FACULTEIT ECONOMIE EN BEDRIJFSKUNDE

Access based business models in mobility

Which characteristics of a car access based business model in mobility lead to more psychological ownership of its consumers?

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Preface

Last September, approximately 9 months ago, I chose to do research on *which characteristics of a car access based business model in mobility lead to more psychological ownership of its consumers,* as the subject of my Master's Dissertation. Due to the fact that I am a student with no real income streams, I am not able to purchase my own car. Because of this, I have been using car sharing for the past years as a mode of transportation and was always wondering why not more people made use of these services. This spiked my eagerness to learn more about what acces based business models were exactly, what their full potential could mean for society and the environment and what withheld people from making more use of them.

I hereby would also like to acknowledge and thank the people that supported and guided me during the process of writing this Master's Dissertation. Foremost, I would like to thank Professor Sarah Steenhaut and Professor Bert Weijters for giving me the opportunity to make this Master's Dissertation and for giving me the necessary guidance, feedback and valuable insights when I needed it. Furthermore, I would also like to thank my parents, family and friends for giving me valuable support and motivation and giving me inspiration when I needed it. Your wise and loving words have, as always, served me well. Lastly, I also wish to thank all of the respondents, without whose cooperation I would not have been able to conduct this analysis.

Marie-Lien Van Cauteren, 06/06/2022

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Introduction

Over the past decade, the global environment has been under attack. Emissions are at an all time high, with the main problem being fossil fuels, which are a big contributor to the unwanted environmental consequences that we currently face. Fossil fuel's exhaustibility and negative side effects, alongside the general depletion of natural resources, have urged individuals to rethink their consumption patterns and habits. This has raised interest in environmental and sustainable alternatives for a wide range of applications, domains, and industries (Ketter et al., 2016; Noppers et al., 2014). For transportation in particular, numerous efforts have been made to step away from the current norm of private ownership and look for possible alternatives.

One of these possible alternatives is access based consumption. Access based business models have gained enormous popularity in almost all industries over the past years. They are characterized by the fact that there is a transfer of a product but not a transfer of ownership, which is no longer the ultimate expression of consumer desire (Bardhi & Eckhardt, 2012). Property will continue to exist, but it is less likely to be exchanged in the market (Rifkin, 2000). Instead of buying and owning objects, users pay for experience or temporary use of products via rental and/or membership fees (Lawson et al., 2016). These sharing systems have evolved into a relevant business concept that provides access to product benefits without ownership (Akbar et al., 2016). Examples of access based models vary from car- or bike-sharing programs (Zipcar, Hubway) to online borrowing programs for DVDs, bags, fashion, or jewelry (Netflix, Rent the Runway) (Bardi & Eckhardt, 2012).

One of these access based models within a transportation scope is car-sharing. Over the last decade, car-sharing has become a global phenomenon, an international transportation trend and has potential to alter the way we use cars (Prieto, Baltas, & Stan, 2017). This concept is gaining momentum as a viable alternative to several modes of transportation, where the current average preferred option is to own a private car (Paundra et al., 2017). A single shared car has the ability to replace between nine and thirteen private cars privately owned cars (Martin et al., 2010) due to the fact that, on average, privately owned cars are only used 5% of the time or 72 minutes a day (Ballus-Armet et al., 2014). As a result, car sharing may be a viable option for reducing total resource consumption, and it may have a significant impact on society and the environment because it is more economical and efficient for users since fewer overall cars will be needed. Apart from the environmental benefits that car sharing possesses, there are also numerous other benefits such as cost

savings and improved mobility. Considering this, it is easy to understand that car sharing holds great promise for sustainability and individual mobility alike (Paundra et al., 2017).

As it is easy to conclude that car sharing has many advantages, it still remains severely underused and the majority of people still opt for privately owned cars. This is partially due to the fact that access produces a different self-relation with an object compared to ownership (Bardhi & Eckhard, 2012). Psychological ownership, or "the state in which an individual feels as though the target of ownership (material or immaterial in nature) or a piece if it is theirs" (Pierce et al., 2003), plays an important role in this aspect. There has been growing evidence that individuals can develop strong possessive feelings with certain objects of choice, even when they are not legally theirs, and that some individuals are more disposed towards experiencing psychological ownership towards target objects than others (Dawkins et al., 2017; Jussila et al., 2015). Individuals frequently express their emotional attachment to their privately owned car in the context of transportation (Lord, Despres, & Ramadier, 2011; Steg, 2005), so it is natural to assume that the tendency towards psychological ownership will influence individuals' preferences for car sharing in relation to the characteristics of these car-sharing services (Paundra et al., 2017).

There are several different behavioral and motivational routes that lead to this feeling of psychological ownership (Rogers & Paul, 2012) but there are noticeable differences in how these pathways take effect regarding services versus products (Danckwerts & Kenning, 2019). Despite the fact that digital technologies are intangible, consumers can develop feelings of psychological ownership towards them (Kirk et al., 2018b), implying that there is a possible link between (consumer) technological appropriation and perceived psychological ownership.

In this Master's Dissertation I aim to investigate which characteristics of a car access based business model gives consumers more psychological ownership and how this development of psychological ownership differs from the car-sharing service versus the car (or the product). I wanted to research this in order to obtain more future use out of these business models in order to provide possible solutions to go against depletion of resources. This is due to the fact that purchasing access, instead of products, promotes more sustainable consumer behavior since it diminishes the underuse and rapid replacement of privately owned goods. It is also vital for businesses and marketers to have a deep understanding of the aspect of psychological ownership in all of this. If they can effectively design and market their products, with knowledge of which characteristics will heighten the chances of consumers developing psychological ownership, this will have a positive effect on the adoption rates of these access based systems, which is related to increased happiness, motivation, willingness to pay and loyalty from consumers (Li, Dan, & Atkinson, 2020).

Literature review

Chapter 1: Access based business models

1.1 Definition

Access-based business models are defined as "transactions that can be market mediated, but where no transfer of ownership takes place" (Lawson et al., 2021). In other words, consumers can seek access to products they want to consume, but it will be of temporary nature since no ownership will take place. In return for the use of the products, consumers pay for the experience through rental and/or membership fees. It differs from normal renting systems due to the fact that access based consumption takes place among consumers through intermediary firms leveraging the use of networked technologies on a scale that has never been witnessed before, for example via your smartphone. It is also important that consumers themselves are active participants in these access based systems, since other consumers will rely on this working for the service proposition. For example, in car sharing, it is important that customers refuel the car at correct timings and keep the car tidy so that next users are enabled to optimally use the car. This concept can be extremely useful for the environment and society as a whole because a single product or object that would have been owned by a single individual and used infrequently, will instead be shared among multiple individuals which will lead to maximization of usage with less waste as a result (Lawson et al., 2016).

1.2 The origin of access-based models

Access based business models have existed for quite some time. In fact, they have always existed, just not in a market-mediated atmosphere. Sharing with family or friends and giving them access to certain products has always been common. You can for example lend your car to a friend or family member for a certain occasion or certain period of time. This however, as already mentioned, is not in a market-mediated atmosphere, but more in a private and non-profit atmosphere (Lawson et al., 2021).

Historically, ownership has always been the normative, socially acceptable mode of consumption. Based on cultural values of society, access was frowned upon because it was believed that there were more advantages to ownership that access just did not have. Access was viewed as a subpar mode of consumption that was precarious, wasteful, and limited in freedom (Bardhi, Fleura, & Eckhardt, 2012). One of the advantages of ownership is that you can accumulate capital overtime. This can be advantageous to strengthen your financial position in the end. However, in order to begin with capital accumulation, you need to have enough funding to support this. This is something that many individuals often lack and why

access may be a more viable option. Another advantage is the fact that ownership over a certain object gives you financial interdependence and can lead to identity forming. This is due to psychological ownership (chapter 4). For example: the possession over a car gives you the freedom to leave with your car at any given point in time to whatever destination you desire. This is a freedom that is more limited with access. (Bardhi, Fleura, & Eckhardt, 2012).

In the last decades, there has been a shift in this atmosphere and access based business models have emerged and have been generalized in society in a market-mediated atmosphere with the intention to make profits. It has taken more of a commercial turn and a new way of access based business models was created. This is partially due to a shift in socio-cultural politics of consumption. General life is getting more expensive over time and individuals are forced to adapt their consumer spending habits to this trend. This is in line with the costs of acquiring and maintaining ownership over a given product, which also gets more expensive every year, making ownership often a less attractive option over access (Lawson et al., 2021; Bardhi, Fleura, & Eckhardt, 2012). Another reason why access based business models emerged is due to the fact that a response to the challenges of a liquid society was needed. A liquid society is characterized by its main players being insecurity, individualism and uncertainty. Access based systems have been developed in a way to counter these challenges (Chirumbolo et al., 2021; Pollock & Griselda, 2007). It is also no coincidence that the rise and popularity of access based systems goes hand in hand with the global economic crisis that the earth faces. Global resources are not inexhaustible and their available quantity decreases every year, with the main problem being fossil fuels. Consumers have been obligated to rethink their habits and values, one of these values being their relationship between personal well being and ownership. Consumers are urged to be more mindful, and especially more resourceful, when it comes to their spending habits, use of products and overall lifestyle (Martins et al., 2019; Bardhi, Fleura, & Eckhardt, 2012). The overall rise and popularity of access based systems has also noticeably been more prominent in urban areas than in non-urban areas. Urban areas have more space limitations because they are more densely populated (Günneralp et al., 2020). This is also stimulated by the current trend of reurbanization: more and more individuals, especially young professionals and empty nesters, are moving back to urban areas (Hierse et al., 2017; Bardhi, Fleura, & Eckhardt, 2012). Being able to have access to products that are stored elsewhere facilitates this movement or reurbanization (Bardhi, Fleura, & Eckhardt, 2012).

1.3 The six dimensions of access based models

Access based business models are very widely used in numerous domains. However, not every access based business model is the same. To understand how these models differ from one another and what their characteristics are, 6 dimensions have been established: temporality, anonymity, market mediation,

consumer involvement, type of accessed object and political consumerism. In this paragraph I will explain each dimension and how it is related to car sharing (Bardhi, Fleura, & Eckhardt, 2012).

1.3.1 Temporality

Ownership over a certain product is characterized by long-term interaction with that product. This is in contrast with access, which can be long-term, but mostly short-term. In general, access is usually more temporary (Bardhi, Fleura, & Eckhardt, 2012). In the case of car sharing, car sharing can be both long-term, for example car leasing, but will mostly be short term, for example renting a car by the day, hour or even minute.

1.3.2 Anonymity

How an individual behaves and shapes a relationship within access based consumption in regards to other consumers can be anonymous or social, while ownership is always anonymous. Access is defined as social when it is used in a public context or its use/consumption is shared with multiple people. For example public gardens or couch surfing. In contrast, access that is defined as anonymous is characterized by the fact that the consumer wants and gains exclusive access to the object that is consumed. It is not public or shared with others. A prime example here is the case of car sharing. When you have access to a car, it is not the intention that another person has access to that same car at the same time. You want exclusive access to that car given a certain time frame (Bardhi, Fleura, & Eckhardt, 2012).

1.3.4 Market mediation

Another dimension of access based model is the level of market mediation that takes place. In access based systems, the shared objects are mediated via the use of a third party and the scale on which these transactions take place can vary from profit to not for profit. Not for profit access based business models have existed in the public sphere, as well as in the private sphere. An example is peer to peer sharing where consumers gain access to objects/services that are owned by other consumers via the use of technology. In contrast, for profit access based business models tend to rely more heavily on underlying market mediation with more motives toward profit via economic exchange. Car sharing can be categorized in this dimension. It is also important to notice that the level of market mediation can have a big influence on the consumer/object relationship as well as the underlying exchange norms (Bardhi, Fleura, & Eckhardt, 2012).

1.3.5 Consumer involvement

The fourth dimension of access based business models is related to the level of consumer involvement, where a consumer can have limited involvement or extensive involvement. Car rental is an example of limited involvement, whereas car sharing is an example of extensive involvement. An important fact to

notice is that in cases where extensive consumer involvement is required, consumer co-creation occurs. Consumer co-creation indicates a product/service design process where a consumer's input plays a big role from start to finish. A consumer will almost take on the role as an employee. In car sharing, this translates itself to the fact that consumers rely on other consumers to keep the car clean, fill up the car with fuel in time, report damage… (Bardhi, Fleura, & Eckhardt, 2012).

1.3.6 Type of accessed object

The type of accessed project also plays a key role in the essence of access based consumption. Objects can be either experimental (e.g. for entertainment) or functional (Chen, 2009). Car sharing qualifies more to a functional dimension, since the car is merely used to transport yourself from point A to point B (Bardhi, Fleura, & Eckhardt, 2012). Another dimension that can be discussed here is whether the assessed object has a physical or online nature. Immaterial objects, like files or music have a digital nature. This is in contrast with car sharing, which has a physical nature.

1.3.7 Political consumerism

The last dimension of access based systems is political consumerism. This represents the "use of market action as an area for politics, and consumer choice as a political tool" (Copeland, Lauren, & Boulianne, 2020). Certain individuals opt for access-based models as a way of consumption to depict and advocate their ideological interests to society, business, and government ideologies. This by outweighing ownership versus access and its effects on society as a whole. For instance, access is known to be a more environmentally, sustainable and antimarket consumption alternative versus ownership. For example, within the sphere of car sharing there can be politically based motivations. This political part of access can shape how a consumer identifies with a product and has an effect on consumer-to-consumer relationships (Bardhi, Fleura, & Eckhardt, 2012).

1.4 Motivational factors that influence individuals when considering on engaging in access based consumption

There are multiple factors that drive consumers' behavior regarding access based consumption.

1.4.1 Economic consciousness

Consumer consciousness is defined as "a consumer lifestyle trait characterized by the degree to which consumers are both restrained in acquiring and in resourcefully using economic goods and services to achieve longer-term goals" (Michaelis et al., 2021). In access-based models this definition is translated in the fact that renting a certain item is often more cost-effective than purchasing and owning it. It is also often

a mutually beneficial situation for individuals who are in need of a certain item (borrowers) and the individuals who own the item (owners): the borrowers can obtain the item, for a certain amount of time, while the owners can profit off their unused items in this manner (Lawson et al., 2016).

1.4.2 Environmental consciousness

A second motive for access based systems is being environmentally conscious. One single item will be shared among multiple consumers, in contrast to ownership where one item is used by only one consumer. Items can also be reused, while also for example reducing the amount of packaging necessary to obtain and use one single product. As a result, access-based systems provide individuals with the opportunity to support environmentally favorable behaviors (Lawson et al., 2016). This offers an explanation as to why environmentally conscious individuals have higher chances at participating in access based systems (Gleim & Lawson, 2014 ; Hartmann & Apaolaza-Ibanez, 2012).

1.4.3 Status competition

Another motivational factor as to why consumers may participate in access based systems is status competition. Status competition is defined as "the motivational process by which individuals strive to improve their social standing through the conspicuous consumption of consumer products that confer and symbolize status for both the individual and surrounding significant others" (Zerbe & James G, 2021). By using access based models, consumers have access to rent goods that they otherwise might not be able to afford or buy. In most of the access based systems, nobody knows whether an item is purchased or rented, so being seen with a certain item can increase your status towards other individuals, even though you did not buy it.

1.4.4 Product trial

When wanting to buy a certain new item, consumers are often confronted with choice confusion. Choice confusion is characterized as "a lack of certainty related to making choices based on a large number of options" (Shim & Gehrt, 1996). Consumers prefer to be offered with a variety of options, but these numbers are frequently so large that consumers become overwhelmed and decide to postpone the purchase or seek additional information (Schwartz, 2004; Matzler, Waiguny, & Fuller, 2007). Access-based consumption has the ability to serve as some form of information search because it enables consumers to try a certain product, at a relatively low cost, without any further obligations before making the commitment of purchasing and owning the product. This reduces the perceived risk of purchase greatly (Locander & Hermann, 1979). You can take the product on a so-called 'test run' as a way to try a product without committing to it by owning it (Lawson et al., 2016).

1.4.5 Variety seeking

Another motivational factor for consumers to use access-based systems is variety seeking, which is defined as "the degree to which a person expresses a desire to try new and different things" (Sela et al., 2019). When individuals display variety seeking behavior, it suggests that they seek variation, novelty, and fun. When owning a certain product, you own that one particular product but nothing new or trendy. Access-based models enable individuals to experience the most recent products and newest trends without having the obligations that come with ownership or without having to commit to a specific brand or style (Lawson et al., 2016). However, this can also work negatively for access-based models, because a substantial amount of consumers develop brand or even product loyalty which can withhold them from participating in access-based consumption (Sela et al., 2019).

1.5 Factors that withhold consumers from participating in access based consumption

1.5.1 Possessiveness & materialism

High levels of possessiveness and materialism have a negative impact on the chances that an individual may use access-based consumption. Possessiveness is defined as "a general attachment to possession", while materialism is defined as "the importance that a person attaches to possessions" (Belk, 1985). As can be seen from the definitions, possessiveness and materialism have an underlying association: people who showcase high levels of materialism believe that their possessions are their primary source of success and happiness in life (Felix & Garza, 2012). As a result, individuals who place great worth on their possessions and entrust these material goods as a source of happiness are less likely to opt for access-based consumption, because they lay tremendous value on their own possessions and hence place significant value on their ownership (Lawson et al., 2016).

1.5.2 Brand or product loyalty

As earlier mentioned, one of the motivational factors that draw individuals to opt for access-based consumption is the fact that they have access to a great variety of products. However this can also work the other way around, because a substantial amount of consumers develop brand or even product loyalty, which can withhold them from participating in access-based consumption. Individuals may want to 'stick' to a certain product or brand after they repeatedly had positive encounters with these products or brands and may have no desire to access a different product or brand (Lawson et al., 2016).

1.6 Environmental impact of access-based systems

At the end of 2021, the earth reached a population of 8 billion, with an average growth of 80 million per year. This results in an average growth rate of 1% of the total population. With this growth rate in mind, the earth's population is estimated to be 10 billion people by the year 2057 (consulted via https://www.un.org/en/global-issues/population). Combine these numbers with the current trend of reurbanization, and it will be inevitable that cities will suffer under the negative consequences of overpopulation. To accompany this growing population, more resources will have to be provided by the earth in combination with further pollution of the environment (Hierse et al., 2017). Earth overshoot day, which is defined as, "the date when human demand for ecological resources and services in a given year exceeds what the earth can regenerate in that same year" (Liu, Werven, & Ramakrishna, 2021), is falling earlier on the calendar every year. For example, in 1987 earth overshoot day took place on october 23th versus last year's earth overshoot day, which took place on july 29th. Our existing lifestyles and consumption patterns are incompatible with what the world can offer for us, and we must make changes to ensure that future generations can live and have enough resources to sustain themselves (Hierse et al., 2017). However, this transition towards a future that is more sustainable and where humanity operates within its planetary boundaries is one of the greatest challenges we face right now (Wasserbauer et al., 2020).

The European Union has set numerous climate and resource efficiency targets and, in order to reach these targets, we are urged to make numerous changes in our daily-life behaviors and patterns as well as in our business models. Business models can play a key role to reach these targets because it affects how a company creates, captures and delivers value and can result in increased utilization of products and materials (Nußholz et al., 2019). Access-based systems can be part of the answer to this problem. It will ensure that less resources are needed, less emissions will occur, waste is more limited and products/services are used more efficiently (Hierse et al., 2017).

Chapter 2: Car sharing as an access based system in mobility

2.1 Definition

Over the last decade, car-sharing has become a global phenomenon, an international transportation trend and has potential to alter the way we use cars (Prieto, Baltas, & Stan, 2017). The car-sharing concept is gaining momentum as a viable alternative to several modes of transportation, where the current average preferred option is privately owned cars (Paundra et al., 2017). In car-sharing services, individuals are enabled to

access and use cars without the obligation to purchase them and function as a substitute for privately owned cars. It is defined as ‘a service that provides members with access to a fleet of vehicles on a daily, hourly or minute basis’ where individuals are able to reserve a car and often on a membership basis. (Millard-Ball & Adam, 2005).

Cars nowadays are severely underused and this is the basis and economic principle on which car sharing is built. Its goal is to improve utilization of underused assets (Bardi & Eckhardt, 2012 ; Cohen & Kietzmann, 2014 ; Schaefers, Lawson, & Kukar-Kinney, 2015), which is nowadays often addressed as the goal of sharing economy. Car sharing has the ability to complement the current existing public transportation services, particularly providing mobility services for those trips which are generally only suited for car driving (De Lorimier & El Geneidy, 2013). It reduces the overall need to have private cars and increases mobility options for many (Paundra et al., 2017).

2.2 Conceptual foundations

2.2.1 Demographic

A demographic is defined as ‘the study of a population that is based on various factors such as sex, age, race. It refers to socioeconomic characteristics such as employment, education, marriage rates, income, household characteristics and more. The identification of sociodemographic variables such as age, sex, education level, household size, work situation … are important to identify profiles that are more likely to make use of car sharing services. These sociodemographic characteristics have the potential to impact mobility patterns and travel options (Metz, Michael, & Doetsch, 2012), and understanding them may aid in the expansion and understanding of car sharing services (Millard-Ball et al., 2005).

When we look closely at the current demographic that uses car sharing services, we see that these individuals tend to be younger and more educated (Burkhardt & Millard-Ball, 2006; Efthymiou et al., 2013). They are often students that belong to low-income households. Regarding age, older people are less inclined to join these services than younger people because they are used to using their own cars and have few intentions of changing these habits (Prieto, Baltas, & Stan, 2017). We see that car sharing users are usually well-educated, younger adults with a moderate/upper income that live alone, or in a small household, in urban areas without children (Le Vine et al., 2014). It is also proven that the intention to join car access and sharing services is related to household income and household size (Efthymiou et al., 2013). Within the car sharing demographic, it is also important to notice that there are generally more secondary household drivers than main household drivers (Prieto, Baltas, & Stan, 2017). When we look at the differences of car

sharing adoption between men and women, we see that men are more inclined towards the use of these services. This can be explained due to the fact that women might have some more safety concerns within society than men, where they might feel more comfortable using their own car that they know than a strange car that might come with complications and uncertainties (Prieto, Baltas, & Stan, 2017). So to conclude this topic: younger individuals, who live in urban areas, who have enjoyed higher education and have no children are more likely to use car sharing services. In detail, it is mostly male younger adults, living childless in city centers with a higher education degree who are more likely to choose car sharing options (Prieto, Baltas, & Stan, 2017).

2.2.2 Geographic markets

As said in the previous part, car sharing has become a major transportation trend in metropolitan, urban areas. In these areas, car sharing services have seen enormous growth rates in the last couple of years (Prieto, Baltas, & Stan, 2017), which results in the fact that most car sharing services have been developed in these high-density metropolitan areas (De Luca & Di Pace, 2015). Metropolitan areas are also characterized by the fact that there is usually a general low-ownership rate of cars, that many destinations are within walking distance and that there are a lot of transit options from public transport that add to the car sharing journey. It also helps that there is often parking pressure and that metropolitan areas benefit from car sharing services because it reduces the total amount of cars needed and so also parking space needed (Millard-Ball & Adam, 2005).

2.2.3 Impacts of car sharing

2.2.3.1 Vehicle ownership

Car sharing enables individuals to have access to a car without having to own it. Vehicles can be used for occasional trips and households are enabled to own 1 or no car instead of owning a second or third vehicle (Bardhi, Fleura, & Eckhardt, 2012). Data shows that, on average, this is done by 20% of households and that even more households hold off on their purchase of a new car when they have access to car sharing services (Millard-Ball & Adam, 2005).

2.2.3.2 Greater mobility

As mentioned earlier, car sharing services enable individuals to access cars when they do not have any at their disposal, which improves mobility for these individuals drastically (Millard-Ball & Adam, 2005).

2.2.3.3 Cost savings

Due to the fact that individuals have access to car sharing services, they will be less inclined to purchase new cars. Because of this, they will not be faced with the costs of purchase, insurance, maintenance and fuel

but only with the membership- and user fees, resulting in a drastic reduction in total costs (Millard-Ball & Adam, 2005).

2.2.3.4 Environmental impact

The use of fossil fuels has negative consequences for the environment and results in raised interest in sustainable and environmental alternatives for a wide range of application domains (Ketter et al., 2016 ; Noppers et al., 2014). For transportation specific, numerous efforts have been made to research and introduce innovative technologies and even electric vehicles (Abrahamse et al., 2009 ; Noppers et al., 2014) in order to lessen the use of fossil fuels globally. This encourages the use of novel transportation such as car sharing and has beneficial effects on the environment because it reduces the everyday impacts of transportation (Paundra et al., 2017). It will also give individuals the opportunity to access the newest cars that are most efficient in using fuel and even electric cars. Older, more polluting cars will be less accessed and this will contribute to the overall well being of the environment. Although economical concerns outweigh ethical concerns in most consumption situations, a lot of access based car sharing services promote 'green driving' due to the fact that they make it cheaper to rent hybrid or electric cars (Bardhi, Fleura, & Eckhardt, 2012).

Research has proven that a single car in car sharing services can replace between nine and thirteen private cars (Martin et al., 2010), given that private cars are only used for a mere 5% of the time or 72 minutes a day (Ballus-Armet et al., 2014). This means that fewer cars will be needed, which results in less car production. Less production means less needed raw materials and overall resources which is beneficial for the environment. The reduction, or to some context replacement, of privately owned cars will also contribute to the reduction of air pollution and traffic congestion (Efhtymiou, Antoniou, & Waddell, 2013). Furthermore, when individuals are dependent on car sharing services, they will be more rational about unnecessary trips. This can contribute towards lessening overall pollution by as much as 56% (Shaheen & Cohen, 2013). We can conclude that car sharing promises great possibilities for sustainability and individual mobility (Paundra et al., 2017).

2.3 Advantages and disadvantages

2.3.1 Advantages and success factors

There are numerous advantages that are connected to access based car systems, compared to private ownership of cars.

To begin with, choosing an access-based car as a mode of mobility will cost far less than opting for private car ownership (Bardhi, Fleura, & Eckhardt, 2012). As previously discussed, there are numerous expenses connected to owning a car. There is a fixed purchase cost, but also a lot of variable cost of maintenance, fuel prices and insurance (Millard-Ball & Adam, 2005). So, access based car systems are much cheaper and have more economic benefits than private cars (Lawson et al., 2016).

Second, you have access to a wide variety of cars. Depending on the type of car ride and the occasion, you have the ability to choose a vehicle that best adheres to your needs, instead of being stuck on one specific type of vehicle in ownership. You also have the ability to try new types of cars before potentially purchasing them (Lawson et al., 2016). It also enables you to drive cars that you could otherwise not afford, so it is a form of lifestyle facilitator (Bardhi, Fleura, & Eckhardt, 2012).

Lastly, car sharing is extremely advantageous for the environment and society as a whole. It decreases the overall need for cars, increases available parking spaces and mobility (Millard-Ball & Adam, 2005). There will be less congestion, which means that transportation from point A to point B goes more fluently (Paundra et al., 2017). Old cars will be replaced by newer, more fuel efficient (or even electric) cars (Abrahamse et al., 2009 ; Noppers et al., 2014). This reduced pollution implicates an overall decrease of greenhouse emissions (Ketter et al., 2016 ; Noppers et al., 2014). In short, car sharing can give the customer the feeling of value adding to the society and the environment, making it a worthwhile alternative for traditional means of transportation.

2.3.2 Disadvantages and barriers from success

Although there are many benefits related to car access based systems, there are also some disadvantages. First of all, it is not possible to obtain capital accumulation like in ownership. You will also not form any sense of personal interdependence and security with the car, since it is not yours (Bardhi, Fleura, & Eckhardt, 2012). Furthermore, you will also not fulfill your ontological security. Ontological security is described as a sense of confidence and trust in the world as it appears to be, the security of being. Human beings have faith in the continuity of their self-identity and in the consistency of their material and social environment (Kinvall, Catarina, & Mitzen, 2020). This reflects itself on a sort of reliability on persons and things. This ontological security can not be fulfilled in car sharing since firstly the car is not yours, so it is not part of your self identity, and second you can not fully rely on it because its availability is not guaranteed like it is in ownership (Bardhi, Fleura, & Eckhardt, 2012). There is also a certain lifestyle impact. You lose some form of freedom, while gaining another. If you were used to having your own

private car, adapting to an access based system can be challenging, since there are membership requirements and perimeter limits that a private car does not have (Bardhi, Fleura, & Eckhardt, 2012).

2.4 types of car sharing

There are different types of car sharing initiatives, with the highest distinction being car sharing between consumers and professional car sharing. In this Master's Dissertation, we only focus on the latter.

2.4.1 Particular, local initiatives

First of all, there are car sharing initiatives between consumers themselves. You will use cars of other consumers, called peer to peer platforms. We will not focus on these kinds of sharing platforms but only on professional car-sharing in this Master's Dissertation

2.4.2 Peer to peer

Peer to peer transactions are services where two, often unknown, individuals interact with one another without any intermediation by a third party. The two customers, the buyer and the seller, are in direct contact with each other via the peer-to-peer service. It is however possible that the peer-to-peer platform provides some kind of services like screening, payment process or rating. A consumer takes part in the car-sharing system when he/she joins the application and contributes resources while using the resources that are provided by other consumers. However, as already mentioned, we will not focus on these kinds of sharing platforms but we will focus on professional car-sharing in this Master's Dissertation.

2.4.3 Professional initiatives

Professional initiatives in the case of car sharing are legitimate companies who provide transportation methods by providing vehicles. This can be done in a station based or free floating way (consulted via https://www.egear.be/autodelen-belgie/).

2.4.3.1 Station based

In a station based setting consumers can use the provided cars by the minute, hour or day but need to collect and bring the car back to a certain fixed geographical point (consulted via https://www.egear.be/autodelen-belgie/).

2.4.3.2 Free floating

In a free floating setting the car-sharing company usually operates within a certain perimeter where you can collect and bring back the car. (consulted via https://www.egear.be/autodelen-belgie/). This means that

consumers do not have to go to a certain fixed geographical point to collect or bring back the vehicle, but that this can be done within a certain perimeter, usually being a certain city.

2.5 Biggest players on the market and distinguishing characteristics

There are a lot of companies who offer varying types of car-sharing in Belgium, Europe and around the world. We will discuss the biggest players on the market in Belgium while focusing on what differentiates them from their competitors. This with the goal to identify the key characteristics that would potentially have an effect on the psychological ownership of consumers.

2.5.1 Cambio

Cambio is one of the biggest car-sharing players in Belgium. It was founded in the year 2000 and offers station-based car-sharing options. It operates in Belgium and Germany and has more than 58.000 members with 1.842 cars in Belgium (consulted via www.cambio.be on 02/06/2022). It offers 3 types of packages and your most suited package depends on how much you use the car. If you do not use the car much, you will opt for the start package where you pay a low monthly fee but relatively higher prices for the car use. This is in contrast with the comfort package, made for users who will use the car a lot, where you pay a higher monthly fee while paying lower prices for the car use (consulted via www.cambio.be). So the package that individuals opt for will depend on their car using habits. Cambio offers 4 classes of vehicles, being basic, regular, premium and monovolume types of vehicles. They also offer the ability to pay per hour, day, week, month and per kilometer driven. Cambio is a station based car sharing company, meaning that you have to pick up and return the car at the same, fixed location. When using the car, you can use the car between one hour and 30 days within the EU (consulted via www.cambio.be).

2.5..2 Batt Mobility

Battmobility is another Belgian station based car-sharing company that is based and operating in Ghent. They also have a small presence in Arendonk, Kruisem and Kortrijk, but they are mainly active in Ghent. It is known for the fact that they only use electric vehicles and are big promoters of sustainable transportation. They offer 3 different package forms and two different kinds of car fleets: the standard and the luxury car fleet. You are able to rent the vehicle for longer periods of time and use it within the Schengen countries. Depending on what package form you choose from, you have the ability to pay per day, per month and/or per driven kilometer. Also, before committing to this car-sharing platform, you have the ability to test ride the concept and the cars for free (consulted via www.battmobility.be).

2.5.3 Poppy

Poppy mobility is a Belgian free floating car-sharing company. It was founded in 2018 so it is a quite recent company, with operations in Antwerp, Brussels, Mechelen. They have a range of combustion engine, hybrid and fully electric cars at disposal for their clients (consulted via www.poppy.be). You can use the cars for up to 72 hours with a limit of 200km per session, so it is more suitable for short-term drives. You pay after each ride, with a cost of € 0,36 per minute driven, or with a maximum of 90 euros per day (consulted via www.poppy.be).

2.5.4 Green Mobility

Green Mobility is another Belgian car-sharing company that is characterized by a free-floating nature and is active in Antwerp, Ghent and Brussels. As the company name suggests, it is 'green focused' and only provides electric vehicles. You can rent the vehicles for up to one week and move freely with it within the Benelux. After use, you have the ability to pay per minute, hour, day or even week (consulted via www.greenmobility.com).

2.5.5 Partago

Partago is a Belgian roundtrip home zone based car-sharing company. So after every ride with the car, you need to bring the car back to the same fixed zone. The difference with for example Cambio and Battmobility is that there is not a fixed place, but rather a zone. Partago is active all over cities in Flanders and Brussels but when rented for longer periods the cars can be used all over Europe. Partago offers 2 different formulas from its members to choose from and only uses electric cars. You can use the vehicles for an extensive period and can move freely with it across Europe. After use, you can pay per minute, hour, day, week, month and even per kilometer. Furthermore, before committing to join the platform, you have the ability for a free test ride (consulted via www.partago.be).

2.6 Characteristics of car sharing services

Attributes	*Attribute types*	Cambio	Battmobility	Poppy	Green Mobility	Partago
Packages	***Choose from different packages according to your needs***	X	X		X	X
Geographic limitation	***Return the car in an area instead of a fixed position***			X	X	X
	Take the car outside of Belgium	X	X		X	X
Vehicle type	***Rent an electric vehicle***	X	X	X	X	X
	Rent a premium vehicle	X	X			
	Rent a (mono)volume vehicle	X	X		X	X
	Choose from a range of cars	X	X	X	X	X
Payment method	***Pay per minute***			X	X	X
	Pay per hour	X	X		X	X
	Pay per day	X	X	X	X	X
	Pay per week	X			X	
	Pay after each ride			X		X
	Pay per month	X	X			X
Duration	***Rent the vehicle for longer than 72 hours***	X	X		X	X
Test ride	***A test ride***		X			X
Reservation time	***Reserve a vehicle for a short period of time upfront (0-30 min)***	X	X	X	X	X
	Reserve a vehicle for a long period of time upfront	X	X		X	X

Table 1: characteristics of car sharing services

Chapter 3: Evolution of car sharing

3.1 Origin

The earliest car sharing initiative in Europe was “sefage” (selbstfahrergemeinschaft). It was initiated in Zurich (Switzerland) in 1948 and was meant to provide car sharing opportunities for individuals unable to justify buying a car, given their financial situation, but intrigued to share one. After this, there were numerous other attempts to provide car-sharing initiatives to the public but most of them failed. Some examples are “Procotip" that arose in 1971 in Montpellier (France) and “Witkar" that originated in Amsterdam (The Netherlands) in 1973 (Shaheen et al., 1999).

In the 1980’s there were other, more successful, attempts to set up car sharing initiatives around Europe with an estimated number of car sharing users of 125.000. In 1991 the European Car Sharing Association (ECS) was founded in order to be able to support car sharing lobbying activities (Shaheen et al., 1999).

In Belgium, (professional) car sharing originates from 2002 with implementation in the Wallonian part of Belgium, and 2003 in Flanders. In 2009, Belgium registered 6.932 users with 248 shared cars with the main players being Cambio with activities in 18 cities all over Belgium (Loose & Willi, 2010).

3.2 Car sharing today

At the beginning of 2021, there were about 150.000 car sharing users in Belgium who made use of about 4.000 shared cars that are offered by numerous car sharing platforms. In the last 5 years, there has been an enormous ‘boom’ in the adoption of car sharing habits, since the total number of car sharing users in Belgium has increased fivefold during this timeframe from 50.000 users in 2017, to around 250.000 users in 2021. In 2020, there was a rise of 30% regarding the number of car sharing users and a rise of 10% regarding the number of cars that are available for sharing. 710.000 car rides were made using car sharing services which translates to about 11 drives per user. For roundtrip based car sharing services, the average user uses a shared car for about 8 hours and drives an average of 52 kilometers per use. This is different from the averages of free-floating car sharing services, where the average reservation time is 47 minutes with an average of 13 kilometers driven (jaarrapport autodelen, 2021).

3.3 Car sharing in the future

Car sharing holds many future possibilities, given the current positive trends towards it, and the tremendous economic and environmental benefits that it can realize. Especially in urban, metropolitan areas, car sharing can have a big future (impact) since it reduces the overall need for cars. Many trips start and finish in

metropolitan areas, since the largest activity of employment, retail and recreational activities take place in these areas (Mounce, Richard, & Nelson, 2019). There is also the current trend of urbanization, which means that individuals shift their housing and living focus from rural to urban areas. The United Nations have predicted in 2015 that by 2050 about 86% of the developed world and about 64% of the developing parts of the world will be urbanized with a large part of the population growth being absorbed by cities (Alkema et al., 2015). Due to this urbanization trend, urban regions will become increasingly more dense which will cause transportation needs in urban areas to rise. This elevated use of transportation will cause increased amounts of congestion, which will lead to a tremendous waste of money, time and energy (Mounce, Richard, & Nelson, 2019). It also has an impact on air quality, since elevated levels of transport use contribute to elevated levels of greenhouse gasses. Car sharing holds many future possibilities, given the current positive trends towards it, and the tremendous economic and environmental benefits that it can realize.

Chapter 4: Psychological ownership in an access based environment

4.1 Definition of psychological ownership

Psychological ownership can be defined as "the state in which individuals feel as though the target of ownership ((im)material in nature) or a piece of it is 'theirs'" (Pierce et al., 2011). It is also defined as "whether an object is mine or not mine" (Morewedge, 2021). It reflects the personal sense that an individual holds for a target (Li, Dan, & Atkinson, 2020). It is not to be confused with legal ownership which is the fact that you own an object's property rights and legal ownership is also not needed to experience psychological ownership (Morewedge & Carey K, 2021). When psychological ownership is high, consumers will feel closely connected to a certain object, whereas consumers will fail to associate themselves with the object when psychological ownership is low. (Li, Dan, & Atkinson, 2020).

4.2 The difference between psychological ownership and legal ownership

As mentioned earlier, psychological ownership and legal ownership are two different concepts and are not always congruent. Legal ownership is defined as "the possession of a bundle of property rights, such as the right to exclude others from its use and the right to sell or profit from the object" (Morewedge, 2021). Legal ownership often precedes psychological ownership, but this is neither a necessity nor a guarantee that psychological ownership will actually take place (Avey et al., 2009; Pierce et al., 2003; Wilpert, 1991). Psychological ownership reflects a subjective sense of ownership, rather than the individual who legally has the property rights (Rogers & Paul, 2021). Individuals can develop possessive feelings to objects even if they do not possess any legal rights over this object (Preston et al., 2020) but legal ownership often

facilitates the rise of psychological ownership towards objects by individuals (Pierce et al., 2003). Psychological ownership can become stronger over time, in contrast to legal ownership, which remains fixed until the bundle of property rights are legally transferred. Psychological ownership drives people's subjective sense of ownership, instead of their legal ownership status (to others), which is key in order to fulfill their possession drives (Rogers & Paul, 2021).

In terms of material product attachment, psychological ownership is also a larger concept than legal ownership (Kleine et al., 2004) since it includes a cognitive dimension because only psychological ownership may be created prior to purchasing an object (Vickers & Neil J, 2017). Another remark is that it is possible that psychological ownership is experienced on a group level (Pierce & Jusilla, 2011) and or towards constructs that are not tangible like for example ideas, personal characteristics, social constructs and events (Pierce et al., 2001).

4.3 Psychological ownership theory: how is it established?

Pierce et al. argued in 2003 that individuals have numerous drives or motivational 'roots' to possess objects that can be accomplished by changing to certain behavioral 'routes' in order to develop psychological ownership to accomplish a feeling that an object is perceived to be "mine" (Pierce et al., 2003). Once psychological ownership is developed by the individual, it can have a positive or negative effect on the individual's behavior towards the target object (vb. possessiveness, defense hostility, territoriality…) (1a Kirk et al., 2018b). After a certain amount of time, individuals will embody the owned items in their self-identity and the objects will become part of their 'extended-self' which symbolizes self-nurturance and self-completion (Beek, 1988; Fritze et al., 2020). Other aspects that shape the strength and nature of psychological ownership perceived by individuals are boundary conditions (key characteristics of the object) and potential moderators and mediating factors (Jusilla et al., 2015).

4.3.1 Motivational routes/motives

There are four motivational routes, which explain why individuals are driven to possess objects.

The first motive is the need for *efficacy and effectance*, which is an individual's desire to control and interact with its environment in a way that is effective and results in a feeling of efficacy and competence. An individual wants to be able to produce desired outcomes in their environment (White, 1959) and dominate one's immediate environment (Rogers & Paul, 2021). It satisfies "my need as MINE" or in other words: possessions have the ability to make individuals feel safe if these possessions are 'theirs to have and to hold' (Isaacs, 1993).

The second motive is the need for *self-identity*. Individuals try to define themselves via the means of ownership. Possessions have an important role in self-understanding and self-identity forming process due to the fact of the importance and the meaning that is given to these possessions by society (McCkracken, 1986). Pierce et al. stated in 2003 that "ownership helps individuals to define themselves, express their self-identity to others and maintain the continuity of self across time". It is the drive to express one's personality, values, interests, and group affiliations to the social world (Rogers & Paul, 2021). This is also in line with the findings of McCracken, since he argued in 1986 that consumer goods are carriers of cultural meaning through advertising and the fashion system and that individuals claim these consumer goods to try to incorporate the qualities that this good had been given by marketing forces. Furby also elaborated on this in 1978 by saying that "psychological ownership reflects a relationship between an individual and an object in which the object is experienced as having a close connection with the self, becoming part of the 'extended-self'''. When an individual brings belongings into his or her life and interacts with them, they become a part of the 'extended-self' in the quest for self-knowledge and purpose (Pierce et al., 2003).

The third motive is the motive of *'having a place'* (Porteus, 1976). This motive originates back to owning a home, in geographical norms. Pierce et al. suggested in 2003 that this concept can be adapted to a broader context in a way that it is interpreted as the need that the home is a structure point and that an individual uses it as a foundation to structure his/her life around (Kron, 1983). In terms of psychology, it is important that individuals make emotional investments into possessions with the goal of being able to experience them in a way as individuals experience homes (Porteous, 1976). Via this way, it is possible that individuals regard certain possessions as home when the individual finds a strong sense of identification with the possession (Pierce et al., 2003).

The fourth and final motivational motive is *stimulation*. This reflects "an individual's desire and need to experience positive hedonic sensations like satisfaction, pleasure and excitement" (Rogers & Paul, 2021). Individuals look for stimulation, to meet their 'arousal requirements'. This is also why, opposed to being content with current possessions, individuals feel stimulated to seek out new possessions to replace current ones (Pierce & Jussila, 2011).

4.3.2 Behavioral routes/motives

There are 3 behavioral routes that provide an explanation as to how individuals nourish their psychological ownership motives.

The first behavioral route is *control*. It represents "the ability to exert direct or indirect influence over a particle object" (for example the ability to buy it or to grant/exclude others from using it) (Rogers & Paul, 2021). Pierce et al. also argued in 2003 that when an individual emerges individual control over an object, psychological ownership may emerge. It is also argued that the level of control that an individual can exercise over a target object is positively correlated to the experience as part of the self (Furby, 1978 ; Pierce et al., 2003). This is also in line with the work of Prelinger (1959) and Pierce et al., (2003) in which it is stated that individuals have a higher likelihood of considering objects part of their extended self when they can influence or control them.

The second behavioral route is *intimate knowledge*. This symbolizes "an individual's familiarity, awareness and in depth understanding of a particular object" (Rogers & Paul, 2021). Individuals become more heavily attached to target objects when they participate or associate with these objects (Pierce et al., 2003) in order to possibly develop psychological ownership.

The third and final behavioral route is *self-investment*. This reflects "an individual's input of personal resources such as physical and/or mental efforts, time, expertise … to the target object" (Rogers & Paul, 2021). An individual who invests into an object has a higher chance of becoming one with the object which leads to higher chances of developing psychological ownership (Jussila et al., 2015; Rochberg-Halton, 1980).

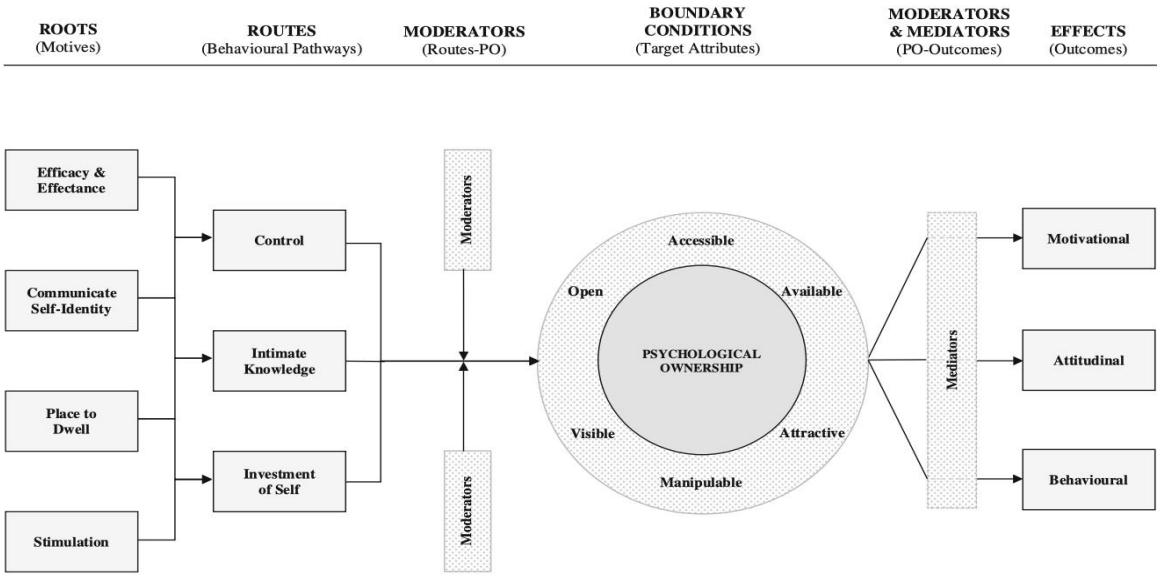

Fig. 1 Psychological ownership theory (Jusilla et al., 2015)

4.3.3 Psychological ownership theory in a car sharing context

These previously defined findings can also be applied in a car sharing context. An individuals' ability to drive for example a rented car can satisfy their need for control and accordingly satisfy their need for efficacy and effectance, due to the fact that it leads to a quicker journey. Renting a sports car is a symbolic display of personal wealth/success, which leads to self-identity. It is also a way to escape daily tension through the thrill of driving and living fast, covering the stimulation and location to dwell route (Rogers & Paul, 2021).

4.4 The relation between access based consumption and psychological ownership

As said earlier, psychological ownership is defined as "the feeling that an object is MINE" (Pierce, Kostova, & Dirks, 2001). In traditional (capital) markets, where individuals own most of the objects that they consume, psychological ownership is usually established via legal ownership which means that ownership of a product or service is acknowledged via property rights. In most cases, psychological ownership follows legal ownership but legal ownership is in no case a requirement to experience psychological ownership with an object (Morewedge & Carey K, 2021).

Market innovations have led to new types of business models where the relations between individuals and their objects have become increasingly more varied and fractional models of ownership have emerged (Mordewegde & Carey K, 2021). Individuals are enabled to purchase access to consume goods and services which are owned by others and shared with many (Pierce, Kostova, & Dirks, 2001). Individuals will opt to selectively purchase a fraction of a bundle of property rights instead of the whole of the bundle. Instead of paying for legal ownership, individuals are now paying for legal access (Morewedge & Carey K, 2021).

When purchasing a fractional bundle of property rights, individuals may experience less psychological ownership than individuals who purchase the entire bundle of property rights. In other words: users of an object may experience a different level of psychological ownership than the individuals who legally own the object. When psychological ownership is high, consumers will feel closely connected to a certain object, whereas consumers will fail to associate them with the object when psychological ownership is low. There is evidence that certain individuals are more prone to experiencing psychological ownership towards target objects than others, whether they are legally theirs or not and this will have an influence on their willingness to adopt car sharing services (Dawkins et al., 2017; Jussila et al., 2015).

This Master's Dissertation will focus on the characteristics of car sharing services that impact the levels of psychological ownership that individuals experience. This is a meaningful understanding since it is proven that higher psychological ownership leads to higher consumer happiness, better product understanding and higher willingness to pay (Li, Dan, & Atkinson, 2020).

4.5 Differences in psychological ownership towards services and psychological ownership towards products

There are noticeable differences in how the previously mentioned motivational and behavioral routes predict psychological ownership development regarding services versus product (Rogers & Paul, 2021; Danckwerts & Kenning, 2019). Despite the fact that digital technologies are of intangible nature, consumers often develop feelings of psychological ownership towards these digital technologies (Kirk et al., 2018b), meaning that there is a relationship between (consumer) technology appropriation and perceived psychological ownership. Technologies, or so-called 'mediums', that offer the possibility of customization and control have a positive influence on the perceived psychological ownership levels by consumers. These consumers can develop both perceived psychological ownership to the technology and to the product that they are accessing via this technology. This is due to the fact that interacting with the technology gives consumers the impression of control which results in perceived psychological ownership to the service and to the product that is accessed via the service (Kirk et al., 2015). So, digital technologies have the ability to promote perceived psychological ownership of digital and non-digital objects (Kirk et al., 2018b). This is also encouraged by the fact that consumers of a certain service, where the service enables the access to digital goods, are capable of developing ownership related feelings to this digital product (Watkins et al., 2016).

Hypotheses

When taking into account psychological ownership theory and its precedents and routes, it is logical to assume that one of the characteristics of car-sharing services, as defined in table 1, will have a significant impact on the psychological ownership of consumers. For example, the mere possibility of being able to choose your vehicle type shows signs of control, while using a sports car might boost your perceived stimulation levels and a test ride might promote intimate knowledge of the car. These are just examples as to how psychological ownership theory might occur in car-sharing and form psychological ownership for the car by its consumers.

H1: There will be at least one attribute that has a positive or negative influence on the psychological ownership by consumers for the car.

However, since Danckwerts & Kenning (2019) made the distinction between how this psychological ownership is experienced towards the car sharing service and the car sharing product, it is also valuable to research whether these same attributes also have an impact on the psychological ownership for the car sharing service by its consumers.

H2: There will be at least one attribute that has a positive or negative influence on the psychological ownership by consumers for the car sharing service.

Apart from researching whether or not the attributes have an impact on the psychological ownership of the car and/or car sharing service, it is also valuable to test where psychological ownership occurs the strongest.

H3: In general, the attributes will have a bigger positive or negative influence on the psychological ownership for the car than for the car-sharing service.

Methodology

Goal

This quantitative study has two main goals. The first goal is to identify whether certain manipulated attributes of car sharing services have an impact on the perceived psychological ownership of individuals to the car and/or car sharing service. The second goal is to identify whether there is a difference in perception of these car sharing service attributes to the psychological ownership of the car itself or to the psychological ownership of the service itself. This was established by creating two different pathways in the survey where each respondent only received one of the two and by comparing these two pathways in the analysis. This information can be valuable for businesses, marketeers and product creators to improve perceived psychological ownership of their products/services by consumers due to the fact that they will know what attributes to focus on. This study was therefore set up as a mixed design and later analyzed via a conjoint analysis in the statistical analysis program SPSS, which is described in detail in the next paragraph.

Study description

An overview

Conjoint analysis was used to research the relative importance of a number of car-sharing attributes of a fictitious car-sharing company, called ‘shareacar’. A conjoint analysis approach was chosen because this Master’s Dissertation study attempted to understand how consumers traded off between various preference factors of car sharing platforms.

The sample

In total, the questionnaire was filled in by a total of 385 respondents, with 189 respondents that filled in the service-based subsample and 196 respondents that filled in the product-based subsample. Out of these 384 submitted surveys, 248 surveys were incomplete and thus erased from the data collection. This left us with 137 complete surveys. Out of these 135 complete surveys, 23 respondents were not of the correct age category, since a population between 18 and 30 years old was targeted, and thus also filtered out of the data collection. There was also a consent form (see annex 4) in the questionnaire to make sure that all respondents had given their permission to process their results. This answered ‘yes’ by all remaining respondents. This left us with a total of 114 eligible respondents: 46 from the service-based subsample and 68 from the product-based subsample.

Questionnaire design

This research is conducted through a scenario based experiment via the use of an online questionnaire. This was done via the online program qualtrics, where respondents were shown different kinds of fictional scenarios of a car sharing service, based on variable characteristics of this car sharing service. These questionnaires were filled in in complete anonymity and the (conjoint) analysis was performed using SPSS afterwards. There are 7 variables that are being experimentally manipulated to evaluate the perceived levels of psychological ownership: package type, geographic limitation, vehicle type, payment method, duration, possibility to test ride and reservation time. The levels of these variables vary between 2 and 6. These variables were selected due to the fact that they would have an influence on the overall perception of the car sharing service and would impact the levels of perceived psychological ownership. In the table below all the attributes with their according attribute levels are shown.

Attribute	*Attribute type*
Package type	One package type for all
	Multiple packages
Geographic limitation	Return car to fixed location
	Return car in area
	Take car outside of Belgium
Vehicle type	One vehicle type available
	Multiple vehicles available
	Electric vehicle
	Monovolume vehicle
	Premium vehicle
Payment method	Pay per minute
	Pay per hour

	Pay per day
	Pay per week
	Pay per month
	Pay after each ride
Duration	Rent vehicle max 72 hours
	Rent vehicle longer than 72 hours
Test ride	Possibility to a test ride
	No possibility to a test ride
Reservation time	Max 30 min in advance
	Longer than 30 min in advance

When combining all of these variables, a total of 1152 profiles could be created. This is of course not possible to test and 20 test profiles were created via R.studio. Via these 20 profiles, it is possible to test the significance of each attribute and its effect on perceived psychological ownership of respondents.

In the first question of the survey all respondents had to choose from 3 age categories, namely the categories <<under 18 years old>>, <<between 18 and 30 years old>> and <<above 30 years old>>. This was done in order to ensure that all respondents were between the ages of 18 and 30 and thus eligible for the data collection, respondents of other age categories were automatically sent to the end of the questionnaire and could not participate in the data collection. The survey had two blocks, with the same 20 profiles. The only difference was that in the first block psychological ownership of the car sharing service was tested, and in the second block psychological ownership of the product (= the car) was tested. Each respondent was randomly assigned one of the two blocks via the 'randomization' tool where each of the two blocks were presented evenly to the respondents. These two blocks had the exact same 20 scenarios of a fictional car sharing service, called 'shareacar', with different manipulated attribute levels each time.

Respondents were asked to indicate their "degree of perceived psychological ownership for this car (sharing service)", "perceived level of ownership over the car (sharing service)" and "degree to which you feel that

the car (sharing service) is "MINE"" on a likert scale from 1 to 7 where 1 indicated low perceived levels and 7 indicated high perceived levels (Danckwerts & Kenning, 2019).

Finally, in the last block of the survey, more general questions were asked to the respondents. Firstly, they had to indicate if they agreed with the standard consent form, provided by Ghent University, in order to be able to use their answers in the study. Furthermore, they had to indicate their job status, how many minutes they typically spend in their car, the size of their household, the number of cars available in their household, whether they were in the possession of a private car, their main transportation goals when using a car and whether or not they had previously made use of car sharing services. Lastly, respondents had to indicate on a scale from 'strongly disagree' to 'strongly agree' whether or not they found themselves to be personally attached to owning a private car. At the end of the questionnaire, respondents were also able to leave comments if they had any about the survey as a whole. For the full lay out of the questionnaire, I refer you to appendix 5. After enough respondents had filled in the online survey, the results were analyzed using a conjoint analysis via the statistical analysis software program SPSS.

Measures and scales

In the survey, there were two subsamples, namely the service-based sample and the product-based sample. They were both asked to answer each scenario in a way that they indicated to what extent, on a scale from 1-7, they felt psychological ownership of the service or product, given the manipulated attributes in each scenario.

In each scenario, they had to answer 3 questions, namely (1) "degree of perceived psychological ownership for this car/car sharing service", (2) "perceived level of ownership over the car/sharing service" and (3) "degree to which you feel that the car/car sharing service is "MINE". They had to base their answer on a likert scale from 1-7, where 1 equaled low perceived levels and 7 equaled high perceived levels. This was based on a study done by Danckwerts and Kenning in 2019.

Service-based psychological ownership (used in the first subsample)	**Car-based psychological ownership (used in the second subsample)**
"Degree of perceived psychological ownership for this car sharing service"	"Degree of perceived psychological ownership for this car"
"Perceived level of ownership over the car sharing service"	"Perceived level of ownership over the car"
"Degree to which you feel that the car sharing service is "MINE"	"Degree to which you feel that the car is "MINE"

Danckwerts & Kenning, 2019

Data description

Method of analysis

For this 2 (between subject) x 20 (within subject) design, or 2x20 mixed design, conjoint analysis via the statistical software analysis program SPSS was used to analyze the data. A conjoint analysis is a style of statistical analysis that is used in market research in order to understand how individuals value different features or components of certain products and services. It is based on the foundation that any object or service can be broken down to a set of attributes that will have an impact on the individual's perceived value of that object or service.

Before analysis data was gathered, it was first checked on missing data and incomplete surveys. After erasing the insufficient data, the internal consistency was checked using Cronbach's alpha approach and the assumptions for linear regression were also checked via the statistical analysis software program SPSS.

Analysis and results

Cronbach's alpha internal consistency check

A 7-point likert scale was used in the survey, where respondents had to indicate their perceived levels of psychological ownership towards the car sharing service or the car. In order to check the internal consistency of the reliability of this 7-point likert scale, or to check how reliable this 7-point likert scale was and if it consistently measured the same construct, Cronbach alpha's were calculated for both subsets (service and product based) of the survey. After checking the internal consistency of each profile of the subsets, an average of all of them (per subset) was taken in order to calculate one Cronbach alpha per subset.

The Cronbach's alphas were calculated for each profile in each subset, giving us a total of 20 Cronbach's alphas per subset. For the service based subset, the Cronbach alphas ranged between 0,819 and 0,952 for the 20 profiles. For the product based subset, the Cronbach alphas ranged between 0,850 and 0,929 for the 20 profiles. This indicated good reliability in the scales of both subsets. A table with an overview of each Cronbach alpha per profile per subset can be found in appendix 1.

When averaging the 20 profiles into one Cronbach alpha per subset, A Cronbach alpha of 0,887 for the service subset and a Cronbach alpha of 0,895 for the product subset was found. This reflected a very good internal consistency and allowed us to average the three items of the Danckwerts and kenning's scale into

one construct, namely the average rating of perceived psychological ownership per profile. This average rating will be used in the conjoint analysis.

Subset	Number of profiles	Scale	Cronbach's Alpha
Service-based	20	7-point likert scale	0,887
Product based	20	7-point likert scale	0,895

Conjoint analysis

Assumptions

Before starting to analyze our model, it is important to check whether our not our assumptions of multiple regression are met, since this is necessary in order to conduct a conjoint analysis. These assumptions are vital to check whether or not our model is properly specified and were checked using the statistical software analysis program SPSS. In our analysis, we used the average rating per profile of all respondents. This was originally an ordinal 7-point likert scale, but since they were averaged this was transformed into a continuous one.

The first assumption is the assumption of multicollinearity, meaning that high intercorrelations among two or more independent variables occur in a multiple regression model. However, the data is set up in the form of an orthogonal design, meaning that there is no multicollinearity and verifying this assumption.

Also, due to the fact that this dataset has a multilevel structure and was analyzed using a conjoint analysis, it was not necessary to test the assumption of homoscedasticity. However, in order to be sure, this was tested via scatter plots (annex 2.5 and annex 2.6) and saw that this assumption of homoscedasticity was met.

Lastly, the assumption of a normal distribution was verified regarding the average ratings per profile. This was done conducting a Kolmogorov-Smirnova test, Shapiro Wilk test and overview of histograms via SPSS. Out of the Kolmogorov-Smirnova test outputs, it showed that regarding the service based subset, profile 1; 2 and 6 showed signs of deviations from a normal distribution (P-value < 0,05) (annex 2.1). The Shapiro Wilk test outputs were a bit more optimistic since only profile 6 showed signs of deviations from normal distribution (P-value < 0,05) (annex 2.1). When taking a closer look at these profiles, using histograms (annex 2.3), and concluded that the data was indead showing signs of deviations from normal distribution. When checking the assumption of normal distribution for the product subset, some deviations from normal

distribution were also noted. Regarding the Kolmogorov-Smirnov test outputs, profiles 1; 2; 4; 5; 7; 11 and 13 showed deviations from normal distribution (P-value < 0,05) (annex 2.2). The Shapiro Wilk test outputs showed that profiles 1; 2; 7; 9; 11 and 14 deviated from normal distribution (P-value < 0,05) (annex 2.2). When taking a closer look at these profiles, using histograms (annex 2.3), and concluded that the data was indead showing signs of deviations from normal distribution. However, the central limit theorem states that for samples n>30 this is not a problem since the sum of values tends toward a normal distribution, even if their original values are not all fully normally distributed.

Key results

The part-worth utilities for each attribute level were estimated and analyzed using SPSS statistics. The following results were discovered, working with 95% (*α=0,05)* confidence intervals. These 95% confidence intervals can be interpreted as the range within which the estimated part-worth utility is likely to be positioned with 95% confidence, meaning that values outside the scope of this range are unlikely to be the correct value. Therefore, if the null value is not contained in this 95% confidence interval, null has less than 5% probability to be the true value, and the values are considered to be significant. Consequently, if the null value is contained within this 95% confidence interval, then the null is considered to be one of the values consistent with the data that is observed, meaning that the values are not seen as significant.

Service base subset

Within the service based subset, there are 2 relevant attribute levels found after conducting the SPSS analysis, namely the ability to pay per hour and the ability to pay per month. This allows us to accept the second hypothesis, namely "H2: There will be at least one attribute that has a positive or negative influence on the perceived psychological ownership by consumers for the car-sharing service".

The ability to pay per hour had a negative estimated utility of -0,53 and a 95% confidence interval of [-0,82988; -0,23012] indicating that the offering of the ability to pay per hour would have a negative influence on the psychological ownership of the car sharing service. The second relevant attribute level was the ability to pay per month. This has a positive estimated utility of 0,419 and a 95% confidence interval of [0,11912; 0,71888]. This indicates that the offering of the ability to pay per month has a positive influence on the psychological ownership of the car sharing service. In the following table, the estimated utilities and the confidence intervals, marking their significance are shown.

Conjoint analysis results (service based subset) - Estimated utilities and confidence intervals for significance

Attribute	*Level*	*Estimated utility*	*Confidence interval (α=0,05)*	
			Min	***Max***
Package type	*One package for all*	0,04	-0,09132	0,17132
	Multiple packages	-0,04	-0,17132	0,09132
Geographic limitation	*Return the car to a fixed location*	-0,107	-0,29712	0,08312
	Return the car to an area	0,063	-0,1134	0,2394
	Take the car outside of Belgium	0,044	-0,15396	0,24196
Vehicle type	*Choose from a range of cars*	0,024	-0,20924	0,25724
	Electric vehicle	0,1	-0,11168	0,31168
	Monovolume vehicle	-0,095	-0,3204	0,1304
	Premium vehicle	-0,029	-0,33476	0,27676
Payment method	*Per minute*	-0,104	-0,41564	0,20764
	Per hour	-0,53	-0,82988	-0,23012
	Per day	0,113	-0,15356	0,37956
	Per week	0,082	-0,18456	0,34856
	Per month	0,419	0,11912	0,71888
	Pay after each ride	0,02	-0,2838	0,3238
Duration	*Rent vehicle max 72 hours*	-0,08	-0,21328	0,05328
	Rent vehicle longer than 72 hours	0,08	-0,05328	0,21328
Test ride	*No*	0,033	-0,10028	0,16628
	Yes	-0,033	-0,16628	0,10028
Reservation time	*Reserve vehicle short period in advance (<30 min)*	-0,007	-0,13832	0,12432

Reserve vehicle long period in advance (>30 min)	0,007	-0,12432	0,13832

Product based subset

Within the product based subset, numerous attributes were found that had a significant influence on the psychological ownership by respondents for the car (= product). This allows us to accept the first hypothesis: "H1: There will be at least one attribute that has a positive or negative influence on the perceived psychological ownership by consumers for the car. It also allows us to accept the third hypothesis: "H3: In general, the attributes will have a bigger positive or negative influence on the perceived psychological ownership for the car than for the car-sharing service". This is due to the fact that there are more attributes with a significant influence on the perceived psychological ownership for the car by individuals than there were attributes that had a significant influence on the perceived psychological ownership for the car sharing service.

Within the first attribute, package type, it can see that the offering of multiple packages, instead of one package for all, has a positive significant influence on the psychological ownership for the car, with an estimated utility of 0,066 and a confidence interval of [0,017; 0,115].

The second attribute was the geographic limitation attribute. The need to return the car to a specific location has a significantly negative impact on the psychological ownership for the car by respondents with a utility of -0,227 and a 95% confidence interval of [-0,29952; -0,15448]. The ability to take the car outside of the Belgian borders has a positive significant impact is in turn on the psychological ownership for the car by respondents with a utility of 0,178 and a 95% confidence interval of [0,10352; 0,25248].

Within the third attribute, vehicle type, there are no significant attributes noted. This points in the direction that the type of vehicle that is offered has no real influence on the psychological ownership that is developed by individuals for the car.

The fourth attribute was payment method, where several levels were significant. Firstly, the ability to pay per week and per month has a positive and significant influence on psychological ownership of the car. The ability to pay per week has a positive estimated utility of 0,122 and a 95% confidence interval of [0,02204; 0,22196], while the ability to pay per month had a positive estimated utility 0,395 with a 95% confidence interval of [0,28132; 0,50868]. This in contrast with the ability to pay per minute and per hour, which have a negative significant influence on psychological ownership of the car. The ability to pay per minute has a

negative estimated utility of -0,214 with a 95% confidence interval of [-0,3316; -0,0964], while the ability to pay per minute had a negative estimated utility of -0,186 with a 95% confidence interval of [-0,29968; -0,07232].

Regarding the fifth attribute, duration, the ability to rent the vehicle longer than 72 hours has a positive and significant influence on the psychological ownership of respondents to the car, with an estimated utility of 0,081 and a confidence interval of [0,03004; 0,13196].

For the sixth attribute, the ability to test ride, it can be seen that the mere possibility of a test ride has a positive significant influence on the psychological ownership of the car with an estimated utility of 0,051 and a confidence interval of [0,002; 0,100].

Lastly, for the attribute of reservation time, the ability to reserve a vehicle more than 30 minutes in advance has a positive and significant influence on the psychological ownership of the car with an estimated utility of 0,082 and a confidence interval of [0,033; 0,131].

In the following table, the estimated utilities and the confidence intervals, marking their significance are shown.

Conjoint analysis results (product based subset) - Estimated utilities and confidence intervals for significance

Attribute	*Level*	*Estimated utility*	*Confidence interval (α=0,05)*	
			min	max
Package type	One package for all	-0,066	-0,115	-0,017
	Multiple packages	0,066	0,017	0,115
Geographic limitation	Return the car to a fixed location	-0,227	-0,29952	-0,15448
	Return the car to an area	0,049	-0,01764	0,11564
	Take the car outside of Belgium	0,178	0,10352	0,25248

Vehicle type	Choose from a range of cars	0,06	-0,0282	0,1482
	Electric vehicle	-0,032	-0,11236	0,04836
	Monovolume vehicle	-0,041	-0,12724	0,04524
	Premium vehicle	0,013	-0,10264	0,12864
Payment method	Per minute	-0,214	-0,3316	-0,0964
	Per hour	-0,186	-0,29968	-0,07232
	Per day	-0,028	-0,12796	0,07196
	Per week	0,122	0,02204	0,22196
	Per month	0,395	0,28132	0,50868
	Pay after each ride	-0,089	-0,20268	0,02468
Duration	Rent vehicle max 72 hours	-0,081	-0,13196	-0,03004
	Rent vehicle longer than 72 hours	0,081	0,03004	0,13196
Test ride	No	-0,051	-0,1	-0,002
	Yes	0,051	0,002	0,100
Reservation time	Reserve vehicle short period in advance (<30 min)	-0,082	-0,131	-0,033
	Reserve vehicle long period in advance (>30 min)	0,082	0,033	0,131

Additional analysis and insights on data

Most significant categories

Within the service based subset, the category payment method is of the most importance regarding psychological ownership, followed by vehicle type, geographic limitation, reservation time, package form, duration and lastly test ride (annex 3.1 and annex 3.2).

This is similar to the product based subset, where also payment method was the category with the most influence on psychological ownership. However, this was, in contrast to the service based subset, followed by the category geographic limitation, vehicle type, reservation time, duration, test ride and package form (annex 3.3 and annex 3.4).

Comparing service based versus product based

When comparing the results from the service and product based subset, it can be seen that some attributes have similar positive/negative effects on the psychological ownership towards the car sharing service and the car, while others have opposite positive/negative effects. In the attribute package type, the offering of different packages had a negative effect in the service subset, while it had a positive (significant) effect in the product subset.

Regarding the attribute geographic limitation, the effects are congruent since the need to return the vehicle to a fixed location has a negative effect in both subsets (significant in the product subset), while the ability to return the vehicle in an area instead of a fixed location and the ability to take the car outside of Belgium (significant in the product subset) was positively perceived in both subsets.

For the attribute vehicle type, there was nothing significant to notice in both subsets. The ability to choose from a range of cars was both positively evaluated in both subsets, while the ability to rent a monovolume vehicle was negatively evaluated in both subsets. However, results were not congruent regarding the electric and premium vehicle. In the service based subset, the ability to rent an electric vehicle was positively evaluated, which was in contrast to the product subset, where it was negatively evaluated regarding levels of psychological ownership. Also, the ability to rent a premium vehicle was negatively evaluated in the service subset, while it was positively evaluated in the product subset regarding psychological ownership.

In the attribute payment method, there were also some congruent levels and some levels that were not congruent in the two subsets. The congruent levels were the ability to pay per minute (significant in product

subset) and the ability to pay per hour (significant in product subset), which were negatively evaluated in both subsets; and the ability to pay per week (significant in product subset) and per month (significant in product subset), which were positively evaluated in both subsets. However, there were also levels that were not congruent. The ability to pay per day and the ability to pay after each ride were positively evaluated in the service subset, while they were negatively evaluated in the product subset regarding psychological ownership.

As regards to the attribute duration, the results are congruent for both subsets, since the ability to rent the vehicle longer than 72 hours was positively evaluated in both subsets (significant in product subset) regarding psychological ownership. For the attribute test ride, the results were opposed in the two subsets, since the ability to a test ride was negatively evaluated in the service subset, but (significantly) positively evaluated in the product subset regarding psychological ownership. Lastly, for the attribute reservation time, the results were congruent in a way that in both subsets the ability to reserve a vehicle a long period of time in advance was positively evaluated (significant in product subset) regarding psychological ownership.

Discussion

There has already been a lot of research towards psychological ownership in traditional capitalistic systems, where ownership of products has been the norm. However, access based systems are on the rise while gaining popularity within consumer markets and research into how psychological ownership can play a role in these newly emerging systems has been scarce. This Master's Dissertation conceptualizes access-based consumption, its application within (professional) car-sharing, identifies its attributes and researches which characteristics have an influence on developed psychological ownership by its consumers for both the car and the car-sharing service.

Within our findings, the most significant category of all categories was payment method. The ability to pay per month had a significant positive influence on the chances of developing psychological ownership by consumers, both for the car and the car sharing service. In contrast, the ability to pay per hour had a negative influence on the chances of developing psychological ownership by its consumers in both service and product subset. So, when aiming to raise psychological ownership both for the car and car sharing service, it might be beneficial to implement the ability to pay per month and eliminate the ability to pay per hour. Apart from payment method being the most significant category, it was also the only category that had both an effect on the psychological ownership of the product AND the service. So, the following results in the discussion will be purely about the psychological ownership towards the product (= the car). We can state

that is in line with the findings of (Rogers & Paul, 2021), who argued that there are differences in the motivational and behavioral to predict psychological ownership regarding product versus service and that these results are not in line with the findings of (Kirk et al., 2018b) who argued that individuals will often develop feelings of psychological ownership towards digital technologies purely because they are accessing these digital technologies via the product.

It is proven by research that consumers like to be presented with choices (Schwartz, 2004; Matzler, Waiguny, & Fuller, 2007) and like to seek variety (Lawson et al., 2016). The findings of this study support this, but only partially. Firstly, the offering of multiple packages, or in other words giving the consumer choices, had a significant effect on the chances of developing psychological ownership for the car. However, regarding the vehicle type, which can also be seen as a form of choice for the consumer and can bring variety in the cars driven, nothing significant was found in both subsets. This indicates that in the eyes of the consumer, indifference is shown to the type of car driven and no significant impact on psychological ownership is evaluated. This is not in line with the findings of Rogers and Paul (2012) regarding psychological ownership theory, in which the ability to drive more upstream and luxury cars was seen as a display of self-identity and a tool for stimulation. Bardi & Eckhard (2012) stated that the promotion of 'green driving', via the offering of electric and hybrid cars, would promote car-sharing adoption. However, since the offering of an electric vehicle was non-significant regarding psychological ownership in both subsets, this can be seen as contradictory with these study results.

In 2014, Gleim & Lawson argued that environmentally conscious individuals have higher chances at participating in access based systems since they want to support practices that are perceived as environmentally friendly. Apart from the fact that one car is used by multiple consumers instead of one private car owner, car sharing is also seen as a relatively environmentally friendly option in terms of travel. This shows in our results in the fact that the ability to take the car outside of Belgium, and thus take it on international trips, is positively evaluated in terms of psychological ownership of the car.

Millard-Ball and Adam argued in 2005 that one of the main benefits of car-sharing is that it improves mobility for many. However, when needing to pick up and return the car to a fixed location (station based car sharing), instead of a given area (free floating car sharing), this mobility is limited. This was also confirmed in the results, since the ability to pick up and return the car to a fixed location was negatively associated with psychological ownership for the car. When the goal is to improve the chances of individuals developing psychological ownership of the car, it might be worthwhile to consider switching from station based car sharing to free floating car sharing as a car sharing company.

One of the reasons why access-based models emerged was to go against the current liquid society, where one of the main players is uncertainty (Chirumbolo et al., 2021; Pollock & Griselda, 2007). The ability to reserve a vehicle for a longer period in advance was positively significantly evaluated in terms of psychological ownership. This indicates that when individuals are able to reserve a vehicle a longer period of time in advance, the risk of not being able to access a vehicle when you need it is minimized and chances of developing psychological ownership rise.

Car sharing is within the dimensions of access based systems defined as a temporary state, in which Bardhi and Eckhardt (2012) stated that it is difficult to acquire psychological ownership due to the fact that the usage time of car sharing is often too short. This was in line with the results, since within the attribute duration, the ability to rent a vehicle longer than 72 hours, was positively linked to the experience of psychological ownership. This means that the longer individuals take part in a car-sharing service, the higher their chances of developing psychological ownership. This was also the case for the ability to test-ride the car and to try the service (Lawson et al., 2016), which showed to have a positive effect on psychological ownership of the car.

Conclusion and implications

Conclusion

Thus, after this (conjoint) analysis, an answer to the research question can be provided. Psychological ownership, and its understanding, provides powerful tools for marketers and businesses in order to improve sales, customer willingness to pay and overall customer satisfaction.

Regarding the development of psychological ownership in car-sharing services individuals showed indifference since there was only one significant category, namely the payment method. The fact that customers are able to pay per month, will have a positive effect on their psychological ownership towards this car sharing service, while the ability to pay per week will have a negative one. So, regarding the ideal car sharing platform to boost psychological ownership for the car sharing service, the installment of ability to pay per month and the abolishment of the ability to pay per week is recommended.

However, since there was only one attribute with effect in the service subset, it will be very hard to influence psychological ownership towards the service and the main efforts to heighten it should be focused

on the characteristics of the product, where numerous attributes were found to be significant. In order to maximize the possibility of consumers developing psychological ownership of the car, the ideal car-sharing platform would be a platform that offers multiple (subscription) packages to choose from, where you can pick up and return the car to an area (free floating) instead of a fixed location (station based), take it outside of Belgium on international trips, where you have the options of paying per week and/or paying per month, where you can rent the vehicle longer than 72 hours, take it on a test ride and reserve the vehicle for a long period in advance in order to minimize the risk of unavailability.

We can conclude that car-sharing concepts hold great promise for the future. The concept of owning a car will be replaced by the concept of feeling like you own the car. The biggest challenge in all of this is the image that surrounds car-sharing systems, where marketing will be an important tool. These marketing efforts will need to target psychological ownership within individuals, in order to boost their use of it. In order to do this in the most efficient and effective way, it might be useful to take into account the researched attributes that have the biggest impact on psychological ownership. Another valuable comment to be made is the fact that when usage of these car-sharing systems will rise, the economic landscape of car production will change. Since one car will be used by multiple consumers, less cars will be needed in total, resulting in less car production. This will cause a shift in the job market from car production to jobs that are in line with supporting these car access based systems and platforms in order to keep these systems going.

Managerial contribution

This conclusion is worthwhile for managers, marketeers and business owners in order to increase their knowledge of characteristics of their products/services to increase the psychological ownership of their customers. In this way, they can adapt their products in a way that will boost psychological ownership effectively with the intention to increase overall sales, willingness to pay from consumers, overall consumer happiness and brand awareness.

Limitations

There are several limitations that must be accounted for, regarding the research method and theory. First of all, the initial goal of obtaining at least 100 participants per scenario was not met in the experiment. However, since this experiment is a mixed within-subjects design, this had minimal to no effect on the validity of the answers. 114 respondents were used in the sample for this study, which is a large enough size but a larger size would have been slightly more accurate.

The second limitation is the fact that there were no real-life scenarios used in this experiment, but a fictional one of a fictitious car-sharing service ‘shareacar’. This decreases reliability since respondents are less subjective of empathizing with the subject.

The third limitation is that the survey was fairly long because 20 profiles were required. This may have been burdensome and overwhelming for respondents, causing their attention to slip and influencing the validity of the responses.

The fourth limitation is that due to an error, the validity question ‘do you think your answers should be included in this study’, where respondents had to indicate yes or no, was only shown in one of the two subsets and therefore not usable. All respondents, who had filled in the questionnaire until the end, were therefore used. However, non-complete surveys and respondents who had filled in the questionnaire under 5 minutes, have been removed from the database to counter this.

The last limitation is that in this Master’s Dissertation, the only focus was on professional car-sharing activities. A broader study, considering all car-sharing initiatives, may be interesting to conclude broader scopes of influences on psychological ownership.

Suggestions for future research

As mentioned in the limitations, the use of real-life scenarios and a larger sample size may benefit future research. It would also be interesting to research all car-sharing initiatives and not just the professional ones to really understand the influence and scope of psychological ownership on consumers.

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Appendix

Annex 1: SPSS Cronbach's Alpha reliability check

Profile	*Service based*		*Product based*	
	Normal	*Standardized*	*Normal*	*Standardized*
1	0,853	0,854	0,85	0,851
2	0,826	0,833	0,852	0,857
3	0,905	0,908	0,88	0,881
4	0,929	0,931	0,913	0,914
5	0,891	0,894	0,873	0,874
6	0,912	0,914	0,919	0,919
7	0,878	0,88	0,91	0,911
8	0,909	0,917	0,868	0,87
9	0,901	0,901	0,907	0,907
10	0,87	0,876	0,884	0,889
11	0,904	0,905	0,929	0,93
12	0,873	0,876	0,924	0,924
13	0,894	0,896	0,908	0,908

14	0,89	0,889	0,912	0,916
15	0,894	0,896	0,884	0,884
16	0,819	0,818	0,891	0,892
17	0,849	0,848	0,91	0,91
18	0,925	0,925	0,896	0,895
19	0,952	0,953	0,911	0,911
20	0,869	0,871	0,883	0,883
Average	0,88715	0,88925	0,8952	0,8963

Annex 2: Assumptions

Tests of Normality

	Kolmogorov-Smirnova			**Shapiro-Wilk**		
	Statistic	df	Sig.	Statistic	df	Sig.
Average rating profile 1	0,139	47	0,023	0,97	47	0,262
Average rating profile 2	0,139	47	0,024	0,966	47	0,182
Average rating profile 3	0,086	47	,200*	0,978	47	0,511
Average rating profile 4	0,122	47	0,076	0,963	47	0,14
Average rating profile 5	0,081	47	,200*	0,972	47	0,303

Average rating profile 6	0,162	47	0,003	0,944	47	0,026
Average rating profile 7	0,11	47	,200*	0,973	47	0,349
Average rating profile 8	0,108	47	,200*	0,968	47	0,216
Average rating profile 9	0,09	47	,200*	0,973	47	0,335
Average rating profile 10	0,087	47	,200*	0,975	47	0,407
Average rating profile 11	0,127	47	0,056	0,973	47	0,335
Average rating profile 12	0,108	47	,200*	0,961	47	0,116
Average rating profile 13	0,115	47	0,149	0,959	47	0,099
Average rating profile 14	0,128	47	0,052	0,979	47	0,537
Average rating profile 15	0,096	47	,200*	0,975	47	0,396
Average rating profile 16	0,127	47	0,056	0,974	47	0,371
Average rating profile 17	0,08	47	,200*	0,984	47	0,74
Average rating profile 18	0,116	47	0,128	0,952	47	0,052
Average rating profile 19	0,081	47	,200*	0,976	47	0,44
Average return profile 20	0,122	47	0,076	0,973	47	0,332

Annex 2.1: Normality: Kolmogorov-Smirnova & Shapiro Wilk test - Service subset

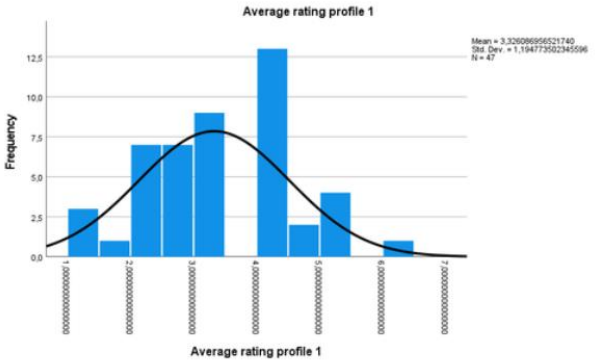
Tests of Normality

	Kolmogorov-Smirnova			**Shapiro-Wilk**		

	Statistic	df	Sig.	Statistic	df	Sig.
Average rating profile 1	0,263	36	<,001	0,887	36	0,002
Average rating profile 2	0,159	36	0,022	0,932	36	0,028
Average rating profile 3	0,144	36	0,059	0,974	36	0,539
Average rating profile 4	0,168	36	0,012	0,967	36	0,357
Average rating profile 5	0,149	36	0,041	0,965	36	0,295
Average rating profile 6	0,11	36	,200*	0,967	36	0,348
Average rating profile 7	0,177	36	0,006	0,927	36	0,02
Average rating profile 8	0,106	36	,200*	0,975	36	0,584
Average rating profile 9	0,145	36	0,054	0,939	36	0,048
Average rating profile 10	0,118	36	,200*	0,949	36	0,097
Average rating profile 11	0,158	36	0,024	0,938	36	0,043
Average rating profile 12	0,143	36	0,06	0,946	36	0,081
Average rating profile 13	0,147	36	0,048	0,959	36	0,198
Average rating profile 14	0,141	36	0,068	0,928	36	0,022
Average rating profile 15	0,125	36	0,173	0,949	36	0,098
Average rating profile 16	0,103	36	,200*	0,978	36	0,663

Average rating profile 17	0,136	36	0,09	0,946	36	0,076
Average rating profile 18	0,091	36	,200*	0,983	36	0,836
Average rating profile 19	0,129	36	0,135	0,965	36	0,311
Average rating profile 20	0,137	36	0,086	0,962	36	0,25

Annex 2.2: Normality: Kolmogorov-Smirnova & Shapiro Wilk test - Product subset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Std. Dev. = 1,194773502345596
N = 47
Frequency
Average rating profile 1


Average rating profile 5
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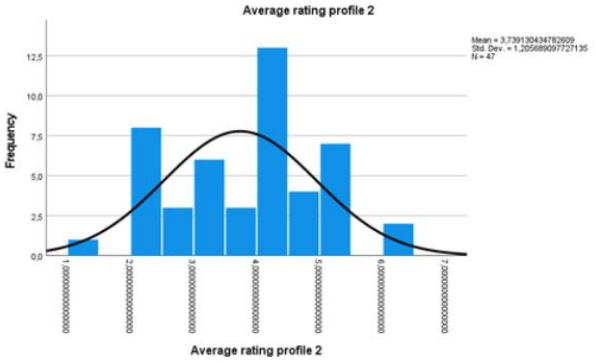
Std. Dev. = 1,356621605391216
N = 47
Frequency
Average rating profile 5


Average rating profile 2
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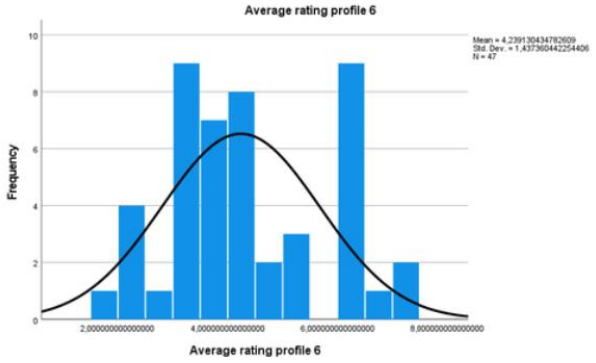
Std. Dev. = 1,205689097727135
N = 47
Frequency
Average rating profile 2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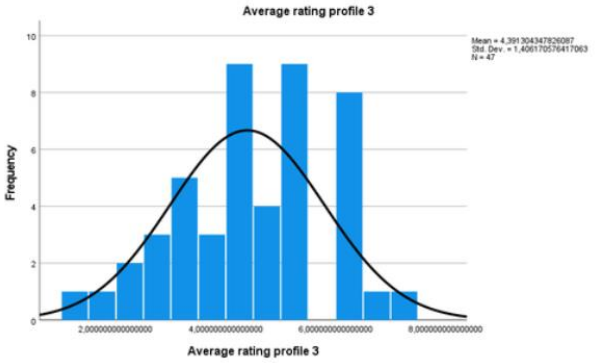
Std. Dev. = 1,437360442254406
N = 47
Frequency
Average rating profile 6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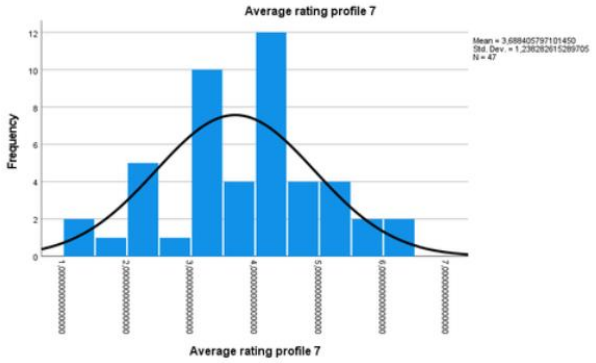
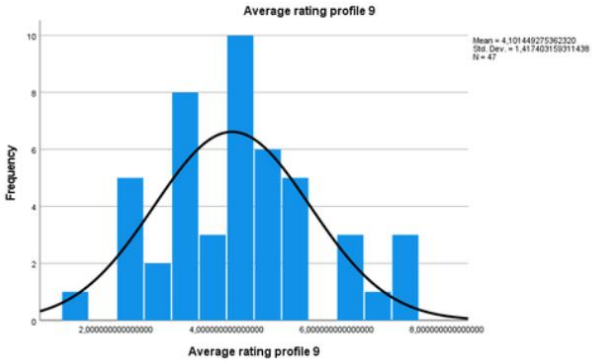
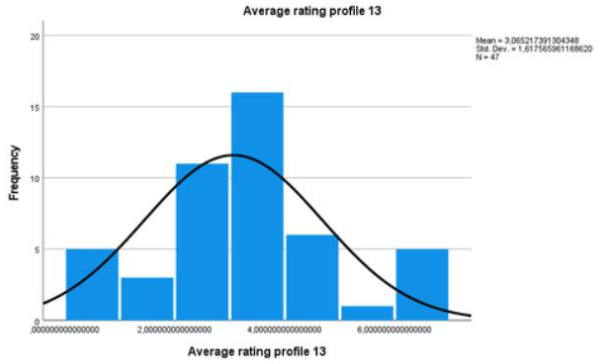
Std. Dev. = 1,406170576417063
N = 47
Frequency
Average rating profile 3

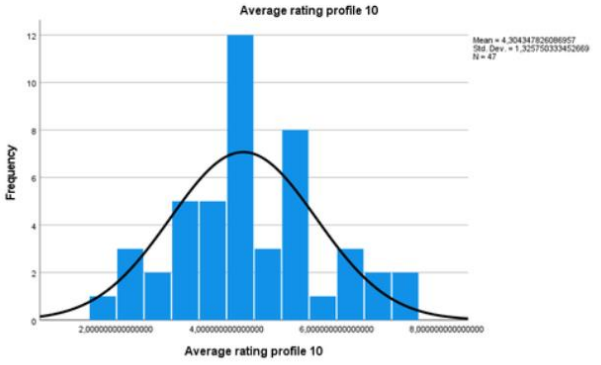

Average rating profile 7
Mean = 3,688405797101450
Std. Dev. = 1,236282615289705
N = 47
Frequency
Average rating profile 7


Average rating profile 4
Mean = 3,898550724637682
Std. Dev. = 1,527318962630460
N = 47
Frequency
Average rating profile 4


Average rating profile 8
Mean = 3,934782608695653
Std. Dev. = 1,364879646826086
N = 47
Frequency
Average rating profile 8


Average rating profile 9
Frequency
Average rating profile 9


Average rating profile 13
Frequency
Average rating profile 13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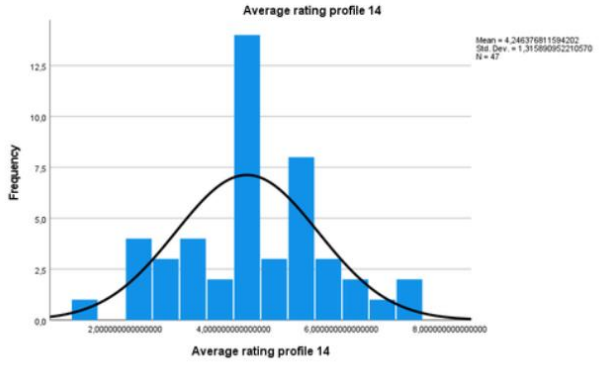
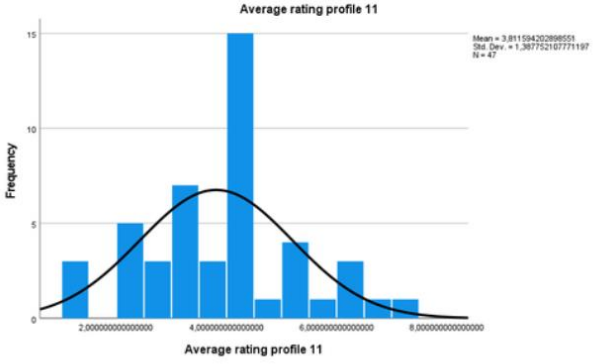
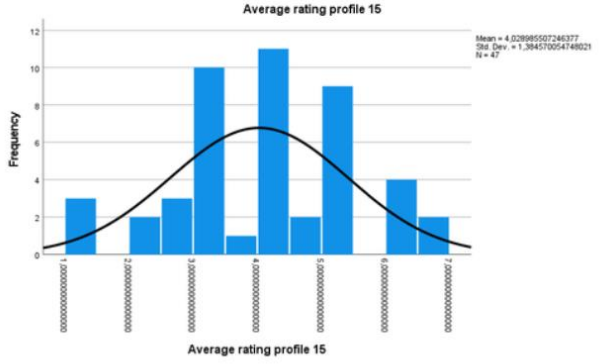
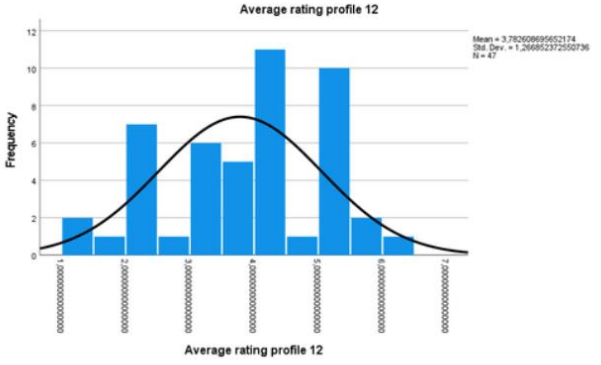
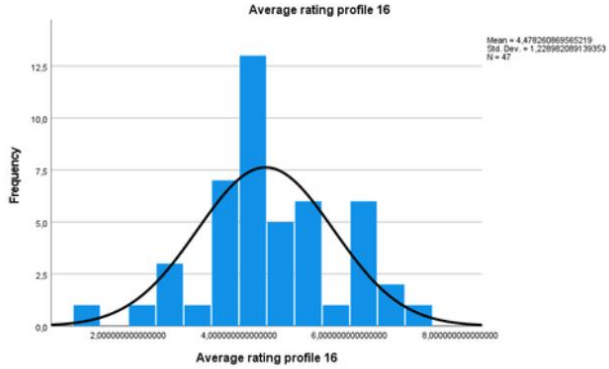
Frequency
Average rating profile 10

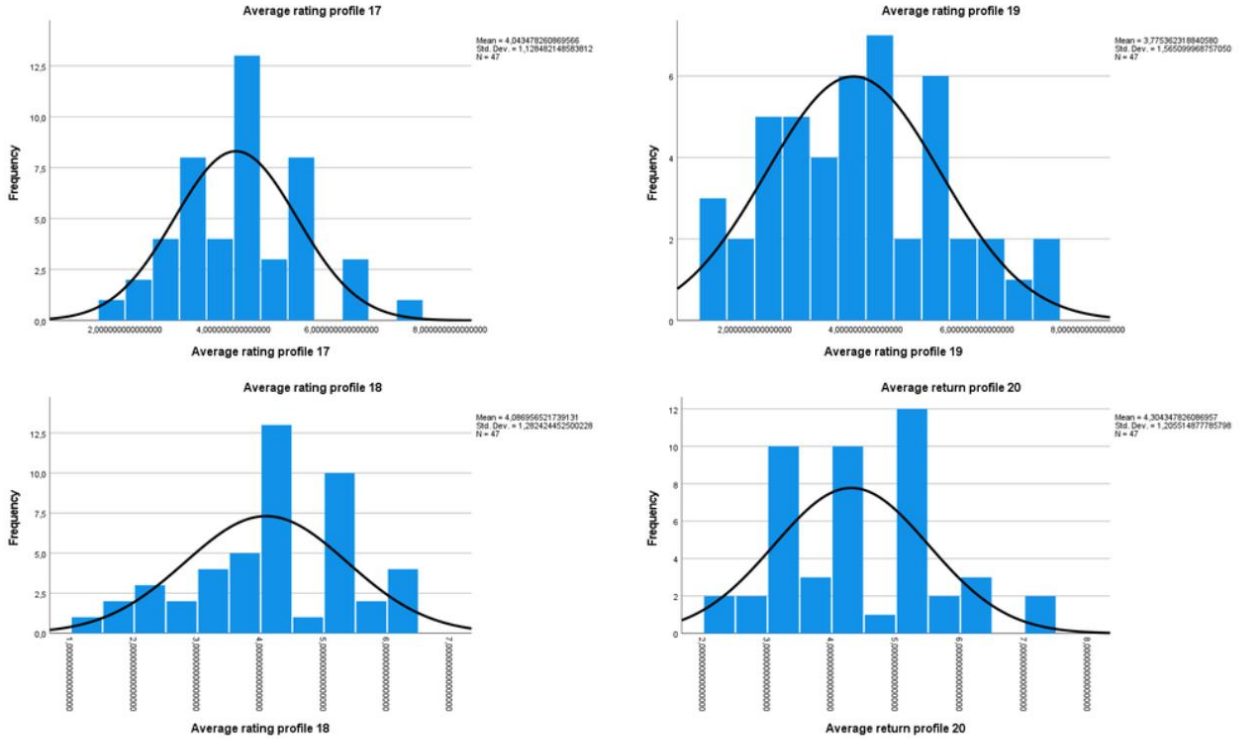

Average rating profile 14
Frequency
Average rating profile 14


Average rating profile 11
Frequency
Average rating profile 11

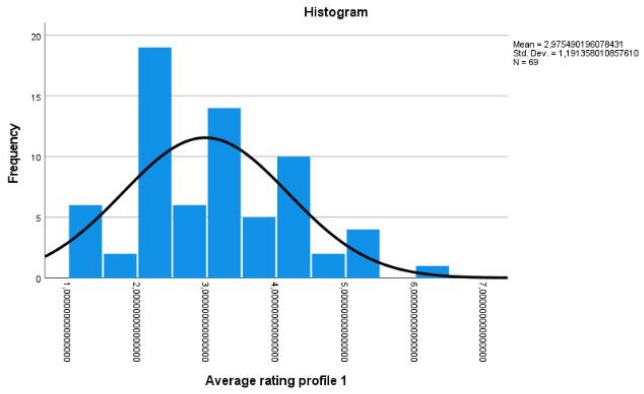

Average rating profile 15
Frequency
Average rating profile 15

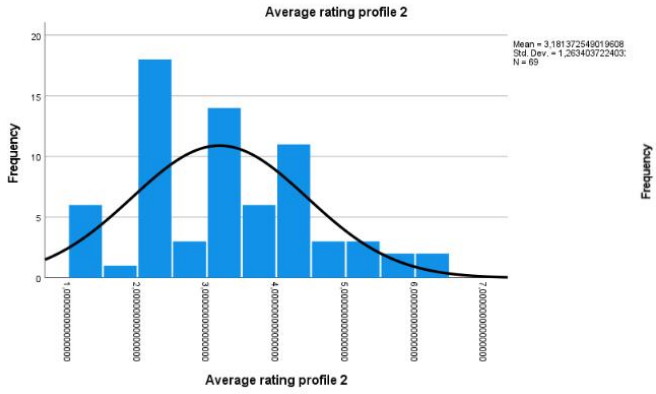

Average rating profile 12
Frequency
Average rating profile 12

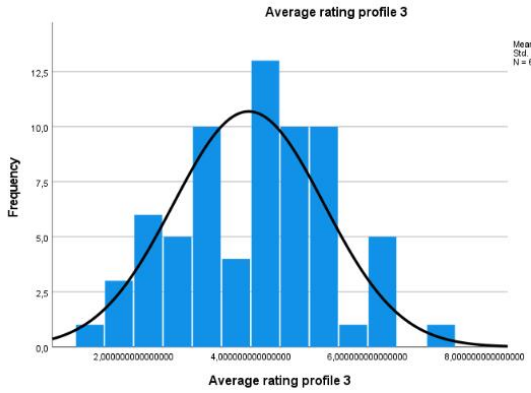

Average rating profile 16
Frequency
Average rating profile 16

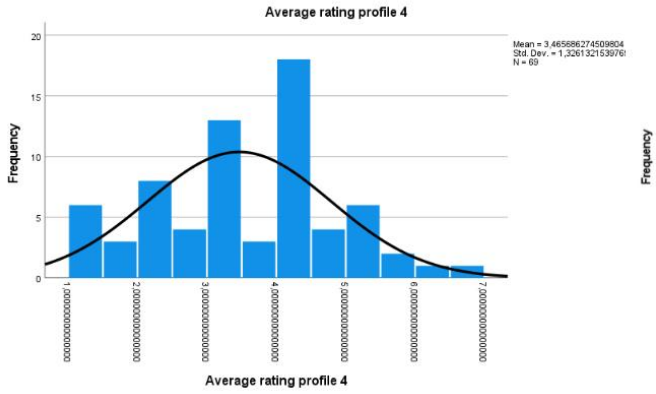


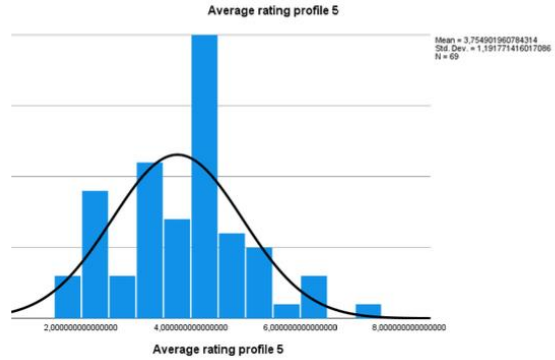
Annex 2.3: Normality test: histograms:service subset

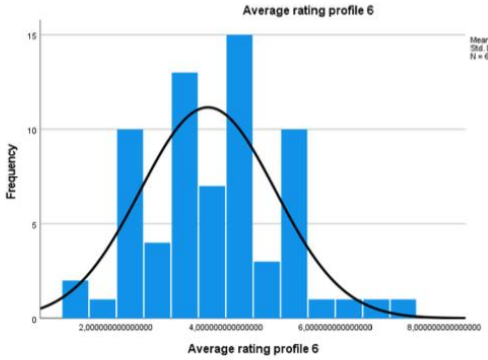

Histogram
Mean = 2,975490196078431
Std. Dev. = 1,191358010857610
N = 69
Frequency
Average rating profile 1

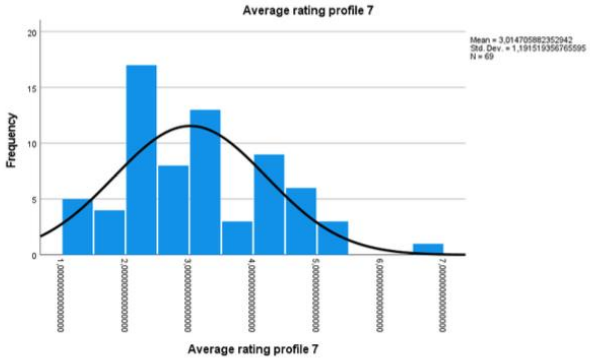

Average rating profile 2
Mean = 3,181372549019608
N = 69
Frequency
Average rating profile 2

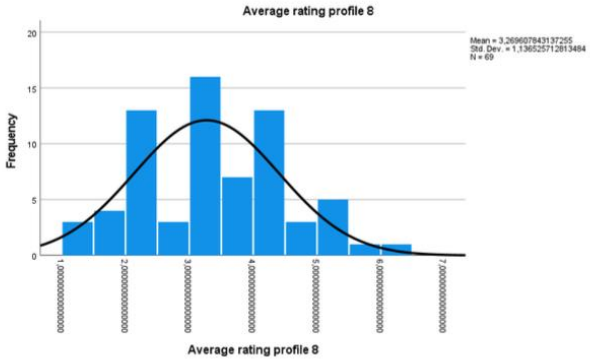

Average rating profile 3
Mean = 3,965686274509804
N = 69
Frequency
Average rating profile 3

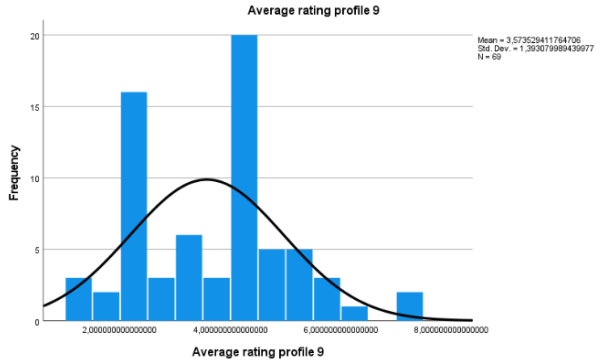

Average rating profile 4
Mean = 3,465686274509804
N = 69
Frequency
Average rating profile 4

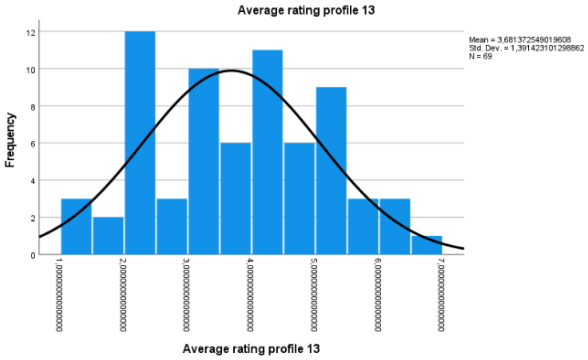

Average rating profile 5
Mean = 3,754901960784314
N = 69
Average rating profile 5

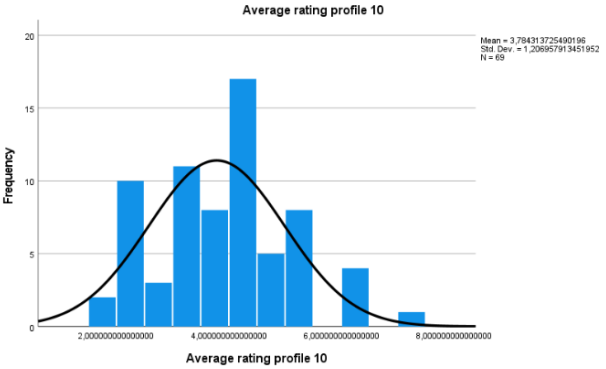

Average rating profile 6
Mean = 3,671568627450980
N = 69
Frequency
Average rating profile 6

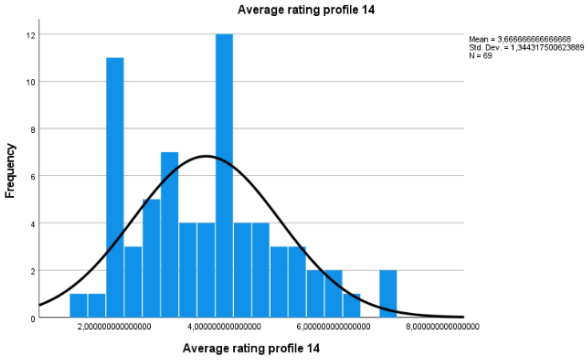

Average rating profile 7
Mean = 3,014705882352942
N = 69
Frequency
Average rating profile 7

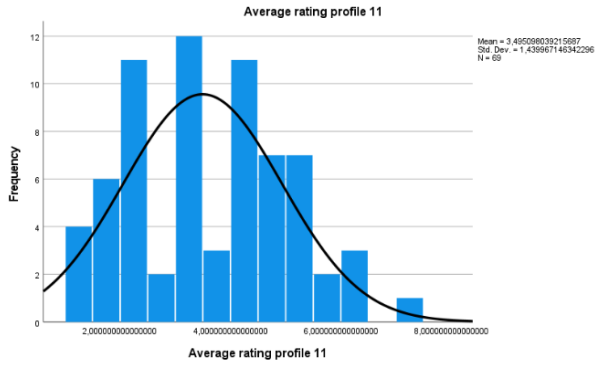

Average rating profile 8
Mean = 3,269607843137255
N = 69
Frequency
Average rating profile 8

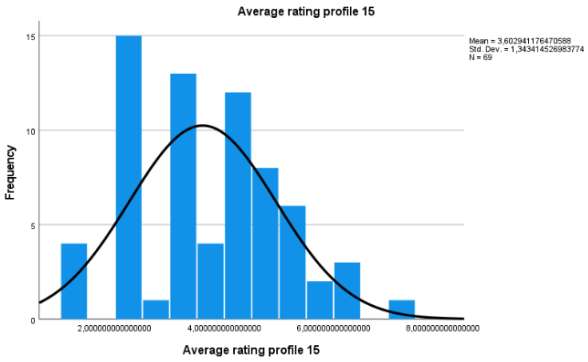

Average rating profile 9
Mean = 3,57352941176470
Std. Dev. = 1,39307998943997
N = 69
Frequency
Average rating profile 9

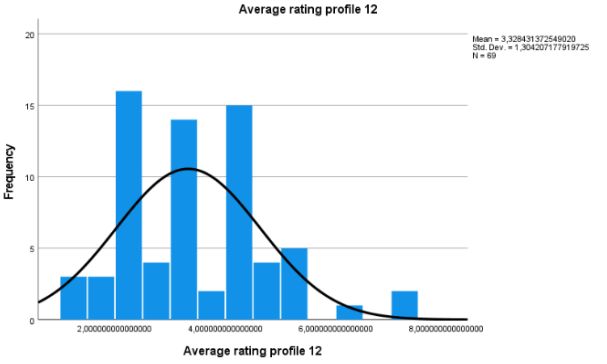

Average rating profile 13
Mean = 3,68137254901960
Std. Dev. = 1,39142310129886
N = 69
Frequency
Average rating profile 13

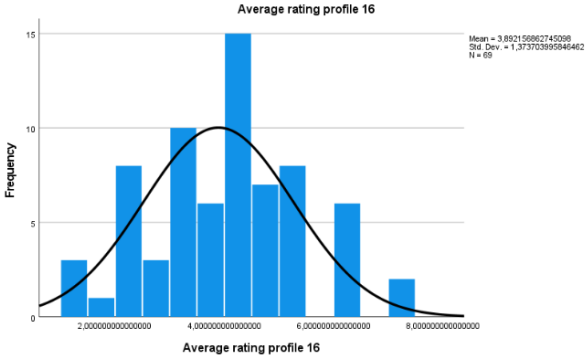

Average rating profile 10
Mean = 3,78431372549019
Std. Dev. = 1,20695791345195
N = 69
Frequency
Average rating profile 10

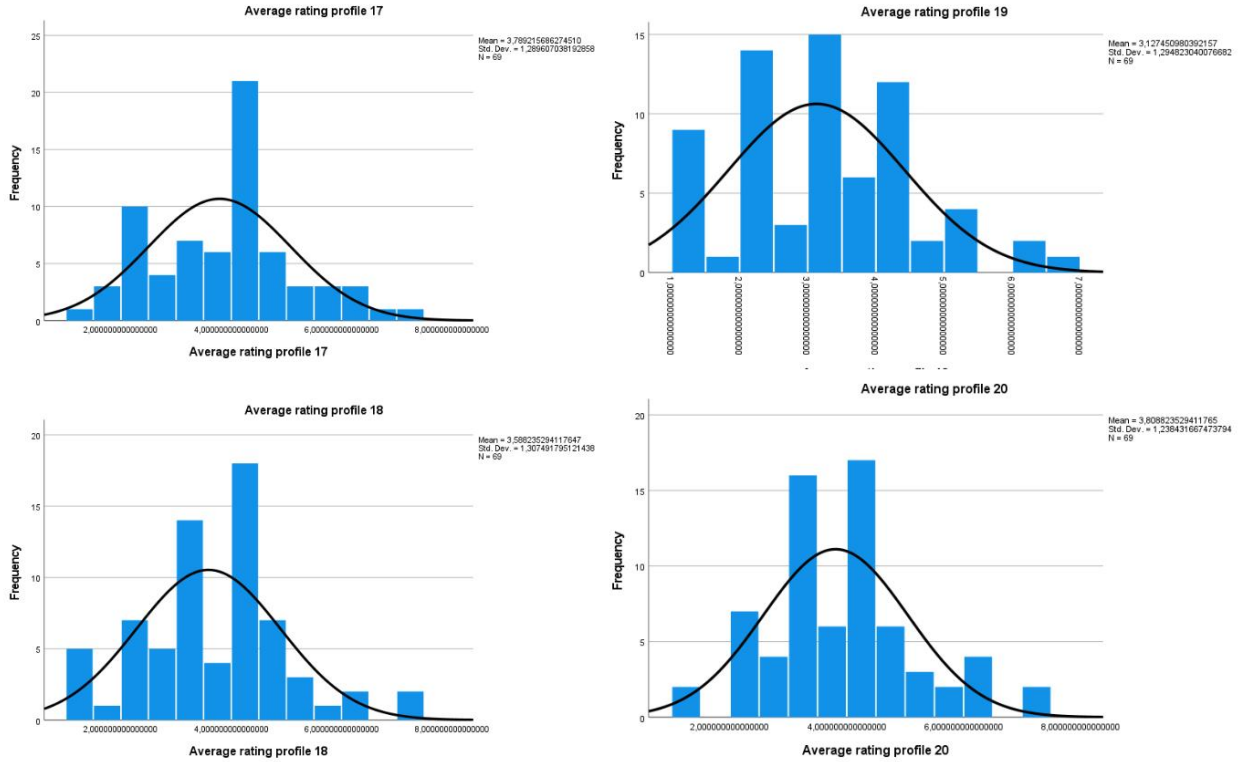

Average rating profile 14
Mean = 3,66666666666666
Std. Dev. = 1,34431750062368
N = 69
Frequency
Average rating profile 14


Average rating profile 11
Mean = 3,49509803921568
Std. Dev. = 1,43966714634229
N = 69
Frequency
Average rating profile 11

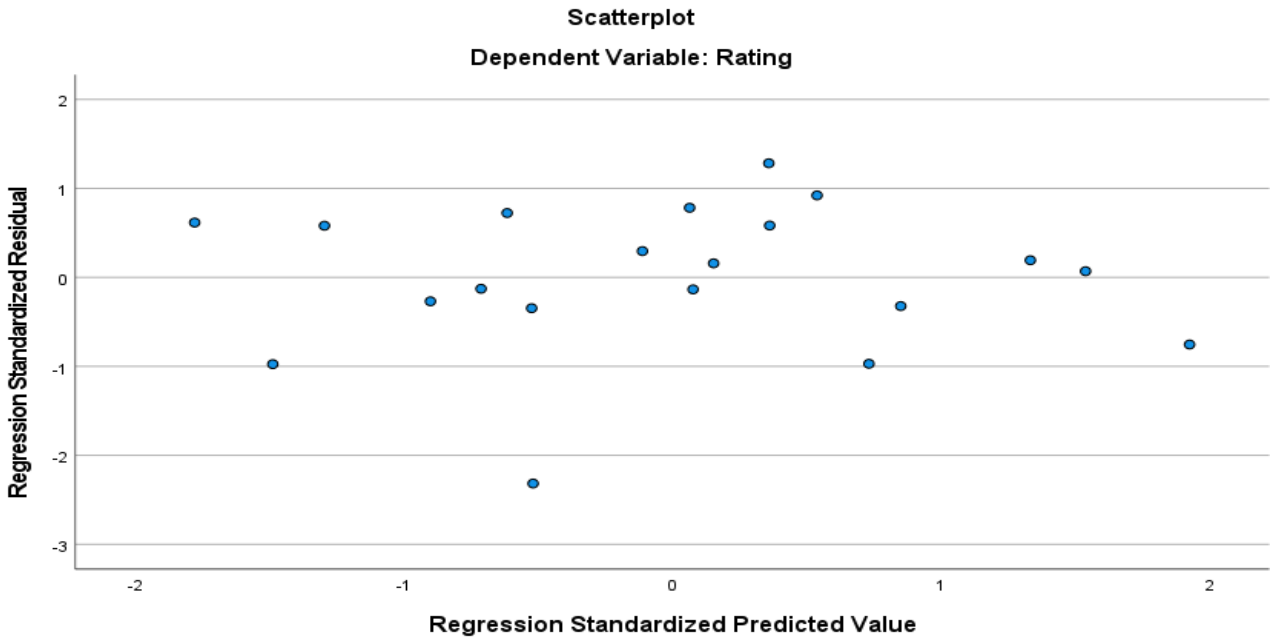

Average rating profile 15
Mean = 3,60294117647058
Std. Dev. = 1,34341452898377
N = 69
Frequency
Average rating profile 15


Average rating profile 12
Mean = 3,32843137254902
Std. Dev. = 1,30420717791972
N = 69
Frequency
Average rating profile 12

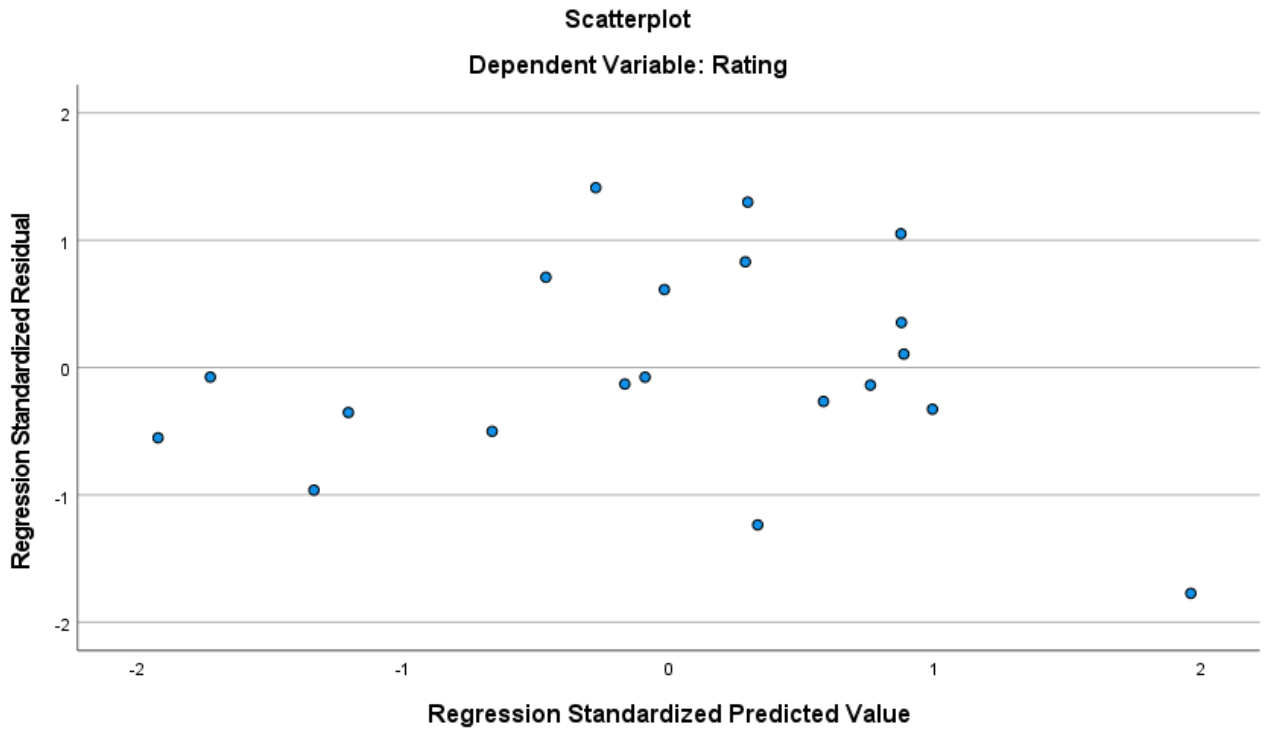

Average rating profile 16
Mean = 3,89215686274509
Std. Dev. = 1,37370399584646
N = 69
Frequency
Average rating profile 16



Annex 2.4: Normality test: histograms: product subset



Annex 2.5: Homoscedasticity - Scatter plot - Service subset



Annex 2.6: Homoscedasticity - Scatter plot - Product subset

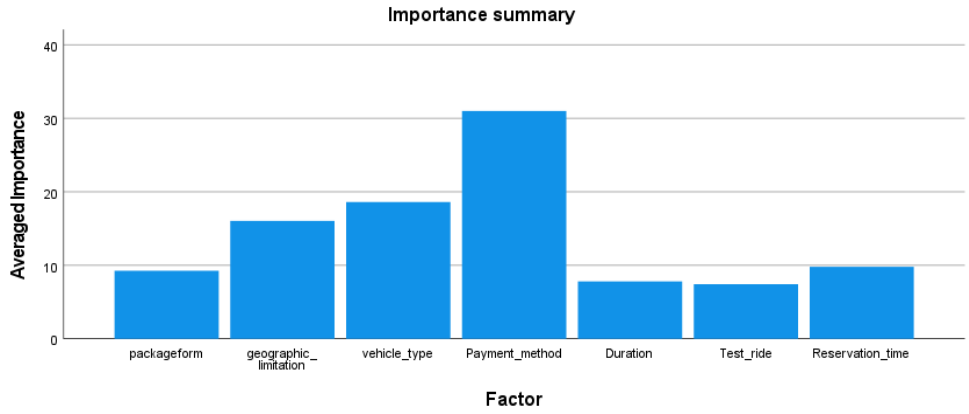
Annex 3: Importance values

Importance Values

packageform	9.265
geographic_limitation	16.057
vehicle_type	18.621
Payment_method	31.013
Duration	7.806
Test_ride	7.429

Reservation_time	9.809

Annex 3.1: importance values table: averaged importance score service subset

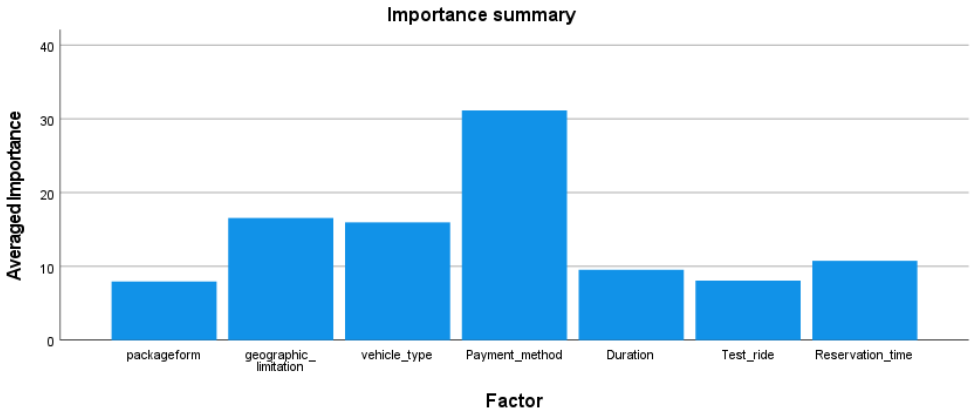


Annex 3.2: importance values graphical: service subset

Importance Values

packageform	*7.948*
geographic_limitation	*16.564*
vehicle_type	*15.970*
Payment_method	*31.152*
Duration	*9.535*
Test_ride	*8.073*
Reservation_time	*10.758*

Annex 3.3: importance values table: averaged importance score product subset



Annex 3.4: importance values graphical: product subset

Annex 4: Consent form

In order to use your results for an analysis, I would need your consent to process your results. Please fill in the consent form underneath.

“I declare hereby that I, as a participant in a research project of Ghent University,
(1) have been informed about the questions and the tasks that I will encounter during the research and that I was given the opportunity to receive further information if desired;
(2) will participate out of free will in the research project
(3) give informed consent to the researchers to store, process, and report my data in anonymized form;
(4) am aware of the option to stop my participation in this research at any moment in time without having to provide a reason;
(5) know that participating or stopping my participation in the research has no negative consequences of any kind for me
(6) am aware of the option to ask the researcher(s) for a summary of the results after the study is finished and the results have been known;
(7) agree that my data may be used for further analysis by other researchers after complete anonymization;
(8) am aware that UGent is the responsible entity with regards to the personal information collected during the study. I am also aware that the data protection officer can give me more information about the protection of my personal information."

Contact: Hanne Elsen (privacy@ugent.be).
Name of the responsible researcher: Marie-Lien Van Cauteren (MarieLien.VanCauteren@UGent.be)

- ○ I agree
- ○ I do not agree

Annex 5: Questionnaire

BlockRandomizer: 1 - Evenly Present Elements

Standard: Service based (26 Questions)
Standard: Product based (27 Questions)

Block: Personal information (13 Questions)

Pagina-einde

Start van blok: Service based

Q64 Dear respondent
I am a Master student business economics, specializing in corporate finance, at the University of Ghent. In order to collect data for my Master's dissertation I am researching the perceived levels of psychological ownership, given certain manipulated attributes, in relation to car sharing services regarding a population of **18-30 year olds**.

This survey will approximately take 5-7 minutes. There are no right or wrong answers to the questions asked and your answers will be dealt with in full anonymity and confidentiality.

At the end of the survey you will have the possibility to leave your email address for a chance to win a **bol.com voucher worth €20**!

Thank you in advance for your participation!
Kind regards Marie-Lien Van Cauteren

Pagina-einde

Q2 What is your age?

- ○ Under 18 years old (1)
- ○ 18-30 years old (2)
- ○ Over 30 years old (3)

Ga naar: Einde enquête Als What is your age? = Under 18 years old
Ga naar: Einde enquête Als What is your age? = Over 30 years old

Pagina-einde

Q56 **Car sharing services** enable individuals to access and use cars without the obligation to purchase them and function as a substitute for privately owned cars.

It is defined as 'a service that provides members with access to a fleet of vehicles on a daily, hourly or minute basis' where individuals are able to reserve a car online, or via phone, and often on a membership basis. It provides people access to vehicles for personal and business use.

These services have the ability to complement the current existing public transportation services, particularly

providing mobility services for those trips which are generally only suited for car driving and reduces the overall need to have private cars and increases mobility options for many.

Please keep this description in mind when answering further questions.

Pagina-einde

Q68 Consider a fictive car sharing service, called "Shareacar", that has the following basic characteristics Opt for a **"one for all" package** Choose only **one type of car** You always have to **pick up and return the car at the same, fixed location** Rent the vehicle **max 72 hours** Use the car **within Belgium**, but not abroad **Reserve** the vehicle for a **short period upfront (0-30 min)**
During the next few questions, you will be presented with characteristic variations of this car sharing service called "Shareacar", in addition to the basic characteristics that are already mentioned.

Psychological ownership is the feeling of possession over a target or object that may or may not be supported by formal ownership.
The goal is to identify the extent of psychological ownership level you experience towards this service, that you would feel that the service is "YOURS", even though you might not actually own it.

Please fill the questionnaire in until the end, otherwise your answers will not be valid.

Pagina-einde

Q14 1/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to choose from **range of cars**
- Possibility to **pay per hour**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q57 2/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to choose an **electric vehicle**
- Possibility to **pay per week**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q36 Here you can see pictures of a **premium vehicle**, which can be perceived as a luxury, more upstream car. Please keep this in mind when answering further questions.

Pagina-einde

Q58 3/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to take the vehicle **outside of Belgium**
- Possibility to choose a **premium vehicle**
- Possibility to **pay per month**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q35 Here you can see a picture of a **monovolume vehicle**, which is significantly bigger and can be used to transport larger goods. Please keep this in mind when answering further questions.

Pagina-einde

Q59 4/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to choose from **different packages**, according to your individual needs
- Possibility to **return the car within a given area** (for example Antwerp), instead of a fixed geographical location
- Possibility to choose a **monovolume vehicle**
- Possibility to **pay per minute**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q60 5/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to choose from **different packages**, according to your individual needs
- Possibility to **return the car within a given area** (for example Antwerp) instead of a fixed geographical location
- Possibility to choose a **premium vehicle**
- Possibility to **pay per week**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

1	2	3	4	5	6	7

Degree of perceived psychological ownership for this car sharing service ()	
Perceived level of ownership over the car sharing service ()	
Degree to which you feel that the car sharing service is "MINE" ()	

Pagina-einde

Q61 6/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **take the car outside of Belgium**
- Possibility to **choose from a range of cars**, instead of just one car
- Possibility to **pay per day**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q62 7/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **choose a monovolume vehicle**
- Possibility to **pay per day**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q63 8/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **return the car within a given area** (for example Antwerp), instead of a fixed geographical location
- Possibility to **choose an electric vehicle**
- Possibility to **pay per hour**
- Possibility to **rent the vehicle longer than 72 hours**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q64 9/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **take the car outside of Belgium**
- Possibility to **choose an electric vehicle**
- Possibility to **pay after each ride**
- Possibility to **rent the vehicle longer than 72 hours**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q65 10/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **return the car within a given area** (for example Antwerp), instead of a fixed geographical location
- Possibility to **choose from a range of cars**, instead of just one car
- Possibility to **pay per month**
- Possibility to **rent the vehicle longer than 72 hours**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q66 11/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **take the car outside of Belgium**
- Possibility to **choose an electric vehicle**
- Possibility to **pay per minute**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q67 12/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **return the car within a given area** (for example Antwerp) instead of a fixed geographical location
- Possibility to **choose a monovolume vehicle**
- Possibility to **pay after each ride**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q68 13/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Ability to **take the car outside of Belgium**
- Possibility to **choose a monovolume vehicle**
- Possibility to **pay per hour**
- Possibility to r**ent the vehicle longer than 72 hours**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	-1	0	2	3	4	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q69 14/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **return the car within a given area** (for example Antwerp) instead of a fixed geographical location
- Possibility to **choose an electric vehicle**
- Possibility to **pay per day**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q70 15/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **choose from a range of cars**, instead of just one car
- Possibility to **pay after each ride**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q71 16/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **choose an electric vehicle**
- Possibility to **pay per month**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q72 17/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **return the car within a given area** (for example Antwerp), instead of a fixed geographical location
- Possibility to **choose from a range of cars, instead of just one car**
- Possibility to **pay per week**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

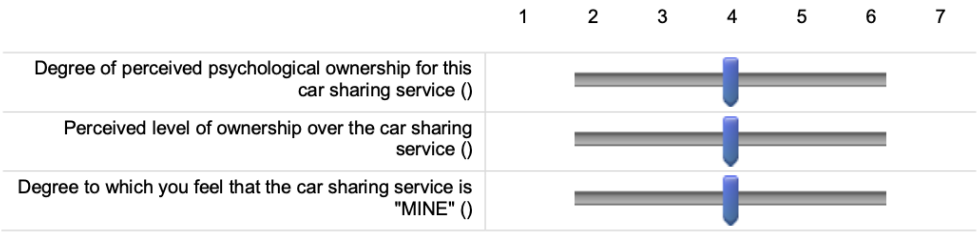
	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Q73 18/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **return the car within a given area** (for example Antwerp), instead of a fixed geographical location
- Possibility to **rent a premium vehicle**
- Possibility to **pay per day**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

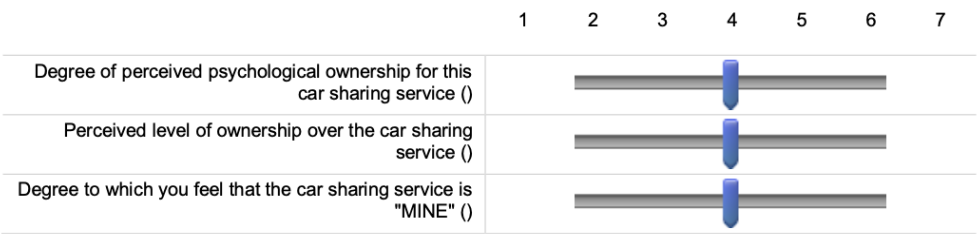


Pagina-einde

Q74 19/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **rent a premium vehicle**
- Possibility to **pay per day**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.



Pagina-einde

Q75 20/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **take the car outside of Belgium**
- Possibility to **rent a monovolume vehicle**
- Possibility to **pay week**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car sharing service ()							
Perceived level of ownership over the car sharing service ()							
Degree to which you feel that the car sharing service is "MINE" ()							

Pagina-einde

Einde blok: Service based

Start van blok: Product based

Q67 Dear respondent
I am a Master student business economics, specializing in corporate finance, at the University of Ghent. In order to collect data for my Master's dissertation I am researching the perceived levels of psychological ownership, given certain manipulated attributes, in relation to car sharing services regarding a population of **18-30 year olds**.

This survey will approximately take 5-7 minutes. There are no right or wrong answers to the questions asked and your answers will be dealt with in full anonymity and confidentiality.

At the end of the survey you will have the possibility to leave your email address for a chance to win a **bol.com voucher worth €20**!

Thank you in advance for your participation!
Kind regards Marie-Lien Van Cauteren

Pagina-einde

Q66 What is your age?

- ○ Under 18 years old (1)
- ○ 18-30 years old (2)
- ○ Over 30 years old (3)

Ga naar: Einde enquête Als What is your age? = Under 18 years old
Ga naar: Einde enquête Als What is your age? = Over 30 years old

Pagina-einde

Q69 **Car sharing services** enable individuals to access and use cars without the obligation to purchase them and function as a substitute for privately owned cars.

It is defined as 'a service that provides members with access to a fleet of vehicles on a daily, hourly or minute basis' where individuals are able to reserve a car online, or via phone, and often on a membership basis. It provides people access to vehicles for personal and business use.

These services have the ability to complement the current existing public transportation services, particularly providing mobility services for those trips which are generally only suited for car driving and reduces the overall need to have private cars and increases mobility options for many.

Please keep this description in mind when answering further questions.

Pagina-einde

Q83 Consider a fictive car sharing service, called "Shareacar", that has the following basic characteristics Opt for a **"one for all" package** Choose only **one type of car** You always have to **pick up and return the car at the same, fixed location** Rent the vehicle **max 72 hours** Use the car **within Belgium**, but not abroad **Reserve** the vehicle for a **short period upfront (0-30 min)**
During the next few questions, you will be presented with characteristic variations of this car sharing service called "Shareacar", in addition to the basic characteristics that are already mentioned.

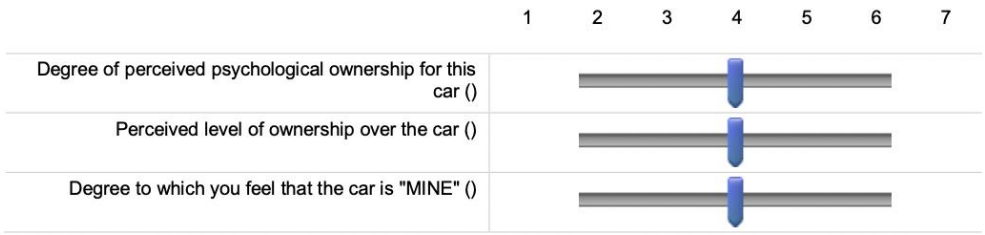
Psychological ownership is the feeling of possession over a target or object that may or may not be supported by formal ownership.
The **goal is to identify the extent of psychological ownership level you experience towards this product,** that you would feel that the product is "YOURS", even though you might not actually own it.
Please fill the questionnaire in until the end, otherwise your answers will not be valid.

Pagina-einde

Q84 1/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to choose from **range of cars**
- Possibility to **pay per hour**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

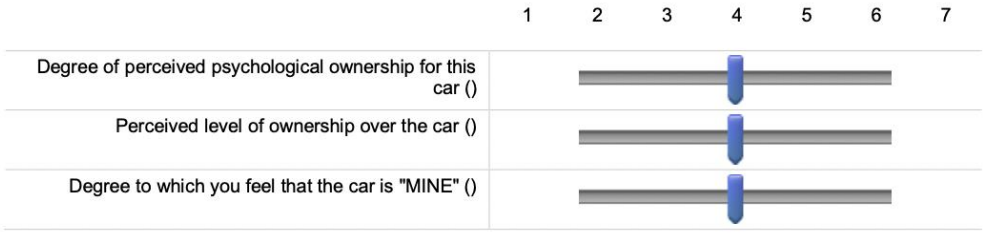


Pagina-einde

Q85 2/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to choose an **electric vehicle**
- Possibility to **pay per week**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.



Pagina-einde

Q86 Here you can see pictures of a **premium vehicle**, which can be perceived as a luxury, more upstream car. Please keep this in mind when answering further questions.

Pagina-einde

Q87 3/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to take the vehicle **outside of Belgium**
- Possibility to choose a **premium vehicle**
- Possibility to **pay per month**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car ()							
Perceived level of ownership over the car ()							
Degree to which you feel that the car is "MINE" ()							

Pagina-einde

Q88 Here you can see a picture of a **monovolume vehicle**, which is significantly bigger and can be used to transport larger goods. Please keep this in mind when answering further questions.

Pagina-einde

Q89 4/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to choose from **different packages**, according to your individual needs
- Possibility to **return the car within a given area** (for example Antwerp), instead of a fixed geographical location
- Possibility to choose a **monovolume vehicle**
- Possibility to **pay per minute**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

1	2	3	4	5	6	7

Degree of perceived psychological ownership for this car ()	
Perceived level of ownership over the car ()	
Degree to which you feel that the car is "MINE" ()	

Pagina-einde

Q90 5/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to choose from **different packages**, according to your individual needs
- Possibility to **return the car within a given area** (for example Antwerp) instead of a fixed geographical location
- Possibility to choose a **premium vehicle**
- Possibility to **pay per week**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car ()							
Perceived level of ownership over the car ()							
Degree to which you feel that the car is "MINE" ()							

Pagina-einde

Q91 6/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **take the car outside of Belgium**
- Possibility to **choose from a range of cars**, instead of just one car
- Possibility to **pay per day**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to a **test ride**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

1	2	3	4	5	6	7

Degree of perceived psychological ownership for this car ()	
Perceived level of ownership over the car ()	
Degree to which you feel that the car is "MINE" ()	

Pagina-einde

Q92 7/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **choose a monovolume vehicle**
- Possibility to **pay per day**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car ()							
Perceived level of ownership over the car ()							
Degree to which you feel that the car is "MINE" ()							

Pagina-einde

Q93 8/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **return the car within a given area** (for example Antwerp), instead of a fixed geographical location
- Possibility to **choose an electric vehicle**
- Possibility to **pay per hour**
- Possibility to **rent the vehicle longer than 72 hours**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

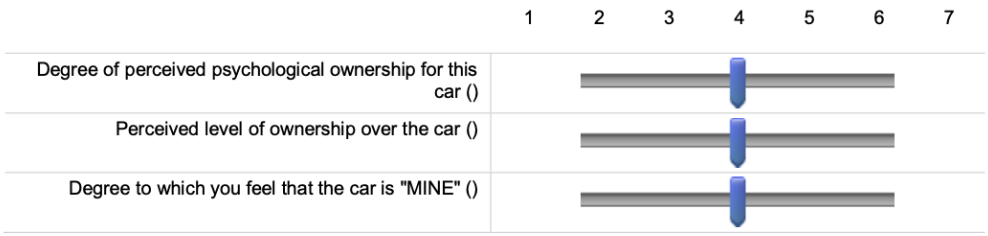
	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car ()							
Perceived level of ownership over the car ()							
Degree to which you feel that the car is "MINE" ()							

Pagina-einde

Q94 9/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **take the car outside of Belgium**
- Possibility to **choose an electric vehicle**
- Possibility to **pay after each ride**
- Possibility to **rent the vehicle longer than 72 hours**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

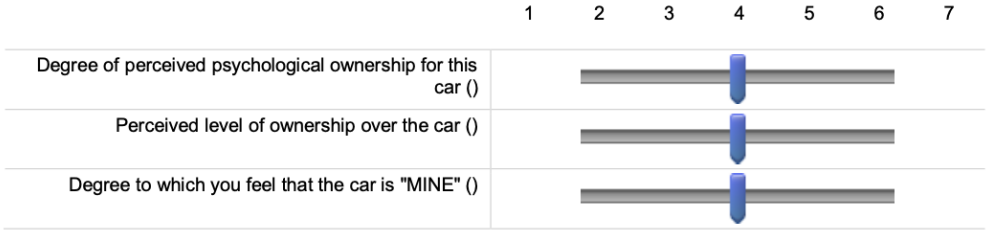


Pagina-einde

Q95 10/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **return the car within a given area** (for example Antwerp), instead of a fixed geographical location
- Possibility to **choose from a range of cars**, instead of just one car
- Possibility to **pay per month**
- Possibility to **rent the vehicle longer than 72 hours**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.



Pagina-einde

Q96 11/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **take the car outside of Belgium**
- Possibility to **choose an electric vehicle**
- Possibility to **pay per minute**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car ()							
Perceived level of ownership over the car ()							
Degree to which you feel that the car is "MINE" ()							

Pagina-einde

Q97 12/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **return the car within a given area** (for example Antwerp) instead of a fixed geographical location
- Possibility to **choose a monovolume vehicle**
- Possibility to **pay after each ride**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

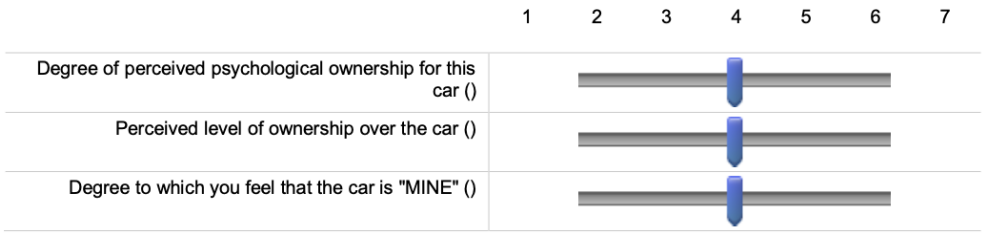
	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car ()							
Perceived level of ownership over the car ()							
Degree to which you feel that the car is "MINE" ()							

Pagina-einde

Q98 13/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Ability to **take the car outside of Belgium**
- Possibility to **choose a monovolume vehicle**
- Possibility to **pay per hour**
- Possibility to r**ent the vehicle longer than 72 hours**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

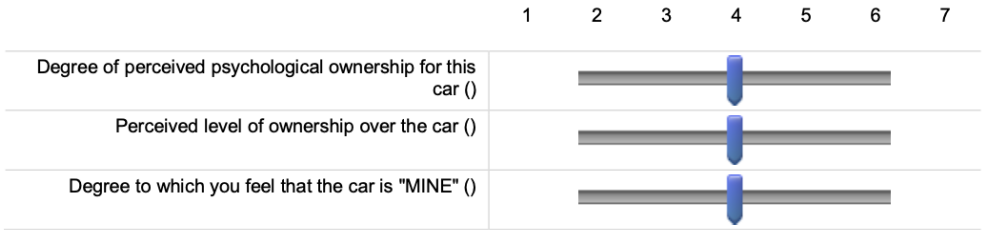


Pagina-einde

Q99 14/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **return the car within a given area** (for example Antwerp) instead of a fixed geographical location
- Possibility to **choose an electric vehicle**
- Possibility to **pay per day**
- Possibility to r**ent the vehicle longer than 72 hours**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

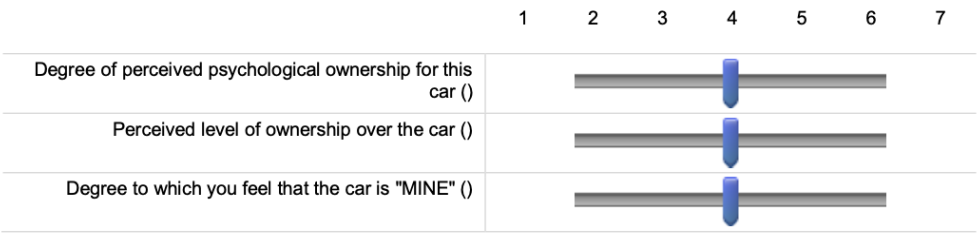


Pagina-einde

Q100 15/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **choose from a range of cars**, instead of just one car
- Possibility to **pay after each ride**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

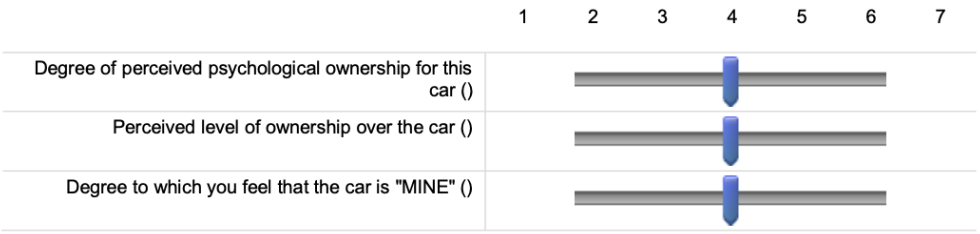


Pagina-einde

Q101 16/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **choose an electric vehicle**
- Possibility to **pay per month**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to a **test ride**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

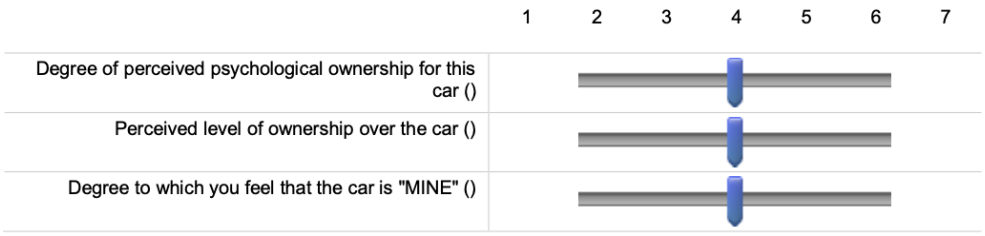


Pagina-einde

Q102 17/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **return the car within a given area** (for example Antwerp), instead of a fixed geographical location
- Possibility to **choose from a range of cars, instead of just one car**
- Possibility to **pay per week**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

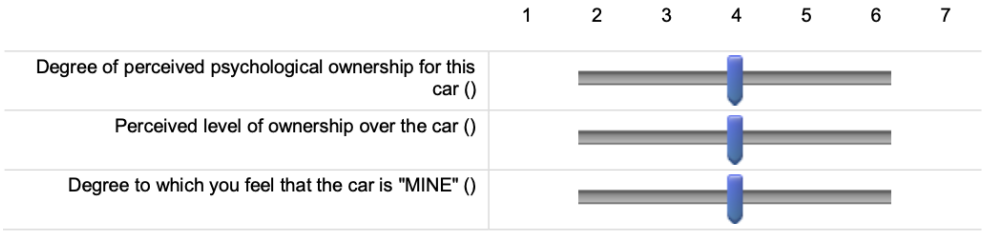


Pagina-einde

Q103 18/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **choose from different packages**, according to your individual needs
- Possibility to **return the car within a given area** (for example Antwerp), instead of a fixed geographical location
- Possibility to **rent a premium vehicle**
- Possibility to **pay per day**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.



Pagina-einde

Q104 19/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **rent a premium vehicle**
- Possibility to **pay per day**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car ()							
Perceived level of ownership over the car ()							
Degree to which you feel that the car is "MINE" ()							

Pagina-einde

Q105 20/20 Next to the basic characteristics of "Shareacar", the company also offers the following additional features:

- Possibility to **take the car outside of Belgium**
- Possibility to **rent a monovolume vehicle**
- Possibility to **pay week**
- Possibility to **rent the vehicle longer than 72 hours**
- Possibility to **reserve the vehicle a long period upfront (>30 min)**

Please indicate your perceived level on a scale of 1-7, with 1 being low perceived levels and 7 being high perceived levels.

	1	2	3	4	5	6	7
Degree of perceived psychological ownership for this car ()							
Perceived level of ownership over the car ()							
Degree to which you feel that the car is "MINE" ()							

Pagina-einde

Q66 Do you think your answers should be included in this study?

- ○ Yes (1)
- ○ No (2)

Einde blok: Product based

Start van blok: Personal information

Q55 In order to use your results for an analysis, I would need your consent to process your results. Please fill in the consent form underneath.

"I declare hereby that I, as a participant in a research project of Ghent University,
(1) have been informed about the questions and the tasks that I will encounter during the research and that I was given the opportunity to receive further information if desired;
(2) will participate out of free will in the research project
(3) give informed consent to the researchers to store, process, and report my data in anonymized form;
(4) am aware of the option to stop my participation in this research at any moment in time without having to provide a reason;
(5) know that participating or stopping my participation in the research has no negative consequences of any kind for me
(6) am aware of the option to ask the researcher(s) for a summary of the results after the study is finished and the results have been known;
(7) agree that my data may be used for further analysis by other researchers after complete anonymization;
(8) am aware that UGent is the responsible entity with regards to the personal information collected during the study. I am also aware that the data protection officer can give me more information about the protection of my personal information."

Contact: Hanne Elsen (privacy@ugent.be).
Name of the responsible researcher: Marie-Lien Van Cauteren (MarieLien.VanCauteren@UGent.be)

- ○ I agree (1)
- ○ I do not agree (2)

Ga naar: Einde enquête Als In order to use your results for an analysis, I would need your consent to process your results.... = I do not agree

Pagina-einde

Q8 Are you, yourself, in the possession of a private car?

- ○ Yes (1)
- ○ No (2)

Pagina-einde

Q9 What is your main transportation goal when using a car? Multiple answers are possible.

- ☐ Work (1)
- ☐ School (2)
- ☐ Visiting friends or family (3)
- ☐ Recreational activities (4)
- ☐ Other (5)

Pagina-einde

Q10 In what kind of area do you live?

- ○ Metropolitan area (Brussels, Antwerp, Ghent, Liège, Charleroi) (1)
- ○ City (2)
- ○ Town (3)

Pagina-einde

Q11 Have you ever used car sharing services?

- Yes (1)
- No (2)

Pagina-einde

Q12 Would you say that you are very personally attached to having a personal, private car?

- Strongly disagree (1)
- Disagree (3)
- Somewhat disagree (4)
- Neither disagree nor agree (5)
- Somewhat agree (6)
- Agree (7)
- Strongly agree (8)

Pagina-einde

Q65 If you have any further comments or questions, please feel free to leave them in the comment section below.

_____

Pagina-einde

Q3 What is your gender?

- Male (1)
- Female (2)
- Other / I do not want to disclose this information (3)

Pagina-einde

Q4 What is your job status?

- Student (1)
- (Self) employed (2)
- Unemployed (3)
- Other (4)

Pagina-einde

Q5 How many minutes a day do you typically spend in your car?

- 0 - 15 minutes (1)
- 15-30 minutes (2)
- 30-45 minutes (3)
- 45-60 minutes (4)
- 60-90 minutes (5)
- > 90 minutes (6)

Pagina-einde

Q6 What is the size of your household?

Household size is the number of people for whom the financial head of the household is financially responsible. For dependent students, the household size will include the parent or parents with whom they live most of the year, plus any children or other dependents for whom those parents are financially responsible.

- 1 individual (1)
- 2 individuals (2)
- 3 individuals (3)
- 4 individuals (4)
- 5 individuals (5)
- > 5 individuals (6)

Pagina-einde

Q7 How many cars are available in your household?

Household size is the number of people for whom the financial head of the household is financially responsible. For dependent students, the household size will include the parent or parents with whom they live most of the year, plus any children or other dependents for whom those parents are financially responsible.

- None (1)
- 1 car (2)
- 2 cars (3)
- 3 cars (4)
- 3+ cars (5)

Pagina-einde

Q107 You have reached the end of this survey. If you would like to take part in the contest to win a **bol.com voucher of €20**, please leave your email adres below.

_____

Pagina-einde

Einde blok: Personal information