



Peer-to-Peer Car Sharing

Transitional Pathway or Gateway Drug?



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By
DAVID GAARSDAL RØNNØV
HANNE COLLIN ERIKSEN
JASPER ROELOF DE JAGER
JONAS SØNDERKÆR MIKKELSEN
KATHRINE EMELY ISAKSEN
KIA MADSEN
SØREN WINTHER HANSEN

ACADEMIC ADVISOR
MORTEN ELLE

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CONTENT

1 Introduction	1
1.1 A Car Dependent Society	1
1.2 Car Sharing as an Element in the Transition to a More Sustainable Transport System	2
1.3 What is Car Sharing?	2
2 Problem Area: the Case of GoMore in Copenhagen	4
3 Transition theory	5
3.1 Introduction to Multi-level Perspective	5
3.1.1 Dynamic and Unstable Regimes	7
3.1.2 The Space Dimension	7
3.2 Transition of Automobility	8
3.2.1 Meso Level: The Automobile Regime	8
3.2.2 Macro Level: Pressures in the Landscape	9
3.2.3 Meso Level: Pressures in the Regime (Interlinkage between Pressures)	9
3.2.4 Micro Level: Car Sharing – A Window of Opportunity	10
4 Methodology	14
4.1 Research Design: Examining the Niche	14
4.2 Deciding on a Case	15
4.2.1 Why GoMore?	15
4.3 Research Tools	16
4.3.1 Method Combination	16
4.3.2 Quantitative Data	16
4.3.3 Qualitative Data	20
4.4 Validity, Reliability and Generalization	23
4.4.1 Validity	23
4.4.2 Reliability	23

4.4.3 Generalization of the Questionnaire	23
4.4.4 Overall Generalizability	24
5 Presentation of the Case	25
5.1 GoMore: How it works	25
5.1.1 Leasing	26
5.1.2 GoMore's P2P car fleet	26
5.2 GoMore users	27
5.2.1 Renters and owners	27
5.2.2 Age distribution	27
5.2.3 Gender	27
5.2.4 Education	28
5.2.5 Location	28
5.3 Summary	28
6 Analysis	29
6.1 Motivation	29
6.1.1 Owners	29
6.1.2 Renters	34
6.1.3 Discussion of Motivation	40
6.2 Mobility	42
6.2.1 Car Use in Peer-to-Peer Car Sharing	42
6.2.2 Daily Mobility Patterns	46
6.2.3 The Dynamic Regime	54
6.2.4 Discussion of Mobility	57
6.3 Car Dependency	59
6.3.1 Owners	59
6.3.2 Renters	66
6.3.3 Conclusion on Car Dependency	71
6.3.4 Discussion of Car Dependency	72
7 Discussion	75
7.1 Should the Niche be Supported?	75

7.1.1 Lack of Knowledge	75
7.1.2 The Risks of Peer-to-Peer Car Sharing	77
7.2 Governing Car Sharing – Protecting the Niche	79
7.2.1 The Planners’ Tools to Control the Private Domain	79
7.3 The Role of Peer-to-Peer Car Sharing in a Sustainable Transport System	83
8 Conclusion	84
8.1 The Change in Car Use and Car Ownership among the Owners	84
8.2 The Change in Car Use and Car Ownership among the Renters	85
8.3 The Effect of GoMore’s Peer-to-Peer Car Sharing on Car Use and Car Ownership in Copenhagen	86
9 Bibliography	87

1 INTRODUCTION

The overall scope of this study is sustainable transition in the transport system. The following will introduce car sharing as a possible transition path towards a less car-dependent city.

1.1 A CAR DEPENDENT SOCIETY

The technology of the automobile has shaped and changed our cities since the early twentieth century. Over decades of time, the cities were transformed to accommodate the car, and the system has become the dominant form of transport in all western countries. (Dennis & Urry 2009) Today the cities built to accommodate the car experience serious externalities of the automobile technology:

“With the environmental and social impacts worsening (congestion and carbon emissions as well as a growing list of health impacts, including obesity and depression in sprawling suburbs), the economic aspects of automobile depen-

dence are now tipping toward redevelopment and sustainable transport modes.”
(Newman & Kenworthy 2015: 2)

After a century with the car society, a tendency to prioritize other modes of transport in the cities around the globe, such as biking and public transportation, is emerging. A decline in the kilometers traveled by car is even visible in the United States and Australia, which traditionally are seen as very car dependent countries. (Newman & Kenworthy 2015) Even though other transport modes are beginning to gain ground in the cities, the European transport system is still very car dependent. On average, there is one car for every two citizens in the European Union. Almost all member states of EU have experienced an increase in the number of cars per inhabitant from 2006 to 2012, and 83 % of all passenger transportation was done by car in 2012. (European Union 2014) The infrastructure of the automobile system takes up a lot of space. In cities, where the urban area is limited, the road infrastructure competes with residential areas for surface space. In some cities, e.g. Milan, the space used for automobile infrastructure is almost equal to the space used on residential buildings. (European Environmental Agency 2002)

In *the System of Automobility* (2004) Urry argues, that despite of a reawakening trend towards public transportation in the cities, the ‘public mobility’ of the 19th century will never be completely re-established.

“Any post car-system will substantially involve the individualized movement that automobility presupposes and has simultaneously brought into being as an irreversible consequence of the century of the car.” (Urry 2004: 36)

For a century, the urban fabrics have been altered and designed to accommodate the car. Work, services and social life are today fragmented across a city region and are no longer in close proximity to the home. Furthermore, the car has changed our movement patterns and individualized mobility, enhanced flexibility and reduced the travelling time from A to B. (Urry 2004)

1.2 CAR SHARING AND THE TRANSITION TO A MORE SUSTAINABLE TRANSPORT SYSTEM

To change the current car dependency there is a need for 'technology transition corridors'. In other words, solutions that can help a gradual change from the car to other more sustainable transport modes. (Urry 2004) According to Jörg Firnkorn in Garrett & Nielsen's report (2015), car sharing can be part of the transition from today's car-system. Car sharing enables the flexibility and freedom of the car when it is necessary, but changes the main transport mode to bicycle or public transport. The freedom of the individualized movement is thereby intact, while the car sharing is combined with other transport modes. (Garrett & Nielsen 2015) The same is argued by Urry, who consider car sharing as an initiative that, in time, might contribute in a transition towards a post-car society, and thus a more sustainable transport system¹. (Urry 2004)

In Denmark, the number of private cars have risen with 241 % since the 1960s and prognoses predict that 2.54 million cars will be driving around the country in 2020 (Danmarks Statistik 2016). In 2015, 67 % of all passenger transportation in Denmark was by car, and the transport sector was accountable for close to half of the CO2 emissions in the Danish energy system. (Energistyrelsen 2016) However, despite of the national trend, the capital Copen-

hagen is experiencing a decline in kilometers driven by car, and the Municipality of Copenhagen is actively working towards a further decrease in car use. From 2007 to 2013 the trips by car in Copenhagen have decreased by 10 %. (Københavns Kommune 2015) Since 2000 the car ownership in Copenhagen have however increased with 30 %. The rise cannot simply be explained based on the demographic development in the city. (Københavns Kommune 2016) This presents an interesting paradox, where the Copenhageners have more cars today than in the last decades, despite a decrease in car use. This development result in a low utilization of the cars in the city. A study of specific areas (Vesterbro and Østerbro) in central Copenhagen, shows that 23 % to 26 % of the cars are parked in the same spot from Monday to Friday. (COWI 2017) This paradox has led to the Technical and Environmental administration's focus on car sharing as part of a solution to decrease the number of cars in the city and as a part of transitioning towards a more sustainable transport system. The Technical and Environmental administration recognizes car sharing as a part of a transition path, and it is one of the initiatives in *The Action Plan for Green Mobility* (City of Copenhagen 2012a). The plan is part of the overall *Climate Plan* which set a number of goals for the Municipality of Copenhagen, in order for it to reach CO2 neutrality in 2025. The transport sector represents 25 % of the total CO2 emissions in Copenhagen, and therefore it will require a restructuring within

the sector in order to achieve the green profile (City of Copenhagen 2012b).

1.3 WHAT IS CAR SHARING?

Shared mobility is a business model for one segment of the 'Sharing Economy' and car sharing is a segment of shared mobility. The Sharing Economy is known in different domains; in Business-to-Business, Business-to-Consumer and Consumer-to-Consumer. (Puschmann & Alt 2016) Seen in a car sharing perspective these business models can be transferred into different system models, see *figure 1: Car Sharing*. The Technical and Environmental administration have made a strategy for car sharing 2017-2020, with the goal of increasing the number of shared cars from 240 to 750 in 2020. (Teknik- og Miljøforvaltningen 2017) The Technical and Environmental administration operates with three different concepts: Two-way car sharing, one-way car sharing and Peer-to-Peer car sharing. A one-way system is a system where the cars are dropped-off at any point within a specific operating area, whereas a two-way system requires the cars to be retrieved at the same starting point. Thirdly, there is Peer-to-Peer (Peer-to-Peer) car sharing in which private individuals rent out their cars to other users of the same scheme through an online platform. This scheme also stipulates that the car be picked up and returned to the owner of the car, making it very similar to the two-way system. (Boya-

¹ A sustainable transport system is in this study based on Newman and Kenworthy's definition: A sustainable transport system creates a livable city, that is economically resilient and does not rely on the future oil market. It is a system aiming towards CO2 reductions and solving climate change issues. (Newman & Kenworthy 2015)

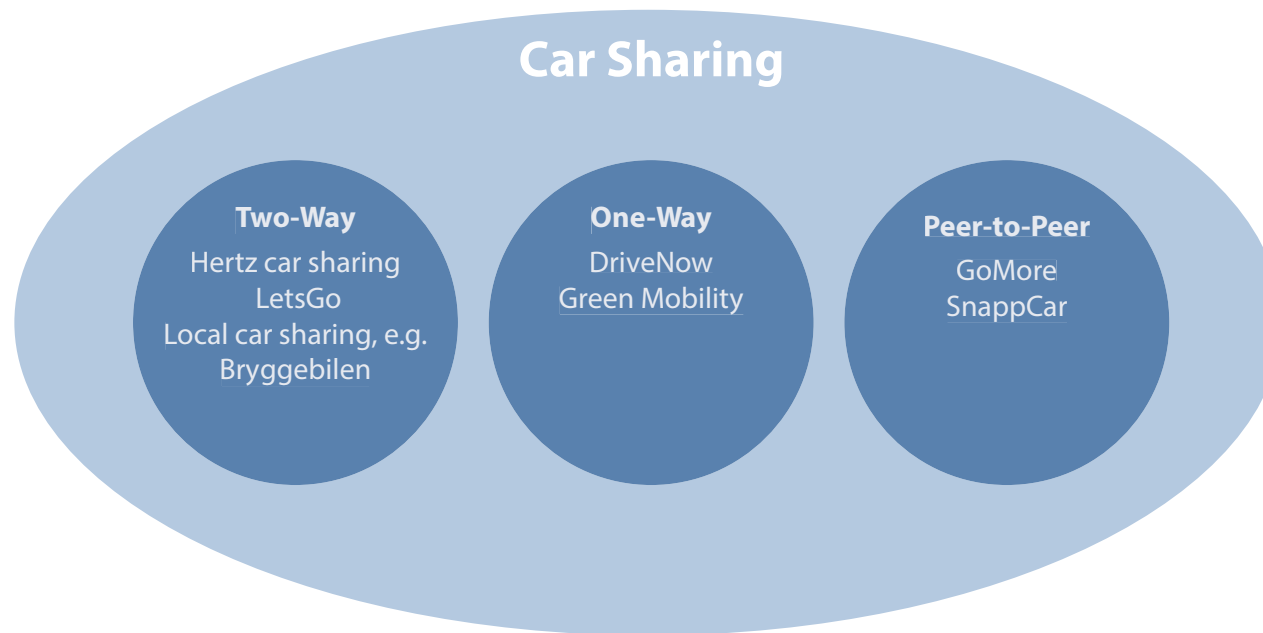


Figure 1: Car Sharing. The figure illustrates the car sharing domain in Copenhagen. Listed are the different system models and the operators that operate in the different concepts. Own production.

ci, Zografos & Geroliminis 2015; Teknik- og Miljøforvaltningen 2017) The strategy for car sharing in Copenhagen is made with a focus on the two-way car sharing schemes. This is due to the fact that this concept is the most researched so far, which means that there exists some documentation on the effects. One of the effects of two-way car sharing is that it replaces five to ten private cars, according to the strategy for car sharing. (Teknik- og Miljøforvaltningen 2017) The Peer-to-Peer car sharing concept remains the least studied car sharing scheme, in a Copenhagen context, which makes it interesting and highly relevant to study further. The effects of Peer-to-Peer car sharing needs to be discovered, if the concept is to be developed

further in municipal plans and strategies in the future.

The Peer-to-Peer car sharing concept is reflected in the term ‘Collaborative Consumption’ (CC), because it emphasizes consumption without any intermediaries just from peer to peer (Puschmann & Alt 2016). Several different terms have been used to describe the phenomenon of CC; however, the characteristic for the different definitions are that the development in technological possibilities play a crucial role in the Peer-to-Peer based activity. In this report, the concept of Collaborative Consumption will be used and it is defined broadly as “[...] *Peer-to-Peer-based activity of obtaining, gi-*

ving, or sharing the access to goods and services, coordinated through community-based online services.” (Hamari, Sjöklint & Ukkonen 2015: 2047) The Peer-to-Peer business model has resulted in new business models, like GoMore, Uber and Airbnb, which all challenge the traditional relation between economy and ownership, because their existence allows people to have access to products or services without owning them. GoMore acts as a platform for economical-technical provision and the actual sharing and lending of cars is driven by the social dynamics of the peers interacting with other peers through the platform.

2 PROBLEM AREA: THE CASE OF GOMORE IN COPENHAGEN

The role of Peer-to-Peer car sharing in a transition towards a more sustainable transport system in Copenhagen is addressed through the specific case of GoMore. GoMore is a Denmark-based ride sharing and Peer-to-Peer car sharing company that provides a platform to “[...] *arrange cheap, fun and green transport.*” (GoMore n.d.) GoMore is considered a case of Peer-to-Peer car sharing that is changing ownership and use structures in a way that is more sustainable, because the transformation of the car dependent city can leave room for other and more sustainable transport modes. This report aims to examine the relatively unexplored field of Peer-to-Peer car sharing, and how the concept is or is not contributing to a sustainable transition of the automobile system in Copenhagen. These considerations have led to the following research question:

How does Peer-to-Peer car sharing affect car use and car ownership in Copenhagen?

In this study, car dependency is defined as an intangible concept that encompasses the de-

pendency on the car as a structuring factor in society as well as a habit-forming transport mode for the individual. To this end, the potential for a transition of a car dependent city is measured in the change of car use and car ownership among the users in Peer-to-Peer car sharing. It is however important to note that the use of cars not only reflects the individual's travel choices, but is affected by the city's infrastructure and the geographical distribution of different obligations and services. (Urry 2004)

To measure a change in car use kilometers driven before and after joining the Peer-to-Peer service, is therefore not enough to determine the effect of GoMore's car sharing. How the trips in Peer-to-Peer cars affect the daily mobility patterns of the users and which trips the car sharing replaces are also found as key elements to assess the influence of Peer-to-Peer car sharing in this study. The same goes for car ownership where cars replaced by the service is 'only' the end result driven by different motivational factors and incentives. Therefore, car ownership is also researched from a sharing economy perspective and mobility perspective

to determine the norms and meanings behind the user's actions concerning car ownership. To investigate car use and car ownership, and thereby be able to assess if Peer-to-Peer car sharing is a transitional path towards a sustainable transport system, the following sub-questions have been necessary to ask:

- *What are the characteristics of GoMore's Peer-to-Peer car sharing users? And what motivates them?*
- *What are GoMore's users' mobility patterns? And what trips does a GoMore rental replace?*
- *What are the effects of GoMore's Peer-to-Peer car sharing service on its users' overall car dependency?*

The sub-questions above help determine the effects of Peer-to-Peer car sharing in Copenhagen and feed into a discussion of how Peer-to-Peer car sharing can contribute to a transition towards a more sustainable transport system in the city.

3 TRANSITION THEORY

According to Urry in *The 'System' of Automobility* (2004), car sharing, as a transition technology, can help create a shift in the transport system and end automobile dependency. However, different types of car sharing concepts have emerged and seem to have different effects on the mobility patterns and thereby the automobile dependency of its users (DTU Transport 2017; Garrett & Nielsen 2015; Wroblewski et al. 2013).

Since some degree of car ownership is a prerequisite for the existence of Peer-to-Peer car sharing, as car owners need to rent out their cars, it is unlikely that Peer-to-Peer car sharing holds the potential of radically transforming the transportation system in a way that results in the introduction of completely new modes of transportation. On the other hand, some changes can be the outcome of Peer-to-Peer car sharing, although they may not be radical to the extent that a transition to a new transportation system could be the result.

Peer-to-Peer car sharing entails new configurations of both car use and car ownership. This could indicate that the societal meanings and norms normally attributed to the car are being contested, and that in turn new norms and meanings are in the process of being produced. These changes and new configurations within the transport system are interesting to analyze in order to assess the potential and role of Peer-to-Peer car sharing in transitioning to a more sustainable transportation system. Transition theory in a socio-technical perspective is therefore the main theoretical framework of this report. The following chapter will introduce the Multi-level perspective theory and reflect on how the system of the automobile are pressured from multiple socio-technical levels. Afterwards Peer-to-Peer car sharing and the current literature's knowledge of its users will be presented, as the purpose of the study is to assess if the concept can create a change in the system of automobility.

3.1 INTRODUCTION TO MULTI-LEVEL PERSPECTIVE

The Multi-level Perspective (MLP), as presented by Frank W. Geels in his article *From sectoral systems of innovation to socio-technical systems* (2004), describes how transition from one system to another is the result of socio-technical developments that have destabilizing effects on the existing dynamics of a system. As a result, the configurations of actors and artefacts in the system can become misaligned, and the rules which govern actions and developments of a system can be contested. The transition of systems is influenced by pressures on multiple levels which creates a window of opportunity, where new developments can be introduced to the system. These new developments are being formed in **niches** at the micro level of the system which, being segregated and protected from the rules and actions that regulates the regime at a meso level, function as incubators for new system configurations.

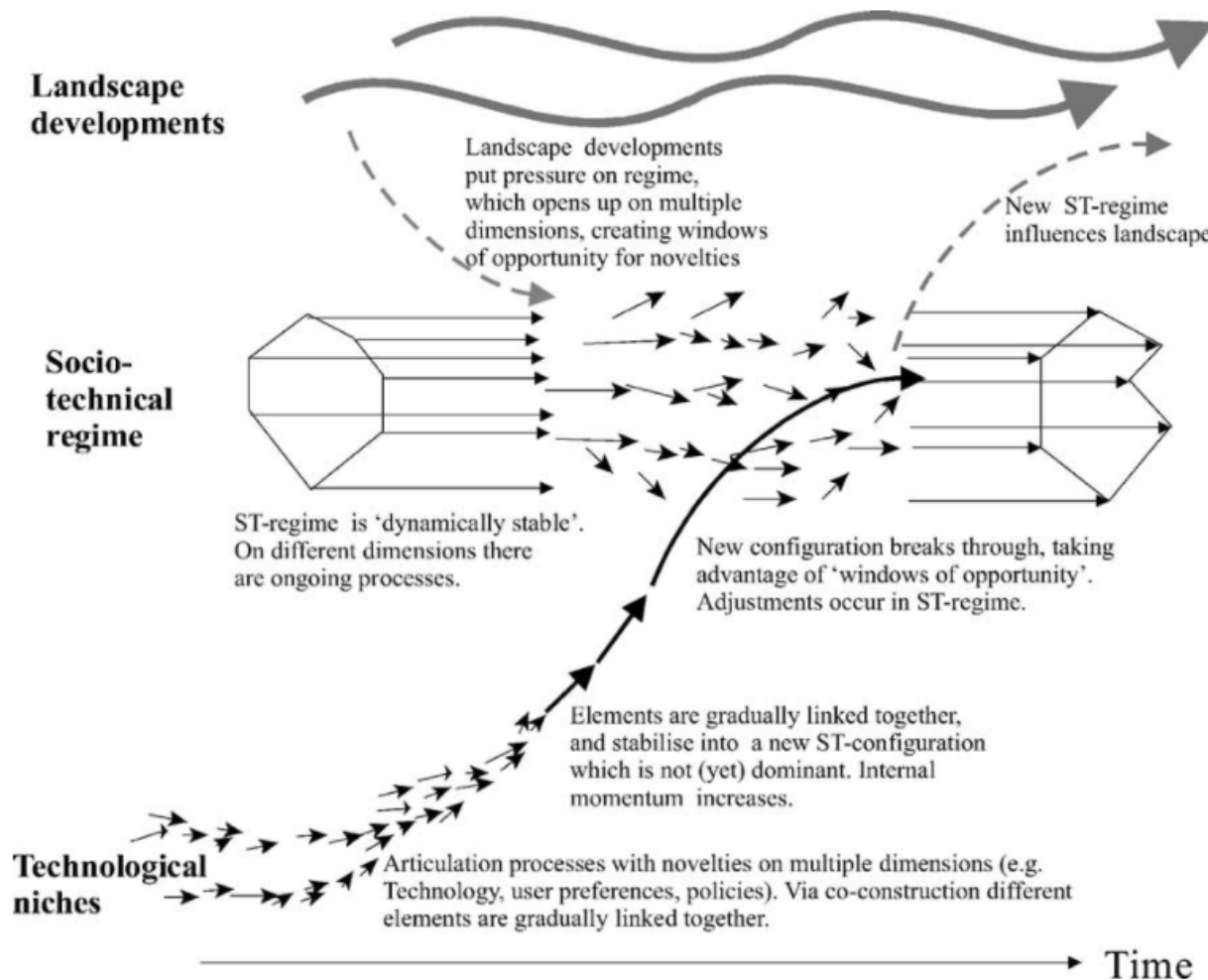


Figure 2: Transition of a system. (Geels 2004)

Figure 2: Transition of a system, illustrates the transition of a system under pressure from the different levels. The meso level of the system, also called the **regime**, is governed by the rules that guide the actor's actions and interactions. According to Geels (2004) three different types of rules maintain and reproduce the regime:

- *Normative rules*, which represent the perceptions of 'proper' behavior in different social groups, also referred to as 'norms'.
- *Cognitive rules*, which represent the perception and frames of reality through which sense or meaning is made, also referred to as 'sensemaking'.
- *Regulative rules*, which represent established legal systems and laws.

In that sense, the regime has a strong self-confirming effect, which results in developments being highly path-dependent, if the regime is stable and uncontested. At the macro level, the **landscape** physically sets the stage for the system and metaphorically places the regime in a wider societal context. At the landscape level, developments and changes happening in a larger context beyond the boundaries of the regimes can have both stabilizing and destabilizing effects on the regime. The MLP approach to understanding system transitions puts emphasis on both the socio-technical nature of society and on the co-evolving relationship between the micro, meso and macro level.

3.1.1 DYNAMIC AND UNSTABLE REGIMES

Regimes are often viewed as stable because of their reinforcing mechanism of a fixed set of rules. Regimes are thereby by definition stable and dominating, but in the article *A socio-technical analysis of low-carbon transitions: introducing the multi-level perspective into transport studies* (2012) Geels concede that the transport system might be influenced by more than one regime:

“In the transport domain there is not just one regime (automobility), but also other regimes (e.g. train, tram, bus, cycling). These transport modes have been around for many decades, are carried by specific communities of actors that have developed institutionalised practices, beliefs, capabilities etc. It makes no sense to call these transport modes ‘niches’ in the sense of being radically new and precarious innovations.” (Geels 2012: 473)

Geels argue that the other modes only provide a small percentage of the market’s mobility and therefore can be viewed as ‘sub-alternative-regimes’ to the dominant automobile regime. (Ibid.) However, based on the modal split in various cities, it can be argued that the transport system in cities no longer have one dominant automobile regime and different modes are constantly struggling for space in the city. Even the truly car dominated cities in the United States have been undergoing a transformation in

recent years (Dennis & Urry 2009; Newman & Kenworthy 2015a). It is therefore important to note that regimes can also be highly dynamic.

The current transportation system cannot be described as stable, but rather as a highly unstable regime where the relations between the different modalities continuously struggle to be assembled in new ways. As an example, the transportation system has undergone a change from clearly separated sectors of mobility to more integrated modes of transport. Today, travelers in Copenhagen can bring their bicycle on the train and change easily between bus, metro and train with an integrated payment system. The current transportation system is shaped more than ever before by the notion of multimodality where different modes are used, often in combination with each other, by users who would previously have had one dominant mode of transport making the boundaries between the modes increasingly blurred. (Lisson et al. 2017) Car sharing is just one example of the elements in this struggle to define this dynamic regime in a new way. The struggle between the different regimes in the transport system can be shaping new multimodal practices that have leverage to change the rules of the automobile regime (Dennis & Urry 2009). The interconnection between the different transport regimes is both on a physical or infrastructural level where the separation of modes is occurring less than previously, and on a strategic or planning level where the role of the car in the city

is being changed and the notion of ownership towards a car is being reconfigured (Newman & Kenworthy 2015; Urry 2004).

MLP theory puts emphasis on the interrelated nature of the social groups who adhere to a shared set of rules (Geels 2004). A highly dynamic regime is however hard to define, as the links between the actors involved and the rules that structure and coordinate their activities are changing and uncertain. In this report, the investigation of Peer-to-Peer car sharing will be viewed with a more dynamic understanding of the regime, which seems more realistic than the discrete and isolated regime with stabilized structures and actions.

3.1.2 THE SPACE DIMENSION

Existing literature and studies using multi-level Perspective as a tool in empirical analyses argue that the MLP is spatially naïve (van der Linden 2016) and that the geography of transitions is unaccounted for in the theory (Smith, Voß & Grin 2010). At a landscape level, global trends such as climate change affect areas around the world, however huge differences in consequences and thereby transitional solutions can exist from region to region. This naivety towards the spatial and the underestimation of local differences can be the result of regulative regime rules often being on a national level. While national laws and rules do have an im-

pact on the coordination and structuring of activities within regimes, regime changes might also be initiated as a result of activities occurring within a municipal, city or local community context, possibly fostered or reinforced by international actors and activities. These actions are highly place-specific, but the MLP does not emphasize their role in system transitions. (Ibid.)

In the case of Peer-to-Peer car sharing, this critique is highly relevant. In Danish towns with less than 20,000 inhabitants, the kilometers driven by car per person per day is more than twice the amount of that in the capital area of Copenhagen. (Teknik- og Miljøforvaltningen 2017) This indicates that, although the same set of formal rules govern actions within the automobile regime on a national level, car use varies immensely in different geographical locations. The geographical scope of this report is explained in section 4.3.2.4 *Using GoMore to approach members*. The specific geographical context of this area, and the way in which it is different from those of other areas, are important to be aware of, as the elements that potentially could lead to system transitions might also be different.

3.2 TRANSITION OF AUTOMOBILITY

Despite the contextual differences between Denmark and the United States, the regime of the automobile is highly embedded in the various forms of Western culture, and even though there have been several attempts to shake the regime, it is still relatively stable. (Geels et al. 2012)

3.2.1 MESO LEVEL: THE AUTOMOBILE REGIME

The regime of the automobile is constituted by many elements. The existing technology of the combustion engine, policies and regulation, the user performance of the car, the car culture which applies different symbolic meanings to the automobile and the infrastructure of the city are just some of the elements making up the current automobile regime.

As described in the introduction, the car dependency of modern society has been the result of decades of change in infrastructure to accommodate the technology of the automobile, see 1.1 *A Car Dependent Society*. The technological progress has made the car mainstream and it is no longer a technology reserved for the elite of society. The car enables a high degree of mobility and have caused a dramatic rise in individual transportation. The car is often described

as a private space where you have the freedom to go wherever you want, whenever you want. (Dennis & Urry 2009) In the article *Morning Queues and Parking Problems: On the Broken Promises of Automobile* (2006) Olle Hagman argues why the car is the favorite transport mode in a large part of the population. The car represents speed and freedom and the arguments for using a car is often that it is easy, fast, comfortable, safe and flexible compared with public transport. Furthermore, the car is more convenient when you have to transport goods and it is also seen as a sign of wealth. (Hagman 2006) Mette Jensen elaborates on this, and describes different car owner types in her paper *Bilen som kulturfænomen (The car as a cultural phenomenon)* (1997). She states that there are three different types of car owners: *The passionate car driver, the everyday car driver and the leisure time car driver*.

The passionate car driver sees the car as the only way to get from A to B, and the time spent in the car is a part of the time off. This type of car driver also gives the car a substantial symbolic value, and could be described as a car enthusiast. *The everyday car driver* uses the car to commute to and from work, and mainly picks the car because it is the fastest, cheapest and most comfortable way to carry out the trip. This type of car driver does not exclude other modes of transport. *The leisure time car driver* is only using the car for leisure trips and perceive the car as an expensive but comfortable

transport mode. This type of car driver prefers to take public transportation, but in situations where public transport is not sufficient, the car is used. (Jensen 1997) Today these different types of meanings, attributed to the car, have created an individual transport culture in the western part of the world, which can be just as difficult to change as the infrastructure of our cities. (Dennis & Urry 2009) However, in cities around the globe other and more sustainable transport modes are gaining ground, see 3.1.1 *Dynamic and Unstable Regimes*, which makes the regime of the private car unstable. New needs are pressuring the current automobile systems in the cities and changing the way the automobile system interacts with the transport system. The following segment will present some of the different pressures that the automobile regime is exposed to from the macro, meso and micro level.

3.2.2 MACRO LEVEL: PRESSURES IN THE LANDSCAPE

The external landscape pressures can change the stability and the actions at the meso level. The landscape can both be destabilizing or stabilizing the regime. (Geels 2012) The stabilizing elements are cultural and social factors such as individualization and convenience as a result of car ownership and use, which is normalized as freedom for the individual and economic growth in society. One of the most significant de-

stabilizing elements in the landscape is climate change and resource scarcity that pressures the regime to find sustainable alternatives to the way we produce and use resources. Urbanization might be another destabilizing element as increased density pressure the efficiency of the current automobile regime in the city (Geels 2004 & Hagman 2006). Furthermore, the rise of the digital society is a destabilizing element in the landscape that enables people to interact in new ways. GoMore is an example of digital platform where peers can contact and rent cars from other peers. (Puschmann & Alt 2016) The destabilizing elements gradually pressure the regime of the automobile, creating cracks that open opportunities for a system change (Newman & Kenworthy 2015).

3.2.3 MESO LEVEL: PRESSURES IN THE REGIME (INTERLINKAGE BETWEEN PRESSURES)

A regime is maintained and reproduced through the everyday actions of the actors in the system. Their actions are defined by the established rules which uphold the stability of the regime. Increasing pressure on a regime can influence the rules and make the current regime more unstable creating 'windows of opportunity' for niches to either transform or replace the regime. (Geels 2004) The fact that there is no dominant regime in the current transport system of Copenhagen, and that multiple mo-

des are competing pressures the automobile regime. Multiple ways of ownership, modes and many different trends is a part of this complex reality. Below, however, only relevant developments concerning car sharing, which are conflicting with the current automobile regime in the transport system, will be presented.

3.2.3.1 FROM OWNERSHIP TO ACCESS

Sharing economy challenges traditional ownership by creating possibilities for sharing resources. For decades, the individual transport which is the core of the automobile regime has been enabled by private car ownership. This movement from ownership to access is pressuring traditional private ownership. Sharing economy has gained more ground over the last years and it is predicted that sharing economy will have major impacts on, both the practitioners and policy makers. Sharing economy is considered an umbrella concept under which there are several different initiatives that are driven by the development of the information and communication technologies. Sharing economy has evolved due to the changes in the attitudes towards consumption, and a renewed concern for ecological, societal, and developmental impacts. In combination with this, an increasing focus on climate change and a desire for social embeddedness through locally oriented consumption, has made sharing economy models an interesting alternative for consumers. (Hamari, Sjöklint & Ukkonen 2015)

COLLABORATIVE CONSUMPTION

There are three main drivers that can be identified for the development of Peer-to-Peer (Peer-to-Peer) or Collaborative Consumption (CC) models, see 1.3 *What is Car Sharing?* The first is a change in consumer behavior; it has become more attractive to use products or services temporarily rather than own them permanently. The main reasons for the change in behavior is the requirement of convenience, more affordable prices and a greater focus on environmental responsibility. The second driver is the development of social networks through community platforms. The development of the Internet has stimulated new business models and enabled peers to engage in new social networks through interaction on community platforms. The new possibilities for social relations enable a paradigm shift from owning goods or services to sharing them. Within these new markets, mechanisms for trust and reputation are developed which ensure a reliable payment for sharing the service or products. The last important element is the smart mobile devices and electronic services, such as payments via an app, making sharing easy and convenient. (Puschmann & Alt 2016)

3.2.3.2 NEW PARADIGMS IN THE TRANSPORT SYSTEM

In the last decade, a new understanding of transport has emerged, and transport is today seen as 'mobility' by some. The formerly domi-

nant 'predict and provide' transport planning, which has been the main paradigm in car dependent regimes, is under pressure. The mobility paradigm differs from traditional transport research by looking at society as a system that can support human behavior and thus have a major impact on the individual's mobility. Mobility research has a broader and more complex understanding of travel patterns and attribute transportation elements of cultural and social meaning. The transport demand is in the new mobility paradigm seen as the result of people's need to fulfill a number of social obligations. The mobility research explains how activities in everyday life is connected to transportation. The modes of transportation and activities are interconnected which links travel to experiences, performances, and affordances. (Sheller & Urry 2006) The understanding of mobility is therefore also an understanding of the different social, symbolic, cultural and physiological meanings that influence our choice of transportation. (Urry 2006) The shift from the 'predict and provide' paradigm in transport research to a new sustainable mobility perspective is challenging the planning in the current automobile regime. (Urry 2004)

INCREASING DEMANDS FOR MOBILITY

The use of cars in many urban environments seems to be decreasing while the share of other modes of transport in cities are growing. (Newman & Kenworthy 2015) This tendency in various cities all over the world can be caused

by new emerging trends of urbanization, lack of space in the city, and shifting values under economic and environmental pressure of the landscape which demands a new form of urban mobility (Mendez, Monje Jr & White 2017).

"[...] Two fundamental trends are challenging the transportation sector and thus transforming cities as a whole. The first is higher pressure on the transportation systems due to rising mobility demand induced by urbanization and limited space. The second is the increasing complexity of transportation options to satisfy this demand due to new mobility services." (Lisson et al. 2017: 90)

With the lack of space in the city and increasing levels of congestion the car breaks its promises of freedom and speed and in some cases the car is no longer able to fulfill the mobility demand (Hagman 2006).

3.2.4 MICRO LEVEL: CAR SHARING - A WINDOW OF OPPORTUNITY

The developments mentioned above are all affecting the strength of the automobile regime. New demands are affecting actions and rules of the current regime creating cracks and opening windows of opportunities for emerging niches from below. (Geels 2004) In the article *The System of the Automobile* (2004) Urry argu-

es that car sharing, among other new mobility trends in the car dependent regime, is a sign of an emergent transformation of the transport system. Car sharing has emerged as a niche to fill the need for a service of increased mobility in a dense urban environment. (Karim 2017) Car sharing in general is an expression of a shift from ownership to access in the transport system. (Urry 2004) The combination of a trend of moving towards access instead of ownership and a growing skepticism in the perception of the car have made car sharing more prevalent. It is forecasted that 34 % of car owners and the same for non-car owners in America and Europe change attitude towards renting and renting out their cars, in order to fulfill the needs for mobility in the future. (Wilhelms, Henkel & Merfeld 2017) New mobility services such as Business-to-Consumer car sharing has started a de-privatization of the car putting the parking fees, maintenance and other economic responsibilities back on the car manufacturers, enabling a flexibility and economic incentive to use other modes of transport as well (Bardhi & Eckhardt 2012, Urry 2004). Car sharing is often combined with other mobility services in the city and is only used when it is most convenient (Karim 2017) which often results in a multimodal travel pattern.

3.2.4.1 THE NICHE DEVELOPMENT: PEER-TO-PEER CAR SHARING

A niche is a socio-technical innovation often protected from the normal regime market.

(Geels 2004) As an example traditional car sharing schemes have in some cases been protected with different parking policies than the regular car-based market in Copenhagen, and is thereby helped gain access to a local market. (Shaheen, Cohen & Martin 2010) A niche is usually supported by different user groups acting on different rules than those established in the regime. The groups are often characterized by innovative frontrunners or users driven by ideological values. (Geels 2004) The following segment will describe the distinctive traits of the user group existing in the current literature about Peer-to-Peer car sharing.

3.2.4.2 USER GROUP DISTINCTIONS

The motivation for participation in different sharing economy models have been studied. Hamari, Sjöklint and Ukkonen argue in their article *The Sharing Economy: Why People Participate in Collaborative Consumption* for four different categories from which the motivation for participating in Collaborative Consumption can be explained. A distinction is made between an intrinsic and an extrinsic motivation.

Intrinsic motivation	Extrinsic motivation
Sustainability	Reputation
Enjoyment	Economic benefits

The participation in CC has generally been characterized by **sustainable beliefs**, such as helping others and the environment, and sharing platforms are used to uphold an environmentally friendly marketplace that minimizes the impacts of the consumption. **Enjoyment** in various forms of activities seems to be the key motivator in the continued use of many sharing services. **Reputation** can be another motivation factor in CC. By sharing, the individual can gain reputation among other people and this reward can be a driver for active participation. Sharing services are often perceived as **economically** sound and saving money and time can also be a motivational factor for participating in CC. It seems that: *“Perceived sustainability is an important factor in the formation of positive attitudes towards CC, but economic benefits are a stronger motivator for intentions to participate in CC.”* (Hamari, Sjöklint & Ukkonen 2015: 2055)

MOTIVATION FOR PARTICIPATING IN PEER-TO-PEER CAR SHARING

There is still missing research on the actual motives for joining Peer-to-Peer car sharing (Wilhelms, Henkel & Merfeld 2017), which justifies this research. Advocates for different concepts of sharing economy e.g. CC promotes motives of unselfishness and environmental concerns, while researchers (Hamari, Sjöklint & Ukkonen 2015) found more extrinsic motives dominating such as economic benefits. This indicates that a contradiction exists between the people

advocating for CC and the actual motivation among the users of these sharing services.

The findings from Wilhelms, Henkel & Merfeld's study on German Peer-to-Peer users (2017) showed that car owners were motivated to participate for three different reasons. Most owners were driven by saving money, not for a particular purpose, but rather attracted by the idea of avoiding costs and increase their savings though the participation in a Peer-to-Peer network. Another group of the owners were not motivated by saving money but rather to spend the additional income on something they otherwise would not. The least represented group does mainly participate for altruistic reasons such as being motivated because it feels good to enable others to fulfill their mobility needs. Even though they are ideologically motivated, they are still rational and make cost-benefit calculations, the same way the group that are motivated by economic reasons does. (Wilhelms, Henkel & Merfeld 2017)

Among the renters four different categories of motivation were found. One of the most prominent outcomes were those who are exclusively driven by saving money on their use of mobility, and these people value low and transparent costs of the cars. Another group were motivated by easy accessibility and convenience which was related to saving stress, effort and time, and the participation in car sharing enables the users to easily get to the car they are renting. Others use Peer-to-Peer car sharing to

express themselves and value Peer-to-Peer car sharing for the variety of vehicles and the ability to express status. The last prominent renter type is most concerned about certainty and trust about both the car and the person who rents it out. They value that car sharing enables the exact experience they desire by meeting the specific mobility requirement. (Wilhelms, Henkel & Merfeld 2017)

The economic aspect seems to dominate the category of both owners and car renters. Despite the dominance of the promoting of intrinsic motivations by advocates for sharing economy, it seems as if that reality is another and the members, to a very high degree, are driven by economic benefits. The environmental benefits are not completely forgotten; they are not the reason for participation, but are most of the times perceived as an adverse effect of the participation in Peer-to-Peer car sharing. (Ibid) Even though the users are attracted to gaining an economic profit, they are at the same time environmentally conscious, in the sense that they perceive car sharing as a sustainable mode of transportation. The study indicates that the renters and owners have different motivations and value different aspects of Peer-to-Peer car sharing. This means that when examining the usage of Peer-to-Peer, it is considered important to make a distinction between the motivations for the people who rent out their car and those who rent other people's cars. The study's results are based on German Peer-to-Peer car

sharing users, which means one should be careful about transferring it directly to a Danish context. The niche developments are highly linked and affected by the system that they are in. However larger cities in Germany have a higher number of cars than Danish cities (European Union 2014) which means that it is important to be aware that results of the study can only be transferred to a limited degree due to the contextual differences. However, it can be assumed that several of the motivational factors among the Danish Peer-to-Peer users also will be different for the users and the renters respectively, which is why this study will attempt to take into account the difference between the two user groups.

3.2.4.3 MULTIMODAL TRAVEL PATTERNS

No research has yet been done on the mobility patterns of Peer-to-Peer users. In this regard, the traits of the niche's user group is unknown. However, studies of other Business-to-Consumer car sharing concepts have shown an overall tendency towards a reduction in car use in the user group, because they start to rely on public transport and biking as their main transportation. The users of car sharing organizations seem to use a variety of transport modes depending on their destination (Firnkorn & Müller 2011; Wroblewski et al. 2013), a tendency that aligns with the increasing demand for mobility services in the city, see 3.2.3.2 *New Paradigms in the Transport System*. The transition of the car dependent regime that car sharing as a niche

promotes might therefore be a stepping stone to multimodal travel patterns.

In recent years, the transport regimes described in multi-level perspective theory have become more complex in the literature. In the article *A Socio-technical Analysis of Low-carbon Transitions: Introducing the Multi-level Perspective into Transport Studies* (2012), Geels recognizes that different transport modes do compete in the system. However, multimodality, which is a step further in describing the unstable regimes in the transport system, is not present in the current transition theory literature. Multimodality makes the transitions in the transport system much more complex than ever before. Not much research has been done on multimodal travel patterns. Traditionally the focus has been on primary modes of transport in behavioral studies. (Bardhi & Eckhardt 2012; Clifton & Muhs 2012) According to Clifton & Muhs, a multimodal trip is: “[...] one that involves switching between different travel modes at least once as part of a journey between an origin and a destination.” (Clifton & Muhs 2012: 74) Figure 3 illustrates an example of multimodal trips.

Despite the lack of research on this new multimodal mobility, some tendencies in the multimodal patterns can be pieced together from different studies of modern urban mobility. The multimodal transport behavior seems to require:

- Flexibility of the individual’s travel choices and the transport system (Karim 2017; Hinkeldein et al. 2015)
- Use of an intelligent travel information system (app) (Lisson et al. 2017; Ronald et al. 2017; Hinkeldein et al. 2015)
- A capacity to make decisions as you go – and not be restricted by departure schedules or congestion. (Kesselring 2006; Lisson et al. 2017)
- Give the travel time meaning such as an opportunity for work, relaxation, exercise or an environmental choice. (Vannini 2010; Kesselring 2006; Urry 2009; Hinkeldein et al. 2015)

It is unclear if the mobility parameters of multimodal travel can be observed among users of Peer-to-Peer car sharing. But as car sharing is a niche born of the need for increased mobility in the urban environment, it does not seem unlikely. The travel patterns of Peer-to-Peer users are going to be investigated further in this report.

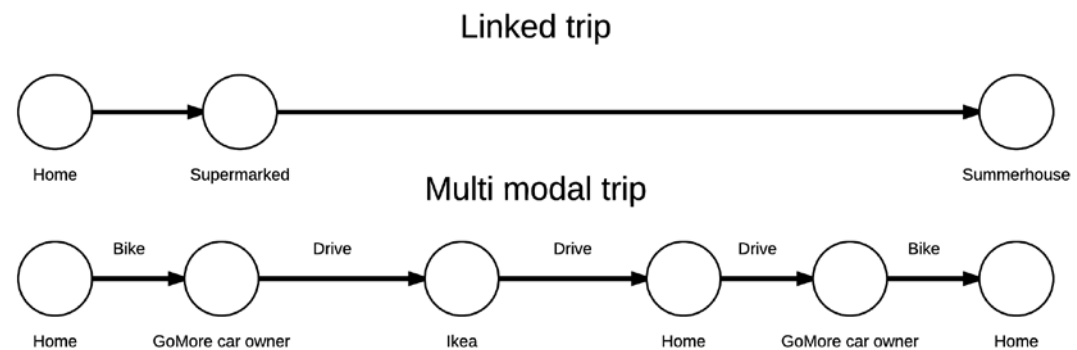


Figure 3: Illustration of the difference between linked trips, where you have an activity along the route of the trip and multi-modal trips where you change transport modes along the way (Clifton & Muhs 2012: 75). Own production.

4 METHODOLOGY

The transport system in Copenhagen is increasingly changing to a more multimodal system, which means that the regime of the private car is exposed to pressures that forces new meanings, associated with the car, to emerge. GoMore is an example of how these pressures are handled, attempting to create new meanings out of the private car by reorganizing ownership of cars. In this report, the pressures on the traditional arguments for having a car are identified, see section 3.2 *Transition of Automobility*, as well as how people change their story of using the car. In the following chapter, the methodological considerations will be presented and described. It will outline the report's empirical work and how the research question will be investigated.

4.1 RESEARCH DESIGN: EXAMINING THE NICHE

Car sharing is investigated as a niche through the lens of the multi-level perspective (MLP). If Peer-to-Peer car sharing is indeed a niche development and not merely a change happe-

ning within the existing regime, then the car sharing users will most likely share a set of meanings and rules connected to using and owning a car that are different from the users in the automobile regime. In this report, it is attempted to uncover how the users of GoMore's Peer-to-Peer car sharing service as a group might be different, in relation to car use and car ownership, from groups in the regime. The approach to analyzing the effects of Peer-to-Peer car sharing in this report is outlined in *figure 4*. Using GoMore as a case and MLP to analyze a future transition to a more sustainable mobility system, the report touches on topics such as the sharing economy, collaborative consumption and urban mobility. The methodology is based on using a quantitative online questionnaire and qualitative telephone interviews to enlighten our understanding of the user group and qualitative expert interviews in person with key actors within the field. The data on the user group is analyzed with respect to the users' motivation to use GoMore, their mobility patterns and GoMore's effect thereupon and the size and shape of their car use and car ownership, all in order to be able to assess their level of 'car dependency'. This finally enables the report to give an assessment of whether car sharing has a role in the transition to a sustainable transport system and if so, what that role should be.



Figure 4. Diagram illustrating the structure of the logic behind the report. Own production.

4.2 DECIDING ON A CASE

In this section, the different arguments and considerations behind the choices related to having a case study approach will be discussed. The case study, as research design, provides the opportunity to investigate a subject in great detail. The geographical setting of this case study is Copenhagen, see map in section 4.3.2.4 *Using GoMore to Approach Members*, and the subject is GoMore's Peer-to-Peer car rental users.

4.2.1 WHY GOMORE?

Copenhagen is an interesting case for Peer-to-Peer car sharing. The high percentage of cyclist and users of public transport in Copenhagen renders the car unnecessary in many citizens' daily transport, see 6.2.2.1 *Primary Transport Modes*. It suggests that car sharing, in the context of Copenhagen, can enable a life without owning a car. But it could also be a problematic case, if car sharing is a transition path to car ownership and car use, for former cyclists. In a sustainability perspective, these potentials and risks are interesting to examine. GoMore has been chosen because it is one of the largest operators in the Copenhagen area for Peer-to-Peer car sharing and they experience rapid growth (Jensen 2015). Being one of the most established organizations present in the niche of Peer-to-Peer car sharing might make for a bigger variation in users, thereby also ma-

king GoMore a suitable case for this report. With this in mind, along with the fact that the management of GoMore was open to contributing with information of the service, GoMore was chosen as a case.

GoMore is an atypical case of Peer-to-Peer car sharing because it is a hybrid of different services. GoMore started as a ridesharing service, later added a car sharing service and most recently a leasing service as well. GoMore is an interesting case that represents the contradictions in Peer-to-Peer car sharing: On one hand, they promote a city with less cars because the citizens are sharing their cars, and on the other hand GoMore provides leasing and thereby a form of car ownership by promoting that the car is rented out through their website as a way of financing the lease. The concept of GoMore leasing will be further explained in 5 Presentation of the Case. The case of GoMore is therefore highly relevant in the debate of car sharing as a transition to a more sustainable transport system. The case study is suited to produce context-dependent knowledge, and becoming an example used for further learning (Flyvbjerg 2011), as no existing research focuses on Peer-to-Peer car sharing in Copenhagen. It is central to acknowledge the fact that the results of this study is highly affected by the social, economic and cultural context which applies to Copenhagen. One of the goals of this report is to study the whereabouts of GoMore's Peer-to-Peer users in Copenhagen, and by doing

so, the contextual reality cannot be ignored. However, the study can identify underlying mechanisms that to a much lesser degree are place specific.

The strength of the case study is that it provides a frame that makes it possible to produce context-dependent results that give a unique picture of reality in the specific context but at the same time can be used to make some general considerations about the underlying mechanisms that influence the patterns and use of Peer-to-Peer car sharing services. Besides this, the case gives the opportunity to examine the phenomenon in depth and provide a unique insight into the topic: GoMore's Peer-to-Peer car sharing. It is important to recognize that the transport system surrounding the niche is affecting the niche to a high degree, which makes the case study a useful method to investigate the specific socio-technical context. The approach of investigating the case is described in the following chapter.

4.3 RESEARCH TOOLS

This section presents and explains how the different research tools are used in the process of writing this report. Secondly, it provides an overview of the empirical data gathered through a questionnaire and interviews, and how the two were conducted.

4.3.1 METHOD COMBINATION

This study seeks to understand the general use of GoMore's car sharing service, but also the underlying mechanisms that influences how the members of GoMore are using the car in everyday life. To gain a deeper understanding of car sharing as a niche, it is found necessary to investigate GoMore's users, and how the niche has affected their car ownership and mobility patterns in general. Therefore, the report uses a mix of both quantitative and qualitative methods in order to understand the user's general travel patterns and at the same time understand their sensemaking about the car.

A quantitative approach was chosen to start off with, as it provides a broad overview and gives an understanding of the general use of GoMore. This was done as a questionnaire. The quantitative method was supplemented by two different kinds of interviews: *Stakeholder* and *user interviews*. The stakeholder interviews supported knowledge concerning car sharing

from a private organization (GoMore) and a public organization (Copenhagen Municipality). The individual user interviews, conducted with users from GoMore, provided an in-depth understanding of the GoMore user's actions. The use of qualitative and quantitative methods increases the confidence in our findings and strengthens the study of our users, because the different methods are reinforcing each other. (Bryman 2008) The two approaches will be unfolded, in a detailed manner, in the forthcoming sections.

4.3.2 QUANTITATIVE DATA

To examine the niche it was decided to distribute a questionnaire to a sample of GoMore users. The purpose was to uncover whether the GoMore users are car owners or car renters, what their mobility patterns are, their motivation to join GoMore, how GoMore has affected their use of cars, statistics regarding their latest trip and their overall demographics. The questionnaire can, as a tool, provide an overview of the previously mentioned topics, thus providing a better understanding of the Peer-to-Peer car sharing niche and its users. It was chosen to do an online questionnaire as it would have a larger reach, and the data would be easier to manage afterwards (Fuglsang, Hagedorn-Rasmussen & Olsen 2010). An important consideration when choosing to do an online questionnaire is that it can limit the respondents to

people who use the Internet. This limitation was accepted as access to the Internet is required to use GoMore in the first place.

The questionnaire was designed in Google Forms. The questionnaire was sent to a total of 818 people, of which 218 responded. The response rate is described further in section 4.3.2.6 *Response Rate*. One drawback of Google Forms is that the given answers first are available as a response when the respondents have pressed 'Submit' at the end of the questionnaire. Partial responses that were not completed are thus not included. It was attempted to minimize this problem by making the respondents aware of this in the initial message sent to the users.

4.3.2.1 DESIGN OF THE QUESTIONNAIRE

When making a questionnaire it is important to limit and condense the amount of questions as much as possible, according to Fuglsang, Hagedorn-Rasmussen and Olsen (2010). The questionnaire given to the users of GoMore consisted of a total of 34 questions, see *Appendix 17*. Answers to some particular questions could exclude the respondent from other questions, which made the total number of questions less than 34 for some of the respondents. Depending on their answers the questionnaire took 1-10 minutes. The exclusion of some questions was an important feature, as it would shorten the length of the questionnaire, thus potentially increasing the amount of par-

ticipants completing the questionnaire (Fuglsang, Hagedorn-Rasmussen & Olsen 2010). The focus on keeping the questionnaire short had the unfortunate effect that some questions were left out or merged with others, even though their answers would retrospectively have been useful. One example is asking the respondents whether they sold a car because of GoMore. In the questionnaire, this question was left out and it was deemed sufficient to ask whether they owned a car, and if not, whether they had ever considered buying one, and if that was the case, whether they still considered buying one after joining GoMore. Having the answers to this question would have helped inform the assessment of whether GoMore leads to more or less cars in the city. Another example of an omission was giving the respondents the option of selecting that they had leased a car. Presumably, most of the lessees chose that they were car owners, for lack of a better option. Retrospectively, it would have been useful to know exactly which car ‘owners’ were in fact car lessees. The leasing part of GoMore, however, was initially not part of the scope of the study and the focus was on keeping the questionnaire short and concise in order to get as many responses as possible.

The objective of the beginning of the questionnaire was to distinguish whether the participant was a car owner or a car renter in GoMore’s Peer-to-Peer car sharing service, and to exclude the participants who did not fall into those two

categories. After the distinction, the questions would split into two different ‘trails’ one for each category, to examine the features of each type. In the final part of the questionnaire the trails merged together, to obtain demographic information on both user groups, see *figure 5*.

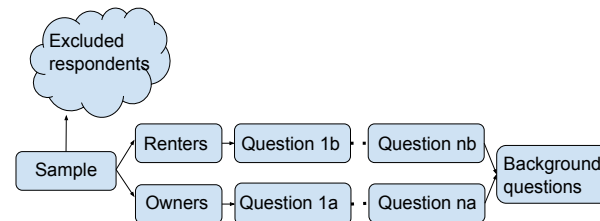


Figure 5. Diagram illustrating the questionnaire flow

A general notice of the questionnaire is that there can be a difference between what people say they do and what they actually do. Questions concerning kilometers driven and other aspects of their car use, that can be difficult to answer, were dealt with by asking more specifically to the user’s latest trip. Remembering the latest trip can be easier for the respondents and thereby give a more accurate answer than more general questions. This method was inspired by the ways in which Trafik-, Bygge- og Boligstyrelsen (Danish Transport, Construction and Housing Authority) and Danmarks Tekniske Universitet (Technical University of Denmark) had conducted their mobility study *Transportvaneundersøgelsen (The Transport Habit Study)*. (Trafik- Bygge- og Boligstyrelsen 2017)

4.3.2.2 FORMULATION OF ANSWER OPTIONS IN THE QUESTIONNAIRE

In continuation of the theoretical constructs presented, the qualitative data was used to analyze if the usage patterns and the reasoning stated and revealed in the quantitative data could reveal any indication of new types of meanings attributed to owning and driving a car. Traditionally, car ownership has often been linked to ideas of prosperity, freedom, individualism and even specific values connoted to specific car types, see 3.2.1: *Meso Level: The Automobile Regime*. Sharing economy literature (Hamari, Sjöklint & Ukkonen 2015) argues that sense-making and self-presentation is disconnected from ownership. This makes it interesting to investigate whether having access to a rental car can replace car ownership, as the traditional identity-making elements might be changed. To find out whether this was the case with the respondents in this study, several questions were asked that had value-laden response options. See figure 6 for an example from the questionnaire. The response options in figure 6 reflect various hidden values. For instance, the answer: ‘*To try car sharing*’ can be interpreted as reflecting curiosity and an openness to trying new concepts whereas: ‘*To try new car models*’ may reflect an individual for whom the specific car in itself continues to pose an attraction.

Why have you joined GoMore? *

Please tick all that apply.

- ☐ It gives me more freedom than owning a car.
- ☐ To save money
- ☐ To try new car models
- ☐ To lower environmental footprint
- ☐ To avoid parking hassles
- ☐ To get more transport options
- ☐ To try car sharing
- ☐ Andet...

Figure 6. Example of laden response options from the questionnaire.

4.3.2.3 CRITIQUE OF THE ONLINE QUESTIONNAIRE

Online questionnaires are preferable when investigating a larger amount of data. The gathering and processing of data is much more time-effective than traditional ways of collecting data. A criticism of online questionnaires is that they are impersonal and there is a greater risk that the questions will be misunderstood. To prevent these risks of misunderstandings, a pilot test of the questionnaire had been conducted among parents, friends and fellow students.

Disregarding risks, it can be argued that online questionnaires for exactly GoMore's users make good sense. It is likely to think that the relatively large response rate can be influenced by the fact that the users of GoMore are users who already uses social media platforms because a GoMore membership requires either an app or a user account on their website. Another factor to take into account is survey fatigue. Since the inception of the Internet, the number of E-surveys on all platforms have grown exponentially. The rising number of online questionnaires have in many cases lowered the response rate (Porter, Whitcomb & Weitzer 2004).

4.3.2.4 USING GOMORE TO APPROACH MEMBERS

It was chosen to contact the users through GoMore's own website, as the platform provides the possibility of reaching the car owners and the car renters in a personal message directly to the user. It was decided to make a geographical scope that includes Copenhagen and the closest suburbs that surround it, as the urban context provides the frame of research for this project. The geographical focus of the potential respondents can be seen in figure 7. The contact was initiated through private messages on the platform, inviting the users to participate. Both Danish and English questionnaires were sent, to make sure there was no limitation due to language issues. Based on the user's profile description, it was possible to figure out whether the potential respondent was a Danish speaker



Figure 7. Geographical scope of the questionnaire respondents. Not all available cars are shown on the map. (GoMore 2017)

or a non-Danish speaker. The message was brief and unambiguous and it provided the potential participant with a link to the questionnaire. An example of the English message is provided below while the Danish example can be found in *Appendix 18*. The fact that the message was personal could have resulted in more people feeling obliged to answer. This may explain the relatively high number of respondents.

For technical reasons, the URL to the questionnaire could not be clicked directly from the message in the GoMore user's inbox. The link had to be copied and pasted into a new browser tab, which made it more difficult and time consuming to gain access to the questionnaire. Furthermore, some of GoMore's members

were suspicious towards the validity of the link and the research, as for example one of them responded: “Jeg kan ikke vide om det her er en falsk mail” (English: *I cannot know if this is a fake e-mail*. Anonymous, 30th March 2017). Although some people responded in such a way, most were positive towards the questionnaire and towards being approached. These messages were responded to directly, and several of the members seemed to be grateful for getting a response and replied that they would then complete the questionnaire.

Hi [name],

My name is Jasper and I study at Aalborg University in Copenhagen. My study group and I are writing a master's project about GoMore's users. I apologize for contacting you this way but we need the inputs from you and other GoMore users. You can win 2 cinema tickets as a token of our appreciation!

We hope you will answer our short survey – see the attached link: <https://goo.gl/forms/qVzy3rBFMDP-B1EtJ2>

To open the survey you need to open this message in a browser and paste the link into a new browser.

I hope you have the time to help us, it means a lot!

Sincerely,

Jasper

Figure 8. Template of the GoMore message to potential respondents in English for the non-Danish members.

4.3.2.5 USING FACEBOOK AND INSTAGRAM TO APPROACH MEMBERS

GoMore has a strict privacy policy, which required that we searched for other methods to establish contact to the members. Facebook and Instagram were used as tools to identify and later contact the GoMore members. This was done with the same geographical focus in mind as the previous approach, so that only the Facebook users living in that area were considered. It is worth mentioning that even though they were members they were not necessarily using GoMore. This might have affected our sample, in the way that we also got answers from users who only used GoMore once but yet still are members.

4.3.2.6 RESPONSE RATE

The questionnaire was sent out between March 30, 2017 and April 3, 2017 to 818 GoMore users on two different platforms, and, as seen in figure 9, achieved a response rate of 27 %. Compared with another car sharing study, where a similar method of contacting the users was implemented, 27 % is a rather high response rate. (Garrett & Nielsen 2015)

The result showed an overrepresentation of men (60 %) in the questionnaire. This overrepresentation can be explained by the fact that the population that was asked to participate consisted of 65 % men and 35 % women. And another study also shows that it can be assu-

med that there is an overrepresentation of men in the overall user base of car sharing in general. (Firnborn & Müller 2011)

The questionnaire was sent to	818
Facebook	222
GoMore	596
Responses	218
Response rate	27 %
GoMore car rental users	163

Figure 9. Response rate

4.3.2.7 ANALYZING THE DATA

The questionnaire was closed for new responses after two weeks as we had to proceed with the data analysis. To reduce the sampling variance the sampling data are trimmed. The purpose of trimming the data was to reduce the variance while also avoiding introducing any considerable bias. Out of the total number of 218 answers, 55 people either did not use the car sharing part of GoMore or had not submitted invalid responses. Furthermore, sampling variances such as answers in the ‘Other’ category are, depending on the given answer, included in one of the existing answer options. This introduces a bias, in the way that we chose to move the answers from one category to

another. This may have influenced our results in a way that is more focused on the general answers than the specific ones. However, it also worked the other way around, categories were created when several respondents answered the same in the ‘Other’ category.

The final, cleaned sample consisted of 163 respondents. Out of the 163 respondents 54 were renting out their own car through GoMore and 109 were renting other people’s car through GoMore. The data was processed in Microsoft Excel, and graphs and tables were made to visualize the characteristics of the users. In some cases, question results were crossed using pivot tables to find out how different groups within the population performed certain actions. This resulted in a more refined picture, which could be used to examine different trends within the groups.

4.3.3 QUALITATIVE DATA

The qualitative data collection covers interviews with GoMore’s users and stakeholder interviews. The considerations regarding this data collection are explained in the following section.

4.3.3.1 USER INTERVIEWS

In addition to the questionnaire, the project group recognized the need for qualitative

data. The questionnaire provided statistical background knowledge about trends and tendencies among GoMore’s users, but in order to explain why these trends were appearing more in-depth responses were needed. The interviews were made to understand and explain why informants were acting the way they are (Fuglsang, Hagedorn-Rasmussen & Olsen 2010). Specifically, respondents were asked about their reasoning behind decisions such as whether or not to buy a car and how they determine their transport mode of choice. The questionnaire was conducted several weeks before the interviews with the GoMore users, which made it possible to use the results from the questionnaire actively and incorporate it into

the individual interviews. Similarly to the formulation of answer options in the questionnaire, in the interview guide made for the GoMore users, there was an opening question asking car owners to talk about their considerations when they bought their car, allowing them to reflect and elaborate on their reasons for making the purchase or long-term lease. For the renters that do not own a car, the question was phrased to make them reflect on what car sharing provides for them. Furthermore, the intention behind the follow-up interviews was to address the conflicting thoughts that were expressed in the questionnaire, and provoke a reflection by the users that could give an indication of the sensemaking of the car.

Renters Pseudonym		Age	Location	Amount of GoMore rentals a year	Primary transportation	Education
Luna	(F)	25	Frederiksberg	1	Bicycle	Medium Circle higher Education
Lars	(M)	32	Copenhagen Ø	15	Bicycle	Long Circle Higher Education
Simon	(M)	49	Copenhagen N	12	Bicycle	Long Circle Higher Education
Gustav	(M)	49	Copenhagen N	2	Bicycle	General upper secondary school
Caroline	(F)	29	Copenhagen SW	12	Public transport	Medium Circle higher Education
Sigrid	(F)	33	Copenhagen N	3	Bicycle	Long Circle Higher Education
Owners Pseudonym		Age	Location	Weekly use of the car	Primary transportation	Education
Magnus	(M)	37	Copenhagen S	Less than once	Bicycle	Long Circle Higher Education
Kristina	(F)	54	Gentofte	3-5	Bicycle	Vocational education
Hannah	(F)	43	Copenhagen NW	Less than once	Bicycle	Long Circle Higher Education
Klara	(F)	46	Frederiksberg	1-2	Bicycle	Medium Circle higher Education
Thor	(M)	44	Tårnby	3-5	Bicycle	Vocational education
Casper	(M)	61	Charlottenlund	6-7	Car	Long Circle Higher Education
Signe	(F)	44	Copenhagen NW	6-7	Car	Medium Circle higher Education

Figure 10: GoMore informants.

4.3.3.2 CHOOSING THE INFORMANTS

In the questionnaire the respondents were asked if they would leave their phone number and thereby agree to be contacted for further questions. 63 of the questionnaire respondents left their phone number in order to be contacted, which leaves a bias in the selection process of the informants, since the total sample was not represented. It can be argued that the respondents leaving their phone numbers are more enthusiastic or have a strong opinion about GoMore. An overview of the respondents who left a phone number was made, divided into eight categories: Four renter and four owner categories. The categories of the renters were: *'Still considers buying a car'*, *'No longer considers buying a car'*, *'Have never considered buying a car'* and *'Owns a car'*. The categorization of the owners was based on how many times during an average week they drive their own car: *'Less than once a week'*, *'1 to 2 days'*, *'3 to 5 days'* and *'6 to 7 days'*, see *Appendix 19* for an overview of the possible participants for interviews. The responses were compared to the primary transportation mode to ask the informants specific questions about their habits in everyday life. The respondents in the owner categories were also asked if GoMore affected them in their car purchase. This was done as a way of determining GoMore's effect on car ownership. It was chosen to conduct an interview with one user in every category for both renters and owners, see *figure 10* for overview of the 13 informants.

This way of structuring whom to call, introduces a possible bias as some users are included and some are excluded. This fact may have affected our results in the way that we have interviewed the more general users instead of the outliers of the sample.

4.3.3.3 HOW WE CONDUCTED THE INTERVIEWS

To make sure the interviews required as little as possible from the respondents' side, it was decided to make phone interviews. Our informants were mostly friendly and forthcoming, which may be due to the informants agreeing to participate in an interview during the questionnaire. Six interviews were made with the renters, and seven with the owners. All 13 interviews were transcribed. As the interviews were conducted in Danish a translation of relevant quotes was necessary for them to be used in the report. To minimize the risk of losing meanings in the translation, the quotes is not translated directly but translated in a way that secure the meaning of what is said by the respondents.

4.3.3.4 CRITIQUE OF THE USER INTERVIEWS

When an interview guide is created, it is common to have a preferred kind of answer to the questions. This means the questions probably will be leading the informant in the direction of the wished response. Knowing your own background, prejudices and pre-understanding of the topic will help to challenge the under-

standing of the research. (Fuglsang, Hagedorn-Rasmussen & Olsen 2010) This risk is attempted minimized by asking open questions that encouraged the informants to answer in long sentences trying to get them to tell stories about how they use cars in their everyday life, in order to capture the broader picture of why they behave like they do and what sensemaking of the car they have. The method of making a questionnaire and then using it to select the interviewees, introduces some biases. Not all answered our questionnaire, and it is most likely to think that the majority of the people who answered the questionnaire are in favor of GoMore. If this is true it automatically introduces a bias, which is an overrepresentation of people who are positively inclined. This may have affected our end results in the way that they are underdetermined or less critical than an equal number of positive and negative users.

4.3.3.5 STAKEHOLDER INTERVIEWS - MAKING CAR SHARING GOVERNABLE

After assessing the effects of Peer-to-Peer car sharing on car use and car ownership among the users of GoMore, the niche's potential as a transition path is discussed in the report. It might therefore be interesting to know how car sharing is being governed in the current transport system of Copenhagen and what the future ambitions and goals are for car sharing in the city. To determine Peer-to-Peer car sharing's influence on a transition towards a sustainable transport system main public transport provi-

ders in Copenhagen can be identified, e.g. DSB, The Metro Company and Movia. They all influence the system and thereby have a 'stake' in the development of car sharing and its effect on the transport system. However, it is only the transport system these actors provide and how it will be affected by the use of Peer-to-Peer car sharing, that will be addressed in this study. Therefore the stakeholders involved in this study are a municipal transport planner and the co-founder of Peer-to-Peer car sharing in GoMore. This project's focus is the relation between GoMore's Peer-to-Peer car sharing service, its users and the transport system, which will be seen through the lens of a transport planner situated in the Technical and Environmental Administration in the Municipality of Copenhagen. The municipal Transport Department is a main stakeholder and planning authority when car sharing is attempted to be integrated in the transport system of Copenhagen, see 1.3 *What is Car Sharing?*

Two stakeholder interviews have therefore been conducted: one with Annette Kayser who is a representative from the Technical and Environmental Administration in the Municipality of Copenhagen and another with Søren Riis who is the co-founder of GoMore. Annette Kayser is a project manager in the Mobility unit of the Technical and Environmental Administration in Copenhagen Municipality and is currently working on the implementation of car sharing into the transport strategy

for Copenhagen. Søren Riis is, besides being co-founder of GoMore, an associate professor of philosophy at Roskilde University and an associate partner of the Copenhagen Institute for Future Studies. The stakeholder interviews were conducted to give insight and knowledge about Peer-to-Peer car sharing in Copenhagen and insight of the potentials and barriers in the relation between the Planning Department in the municipality and GoMore. The purpose was to bring in perspectives on the future of car sharing from both a public and a private perspective. The interviews were semi-structured exploratory interviews, which gives the opportunity to delve into the answers given, but the interview is still following a specific theme and prepared questions (Fuglsang, Hagedorn-Rasmussen & Olsen 2010).

It is important to be aware that the two stakeholders have certain agendas. Annette Kayser is speaking from the municipal Mobility Department's perspective, and is influenced by the interest of the Technical and Environmental Administration and the policies within the Municipality of Copenhagen. The Mobility Department is working on limiting the CO2 emissions and does not want to support transportation modes with a high amount of emission, whereas Søren Riis is speaking as a co-founder of an innovative private company that is not influenced by the same policies and rules as the ones existing in the public sphere. Søren Riis is working on gathering support for

this type of transport solution. Both stakeholders are operating in a conflicted transport system, nurturing different interests. The chapter 7 *Discussion* will shed light on their different points of view and their role in a public private perspective towards a sustainable transport system will be discussed.

The knowledge obtained in the two stakeholder interviews is supplemented by literature produced by the Mobility Department of Copenhagen Municipality and GoMore. *Strategi for delbiler i København 2017-2020 (Strategy for car sharing in Copenhagen 2017-2020)* is a report published by the Technical and Environmental Administration in the City of Copenhagen in 2017. The report proposes 15 initiatives to support car sharing in the City of Copenhagen. It is written from the rationale that shared cars are reducing the number of cars in the city. The report is used to give an insight to what ambitions – goals and wishes – the Municipality of Copenhagen have towards car sharing in general. Furthermore GoMore's web page is used to get an overview of GoMore and the fleet of cars, and understand the overall characteristics of GoMore. GoMore's web page made it possible to navigate in the possibilities and limitations of Peer-to-Peer car sharing and furthermore provided an overview of cars available, their location and the price of the cars in GoMore.

4.4 VALIDITY, RELIABILITY AND GENERALIZATION

This study deploys both quantitative and qualitative methods, and a study's validity, reliability and generalizability is considered differently according to qualitative and quantitative methods.

4.4.1 VALIDITY

Validity and reliability are closely related terms, as they both concern trustworthiness and credibility (Kvale 2008). The aim of this report has been to investigate: *How Peer-to-Peer car sharing affect car use and car ownership in Copenhagen.*

The effects on car use and car ownership largely depend on whether the individual users have initiated new user forms that make them less likely to drive and own a car. In order to investigate this it is tried to conduct, an objective as possible analysis of their use of the Peer-to-Peer car sharing scheme and an in depth as possible analysis of their motivation for joining. The problem formulation has been an integral part of both creating the questionnaire and the various interview guides, as to make sure that the answers would be as directly linked to the overall analytical objective as possible. The answer to the second part of our problem formulation has been approached partly by discussing the

findings in the data analysis in relation to the more strategic statements from the stakeholder interviews and partly by relating the MLP theory to the findings throughout the analysis. In that way, the more general and theoretical discussion of how the Peer-to-Peer development relates to a transition of the transport system as whole has been achieved by combining the quantitative data with the qualitative.

4.4.2 RELIABILITY

Whether research is reliable depends on its consistency (Kvale 2008). Here, other researchers must be able to reproduce our research under the same conditions and then find the same results that have been found in this study.

The reliability of the user interviews is supported by the fact that the interviewees were sought selected in a way that all user types was represented. The interviewees thereby represented the questionnaire sample as best as possible. The reliability of the questionnaire is supported by the fact that the population that answered the questionnaire has a very similar gender split to the population that was asked to answer the questionnaire. The division of male and female of the potential respondents was 65 % male and 35 % female; that division was 60 % and 40 % of the actual respondents. This also strengthens the generalizability of the results, as research has shown that men are more likely

to participate in car sharing memberships than women are (Firnkorner & Müller 2011).

4.4.3 GENERALIZATION OF THE QUESTIONNAIRE

The gender split of the respondents can be generalized to the potential respondents. However, it can be questioned whether the potential respondents are representative for all GoMore users. The generalization of the questionnaire depends on whether or not the sample is representative (Bryman 2008). The randomness of selecting potential respondents from a list of users on GoMore's web page can be questioned, because there is no function on its website to randomly connect to a user. Approximate the first 10 out of 40 pages of users that is renting out their car were written to, and the selected potential respondents were those with more credible and active profiles: Cars and users at the final pages had limited descriptions. In a pre-attempt to avoid a very low response rate, picking the approximate first 10 pages would make the research more vital. However, this does raise questions about the randomness of selecting the population and therefore to some extent questions the ability to generalize.

4.4.4 OVERALL GENERALIZABILITY

This study takes point of departure in a case study of the niche of car sharing seen in a mobility and sharing economy perspective. A research is generalizable in the extent that the used methods allows. A case study is in its nature not immediately generalizable, in comparison to for example quantitative sampling techniques. On the contrary, a case study provides a unique insight to the reality of a specific context and can provide valuable knowledge that can be used for development and is highly generalizable (Flyvbjerg 2011). On the basis of the empirical work it is the goal to provide insight to the characteristic of the user group and the effects GoMore has on car use and car ownership. Considering the problem area of this project, it is determined that the results of the case study of GoMore's Peer-to-Peer users to some degree can be used elsewhere. However, it is highly important to keep in mind that the city of Copenhagen has some special characteristics such as a high percentage of biking in the modal split of trips, see 6.2.2.1 *Primary Transport Modes*, that makes it hard to compare with other cases. When doing case studies it is not possible to generalize empirically, because there are a lot of site-specific issues that affect the picture of car sharing and car use regardless of the city context. The generalizability is most likely to be higher to contexts, where the modal split is most reminiscent of the Copenhagen and the density of the city is approximately the same.

5 PRESENTATION OF THE CASE

This chapter elaborates further on GoMore's car sharing in Copenhagen and the demographics of the 163 valid respondents in the questionnaire among GoMore's users. This chapter contains an explanation of how GoMore works, a description of the GoMore car fleet, GoMore's users and the characteristics of the modal split in Copenhagen. In the description of the users some of the parameters characterizing the users will be presented and, as far as possible, be compared with the average Copenhagener. The presentation is meant to give an overview of the case and a description of the user group before the empirical data is analyzed further.

5.1 GoMore: How it Works

The information in this section has been obtained via GoMore's general website, through the 'terms and conditions' for renting cars and through 'mock rentals' (where all steps leading up to the actual payment of the rental has been completed on the website).

GoMore is a Danish Peer-to-Peer car sharing, ride sharing and leasing company, launched in 2005 by Matias Møl Dalsgaard and Søren Riis. GoMore is mostly used in Denmark, where over half a million people use its services. In total, GoMore has approximately 1.5 million users in Europe, as it is also active in France, Norway, Spain and Sweden. The Peer-to-Peer car sharing service of GoMore is based on a platform where renters and owners can connect and engage in rental agreements of privately owned cars (GoMore n.d.). According to Søren Riis, GoMore currently has about 10,000 cars listed for rental all over Denmark, with around 1000-2000 of those situated in Copenhagen (Appendix 16). The latter figure counts 1770 cars in the case area selected for this study.

When owners list their car for rental, they select a price of at least DKK 195 per day and the periods of time it will be available, see price example in figure 11. Renters can book and pay for the cars online. When the car rental is accepted from both the renter and the owner, a

rental contract is signed which is either printed out from the platform or accessed through the GoMore app and the keys are exchanged. The price of renting a car includes the opportunity to drive 150 kilometers per day. When this limit is exceeded the price per extra kilometer is DKK 2.5. The renter pays for fuel for any driven distance, as he or she delivers and receives the car with a full tank. To slightly compensate for the additional payment for extra kilometers, GoMore applies discounts to rentals longer than one week. The amount of discounts differ daily. According to GoMore's terms on car rental, these discounts are based on analyses of the general car rental market (GoMore n.d.). Initially, rental prices exclude insurance and service fees. GoMore charges a 20 % fee (with a minimum of DKK 100) on each rental to cover any damage, third-party costs and roadside assistance. Furthermore the company's service and administration is also covered by the 20 % fee. Optional extra costs are the reduction of own risk in the insurance, the addition of an extra driver and the ability to drive abroad.

Price of 'city' car

Kia Picanto from 2013

24 km per liter

24 hours rental

Price: DKK 300

Figure 11: Example of prices. Varies and depends on car model and the owner's pricing.

5.1.1 LEASING

Another feature of GoMore is the ability to lease a car. Different from renting, leasing is on a longer term. GoMore offers two leasing periods from 12-36 months. An important point when leasing a car through GoMore is that it is possible to rent out the car when it is not used: *"Rent your car out. Make leasing even more inexpensive by renting out your car on GoMore"* (GoMore n.d.).

5.1.2 GoMORE's PEER-TO-PEER CAR FLEET

The following section will introduce the characteristics of GoMore's car fleet obtained through observations on GoMore's website, inside of the geographical delimitation presented in 4.3.2.5 *Using Facebook and Instagram to Approach Members*. As of April 10th 2017, there is

a total of 1770 cars available through GoMore in the selected Copenhagen area that this research has as its scope. The majority of these cars run on non-renewable, carbon emitting fuel types. Diesel and petrol together account for 98,0 percent, see figure 12.

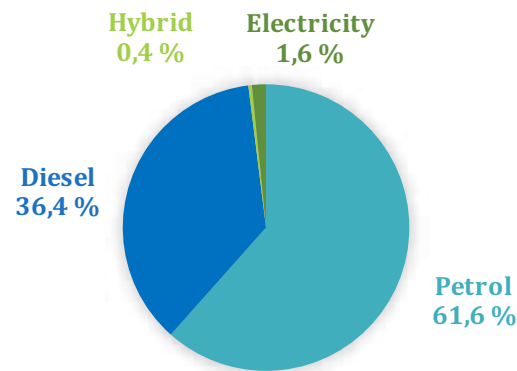


Figure 12. Distribution of Fuel Types in GoMore's Fleet.

The majority of the cars in the greater Copenhagen area are 'city cars'. A city car is one of 10 categories of cars that GoMore offers users to rent on their website, see figure 13. The city car is a compact car, with a low fuel use, typically with three or five doors and is the smallest type of car available on the website.

The Amount and Type of Cars

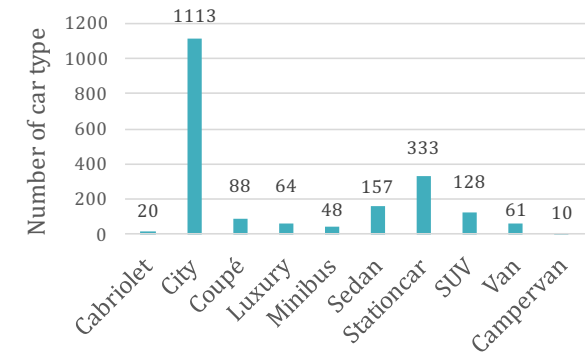


Figure 13. GoMore's car fleet by car type. Based on GoMore's categorization of cars and on its fleet of April 10th 2017 in the geographical focus of this research.

5.2 GoMORE USERS

The following section draws on data collected in the questionnaire, setting up characteristics of the user group; sex, age, education and location. The age of the GoMore users that completed the questionnaire span from 18 to 76. Compared to the Copenhagen average, GoMore users (both renters and owners) represents a larger distribution of young people in the age groups 25-29, 30-34 and 35-39 (see *figure 15*). The average GoMore user is 36 years of age, whereas the Copenhagen average is 40.4 years.

5.2.1 RENTERS AND OWNERS

The questionnaire and the corresponding analysis distinguishes between owners and renters, because renting or renting out a car are two different features of GoMore and thereby seems to entail different motivational drivers to participate, see 3.2.4.2 *User Group Distinctions*.

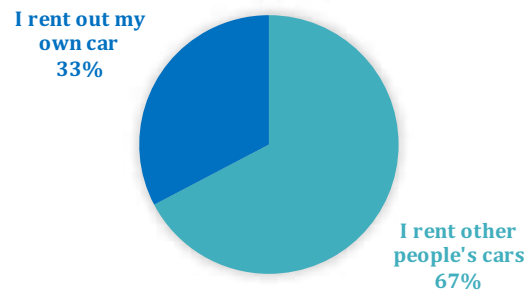


Figure 14: The distribution of renters and owners in this study.

As it was assumed that they have different associated data, the difference in users has been kept. The questionnaire respondents was primarily car renters (67 %) compared to car owners (33 %). An explanation to this distribution of respondents could be that the supply of one car has the potential of meeting the demand of several renters.

5.2.2 AGE DISTRIBUTION

This tendency might be due to the web- and app-based platform GoMore uses, that is more appealing to the younger generations. Perhaps another reason for the large representation of people in the age of 25 to 39 is the transformation into the next life stage. Generally, in this age many people move on from the educational

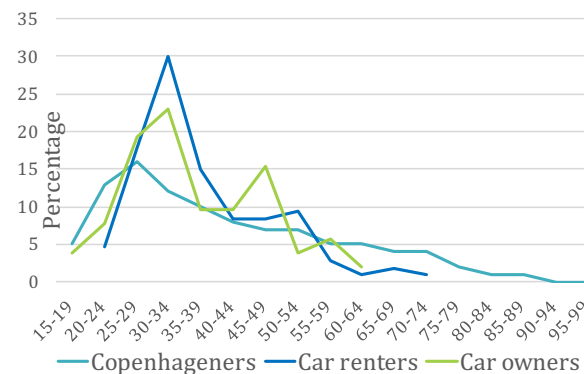


Figure 15: Age of GoMores renters and owners compared to the age of the average Copenhagen (Statistikbanken 2017).

system and start a career, build a family and so on. The need for a car may change as you get a job far away or no longer travel alone but have to bring your family. This relation between age and mode of transport has also been found in a DTU study on Danish transport habits (DTU Transport 2016a).

5.2.3 GENDER

The GoMore users are unequally divided in men and woman, as a large majority of the users are men. In Copenhagen, the gender split is almost equal: 49,4 % are men and 50,6 % are women (Statistikbanken 2017).

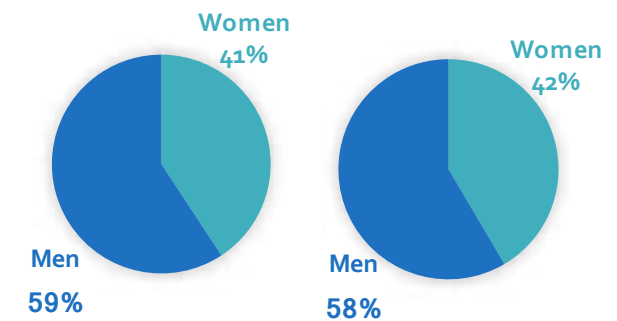


Figure 16, Gender split among respondents. Left renters: 108 respondents (44 women and 64 men) Right owners: 53 respondents (22 women and 31 men)

There seems to be an overrepresentation of men among the users group in Peer-to-Peer car sharing. There also seems to be a tendency in

car sharing schemes, see 4.3.2.6 *Response Rate* and 4.4.2 *Reliability*, where men are more likely to participate. Prior studies have found that men drive more in cars than women do (DTU Transport 2016b) and this might be the explanation behind the distribution in the data.

5.2.4 EDUCATION

There is a strong tendency for the GoMore users to have a higher level of education compared to the Copenhagen average, as shown in the figure 17 below. This is also confirmed by the educational background of the interviewed users, see further below. People with more education are more likely to participate in GoMore's Peer-to-Peer car sharing. Similar results are also seen in other car sharing studies (Firnborn, Müller 2011; Garrett, Nielsen 2015), where the user group is often more educated than the average citizen in the area.

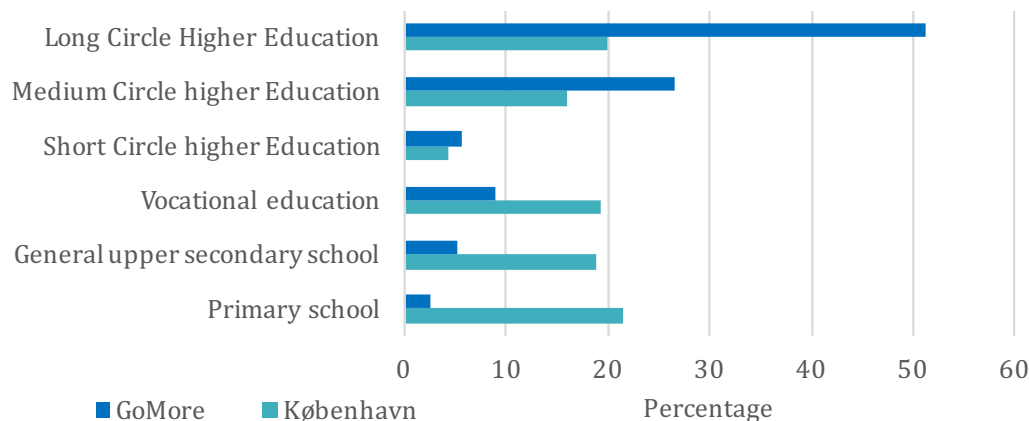


Figure 17: Educational background (Statistikbanken 2017).

5.2.5 LOCATION

The users who took part in the questionnaire are mainly from the Copenhagen area that was chosen as the case for this report in the methodology. The areas that are represented the most are: Frederiksberg (22 in two different postal districts), Nørrebro (19), Amager south (17), Østerbro (13), Inner city (9), North West (8) and Brønshøj (8). 88 % of the 163 respondents used in the research left their postal code which the map in figure 18 is based on. Frederiksberg being the most well represented area may correlate with the Peer-to-Peer car sharing user, as the population in this part of Copenhagen may fit the educational profile described earlier, as Frederiksberg is the most well-educated neighbourhood of Copenhagen (Dam 2016).

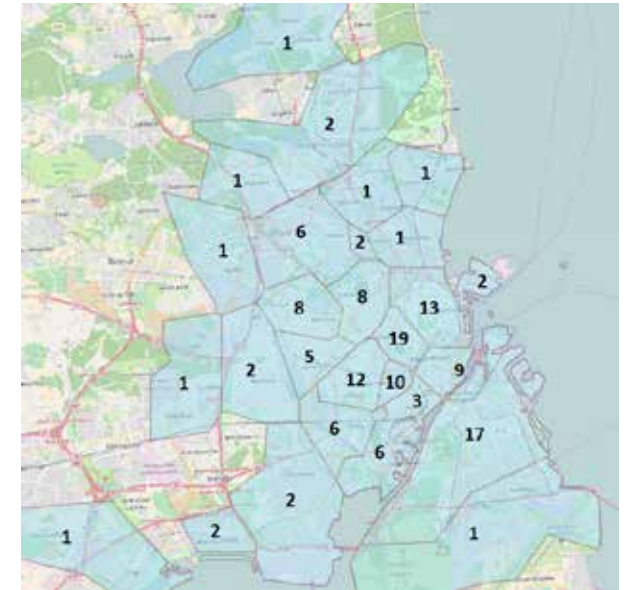


Figure 18: The map shows the representation of users in the different areas (postal codes) of Copenhagen. 143 respondents.

5.3 SUMMARY

To sum up, GoMore is a business that provides ride sharing, car sharing and car leasing. Concerning the users, there are a number of differences between the average Copenhagener and the renters and car owners of GoMore's service. The GoMore users are predominantly male and younger than the average Copenhagener and have an above average level of education. The gender rate among renters and owners is almost the same. There seem to be more users that are renting cars than owning cars.

6 ANALYSIS

The purpose of the analysis is to investigate Peer-to-Peer car sharing's effect on car use and car ownership in Copenhagen using both the questionnaire and the individual interviews made with seven car owners and six car renters. If car sharing is a transition pathway to a sustainable transport system the rules and actions of the niche's user group have to be different than the ones in the automobile regime. The first two parts of the analysis therefore try to characterize the user group of GoMore's car sharing service.

In the first part, *6.1 Motivation*, the drivers to participating in Peer-to-Peer car sharing and the sensemaking behind the choice to share will be identified. The purpose of the analysis of the user group's motivation is to assess if Peer-to-Peer car sharing is a niche defined by the same trends identified in sharing economy literature. In the next part, *6.2 Mobility*, the everyday mobility of the user group will be investigated. This analysis will define which trips Peer-to-Peer car sharing enables and research

the correlation between daily travel patterns and the usage of car sharing. The rules in a niche affect the actions of the user group, and the main purpose of the mobility analysis is therefore to identify the underlying sensemaking and norms associated with their travel patterns. Based on this analysis it will be possible to discuss if the user group follow other rules and thereby are disconnected from the automobile regime. The analysis of the mobility patterns therefore works as a point of departure for the last part of the analysis, *6.3 Car Dependency*. The interviews, questionnaire and previous findings in the two former chapters will be mobilized in the last analysis to investigate how Peer-to-Peer car sharing affects car dependency and if it can be seen as a transition path towards a sustainable transport system.

6.1 MOTIVATION

Former work on Peer-to-Peer car sharing shows a tendency to different motivational factors between owners and renters (Wilhelms, Henkel & Merfeld 2017). But sub-categories in each group are also possible and different motivation factors may be observed. It is attempted to explain whether it is possible, based on the collected data material, to identify different groups with significant differences. In the following chapter of the analysis we investigate

the motivations for participating in Peer-to-Peer car sharing in the different user groups of the niche. The motivational factors are seen as an expression of the niche's user groups sensemaking and norms. It will describe and analyze the overarching participation motives for joining Peer-to-Peer car sharing for GoMore owners and renters.

6.1.1 OWNERS

Without owners, who want to share their car, the Peer-to-Peer car sharing concept would be possible. The first section of the analysis is therefore dedicated to analyzing the owners' motivation for sharing their private car. The following section will investigate if the user group can be characterized by the same trends as found in other sharing economy research. Notions of **intrinsic** and **extrinsic** motivations are mobilized to understand the respondents' motives to use and join GoMore. It is also attempted to evaluate the results in relation to the different types of owners identified in another Peer-to-Peer car sharing study being; *Cost-cutters*, *Enjoyment enhancers* and *Experience enablers*, and investigate other potential motivational factors applicable for the Peer-to-Peer users of GoMore (Wilhelms, Henkel & Merfeld 2017).

The analysis is based on the questionnaire and the individual interviews. In the questionnaire, the renters were asked: “*What is your motivation for joining GoMore*”, the 54 participants had the opportunity to choose several answers to the question. A total number of 127 answers were given to the question. The motivational factors expressed through the individual interviews are based on seven interviews, and contrary to the questionnaire the informants were asked about their main motivation, meaning they only had the opportunity to choose their first impulse.

6.1.1.1 COMPENSATION FOR LOW UTILIZATION

Based on the data in the questionnaire the owners seem driven by different motivational factors, see Figure 19. 65 % of the respondents have joined GoMore: “*To earn extra money while still having the benefits of owning a car.*” Figure 19 shows that this motivational factor has been chosen the most in the questionnaire. More than half of the owners thereby seem to be motivated by extrinsic reasons such as economic benefits when they share a car. Another group who is highly represented (61 %) is the owners who are primarily motivated by: “*To make sure my car is used while I’m not using it*”. However, it is unclear whether this motivation is considered in a perspective of better use of resources or a more extrinsic motivation such as maintenance and the fact that it is bad for the car not to be used for longer periods of time.

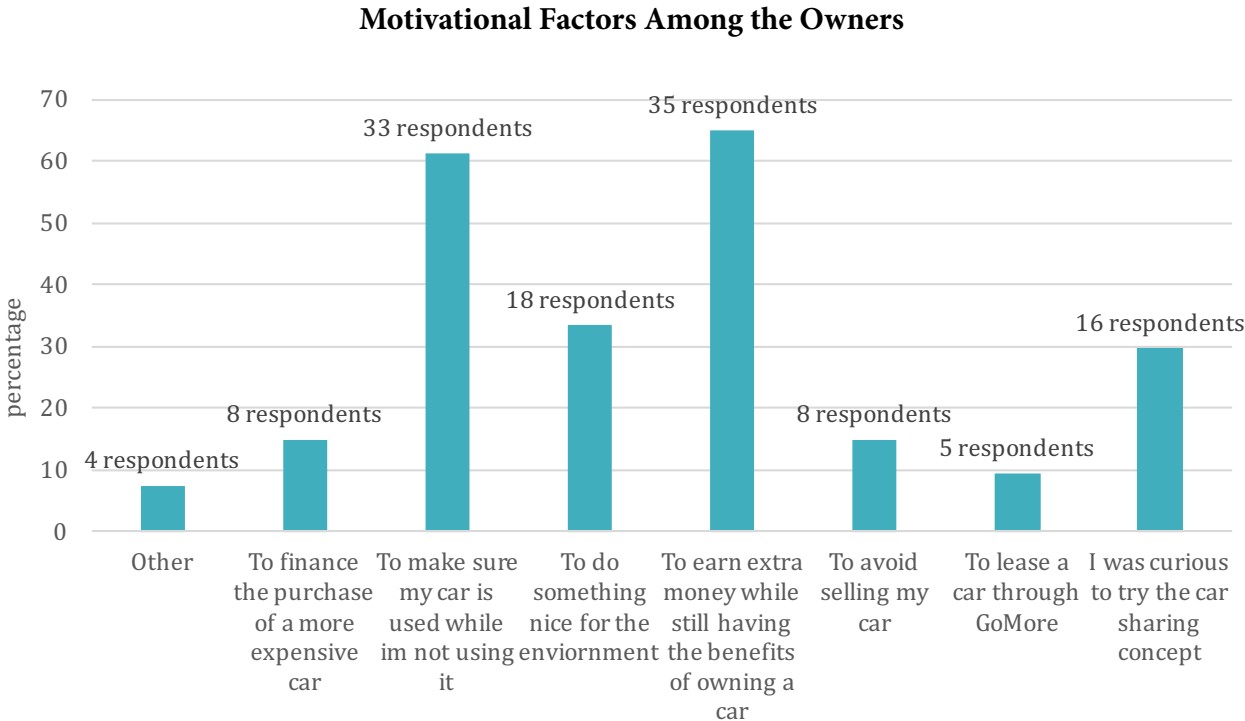


Figure 19: Column diagram showing the share of the different owner’s motivations for joining GoMore. The question is answered by 54 respondents with the options to choose more answers. The leasing category is created out from the “other” category in the questionnaire. Total answers are 127.

The owners who are motivated by possible intrinsic values such as better resource use and environmental concerns on average rent it out 27 times a year. The ones motivated by earning extra money in average rents it out 30 times a year. The average rentals per year for the whole owner groups is 28 times. There seems to be no significant indication that different motivation among the owners reflect a difference in how much they use the Peer-to-Peer car rental service. 73 % of the times “*To make sure my car*

is used while I’m not using it” was answered in combination with; “*To make money while still having the benefits of owning a car*” which indicates that the economic factor is not subordinate, see Appendix 14. This correlation suggests that the intrinsic aspects of using resources better is only considered to a limited degree.

The findings indicate that the owners are mainly motivated by the possibility of cutting some of the cost when they are not using their car.

In the interview, the owner Casper mentions that he joined GoMore because he wanted “[...] *to get some money so it [the car] did not just stand there, it was too bad that it just stood there. It should also be used and if you could get some money for it, that would be fine.*” (Appendix 6: Casper) Half of the owners in the questionnaire use their car less than 2 days a week and could be motivated to share as a way to compensate for the cost of having a car they rarely use. 4 out of 7 owners in the interviews of this study state that the income from GoMore is used to cover the monthly expenses of having the car, while the others state that the money is used to cover the expenses in the household. This could indicate that the group of car owners are focused on reducing car-associated expenses and to get an additional income. The potential of saving money seems to drive all the owners in the interviews, they are attracted by the idea of avoiding costs. Hanna describes:

“It would be too expensive if we just have a car parked in the street costing us money [...] When we can rent it out to others and get some of the cost covered then it’s fine.” (Appendix 3: Hannah)

Klara talks about her cost as well: *“I hoped that I could get some of my cost covered by renting my car to others.”* (Appendix 4: Klara) Furthermore, Magnus states that he can get his monthly cost of leasing a car covered during *“the good months [the months where the car is rented out a lot]”* (Appendix 1: Magnus) and Signe

explains that the income from GoMore is an important part of her economy each month. It seems that Signe is the only one who is dependent on the income, and in most cases the income is just an extra benefit, thus their participation in Peer-to-Peer car sharing is not meant to raise money to a specific experience but to avoid the full cost of the car. In the study of Peer-to-Peer car sharing (Wilhelms, Henkel & Merfeld 2017), the possibility of cutting costs was one of the dominant motivational factors among the owners. Even though the interviews with owners in this study indicate that cost-cutting is a main motivational factor some statements suggest that other motivational factors also play a role.

6.1.1.2 IS SHARING CARING?

The previous section raised the question of whether the owners are motivated by environmental concerns and better use of resources. The following section will go more into depth with the owner’s perception of being environmentally conscious and if intrinsic values affect their choice to share.

6.1.1.2.1 RESOURCE PERSPECTIVE

Among 127 responses given by 54 owners, 18 owners (33 %) chose: *“To do something nice for the environment”* as one of the motivations for joining GoMore, see Figure 19.

The respondents who perceive themselves as

environmentally conscious might therefore be driven by more intrinsic values. This however, is no indication that the economic factor is subordinated. On the contrary, the results, shows that owners who feel motivated by environmental aspects at the same time are motivated by the fact that GoMore enables them to earn some extra money. This indicate that there does not exist a strict line between the intrinsic and extrinsic values in the sample, as 81 % of the owners who were motivated by environmental concerns, at the same time were motivated by having a monetary gain, see Appendix 14. It indicates that even though the relatively large number of the owners perceive themselves environmentally conscious, it might just be perceived as a positive bonus of the main purpose of making some extra money.

6.1.1.2.2 SHARING AS AN EXPERIENCE

30 % of the owners answered: *“I was curious to try the car sharing concept”* as a motivational factor in joining GoMore. Being curious about a concept, is of course subjective, but the fact that GoMore is related to sharing economy makes it interesting to examine the informants attitude and motivation towards the concept of sharing in relation to Peer-to-Peer car sharing and in general.

Some of the owners associate being environmentally conscious with a better utilization of resources and the wish to *“[...] give others the opportunity to rent a cheap car.”* (Answer given

in the questionnaire). During the interviews, it became clear that several of the respondents contradicted themselves in their sensemaking about the importance of a better utilization of the car. Hannah who leases a car through GoMore states that GoMore enables her to share resources with other peers, which is of great value to her. She mentions that: *“If I have something to spare, I would also like to share it with others.”* (Appendix 3: Hannah) Even though she is very idealistic about sharing economy and concerned about better use of resources in general, she still leases a car through GoMore and uses it less than once a week. Hannah is also using other sorts of sharing concepts, and she is very idealistic about sharing:

“We like home exchange more [than AirBnB], because it is free, and people takes better care of your things because it is mutual [...] I feel like it is a little weird to make money on something that used to be free.” (Appendix 3: Hannah)

Klara is, like Hannah, very enthusiastic about sharing economy in general. She explains: “I’m a huge fan of sharing economy. We have also exchanged housing and we are members of many different things. We think it’s cool to share! The whole idea fits into our lifestyle.” (Appendix 4: Klara) Furthermore, Klara expresses that sharing is more than a concern of money, but also have a fun element. Sharing leaves Klara with a good feeling. This indicates that some owners take pride in providing a car to help others

with their need of a car. She expresses further, that she would rather prefer her items to be used than the opposite. Klara is leasing a car through GoMore and uses it 1-2 times a week. Despite the low utilization of the car, Klara only rented it out 2 times since January 2017. Klara and Hannah are an example of a ownergroup who perceive themselves as environmentally conscious and resource efficient, even though they might own a car they do not use a lot. The two women seems to be motivated to share by altruistic reasons, were sharing with others makes them feel good and boost their perception of them self in a positive way.

6.1.1.2.3 SOCIAL ASPECTS AND EXPERIENCE AS MOTIVATION

Another aspect that has been expressed in the interviews is the notion of social benefits of participating in GoMore or in other sharing concepts. Signe mentions that: *“Of course the money means a lot, but the social matters almost as much.”* (Appendix 7: Signe) She enjoys meeting new people through her membership of GoMore. A participant in the questionnaire wrote that her motivation for joining GoMore was to get to know her neighbors. These people are clearly interested in meeting other people, and they value that GoMore fulfil the potential of strengthening their social relations. Based on these types of statements in the interviews, the questionnaire could indicate that the owners who value the social benefits and environmental aspects of Peer-to-Peer car sharing are

motivated to share because of intrinsic values. However, even though these intrinsic elements seem to matter for some, they still need to be compensated financially.

6.1.1.2.4 MONEY AND SECURITY MATTERS

Hannah, who is very enthusiastic about sharing, explains that she would not rent her car out, if no monetary aspects were involved.

“It’s an expense of the car that you would not otherwise have [due to wear exposure] and that’s of course the way you justify it [making money] to yourself.” (Appendix 3: Hannah)

The attitude in the interviews is often that the car loses value when it is used and that the owners thereby need to be compensated. This is further underlined by Magnus who says:

“I really like the idea, the only monetary aspect that should be involved, should be to make sure that the risk you take by renting it out is covered.” (Appendix 1: Magnus)

These attitudes indicate that some owners are very interested in the idea of sharing their resources, but that there are certain limitations because of the loss in value of a car when it is used. The people who express a positive and committed attitude towards the concept of sharing are inclined to value insurance and security more when renting out.

Casper owns two cars, but only wants to rent out the one he is least pleased with, because he is uncomfortable by renting out a nice and expensive car. This fact is supported by Klara who answers to the question, whether she would rent her car out if no monetary compensation were given: *“Oh yeah, sure. If I exchange my house, I would like to offer them the car as well, but it requires some kind of security of my car.”* (Appendix 4: Klara) Klara is using a sharing scheme where she can exchange her house with another family for free. She would like to give the family she exchanges house with the opportunity to borrow her car as well, as long as the car is secured. It might be argued, that these people are more driven by intrinsic values but somehow the good intentions are overshadowed by extrinsic values because it is the only way they can feel secure in the process of renting out their car. Others like Kristina does not see the idea in sharing her car when it is not used without receiving any money, she expresses:

“Of course it’s annoying when it’s [the car] not used, but that’s just how it is. The bike is also parked during longer periods, that’s just how it is. But I think it’s a good arrangement to rent it out.” (Appendix 2: Kristina)

This is backed up by Thor who does not see the idea of renting out their car for free. It seems that the economic incentive in GoMore’s Peer-to-Peer car sharing service create a feeling

of security and compensate for potential losses caused by sharing the car. This also indicates that the owners would not rent out their cars if it was not for the monetary compensation. It does not seem to matter if the owners are or are not driven by intrinsic values to share, the possibility to earn money is still the dominant motivational factor either to supplement their income, cost of the car or to compensate for economic loss when renting it to others. In relation to the owners being motivated by money, security in knowing that their car is safe and sound while other uses it have been found to be an important factor. It can be said that the informants are interested in sharing and are motivated because it feels good to fulfill others mobility needs. They are proud to help others, but do not say that they would have participated if there was not any economic compensation. This group of users who are partly driven by intrinsic values has similarities to the Experience enablers, that were identified in the German Peer-to-Peer study. Even though they have good intentions, they are rational and make cost-benefit calculations, like the group that are motivated by economic reasons (*the cost cutters*) (Wilhelms, Henkel & Merfeld 2017).

6.1.1.3 MOTIVATION TO KEEP THE CAR

The motivational categories in Figure 19; *“To avoid selling my car”* and *“To finance the purchase of a more expensive car”* are represented as a motivation 15 % times respectively, among the owners. The two categories are linked to

maintaining the current car ownership or new and other types of car ownerships.

17 people out of 54 people bought a car because of GoMore, which is 31 % of the respondents. The findings indicate that the car owners who bought a car because of GoMore, see Figure 19, are highly likely to participate for reasons associated with earning a profit, to make sure the car is used and to finance the purchase of a more expensive car.

6.1.1.3.1 LEASING AS A MOTIVATION FOR JOINING GoMORE

Another interesting finding primarily in the interviews, was that some people were motivated to join GoMore because the service offers leasing of cars for 12 or 36 months. In the questionnaire five respondents wrote leasing in the *“Other”* category, as the reasons why they participated in Peer-to-Peer sharing. This number is not particularly high compared to the total of 54 respondents, but the follow-up interviews revealed that this number might be higher than the questionnaire indicates. The interviews with the owners within the different groups see 4.3.3.2 Choosing the Informants revealed that 5 out of 7 owners, in one way or another mentions the leasing service as a motivational factor in their consideration of joining GoMore. This is supported by Kristina who mentions that *“[...] if I did not have the opportunity to lease through GoMore, I would have found another solution, [...] but I would not have leased*

it through another leasing company.” (Appendix 2: Kristina) This indicates that GoMore enable Kristina to lease a car instead of renting a car when she needs one for moving stuff or to travel to her mom, who lives in a place where public transport does not reach.

Another owner, Hannah explains that: *“The main reason we lease on GoMore is the fact that we get the opportunity to lease a cheap car.”* Furthermore, she explains: *“We could have leased the car without renting it out, but I leased one [a car] with the purpose of renting it out.”* (Appendix 3: Hannah) Klara expresses the same, however, one of her considerations when leasing was the expenses of having a car. She hoped that renting out the car could cover some of the costs:

“[...] I have leased a car through GoMore, which I did because I sometimes need a car, but I do not think it is worth 4000 kr. a month, so I hoped some of my expenses could be covered by renting it out.” (Appendix 4: Klara)

This is underlined by Magnus, who explains that; *“[...] of course the financial part matters, that you can cover some of the leasing expenses.”* (Appendix 1: Magnus) The interviews indicate that some of the respondents lease a car through GoMore with the purpose of renting it out, which often is supported by the motivation of earning some extra money. Thor explains that: *“We could lease a car that we could rent*

out on weekends and to make ends meet economically.” (Appendix 5: Thor). Klara goes a bit further in her explanation and states that: *“We have on purpose leased one of the most attractive cars on GoMore.”* (Appendix 4: Klara) Klara is not just renting it out, she actively does something to make sure that it is a popular car to rent. This indicate that the user group who lease is not motivated by reducing a fixed cost in the monthly budget associated with the owning a car but use the income from the Peer-to-Peer service to actively financing a car ownership. Thereby GoMore enables some car owners to get a car and enjoy the benefits of having a car.

“But then we discovered this solution [GoMore][...] that you could lease a car, and normally when you lease a car you can’t rent it out, but you can when you do it through GoMore. And then it suddenly made sense for us, not because of the economy, we would be able to afford a car anyway if we wanted a car, but when there’s actually someone else who can use it when we’re not, because we only use it for pleasure.” (Appendix 3: Hannah)

This category covers those who have been influenced to buy a car by the fact that they can earn money on renting it out. This group seems different from the ones who are renting the car out because of low utilization, see 6.1.1.1 *Compensation for low Utilization*. The motivation for this group of users is not to save money but as Hannah express above to spend

the income on something, such as a new car, they otherwise not would have used money on. This group of owners is related to *Enjoyment enhancers* identified in a similar study, (Wilhelms, Henkel & Merfeld 2017) because they express that they rent out their car to create an additional income to use for other purposes to enhance their lifestyle. The enhancement of lifestyle is seen as a result of the fact that the owners are able to keep the car and provide them with extra freedom and possibilities than they otherwise would not have.

Motivational Characteristics of the Owner Group

Extrinsic Sensemaking:

Participate to cut cost of ownership
or to
finance a car and enjoyment

Intrinsic Sensemaking:

Sustainable aspect as an added bonus
An underlying factor which get people to consider sharing?

6.1.2 RENTERS

In the following section the renters’ motivation for joining GoMore will be analyzed to assess if significant categories within the user group can

be characterized, and to analyze if any of the same trends found in other sharing economy research are present. The distinction between *intrinsic* and *extrinsic* motivations will continue to be used, in order to understand the respondents and informants' motives to use and join GoMore. It is also attempted to evaluate the results in relation to the different types of renters identified in other Peer-to-Peer car sharing literature being; *Saving seekers*, *Convenience seekers*, *Expression seekers* and *Certitude seekers* (Wilhelms, Henkel & Merfeld 2017), and investigative other potential groups applicable for the Peer-to-Peer users of GoMore.

The motivational factor has been investigated both through the questionnaire and the individual interviews. In the questionnaire, the renters were asked: “*What is your motivation for joining GoMore*”, the participants had the opportunity to choose several answers to the question. 99 renters answered the question and a total number of 195 answers were received. The motivational factors expressed through the individual interviews is based on 6 interviews, and contrary to the questionnaire the informants were asked to their main motivation, meaning they only had the opportunity to choose their first impulse.

6.1.2.1 FREEDOM AND FLEXIBILITY

A general niche development in sharing economy is the movement from ownership to access. The user groups in sharing schemes

participate to get access to an artifact they do not wish to own themselves, see 3.2.3.1 *From Ownership to Access*. Among the renters in this study the possibility of access seems to be one of the main motivational drivers to participate in Peer-to-Peer car sharing.

6.1.2.1.1 THE BENEFIT OF HAVING MORE TRANSPORTATION MODES

The GoMore members renting other's cars are most commonly motivated by: “*To get more transport options*”, see Figure 20.

More than half of the renters (64 %) or 63 respondents out of 99, chose this option as a motivational factor to participate in Peer-to-Peer car sharing. The access to more transport options also seems to be a motivational driver for all the participants in the interviews, and the main reason why they joined GoMore's sharing service. Luna describes her reason:

“I have discovered yet another car rental service to use when I need a car [...] it is really easy. It [GoMore's Peer-to-Peer car sharing] is a really nice supplement.” (Appendix 8: Luna).

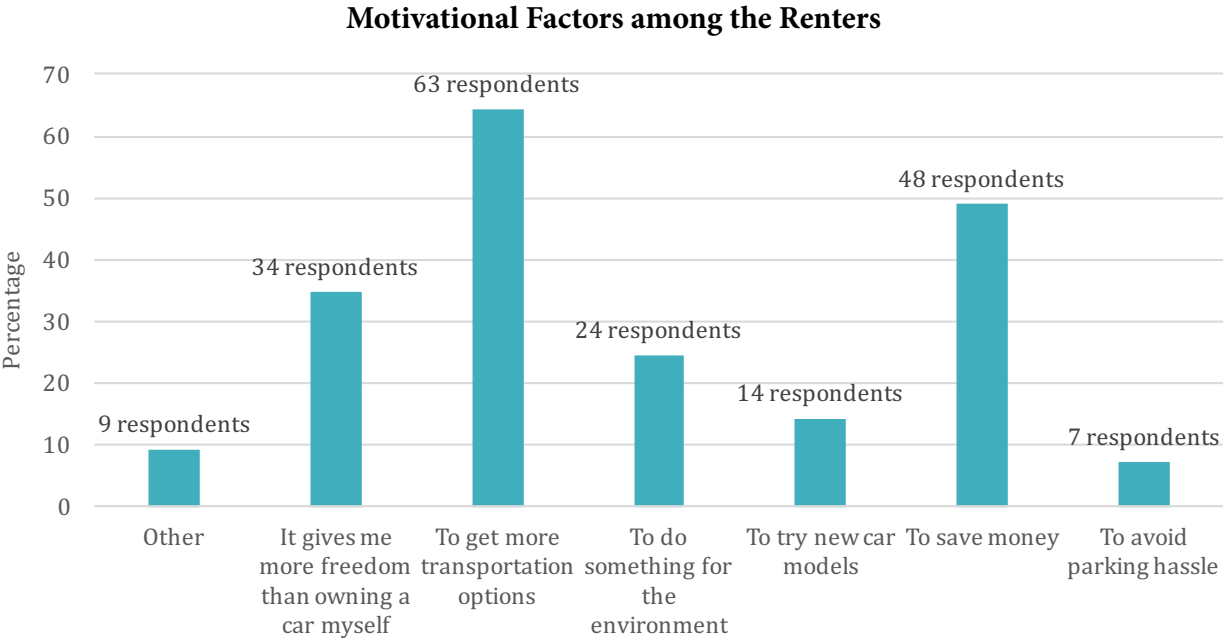


Figure 20: Bar chart showing the share of the different renters' motivations for joining GoMore. The question is answered by 99 respondents with the options to choose more answers. Total answers are 195.

In the statement above Luna describe how GoMore works as a supplement to other transport modes. When Luna needs a car, she borrows one from friends or family, or use different car services such as rental and GoMore's car sharing. In general, the interviews indicate that Peer-to-Peer car sharing works as an add-on among the participants daily transport modes making them more flexible when they have to travel. This is supported by Lars:

"The flexibility is the strength of GoMore. I can choose a place and a time that fits me [...] [GoMore] gives me the opportunity to rent the type of car I need, at the time I need it." (Appendix 9: Lars)

Four of the seven owners (Appendix 8: Luna; 9: Lars; 10: Simon; 13: Sigrid) have tried other car sharing schemes or rental services before they joined GoMore. However, they all state that GoMore's big fleet of cars and free membership have made the Peer-to-Peer car sharing the most flexible service. In the situations where other modes cannot cover the needs of getting from A to B GoMore's Peer-to-Peer car sharing service is easy to join and use: *"I made the profile because I needed the car right away."* (Appendix 8: Luna). This indicate that Peer-to-Peer car sharing is a more flexible transport option than other car services because the scheme does not have to finance the cars in the service but rely on private cars creating a bigger supply and variety of cars. It seems essential for the renters that they have easy access to the cars in the

moments where they need them. Flexibility is thereby closely connected with the motivations of having more transport options.

6.1.2.1.2 BEING INDEPENDENT

Another parameter chosen by 34 respondents or 35 % of the times, see *Figure 20*, is the statement: *"It gives me more freedom than owning a car myself"*. The interviews indicate that a group among the respondents want to avoid the hassle of owning a car, but still like the options to go wherever and whenever they like. One example is Luna who's talking about the obligations that comes with owning a car. These obligations do not exist with a GoMore car: *"[car sharing] enables me to avoid the responsibilities of owning a car. When I don't need a car in my everyday life."* (Appendix 8: Luna). The same type of sensemaking is used by Simon and Lars, who would rather share a car than own one. They see it as a limitation to own a car, because their needs for a car is not constant, as it is only present in certain situations, and because they need different car types in different situations. Buying furniture or moving stuff requires a large car, whereas taking a short trip in the woods or visiting friends and family, can be done by a smaller car. When renting a car, you can decide whether or not to pick a large car. Renting a car instead of owning thereby grants you the freedom to use different cars for different occasions - not trying to fit your errand into a *"wrong"* car. (Appendix 10: Simon)

3 renters out of 6, indicate that they see it as a freedom not to own a car. There seems to be a clear division between the renters in their sensemaking about the car. Luna, Simon and Lars does not consider buying a car and thereby argues that the car is *"useless"* (Appendix 10: Simon) in their daily life, or that the responsibilities and cost connected with owning a car *"doesn't make sense"* when they *"rarely need a car."* (Appendix 8: Luna; 9: Lars) The group of renters who are considering buying a car have a different sensemaking and argue that GoMore is not *"flexible enough"* or *"convenient"*. As an example, Caroline explains that she participates in Peer-to-Peer car sharing because it is her cheapest option at the moment while she is saving to buy her own car: *"I am a student, and do not have the money for a car"* (Appendix 12: Caroline). It could indicate that the renter group is somewhat divided in users who is motivated by the freedom it can give not owning a car, while the other group does not make this connection but is motivated by price or the temporary transport option GoMore provides.

6.1.2.2 REFLECTIONS ON FREEDOM AND FLEXIBILITY

Sharing economy literature and former Peer-to-Peer car sharing research, focusses on participation in CC based on online webpages and the latter investigate the Peer-to-Peer car sharing users in a communication campaign perspective, with little focus on access based services. (Hamari, Sjöklint & Ukkonen 2015;

Wilhelms, Henkel & Merfeld 2017)) have not touched upon the mobility perspective in the characterization of the user group. It is therefore not surprising that this study has found another motivational parameter among the users of Peer-to-Peer car sharing: The freedom and flexibility that Peer-to-Peer car sharing enables in the user groups transport options.

The data from the questionnaire indicate that one of the main motivational drivers for the renters in GoMore's Peer-to-Peer car sharing is the opportunity to get more transport modes. Factors such as flexibility and in some cases freedom seems to be underlying motives connected with the wish for more transport options. This makes the distinction between intrinsic and extrinsic values vague. The respondents' understanding of having more transport options could on one hand be an expression of a pragmatic user who always chooses a transport mode that makes the journey from A to B easier and faster extrinsic). This type of extrinsic value is expressed by some of the interviewees who wants to be able to choose different cars depending on the purpose of the journey so they can save fuel or as a practicality when they move stuff (Appendix 9: Lars, 10: Simon). Or who doesn't want to own a car because of the attached responsibility and cost (Appendix 8: Luna; 9: Lars; 10: Simon). However, the motivation to get more flexibility or to be free to move might also be associated with intrinsic values. The Peer-to-Peer car sharing enables the ren-

ters to go whenever and wherever they want:

"Yesterday we just went out in the woods and roasted marshmallows. You just have the opportunity to grab a car and drive somewhere to enjoy time with your family." (Appendix 10: Simon)

Increased mobility and freedom to move might thereby also serve as an intrinsic motivational factor because Peer-to-Peer car sharing creates possibilities for new experiences and enjoyment. Either way it seems that the motivation to get more transport options is connected to many underlying factors such as cost, freedom and flexibility and thereby cause a variation in the sensemaking in the renter group.

6.1.2.3 MONEY AND CONVENIENCE MATTERS

As seen in the Peer-to-Peer study from Germany the extrinsic motivation relating to economic benefits is dominating the Peer-to-Peer user's motivation for joining a Peer-to-Peer car sharing service. (Wilhelms, Henkel & Merfeld 2017) The second most common answer given in the questionnaire is: *"To save money"* which is represented as a motivation by 48 respondents out of 99, (49 %) see Figure 20. The fact that the respondents have the opportunity to choose other rental options indicates that saving money is a contributing factor to joining GoMore. This motivation can also be identified in the interviews; Caroline mentions that her

motivation for joining GoMore is that *"[...]it is cheaper than other companies - the conventional rental firms."* (Appendix 12: Caroline). The extrinsic motivation of choosing the cheapest car sharing service is important, this is further underlined by Simon and Lars who also mention the fact that GoMore is cheaper than other car sharing options on the market. Although Lars is motivated by the fact that GoMore is cheap, this is closely connected to the value that GoMore is easy and convenient;

"GoMore is not really a membership, it is just typing in your email address and then you have a profile. But I'm using GoMore because there are cars to the extent I need. It's cheaper and significantly easier than some car rental service because I can find a car that is just around the corner where I live." (Appendix 9: Lars)

The convenience of picking up and returning the car easily is very appealing and important to Lars:

"I can find the place and the time that suits me. GoMore means that I do not need to buy a car, because I always have the opportunity to rent one close by and you can return and pick up at odd hours of the day" (Appendix 9: Lars)

Klara on the other hand argue the exact opposite way, by legitimizing her leasing a car instead of renting one, because of the fact that

she found it inconvenient to plan her time after when the car could be picked up and returned. Gustav who owns a car but also rents other's cars, agree with Klara about the inconvenience and explains that he will never sell his car because GoMore is not flexible enough. These are interesting contradictions, and it is even more interesting that Lars who sees it as an opportunity and tries to fit it in his planning, generally associates the car negatively: "[car rental] gives me opportunities at the times I need it, instead of having a ton of steel sitting outside my door." (Appendix 9: Lars), while Klara and Gustav perceive the possession of the car as something positive. This indicates that there is a difference in the sensemaking about the car whether the users perceive the car positively (opportunity creating) or negatively (barriers and inconvenience).

The interviewees were asked "What is important for you, when renting a car through GoMore?" A general trait for the informants is that the price on and the distance to the car is crucial (Appendix 8: Luna; 10: Simon; 13: Sigrid). The close distance between renter and the car, is primarily associated with the value convenience. This is highlighted by Simon: "Well, it counts right? I wouldn't want to go to Ballerup to pick up a car, but yeah, as long as it is within one or two kilometers, it is fine" (Appendix 10: Simon) Furthermore, the renter Lars explains the importance of proximity and availability: "If I just need to rent a regular car, but with re-

asonable fuel economy, then I can often find it close by." (Appendix 9: Lars)

The extrinsic values such as saving money seems to contribute to the motivation of renting cars in general, but also to the fact that GoMore is the chosen platform to rent cars through compared to other platforms. While the *saving seekers* in the German study constituted the majority of the renters, the GoMore survey indicates that users appreciate more that it allows them to get more transport options, however, this is often related to the fact that they also are motivated to save money.

Several of the interview respondents who value the convenience of the car rental service, are also emphasizing the opportunity to save money as an influential driver. The people who have a desire for the convenience that GoMore provides them, value the fact that it gives them the opportunity to save money and to use it whenever they feel the need and to get the exact car they need. Furthermore, they value that they are able to plan their trip, and be able to fast and easily reach the rental car.

6.1.2.4 ENVIRONMENTAL PERCEPTIONS

Figure 20 shows that 24 % equal to 24 people out of the total number of 99 respondents, answered: "To do something nice for the environment". However, not a single one of the interviewees talked about the environment or being sustainable in the context of using GoMore.

One could think that it was something people would be concerned about, but it is maybe not the first thought when asked about why they joined a car sharing scheme. This could indicate that an intrinsic value like environmental concerns is not a main motivational driver but an extra benefit of sharing. In sharing economy literature, the same tendency is visible where intrinsic values such as sustainability is a sub-motivational factor and extrinsic concerns are the main motivational driver, see 3.2.4.2 *User Group Distinctions*.

However, to be environmental conscious might still play a role in their motivation to participate in Peer-to-Peer car sharing, even though it is not directly articulated in the interviews.

"I think my friends are going to judge me if I live in the center of Frederiksberg and have a car. It is super un-cool to have a car. I don't know any in my generation who owns a car." (Appendix 8: Luna).

Luna is influenced by the reputation she will get in her circle of friends, where having a car in the city is associated with something negative. Imprinted by this normative rule she seems to be motivated to use other types of car services such as Peer-to-Peer car sharing to get her travel needs covered. Luna's statement is representing a different norm and a negative perception of the car than represented in the automobile regime, see 3.2.1 *Meso Level: The Automobile Regime*. According to Hagman (2006), the

negative environmental impacts caused by the car is beginning to change its former image of freedom and status. Among Luna's friends a car is not a status symbol but an "un-cool" thing to own in a city (Appendix 8: Luna). There can be several reasons for this norm; it might be too troublesome and expensive in the city but it can also indicate a sustainability concern. According to Lars GoMore covers his need for auto-mobility and adds:

"In a resource perspective, I think it's silly that everybody has their own car, it's much smarter to share them instead. It's a shame when people rent out 10 cars, then I think it's a business. But I have only experienced one, maybe two, who makes [GoMore's Peer-to-Peer car sharing] into a business." (Appendix 9: Lars)

These considerations among the renters might indicate that sustainability as an intrinsic value might be an underlying concern, that leads to people starting to consider sharing in the first place. Extrinsic values such as price might be an influential motivational driver, but without a change in the perception of the car's abilities, such as the ones that exist among Luna's friends, or without the presence of intrinsic values relating to sustainability, the renters might not have considered trying car sharing in the first place. However, it's important to keep in mind that it is far from all the renters in the questionnaire and interviews that express these environmental perceptions.

6.1.2.5 CERTAINTY AND TRUST

Several of the interviewees address elements such as certainty and trust. An example is Caroline, who addresses the quality of the car she is renting; *"However, I would say that there are some cars on GoMore that look like some junk boxes, I avoid those. But that's just because I do not want to risk getting stuck [if the car breaks down]."* (Appendix 12: Caroline)

The certainty of renting a good and reliable car is important to her. She wants security in knowing that the money she is paying to rent the car, is used to cover the expenses concerning the service. Furthermore, she wants the security of safety when she is renting a car, and is willing to pay a bit more, to be sure the car is safe and sound.

"It is mainly the price but also that it does not look like a wreck [...] I've tried renting a car where one of the doors couldn't open and where I wasn't allowed to roll down the windows. There were a lot of things wrong with the car, little things here and there. I pay for the car, so it should also be pretty good." (Appendix 12: Caroline)

Caroline is explaining that one of the benefits of a Peer-to-Peer car sharing service is; *"[...] you experience that the ones you rent the cars from are just regular people, they are flexible and so on. You do not experience this, when renting through a traditional car rental company. I think*

that is really favorable." (Appendix 12: Caroline). Another renter also touches upon this, by explaining that, the fact that it is people, makes it more flexible to pick up and return compared to a leasing firm (Appendix 9: Lars). The literature shows that trust remains a key element in Peer-to-Peer sharing services (Hamari, Sjöklint & Ukkonen 2015), the rental of cars depends on the presence of trust between the renter and the owner. However, it is expressed in the interviews only to a limited degree, only Caroline is very explicit about it, which may be explained by the fact that she had a bad experience once before.

Some of the renters use the rating system on GoMore's webpage to form an overview of previous renter's experiences with this owner. *"If I was to rent it for a weekend, I could imagine that I would check out the user reviews."* (Appendix 8: Luna) The German study of Peer-to-Peer users (Wilhelms, Henkel & Merfeld 2017) showed that the certitude seekers were attracted to elements such as the owner's car sharing profile and communication with the owner, which also is valid for some of the interviewees.

These aspects are not a decisive motivation but something that is considered valuable for both the renters and the owners. The owners were characterized by a need for security when renting out their car in terms of covering value loss or damages. The renters are also considering similar aspects when talking about their values, but in a softer manner. The renters seem to be

able to relate to certainty. It seems as if the certainty of being able to get the car exactly when they need it and getting a well-functioning car are the most important factors.

Motivational Characteristics of the Renter Group

Extrinsic Sensemaking:

- Participate to enable cheaper trips.
- and to
- Get an easy access new transport option.

Intrinsic Sensemaking:

- Resource concerns as an underlying factor which get people to consider sharing?

6.1.3 DISCUSSION OF MOTIVATION

The purpose of this analysis has been to investigate the user characteristics and identify the drivers of participating in GoMore’s Peer-to-Peer car sharing service. The renters and owners’ motivation to share a car are in many ways corresponding with tendencies found in other studies of similar user groups. The users of GoMore seems to be motivated to participate by extrinsic benefits such as cost reduction compared to other rental options, increased mobility options and access to a wide range of car models. Intrinsic values such as environmental perceptions on the other hand, does not seem to be main motivational drivers. The same tendencies are represented in the current *Sharing Economy and Collaborative Consumption* literature. However, just as Hamari, Sjöklint, Ukkonen (2015) argues, it could seem as if the intrinsic values in some cases have shaped the normative rules of the user group, and thereby made them open to partake car sharing in the first place.

It could be argued, that the motivations for participation in car sharing visible in the collected data, fits under the same categories as those identified in the German Peer-to-Peer car sharing study, see 3.2.4.2 *User Group Distinctions*. Some are experience enablers with interest in sharing as a concept, others are enjoyment enhancers who were motivated to join GoMore because it made them able to keep the benefits of having a car and the lifestyle that follows.

However, the most predominant motivation is economic benefits, which makes the owners similar to *the cost cutters*, were GoMore enables them to avoid cost and earn some extra money. Among the renters the same type of motivations such as cost reduction of transport, convenience when renting a car, and a need for established certitude when using the service. Even *expression seekers* can be identified in the questionnaire. A few users (7 respondents) in the questionnaire comment that they tried GoMore because they wanted to drive a specific car to a wedding or try a prestigious car model such as a Tesla. However, to express oneself using GoMore’s service doesn’t seem like a motivational factor for the majority of the user group.

An increase in personal mobility and freedom have been identified as some of the main motivational mechanisms among the user group. This represents a different motivational factor than previously mentioned in the CC and SE literature. It might not be a surprising finding, as this study researches car sharing in a mobility perspective, however it seems as an essential driver to consider in the investigation of Peer-to-Peer car sharing effect on car use and car ownership.

6.1.3.1 MOTIVATION IS A COMPLEX MATTER

The results of this study indicate that the user group is motivated by several factors and not just one main driver as in the German Peer-to-Peer study, see 3.2.4.2 *User Group Distinctions*.

ctions. Even though increased mobility and cost reductions are two of the main motivational factors in the user group, the analysis in this chapter has shown that a correlation of extrinsic and intrinsic values make it a complex matter. The user group have chosen several statements in the questionnaire as an explanation of why they participate in car sharing. There seems to be no relation between the motivation stated by the questionnaire participants and the amount of times they use GoMore to either rent out their cars or rent other people's cars. As an example, no significant difference can be observed between the owners who are motivated by the possibility of making money (average 30 times a year) and the owners who are concerned about the environment (average 27 times a year). Some motivational drivers are more dominant than others, however it seems that the niche's users have several ways of making sense of their participation in car sharing and it makes it difficult to define different types of users. The motivational factors thereby aren't as divided between different groups as prior studies and literature has found.

6.1.3.2 AN IDEOLOGICAL USER GROUP?

Geels argues that the user group of a niche often are innovative frontrunners or are driven by ideological values, see section 3.2.4.1 *The Niche Development - Peer-to-Peer Car Sharing*. This might not be a completely justified definition of the users of Peer-to-Peer car sharing in Copenhagen. It became clear that sharing is

not an act of complete altruism, at least not for participants in this study. The economic factor is a main driver which is also a tendency that can be observed in sharing economy literature. Among the renters it seems as if the monetary and pragmatic aspects of car sharing are dominant motivations. They mainly use GoMore because of the increase in transport options and it being cheap. It might be argued that the fixation on economic aspects in this sharing scheme is caused by GoMore's concept. The service is a hybrid of leasing and renting private cars with a business element in the app; where you have to pay for sharing which can explain that many users are motivated by this factor.

Even though many of the owner's state that they are motivated by intrinsic beliefs such as a curiosity of innovative concepts or believe in sharing resources, the main motivational factor seems to be economical. The group of owners is thereby, to some degree, driven by innovation and ideological values, but it seems that the niche would not exist if an economic benefit were not involved. However, the interviewees seem to be reflective about sharing as a concept, as many of them are motivated by sharing their car, to increase the usage, and all but one, express different intrinsic motivational factors behind their choice to share.

Not much in either the statistical data or in the interviews suggest that the Peer-to-Peer aspect in car sharing is essential for the renters. One respondent expresses an environmental benefit

related to sharing the resources that exists and another convey that she trusts her peers more than a business, but all members state that they first and foremost partake in the scheme because it enables them to get a cheap mobility service with a varied and easily accessible fleet of cars.

6.2 MOBILITY

Prior car sharing studies of Peer-to-Peer car sharing have not touched upon the types of trips made with Peer-to-Peer car sharing, but rather investigated the motivation to share (Wilhelms, Henkel & Merfeld 2017). The purpose of the following part of the analysis is therefore to examine the travel patterns of the user group in Peer-to-Peer car sharing and to identify if different rules and sensemaking about the car exists within the Peer-to-Peer car sharing niche. This step is necessary in a final assessment of Peer-to-Peer car sharing's effect on car dependency.

First, the use of the Peer-to-Peer car will be described, from a perspective of understanding the typical trip, purpose of the trip and which trips it replaces. This results in a split between owners and renters and a separate analysis of each group, where there will be a focus on each group's daily mobility patterns, what their primary transport mode is, the modal split of each group and their daily mobility. The different user groups sensemaking will be investigated using the interviewees statements. This results in an investigation of the dynamic regime in which the niche of car sharing exists where the increased mobility demand, of the users, is discussed with a focus on Multimodality as the main topic.

6.2.1 CAR USE IN PEER-TO-PEER CAR SHARING

The first section of the mobility analysis is based on the data from the user questionnaire. The section will present the purpose of the use of GoMore and which trips it enables.

6.2.1.1 THE TYPICAL TRIP

The table below illustrates the typical trip in GoMore's Peer-to-Peer car sharing service. The table represents the latest trips of the 109 renters asked in the questionnaire.

An average GoMore trip	
Rental period	8-24 hours (32 %), 1-3 days (3 0%)
Time of the day the car is used	9-15 (84 %), 15-18 (81 %)
Days of the week the car is rented	Whole weekend (77 %), Saturday (30 %)
Destination of trip	Zealand: Outside of Copenhagen (38 %), Jutland (25 %)
Average GoMore rental period (km)	313 km
Renters average number of rentals per year	5 times

The average GoMore trip takes place in the 8-24 hour interval (32 %) or the 1-3 day interval (30 %), see *Appendix 20: Figure 7*. This corresponds well with the fact that the most common trips are to visit friends or family or to go on vacation, see *Figure 21*. Trips to visit friends and family often fall in both intervals, 8-24 hour or 1-3 day of rental time, while vacation often falls in the 1-3 day interval, or longer, see *Appendix 20: Figure 6*. GoMore trips in general are most likely to take place over the weekend (77 %), see *Appendix 20: Figure 8*. If the GoMore user is renting the car for one day (or less) it is typically on a Saturday (30 %). This might again be due to the fact that most trips are leisure trips and not connected to the user's work, thus they have more time to take these trips in the week-end.

Most trips leave Greater Copenhagen, as it is most common to take trips to the rest of Zealand (38 %) or Jutland (25 %). The purpose of these trips is often to go on vacation or to visit friends or family. Other trips include trips to Denmark's smaller islands (8 %), Funen (5 %) and Sweden (5 %). Trips within the Greater Copenhagen Area account for 20 %, see *Appendix 20: Figure 9*, and the purpose of these trips is often to move goods or to shop for large goods.

When comparing the purpose of GoMore trips, *Figure 21*, with the purpose of the average Danish trip, *Figure 22*, interesting facts emerge. It would seem like leisure trips (vacation and to

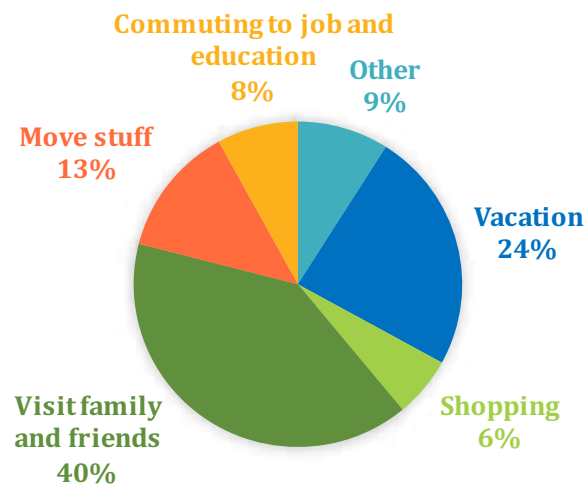


Figure 21. The purpose of trips among the renters. 109 respondents.

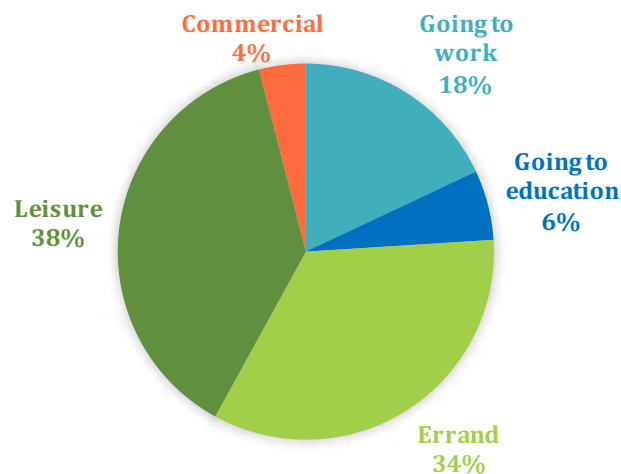


Figure 22. Purpose of the average Danish trip (DTU Transport 2017).

visit family and friends) are over-represented, 64 %, compared to 38 % in the overall Danish trips. It also shows that GoMore trips are under-represented, 8 %, when looking at trips to work or education compared to 24 % of the overall trips. This comparison supports that the purpose of GoMore trips is mainly leisure and not commuting to work or education. The aspects of the purpose will be further investigated and elaborated in the next section.

6.2.1.2 PURPOSE OF GOMORE TRIPS

The most occurring reasons to rent a GoMore car is to either visit friends and family (40 %), go on vacation (24 %) or to move stuff (13 %), see Figure 21. For the users who rented a car to visit friends or family, 40 % of the users chose to rent a GoMore car to make their trip more comfortable, see Figure 23. Comfort is also one of the main reasons to rent a car through GoMore for the users who rent a car to go on vacation (30 %). For the ones using a GoMore car to go on vacation, the lack of public transportation options to their destination was a substantial factor as 40 % of them stated that as the reason for renting a GoMore car. The complex notion *comfort*, which will be further elaborated, seems to play a big role in these trips that could be characterized as leisure trips. Since visiting friends or family and vacation is the most common purpose of the GoMore trips, it seems fair to conclude that GoMore trips are mainly leisure based. The trips whose purpose is to move stuff is the third most represented

category. These trips often take place within the Greater Copenhagen Area. The reason why the users picked a GoMore car for this purpose is in 80 % of the cases that they simply needed a larger car.

The purpose categories "*Shopping*" and "*Commuting to job or education*" are also interesting to examine, but they are less suited to generalize from as there is only six and eight respondents in each category respectively. In the shopping category, three of the respondents commented that their destination was IKEA (either located in Gentofte or Taastrup), which was the reason why they rented the GoMore car. The GoMore car enables fast and comfortable transportation to and from the user's shopping destination and also provides room to transport more goods than on a bike or using public transportation. When asked how they would have made the trip if a GoMore car was not an option, the answer was to either rent a car through a regular car rental firm or not to take the trip at all.

For the ones in the "*Commuting to job or education*" category, it is important to note that none of the trips can be described as actual daily commuting, but rather special occasion commuting connected to either the user's job or education. This is emphasized by the fact that the eight respondents, whose purpose was commuting, rent a GoMore car eight times a year on average. This is three more times than the average user a year, see Appendix 20: Figure 10.

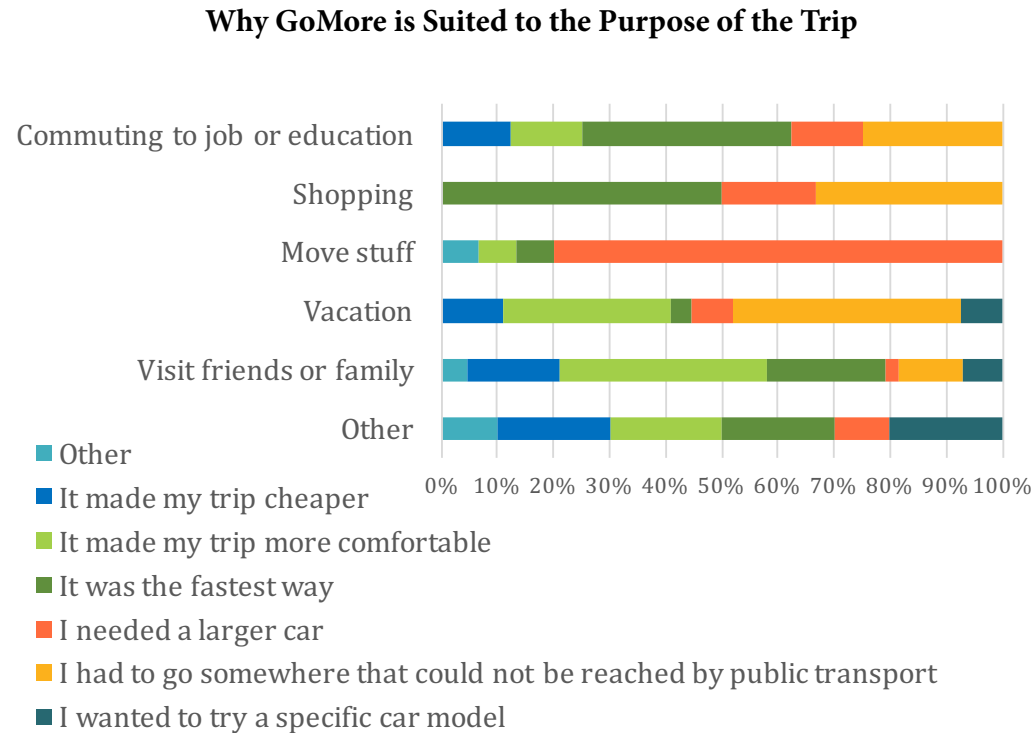


Figure 23: The purpose of the trip and why the renter chose GoMore to make the trip. A total number of 109 respondents.

In the commuting group, two respondents range significantly higher than the average with 25 and 16 rentals per year. The purpose of both the respondents latest trip was to go to a conference or lecture. This might show that, for at least these two individuals, GoMore can provide transportation for these special events that are connected to their job. In the "Other" category, which consists of ten respondents, the most common (40 %) purpose of the trips was to try a specific car model, either because they were

considering buying the specific model, or just for entertainment. On a side note, trying a car model is different than trying a car because a car model is more specific. Three out of four stated that they wanted to try Tesla's electric car, see *Appendix 14*.

6.2.1.3 TRIPS REPLACED

This section investigates which trips GoMore Peer-to-Peer car sharing replaces and if it generates new trips for its users.

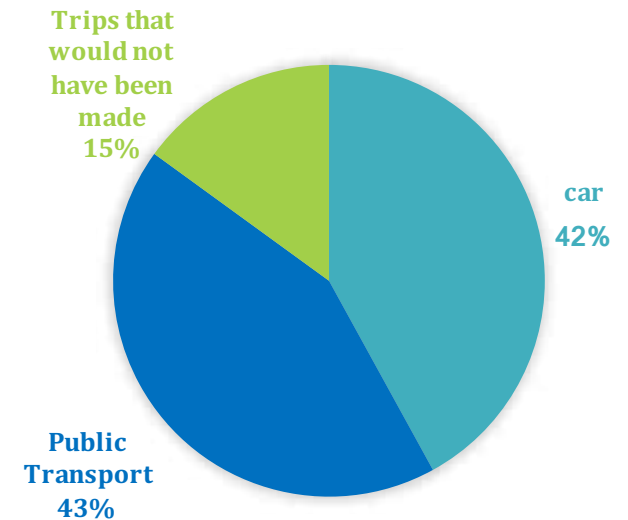


Figure 24: Trip modes replaced by GoMore's car sharing service. 107 Respondents.

Figure 24 shows the trips replaced among the respondents. As seen in the chart most trips replaced by GoMore are either public transport trips (43 %) or trips that would have been carried out in another car (42 %). In the public transport category, it is mainly train trips being replaced (83 %), see *Appendix 20: Figure 11*. In the trips that would have been carried out using another car, it is most often rental cars that are being replaced (60 %). This shows that the companies providing transport on rails and the regular car rental companies are GoMore's main competitors. Sigrid mentions "*The public transportation in Northern Jutland was not good.*" (*Appendix 13: Sigrid*) and Luna explains "*I found out what the prices of public transport were – we were a couple of people, so it would almost cost the same.*" (*Appendix 8: Luna*)

Several interview respondents justify their choice of the rental car, either because the price of public transportation is too high or because it is too inconvenient or time-consuming to reach their destination with public transportation. Public transportation seems to be the main alternative to the car for the renters and usually the car is rented when it is perceived to take longer, cost more or to be difficult to get to the respondent's destination with public transportation. It is also important to notice that 15 % of the trips being taken in GoMore cars would not have been made otherwise. This is indication that GoMore generates more trips and that GoMore as a service provides more mobility options for its users. This corresponds well with the fact that 64 % of the renters completing the questionnaire joined because they wanted more mobility options, see 6.1.2.1.1 *The Benefit of Having more Transportation Modes*, so in most cases renters are provided with the service that motivated them for joining in the first place. When investigating further and focusing on the purpose of the GoMore trips, interesting patterns start to emerge. Looking at the category Visiting friends or family, 64 % of the trips that previously would have been carried on public transport, are now replaced by trips in a GoMore car, see Figure 25. This can mainly be explained by the GoMore users' desire for comfort, that was uncovered in the earlier section, see 6.2.1.2 *Purpose of GoMore Trips*. Other notable factors are the price of the trip and the timeframe in which the trip can be carried out, as seen in Figure 26.

It is also notable that in both the "Vacation" and the "Visiting friends and family" category, more than 30 % of those trips would not have been carried out, strengthening the statement that GoMore enables more mobility, especially in the trips that can be described as leisure-orient-

ted. The figure also shows that for the users who plan to move stuff around, the GoMore service proves a valid alternative to renting a regular moving van, and it enables trips that would not have been made in this category as well. When

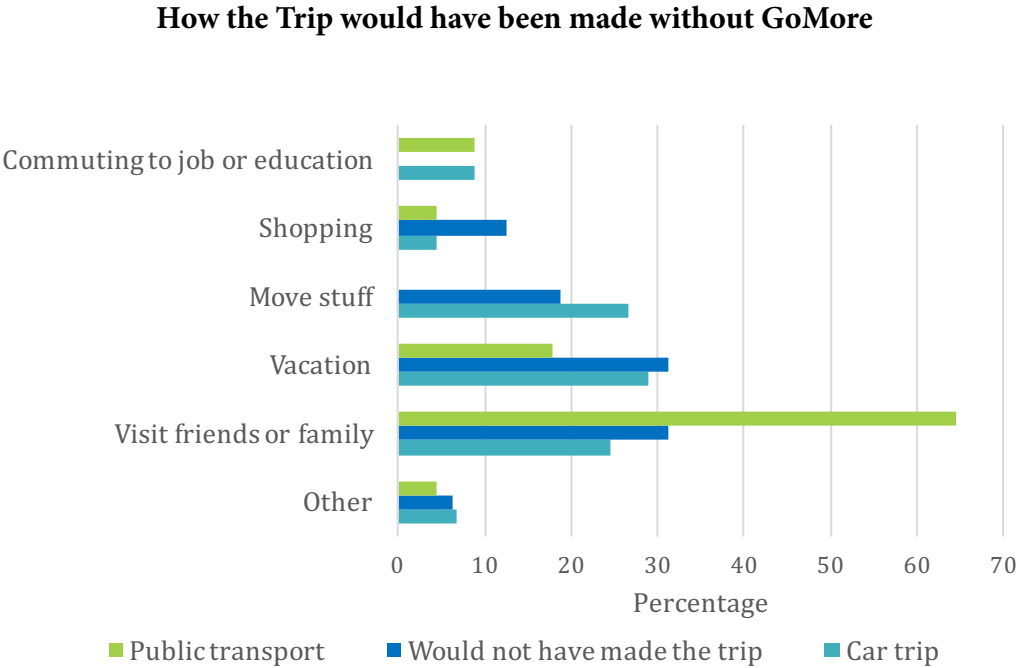


Figure 25: The purpose of renter's most recent trips in GoMore and how the trip would have been completed without GoMore. 107 respondents.

How the Purpose affected the choice to use GoMore

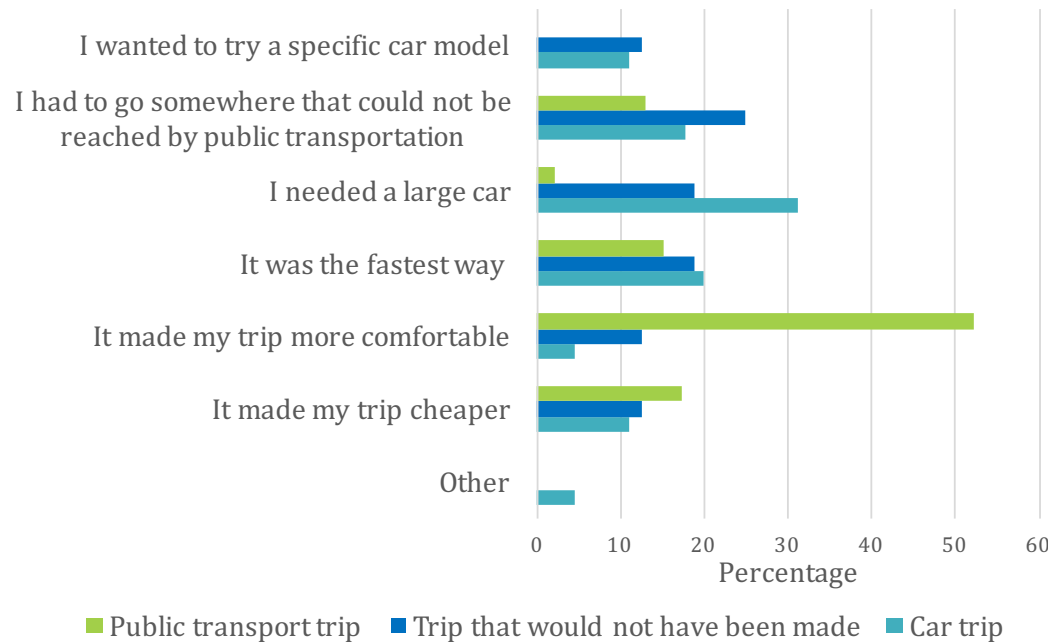


Figure 26: How the GoMore users would have completed their trip without GoMore and why they chose GoMore to complete the trip. 108 respondents.

Figure 25: How the trip would have been made without GoMore is compared to Figure 26: How the purpose affected the choice to use GoMore, it is explained that a portion of the trips, especially the ones which purpose was to visit friends or family, are trips where the destination cannot be reached using public transport. These trips also account for a substantial sum of the trips that would not have been made otherwise.

However some of the respondents (13 %) contradict themselves when they state that their destination could not be reached by public transportation but that they would have used public transport if GoMore did not exist, see Figure 26. This can either be seen as an indicator that the respondents have misunderstood the question they were asked, or it could be seen as an indication that, now that they have

access to a car, they no longer consider taking public transportation in the cases where public transportation is inconvenient or difficult.

6.2.1.4 SUMMARY

To sum up, the results indicate that the typical Peer-to-Peer car sharing trip in Copenhagen has its destination outside the city, mainly in Jutland and Zealand, and in most cases, it is leisure trips to visit friends and family or to go on vacation. The reason the users pick GoMore to carry out these trips is mainly connected to comfort. The destination of these trips is often located where public transportation is perceived to be limited. The modes that GoMore trips most often replace are public transport and trips in other car rentals, thus these two modes are GoMore's main competitors.

6.2.2 DAILY MOBILITY PATTERNS

The former analysis of the car use showed that the trips made with GoMore's Peer-to-Peer car sharing service are often used for leisure purposes. The trips are usually made in the weekend to go out of the city and the service is not used every week. This indicates that the users do not use GoMore to cover their daily mobility need. The next part of the analysis will investigate how the user's primary transport modes and mobility patterns are interlinked with the use of Peer-to-Peer car sharing.

6.2.2.1 PRIMARY TRANSPORT MODES

Among the respondents, 67 % list the bike as their primary mode of transport, see *Figure 27*. The figure shows the modal split among the respondents, including both renters and owners. The general modal split and the large share of cyclists for the GoMore users could correspond with the amount of renters asked in the questionnaire, if it is assumed that they are a part of GoMore because they do not own a car themselves. The same could be argued about the amount of car drivers in the questionnaire;

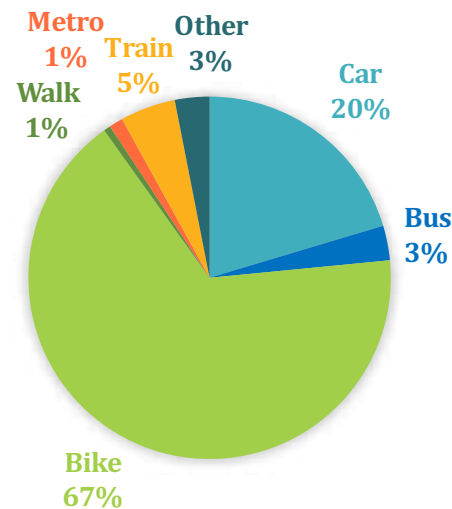


Figure 27: The Modal Split of the User Group. Primary transport mode for 163 participants (both owners and renters).

here the 20 % could be assumed to be the owners renting out their cars. However, the next sections will show that this is not always the case. The GoMore user group differs from the Copenhagen average in their modal split, as a substantial amount of the users pick the bike as their primary mode (renters 75 % and owners

50 %) compared to the Copenhagen average (27 %), see *Figure 28*. The car owners of GoMore use the car more (42 %) than the average use in Copenhagen (34 %), but the bike is still the preferred mode in this group. Both the GoMore renters and owners walk and use public transportation less than the average Copenhagener.

The averages of all journeys entering, leaving and completely within Copenhagen

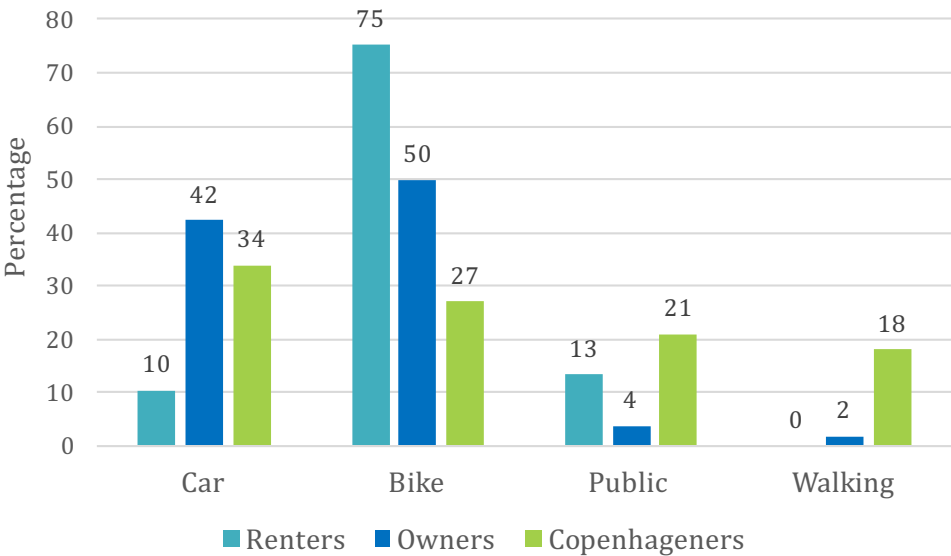


Figure 28: The averages of all journeys entering, leaving and completely within Copenhagen. The vertical axis highlights the share in percent that the transport mode has of all modes. Own production based on questionnaire and City of Copenhagen (2012a). 154 respondents.

6.2.2.2 THE RENTERS' MODAL SPLIT

Figure 29 shows the renters' primary transport mode. Even though the figure do show that 75 % of the renters' state that the bike is their main mode of mobility, 10 % of the renters have listed a car as their main transportation mode. Less surprising is the fact that the share of public transport is represented by 12 % in the modal split and is higher in this group who rents than in the total user group of renters and owners above.

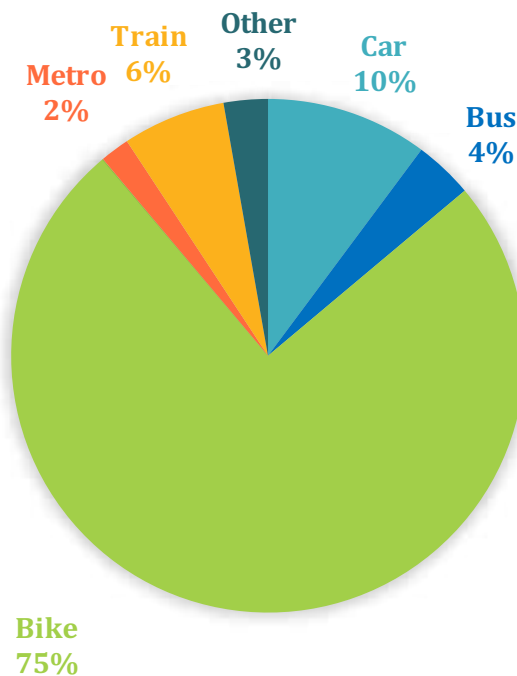


Figure 29: The Renters' Modal Split. Primary transport mode for renters. 108 respondents.

6.2.2.2.1 CAR OWNERS AS RENTERS IN PEER-TO-PEER CAR SHARING

In a Peer-to-Peer car sharing concept the renters is assumed to join because they want access to a car without owning one. However, approximately 18 % of the renters owns their own private car while they also rent cars through GoMore. 10 % of the renters' state that they use a car as their primary transport mode but they do not use GoMore Peer-to-Peer car sharing to cover their daily mobility needs. It can be due to the fact that they all own their own car. On average, this group uses GoMore's car sharing service 3 times a year. This could indicate that the group that already owns a car needs a second car in some cases or needs a car with other abilities than their own private car.

Interviewee Gustav is one of the renters who owns a car, and depending on the season and weather, he shifts between driving his car and biking the 5 kilometers to his workplace. However, he states that he mainly uses his car on long trips to visit his parents in Jutland:

"I could go by bus, but then I'm not able to bring all my luggage. If we're visiting my parents – I have 3 children – then we need to bring bed linen, and I can't bring that in the train or in the bus." (Appendix 11: Gustav)

Gustav have tried GoMore's Peer-to-Peer car sharing service a couple of times when his own

car has been in the repair shop. According to Gustav's sensemaking, the car is the best choice for longer trips because public transport is lacking the same comfort and convenience. Even though he has tried GoMore a couple of times he still prefers the flexibility and convenience of the 'door-to-door' service of his own car (Appendix 11: Gustav).

When investigated, the results from the questionnaire also shows that around 50 % of the car owning renters specifically use GoMore because of a need in rare situations, such as moving goods, trying a specific car or to use a car with other specific abilities than the one they already own. However, GoMore rarely substitute a second car and is mainly used in the few cases, on average only 3 times a year, where the renter's own car does not suffice, see *Appendix 20: Figure 1*.

The 18 % of the renters that rarely uses GoMore and have their own private car could likely have some of the same cognitive rules as Gustav. The car is a vital part of one's mobility; this can apply in the form of one's primary transport, as the 10 % seen in the modal split, or to Gustav's explanation of freedom and convenience in one's leisure time. However, Peer-to-Peer car sharing is not seen as an important supplement to this type of mobility but as a convenient service if the private car is being fixed, is not big enough for a specific purpose or if you want to test out a car before buying it, see *Appendix 20: Figure 1*.

6.2.2.2.2 THE BIKE CULTURE IN COPENHAGEN

It is not surprising that 75 % of the renters mainly use their bike during the week, see Figure 29, since the geographical area is the city of Copenhagen, where the bike is a popular mode of transportation. In fact, all but one of the 13 interviewed informants in this study, including both renters and owners, use their bike as their primary mode of transportation. The modal split in this Peer-to-Peer car sharing study and in Copenhagen in general is a strong indicator of a bike regime competing and, it seems, often winning against other modes in the city:

“Two years ago our children were still in kindergarden, if you take your bike it’s 500 meters from home, but if you take the car it’s 1.5 kilometers. And then you’d get stuck in the morning traffic, so in many ways a car is totally useless when you live in the center of Copenhagen.” (Appendix 10: Simon).

For Simon, it does not make sense to use the car for such short trips. He thinks it is more troublesome to drive when you live close to your destination. Simon argues that the bike is the easiest way to get around in Copenhagen. All participants in the interviews use the same sensemaking about the bike as being the most “flexible” (Appendix 9: Lars; 10: Simon), the “cheapest” or the “fastest” way of transport in Copenhagen (Appendix 9: Lars; 10: Simon; 11: Gustav; 12: Caroline). Even Gustav, who is the

only renter among them who owns a car, states that biking is: *“Faster than public transport and it is free and give some good exercise. I actually like to bike.”* (Appendix 11: Gustav) Like Gustav, Simon also states that the bike enables him to get some exercise in an otherwise passive everyday life. The car, on the other hand, has the complete opposite effect on your health, and in general, the renters in the interviews have a variety of different negative statements about the use and ownership of a car.

Owning a car is an “inhibiting factor” and reduces the individual’s freedom, see 6.1.2.1.2 *Being Independent* and is furthermore, by normative rules, “uncool” in some social groups (Appendix 8: Luna). Other interviewees describe the car as a “ton of steel”, again referring to a property that will weigh you down or as “expensive” (Appendix 9: Lars; 12: Caroline). One respondent even states: *“It’s boring to drive a car, you cannot concentrate on other stuff, you have to sit and stare at the road to keep the speed limit and so on.”* (Appendix 10: Simon) At the same time the former automobile regime’s cognitive rules about freedom and movement, see 3.2.1 *Meso level: The Automobile Regime*, is contradicted in the interviews as the interviewees express their frustrations with the car: *“I am very frustrated when driving a car, especially in rush hour traffic.”* (Appendix 13: Sigrid), or find it “totally useless” in the rush hour traffic, as mentioned by Simon previously.

The interviewees all have similar norms and

use the same kind of sensemaking when they explain why the bicycle, and not the car, is their preferred type of transport in Copenhagen. This type of sensemaking has also been found in other mobility studies of cyclist culture in Copenhagen (Freudendal-Pedersen 2015) and is an indicator of some of the shared rules of the cyclist regime in the transport system of Copenhagen. However, when the interviewees have to travel outside of the city the stories change and the cyclist regime has a hard time competing with the car regime.

6.2.2.2.3 THE DAILY MOBILITY OF THE RENTERS

The renters who state that the bike or public transport is their main mode of transport rent a car more often than the car owning renters. On average the cyclists use Peer-to-Peer car sharing six times a year and the renters mainly using public transport rent a car through GoMore four times a year. This group also uses GoMore for many more different purposes than the car owning renters. The variety in the use of the Peer-to-Peer car sharing service in both types of trips and rentals per year among the renters indicate that GoMore provides a different mobility service for different user groups. In total, 49 % of the renters use GoMore’s service 0-3 times a year, while the other half of the renters use the service considerably more, see Figure 30. Around 32 % of the renters rent a car 4-7 times a year and 17 % use Peer-to-Peer car sharing 8-15 times a year, see Figure 30.

This difference in the use of GoMore is an indicator of the different obligations and demand for mobility among the users of Peer-to-Peer car sharing. Simon, Luna and Lars are all renters who do not consider owning a car. They all state that they rarely need a car since they live in Copenhagen but that they still need one on occasions to go out of the city. As an example, Simon and his wife bicycle with their children

everywhere, but on longer trips the children are still too small to bike and then they take the train. Only on special occasions, where public transport does not cover their needs, the family opts for using a car:

“We rarely need a car, but sometimes you have to travel [...] and [GoMore] gives you an opportunity to just pick up a car

and go on a trip somewhere or to visit somebody who doesn’t live close to a train station.” (Appendix 10: Simon)

All three interviewees agree that a car is necessary sometimes when you have to travel beyond the city boundaries and in these cases GoMore can prove helpful in fulfilling these needs. (Appendix 8: Luna; 9: Lars; 10: Simon)

6.2.2.2.3 CAR USE HAS MANY AFFECTING PARAMETERS

Among the renters in the questionnaire who state they still consider buying a car after joining GoMore, the rentals per year are fewer compared to the people who do not consider buying a car, see Appendix 20: Figure 3. While 79 % of the renters who are still considering buying a car use Peer-to-Peer car sharing 1-6 times a year, 45 % of the renters who are not considering buying a car anymore are using it 7-15 times a year, see Appendix 20: Figure 4. This could indicate that the more the renters use the Peer-to-Peer car sharing service, the more they cover their need for a car and thereby do not consider buying their own.

However, based on the interviews, a more complex reality appears. The number of times you rent a car is caused by many different parameters and does not have to be an indicator of a car need being covered. Sigrid has used GoMore once, and is considering buying a car.

The averages of all journeys entering, leaving and completely within Copenhagen

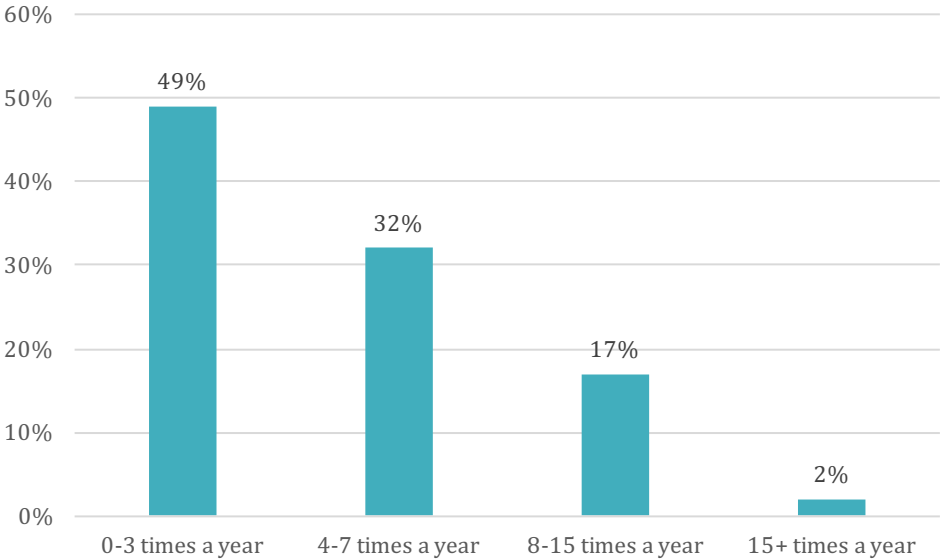


Figure 30: Rentals per year among the renters. 105 respondents.

It is not because of a need to use a car in her current daily life. In fact, she would much rather prefer to use public transport: “*When I take the train I’m able to work and relax. I get so annoyed when I drive a car, especially in the rush hour.*” (Appendix 13: Sigrid) But Sigrid is looking for a new job, and if it is too far away to use public transport (over 50 km away from Copenhagen) she will consider buying a car. The reason that Sigrid does not use GoMore more often, is because of a low need for a car. She often takes public transport and combines bike and train when she is going on longer trips to Jutland. GoMore was interesting for Sigrid on one trip where the public transport was perceived to not suffice in Northern Jutland, when she wanted to go to nature sites. A correlation between using GoMore a lot to cover a need for a car and a reduced car ownership is thereby far from certain. Other factors, such as distance to work, and having children is just as likely to influence car use and ownership.

It is however possible that the people who use GoMore for a larger variety of trips learn that they can live without owning a car. The data shows a more diverse car use of the Peer-to-Peer car sharing service among the people who no longer consider buying car. This group has a bigger share of different purposes that they use a car for. Among this group, the car is used more often to move stuff and to commute than among the users still considering buying a car. The ones still considering buying a car are do-

minant in the renter group, as they make up 40 % of the users, see 6.3.2.2 *Non Car-owning Renters*. This group is mainly using GoMore to go on vacation or to visit family, see Appendix 20: Figure 5. The fact that 40 % of the renters are still considering buying a car even though 75 % use a bike for their daily transport, see Figure 29, can also be a sign of different infrastructure parameters in the transport system outside of Copenhagen. It may also be a sign of some normative rules still dominating in the automobile regime, however.

Caroline’s statement is just one example among the interviewees of a rule that is often seen in the automobile regime (Freudenthal-Pedersen 2009); “[...] *when I get children I will need a car.*” (Appendix 1: Magnus; 4: Klara; 6: Casper; 11: Gustav; 12: Caroline). Her family lives outside of Copenhagen and she explains how a car would make it more convenient to go there and visit them:

“I have a child, so it can be a little troublesome on the longer trips, then it [GoMore] is easier and gives me the possibility to get there more conveniently.” (Appendix 12: Caroline)

Caroline’s sensemaking is influenced by a dynamic transport regime where different arguments exist for the different transport options. She explains that it is cheaper and faster for her to use a bike and public transport than a car in Copenhagen. However, the car still enables

a more comfortable trip for her and her child when they take the longer trips out of Copenhagen. Caroline elaborates and states that when she is able to afford a car she will buy one.

6.2.2.2.2 SUMMARY

To sum up, it seems likely that the low car ownership among the renters (18 %) is due to the bike being a dominating mode of transport in Copenhagen. GoMore ensures renters access to a car when they need it, which is rare and the purpose is often to leave the city on longer trips. The bike enables the majority of the renters (75 %) to fulfill their daily need for transportation and the presence of Peer-to-Peer car sharing seems to enable a life without a private car for some. This will be discussed further in chapter 6.3 *Car Dependency*. Overall there seems to be a tendency of three different groups among the renters in the data from the questionnaire:

Mobility patterns of the renters

Renters that rarely use GoMore

Perceive their bike as their primary transport mode and use GoMore 5 times a year (on average). The GoMore car enables convenience and comfort on longer trips.

Conflicting sensemaking and norms influenced by the bicycle culture in Copenhagen but also by the automobile regime.

Renters that use GoMore more frequently

Perceive their bike as a primary transport mode and use GoMore 8 times a year (on average). The GoMore car enables a variety of trips. Sensemaking and norms influenced by the bicycle culture in Copenhagen and owning a car is deemed unnecessary.

Car owning renters

Includes renters who own a car and use GoMore to rent cars that can perform other tasks than their own. Use GoMore's car sharing service 3 times a year (on average). Half of them perceives the bike as their main transport mode, while the other half choose the car.

GoMore enables trips where they need a different car type than their own. Conflicting sensemaking and norms influenced by the bicycle culture in Copenhagen but also by the automobile regime.

6.2.2.3 THE OWNERS' MODAL SPLIT

Among the owners less than half (40 %) use their car as the primary transport mode, see *Figure 31*. The modal split of the car owners' main means of transport is in some ways surprising. It seems that 52 % of the owners perceives their bike as their most important transport option to get around in their daily lives. This challenges the traditional usage patterns of car owners, see 3.2.3.2 *New Paradigms in the Transport System*, but does also make some sense in a Peer-to-Peer car sharing perspective. The owners who share their car with others must to some extent use another transportation mode when

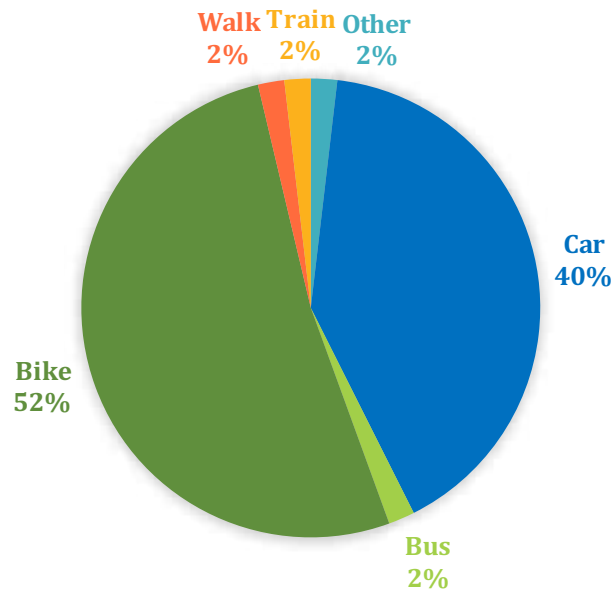


Figure 31: The Modal Split of the Owners. Owners' main mode of transport. 54 respondents.

the car is rented out. However, the average owner rents out his or her car 28 times a year or around twice a month, see *Appendix 14*. The frequency of bookings does therefore not necessarily explain the high number of cyclists among the owners.

Public transport is represented by 4 % in the modal split of the owners which is lower than the percentage among the renters in the questionnaire. *Figure 31* therefore seems only to indicate two different groups among the owners; people who mainly use their bike and others who mainly use their car.

6.2.2.3.1 THE DAILY MOBILITY OF THE CAR OWNERS

The difference in main travel mode indicates subgroups in car use in the daily mobility patterns of the owners. The variety in the owners' car use during the week is therefore not that surprising. Around half of the owners in the questionnaire use their car 1-2 times a week or less, see *Figure 32*. The smallest group represented in the data is the owners that use their car 6-7 days of the week. In general, the respondents use their car less than what might be expected of a traditional car owner who commute to work. According to Mette Jensen's theory (1997), the car owners who drive between 6-7 days would either be categorized as passionate car drivers or everyday car drivers, see 3.2.1 *Meso level: The Automobile Regime*.

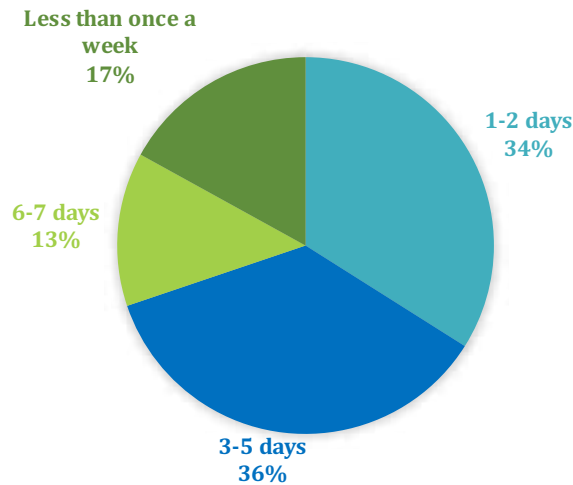


Figure 32: The owners' weekly car use. 53 respondents.

The owners who state that the bike is their primary transport mode in general use their cars less than the ones who state that the car is their primary transport mode, see Figure 33. The owners who use their car less than once a week have all picked the bike or walking as their primary transport mode.

Figure 33 shows that around 66 % of the users who drive their car 1-2 times a week bike as their main mode of transportation. The rest, around 33 %, claim to use the car as their primary mode, but only use the car 1-2 days a week. This could be people who are unemployed, work at home or due to other factors do not have the same need for mobility as the other owners. The car owners that use their car 6-7 times a week either drive a car or use public transport (bus, train or metro) to fulfill their

everyday mobility demand. The ones that state that public transport is their primary transport mode, even though they use their car 6-7 days a week, could either be commuting in their car to the station/bus stop or they use their car in their leisure time every day. The modal split and the variety of car use, shown in Figure 31, seem to indicate two different types of car owners: the

traditional type who commutes to work and the owner who uses his or her car rarely and for other purposes. This variation in car use is also represented in other studies, where Jensen (1997) among others have defined these two 'types' as "the everyday car driver" and "the leisure time car driver", see 3.2.1 Meso level: The Automobile Regime.

Car Use and Primary Transport Mode of the Owners

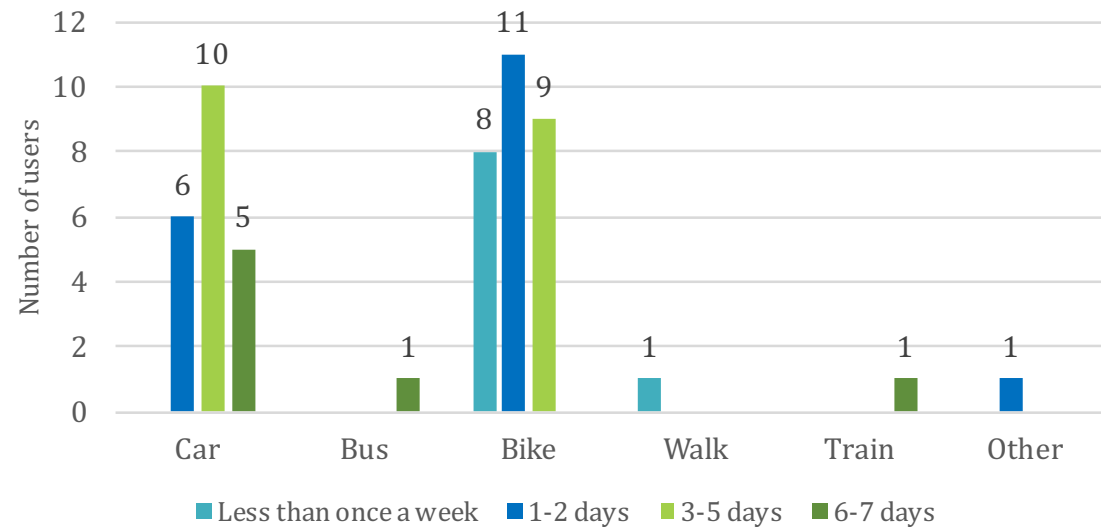


Figure 33: Illustrates the number of respondents that use car, bus, bicycle, walk, train or other as their primary mode of transport. The modes are split up in the four categories of how many times a week the owners use their own car: Less than once a week, 1-2 days, 3-5 days and 6-7 days. 53 respondents.

6.2.3 THE DYNAMIC REGIME

The difference in car use and main transport mode among the owners could be an indicator of a dynamic regime in the transport system where a variety of modes compete. Among the interviewed owners, there also seems to be a tendency of two different types of car users.

6.2.3.1 LEISURE TIME OF CAR USERS

5 out of the 7 interviewed owners explain that the bike is their primary transport mode. They only use their car a couple of times a week, or less. In many aspects, they use the same sense-making as the cyclists among the renters, and use their cars for the same type of leisure trips, see section 6.2.2.2 *The Renters Modal Split*. The same cyclist culture and rules affect these owners. Magnus describes the bike as the easiest and most flexible transport mode inside Copenhagen:

"I never use the car in the weekdays, it would take me a longer time to drive to work [in his car] than it does to bike [...] We live in the middle of Copenhagen so it's just easier to take the bicycle. [...] I live 6 minutes from work but by car it would take at least 20 minutes." (Appendix 1: Magnus).

Even though this group owns a car, they do not use it much inside the city. When asked why they prefer the bike they explain that the car

is inconvenient in Copenhagen where the parking is expensive and the trips are faster by bicycle. (Appendix 1: Magnus; 3: Hannah; 4: Klara; 5: Thor) Klara explains the benefits of the bicycle:

"The bike is super-fast through the city and the bike is free because you don't have to pay for parking. So it's much easier and flexible [than the car] and it's nice to get outside – when it doesn't rain – so I don't mind biking." (Appendix 4: Klara)

Hannah supports Klara's thoughts:

"We never use it [the car] in our everyday life. Never to work and never going grocery shopping. We haven't changed those habits even though we have a car." (Appendix 3: Hannah)

Instead Hannah and Klara use their car for leisure trips outside of the city just like the main proportion of the renters. The owners have different reasons to use their car on these leisure trips, however convenience and comfort are the main drivers, and the reason why they own a car. Magnus explains that it is easier to take his car when they need to bring their dog, and Thor explains that they need a big car to pack their things, when they are going to visit family in Jutland, and both use comfort as an argument for keeping the car. Klara and Hannah also like the convenience of the car, and the freedom it provides to go wherever they need.

Hannah states: *"It [the car] gives you a freedom to go places without having to plan it. [...] It is a luxury we let ourselves enjoy because we can afford it."* (Appendix 3: Hannah) Klara explains: *"Cars are wonderful, because they give you a sense of freedom. You can go wherever you want and without a car I sometimes feel a little trapped inside the city."* (Appendix 4: Klara) It seems that there are at least two dominant forms of sensemaking regarding the car in this user group: the car as an inconvenient and expensive transport mode in the city, and the car as a convenient, comfortable and liberating transport option outside of the city.

6.2.3.2 COMMUTERS AND PASSIONATE DRIVERS

2 out of 7 of the interviewed owners use their car 6-7 times a week and also put it as their primary transport mode. The two owners Signe and Casper both live outside of Copenhagen close to an S-train station and use their cars every day. Casper works at home and his wife, who works in the city, takes the train to work. Despite of the family's small need for a car to commute, the household has two cars. This might be explained by the suburban context they live in, where the norm often is to have a car, because it is easier to use in the suburbs compared to the inner city. Casper uses his car 6-7 times a week and explains it is his only mode of transport. He mainly uses his car to go grocery shopping or to sometimes pick up his children from their workplace.

“It’s the freedom – I love cars – you can drive whenever you want and you’re not dependent on cancelled trains. So it is the freedom to drive whenever and by the way, when you go grocery shopping it’s not possible to take the train.” (Appendix 6: Casper)

Like Hannah and Klara, Casper attributes to the car a sense of freedom and convenience. However, unlike the rest of the owners his sensemaking does not find the car restricting in some situations. When asked if he could imagine a life without a car Casper explains that he has owned a car since he was 16 and cannot imagine using any other mode. Casper does not seem to experience the negative sides of the car regarding congestion and lack of space, as Olle Hagman describes, see 3.2.1 *Meso level: The Automobile Regime*, and as the rest of the interviewees complain about. This might be due to the fact that he works from home, lives outside of Copenhagen and does not experience morning traffic or any of the other negative effects of car ownership that the other interviewees describe. Signe uses her car every day to commute to work but also to go on leisure trips, and to do grocery shopping. Just as Casper she explains that it is her best choice as public transport is costly:

“I usually take the car, funnily enough it’s actually cheapest because my car is so cheap in maintenance and a parking ticket in Copenhagen is still cheaper than

public transport, it’s become so expensive.” (Appendix 7: Signe)

Casper and Signe’s sensemaking about public transport as expensive or limiting seems to be the way they justify taking the car. The two owners explain that their cars give them freedom and is the most convenient option for almost every purpose where they have to travel. They do not own a car because it enables them to go on vacation or take longer trips outside of the city, they own a car because it enables them to keep their daily life together. This group of owners who uses their car as their main transport mode therefore seems significantly different from the rest of the owner group in car use but also in the sensemaking behind their choices. Signe and Casper are representatives for this type of classical owner in the automobile regime, see 3.2.1 *Meso level: The Automobile Regime*, and share many of the same rules of freedom, convenience and that the car is a necessity when you have children and have to transport goods, see next section.

6.2.3.3 DIFFERENT RULES, SAME TECHNOLOGY

One of the most traditional norms in the automobile regime is that you have to get a car when you have children (Freudendal-Pedersen 2009). The two ‘traditional’ car owners Casper and Signe both mention their children as one of the main reasons that they have a car.

“If I only was going home [after work], then the bike would be a good option. However, if I’m picking up my children, have to do grocery shopping, or I’m going to a meeting I wouldn’t be able to do that without the car.” (Appendix 7: Signe)

Signe explains that different errands on a bike would be too time consuming and that she would rather spend this time with her children in the car. Casper uses the same sensemaking as Signe:

“In the beginning the car enabled us to drive our children, when they were younger. Now they have grown up and don’t have the same need, but our cars were used to drive the children back and forth from kindergarten and so on.” (Appendix 6: Casper)

Casper thinks a car is necessary when you have children, when you go grocery shopping or have other errands.

An interesting difference between the owners is that the ones who use their car less have found other ways of doing these errands during a trip and does not seem to follow the same normative rules as the car owners Signe and Casper. Both Hannah and Klara have a different approach to picking up their children and doing grocery shopping. Hannah explains:

“It’s important for me that my children learn to bicycle, we live in Copenhagen NW and there you have to be able to bike and get around yourself. If we pick them up in a car they will never learn [to bicycle]. I don’t want to have to bring them back and forth to all their different stuff. I know many parents who bring and pick up their children to handball, football and a lot of other stuff. Our children need to be able to manage on their own.” (Appendix 3: Hannah)

And Klara explains:

“We have a cargo bike that I use to transport smaller items [...] I even have driven my friends’ children and daughter in the cargo bike, so I don’t really need the car.” (Appendix 4: Klara)

Klara and Hannah does not have a need for a car in their daily life because groceries can be transported in a cargo bike or just be purchased online and brought to your door. Different normative rules can be observed in the group who use the car rarely; Hannah does not consider it as her responsibility to transport her children, they need to be able to do it themselves and Klara argues that she can just transport her children in their cargo bike if needed. The two owner groups thereby seem essentially different in regard to the need and use of a car. They have different rules about the use of the car depending on their primary daily transport mode.

6.2.3.4 IS IT ALL ABOUT CONTEXT?

Completely different rules seem to exist in the cyclist group and in the car driver group. Many of the renters and owners have rules and norms that can be reflected in the cyclist culture of Copenhagen. However, the two owners, Signe and Casper, that use their car a lot and have different rules from the rest of the owner group both live in the suburbs of Copenhagen. That might indicate a tendency, where the people living on the outskirts of Copenhagen have a different perception of the bicycle. Signe and Casper explain that if they used the bike instead of a car, or other modes of transport for that matter, during their everyday mobility, it would take much longer. This might reflect that the foundation for biking in these areas is less advantageous due to the longer distances, thus making the bike less dominant.

In fact, none of the owners in the group that uses their car 6-7 days a week live in the center of Copenhagen; two live on the outskirts of the city and the rest live in the suburbs. In the next group, 3-5 days a week, nearly half live outside of the city in different suburbs, while the groups that uses their car 1-2 days a week or less almost all live inside of the city, see *Figure 34* and *Appendix 14*. Even though different parameters affect car use such as distance to workplace, economy and more intrinsic motivational factors, see 6.1.3 *Discussion of Motivation* and 6.2.2.2.1 *The Daily Mobility of the Car Renters*, it is an interesting tendency that

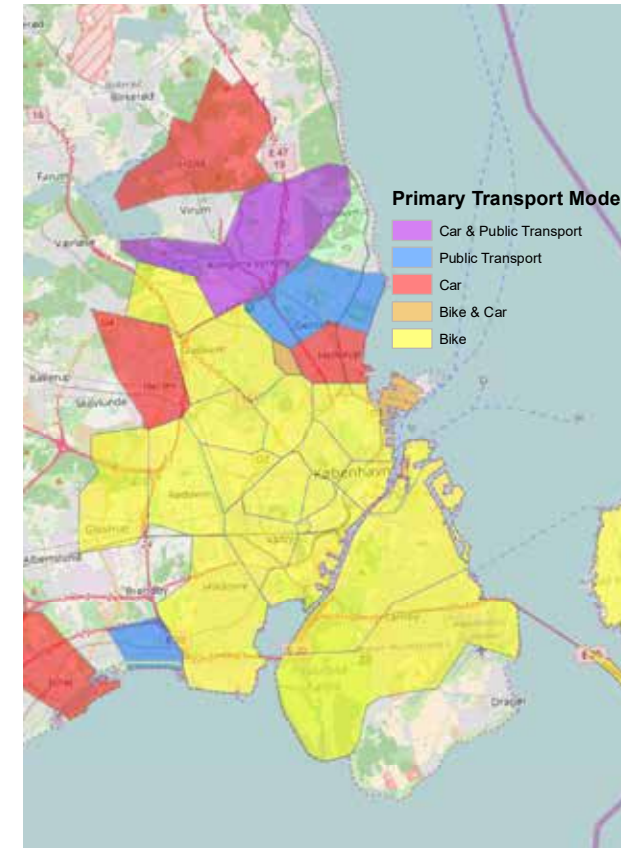


Figure 34: Map displaying the primary transport mode of the GoMore users divided into different areas within the report scope. The most dominant mode in the postal code is represented. Own production. Source: GoMore questionnaire and OpenStreetMap contributors. 143 respondents.

the car use seems to be somewhat dependent on postal codes. The infrastructure in the inner city such as the payments parking zones or the congestion on the roads is something the interviewees all mention as barriers for using a car in the city. The urban structure therefore seems to play a vital role as well when people choose a transport mode affecting everyday mobility patterns.

6.2.3.5 THE USE OF GoMORE

The different patterns and whereabouts of the two groups in car use, the passionate and everyday car drivers and the leisure time car drivers, seem to have an effect on the use of GoMore as well. As described in 6.1.1.1 *Compensation for low Utilization*, the owners mainly use GoMore as a way of earning a little extra money. The amount of times a year an owner rents out his or her car is naturally dependent on how many days a week they use it themselves.

The average rentals per year for a car owner who drives 6-7 days a week is 17 times, while the groups who use their car fewer times a week (less than once a week, 1-2 days, 3-5 days), are closer to the average of 28 times a year. The group that rents out their car the most is the ones that use their car 1-2 days a week with 30 rentals a year on average. It seems that the owners who use their car less rent out their car more frequently during a year compared to the group the uses their cars a lot, see Appendix 20:

Figure 6. To sum up, there seems to be at least two different groups of car owners in GoMore's Peer-to-Peer car sharing service:

Mobility patterns of the owners

'Leisure time' drivers

Owners who uses their car rarely, whose primary transport mode is the bicycle. Rent their cars out on GoMore approximately twice a month (on average).

Sensemaking and norms influenced by the bicycle culture of Copenhagen.

'Everyday' drivers

Owners who use their car a lot and whose primary transport mode is the car. Rent their cars out on GoMore approximately once a month (on average).

Sensemaking and norms influenced by an automobile regime in a suburban context.

6.2.4 DISCUSSION OF MOBILITY

The analysis of the Peer-to-Peer car sharing user group has shown a variation in daily mobility patterns and the use of GoMore's service in the renter group, but also among the owners. The user group thereby seems to embody different complex characteristics, sensemaking and norms. This difference indicates a dynamic regime, where different modes constantly compete. Some of the users seem to be representing conflicting rules, as their sensemaking and norms are reflected in both the automobile regime and in the bicycle regime. This might indicate an integration of the different regimes where a trip no longer is restricted to one mode of transport.

As mentioned earlier, the motivation to join GoMore for 64 % of GoMore renters was to get more transport options. If the ones who are motivated by the freedom of not owning a car is added, the number rises to 75 %. Both motivations can be linked to the urban trend that people in cities want more mobility options, and are beginning to think more of mobility as a service, described in 3.2.4.3 *Multimodal Travel Patterns*. These visions of increased mobility are often described and reflected in the term multimodality. The following section will discuss if the GoMore user group really are innovative frontrunners of these concepts.

6.2.4.1 INCREASED MOBILITY DEMAND - AN INNOVATIVE USER GROUP?

Multimodal trips are per definition trips where more than one mode is used to get from A to B, as described in 3.2.4.3 *Multimodal Travel Patterns*. Following this definition, a trip in a GoMore car will always be multimodal, as the renter would have to get to and from the person renting out the car before using the car for the trip's actual purpose. They use the web site or the app that GoMore provide to get in contact, and reach an agreement with the owner of the car. Using apps and other digital tools seems to be a characteristic and a necessity of multimodality, see 3.2.4.3 *Multimodal Travel Patterns*. The renters use their bike (40 %), go by public transport (31 %) or walk (23 %) to get to their GoMore car, thus the trip is multimodal, see *Appendix 20: Figure 12*. The fact that the GoMore renters as a group are multimodal when taking a trip using GoMore begs the question: Do the GoMore users reflect multimodal patterns outside their GoMore trips?

The interviewees have a pronounced attitude towards public transportation, and how it fits into their daily mobility. In many cases, the interviewees state that using public transportation in the central parts of Copenhagen is both inconvenient and expensive. Klara has a strong opinion about public transportation:

"I almost never take the train, or the bus for that matter. It's not worth it [...]. It's

more worthwhile taking a taxi, that's how expensive public transport has become [...]. The bus [schedules] are really bad, and it is always very inconvenient." (Appendix 4: Klara)

These statements might be due to the fact that most of the GoMore users are seasoned cyclists, and that the bike infrastructure in Copenhagen is extraordinarily good and not that the public transport is extraordinarily bad. The 75 % of the renters that state that their bike is their main mode, might therefore indicate that it is their *only* mode on most trips. However, Caroline whose main mode is public transport expresses that she combines different services when she leaves the city to go to work or to go on holiday:

"I bring my bike with me on the train [going to work], and then I bike home [from work]. This way I don't have to show up at work all sweaty." (Appendix 12: Caroline)

Combining modes enables Caroline to get the benefits of both modes of transport. She can show up to work looking nice because she can bring her bike with her on the train, and she can get exercise and fresh air on the way home because of the bicycle. The multimodal trips generate value for Caroline, and it would seem like both the public transport regime and the bike regime influence her sensemaking, when going on longer trips.

Some of the interviewees have similar stories of how multimodal trips enable them to go on longer trips, but it is rarely on their daily commuting to and from work. These actions are expressed more often among the users who have the bike as their main mode of transportation. Most of the renters' trips seem to take place within central parts of Copenhagen, where the bike, according to their sensemaking, is sufficient in most cases, and it gives the user a large degree of freedom. This might indicate that multimodality is not a dominant trend inside of the city among Peer-to-Peer car sharing users, as the bicycle regime seems very dominant. But it is difficult to determine whether or not the users of GoMore's Peer-to-Peer car sharing service are more likely to have multimodal patterns compared to the average Copenhagen as there have been no studies on this topic as of yet, as explained in 3.2.4.3 *Multimodal Travel Patterns*.

The findings in the analysis above suggest that GoMore is not a vital part of the renters' daily mobility patterns. GoMore's car sharing scheme serves more as an added mobility service to the primary transport mode of the users. It can be assumed that a large part of the GoMore users are prepared to transcend into a more multimodal pattern, as they often assess which mode of transport to pick when going to a particular destination. This shows that they reflect on their trip and how to get there in the most efficient, comfortable and convenient way.

This pattern would not be found among the ‘passionate car user’ type, as this type would pick the car as their mode of transportation wherever they go, see 6.2.3.2 *Commuters and Passionate Drivers*.

Despite of this innovative tendency of the user group, Peer-to-Peer car sharing as a niche does not seem to have its own set of rules. The difference in rules between the groups seems to be rooted in the two competing regimes; the bicycle regime and the car regime, both of which strive to dominate the transport system; one outside the city and the other inside Copenhagen.

6.3 CAR DEPENDENCY

To determine if the niche Peer-to-Peer car sharing is a trajectory going towards a break with the automobile path dependency, this last part of the analysis, will analyze the change in car use and ownership among GoMore’s users. Car dependency is an intangible concept that can be hard to define and hard to measure. For this paper, car dependency is conceptualized as the stated and revealed tendency of individuals to resort to the car to meet their mobility needs. This tendency is measured using the variables from the questionnaire, in which the distinction between car ownership and car use defines car dependency. The underlying meanings, norms and sensemaking attributed to Peer-to-Peer car sharing, discovered in the previous analyses, are a basis for assessing the effect on car use and ownership. The distinction between car renters and car owners has also been kept in this chapter. The trends that appear are elaborated further by the insight gained from the user interviews.

First, the effects of Peer-to-Peer car sharing on car ownership and car use are analyzed among the owners and secondly among the renters. Finally, a discussion will attempt to answer the research question of the study.

6.3.1 Owners

The change in car use is an important measure when trying to assess the impact of Peer-to-Peer car sharing. An increase in car use might suggest that the niche follows a car dependent trajectory, where the actions performed in the regime are reproduced in the niche, while an decrease might suggest that the Peer-to-Peer car sharing can create a transition in the automobile regime. One parameter to assess the change in car use is the kilometers driven before and after the owners joined Peer-to-Peer car sharing. The following section will analyze the users who drive the same, and the ones who drive more or less before and after they joined GoMore.

The chart in *Figure 35* shows the change in annual mileage for car owners before and after joining GoMore. It should be noted that these numbers are to interpreted with caution, since they are based on self-reporting by the questionnaire respondents and might be inaccurate because of estimation difficulties among the respondents. 22 out of the 51 or 43 % of car owners do not change their kilometers driven per year, and are equal to zero kilometers change in the chart. These owners are not visible in the chart. As visualized the share of increased kilometers is bigger than the share of decreased kilometers per year among the owners, thereby making the total number of kilometers driven annually by car owners increase by 16 % in after joining GoMore, also seen in *Figure 36*.

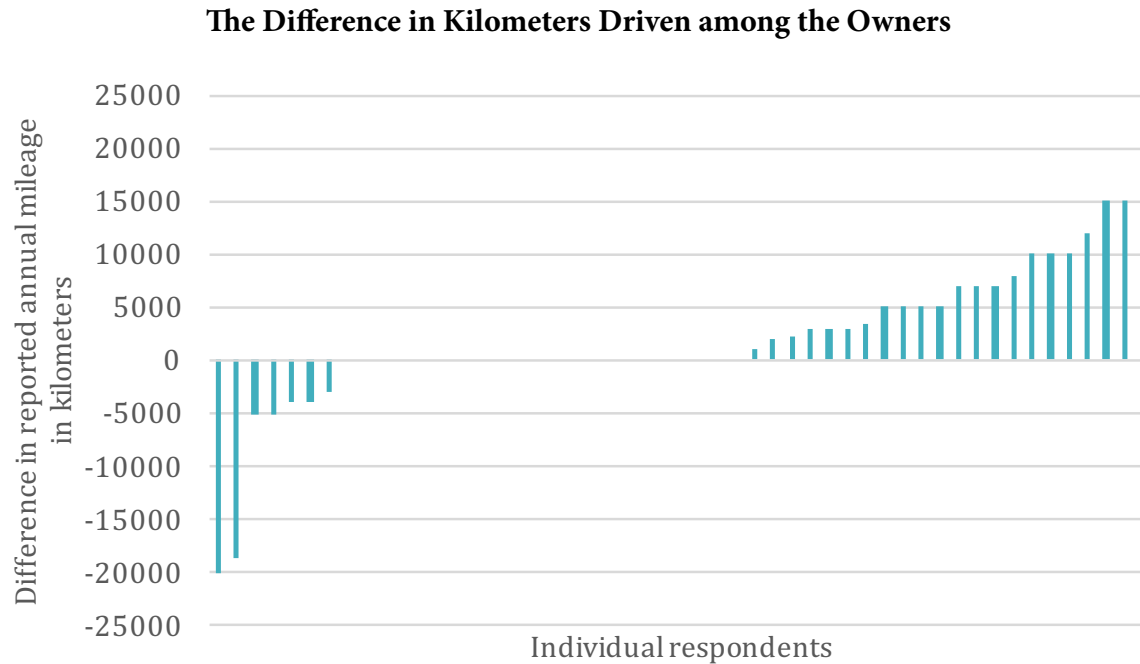


Figure 35: The columns illustrate the decrease or increase in kilometers per owner before and after they joined GoMore. The axes illustrate kilometers driven more than before (positive numbers) and kilometers driven less (negative numbers). 51 respondents in total.

Nearly 43 % of car owners being unaffected by GoMore in their mileage seems contradictory, since the car is arguably less available for car owners once they start renting it out. However, the average annual mileage of the owners is lower than that of the typical Danish car owner. On average, the car owners in Peer-to-Peer car sharing drive less than 15,000 kilometers a year whereas the average Danish car owner drives around 17,000 kilometers a year (Det Økologiske Råd 2014). The low utilization of the car

might enable them to rent it out without having to change their own car use. It seems that 43 % car owners limit rentals to periods when they are not using the car themselves. This is a tendency that can be identified in the interviews; Casper and Signe, who use their car 6-7 days a week, do not change their usage of the car after they have joined GoMore.

As previous sections described, Casper uses his car every day and is very car dependent as it is

The Annual Kilometers Driven by the Owners Before and After GoMore

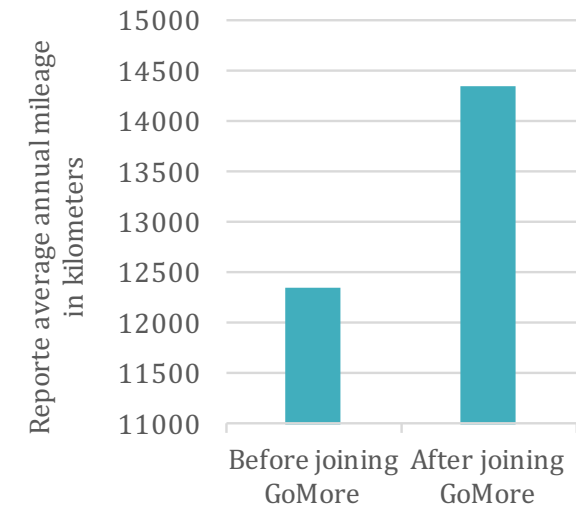


Figure 36: The average annual driven kilometers behind the wheel of a car before and after joining GoMore per owner. 51 respondents.

his only transport mode, see 6.2.3.2 *Commuters and Passionate Drivers*. He rents the family's second car out through GoMore and do thereby not change the use of his own car. When asked if have considered selling his own car and if he could imagine a life without a car he states: “No, never, I have owned a car since I was 16 years old.” (Appendix 6: Casper). Even though the income from GoMore is an important element in Signe's economy, see 6.1.1.1 *Compensation for low Utilization*, she does not change her use of the car to rent it out: “I use it [her car] every day, sometimes I bike, but I mainly use my car.”

When asked if she has ever considered selling her car she answers: “No actually, I simply cannot live without it.” (Appendix 7: Signe) These two owners are examples of a very car dependent user group, as the car is an integral part of their mobility habits. However, they manage to rent their cars out without compromising their own mobility needs. This might indicate that the 43 % who do not change their annual mileage do not change the way they always have used their car, but they make better use of the resource. In this regard, this user group is as car dependent as they were before they joined GoMore, but they might enable others to be less car dependent when sharing.

As seen in Figure 37, 67 % stated that GoMore did not affect their decision to buy a car, while 31 % of the car owners responding to the questionnaire stated that they chose to buy a car because of GoMore.

The group of owners who have not been affected by GoMore in their decision to buy a car is also the users who have a smaller increase on average per user than the ones who have been affected, see Figure 38. The 31 % who have chosen to buy a car, experiences a significant increase in kilometers compared to the rest of the owner group (67 %). This group almost drives 5 times more than the owners who have not been affected in their car purchase by GoMore.

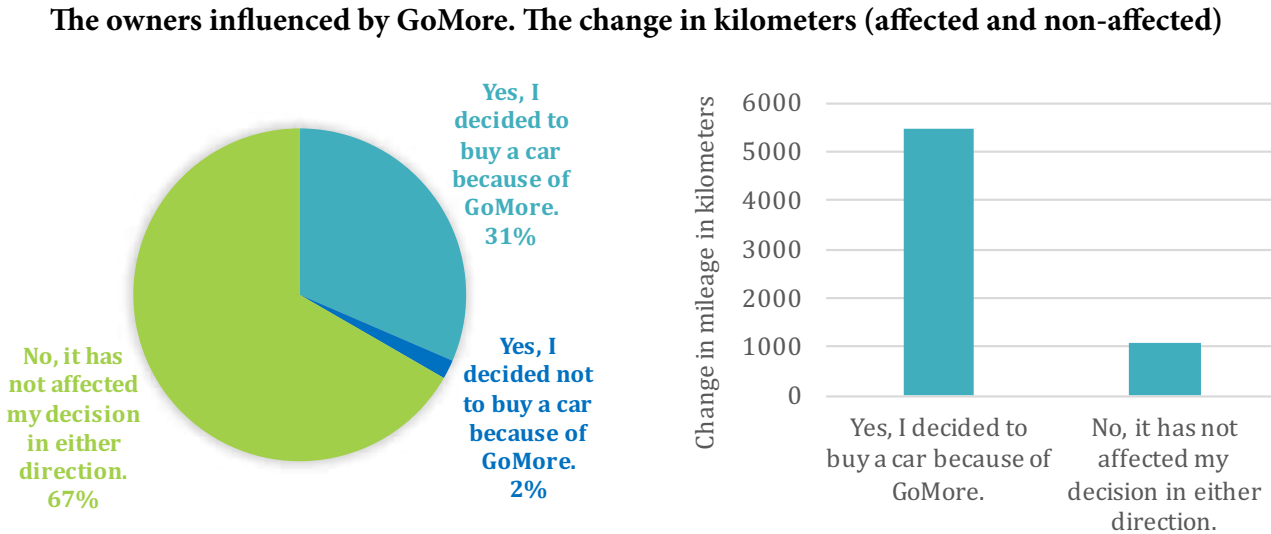


Figure 37 (left): 54 respondents, Figure 38 (right): 50 respondents.

6.3.1.1 PEER-TO-PEER CAR SHARING – AN INCENTIVE TO BUYING A CAR?

GoMore’s service might not be the main cause of why some of the owners have bought a car. It could be a result of a progression in life stages such as having children or getting another job. However, the fact is that 31 % of the owners stated that they bought a car because of GoMore. There is a tendency to use the car more when it is readily available, which might explain the increase in car use among this group (Jong 1990) (Appendix 2: Kristina; 10: Simon; 11: Gustav).

As illustrated in Figure 19 and elaborated in 6.1.1.3 Motivation to Keep the Car of the motivation chapter the categories “To avoid selling my car” and “To finance the purchase of a more expensive car” are represented as a motivation 15 % times respectively, among the owners. The analysis of the motivational drivers to join GoMore, indicate that a group mainly finance a car ownership through the service. Peer-to-Peer car sharing might therefore work as an incentive for owning a car by allowing owners

to subsidize their car expenses by renting the car out. 5 out of 7 of the interviewees reported that they have joined GoMore's leasing instead because they can offset some of the leasing cost by renting out the car. An example of the allure of the car and the economic incentives by renting it out is evident in the interview with Klara. Klara and her family is leasing a car with the hopes of renting it out to cover about half of the costs because they do not use the car themselves on a day-to-day basis:

“We’ve talked about that if our needs changed – say we bought a holiday cottage – then we would have a much greater need for the car. I mean, right now we live in the middle of Copenhagen – come to think of it, it’s actually a little funny that we got a car... We actually don’t need it, but then we’ve got old parents and so on, so you think that you have to go to Funen a little more often and I don’t know what, but you know... It’s just that we used to have a car and then we didn’t have a car for six years and we were actually able to get by without and then we just felt like it again.” (Appendix 4: Klara)

Here, we see how Klara’s reflections leads her to realize that they actually do not need the car. Still, Klara and the family is considering whether to return the car to GoMore after the 12-month lease has elapsed or whether to try to buy it from GoMore. Klara explains:

“We thought about that, say we want to keep the car – we haven’t decided yet, we plan to ask GoMore what it would cost if we were to buy it from them, because we are happy with the car, it’s a lovely car. It’s not an expensive car, it’s... Actually, the leasing is a little expensive compared to the selling price of the car, but then we

got that contract for a year, which suited us really well and it made sense for us like that. We would consider buying it, yes, if we think we need it. We love our car, but do we love it enough? That’s the question.” (Appendix 4: Klara)

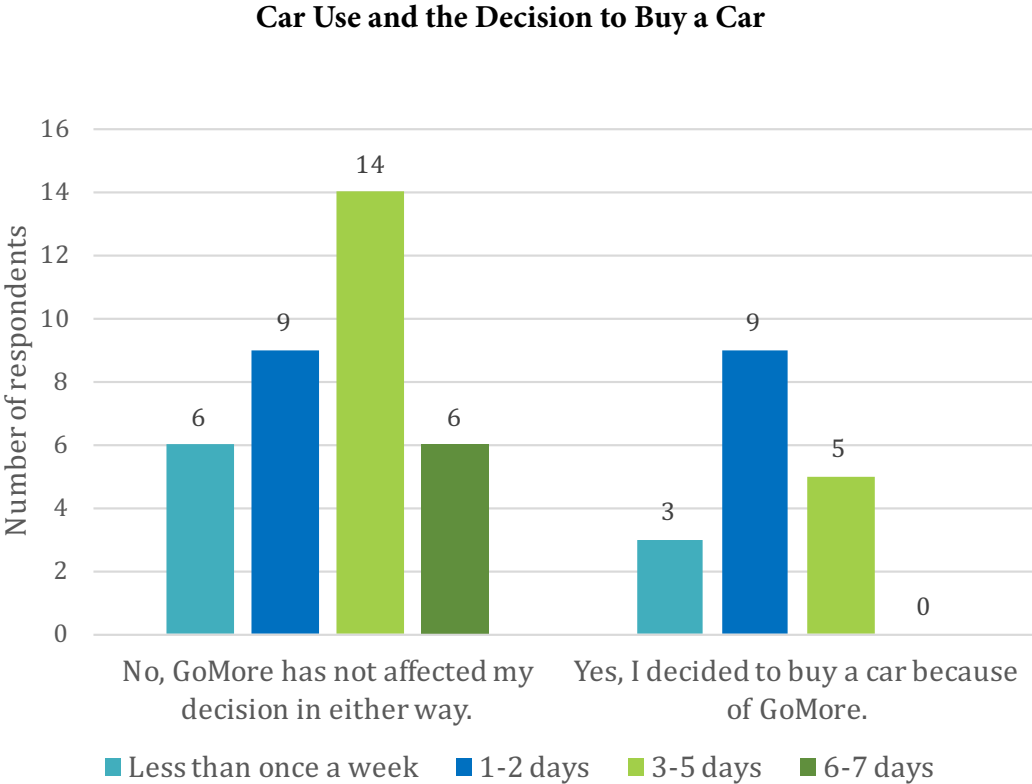


Figure 39. Whether or not GoMore has affected car owners to buy the car they own compared to the amount of days per week they use their car. The numbers above the bars are the number of respondents. 53 respondents.

So even though this family does not use their car in a day-to-day basis, lives in central Copenhagen and uses bikes and a cargo bike for most errands, see 6.2.3.3 *Different Rules, same Technology*, managed without a car for six years, finds that the leasing charge is a little steep (Klara and her husband are self-employed without a regular income, Klara working as an artist) and has trouble renting out the car (only renting it out twice during the four months they have had the car), they are still considering buying the car when the lease runs out. This illustrates how addictive having a car can be – Klara even uses the word ‘love’ – and the Klara’s previous comments show how GoMore’s combination of car sharing and leasing may drive people into car dependency.

In the graph of *Figure 39*, it appears to be that of car owners who were unaffected in their car purchase by GoMore, 40 % use their car 3 to 5 days a week. Although, 43 % of uses their car less than once a week, 1-2 days a week, and 17 % uses their car 6-7 days a week. For those who were influenced by GoMore in their car purchase, 53 % use their car 1-2 days a week. While 18 % use their car less than once a week and 29 % uses it 3 to 5 days a week. Apparently, these car owners who were influenced by GoMore do not use their car for 6 to 7 days a week.

It seems that car owners who were affected by GoMore in buying their car use their car less days in the week than car owners who were unaffected by GoMore in their car purchase.

Hannah give one possible explanation for this:

“We don’t need a car for our day-to-day life, we think it’s too expensive to have a car, we’ve never had a car. But then we became aware of this option, by hearing of this option through a friend who had done it, that you could lease a car. And normally when you lease a car, you can’t rent it out, but you can if you do it through GoMore. And then it could suddenly make sense for us. Not just in relation to the finances, because... I mean, we could easily afford having a car if we wanted a car, but in relation to the fact that there is actually someone else who can also use it when we’re not using it, because we only use it for pleasure.” (Appendix 3: Hannah)

We see in this quote how Hannah attempts to make sense of having a car while also describing that there is no need for it in their day-to-day life. She does so by highlighting the two benefits of renting the car out: monetary gains and resource optimization. The former may be interpreted as an extrinsic value and the latter as an intrinsic value. She later goes on to specify that the motivation is probably split fifty-fifty between the two benefits, and then makes it clear that she would not have leased a car if she couldn’t rent it out on GoMore.

Both Klara’s and Hannah’s statements might indicate that the ones that were affected by

GoMore in buying a car were uncertain about whether their need for a car could justify buying one – with the added income from renting the car out on GoMore, they can justify buying or leasing a car, even though they do not use it that much. The potential impact on car dependency seems to lie with the respondents that have an infrequent need for a car and therefore have not previously been able to justify the expenses of having a car. However, because of GoMore this user segment now has the option of renting out their car so often that they can almost completely offset the cost, giving them the freedom to use the car whenever they wish, as long as it is not rented out. An example of this is the informant Magnus, who states that he – during good months – can almost cover the costs of leasing his car. This may enable a new segment to have a car, potentially putting more vehicles on the road.

The table in *Figure 40* indicates the potential connection between being able to rent a car out through GoMore (assuming that this potential for renting out was how the respondents were affected by GoMore) and deciding to lease the car through GoMore.

The initial objective of asking the questionnaire respondents the question of whether or not being a part of GoMore had impacted their decision to buy a car was to investigate if the possibility of renting out the users’ cars in some way had either sustained their existing car ownership or justified the purchase of their

Respondent	Questionnaire: Car purchase affected by GoMore?	Interview: Leasing through GoMore?
Hannah	Yes	Yes
Thor	Yes	Yes
Klara	Yes	Yes
Kristina	Yes	Yes
Magnus	No	Yes
Signe	No	No
Casper	No	No

Figure 40. Whether or not being a part of GoMore affected the respondent's decision to buy a car in the questionnaire, compared with whether or not the same respondents lease a car through GoMore (data from interview).

car. In the follow-up interviews with the same users, the aim was to understand why some respondents had been affected, while others had not. As Figure 40 indicates, there seems to be a correlation between buying a car because of GoMore and the leasing service that GoMore provides. However, it should be noted that respondents did not have an option in the questionnaire to say that they decided to lease a car because of GoMore.

The statement made by 4 out of 5 lessees in the interviews indicate, that the leasing service,

combined with the possibility of renting the car out, serves as an incentive for car ownership in the sense that it makes a car available for the lessee which would most likely not have been feasible, had it not been for the option of renting it out. (Appendix 2: Kristina; 3: Hannah; 4: Klara; 5: Thor)

“Yes, well I have bought, or I have leased a car through GoMore, and I bought it because I need it every once in a while, but not enough for me to feel that it would be worth spending 4000 kr. every month.

So I hoped that it would be possible to cover some of the costs by renting it out to other people” (Appendix 2: Kristina)

Thor revealed a similar use of the option of renting out the car as a means of making the lease feasible:

“I have a big, old Toyota that uses a lot of gasoline. My wife got a job in Allerød, and we live in Kastrup, so we estimated that if she was going to drive it every day then taking wear and tear into account, it would maybe make more sense to lease a GoMore car that we could then rent out on weekends, or that we could then rent out the big car, and in that way make ends meet.” (Appendix 5: Thor)

Hannah and Klara were also affected by GoMore when deciding to buy a car, both are leasing through GoMore, and also expressed the importance of earning an extra income by renting out their leased car in the interviews. In table of Figure 41, the owners who were affected by GoMore in their car purchase also rent out their car more regularly than those owners who were not affected in their purchase. This indicates that the leasing combined with renting option that GoMore provides, and which seems to be unique to GoMore, is instigating car ownership. People who might not have been able to afford owning a car without the option of renting it out, now gets the opportunity to do so.

Average Yearly Rentals among the Affected and Non-Affected Owners

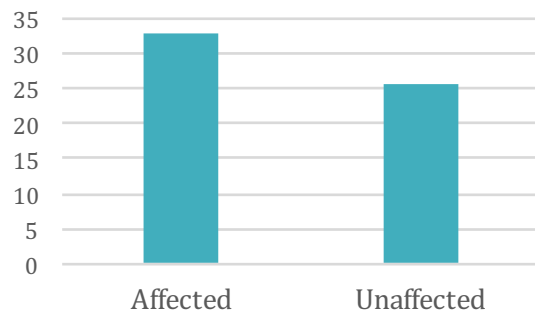


Figure 41. Average annual rentals for car owners/lessees that were affected or not affected by GoMore when buying their car. Yes (n = 16), No (n = 33). 49 respondents in total.

6.3.1.2 OWNERS SUMMARY

Participating in car sharing may constitute a shift away from the traditional attitude towards car ownership. Traditionally, previous generations would attach identity and emotional value to their car (Sheller 2004). Compared to contemporary times, the willingness to leave the car in the hands of complete strangers may indicate that the car has gone from being 'part of the family' to being a commodity or a tool, see 3.2.1 *Meso level: The Automobile Regime*.

This change in the sensemaking towards the car can be identified in the interviewees willingness to share, see motivation see 6.1.1.2 *Is Sharing Caring?* At the same time the interviewed owners seems very aware of the expenses concerning their car.

Many of them have drawn up a budget of expenses and income related to owning and renting a car and have thus become aware of the costs. The costs are thereby much more visible for the owners in Peer-to-Peer car sharing. Trying to optimize the use of the car, when the cars is not used, one could argue, is a step towards a less car dependent society, as it may lead to less cars in the city overall. The majority of the owners in the questionnaire were unaffected by GoMore in their purchase of a car and their car usage. This could indicate that these owners are lowering the total number of cars in the city, as other people rent their cars, and thus become less likely to buy their own car.

However, the analysis of car use and ownership among the owners of Peer-to-Peer car sharing seems to indicate that GoMore works as an incentive for owning a car by allowing owners to subsidize their car expenses by renting the car out. The kilometers driven per year have increased with 20 % and it seems that, out of the 54 owners who completed the questionnaire, 17 can be defined as new car owners that have been created, possibly because of the leasing concept in GoMore. Buying a car because of GoMore goes against the sustainability credentials of Peer-to-Peer car sharing and of GoMore's marketing as a resource-saving concept. The difference between leasing and renting is that leasing is a long-term business-to-peer concept and renting is usually a short-term Peer-to-Peer concept of GoMore. According to

Søren Riis, GoMore is currently the only car leasing provider in Denmark that permits private rental of the leased car (Appendix 16). This gives them an advantage compared to other car leasing providers. It seems that the hybrid of leasing and rental of private cars might have a negative effect on car use and car ownership. This study indicates that the leasing scheme in GoMore might oppose the sustainable transition potential in Peer-to-Peer car sharing. These indications call for further research.

GoMore's effect on car dependency
In total the owners drive 16 % more on average per year after having joined GoMore.
New car owners
17 people (31 %) decided to buy a car because of GoMore.
These car owners increased their annual mileage by almost five times more than did the owners who were unaffected by GoMore when buying their car.
Dependent on the freedom and convenience the car provides in their leisure time.
Old car owners
22 people (43 %) indicate that their annual mileage did not change.
Dependent on their car in their everyday mobility.

6.3.2 RENTERS

The findings suggest that owners in Peer-to-Peer car sharing do not reduce their car use and ownership. The following section will analyze if Peer-to-Peer car sharing leads to car dependency among the renters or if it on the other hand enables them to live without a car. The self-reported annual mileage for GoMore renters decreased by 13 % from 5,544 km to 4,796 km. In Figure 42, the differences in the individual renters' mileage are depicted. A large group, at the center of the chart, did not experience any

change in mileage. These renters are not represented by a bar since their change equals zero. This group contains 37 respondents or 39 % of the 94 respondents answering the question. Outliers include one respondent who increased reported annual mileage by 24,700 km and 18 respondents who decreased their reported mileage including six who decreased it by more than 10,000 km. The numbers might indicate that these six respondents have sold their car before joining GoMore and thereby drive much less than before. However, 4 out of the 7 respondents have never considered owning a car in

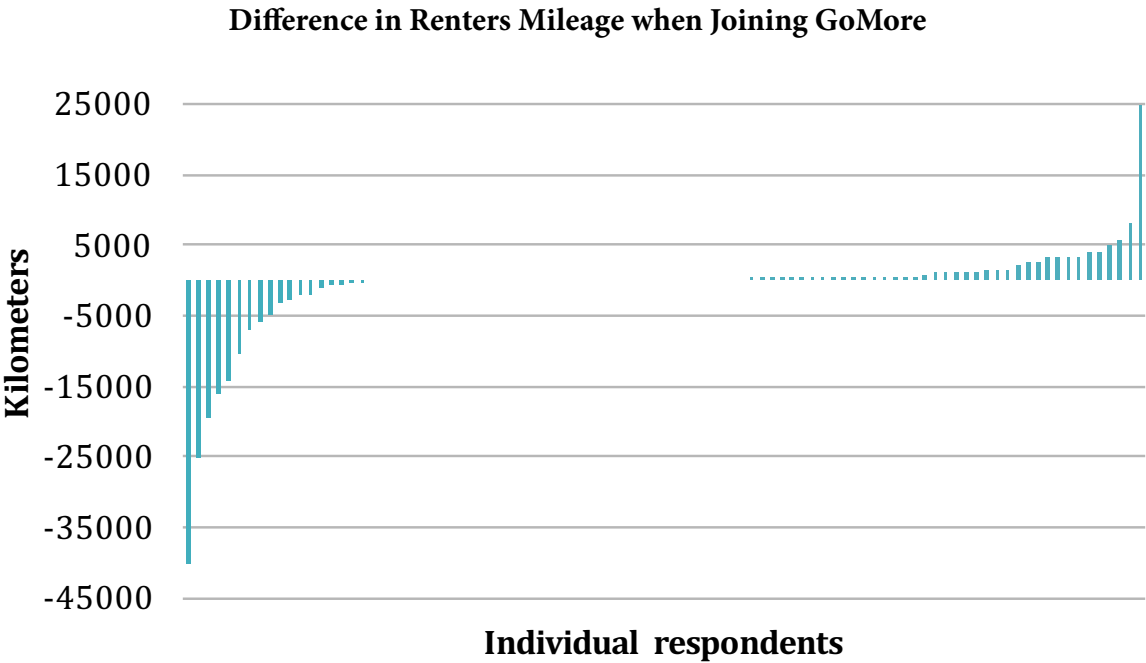


Figure 42: The individual differences in mileage after joining GoMore for renters. 94 respondents in total.

the first place and the decrease might therefore not be caused by GoMore's sharing service alone. As mentioned previously, these numbers of the annual mileage are subject to a certain degree of uncertainty. It is important to note that many other elements can also cause a decrease of 10,000 km a year; the respondents may have changed jobs, sold their holiday cottage, moved to the city or experienced any other life-disrupting factor.

There are 39 renters who increase their driving which is more than the 18 renters who decrease their annual mileage. This is not a surprising tendency when more than 75 % renters are cyclists and only 18 % own a car, see 6.2.2.1 *Primary Transport Modes*. After joining a car sharing scheme they have easy access to a car and thereby increase their annual mileage. However, the significant decrease among the six respondents in the questionnaire creates a total reduction of annual mileage of 13 % among the car renters in the Peer-to-Peer car sharing service. Whether or not this decrease is affected by GoMore's sharing scheme will be investigated in the following sections. *Figure 43* illustrates how GoMore has affected the renters' car ownership.

The graph indicates that Peer-to-Peer car sharing has affected 11 % of the renters to not buy a car even though they considered it before. The rest of the renters seem unaffected by the sharing scheme either because they already own a car, still consider buying a car or never

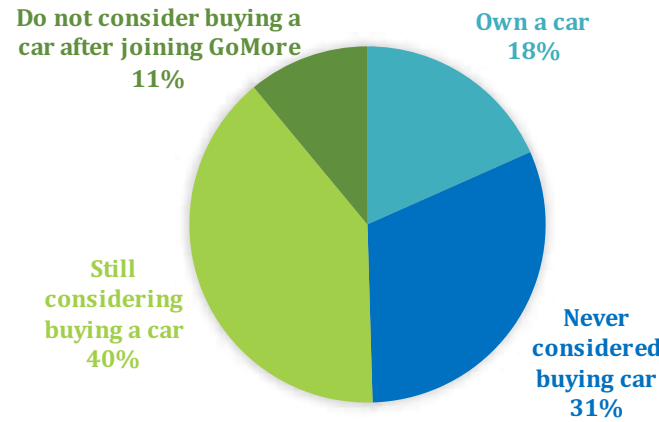


Figure 43. Shows the division in answers in the total of 109 respondents who answered a flow of question about owning and considering to buy a car.

have considered buying a car. For this group of renters, GoMore does not seem to impact their perception of owning a car.

6.3.2.1 RENTERS WHO OWN A CAR

The renters who own their own car (20 out of the total 109 renters who answered the questionnaire) fall into a separate category. There is reason to believe that they are more car dependent in their daily life, than those renters who do not own their own car. However, half of the group does not rely on their car as their primary transport mode, see section 6.2.2.2 *The Renters Modal Split*, where the daily mobility patterns of the group was analysed. When looking into which other mode of transportation they could have made their latest GoMore trip

with it seems that this group is more car dependent than the rest of the renters. As seen in *Figure 44*, 26 % of the renters who own a car are likely to have substituted their GoMore trip by either taking a bus or train. This number is 43 % for the whole renter group, see 6.2.1.3 *Trips Replaced*, indicating that the renters who own a car are more car dependent, as they use public transportation less as a possible substitute for their trips done by car. The previous analysis of the group's use of GoMore show that the car owning renters rarely uses GoMore and they do it when their own car isn't able to fulfill the purpose of the trip, see 6.2.2.2 *The Renters Modal Split*. Although this might seem somewhat self-explanatory, the number seems to indicate that owning a car leads to increasing car dependency.

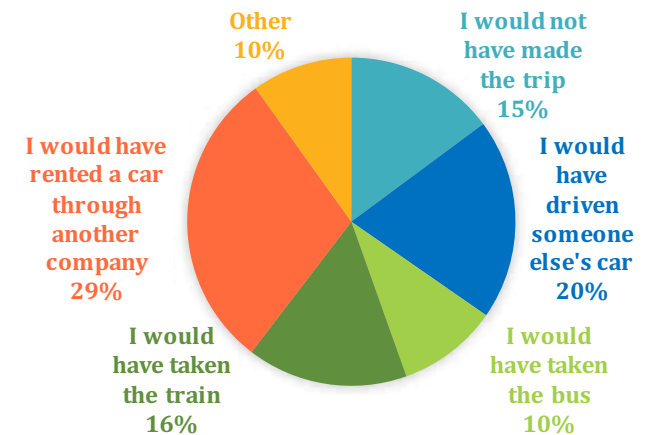


Figure 44. Renters who own a car responding to the question "How would you have completed the trip without GoMore?" 20 respondents.

When interviewing the GoMore users, several examples of the link between car dependency and car ownership was found.

“It is my opinion that it would be too expensive to rent a car every time I need a car. I would of course drive less if I did not own a car, because I would not use a rented car in the same way as I would with my own car – I would simply not rent a car that often.” (Appendix 11: Gustav)

The extrinsic, economic reasons that Gustav uses show some conflicting views related to the expenses of owning and renting. As seen in the previous statement, having to pay the rental price whenever he needs a car seems like a larger expense than the expenses that go toward maintaining and operating his own car. It is interesting that Gustav does not seem to include the initial investment cost of the car, which would, if added, make the cost comparison more realistic. Being confronted with the cost every time a car is rented on the other hand, might make it seem as a larger expense. Another interesting aspect of the interview with Gustav is that he expresses a feeling of needing to use his car, after having spent a lot of money on repairs:

“I have been very unlucky with the car that I currently own, and I have spent too much money on it. On the other hand, it wouldn’t make sense to sell it, now that I

have spent that much money on repairing it so that everything is fixed.” (Appendix 11: Gustav)

As repairs and maintenance are a somewhat inevitable part of owning a car, this might indicate a general tendency of car owners driving their cars as a way of justifying them spending money on it, instead of using it because it is the fastest or cheapest option. In that way, car ownership could be capturing the owner in a car

dependent pattern that is difficult to change. Gustav’s statements and the previous mobility analysis of the car owning renters in 6.2.2.2 *The Renters Modal Split* indicate that GoMore does not affect the car ownership or use in this group. *Figure 45* indicates the same tendency, where the main part of the owners drive the same before and after they have tried GoMore. 13 of these renters maintain the same mileage. The rest, all but one, increase their annual mileage. The renters who own a car thereby seem as

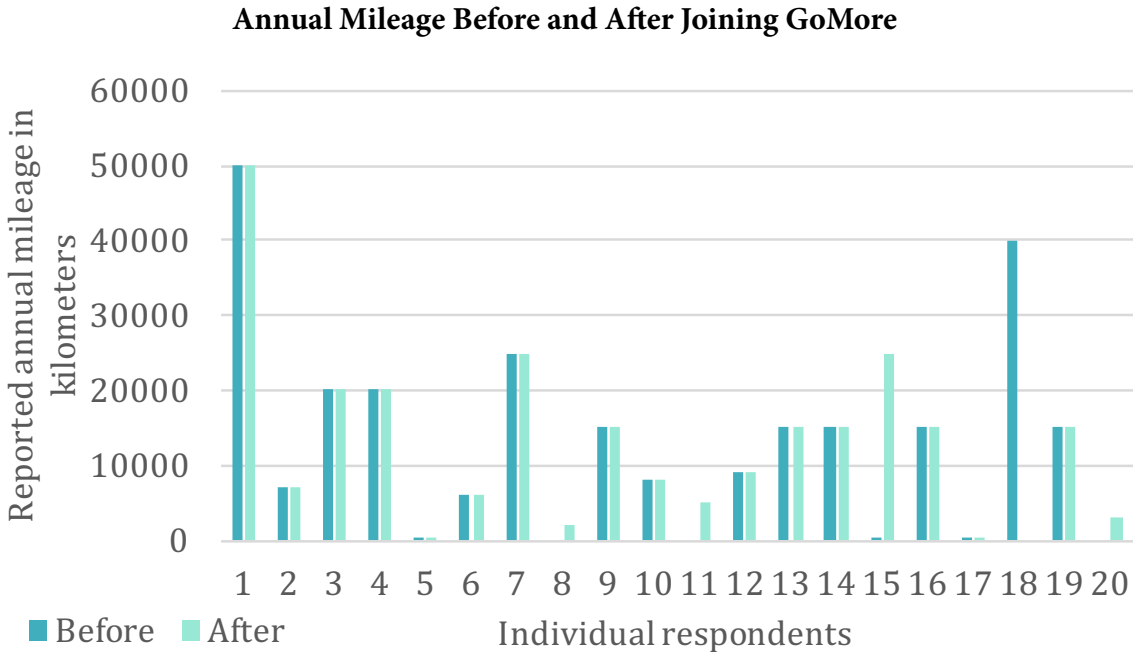


Figure 45: The evolution in mileage for GoMore car renters that own a car. In the diagram above, the mileage for the GoMore renters in the questionnaire that own a car is visible with blue bars indicating the mileage before joining GoMore and red bars indicating mileage after joining GoMore. 20 respondents.

car dependent after they have joined GoMore, as before they joined the sharing scheme.

“GoMore has made me consider buying a newer car, so I can rent it out. But they haven’t made me sell my car, it’s not flexible enough. [...] If I were to even consider selling my car and renting a GoMore car instead, I would have to be able to drive to Southern Jutland and back again in a day without it costing a fortune.” (Appendix 11: Gustav)

6.3.2.2 NON CAR OWNING RENTERS

As illustrated in the table below, 40 % of the renters who considered buying a car prior to joining GoMore are still considering it, and 11 % have changed their mind after using GoMore’s service and do not consider it any longer. 31 % have never considered buying a car. Although the consideration of buying a car remains unchanged for the majority, the 11 % who have been affected by joining GoMore indicate that joining a Peer-to-Peer car sharing scheme, has some potential for substituting the need to own a car.

Viewing this potential in isolation indicates that the 11 % of the renters who are now considered to have no interest in buying a car may have become less car dependent as a result of joining GoMore. As the table shows, 12 respondents have chosen not to buy a car because they are able to use GoMore’s service instead.

Never considered buying a car	34 respondents (31 %)
Still considering buying a car	43 respondents (40 %)
Do not consider buying a car anymore	12 respondents (11 %)

Thereby GoMore seems to replace 12 cars among the renter group in the Peer-to-Peer sharing service. However, using a Peer-to-Peer car sharing scheme naturally also means using a car. Therefore the 11 % of the renters who discarded their considerations of buying their own car, might still be using a car more now than they did before joining the scheme. Figure 46 shows a general decrease in all categories of car renters in terms of kilometers driven before and after joining GoMore. However, it should be noted that the relatively large difference among those who used to consider buying a car is partly explained by the few people who drastically decrease their car use, such one person who reports to have driven 30,000 kilometers before joining GoMore and 5,000 kilometers after joining GoMore. See Appendix 21: Figures 1-6 for more.

As mentioned in the section mobility *Car Use Has Many Affecting Parameters* under 6.2.2.2.1 *The Daily Mobility of the Renters* the renters

who no longer consider buying a car after joining GoMore also rent a car more often than renters who still consider buying their own car (see Appendix 21 for more). The renters who no longer consider buying a car use GoMore for a variety of different purpose, and use GoMore differently than the group that still considers buying a car, see 6.2.2.2.1 *The Daily Mobility of the Renters*. One explanation could be that they really bought into the whole car sharing idea and are using GoMore for all of their small, daily errands, bringing the number of trips up.

“I don’t know if I considered it [buying a car] specifically beforehand. It’s a general consideration. But it’s not worth it, considering my needs. If there was no GoMore, I would be much more inclined to buy a car because then it would be much more difficult to get a hold of a car when I need one. But with GoMore, I don’t even feel the need to buy a car, because I can always rent one that is close, and you can return it and pick it up at odd hours.” (Appendix 9: Lars)

Lars does not feel restricted by not owning a car; he sees GoMore as an opportunity to get a car when he needs it. The ‘still consider’ category use GoMore sporadically for longer trips but do not use it in their daily lives and might therefore feel that they still need to buy a car for all of the short trips for which it isn’t practical to rent a car. At least that is how Caroline explain it.

Average Annual Mileage among Renters Who do not own a Car



Figure 46. The average mileage of GoMore car renters that do not own a car before and after joining GoMore. The categories are renters that considered buying a car but do not consider buying a car anymore after joining GoMore ('Considered once'), renters that still consider buying a car after joining GoMore ('Still considers') and renters that never considered buying a car ('Never considered').

According to her sensemaking GoMore is too expensive to use and owning a car would be more convenient because she goes outside of the city to visit her family often.

"I'm a student and I can't afford to have a car. I have a child and it can be a little hard if you're going a longer distance; in that case it [car sharing] is easier and enables me to go there more easily [...] It [buying a car] is definitely something

that I'm considering, but I have to save up some money first." She continues; *"The cheaper it is to rent a car through GoMore, the less likely is it that I buy my own car."* (Appendix 12: Caroline)

This quote indicates that Caroline is likely to become a car owner as soon as her financial situation allows, if other factors do not change. Her statement is somewhat contradictory as she reflects that GoMore is too expensive to use

so she rather wants the expenses of her own car. This suggests that Caroline is confronted with the cost of a car each time she needs a car on GoMore and finds it expensive, but that she haven't reflected on the cost of owning a car herself. The price of a GoMore car thereby is used as her sensemaking for buying a car of her own, with regular expenses that probably would exceed her GoMore costs. This way of making a 'cost-benefit' analysis clearly differs from the renters who doesn't consider owning a car, who all attribute a car ownership with something expensive and unnecessary. The interviews indicate that the renters have different types of sensemaking associated to using a car and being a car owner. The renters in the interviews who never have considered or do not consider it anymore have a more negative attitude towards car ownership than the ones who are still considering, such as Caroline.

"I do see, when some of my friends with the same attitude to life as me [cyclists], once they buy a car, they always plant their asses in it [their car]. So it's kind of, there's this fear of becoming just as lazy if I end up buying one for real [...] Yeah, it simply becomes too easy to take the car and drive 200 meters down to the baker's and... drive back again. [...] I do see people turn somewhat lazy when they get a car. I mean, I've even seen friends that used to be able to bike 10-15 kilometers to work. Suddenly they couldn't help get-

ting in the car and throwing themselves into rush hour in the city to drive two kilometers. That scares me! That scares me a lot.“ (Appendix 10: Simon)

The group of renters thereby seems to abide by different sensemaking and norms and that might affect if they choose a life without a car.

6.3.2.3 RENTERS SUMMARY

Although 40 % of the renters still consider buying a car it is an important consideration that some of the GoMore renters may have joined the service at a point in their lives when they would otherwise have bought a car. This is hard to discover and even harder to document due to its hypotheticality, but may be the case nonetheless. In a Peer-to-Peer car sharing scheme these renters will probably drive less than they would have if they had bought a car, even if they do drive more than before they joined GoMore. Therefore the 13 % decrease in annual mileage might potentially be even bigger if private car ownership is postponed. The tendencies in the questionnaire suggest that you drive more when you own a car than when you rent a car.

The main group of the respondents have not changed their car use or ownership. The renters who own a car are just as car dependent as before they joined. However, 12 respondents have chosen not to buy a car because of GoMore, thereby potentially saving 12 cars in the city.

GoMore's effect on car dependency

Overall reported mileage among renters decreased by 13 %.

Renter who does not own a car

For 43 % of the renters the latest GoMore trip is likely to have substituted a public transport trip.

40 % are still considering buying a car.

11 % no longer consider buying a car after joining GoMore.

The group who used to consider buying a car, but no longer does so, reports a larger decrease in mileage than the group who still considers buying a car.

Overall decrease in car dependency after joining GoMore.

Car owning renters

No change in mileage before and after GoMore.

The trips 'only' replace public transport 26 % of the times.

Are as car dependent as before joining GoMore.

6.3.3 CONCLUSION ON CAR DEPENDENCY

Despite the decrease in car use among the renters of GoMore Peer-to-Peer service, when looking at the trips GoMore replace, it seems that around half of the renters would have taken public transport instead, see 6.2.1.3 *Trips Replaced* and *Figure 47* below. The different kinds of trips can be categorized in those that increase car use and those that do not increase car use. In a transport system perspective, the car use thereby increases. Overall 58 % the trips made in GoMore's Peer-to-Peer services seem to increase car use, see *Figure 47*.

When the annual mileage of renters and owners are combined, the average number of kilometers driven per individual has increased by 3 %

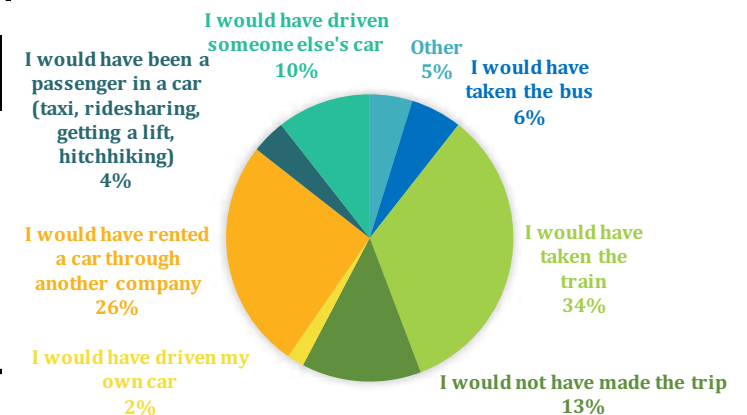


Figure 47: Trip modes supplanted by GoMore (“How would you have completed this trip without GoMore rental?”). 108 respondents.

from 7940 km to 8157 km after the user group joined GoMore, see *Figure 48*. The increase in car use seems to be affected by the increase in car ownership. Even though 12 respondents chose not to buy a car among the renters and some of the renters decrease their annual driving, 17 respondents among the owners have chosen to buy a car because of GoMore and all increase their annual kilometers.

To sum up, it seems that GoMore in general does not reduce car dependency but, out of the sample population of 163 people, rather adds five new cars to the city. This calculation should be taken with caution due to the fact that there can be many unknown factors at play. However, it seems to indicate that GoMore is a gateway drug to owning a car and therefore increases the car dependency.

Car use (km per person)	Increased with 3 %
Car ownership	Out of the 163 users, 5 new cars are added to the city.
Trips replaced	Public transport 43 %, New trips 15 %

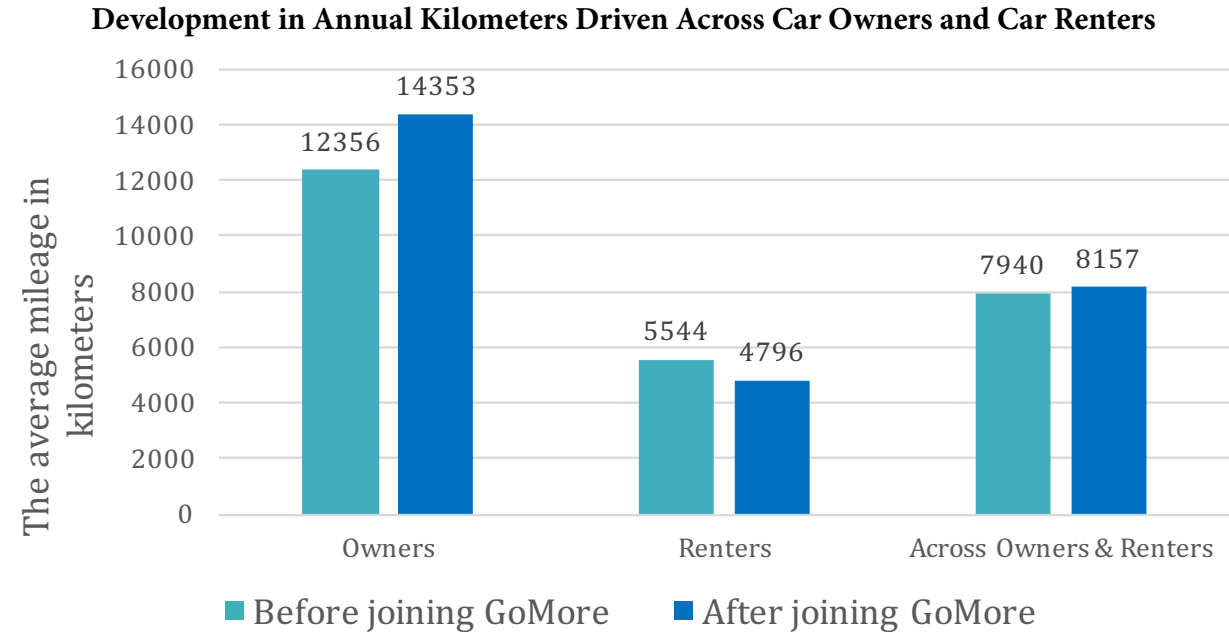


Figure 48. The average kilometers driven among renters, owners and across both categories before and after joining GoMore.

6.3.4. DISCUSSION OF CAR DEPENDENCY

The purpose of the analyses presented previously has been to assess whether Peer-to-Peer car sharing leads to car dependency or at best supports an incremental change in the car regime, or if the concept constitutes a stabilised new niche, with potential for changing the transport system. If the latter is the case, there is a higher probability of Peer-to-Peer car sharing creating a pressure on the car regime than if the former is the case, in which car sharing could be seen simply as the natural next step for the car regime, as it tries to correct its path in order to adjust to landscape pressures.

6.3.4.1 IS PEER-TO-PEER CAR SHARING CHANGING THE AUTOMOBILE REGIME?

It was previously argued that the data could indicate that Peer-to-Peer car sharing not only

relies heavily on the very established technologies in the regime, i.e., the car, but also for some of the users functions as a direct incentive to car ownership, causing the total number of cars in the city to rise. The motivational factors identified among the owners were either to cut costs associated with owning a car or to finance a car. The possibility of covering some of the costs related to car ownership seems to justify the leasing of a car for some of the owners, who would not have considered owning a car before. This tendency results in an overall increase in car use and the number of cars in the entire sample. The way GoMore's services are combined of Peer-to-Peer car sharing and leasing seems to reinforce the path dependency of the automobile regime. This study does not have a clear number of the percentage of lessees, but the interviews indicate a tendency of leased cars constituting a large share of the Peer-to-Peer car fleet.

The number of owners who have been affected by GoMore to buy a car (31 %), possibly due to the leasing option, influence the overall automobile path dependency in Peer-to-Peer car sharing, although there are also users among the renters who go in another direction. The fact that the leasing option might have a negative influence on the sustainability of Peer-to-Peer car sharing could make it difficult for this study to be generalized to non-hybrid Peer-to-Peer car sharing concepts. At least it has to be considered that the high share of users who buy a

car because of GoMore might not exist in other Peer-to-Peer car sharing services. Leasing is growing in popularity and account for 43 % of all new cars in Denmark (Danmarks Statistik 2017). This fact, viewed in the light of the results, makes leasing, as a concept, interesting to research further in future studies. It should be studied if the lessees using GoMore's services go back to other mobility modes or buy a car and continue to be car dependent.

The current automobile regime consists of private car ownership and car use. Peer-to-Peer car sharing is therefore a phenomenon which competes with the current regime's ownership structures allowing the automobile regime to be integrated with other modes such as biking and public transport. According to the findings in this study most trips to pick up the Peer-to-Peer car was a multimodal trip using either biking or walking. The results also indicate that at least 11 % of the renters have been enabled to combine biking during the week with long trips done by car in the weekends without owning a car. However, even though the niche Peer-to-Peer car sharing challenges the automobile regime on ownership structures, they are not in total opposition, because of the fact that Peer-to-Peer car sharing builds on the same infrastructure and technology that is supporting the regime of the private car. As such, Peer-to-Peer car sharing partly supports the existing regime as the concept is also dependent on the infrastructure and privately-owned cars. Findings suggests

that Peer-to-Peer car sharing is complementing the existing regime among the car owners, as an incentive to own a car, while simultaneously competing with it among the renters, where it enables a life without car ownership.

The findings indicate that car sharing predominantly adheres to the existing rules and structures of the transportation system, as argued in 6.2.4 *Discussion of Mobility*. This means that the users that were examined were subject to the rules and structures in their respective primary mobility regime be it biking, driving or something third. This, in turn, means that car sharing may further stabilize the structures of the regimes, thereby making it harder for changes occurring in niche developments to break through and become a part of a new and transitioned system. At best Peer-to-Peer car sharing may lead the dominant automobile regime to undergo a gradual transformation rather than be overthrown by a radical niche development with new rules. Being path dependent could arguably be an undesirable trait of Peer-to-Peer car sharing, as having the private car as a fundamental part of the scheme could diminish its potential for being a sustainable alternative to traditional car use and car ownership. The fact that Peer-to-Peer car sharing can support the rules and structures surrounding the car, that car sharing requires continual maintenance and expansion of infrastructure such as roads, gas stations and repair shops may strengthen and reproduce the automobile regime:

“As long as actors [e.g. firms] expect that certain problems can be solved within the existing regime, they will not invest in radical innovations and continue along existing paths and ‘technical trajectories.’” (Geels 2004: 910)

If the regime is sufficiently stable, i.e., that the pressures from the landscape level do not disrupt the regime to the point where its fundamental structures are altered, then the regime actors are inclined to continue their normal actions, using traditional technologies and following the established rules. Radical changes in the regime naturally entail substantial investments in new infrastructure, production lines and skills. If the regime structures are maintained on the other hand, then these investments are not needed as the current regime already supports those functions. As Geels explains, “[...] firms tend to stick to established technologies as long as possible.” (Geels 2004: 911). The destabilising landscape pressures – e.g. a higher environmental awareness spurred on by climate change and new possibilities for sharing instead of owning spurred on by technological developments – might not have a sufficiently disruptive impact on the car regime to lead to windows of opportunities for niche innovation to become established in the regime. Having the same technology and infrastructure in the niche and the established regime makes the niche less radical. Being a less radical niche could lower the niche’s ability to function as an ‘incu-

bator room’ for new developments, as the new rules and actions formed in the niche has similarities with the ones that already exist in the regime, see section 6.2.4.1 *Increased Mobility Demand*.

The fact that Peer-to-Peer car sharing seems to pose a threat to public transportation outside of Copenhagen, see 6.2.1.3 *Trips Replaced*, may help reproduce an urban and regional geographic structure in the automobile regime making it necessary for many to have easy access to a car if they want to travel outside of the capital region. According to some respondents in the empirical data, poor rural public transport is why they need a car. The findings indicate that the condition of the public transport system outside the city leads to car ownership inside the city. There seems to be a tendency among the car owners living in Copenhagen towards a low utilization of their car. Biking, walking and public transport are all more convenient inside the city. The owners have a car for the rare occasions when they have to journey beyond the urban boundaries, see 6.2.3.3 *Different Rules, same Technology*. This could indicate that an upgrade of the public transport system outside of the city might lead to a lower level of car ownership and to a reduction of car use inside the city.

When assessing the trips replaced by Peer-to-Peer car sharing the findings suggest that almost every second trip does not compete with the automobile regime but with the regime of

public transportation. The current state of development of Peer-to-Peer car sharing might therefore not be the result of a niche becoming an integral part of the automobile regime, caused by unstable regime conditions. Instead, the development resembles a gradual adoption by the automobile regime, as a result of the regime actors incorporating new add-ons to existing technologies and actions. Peer-to-Peer car sharing, as a niche development, might in itself be too unstable or rely too heavily on the regime structures by following the technological trajectory of the regime for it to constitute a breakthrough that leads to new constellations in the regime structure. In the following 7 *Discussion* Peer-to-Peer car sharing’s potential to create a transitional change will be discussed.

7 DISCUSSION

The peer-to-peer car sharing niche encompasses both potentially positive and negative attributes, that can be either desirable or undesirable additions to the existing regime or elements of a new regime. The discussion of whether the positive niche attributes outweigh the negative ones is therefore crucial to have if peer-to-peer car sharing should be promoted as a sustainable addition to the transportation system. Finally, with this in mind, it will be discussed how a municipal planner can influence the development of Peer-to-Peer car sharing in Copenhagen.

7.1 SHOULD THE NICHE BE SUPPORTED?

In the current literature car sharing is described as a positive solution that reduces car ownership, increases mobility in the urban context (Firnkorn & Müller 2011, Haustein & Sick 2015, Loose 2010) and works as a transitional pathway to a sustainable transport system

(Urry 2004). However, our results indicate that Peer-to-Peer car sharing might have some negative impacts on car use and ownership. Whether Peer-to-Peer car sharing as a niche holds the potential of playing a vital role in a transition to a more sustainable transport regime is thereby also questioned by the findings in this report. The results of this study suggest that car sharing as a solution to reduce cars in the city should be a subject of further research and that the consequences should be re-evaluated.

In the following section, the critical elements that determine the future development of Peer-to-Peer car sharing will be discussed. The discussion will take its point of departure in the interviews conducted with Søren Riis from GoMore and Annette Kayser from the Technical & Environmental Administration (TEA) in Copenhagen as a way of bridging the gap from having an analysis that indicates both positive and negative features of Peer-to-Peer car sharing to discussing what implications these features have for the actual institutions and organizations that work with Peer-to-Peer car sharing in Copenhagen.

7.1.1 LACK OF KNOWLEDGE

The lack of knowledge regarding Peer-to-Peer car sharing, mentioned in section 4.2.1 *Why GoMore?* poses a large obstacle for the niche's development, even though GoMore and the Municipality of Copenhagen already have an ongoing dialog. Søren Riis, the co-founder of GoMore, argues that the municipality could take more action regarding benefits for Peer-to-Peer car sharing.

"[...] It's not all the time there's so concrete results coming out of those meetings but they [the Municipality of Copenhagen] like what we're doing mostly, and then, yeah... They like what we're doing, but they're still not... They are not taking that many initiatives, where we see a clear, you can say advantage in following up on the... Or, they are not really... It's not that they're proposing a lot of initiatives, they're just proposing... Nothing." (Appendix 16: Søren Riis).

Despite of the standstill in the negotiations, the meetings between GoMore (including other car sharing operators) and TEA illustrates the development phase in the niche's trajectory. The niche seems to have been acknowledged by influential actors in the transport system.

However, Annette Kayser, expresses the need for more certainty and documentation in order to favor Peer-to-Peer car sharing with discounted parking for instance. According to Annette Kayser, the municipal planner charged with including car sharing in the municipality's mobility strategy, the two main questions about Peer-to-Peer car sharing that need to be answered in order for the planners to opt for or against the initiative, are: "*Which trips does Peer-to-Peer car sharing replace?*" and "*Does Peer-to-Peer car sharing reduce the number of cars in the city?*" (Appendix 15: Annette Kayser)

These questions also have to be answered when assessing other car sharing schemes (free floating and two-way), and whether or not the initiatives instigated by the Municipality of Copenhagen, as a public institution, should support them.

"We need some years to see if car sharing reduces car ownership. So far, with the number we get now, we are not able to see this. We hear all the time that car sharing is a good idea to reduce car ownership, but we cannot see it being reflected in numbers." (Appendix 15: Annette Kayser)

Knowledge is thereby a crucial element in the decision-making process in the Municipality of Copenhagen and each car sharing concept has to document a positive outcome before the niche developments can be supported.

As this study shows, it is highly complex to document the effects of Peer-to-Peer car sharing. Various tendencies and effects on different user groups have been identified and the impact of the niche is thereby hard to define. The fact that this study is based on the users own perceptions of car use and ownership might introduce bias to the numbers estimated in this study. As an example, the driven mileage estimated by the users, might had been more valid if the actual millage was measured accurately among the users. Furthermore, the actual distance driven could have been measured, due to inaccuracies between what people say they do, and what they actually do.

Another example is the cars replaced or added to the city, which have been approached by asking the users of GoMore if the service has changed their opinion on acquiring a car. Using this method it would seem that GoMore actually adds five more cars in our sample, 163 users, as a substantial amount of the owners have stated that they have acquired a car because of GoMore. Similar ways of approaching answering the question have been done in other studies concerning car sharing (Firn-korn & Müller 2011). Following this procedure for calculating the addition of cars, it is possible to, with a high level of uncertainty, scale up the findings in our sample, to the complete case area. Such a calculation would look as follows:

Added cars to the whole population

As the 54 owners constitute a 3 % sample of the 1770 cars in the case area, and 5 cars are added for every 3 %, the total addition of cars to the city out of all the users in the case area would be $(100/3)*5 = 167$.

Figure 49. Calculation generalizing the findings about the increased number of cars. Please note that this calculation is subject to a very large degree of uncertainty because of numerable sources of errors². It is provided here only for illustration.

Another way to estimate how many vehicles car sharing replaces, employed by other studies, is to compare how many cars are owned among the car sharing users and in the general population respectively (Loose 2010, Olsen, Rettig 2000). Using this method, it would seem that GoMore replaces 1.74 cars, see *Appendix 21: Figure 1* calculating how many cars GoMore replaces.

As these numbers show, the different ways to calculate the amount of replaced cars give very different outcomes, which could make both methods seem flawed. The methods for calculating the replacement of cars is complex and depends on different parameters. This could indicate that the decision should be based on many different studies and not one number alone, and that the planners should base their

² The calculation assumes that this questionnaire is representative for all of GoMore's users in Copenhagen, including that the relation between the numbers of car owners and car renters in the questionnaire (roughly twice as many renters as owners) is representative, as well as all other assumptions made throughout the report.

decisions on a variety of different effects. In the future, when more studies concerning car sharing in Copenhagen have been conducted, a comparison study of these might give a more reliant estimate of how car sharing affects the car park. Another additional question could therefore be raised: *Does the demand for these numbers hinder the development of a more sustainable transport system, as the planner cannot act without the numbers?*

7.1.2 THE RISKS OF PEER-TO-PEER CAR SHARING

One could argue that since it is very time consuming to produce the evidence the planners need, niches, like car sharing, are developing more slowly than they might have done otherwise. Thus, in some cases, it would be more beneficial for the planners to take a leap of faith, and support niches that show promise, as the development would happen quicker this way. The counterargument for this could be that car sharing might prove harmful to more sustainable modes of transportation.

Søren Riis, the founder of GoMore, states that he sees private cars as GoMore's main competitor and not public transport:

"We see our main opponent as the private ownership of cars, where people only drive one-and-one in the cars. We see it as

a win-win if people give up their cars, or don't even buy a car, and either use trains or buses or our service. Especially our rental service is the biggest supplement to public transportation, in the sense that many people use their bikes in their everyday lives, but want the car just to take care of that need they have once a month. If we can take care of that, then they don't buy that car. And if they don't buy that car they use trains, buses and our service." (Appendix 16: Søren Riis)

The analysis, however, showed that 43 % of the GoMore trips replace trips that would otherwise have been done using public transport. This indicates that the Peer-to-Peer cars are not only competing against the traditional use of the car, but also the public transportation system. This begs the question; *is Peer-to-Peer car sharing a threat to the established public transport system?*

One of the main differences between public transportation and car sharing is that the former has a public service obligation to provide for the general public, while the latter is a private enterprise limited to people with a driver's license who have the capacity to use GoMore's web based service and the financial means to afford it. One could argue that Peer-to-Peer car sharing in some cases outcompete public transportation, as the respondents say they perceive it as cheaper, more convenient and more comfortable. On the other hand, the added mobility option that is car sharing may for some users

postpone a car purchase, see section 6.3.2.3 *Renters Summary*. For these users, the mode choice may sometimes be a rented GoMore car and may sometimes be public transportation, while it would probably have been their privately-owned car, had they bought one. Inside the city, most questionnaire respondents find that the bicycle is the most convenient transport mode, but many keep the car for the occasional countryside trip or cross-country trip because they perceive the public transport outside the city as insufficient.

Further development of Peer-to-Peer car sharing could potentially cause less people to take trains and busses in the rural regions, creating a negative spiral, thus weakening the public transport system. In that sense, the niche development has to replace public transportation to establish itself further in the transport system. This development is problematic because, as mentioned earlier, the purpose of public transport is to provide service for every citizen to destinations across the country. The effects of people opting for Peer-to-Peer cars could be; rises in ticket prices, cuts in departures and, in the worst cases, that some routes outside of Copenhagen would have to be terminated. As mentioned in 6.3.4.1 *Is Peer-to-Peer Car Sharing Changing the Automobile Regime?* the findings in this report suggest that there is a connection between the overall quality of the public transport system and car ownership in the city. GoMore's service seems to affect the

public transport system on a national scale, as an insufficient system in Northern Jutland can lead to car ownership inside of Copenhagen. A solution might therefore be to strengthen the public transport in the outer regions of the country and to be aware of creating viable connections on the whole trip to decrease the car dependency of the inhabitants of the city. This solution will be discussed further down in section 7.2.3 *Multi-actor collaborations in multi-modal stations*.

If the municipal planners choose to support car sharing, they might be contributing to a geographic imbalance and strengthening a path dependent system that relies on the car, thus supporting the car regime. This concern was voiced by Annette Kayser:

“We worry that small electric cars [i.e., free floating city cars] will outcompete the more sustainable modes, the modes that take less space [...] It [car sharing] should not outcompete public transport.” (Appendix 15: Annette Kayser)

She states that they have to be absolutely certain that Peer-to-Peer car sharing, or any car sharing scheme for that matter, reduces the amount of cars in the city before favoring them in new strategies for mobility in Copenhagen. The current car sharing strategy for Copenhagen, which only concerns two-way car sharing, is an indication of a political agenda in the TEA that aims to reduce the amount of car trips in

the city. Annette Kayser mentions that the current mayor of the Technical and Environmental Committee, Morten Kabell, is skeptical when it comes to projects that revolve around the car:

“The reaction from our mayor when the one-way car sharing systems started... We [Kayser’s department] came and asked; somebody wants to put up some car sharing cars in our city, can we help them? And he replied do you want me to be in favor of 400 new cars in my city?! He was not very happy. A car is still a car. [...] he is not in favor of something that increases the number of cars, that’s absolutely clear.” (Appendix 15: Annette Kayser)

The political agenda to reduce the car use in the city seems to be challenged by the emerging car sharing niche. This begs the question: is it necessary govern car sharing in Copenhagen?

In recent years, the free-floating car sharing providers DriveNow and Green Mobility have introduced more than 800 cars in the city of Copenhagen (DriveNow n.d., Arent 2016). More than six car sharing providers operate in Copenhagen without including the smaller local car sharing associations, see Car sharing seems to be a disruptive element in Copenhagen Municipality’s long standing political visions of becoming less car dependent (City of Copenhagen 2012a). Annette Kayser indicates that in the end, Peer-to-Peer car sharing might need to be included in the municipal plans.

“If they [the cars] should not outcompete the public transport they need to be shared and integrated in their [the public transportation] systems. In the longer run it is a good idea to make more and more people share their cars because that is what we want in the future” (Appendix 15: Annette Kayser)

Car sharing is a result of an increasing demand for mobility in the urban context, see 3.2.3.2 *New Paradigms in the Transport System*. The variation of new different mobility services challenges the public sector, which no longer is the sole provider of shared transportation. Due to increasingly complex travel patterns and mobility demands the public sector is challenged to find new ways of replacing public service monopolies with multi-actor collaboration across municipal borders and private market domains (Torfing, Sørensen & Røiseland). Torfing et al. argue in their article ‘Transforming the public sector into an arena for Co-creation’ (2016), that solving public challenges demands public-private partnerships, in order to make the ungovernable governable. The emergence of the car sharing trend in Copenhagen forces the municipal planners to use new public governance³ approaches, to collaborate with private partners, in order to both provide the mobility services demanded and as a way of influencing the development.

The recently published municipal car sharing strategy indicates, that the planners in the TEA

³ New Public Governance aims to transform the away from an authoritarian system to a more open system with an emphasis on creating solutions to problems in collaboration with partners outside the municipality (Torfing, Sørensen & Røiseland 2016).

have taken a proactive approach in their strategy making (Teknik- og Miljøforvaltningen 2017). By integrating car sharing, having a dialogue with the different schemes and establishing partnerships, the planners have better odds of affecting the trajectory of car sharing, including Peer-to-Peer car sharing. The possible treatment of Peer-to-Peer car sharing might pose for public transport and the fact that Peer-to-Peer car sharing is a growing trend, makes it relevant for the Municipality of Copenhagen to develop a future strategy focusing on creating synergies to reduce competition between the modes. Therefore it is relevant to discuss how the niche, Peer-to-Peer car sharing, should be governed?

7.2 GOVERNING CAR SHARING – PROTECTING THE NICHE

Municipal planning for car sharing can prove difficult, as car sharing operators in Copenhagen are all privately owned businesses and are a part of the market arena separated from municipal authority.

This discussion is approached by assessing what municipal initiatives aimed at two way car sharing schemes can be adopted to Peer-to-Peer car sharing. The aim of this discussion is to understand what tools the planners have available to make the niche governable and thereby influence a possible transition to a more sustainable transport system, by ensuring that the negative aspects of Peer-to-Peer car sharing are controlled while the positive aspects are reinforced.

7.2.1 THE PLANNERS' TOOLS TO CONTROL THE PRIVATE DOMAIN

Copenhagen Municipality's strategy for car sharing from 2017 is an attempt to control and coordinate two-way car sharing. Different initiatives are proposed in the strategy to make car sharing governable, such as:

- Prioritized and discounted parking for two-way car sharing
- Different experiments with citizens to try

to boost car sharing in local areas

- Put up demands for car sharing in local plans
- Multimodal stations/ hubs with different traffic modes including car sharing
- Car sharing in the municipal car fleet
- Knowledge and innovation network to develop car sharing

All in all, the strategy proposes 15 initiatives to be implemented before 2020. The different initiatives are all different tools the municipal planners possess to make car sharing governable (Teknik- og Miljøforvaltningen 2017).

The approach taken by the planners in the Municipality of Copenhagen focuses on parking, visibility, urban development and planning, the municipality's own mobility and collaboration. (Ibid.) As the strategy suggests, the municipal planners have a variety of tools covering both the traditional planning practices, and new public governance initiatives.

Tools such as regulating parking laws and putting forward demands in a local plan are rooted in a traditional and constraining government, where the role of the planner is to represent and safeguard the public interest (Klosterman 1985), while the initiatives that stem from an intention to optimize and be cost-efficient by implementing car sharing in the municipality's own fleet, could be imprinted by the principles

⁴New public management aims to optimize the public sector, in making it more effective and at the same time cut operational costs. (Torfing & Sørensen 2016)

⁵Co-creation is collaborative way of problem solving within a network of actors (Torfing & Sørensen 2016)

in new public management⁴. (Torfing, Sørensen & Røiseland 2016) Having an experimental approach has the potential of awarding the planners with context specific knowledge while also getting to test different solutions. This is achievable by having more navigational practice where co-creation⁵ and new public governance principles are applied. (Torfing, Sørensen & Røiseland 2016, Munthe-Kaas & Hoffmann 2016) The same principles of meta-governance⁶ are applicable when establishing and mobilising a Peer-to-Peer car sharing actor network (Bryson, Crosby & Bryson 2009), and when instigating a multi-actor collaboration between private and public mobility providers in establishing multimodal stations (Torfing, Sørensen & Røiseland 2016, Peters 2010). It seems as if the planner needs to embody all these different roles while also being able to navigate through all the different planning traditions in order to manage the future development of car sharing and its effect on a transition to a more sustainable transport system.

7.2.1.1 RELEVANT TOOLS IN A PEER-TO-PEER CAR SHARING CONTEXT?

The municipal planners face the challenge of governing a societal development that primarily takes place in the private domain. However, Søren Riis' willingness to cooperate with the municipality represents an opportunity to influence the niche. This section will discuss how the municipality can make use of the ongoing dialogue with the GoMore. Annette Kayser

points to multimodal stations, pilot projects and parking as the key initiatives in their strategy govern car sharing in the private domain. The fact that these initiatives are developed to influence Business-to-Consumer car sharing however raises the question: can Peer-to-Peer car sharing be incorporated in the same way and what are the risks and benefits?

7.2.1.1.1 MULTI-ACTOR COLLABORATION IN MULTIMODAL STATIONS

In the previous section the possible risk of Peer-to-Peer car sharing outcompeting public transport was discussed. Annette Kayser states that a way to solve this issue is to try to integrate the different modes in the transport system more. This approach can ensure that car sharing is a supplement to public transport creating a more flexible and efficient transport system instead of a system where modes are competing against each other.

"I definitely think that car sharing integrated in public transport can give this flexibility and time efficiency [...] Different car sharing systems have different solutions and different purposes. They should supplement each other [...] Instead of taking their own car, people can pick the mobility they like." (Appendix 15: Annette Kayser)

Her statement reflects a reality with a dynamic regime where multiple modes are interacting in

the city and continually struggling to be re-assembled in new ways. Her statement also underlines the current trend where mobility has moved from ownership to access, see 3.2.3.1 *From Ownership to Access*. In the car sharing strategy from 2017 the municipality states an ambition to start a public-private collaboration to create multimodal stations. In these transport hubs several modes, including car sharing, should be integrated making it easy for the user to change and pick between mobility services as they travel. (Teknik- og Miljøforvaltningen 2017)

However, the findings in this study suggest that the integration of Peer-to-Peer car sharing in a multimodal station might not be the best option. According to the users the GoMore car is chosen instead of public transport because; it is convenient and more comfortable when going on longer trips, you can easier transport goods and family members, it's cheaper and it can cover areas where public transport does not. At the same time the owners choose to have a car because it enables freedom, comfort and trips from 'door-to-door'. If their car somehow should be parked near a multimodal transport hub some of the convenience of having a car when you need it disappears.

Thereby the value of the car could be reduced for both groups if it should be shared at specific multimodal stations. Both renters and owners want to have the Peer-to-Peer cars at their disposal in close proximity to their home. All in

⁶Meta-governance is concerned with the discipline of governing networks of actors in a way that all actors find satisfying and without doing it in a strict bureaucratic way (Torfing, Sørensen & Røiseland 2016)

all, the findings of this study suggest that Peer-to-Peer car sharing and a multimodal station might be contradictory. However, the idea of integrating modes in multimodal station might be a part of the solution to prevent some of the negative effects of GoMore's service. The Peer-to-Peer car sharing success is an indication of a lacking and inflexible public transport system. If it was easier to bring stuff along on the train, or to go the last mile from the station with a free-floating car, Peer-to-Peer car sharing might not have to compete with public transportation.

To make Peer-to-Peer car sharing governable might not be relevant in the current collaboration on multimodal station. However, in a more local context different public-private collaborations with businesses or housing organizations might be a way of supporting the niche. To share private cars among the employees in a company who use it to commute to work and the employees that just need it to go to a meeting during the day could be one scenario. To integrate Peer-to-Peer car sharing in a public transport system would need a further development of Peer-to-Peer car sharing, or to consider how Peer-to-Peer could be developed in combination with other car sharing schemes and other transport modes. Experimentation and pilot projects between the municipal planners, Peer-to-Peer car sharing organizations and citizens or businesses might thereby be one approach to test and govern the concept.

7.2.1.1.2 PILOT PROJECTS, EXPERIMENTS AND TESTS OF THE NICHE

The previous sections have discussed the need for more knowledge about the effects of Peer-to-Peer car sharing and how it can be integrated in the current transport system. Kayser express a need for more data and proof of the effects of Peer-to-Peer car sharing, while Søren Riis expresses a wish to share the data GoMore is in possession of. However, there seems to exist a problematic paradox between the public and private sector, as Kayser explains how they are afraid to trust the private providers in general and the numbers they represent to the municipality.

“we could integrate our system with them [the municipality] and to actually encourage people to share their cars. [...] We could open up our data and try it out.” (Appendix 16: Søren Riis)

“They provide documentation, but we are not sure if we can trust them.” (Appendix 15: Annette Kayser)

The statements above indicate conflicting rules between the public and private sector. Søren Riis finds that both the municipal, as well as the national administration, can be quite slow in accommodating a transition of the transport system.

“You could say, when they build a new motorway and spend two billion [Danish kroner] on that [the Holbæk Motorway], couldn't you use that in a smarter way? if you could just spend a hundred million of that, on some intelligent signage and make Rejseplanen [the Journey Planner] up-to-date and combine these things. I mean, that would cost maybe five million or so.” (Appendix 16: Søren Riis)

According to Søren Riis GoMore as a concept represents a new and innovative approach to transportation. In the quote above, he argues that the big actors in the current transport system are too focused on the traditional ways of planning for transport. Some of the budget, both in the municipalities and in the national government, should go to experiments with new solutions of integrating different modes. The fact that the municipality already collaborates with some two-way car sharing providers and Annette Kayser's statement above, might on the other hand indicate that the reluctance to integrate GoMore reflect a skepticism towards the effectiveness of Peer-to-Peer car sharing in breaking the car dependency. These differences between the public and private domain might be bridged in joint experiments where the public and private partners can gather shared knowledge. The TEA is currently working on the project, Ny Mobilitet (New Mobility), announced on March 31, 2017 (after the interview with Søren Riis took place). The objective

is to wean car owners off their privately-owned cars, on two streets in Copenhagen and Frederiksberg. (Teknik- og Miljøforvaltningen 2017, Københavns Kommune 2017) By taking away people's cars, this experiment is pushing the limits of how far the municipality can go in terms of intervening in people's private lives, but as Annette Kayser puts it: *"One of the biggest challenges [to car sharing] is to make people use it"* (Appendix 15: Annette Kayser).

The benefit for the participating car owners is partly discounts on public transport, bike share and car sharing and rental (this includes GoMore) and partly the added value from converting the vacated parking bays into recreational urban spaces with benches, plants and street decorations.

The advantage of this kind of experiment is that it has the potential to both convert car owners into car sharing users and provide insight for the Technical and Environmental Department and the other participating partners into how to break car dependency on a larger scale. In the latter respect, it will be useful even if it does not succeed in converting car owners (Munthe-Kaas & Hoffmann 2016). Establishing experimental projects such as Ny Mobilitet can be a way of creating 'incubator rooms' in a very practical sense, where Peer-to-Peer car sharing as a niche development can settle and establish connections between renters, owner, GoMore as an organization, the municipality and other important actors. Connections which would

potentially not have been established, had the experiment not functioned as a shield from the rules and actions in the regime.

7.2.1.1.3 PARKING

A way of protecting and promoting the niche of car sharing in current strategies is to give special parking privileges. The prevailing options are to either favor car sharing cars by making cheaper parking licenses available, or by creating separate parking spots for car sharing cars, as seen in the car sharing strategy (Teknik- og Miljøforvaltningen Københavns Kommune 2017). The main disadvantage of Peer-to-Peer car sharing, related to the municipality's ability to influence their parking concession, is that the cars that are used are privately owned. This makes the distinction of whether the car is used for car sharing trips or for private trips challenging.

"We would like them to test out and say you can have it for free or half price [the parking place] if you rent it out this many times. And then we could integrate our system with them [to keep track on how many times they rent out] and to actually encourage people to share their cars. [...] We could open up our data and try it out, people who rent out their car more than 20-30 times [could get the parking benefits] but they [the municipality] cannot articulate any response when I propose the idea." (Appendix 16: Søren Riis)

However, it might be argued that free parking through GoMore can work as another incentive to buy a car. Combined with the economic gain of renting the car out it might reinforce the problematic tendencies that already seems to justify the purchase of a car for some users. At the same time, Annette Kayser express that parking is a sensitive topic among the politicians in the city council:

"When we have parking spaces we also get some revenues, we get money, people pay, and if we close this parking space and transfer it into a car sharing parking space we don't get the money." (Appendix 15: Annette Kayser)

These issues with parking sheds light on the challenge of navigating in the different political agendas while regulating, or trying to encourage, a development in the private domain. Meanwhile, the possibility of accommodating the wrong actions exist. It would be undesirable for the municipality to unintentionally permit cheaper parking for private cars that are members of a Peer-to-Peer car sharing scheme, but are not rented out enough for them to accomplish the intended benefits.

Should it be decided that the niche needs to be supported by municipal initiatives, the challenge appears of how this support should be accomplished. As Peer-to-Peer car sharing primarily unfolds in the private domain, the municipal planners have limited possibilities,

and incentives relating to pilot projects, favorable parking conditions for Peer-to-Peer cars and instigation of public-private collaborations aiming towards supporting Peer-to-Peer car sharing schemes seems to be some of the main options within their realm of possibilities.

7.3 THE ROLE OF PEER-TO-PEER CAR SHARING IN A SUSTAINABLE TRANSPORT SYSTEM

As the results in the analysis show, Peer-to-Peer car sharing has both positive and negative impacts on the car dependent regime and the transportation system as a whole. It is difficult to predict which role Peer-to-Peer car sharing will have in a transition towards a sustainable transport system. The current development suggests that Peer-to-Peer car sharing at best is a gradual adjustment in the current regime's rules that lead to new norms and actions. Geels and Schot (2007) argue that a transition can happen in several different trajectories. A radical innovation can transform a regime completely in regard to infrastructure, rules, regime and actors, or a new regime can grow out of an old regime. In the case of Peer-to-Peer car sharing it seems unlikely that the actors in the existing regime will abandon their usual rules and technologies to establish new regime structures heavily influenced by Peer-to-Peer car sharing. The current rules of the different regimes in the transport system seem to be unaffected by the influence of Peer-to-Peer car sharing. Instead, actors such as transport providers and municipal planners have begun to adjust the direction of the transport regime by integrating modes and adding new niche developments such as car sharing. This suggests that niches like Peer-to-Peer car sharing will be integrated in the current transport system to a degree in which

it does not disrupt the automobile regime, but serves as a mitigation measure. It might be argued that the transition to a less car dependent city need to rely on other technologies than the automobile. The real change might be in combining individual mobility with shared transport modes.

Multimodal stations is one solution that can create better connections in the whole country and might make the public transport system a more attractive and flexible alternative to the car. In a dynamic transport regime and complex system a sustainable transition relies on several different solutions. Whether or not the niche of Peer-to-Peer car sharing should be supported should therefore rather be based on further research and findings from conducting experimental projects with Peer-to-Peer users. Peer-to-Peer car sharing might be a transitional path in a future scenario if the different actors manage to integrate the niche the right way in the transport system. To manage this, the collaboration between public and private transport providers is essential.

8 CONCLUSION

This report is based on a case study of GoMore's Peer-to-Peer car sharing service in Copenhagen and investigates how it contributes to a transition towards a less car dependent city. The aim of the report has been to answer *how Peer-to-Peer car sharing affect car use and car ownership in Copenhagen*. There are two types of users in GoMore's car sharing service: car owners and car renters. The conclusion has therefore been divided into two sections, where the findings concerning the different subgroups of owners and renters will be presented as the service seems to have a different effect on their car use and ownership.

8.1 THE CHANGE IN CAR USE AND CAR OWNERSHIP AMONG THE OWNERS

The findings in this study indicate that 43 % of the owners do not change their annual mileage after joining GoMore. Even though the owners share their car on GoMore, 40 % uses the car as

their primary mode of transport and half of the owners uses their car more than 3 days a week. The qualitative data indicate that the owners, who use their car for everyday purposes, do not seem to change their use of the car, and drive the same as before joining Peer-to-Peer car sharing. On average, all the owners rent out their car twice a month, which does not seem to affect their own usage of their car. Among the owners, 67 % state that they have not purchased a car because of GoMore. The driver to share a car among these owners seems to be to cut some of the costs associated with the car they already own. The income from the sharing service does thereby not seem to be an incentive to buy a car or to limit the use of the car among this owner group. Instead, GoMore might function as a way of maintaining an expensive car ownership for this owner group.

The main part of the owners (45 %), however, increase their annual mileage. This increase is influenced by the fact that 31 % of the owners have purchased a car because of GoMore, and now drive five times as much as they did before they started to share their car. Even though they have purchased a car the majority of them only use it twice or less during the week, and the data indicate that their primary transport mode is often the bicycle. Among this group

the amount of rentals per year is higher than among the owners who use their car more. Some of the main motivational factors among this owner group were to have the benefits of a car and to be able to cut some of the cost, but also to be able to finance a car ownership. The fact that 31 % of the owners have chosen to buy a car because of GoMore indicates that the income from the Peer-to-Peer service works as a strong incentive to buy a car among some of the owners. The qualitative data suggest that the possibility to get some of the costs of a car ownership covered justify the owner's car purchase. It seems that Peer-to-Peer car sharing especially serves as an incentive for car leasing, as the profits made from renting out the leased car can help offset the leasing expense. Even though the owners who have bought their car because of GoMore have no need of a car in their everyday life, the car is a convenient luxury that they can justify having by renting it out. The trips made by car in this group seem to be very similar to the trips made by the renters, as it is mainly used for vacation or to visit family and friends in the countryside. The data indicate that the public transport is perceived as insufficient in rural areas, which leads to an increase in car ownership inside the city.

All in all, the owners increase their average annual mileage by 16 % after joining GoMore.

re, mainly due to the fact that 17 respondents have purchased a car because of GoMore. The data suggest that there are two main types of owners: 52 % of the car owners, who primarily live in the city, use the bicycle as their primary transport mode, and 40 % who primarily live outside of the city and use the car as their primary transport mode. The data indicate that the owners who have been affected by Peer-to-Peer car sharing to buy a car mainly are users who do not need it for everyday use because they live in the city. The car use and car ownership of the owners thereby seem to be connected to their geographical location.

8.2 THE CHANGE IN CAR USE AND CAR OWNERSHIP AMONG THE RENTERS

The findings of this study suggest that 41 % of the renters increase their annual car use after joining GoMore. This is perhaps not surprising as a majority of the renters (64 %) has joined GoMore's Peer-to-Peer car sharing service to get more transport options. Most of the renters in this case study live in Copenhagen and use their bicycle as their primary transport mode (75 %). The group of cyclists within the renters group use GoMore's Peer-to-Peer service the most. More than half of the renters (58 %) would either have taken public transportation or have avoided taking the trip they now use GoMore for. The increase in car use among 40

% of the renters thereby seems logical as they now, in contrast to before joining GoMore, have access to a car. However, the fact that the renters increase their annual kilometers driven by car does not seem to affect their car use in their everyday life. This might be due to the fact that GoMore is mainly used for leisure trips and enhances the renters' mobility options when traveling outside the city of Copenhagen.

An interesting tendency in the results is that 39 % of the renters actually do not change their reported annual mileage. They state that they drove the same amount of kilometers before as they do after they have joined GoMore. The data indicates that almost half of the renters would have used another car if they had not been able to use GoMore's Peer-to-Peer car sharing for their trip. This might be why 39 % of the renters do not change their annual use of a car. However, the fact that some of the renters drive the same amount of kilometers as before they joined GoMore, might also be because 18 % already own their own car. The renters who own a car do not seem to be affected by GoMore in their annual mileage. They use GoMore 1-3 times a year and only when their own car does not suffice, e.g. when their car is in the repair shop or because they need a large car to move goods. This might indicate that Peer-to-Peer car sharing is not considered as a replacement for their current car use. The qualitative data suggests that this group of the renters is somewhat dependent on the freedom

and convenience of having their own car. The interviews indicate that the renters who own a car do not consider car ownership a burden but rather a convenient addition to their everyday lives. This group of renters might not reflect on the cost of having a car like the others and the sensemaking behind their choice of keeping the car seems to be that they already have invested money in their car ownership.

The last part of the renters (19 %) all decrease their annual mileage. Six respondents in this group have reduced their stated annual mileage by more than 10,000 kilometers after they joined GoMore. Even though this seems to indicate that some of the renters have sold their car after they joined GoMore, the data shows that half of them have never considered owning a car. The reduction in car use is most evident among the renter group that does not consider buying a car (42 %). The drastic apparent reduction among some of the users is hard to explain, and can be caused by various factors, such as a disruption in the user's family patterns or the fact that the amount of kilometers driven in a year can be hard to assess.

All in all, the renters on average decrease their annual mileage by 13 % mainly caused by a few users' drastic change in car use. However, the main part (81 %) of the group drives the same or more than they did before. Among the renters 11 % state that they no longer consider buying a car after they got access to Peer-to-Peer car sharing, while 40 % still consider it. The

data indicates that these two renter groups use the service differently. The ones who do not consider buying a car anymore use the service for a variety of different purposes, while the renters who still consider buying a car mainly use it to travel outside of the city on holiday or to visit family and friends. The main part of the renters has not been affected by Peer-to-Peer car sharing in relation to owning a car. GoMore might have postponed car ownership among some of the renters and at least 12 respondents stated that they have chosen not to buy a car because of the service.

8.3 THE EFFECTS OF GOMORE'S PEER-TO-PEER CAR SHARING SERVICE ON CAR USE AND CAR OWNERSHIP IN COPENHAGEN

The previous sections illustrate that several conclusions can be drawn on how GoMore affects car use and ownership. All in all, the analysis of this study indicates that five cars are added to the city in a sample of 163 Peer-to-Peer car sharing users. An interesting division in norms and sensemaking can be observed between the groups who want to own or already own a car and the renters who do not consider buying a car. The ones that no longer want to or never have wanted to own a car use negative statements when they describe car ownership. Car ownership will limit their freedom, is expensive and unnecessary in their way of life.

The other group, who own a car or are considering buying a car, describe the car as a convenient luxury that enables more freedom to move and to be impulsive. They experience owning a car as a cheaper alternative than using GoMore's service. The study showed that economic extrinsic values are a main driver for both renters and owners of GoMore, but they use different economic arguments in their sensemaking about car use and ownership.

This conflicting sensemaking between car owners and car renters might be an indicator of the paradox that Peer-to-Peer car sharing has to endorse private cars to work, and thereby legitimizes the car ownership for the owners, while at the same time rendering it unnecessary for renters.

All in all, the data indicate an overall increase in car ownership, which could be a result of GoMore's combination of Peer-to-Peer car sharing with car leasing. This might also explain the reported increase in driven kilometers of 3 % in total after the users joined GoMore's peer-to-peer car sharing service. Additionally, 58 % of all GoMore trips create new car trips, as they replace either public transport (43 % of all trips) or are completely new trips that would otherwise not have been made (15 %).

Although the current studies relating to car sharing might give it the appearance of having disruptive and radical abilities to the ways cars are used and owned, the findings in this stu-

dy indicate that its role in a potential transition to a more sustainable transportation system might be limited, as it relies heavily on established regime technologies and actors. Therefore, the benefits of Peer-to-Peer car sharing might be diminished if its early development is not influenced by initiatives coming from planning authorities or other actors in the public domain, who can ensure that its purpose continues to be the lowering of overall car use and ownership.

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