08:31] - Even
Yes, I would say it's five minutes walking. And you walk maybe 500 meters in five minutes.

[00:08:41] - Sander
As you are now comfortable to start marketing, who would be your next user groups?

[00:08:50] - Even
I think now is the first... Okay, we are a bit past like the early days now. We've been up and running for two and a half years. But for the first year, I think we mainly attracted early adopters. Early movers that would jump on every single service there are, just because that's how they are built: "I'm interested in everything new." Now we're getting more and more into one group the ones who have a driver's license, but they don't have access to a car. So, it's actually increasing the number of kilometers been driven. But then I see as a third step, people that I'm talking about are letting go of their two cars or letting go one car or not buying a car. So, we are getting more and more into the mainstream usage of a car. And I don't have that specific demographic that people between 30 and 40 or 20 to 30 because we see it's all spread out. I think the average age of our user is now thirty-seven years, which is pretty much the average person in Norway. It will take some time. I think we a wave in Norway with people instead of buying cars, they're doing a private leasing. And many people are doing that because they are afraid of the value of the car in two, three or four years because they don't know what will happen the technology with the EVs, when would the autonomous driving cars come etc. etc. And when these people now in two or three years when the private leasing is ending, and we have tripled the number of cars, I don't see a reason why Nabobil shouldn't take off.

[00:10:43] - Sander
But its's still if people are letting go their second car they are still wealthier people who are using it?

[00:10:51] - Even
Yeah, but that's sad right? There are extreme amounts of Norwegian households with two cars.

[00:11:01] - Sander
I'm not sure how many more, but more than half of the households are having two cars?

[00:11:05] - Even

I don't know the number. But I mean in order to change the habits, you need to really trust the service, right. And one thing that is for sure is that by accessing cars in terms of renting instead of owning you'll pretty much save the costs. The average, and you probably have numbers, but I read from Aftenposten, the main newspaper in Norway in last summer, the average cost of owning a car in Norway is now about 100,000 NOKs a year. If you go to my site and you rent a car for fifty, you can have a car pretty much all the time and you're still saving 50,000 kroner. People are today buying car number two in order to take their kids to soccer practice and you can basically send the kids in taxi and you will save money. But people are not doing that. So, I think that what we will try to do more and more is focusing on how much money you can save. Because that's what people sadly are caring mostly about.

[00:12:15] - Sander
Have you also considered different pricing, maybe possibility to rent by an hour?

[00:12:21] - Even
So, you can do it today, minimum of three hours. But the issue with that is that the transaction costs for the owners is pretty much the same. If you were having the car in three hours or in three days. Because you need to prepare the car, you need to be there with the key and you also have to be there and when they are coming back. So, I think what we've seen in Nabobil is that when you add up the hourly rates, it normally ends up pretty close to the daily rate anyways. So, I think you can rent it for hours but you will have to pay for day anyways.

[00:12:58] - Sander
But it can be different with keyless access.

[00:13:02] - Even
Yes but... I'm not sure how much of this you will share with our competitors?

[00:13:07] - Sander
It's a public study. I'm not sharing it with anybody but still...

[00:13:15] - Even
So, I'm not going to talk too much about hardware. I think that hardware is okay, it's good. But it will never scale.

[00:13:25] - Sander
So, it's also my next question. What technology can bring into the play, how technology can change, like keyless access, more autonomous cars?

[00:13:39] - Even
We have about 100 keyless cars in Norway today, the largest fleet of keyless cars is on our site. And it's a good experience. But in order to find private people that are willing to

put that hardware in the car, it's hard, and secondly, it's expensive. And if you ask the car owners to take the costs, most people are not willing to do that. Some of them are fine with having it if I will pay the cost. But I think the change for the industry will come when the cars with an open API. When you don't need to make an installation in the car. PSA Group that has Renault, Peugeot, and Citroen. They have a car sharing platform in both France and Spain, where they are doing a physical installation in their own cars with a black box. They are the car maker. They have access to the API since they built the car, but they are still making an installation in their car which is insane. But the day when there are more sharing friendly cars where Nabobil can just access the API of the car as the key can with extra cost then I think that would fly.

[00:15:07] - Sander
Your competitor Hyre for example is offering it for free...

[00:15:11] - Even
Yes, but just now, like we did the first hundred cars on Nabobil paid for it. But that's not a scalable model either, neither for us or Hyre. At some point they will also have to charge for that technology.

[00:15:26] - Sander
So, the technology is too expensive to...

[00:15:28] - Even
Well, if you do the full analysis of the acquisition costs and then you're adding on the hardware, and then there's a monthly fee on the hardware. The lifetime value, it will take you a long time to get a return on that investment. For instance, I could use myself as an example. I live in a neighborhood where we don't have too many cars to be honest. Over the last two weeks I rented cars three times. One was from my not next-door neighbor, but I am actually looking into his living room from my bedroom, it's the next block. He installed keyless in his car and I rented it and it was an amazing experience. I walked up there, I click the button, I took the photos, I drove away, I came back, and I did everything, and I was thinking like if everyone on Nabobil has my experience then my company will succeed. And then last Sunday, me and my wife we had rented out our own car, as we're doing as often as we can, and on Saturday my mom called and invited me and my wife and my daughter for a Sunday dinner. And I said I don't think we can come because we have rented out our car. And a mom said don't you have access to all those thousands of cars that you're telling me about. Yeah, that's a good point, I will rent a car, see you tomorrow. So, I went to our site and I found a car 400 meters down the street. I texted the owner and said I'm taking my family to dinner are you available. And then she said yes, I'm available, you can pick it up and we agreed on the time. The morning after, it was a really nice weather and I texted to woman and said I don't need a car until two, I think we already agreed at eleven, and she said I'll be home you can come whenever you want. I walked down there. I picked up the key from the woman, I drove to dinner, I went back. And with the human connection, it was the same experience as with keyless because I was flexible the car owner was flexible, and I

was thinking like if everyone has this experience on Nabobil, we will succeed. And that was really pleasing for me to see that it's frictionless also with people being involved, as long as people are willing to communicate. I asked the woman have you considered keyless, she said I would never install keyless in my car. I'm doing this maybe ten times a year, which I knew was the average. And she said when I'm too busy I'm not renting out, and when I'm home on Sundays, I'm here anyways, so I would never considered that. I think there are so many of these casual owners that would never... And for Nabobil as well if she rented out ten times, it would never pay back the cost of installing the hardware.

[00:18:37] - Sander
Have you also thought of putting instant booking in your platform?

[00:18:44] - Even
We do, so we got instant together with keyless. But...

[00:18:53] - Sander
There are a lot of people from the survey have said that the reason why they haven't rented a car was because they were disapproved from the owner or it took too long time one or two days...

[00:19:04] - Even
Yeah, that's an issue. So, what we have done now, it's going live in a few weeks, is that I can tell the platform that I need, the request certain hours ahead of the booking. So since I'm at work most of the time and my wife is at work, if someone is asking, for now the car is rented out, but let's say it was not, if someone asks us to get the car in two hours, we would had to say no, unless the booking was for so many days, that it would be worth it for me to leave work, go back home, hand over the key and go back to work. It would take me an hour and the half, and that comes with a cost as well, right? If someone wants my car for two weeks, I would have made the investment to go home, but if someone would have wanted it for two hours I would not do that. And most of instant bookings are very short term. But my main point on the instant part is that the ones who are needing a car instant and for a short trip, there are better options than renting a car. Taking a taxi or Uber when they're coming back or other services.

[00:20:18] - Sander
So, you're not targeting these customers who are needing it only for few hours.

[00:20:22] - Even
No. But we see that for minivans you can see more need for instant and keyless because people buy something online and I need to pick it up now. That's where we might be investing more in keyless. But going back to the survey it's interesting because when I came from Airbnb I know the lead time from booking a place to going. And then I started at Nabobil and the lead time is the extremely different. So, the calendar function is working on Airbnb because they have several weeks to plan. Like my parents they will always go on the

same holiday every single year, so they can tell Airbnb for the next 10 years, that week of July our home is free. But with a car, I don't know today if my car is ready in two weeks or not. Maybe my wife will use it, maybe I will use it. So, we're now using the big dataset and for every day that it's growing, and the algorithms are getting smarter. So now we are predicting about 92 percent of the bookings before they happen. So, if you try to book a car now, my system will know with 92 percent certainty what car you would book. That is also reducing the friction that less and less people should be declined. But in the beginning, we didn't know how to do this. And that's the issue with not owning the cars, is that I don't control the cars. I cannot force you to rent out the car. But now with the big data sets, you can call it artificial intelligence. There are some mathematicians in the university that set it up for us, and they can now predict this, and we can start to use that in our search and show the cars. And when we get even smarter, we can start to look at your preferences. For instance, if I've had a car from Nabobil for six times, and I've only rented EVs, you don't need to show me diesel or gas driven cars because it's 99.6 percent sure that I will rent the electric car next time as well. So that's how we can start using the dataset by making the model smarter.

[00:22:43] - Sander
And also target suppliers to put cars in my neighborhood?

[00:22:51] - Even
Yes. It's important that the politicians and lawmakers are also looking at how we are progressing, and I understand that it's difficult for politicians to make decisions based on historical data but looking at car sharing, it's an ongoing process. We are ten times as good today as we were a year ago, and we are five times as good today as we were when we sent out that survey for you guys. So, it's crazy. And even in terms of size, we're twice the size today as we were last year. It's kind of important to understand that the flaws and the mistakes that have been made in the beginning, there's a high chance that we have fixed it or at least maybe a bit better and then we will make it a better and better and better. It's not like we have a model and we like this forever because we are learning every day, instead of sitting back home for two years and fixing something. We are always sending things out to the market, and fixing, and testing, and checking how things are going.

[00:24:02] - Sander
I've heard that in Oslo you are going to have 600 dedicated parking lots for shared cars. Is it also for P2P cars or only for...?

[00:24:09] - Even
[Shaking head] Which is crazy, right? So, they are then making it harder for my model because it's good for another model. The politicians are now going in, like fucking up the market. It's crazy, shouldn't be allowed. What they're basically doing is inviting 600 people to invest in 600 new cars. There are cars everywhere, do we need 600 more cars? No, we don't.

[00:24:38] - Sander

So, the entrepreneurs who are renting out cars in your platform, they also cannot use it?

[00:24:43] - Even

Which is my point. So, what we will probably do, is that we will invest in cars because of the market situation. If I give the competitors 600 free parking spots, that will be a massive disadvantage to our site. So, I will invest in 150-200 cars that I will sublet to the professional hosts on my site and they will handle it. It's idiodic! I don't have words for it. The politicians have no idea what they're doing when they're doing this idea. It was a good idea in general to open up for 600 parking spots. But they cannot limit one business model over another.

[00:25:21] - Sander

Maybe set the limitation like people who are renting it at least five times a month for example, can use the parking lot?

[00:25:28] - Even

I even told them that we are willing to give these spots the ones that have invested in cars to rent out 100% of the time. So, it's 100% the same as the company owning the car, and they said no. But we will now go to the media and tell them about this because it's insane. And I think that's sad for the car sharing industry in Norway that our competitors that are within those frames, of course they are fighting for this to happen. Because they will win a certain market. But if carsharing in general in Norway will succeed, we need to work together. Maybe there's 30,000 people that have used Nabobil as a renter. Bilkollektive has 5-6000 members. So, if you exaggerate there's maybe 70,000 people in Norway that have rented a car through a carsharing platform. It's really small percentage of the population. And then we are fighting within those 5000... like Hyre, I'm going to say it, they have a commercial saying how awkward it is to rent a car from their neighbor. Is that how you spend your energy, fighting towards our 30,000 users? They should be out there talking to the masses as the biggest player in the car industry in Norway. And they decide to spend energy on focusing on my 30,000? I don't see the logic.

[00:27:05] - Sander

Working together you can expand the market much quicker.

[00:27:08] - Even

Absolutely. The more firms there are out there, the better for the people. And more people let go their car and more people will think that car sharing is good. But if you want to fight them over the next 30/50/60,000 people, none of us will succeed.

[00:27:24] - Sander

There were 30 percent of the people in the survey who haven't used the service. They had signed up but have never used it. Why do you think it’s like that?

[00:27:39] - Even

One is curiosity. Since we have had quite some marketing already that just shown out there. A lot of people have clicked and signed up because they are curious about the service. Number two, I think it has a lot to do with the supply side. That people have signed up, they made the search in their area, an area where we were not present yet. We had not reached critical mass in that area, so they couldn't use the service and then we have the third part, the ones that have failed, that have tried the service, they did get their request declined for instance and then they have given up.

[00:28:27] - Sander

And what do you plan to do to solve this issue?

[00:28:30] - Even

One is again this campaign we are having now which shows the maps around the country, to say that, hey we acknowledged that you have tried to use our service, you failed, go and have a look now. Over the last six months we have added three thousand new cars, maybe in your area. And always telling them about the changes that we made on the site, making sure that they can trust the platform even more. But again, I think with Airbnb as well, there are the huge part of the sign ups that are not being active. Same on my phone, I download all these apps all the time that I put in the back that I haven't necessarily used. I'm just curious and I might use it some point. And then it's just end up lying there.

[00:29:21] - Sander

So, these are the early adopters who are not like getting into the...

[00:29:27] - Even

And I also think that one of the strengths with my platform is that it's free to join. So, we might have people that only have a need to use a car once a year. And if they fail that one time in June, they haven't even tried after, and we might not see them again before June this year. So, I'm not too much worried about the ones that have not used the service. I'm more worried about the ones that have used my service once and not twice because they have the connection to my platform, why you are not using it again. And if most of those people told me that it's because the service didn't work that's a problem. But we did the survey last year that people said they not have a need, and then I think it will come.

[00:30:25] - Sander

You already said that you also have the companies or entrepreneurs who are renting out the cars in the platform, do you have any limitations for them or you do you treat them because in the end they can influence the private providers as well?

[00:30:41] - Even

We don't have any differences for them now but if they get too big or there will be too many, I think that we will keep them to higher standards. So, if you're a professional you

need to have 4.8 stars to be able to be on the platform, while maybe a private person we accept the four-star rating once in a while. Or that you need to reply faster, you cannot cancel, this kind of things. So as long as the car renter is happy, I don't care really if it's owned by a private person or not. The difficulty with owning cars is that you can probably not spread out the supply the way we can. We could have this number of cars with all centered in this area in one huge parking lot the services wouldn't work. Again, how far away are you from your closest car. The only way you can have this distribution is by having private people doing it.

[00:31:38] - Sander
So, it's important to have at least some kind of balance?

[00:31:38] - Even
Yes

[00:31:38]
And the last question is about autonomous cars. How your business model will fit into if we have level 5 autonomous cars driving around?

[00:31:54] - Even
One of my good friends and former colleagues he is a director at Waymo. So, I went to see him in Silicon Valley last year and we drove around in one of the cars. And it was the most amazing experience ever. I was blown away by how good these cars are. And then we discussed for hours how my model will fit into this world. And we agreed on some parts, and we disagreed on a few things but first of all, I think there will be many decades before we are rid of all the human driven cars. This will be now a huge mix starting maybe already today with the level four cars and then we'll have some level five cars, and it will be a mix for many many years. To get rid of all the cars we have in Norway today will take decades. But at some points, I think the question we need to discuss is who will take ownerships of these vehicles. Will it be the car makers, the automaker industry like VW, will they say that you cannot buy a car from us you can only access it. Will it be like, how it is in the air? A lot of funds investing in the airplanes and then SAS and Norwegian and Estonian Air is renting it from the funds, or it will be owned by us as private people. And I don't think we will own them as private people. Why would you own 100% autonomous car, who would you do that? But regardless all of this again, I think even though regardless of ownership these cars will only make an effect on us as people when they are shared. When you click a button and you'll say I will go from here to there, there will be a car picking you up. Who owns the car you don't really care about it. Those cars will need the distribution as well. And then I think there will be local winners, the companies that has the biggest reach in that region. Because Tesla they have this vision that they will have the Tesla platform. But again, I don't think that you and me as private people and users will accept BMW, Tesla, and Honda platform. We will have again one-stop-shop where I can access cars. And maybe I can filter for the Tesla if I want Tesla. And then I think Nabobil might have a future here in Norway. First, because there will be a mix. And then with our route today. I think that we have the potential to be

the main biggest mover. But we will compete up against big players like Uber, we will compete against MAF, which is the biggest auto owner club in Norway, they have 500,000 members owning 700,000 cars. Maybe Ruter, the public transportation provider. So, but I think the main player will be like an Uber. Because thing here is that with the technology there are small changes needed to be made. The only difference from how it is today is that you need to tell the car to come to you instead you going to the car.

[00:35:19] - Sander
I think in the end there also can be two or three big players in every market, for example Uber, Nabobil, maybe the third one. So, everyone has like a different approach, maybe some are targeting more private customers...

[00:35:36] - Even
Maybe again related to how it is in the air, with a Star Alliance and Oneworld where in one platform you can access five brands and another one you can access some brands. So, I think the key here will be to have direct contact to the end user. Once that have the closest relationship to the end user will end up winning somehow.

[00:36:01] - Sander
Because it's easy for you to have autonomous cars in your platform in one day and you have access to the people.

[00:36:12] - Even
And we don't need to start from scratch. So, my goal now is to keep our position now, just going forward. So, we will be the stopping when there's a bigger player coming in. Because I would know we will never develop self-driving kits or things like that, that's not what we are good at.

[00:36:40] - Sander
Thank you!

3. Nils Nordbø interview

Name: Nils Petter Nordbø
Organization: Hyre
Position: CEO
Date: 03.05.2018

Interviewer: How long have you been worked here with Hyre
Interviewee: I started on Hyre February, last year.
Interviewer: And what did you do before?
Interviewee: I worked as a consultant at McKinsey.
Interviewer: And also, in the carsharing field?
Interviewee: I didn't do anything that had to do with automotive. Work mainly with oil actually and private equity companies.
Interviewer: Okay, am I right that Hyre started in April last month?
Interviewee: So, the company started in February and we started basically recruiting and development and we launched our pilots in October last year as a closed market pilot where we invited roughly thousand users to test the service and we spent the time up until April to get feedback from the users and do adjustments to the service to make it as best as possible. And we opened up the platform in April. So, we've been in the market since October, but it's been kind of a closed invite-only marketplace and now it's open for everyone basically.
Interviewer: Okay, but although you have just started to you already know who is your frequent user, who is using Hyre the most?
Interviewee: I think it's a bit too early to say but I think what we see is that we have one out of three so far are recurring users which I think is quite good, given kind of the time period we have been working in there. It's hard to say kind of give you a picture of the demographics of that typical recurring user of our services, I think we need more time to see that.
Interviewer: Okay and you're also open up for providers who can provide their cars in the platform. Are they may be different or how many do they have them already.
Interviewee: So, you mean professional providers or?
Interviewer: Both professional and private providers.
Interviewee: Yeah so, we have roughly now 120 cars. We operate roughly 50 ourselves, 10 are provided by companies and the rest are private cars.
Interviewer: Is it easy to find people to sign up to your platform as a provider?
Interviewee: Provider? I think so we haven't really tested volume wise yet. So, in the last six months, we invited a couple of users to really get some feedback from them about what is important to make this service successful. But I think and from April, May and onwards you'll see if it's kind of the rental side or supply side that this kind of where the bottleneck is. But my hypothesis is that it's easier to attract renters fast with our model because we need to install the device in every car. That scales slower than asking people to download an app and rent a car.
Interviewer: As I understand from your website that you are offering a controller for free for users to install in their cars. Is it going to be like that like infinity or is?
Interviewee: No so right now we are offering Hyre Connect for free if you are willing to share a car at least five days or more. And we are basically subsidizing the platform so to make a platform you need some supply, and this is a new concept for many people. So, we are giving it for free now, but at some time we need to also get paid to cover our costs.

Interviewer: Okay do you also know like what people are using the car sharing for and what purpose?

Interviewee: Yeah, I think you have a quite good picture of. Many users use it to get, I would say most people and that have used our service so far, use it to escape the city. They want to go to the winter cabin, cross-country skiing etc. So, weekend rentals, weekends are pretty much the peak, recreation etc. When you see a car, it's up in the mountains. But we also see more and more people using the cars to go to Ikea or do other types of errands that they typically need a car for, moving stuff, yeah.

Interviewer: Yea, that's similar also I've found from just survey data. There are two things, either major purchases like going to Ikea or for holidays.

Interviewee: Yes, I think the main difference we will see between us and Nabobil, I think you will see more shorter trips because the basis of our service is basically the keyless technology. It's easier and more convenient to use for kind of shorter trips than knocking on your neighbor door and getting their key. So, I think if you compare us with Nabobil, you will see shorter trips.

Interviewer: Makes sense. If we are talking about keyless, what do you think in general in future, how technology will influence the car sharing market?

Interviewee: I think if we look at the OEMs, they are now implementing digital keys in their cars. And you have a couple the OEMs like Volvo that is already offering the digital key to third parties. So, I think kind of the device with today install in the cars, will eventually become unnecessary because we have that technology embedded into the car system already.

Interviewer: Okay, and do you see other technologies that can influence, in addition to the keyless access.

Interviewee: Yes, so if you think of mobility as a service broader and a bit longer perspective, I mean autonomous vehicles will eventually also take over. It’s a timing question. But I don't see other than autonomous vehicles and the OEM digital key setup, I don't see any other relevant technologies at the moment. I don't know if you come across?

Interviewer: No, these are both the things that are also come across. If you're talking about autonomous cars, what is your place in the market if there's like level 5 autonomous cars in the market?

Interviewee: I think autonomous cars will start as a taxi substitute, and we are not a taxi service, we are a stationary model very return the car to the same position. So, and that typically means that we use the cars for longer rides. Right now, taxi service is A to B model, you also see the free-floating carsharing models DriveNow etc. It's a taxi substitute. I think autonomous vehicles will at the beginning be a taxi substitute. Autonomous vehicles is something you find in the urban areas and it's A to B model. It's not necessarily the preferred option to go to your winter cabin. But that depends how the technology develops. In a country like Norway or North region as well, I think at the end of the game, I think it really depends on how easy it will be to scale the regions the autonomous vehicles can operate within. And that depends on what kind of technology that will eventually be in the autonomous vehicles race because we have some technologies that scale almost independent of current infrastructure and you have some technologies that depend on infrastructure and if that infrastructure is costly to build it will start in urban areas and not in the rural areas. And in countries like Norway alike, where you often use your private car to actually for the exact purpose of escaping the city. You still need kind of a car that you drive yourself. And there, car sharing will be, kind of the

model we are offering, be the best option. And autonomous vehicle will compliment that in the cities.

Interviewer: So, it would mean you will take your autonomous car in the city to maybe at the border of the city or somewhere in the hub, and then there you are taking a carsharing car.

Interviewee: That could be one option. I mean it depends on how that develops. But the in-game here I think will be that you also take the autonomous vehicle to your winter cabin, but it's a timing question, so you don't know will that happen in five years' time. I don't think so. Will that happen in cities in five years' time? Maybe, in some areas. It depends on how fast the technology develops.

Interviewer: Okay, maybe it can take even 20 years before you can buy a car that can take you to winter cabin, where there are really narrow roads and...

Interviewee: I mean one thing you can look into is the aviation industry and autopilot system there, because the autopilot systems have been superior to humans for a long time. But it took some time before you could actually use the autopilot system. So, it's a more philosophical question because it's about the human versus the machines and it's not enough to have technology that is better than humans they need to be 10 times better than humans before we trust them to be better than us. It's that simple. So, look at Uber one accident, how many car accidents do you have in the US per year, I don't know but there are probably 1000s of death. One death by machine, stop everything, right?

Interviewer: Yeah, let's come back to carsharing? Car sharing is still a niche. TOI also did a survey among the general population. They found out that half of the Norwegian population have never heard of carsharing. And the active users who are using it's like maybe two to five percent. So the question is, how to reach the majority or masses? And what would be the next potential user groups? Now early adopters are using it how to reach masses?

Interviewee: I think, first of all, car sharing is something that will happen in the urban areas first and if we do a survey of Norwegian population. Most of them do not live in Oslo within Ring 3. If you look at Oslo and the service in Oslo you see, I think it was quite negative survey, they positioned the survey as kind of car sharing has no future. But if you look into this survey and the data you see that in Oslo today 50 percent say they can replace the private car with carsharing, twenty-five percent are unsure, and twenty-five percent say not at all. That is kind of the facts for Oslo. You have to separate all those that are not living in the cities because they are not part of our target market. And then the question is how you make an attractive platform for the ones that are living in the cities. I think it's really two things we need to succeed with and one is kind of making a service that is super simple. I mean take Uber as an example, what are they doing? They are providing a taxi service, taxi service nothing fancy but it was super simple to order a taxi and that was kind of the large disruption, I would say and secondly, they invited private drivers to do the driving and they had extremely good kind of accessibility to cars. It's the same kind of recipe here. You need a super simple system to book a car and that is where our keyless technology comes in. And the other part is that you need to build availability for users. If you have those two things, I think we have a service on a set-up that can compete with private car ownership. Not only on costs, which has been kind of, I would say, the main incentive to use carsharing in the past, but also from a convenience perspective. Because if you can choose instead of having one car you can have as many cars as you want, fit for purpose. You don't need to do any service on the car. You don't need to pay insurance, you don't need to care about kind of washing the car, you don't need to care about all the hassle that comes with owning a car. It's just there, it's there when you need it and you only pay per use. I think that is a

preferred model, but it takes time to establish and you also need to work on the perception around carsharing. Because I think carsharing up until now has been some kind of boring, cost-conscious type of thing people are looking to. But now, especially among the younger segments, carsharing becomes a very attractive alternative to own a car.

Interviewer: Who would be, if right now they are younger people, who would be the next groups? People with families or older people? Who would you see would be that next group of people who are going to use it?

Interviewee: It's like with most new technology, look to video streaming or Spotify or whatever. It starts with the younger people they are often the leading group and you gradually the elder adopting as well.

Interviewer: Okay, but do you think like there should be different strategies to reach elderly people for example? Or maybe you should, I don't know, maybe some different strategies to use?

Interviewee: Yes, I think the main difference between the younger segment and the more grown-up is that **older people they usually have more money they look more to convenience than cost.** So, I think convenience will be important to attract those segments, more than cost actually.

Interviewer: And do you also think you should market differently for elderly people for example?

Interviewee: Yeah, I think it goes hand-in-hand with the value proposition, more on convenience and less on monetary benefits.

Interviewer: Who is your biggest competitor if we are leaving other carsharing platforms out, peer-to-peer carsharing, Nabobil for example. Who are you competing with?

Interviewee: I think basically in the end what we are competing with is the perception around car ownership. It used to be about the cars, it was a bit of a status symbol, I don't think it's much of a status symbol anymore among the younger segments. It's more a symbol of freedom. It's the vehicle is kind of your way to escape the city when you want. If you manage to change the perception and actually establish the service that can compete on the same terms. I think that is kind of our main competitor in the end. I think the way to beat it is working on perception and working on the service itself.

Interviewer: Okay. You said you have one company who are providing the cars in the platform in addition to yourself. Would you have any limitations for companies providing cars on the platform? [shakes his head] No? But do you think it would affect anyhow private users willing to provide their cars in the platform?

Interviewee: I don't think so. I think what they care about is that they get paid for the asset they make available. And of course, on the supply side, there will also be some kind of competition. But on our platform, we are setting the prices per category, so you get kind of your fair share. So, I don't think it will... I think most will see it as a strength that you have professional actors on the platform as well. It's kind of a proof that it's profitable and that we are a serious player that can handle professional actors as well.

Interviewer: The reason why I asked it was because in some cases, it may be that the companies don’t see it profitable to put their cars in the market, but private people may still see it valuable for them because they don't have the extra costs to just sign up to the platform, maybe installing the keyless but that's why in some cases it may be beneficial for private user to...

Interviewee: Yes, that's true, it depends a bit on what costs you are thinking of but part of what makes the value proposition quite strong for privately owned cars, they have basically the same costs – both pay insurance, they both pay a parking spot etc. But it's a bit how you do the profitability analysis and for privately owned cars the cost for parking space etc. It's a bit of the same cost, so all the money can do make on top of that would be profits. For companies that are providing cars for the sole purpose of renting it out the picture will be slightly different. But you also have a lot of company cars that are used from 8 to 4 every day, but not after 4 o'clock and not in the weekends when the consumer typically go shopping and go to their cabins. So I think where we'll start is not necessarily with dedicated company cars but cars that have a spare capacity after four o'clock and in the weekends then consumers typically use the private cars, unless they drive to work but then they are kind of out of our target segment on the rental side.

Interviewer: Makes sense, that's the whole point of sharing economic, using the underutilized capacity.

Interviewee: Yeah, I mean people talk about the sharing economy etc. I mean it's all about one thing and that's capital productivity. It's about utilizing assets as much as possible but because it's cost-efficient and that's it. And if it's a privately-owned car or a company car that is standing still after four o'clock it's the same business case.

Interviewer: Okay but thank you very much do you have any questions or comments to me.

Interviewee: No, it would be, what is kind of the topic of the thesis?

Interviewer: It's like, how peer-to-peer carsharing can reach early majorities.

Interviewee: What's your hypothesis on that?

Interviewer: I have several hypotheses but basically to have a good service, as you have, frictionless process, a lot of suppliers and platforms. I haven't found anything striking yet. It's still the same, younger people who are highly educated are using the services, they are not really interested in the sustainability, it's mainly the cost and the easiness of the service. So these are the main findings right now.

Interviewee: I think sharing economy... **I mean banks, that's sharing as well, you put money in and they lend money out. It's the same really. Take cars in and lend them out.** But we need to make it as easy as a bank. If we manage to do that and we have enough money or in our case cars, you establish an ecosystem. And then, unfortunately, some people have kind of tight relation to their car, but you see younger people they care less about the car than some of the other segments. But some segments are kind of out of reach and car lovers they will never share their car. So, I think in 40 years you'd still have some car lovers that are loving their cars and they treat it like their baby and they're kind of out of reach. But I don't think that would be a common thing to do in 40 years.

Interviewer: I like your point that it should be as easy as using the Uber. That if you can reach the car with a few clicks much more people will think of using it.

Interviewee: Have you tried our service?

Interviewer: I wanted to, but I don't have the Norwegian Bank ID.

Interviewee: Because it's really, the only exception is you need a Bank ID. Because you are you are using an asset that is quite costly, so we cannot just kind of give it out to anyone. But you log into your Bank ID, have you seen that?

Interviewer: I downloaded it, but I didn't get through that.

Interviewee: I mean on Nabobil you are requesting can I borrow your car please, how much is it. If you want to book a car we have a car not too far from here. This one you can see in

the map we are quite close, its 70 kronor an hour order okay you are now ordering a car, confirm, then you need touch ID to make sure that you are not the one that ordering the car and taking it to Estonia. Car booked. If you go to the car now you can open it. It's that simple. If you need a map you can locate the car. It's 2-minute walk you can get the direction. When you get close your car you can open and lock.

Interviewer: Okay, but you don't have to tell how long you're using the car.

Interviewee: Not in this mode, so in this mode, you can use the car for up to 48 hours and you only pay for the time you use it and we have an automatic settlement, so all toll roads we use a GPS position to automatically calculate the cost of toll roads. If you don't fuel the car, we are estimating the fuel, the tank volume a before and after rental. If you fuel for more, if you deliver the car with more fuel than it originally had, you get deducted that amount on your bill and if you don't fuel and you kind of use five liters of gas, it's automatically added to your bill. So, the only thing you have to do to deliver the car is to deliver it. And you have to take photos, before and after that's to ensure to document any damages etc. That's done in the app, start damage control and you can take pictures of the car. So, you just go upload and here we see the look and the position of the car.

Interviewer: But right now, you can do random pictures.

Interviewee: No, but as a renter, if there are damages on the car that are not documented, and you didn't take pictures of them you are the one responsible for the damages.

Interviewer: Okay, so they have the motivation of taking the picture.

Interviewee: So, you have the motivation of doing it. So, it's quite I would say quite simple.

Interviewer: Are you also thinking of expanding to the clients who don't have the Bank ID?

Interviewee: Yeah, but it's not something we will do immediately because it adds complexity and foreign users are usually the one that is either stealing or damaging the cars without paying the bill. So, it's not the simplest way to go but eventually, especially if we go out from Norway need to find alternative identity platforms. But it's extremely important for us, so Bank ID, Norwegian citizens they have Bank ID, but we lose out on some students that don't have it. But we haven't prioritized them yet. We are working with other types of functionalities instead.

Interviewer: It would be much more convenient, even from the airport to use that kind of system than...

Interviewee: Yeah, I completely agree and that is a large market as well. It is basically the largest market for private car rentals if you think about kind of the traditional players, but we want to be an alternative car ownership, that's what we want to be, not an alternative to a rental car you use from an airport, at the beginning. So, this is where we start, but of course, alternative way to expand. I mean, go to traditional rental companies, it's a joke the customer journey there. You stand in line for 30 minutes and they treat you like you're a bastard and it's horrible.

Interviewer: It's quite bad. But thank you!

4. Martijn Arets interview

Name: Martijn Arets
Organization: UU
Position: International Platform Expert
Date: 16.05.2018

Interviewer: So maybe you can introduce yourself as well.

Interviewee: Yea, I'm Martijn I have a background in marketing and event management and for 6 years I'm exploring the collaborative economy. My background is also in crowdfunding, I also wrote 2 books about it. In 2011 I was the first in a row to finish an equity-based crowdfunding campaign which gave me lots of good publicity and awards and behind the scenes, it was a mess. So, I saw various platforms, it has great potential but behind the scenes, it's not a good model. It needs to change before it can reach its maximal potential and also, we're all stakeholders get the right value out of it. And then I saw that is not only about money for a platform, but it's more p2p collaborative economy platforms and so I started kind of research for my own company, called Crowd Expedition. And I did about 400 interviews in 13 countries with all the stakeholders around this upcoming collaborative economy. Since November, I'm also joined part-time with Utrecht University as a researcher of platform collaboratives. So platform is where the users are also owning and governing the platforms, it's really interesting to follow the experiments, it's far from perfect but it got some nice ingredients, and I also have my own company 2 days a week where I advise government and organizations and how to deal with platform economy and I also give keynotes at the conferences.

Interviewer: So, you are basically a consultant for the government organizations?

Interviewee: Yes, but I do also quite some research for my own agenda, so I don't do for external parties, I just see things I think other's interested in. And my main business model is giving keynotes at the conferences, that's my biggest income source. So, I use about 80% of my time in finding and talking to other people and 20% of the time I use given keynotes at the conferences and then share this. And I also have my own newsletter in Dutch already for 2 years so every week I take 5 articles out of international media around platform economy and I give my thoughts on it. And that's already for 2 years.

Interviewer: I also looked at your webpage, quite impressive! I'm really happy that I can have the interview with you.

Interviewee: You no problem, I'm here.

Interviewer: Okay let's go to more specific questions. I'm really interested to know like who is the frequent carsharing user, do you have any opinion on that?

Interviewee: Yeah, I think it depends on which stage of the platform and also on which platform, like in the Netherlands we have SnappCar, that's really the commercial platform but there's also MyWheels they're much older but they're more the common based platform they're more the soft environmentally friendly. There's also less money behind the MyWheels. SnappCar got some great investment they just receive millions from a big leasing company Europcar, it's a big car rental company. So, these platforms are also quite different landscape. And I think it also attracts different people on different platforms and what I see in the platform because I'm also a user of the platform, so I always also use other platforms I'm talking about or try to use, is that it depends on the state of the platform. Like in the early stage it is more the people who really are conscious in making the decision about, okay I'm going to share my car

because it's good for environment bla-bla-ba, and then it changes in a more practical approach. So, I got also get quite some reacts from people who are just for the first time they have no idea how it works. And they think they are just at a car rental company and they just want to have a car. So, I think it really depends on the stage of the platform.

Interviewer: But if we will take at the moment, for example, the SnappCar stage, who is the main frequent user for them now.

Interviewee: I don't know, but I think they are... In the end, the challenge is, of course, many platforms they start from a more ideologic perspective. SnappCar is already commercial from day one. But then if you want to make an impact you need to scale and if you want to scale you need to have a good supply on the platform. And that's also why SnappCar is now for a year working together with a private lease company. So, for 190 euro a month, you can lease a Fiat 500 if you also rent it out for 2 or 3 times a month. Because they will need to have a steady supply before people are really going to use it as an alternative. And with SnappCar I think most people who are using as an alternative for a second car. So that's why you also need to have this really steady supply on the platform that's I think that's also the biggest challenge of the platform. Because in the end, it's about the alternative and also convenience, so you'll see how the platform grows in their life. They are also implementing direct booking because they want to lower all the thresholds for you to have as an alternative. Because it also depends on how many times you're using the platform, like when you are searching for a car for your wedding. You don't mind if there's lots of hassle to do if you have to wait and talk but if you just want to have a car 1 time a week. You want to have less social stuff as possible because you just want to have the car. So, I think it's also it's also a chicken and egg discussion, but I think also the platform because it also needs to grow, also from financial reason, because it also quite some investors onboard, they are also searching how can we solve the friction in the market, because of that they are also busy with smart locks. There must be an app or in development where you can scan your car if there isn't any damage to the car because they really want to lower these thresholds. I think there will also be different groups on the platforms who are renting for different reasons, but I think the majority will be just the practical users. And that's okay because if you reach your goal its fine.

Interviewer: Yeah, if we are looking at the car market, most of the cars that are sold are also practical cars like VW Golfs. It does make sense that people are mostly practical with these things.

Interviewee: Yes, but I think still to really have it as an alternative you really need to have a steady supply. I still have my own car, it's a really big car it's a Volvo V70 because I have 2 and almost 3 kids so I need space and sometimes I rent through SnappCar, but I still made the decision of owning the car because it's so easy. I know it costs me lots of money, it's inefficient but still, that's all the discussions of the platform behind rational and emotional. Many platforms they predict things based on rational, technical developments but is it enough to say what people will do? Because people will make the less logical decision all the time, me and you too, that's how people work.

Interviewer: But if we are looking for the supply and demand problem, what do you think, for example in the Dutch market is there more supply or more demand or where is the shortage?

Interviewee: I think there's a shortage of supply. I think SnappCar they can tell it's from their experience but also if I see how much efforts platforms are putting into to get supply on the platform, that's also why they join the private lease company. That must be on the supply.

Because only then when your supply is steady enough, only then you will get the second group of people who are going to use SnappCar as a full-time alternative for a first or second car.

Interviewer: Have you any idea how they should tackle these issues?

Interviewee: The private lease is a really good one. I think it's maybe good to collaborate with others because we also got the difference like we got the peer-to-peer, but we also got the free-floating model Green Wheels. They're quite big in the Netherlands. Car2Go is not really, only in Amsterdam I guess. But in the end, it's all about an end solution for mobility for more on-demand mobility. So, I think it will be good to collaborate with like Green Wheels. But the problem with all these startups, they're not collaborating. Also, the bigger companies, also they're not uniting to lobby to a government that's also what I hear from governments. The problem is all the platforms they are calling government themselves but they're not joining forces to lobby and that's the same with sharing and gig economy, the same with crowdfunding platforms. They really have a hard time to join forces, to protect their belongings into debates, they have no idea how to do it. And that's really a missed opportunity.

Interviewer: For what people are using the car for if they're taking a car from a peer-to-peer carsharing platform.

Interviewee: From my own experience, it's more about just for a one day visit to family or maybe because I have a big car they need to do some transportation. My experience is that the rental period is quite short. And that's of course not good for SnappCar because the acquisition cost of the customers is quite high, so you want to have customers who rent a car for a week. Maybe in a holiday season, it's different but my experience is that most time is just a really short period. Also, like with the other platform MyWheels. I just joined MyWheels because SnappCar changed its insurance conditions, so if you have a car older than 10 years and someone drives through a wall, you get maximum 750 euros. And my car isn't worth a lot but it's more than 750 euro. So that was also a condition form the insurance company and it's also really critical factor in your model, the dependency of the insurance companies.

Interviewer: In Norway, most people are using the carsharing cars to get to their cabins because the cabin culture there is really popular. And they're often in remote areas and they just take the car for a weekend or for example the Nabobil, one of the platforms there, they told me that they have 2 peaks one is Christmas and the other is Easter. These are the times where everybody is traveling.

Interviewee: And there's also the problem that from the supply side, that's also the period when people want to use their own car, I guess.

Interviewer: I think so. That's the time when everybody wants to travel.

Interviewee: Yeah, that's why it's also good to find partnerships. I think it's the reason why Europcar invested in SnappCar because, in the end, it's about the different form of only month car rental.

Interviewer: Yeah, maybe if you have some company cars on board, then they're not using it during the Christmas or Easter.

Interviewee: Yeah, I also interviewed Pascal, he's one of the co-founders SnappCar and he left the company by one off a year ago I guess. And also, I asked why you don't go to look for businesses to cooperate. He said "I see there a lot of potential but it's too much hassle. Before a business makes a decision, okay, we are going to do this, it will take a year of negotiation. They all want to have their custom-made solution. So, I see there's a big opportunity but I'm not going to spend my time on that." I also see the problem with corporations that when you are renting out your car you get the money on your bank account, so you really see a direct result of

your action. When it's a company, it gets somewhere in the financial department and maybe you get an email, oh we had 2000 euros of profits for renting out our underutilized assets this month. You think it's nice but it's much more indirect, so it's also a motivation issue. You're right, it's really logical, we got the big area in Utrecht near the stadium, where the army is, and they got all grey Volkswagen Polos and in the weekends there's the area full of these cars. So, there's full of potential and it would be logical that they would do something with that but it's also, yeah, different. I think it also involves lots of hidden costs in these transactions. When I rent out my car and I get 20 euros for it, I also need to communicate, I need to be there and get the keys, and this also costs money, but I don't see it as a cost. When you need to make a fleet available in your company and arrange it, then you really see the cost of these transactions and then it's probably not as interesting as you thought before. Only maybe for your green policy but the business case would be much weaker than if you really are going to calculate all the costs, also the labor and the communication into the transaction.

Interviewer: Yeah, there's definitely some optimization needed in this process, otherwise it would be too costly for the company.

Interviewee: Yeah, that's also why SnappCar is already busy for decades for thinking about smart locks. There also must be an app to scan the car on damages. I think it's also something that will help insurance company a lot. I think this friction needs to be solved.

Interviewer: Let's move on. Carsharing, in my opinion, is still a niche or what I have found from the literature. They did a study in Norway among general public and half of the population have never heard of the carsharing or don't know what it is. And only a few percent of the people are active users are using it sometimes. But it still has some environmental and social benefits as we know. So, my main question is how we can reach these majorities? Who can be the next potential user groups?

Interviewee: I think you will only get the right group of mass at the moment that you are offering a better solution than the current situation. So that's the way you need to lower the threshold for people to use the car to make it easier, cheaper. But also, from government perspective you can also do something with regulation and say, okay we're only going to give a permit for parking in front of your house if you also share it on the platform. So, there are different ways to encourage people, you can make car ownership not sharing more expensive or get some thresholds with the parking license, so that's the way. And the other way is to make the experience much, much easier. So that you just make the transaction much easier by the apps and the smart locks. The final way to get the supply to grow on a platform so it will be a good alternative. The other way is to also cooperate with other different stakeholders. Because in the end, I also have had quite some discussion about the sustainability, and I will say that sustainability can be a handicap. So, in the end, your product must be as good as, and preferred even better, and then sustainable. But if you're only are going to focus on environmental benefits then you will never have an impact. Then you will have 2 or 3% of the population who is interested in that. And it's never enough, especially for a peer-to peer be successful.

Interviewer: Who is going to be the next big user group? Right now, they're more like younger people, highly educated, have medium or higher income. What's your opinion, is it going for families with kids or maybe elderly even because they don't need cars that much?

Interviewee: Yeah, I think it depends on, there are different target groups. One target group could be people who are owning a car or two cars if we are talking from the demand side, build a better alternative so they will join. I think the other one is also people with lower income who don't have access to transportation, more aware of possibilities. Like in Amsterdam they

got Stadspas, the city pass. It's a special pass with different benefits for people with a really low income and they are also doing now experiments with some platforms like they share meals, that's Thuisafgehaald, a big Dutch platform for people who like to cook and then people can get some meals in the neighborhood. So also, from a government simulation of helping people because there's also what platforms are doing in marketing. Most money in marketing platform goes into buying customers. So, give them the first experience, especially as they prefer to do sales via their users. So, you get 10 euro and I will get 10 euro when you make me a new customer because the moment you experience how easy it is then it's also more likely that you're going to use it more. So, from a marketing perspective and you put lots of money in a referral program or also maybe with like with the government in Amsterdam they're doing right now, not for carsharing but for other different sharing platforms. So, by helping and providing the poor people with this kind of services because that's also a really interesting target group of course.

Interviewer: Is the marketing strategies should also be different, because right now, as far as I've seen, the marketing is really targeted at young people. Should they change that somehow as well?

Interviewee: Yes, but I think now they're going for the quick wins because they need to show growth to their stakeholders. That I think is the biggest problem of almost all platforms who are quite heavily capital driven. They need to show a nice growth and of course, they are also another example of platforms they have for nice growth, but they are not watching their back door. So, people are running out of platform fast even faster than people are getting on the platform. So that is also the question, that's not a question it's the fact, that that's not good and they will go bankrupt. But I think the platform they will also go first for the quick wins and also go for the biggest group where they can get in the end with the minimal investment the maximum results. But that's why it's also interesting to involve governments because then they can also help go to target groups who are commercially not so interesting because it cost lots of money to involve. And maybe they will rent you a car maybe once a year but then it's more the impact on society that's positive. But in the end especially in the beginning the platform they always go for the big market and for low hanging fruits. And that's logical from their perspective.

Interviewer: Should the pricing also be different because right now you can usually rent a car at least for a day. But for example, maybe you need it only for 3 hours to pick something up from Ikea.

Interviewee: Also depends, like with MyWheels platform where you rent per hour. I think with SnappCar you can say a supplier on the platform you can say the minimal period to rent out, but I think for a couple of hours it only will work when people have no job or are retired. Or when the transaction process is much more automated – here's the code for the smart lock and you can only open the car the moment that you scan it with the app. I think that if you are really going to look for the short term, and maybe it's also good because there are of course different kind of carsharing programs in one city like in Amsterdam you got SnappCar, you got Green Wheels and you got Car2go. And people say okay if you just want a really short ride I'll take Car2go, if I will need to go to the Ikea I will get Green Wheels and if I want to rent something for at least a day then I will get to SnappCar. And also, when you want to rent something for a day then you're more likely to have even more hassle than when you want to rent a car for an hour or for 3 hours. So, I think in the end all these models they will fit for a specific situation and I think also a little bit shows saw with JustPark, do you know JustPark?

Interviewer: No.

Interviewee: It used to be named Park at My House, it's a UK platform. So, you can rent out your private parking place and then they changed their name to JustPark and now you can also rent out public parking spaces. Because in the end you want to have an end solution and you want to have an on-demand decision okay do I want to have more social hassle, walk longer, but pay less or do I just want to go to the coop park, no social hassle, and just have my car parked and pay more. And I think that will also will be in the end with carsharing. In the end, it will be much more a mobility as a service app and for one specific situation you want to have a peer-to-peer car and then you want to have a Car2go, and then you just want to have an Uber.

Interviewer: In the end, if all the peer-to-peer cars have smart locks, you can also have the overlap because then it should be theoretically as convenient as Car2go for example.

Interviewee: Yeah, and I think this will take maybe 2 or 3 years. Because also if you look how platforms grow they first want to be the biggest in their country and then they're going to look across the border but there will be a moment when all markets already have a dominant player and then if you want to go to another country you need to, or buy the other platform, or you need to put a lot of money to start competition. But they already know that this money I need to invest will never be profitable. So, I think that's really a moment when platforms will be more open collaborating on this kind of issues. But I think for now because they are all startups, they are really into their own bubble, but when they think logical they know they can grow by collaborating, but I don't think they will do that the next 2 years. I think it would be the next step in the market but that's for now.

Interviewer: You will also have experience in different markets so how would you compare different peer-to-peer carsharing markets in Europe. I know in France there's a Drivy, one of the biggest platforms in Europe and then the Nordics are also quite active. And then you have Netherlands, Belgium, Germany, how they're different?

Interviewee: I don't know, but I think maybe there also some research here who are really on specific on carsharing, so they might have better insights on that.

Interviewer: It's okay.

Interviewee: Of course, you see it at different countries what I like is that they are different approaches like in Belgium they got a project mainly paid by the government, it's called autodaily.net; sharingcar.net and they organize a kind of a Tupperware party, so small meetings in living rooms of people with 7 or 8 people and then they were discussing the benefits of carsharing and I think 70% of all their Tupperware parties resulted in one local car sharing initiative where one person bought a car or already had a car and they provided with a software and insurance. I think it also depends on the different regions where there are more grassroots initiatives and other regions there are more commercial practical versions. I think if you dive into that you will find some differences in different countries.

Interviewer: Okay. We have talked about keyless access already, how do you think the technology will influence peer-to-peer car sharing in the future?

Interviewee: I think it will have a really positive impact on the usage of the platforms because you're lowering the transaction costs that would stimulate the usage and it will have a really positive effect. The negative or less positive effect is that of course when you are not going to meet the owner then it is just a rental service and I think this will have an effect on the insurance issues because we all know how we were using rental cars and the social benefits will disappear or getting less. And I think it's now already start off with SnappCar. If you lease a private lease a Fiat 500 their logo is on. It's also kind of a uniform sharing a car and the only

difference with a Green Wheels is that somebody private is taking care of it, is taking care that it's clean, that the transaction is made, that sort of thing. But in the end, it will be just kind of a free-floating rental car.

Interviewer: Is there other technologies that can influence the market?

Interviewee: I think a great solution if you have an app that to scan for damages, I think there will also be other technologies like that's maybe you will get rewarded or punished by how you drive and so the sensor in the car. That's already existing the technology used by insurance companies that you get a bonus on car insurance when you don't accelerate too fast and when you don't break too fast. So, these are already existing technology. And of course, in the far future, we have the discussion about the self-driving cars. I think that's also a way too technical discussion right now because everybody says nobody will own a car but in the end, somebody needs to own a car, is it individual or the platform or whoever but somebody needs to own the car and also these cars need to be checked on if they're clean and these kinds of things so they will never be able to be available 24/7. Because also shit happens in real life. This discussion in think is too much from a technical what's possible approach and if it gets all the social and logical experiences people in life.

Interviewer: Yeah, that was actually my next question about self-driving cars, isn't it carsharing just an intermediate step between...

Interviewee: Yes, I think the whole sharing economy most of the sharing economy is an intermediary step because of the fact that we have too much stuff which is used ineffectively. I think it's a temporary solution because in the end it's also really affected that a person needs to buy a car to run that through a platform. In the end, probably there will just be some car rental companies or Uber or whatever but not the individuals. Maybe as an investment that the companies to use kind of a crowdfunding construction that people can buy a self-driving car as an investment and that they get a return on usage but that is just kind of a capital question on who's going to pay for it. But in the end, it's much more logical that they're also like with other sharing platforms like with tools, drills, that kind of stuff. It's more effective when they're just in a place it enables where kind of a box that you can open and get a drill out. Because that's basically for the low-value assets, the friction in the market now is just too big. That's also why everybody is jumping on mobility and housing because the hassle to do the transaction is compensated by the amount of money you get for it.

Interviewer: I have been thinking like what is the role of the platforms that are developing themselves right now like SnappCar, Nabobil etc. What is their role in the market if we have self-driving cars?

Interviewee: I think a really important role because they are the logistical platform where the transaction is being organized. That's also why I think is the mobility industry is now really interesting because as everybody knows, in the end, there will be self-driving cars. And it is 10, 20, 30 years but in the end, there will be. Also, everybody working in the industry knows in our future our market will be completely different and know its time to find out and also to conquer our new place in this new ecosystem. And that's also why all the big car companies are innovating themselves, they're all investing in different kind of platforms and technology because they're all trying to find their next place in the ecosystem. And they also know that at the moment that the platform had dominance, then the cars are just a commodity and then the platform makes the rules and they are just the commodities based on the lowest price. And the last thing you want to be is being in that commodity market. Because you only competing on price and then you model is just not so interesting as it is right now. I think it's a platform, you

have the hardware the cars, and you have the technology of the cars. So I think these are 3 interesting stakeholders for the next step in mobility and the question is who is going to be in which position. That's also the reason why even car companies are investing together in technology, something that's probably if somebody would have told me 10 years ago I would have said they're never going to do that. But they also know there's so much money in the market and like with Apple they got 150 billion dollars on their account so for the first 100 billion, they don't need to raise the fresh capital they already have it. And like Opel, the car company was sold last year for 3 billion. I thought a company so big, so famous and 3 billion? Uber is losing 4 and half billion a year. So that also push these numbers in kind of their perspective.

Interviewer: I've been thinking of that because the peer-to-peer carsharing platforms are having the access to the user. So, this is really crucial if we are having self-driving cars. They have the users that are already used to a quite similar service because renting a car like ordering a self-driving it's quite similar, so they really have a role there.

Interviewee: Yeah, I think the biggest handicap of the car companies, the same with insurance companies, is that they never build a relationship directly with the user. That's also the biggest problem now with insurance companies, they have no idea who their clients are. They also admit it's not secret and same of course also with the big car companies, they have no direct relation with their users and that makes them really in a bad position. And that something that platforms always do is they take away the customer context from the supplier to the platform that's also what happened with booking.com. And in short-term, the hotels were really happy because they got more revenue but then they realize oh shit now we're dependent on the platform and nobody will order something through our own website because they all go to booking.com and that's happening every market and every time I think oh you fuckers why didn't you saw it. There are only some recent examples where the industry was leading in the platform.

Interviewer: Okay, interesting. How peer to peer car service in relation to public transport, business-to-business carsharing and taxis. So, what is the position of peer-to-peer carsharing in these mobility services?

Interviewee: Good question. I think it's just a part of the mobility mix and it's a context and situation dependent. If you want to get public transport, it also depends on the infrastructure in the area you are living like in the Netherlands it's quite good range we always been complaining but if you compare to other countries, it's quite well organized. So, I think it depends on the situation where the person is right now. And also, on the habit of people because I know quite some people I never travel by train and it's the best solution for them, but they have the idea, okay train they suck, so they will never use a train and they all go in their own car waiting for hours in the traffic jams. So that's also the directional and emotional clash but I think its just part of... Maybe you will also see like what you now see in the US that people are now leasing cars to join riding for Uber. But that's, of course, different in Europe because in Europe in almost all countries in Europe Uber is only with professional drivers not with individual drivers.

Interviewer: Yeah, that's a competition with public transport is actually a good point. That's something that was coming in the survey as well that many people said, there was a question if you are not using the carsharing service what would be your alternative, and many people brought up the public transport. And also, my friend yesterday told me that once he wanted to rent a car from SnappCar. But then he compared that he will pay 25 euros a day per

car plus gasoline compared to the train that's 12 or 13 euros. If the public transport is good, it's actually quite hard for carsharing to compete.

Interviewee: Yeah, I think that also depends on like when you're driving by yourself in a car, most of the time public transport is cheaper but when you're going with a family public transport almost always more expensive. So, it also depends on case-by-case.

Interviewer: It's also easier if you have kids and everything.

Interviewee: Yes, definitely. The Volvo in front of my house, you put them in, you lock the door put the music on and just drive.

Interviewer: I think we're done so do you have any questions or comments to me?

Interviewee: No, I'm looking for the results and I'm curious on SnappCar is saying because I haven't talked to them for quite a while but I'm really interested because they'll never tell something about to anybody what their end goal is. I think their end goal is that they're being bought by Mercedes or BMW I think that will be their ultimate dream. Because if you just look at the platform how much money goes in and about their transaction, they are making I think they will never be able to return the investments only by transaction feed, I think that will be impossible.

Interviewer: You need like every car in there right now then they can be profitable.

Interviewee: Yeah, and they also know that. That's also why they got the millions from Europcar. It's a really interesting market for all these car companies. So, I think if I would be from BMW and I would ask them okay can I buy you, then I think they will say yes.

Interviewer: It's actually an interesting point, do you think carsharing will kill the rental car companies.

Interviewee: No, I think it depends on what car rental companies do. If they don't change at all then it might kill but I think it's just a new version of car rental and it's an unequal playing field because the car rental companies need to invest also in the resources that are not in the cost price of individual renters. Like the labor and communication but also the accommodation of where you put your cars. And also, your car get less value if you drive a lot of people are not taking it into account when they're renting out their car on a peer-to-peer carsharing platform. So, from that, it's an unequal situation. But I think it's the moment when the technology of the app with the damage and also the smart locks is at the right level. Then it will be more equal, and it will be also more interesting for car rental companies also to rethink their model. Because car rental companies they're now mostly based on outside of rural areas and yes that's also with the peer-to-peer and also with free-floating like Green Wheels and Car2go. That people just want to have the car just near and that will also be a challenge for governments because when there's one business to consumer car rental company like Green Wheels that ask for permits to put out their cars, then it's okay. But when there are 10, also government needs to have a policy on how to deal with that and also needs to have conditions on these cars. The same what happening with the bike sharing companies from China. There are 5 bike sharing companies who put 1000 bikes in a city, then you also need to have some policy for that, I think that also needs to happen. I think the benefit of maybe the current car sharing players in cities is that there's just a few and it's also because it's quite cost intensive to put a car somewhere. It costs 40 or 50 dollars for each bike, but a car is way expensive. So, you really need to think much better before you put ones there but at the moment when the supply of the B2C models will grow and you also need to rethink for you city how to deal with that.

Interviewer: Because the rental companies right now are having terrible service. Because even if you're taking the car from the airport which is like their best market, their core business, you still have to wait in the line for half an hour.

Interviewee: Yes, and you still need to fill in forms with information you already provided by making the booking, yes it really sucks.

Interviewer: So, I think if they're not changing that they don't have any chance with competing with carsharing if for example you have 5 carsharing cars in front of the airport you just go there press 2 buttons you go in and you get a car.

Interviewee: Yeah agree, and they need to change that because you're right that's terrible service.

5. Martin Frusch interview

Name: Martijn Frusch
Organization: SnappCar
Position: VP Growth & International
Date: 17.05.2018

Interviewer: Can you introduce yourself?

Interviewee: Of course, my name is Martijn so like I said started 2 and a half weeks ago as a VP growth but also international. So, I'm not one of the founders so Victor founded together with Pascal seven years ago now in The Netherlands. I think here the marketplace is pretty mature, still have things to gain of course but in the three countries where I'm also responsible for so the Netherlands, Germany, Denmark, Sweden, there we are more of an immature marketplace at this moment and my role to make it grow, so that's what I'm doing.

Interviewer: And what did you do before?

Interviewee: So, before that, I had my own company which was called Cocoon. That was sort of a Tinder for tech jobs which are connected tech time to scale. SnappCar was actually one of our clients. I scale that to let's say the company which was on breakeven, but we were not growing anymore. We were not able to actually get the journeys of the clients and the candidates aligned enough to actually get a high lifetime value on the client side which we were paying that was high enough to actually be sustainable in the long run. Found out that our competitors were struggling with the exact same things. So, we discussed it with our investors and said you know let's look for an acquisition partner. So, we sold it to another company, and before I actually worked in logistics at Dutch postal services at headquarters in different regions, so that's me.

Interviewer: Okay, thanks so let's move on to the car sharing topic.

Interviewee: Indeed.

Interviewer: So maybe you have already understood who is the frequent user of your platform?

Interviewee: Yeah so frequent user, I guess you're not talking about the owners you're talking about renters, right?

Interviewer: Yeah, actually both but let us start with renters.

Interviewee: But if I talk owners, then what we see is that smaller cars in dense cities especially in, and surrounded area, so for us that means Amsterdam, also The Hague, Utrecht, Rotterdam, smaller cars actually right now were also new things are private lease cars that to push those cars more and more into our marketplaces. We see those cars are actually doing very well. In terms of frequent users, on the rental side, that's one of our challenges. So, if you would ask me now on who's that, of course, I can say in cities people look for mobility solutions, but that's a beautiful story. But if you ask me is how does that work in terms of retention everything that not going so well at the moment.

Interviewer: But do you have any special demographics of them like younger people or older people?

Interviewee: Yes and no, I don't know well enough to be very specific. I can check out later for you if that would help. I mean right now I would just say okay we're talking of people in bigger cities, let's say between twenty-eight, forty years old, don't have a car. I mean, one of myself and you. There's no place for me to park a car even and so when I can rent it from

someone else that's easy for me. It's even easier than renting from a company because if go to a company then I need to bike further than just to go for one of my neighbors.

Interviewer: And for what people are using carsharing for?

Interviewee: What they use it for? We are not really focusing on one time users. So not only do I see people using it for moving or for having a wedding on something like that, that's of course nice branding wise but it doesn't really help us further. For us is really on the mobility solution. So people who are looking for an alternative to actually go to another town or a city, to go to parents to go on short weekend break, some but also longer breaks but that's especially weekend breaks. Day trips going to work, to a place where you actually have a client meeting, but it's harder to get to the public transportation etc. so that's what we really aim for as well in terms of frequent users.

Interviewer: And that's something that I've also found out in other platforms, these are the most frequent users.

Interviewee: It's also most interesting in terms of retention, so we want to boost retention then, of course, it's good if someone comes in because they're looking for a van to do moving or whatever, but if you're looking for people who are willing to use the carsharing platform let's say six to fifteen times a year then you're looking for these kinds of things. I mean people go on a weekend breaks, let's say 2 times a year, they go to visit their parents who are living on another side of the country a couple of times a year or go to client like I said, those are the things that are very interesting for us and that's also why we're not looking for very big cars, we're looking for smaller cars that are rather cheap also to rent, that's it.

Interviewer: As I understand, you also target business customers for client meetings?

Interviewee: It's not, it's not really a key target, maybe it's actually interesting that you asked. I don't have the feeling yet that we are really doing super specific targeting things or campaigns. It's more for us, hey there is a mobility solution which you can use for the journey.

Interviewer: In your opinion is there more shortage of supply or demand?

Interviewee: The interesting question, in general, you could say we are lacking owners. However, **we're now last two weeks really zooming in and not on a city level, but on a zip code level almost.** And then you see that in certain zip codes there is a clear shortage of supply and the other way around. So you can also see that by doing certain things, like keep pushing for more renters in certain zip codes doesn't make sense, because we just don't have right owners for them yet and the other way around. So really zooming in on a super local approach.

Interviewer: Okay and make sense because if you people cannot reach the car with 500 meters or one kilometer they're not using the service. And you're tackling it really approaching certain neighborhoods with certain campaigns or?

Interviewee: I have to say that the way we're doing it has not been that successful yet, we were really zooming in on that. So we're figuring out right now with all kind of experiment what's working what's not but the first step was to get insights in where do we have our blind spots or white spots, basically lacking cars. With renters, you can do a lot of stuff, like doing campaigns but with owners, online campaigns are harder. We cannot just put money in and expect owners to pop up, it's a more complex process.

Interviewer: Okay, so what I found out is that carsharing is still a niche. In Norway, they also did a study among the general population. So half of the people have never heard of carsharing even and a few percent are using it actively. But it still has some environmental and social benefits that we know. So the question is how to reach the majority and maybe more specifically, what should be that like the next user groups?

Interviewee: Yeah, it's a very interesting question. I think more people know about the sharing economy as a whole as a term compared to let's say carsharing economy. Also, in terms of sharing economy, people think about AirBnb and such, while carsharing I'm sure you agree with me, is actually perfect in terms of why a product like a car is actually perfect to use for. I had the same, indeed, but what I'm chatting with friends that actually joined SnappCar, I see that a lot of them actually don't even know what they are doing, and they don't even know what the carsharing is about. So that's indeed very interesting, I also don't know why that's actually the case because many people know need about, oh I need this stuff but it's also because of the press and the negative press etc. But your question was more on okay what's the next target group, right? How would you define the premier target group the people that are now known with it?

Interviewer: They're like typical early adopters. So, who are like younger, highly educated, have a high income or like middle or high around that.

Interviewee: Okay, I get that, but would you say that I mean it's not the 50% you were talking about?

Interviewer: No, I mean from the 50% who can be the next ones, right now we have these early adopters but are you looking more for older people, maybe even younger people or?

Interviewee: For us, we're not really looking at that say in terms of younger or older people. For us, **it's more geographical thing.** So really zooming in on those city areas. We're not so interested in being mentioned in the countryside but also in smaller cities. Take a look at Germany even better, Denmark. We're not focusing on Denmark, we're just focusing on Copenhagen rest of Denmark for us at this moment is just not interesting. So, talking about carsharing then we are only focusing on getting eventually old people who don't have a car, don't have the car for their trip at that moment that they are looking for, to get them on a carsharing platform within that geographical area. But that's just my personal opinion on that, so whether you could even let's say if you have a small car, then you still might need, let's say you have a smaller car, and you're 50 years old 55. You have some grandchildren who don't actually fit in your car, but then your kids basically they're gone for a weekend, they drop their kids with you and then you need a car. You need a bigger car because your own car doesn't fit. Then you still should be able to actually use it as well. So, it's more according to me a geographical problem and also in terms of targeting. Just getting all of these people that are now using other mobility solutions within those geographical areas, rather than looking at it from the perspective of okay who are early adopters in the country level basically. Does it make sense?

Interviewer: Yea totally. Just have a follow-up question, what are the strategies and innovations that you're planning to use to do that?

Interviewee: So, for us we're peer-to-peer and in new countries, we were growing there but, in the Netherlands, we've done that. Like I said, we still need to keep moving on that but that's one. We're really pushing now on keyless technologies to make it easier to remove the barrier to hand over the cars, and on like I said more finance car solutions like private lease, or even with our investor Europcar we're now pushing longer term rental cars to people to actually fill those spots that we have currently on a zip code level.

Interviewer: Okay, have you also considered like different pricing for example or renting by an hour even a minute?

Interviewee: Not yet, maybe they have considered that then we just haven't discussed it yet. At this moment no, as far as I know.

Interviewer: If you don't have the keyless technology yet, then it's quite difficult.

Interviewee: Exactly.

Interviewer: Okay, if you're talking about keyless like maybe there are also some other technologies which will influence the carsharing future. What is your opinion about that?

Interviewee: I mean that's of course clear. The whole self-driving car thing would be a big game changer and that's nobody will not tell you of course but I'm even very unsure what they will do to platforms like SnappCar etc. And why would you use the platform like SnappCar, if the majority of the cars are self-driving cars? So that's something that interests me, but that is of course not something for the next five years basically. But that will be a major threat as well to these platforms.

Interviewer: Yeah, but I have heard from the other platforms when I have asked about self-driving cars as well that they see their value that they have the access to the end user. The users are using basically similar services like self-driving cars. So, they are already used to it and then maybe SnappCar can be one of the providers of that service.

Interviewee: There will be one or two that will have that market, but where there be the carsharing platforms or maybe just BlaBlaCar's or Ubers of this world you can debate on that.

Interviewer: But about keyless. I've heard its quite expensive technology, so until the car manufacturers don't give you access. So, do you see like there's going to be like lots of keyless cars in the platforms or maybe only a fraction?

Interviewee: We're just right now literally doing a first pilot last months and we're now really pushing for it. That doesn't mean that we will have 1000 keyless cars on the road within six months. I don't see that happening, but we do see that, especially for, I mean for both. Not all owners will want it, it depends on what your motivations are on that but for rental, it's a major thing it's super easy. A good friend of mine recently used SnappCar for the first time and his first experience was a 20-minute check-in because the old lady was explaining every single detail of the car. After that, he almost said that it is not working for him. The second experience was super easy and now that's just let's say a neighbor who is living fifteen meters from his house and now every time they just use SnappCar to communicate for insurance and they just drop the key through the door basically. So, it's almost like keyless but based on trust. What I mean is that the first experience for him was such a time-consuming one which wouldn't have taken place with keyless. So, I can imagine that for users, it's the whole exchanging key everything is a barrier to use for the first time. We have to see how many owners actually want it also based on the price. Because that's something we see actually with now with pushing it that it's a big thing for an owner to pay an amount. I think right now we were doing stuff with about 30 euros a month to let them pay that. And it means that in order to actually make up for it they need at least 1 or 1 and a 1/2 day extra in renting out their car. Is it then worth it for them?

Interviewer: Have you considered maybe the business model that you can take the cost by yourself and then...

Interviewee: We're doing it now, so we're thinking about really discussing indeed, let's say maybe we should just subsidize it, for now, to push more on the road and to drive transactions for the company and to prove to ourselves that keyless can actually be a big game changer in terms of growth. When that's happening then we can think of new business models. But for us is more important to see if it really enables growth because when it does then there might also be interesting for us to look for business models for them.

Interviewer: I talked with two platforms in Norway and one of them have like the similar platform like SnappCar quite a lot of people but only a few keyless cars. And they were not really enthusiastic about keyless because it's the costs and everything. The other has only keyless cars so they just started, and they see that this is the only option how the market can go. But they are also a bit like a hybrid platform they have some own cars because it's backed by Moller group.

Interviewee: We have to see how the majority of the owners will respond to it. To be really honest, I don't know yet what the response is next to hey it's pretty, pretty expensive because I can imagine that there's also an emotional component. Probably also not for every car. I mean if you have 70K Jaguar then you probably don't want a keyless technology in your car but if you just have a 6-7K car then it might be different. It might also be different between countries I don't know whether some countries it may be a more of a cultural thing whether a car is something you just don't share that easily and then actually using keyless technology makes it even bigger of a barrier for an owner may be to rent out a car, I don't know that. I just kind of imagine that these things play an important role.

Interviewer: Yeah, recently we got investment from Europcar. So, what do you see is the role of the traditional car rental companies in the future?

Interviewee: Yeah, it's a good one. It's the first time I really think about it. My first feeling is that they will stick around. They will just focus on a different target group probably because it still is, and maybe with the keyless technology stuff then you're getting two more, traditional rental car process. I have to say that every time I just use a traditional rental company it's a long process to fill in these forms, to pay your invoice there. And to make sure that they can actually process you. That's always the process of at least 30 minutes. Let's go back to your question. I think they'll stick around and they will focus on another group but they do see for sure, that's also one of the reasons obviously why they stepped in, that carsharing in a way it's not just a threat to them but also an opportunity, because if they are able to push their cars not just on our platforms but also push their cars also a bit more as a, hey car is not something you own but something you use, just like a train or a bus. That gives them also an opportunity to push their rental cars to people so for longer periods that's we're doing now in Germany and also in Denmark with driving share as it's called for longer rental periods which it was not possible for people in a case of people owning a car. And I think it's in a way the fact that car ownership might be something that's less and less a common thing, especially in bigger cities, is an opportunity for them as well. That's my feeling and why they are sort of shaking to and dancing with all these carsharing platforms is obviously also because they want to see whether they can benefit from each other. I don't see them completely going away.

Interviewer: Yeah, they definitely have to innovate because the process is so difficult.

Interviewee: The process is difficult and the only business case for them, but owning all these cars, of course, is super expensive.

Interviewer: Who do you see as your biggest competitor if you're leaving out other peer-to-peer carsharing platforms, so other mobility services?

Interviewee: Let me start with, if you just look to our strategy which is focusing on a mobility solution for people who need a car to drive outside of the city, then it's not Uber, at this moment. Unless they move, of course, they will move to other spaces, but it's not Uber. Then it's vehicle rental companies, then it's also public transportation in a sense that if there's a good, fast and efficient transportation, also the combination of in the Netherlands with trains and bikes. Every single train station you can get OV bike which is three Euros a day or something

like that. So that's one. BlaBlaCar is not really big here so that, shared rides, is not something in the Netherlands which is really big. But of course, in Germany, it is a thing, a major thing. I think those are the ones so let's say that the shared rides, the combo of public transportation, especially if there's a good connection. I think that's more important.

Interviewer: Makes sense. So, the last question, are there also companies who are offering cars on your platform?

Interviewee: No.

Interviewer: Only private individuals?

Interviewee: Yes. There might be people who will do multiple cars. Who have multiple cars, so you can argue whether they are... I just actually did analysis this morning on that, not on that but I saw some people who are doing a lot of transactions at a couple of cars. So, what I haven't dived into yet is whether these are similar cars or whether they have let's say one big van and small a smaller car and a luxury car or whether they just have four-five smaller cars that they're just renting out. I don't know but then it's more on a professional level that people have a couple of cars doing it, that might be but no we don't have companies on the platform.

Interviewer: And you're not supporting that as well?

Interviewee: No that's definitely not, no.

Interviewer: That's different among platform. Some are really open to it and the others are not.

Interviewee: Really, as far as I know, we don't want that.

Interviewer: Okay thank you.