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### Carsharing in the Brussels region

*L'autopartage en région bruxelloise*

*Autodelen in het Brussels Gewest*

Mareile Wiegmann, Imre Keserü and Cathy Macharis

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# Carsharing in the Brussels region

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## Introduction

- 1 Carsharing has existed in Brussels with Cambio since 2003, and has undergone a significant increase in popularity in recent years with many new operators. In addition to round-trip station-based carsharing (SBCS) whereby the vehicle is picked up and returned to a dedicated station, a new system was introduced in 2016. Free-floating carsharing (FFCS) allows the user to pick up a car, drive and park it at another location within the service area. This article only covers these business-to-consumer systems and does not discuss peer-to-peer and car hire systems.
- 2 The aim of this fact sheet is to provide an overview of the service status, who the carsharing users are, why they become members, how they use the service and how it affects their travel behaviour. The impact of carsharing on modal choice and car ownership greatly affects sustainability and is crucial for stakeholders to understand. Carsharing may be a key component for an autonomous, connected and shared future mobility system, and it is therefore important to monitor its evolution closely.
- 3 Since April 2016, the Brussels carsharing operators have been obliged [Brussels-Capital Region, 2016] to conduct a customer survey and provide operational data on their service status on a yearly basis to the parking authority parking.brussels. The surveys are conducted via an online questionnaire available to registered carsharing users from 1 January to 31 March each year. Each operator conducts the survey independently based on a standard questionnaire. For the 2018 survey, the station-based operator Cambio (2 537 respondents) and the free-floating operators DriveNow (1 778) and Zipcar (1 060) were included. The station-based operators ZenCar and UbeeQo were not included due to too few responses. The operational data detailed in section 1 cover the status as of 31 December 2017 for all operators and includes vehicle location data. FFCS

was only launched in July 2016, which means that the survey was conducted one and a half years after the service launch. For the analysis of the user survey, in which the free-floating and station-based operators are compared side-by-side, the respondents have been weighted so that the share of respondents per operator is proportional to their market share.

- 4 However, representativeness may be limited by the fact that responses were only possible online. This may be the case especially for Cambio, which offers clients the option to book via phone and therefore may have more clients who do not use the internet regularly. An additional limitation may be that the station-based services are well established in Brussels, while FFCS and its user base are evolving rapidly, making comparisons more difficult.

## 1. Service status

- 5 In 2017, five carsharing services were in operation in Brussels. Cambio, Ubeeqo and ZenCar provided station-based carsharing, with 670 cars in service in 218 stations and a total of 623 parking spots. There was a growth of 25 % compared to 2016, with 134 new spots at 42 new stations. The three providers had 13 688 active members who made 230 216 trips in 2017 (630,7 per day). The average duration of a booking was 7 hours and 12 minutes and the average distance driven was 48 km. The cars were in use 30,3 % of the time, which also includes an idle time when parked elsewhere while checked out from the station.
- 6 DriveNow and Zipcar were the two free-floating providers active in Brussels in 2017: they offered 570 vehicles in a more restricted operational area which covered 45 % of the territory of the region and 70 % of the population (see figure 1). Only 10 extra vehicles (2 %) were added in 2017 compared to 2016. Combined, the FFCS operators had 12 300 members who made 334 073 trips (915 per day), with an average distance of 8,2 km and 35,4 minutes. Thus, the cars were in use 7,2 % of the time versus an average of 2,1 % for a private vehicle in Brussels [Lebrun *et al*, 2014].

Figure 1. Free-floating carsharing operating areas as of July 2017



Background: Google Maps 2020.

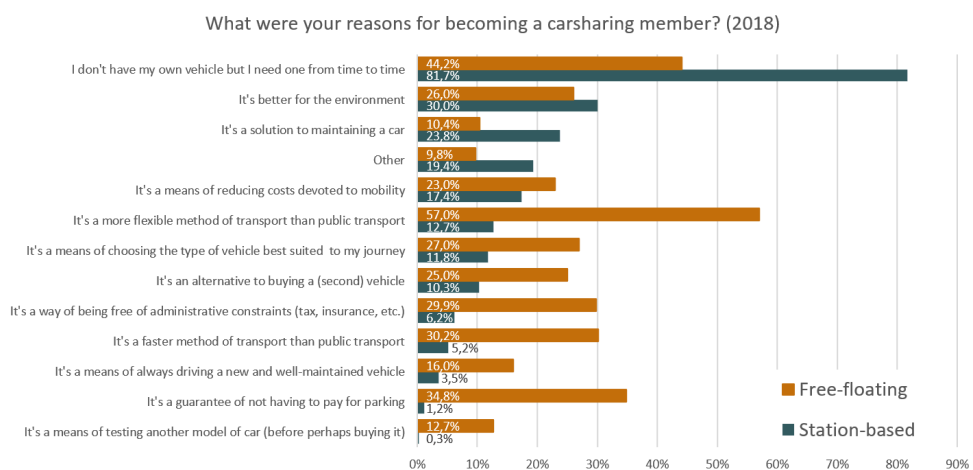
## 2. Who are the carsharing users?

- 7 In terms of demographics, the average carsharing user is young, male and with a high level of education. SBCS and FFCS, however, cater to different profiles. When it comes to the age of respondents, FFCS users are on average younger than station-based users. 37,7 % of station-based users and 50,8 % of free-floating users are between 26 and 39 years of age. This compares to only 33,8 %<sup>1</sup> of Brussels Region residents above age 20 being in this age range. Similarly, 27,3 % of station-based and 13,6 % of free-floating respondents are between the ages of 50 and 64. In BCR overall, the proportion of people aged 50-64 is 21,3 %. This shows that the station-based services succeed in targeting older cohorts while FFCS is mostly used by younger cohorts.
- 8 Regarding the gender of respondents, free-floating users are primarily male, with only 23,3 % being female. Among the station-based users, the share of females is 41,2 %.
- 9 Both cohorts have a high level of education, the free-floating users even more so than the station-based users (69,4 % vs. 63,9 % with university education). According to the Brussels Institute for Statistics and Analysis (IBSA), the share of BCR residents in 2018 between the ages of 25 and 64 who had attained higher education was 47,5 %.<sup>2</sup> Users of carsharing are therefore more educated than the Brussels average.

### 3. Why do they become members?

- 10 Among station-based users, the main reasons for becoming carsharing members were that they do not have their own vehicle but need one from time to time (81,7 %); it is better for the environment (30,0 %); and it is a solution to maintaining a car (23,8 %). Users of FFCS primarily found it to be a more flexible mode of transport than public transport (57,0 %), and do not have their own vehicle either but need one from time to time (44,2 %) and appreciate the guarantee of not having to pay for parking (34,8 %).

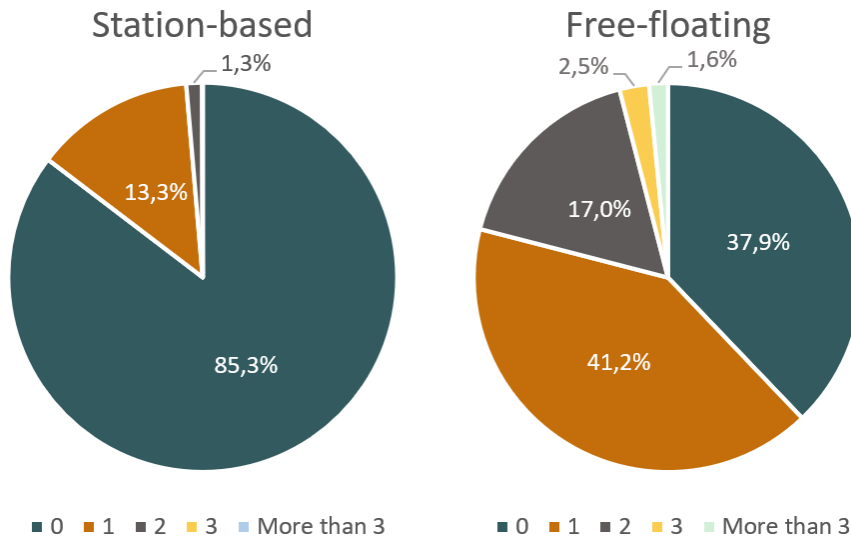
Figure 2. Distribution of respondents according to reasons for becoming carsharing members



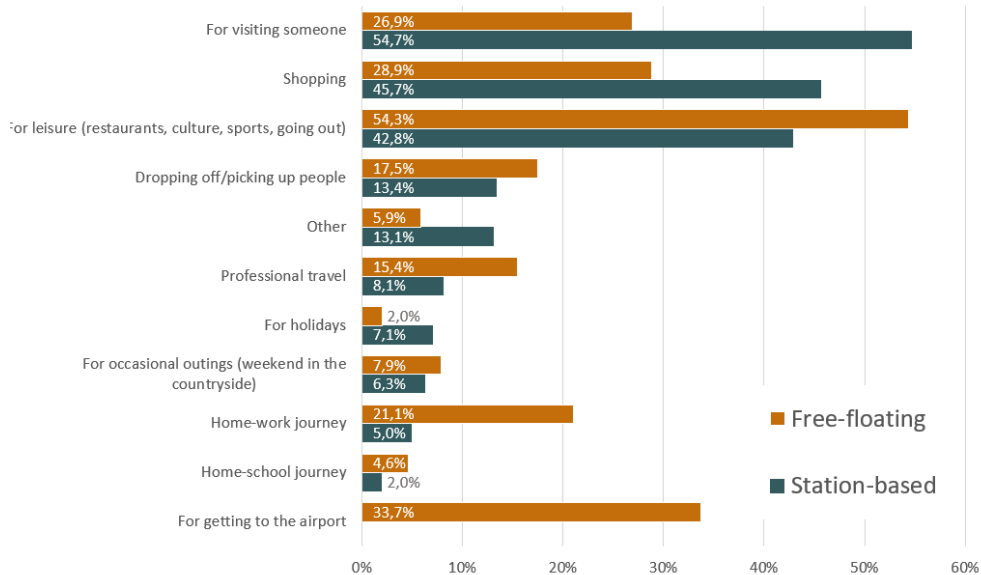
2018; free-floating n=2 838; station-based n=770 (Only those who became members in 2016 or later); multiple answers possible

- 11 In terms of car ownership as depicted in figure 3, the two groups differ widely, with station-based users having much lower rates of ownership. The share of station-based users without a car in their household is 85,3 %. On the other hand, those signing up to free-floating services have a higher rate of car ownership, with only 37,9 % stating that they did not have a car. Both groups differ from the Brussels average: in 2010, 11,1 % of households in Brussels had two or more cars [Lebrun *et al*, 2013], compared with 1,3 % for station-based and 21,1 % for free-floating CS. At the same time, 13,6 % of free-floating users and 33,1 % of station-based users claimed that they had got rid of a vehicle since becoming a carsharing member.

Figure 3. Distribution of respondents according to car ownership rates in the household



What is the reason you use a carsharing service most often?



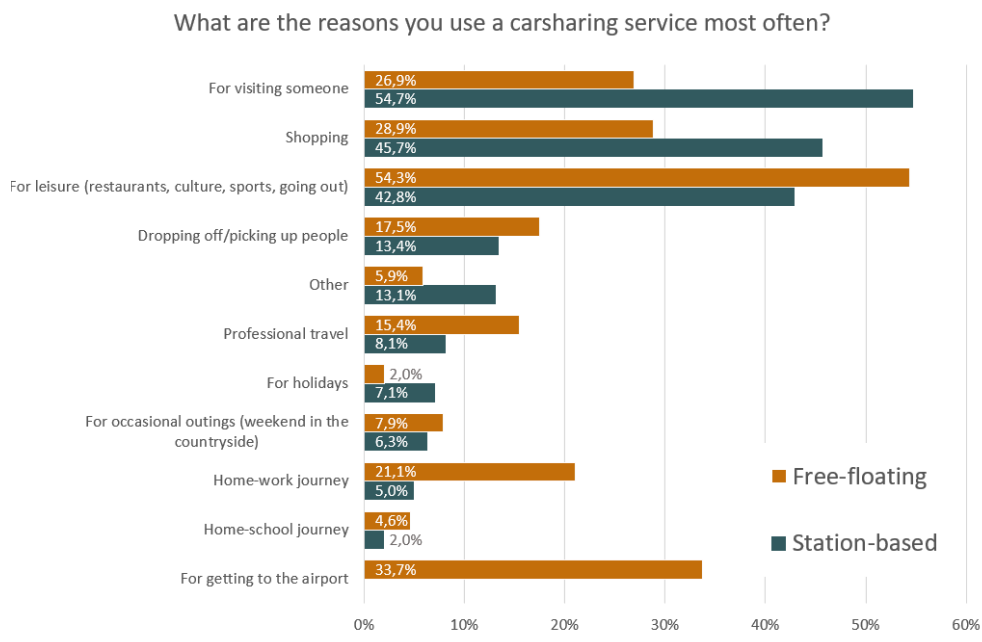
2018; SBCS n=2129; FFCS n=2838

- 12 When asked whether they would have considered buying a car (or an additional one) if the carsharing service was not available, both groups were divided, with about half stating “yes/probably” and half stating “no/probably not”.
- 13 Whether or not carsharing is a means of testing a car model before perhaps buying one depends very much on the operator. The cars and their novelty status differ between operators, and the percentage of those who state this as a reason varies between 0,3 % (station-based), 4,5 % (free-floating operator 1<sup>3</sup>) and 18,2 % (free-floating operator 2).

## 4. How do they use the service?

- 14 In terms of frequency of use, the typical user uses the service rather sporadically. Among the FFCS users, 75,4% use the service 1 to 3 times a month or less, while the percentage reached 79,1 % for users of station-based operators. Those who do not have a car use the carsharing service more frequently than those who do have a car.
- 15 The average distance driven for free-floating users is quite short: 35,1 % stated that their average distance was 2-5 km while 43,8 % stated that it was 6-10 km. This is confirmed by the origin-destination vehicle location data of the operators: for one of the FFCS operators, the average distance driven was 8,4 km (28,0 minutes) in 2017. For the station-based operator, distances are much longer: the average distance driven in 2017 was 47,3 km (7,1 hours).
- 16 The main travel purpose when using carsharing varies between free-floating and station-based services. For station-based users, the main reasons are to visit someone (54,7 %) and to go shopping (45,7 %). For free-floating users, they are leisure (restaurants, culture, etc.; 54,3 %) or getting to the airport (33,7 %). Free-floating users also travel more often for professional reasons and for home-work journeys, and have a greater variety of travel motives overall.

Figure 4. Distribution of respondents according to reasons for using the carsharing service



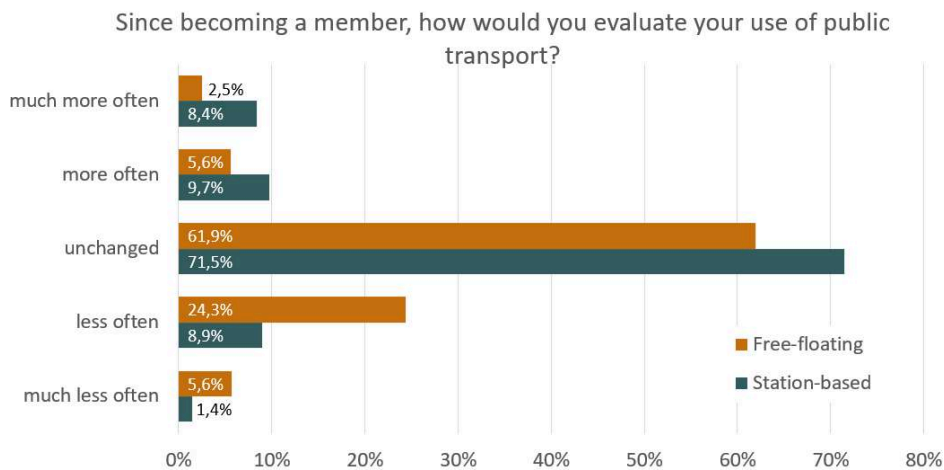
2018; free-floating n=2748; station-based n=2229; multiple answers possible.

- 17 The overwhelming majority of users get to the vehicle on foot, especially among free-floating users (88,3 %). Station-based users use public transport in 9,9 % of cases and use a bicycle in 4,9 % of cases. When asked how many minutes it takes to find a parking space, 32,5 % of free-floating users estimated that it takes more than five minutes.

## 5. How does it affect their travel behaviour?

- 18 The majority (61,9 % free-floating and 71,5 % station-based) of carsharing users state that their frequency of public transport use remained unchanged since becoming a member. Among the users who experienced a change, free-floating users report a tendency to use public transport less often than before, whereas station-based users report a weak tendency to use it more often (see figure 5). Station-based users use public transport more frequently than free-floating users: 49,5 % of SBCS users declared that they use it every day versus just 32,9 % of FFCS users.

Figure 5. Distribution of respondents according to change in use of public transport since becoming a carsharing member



2018; free-floating n=2556, station-based n=771 (only those who became a member in 2016 or later)

- 19 Both free-floating and station-based users report that since becoming a member, they use a private car (i.e. not a carsharing vehicle) less often. The clear majority (78,7 %) of station-based users report that they never travel by private car (versus only 25,8 % of free-floating users). In contrast, some 24,1 % of free-floating users report that they travel by private car every day (versus just 2,5 % of station-based users).

## Conclusion

- 20 This fact sheet has highlighted the differences and commonalities between the user profiles of station-based and free-floating carsharing services, the latter having a higher rate of car ownership, higher share of males and being slightly younger. Both cater to individuals with a high level of education and are used approximately 1 to 3 times a month. The two services clearly serve different purposes, with a greater variety of travel motives stated by the users of free-floating services and the rates of car ownership much higher. In addition, users reportedly reduce their car use once they become members, while the impact on public transport use remains unclear, with FFCS users replacing public transport trips partly with carsharing.
- 21 For future research, it would be worthwhile to track respondents with a unique ID so that data regarding the same person could be gathered over the years. In addition,



future surveys could be carried out with a control group of Brussels residents who are not members of any of the carsharing services in order to provide a better context. Overall, by continuing the survey, the development of carsharing could be monitored in the long term, especially given the rapid changes in the market as services struggle to be profitable, and due to the COVID-19 crisis. Its main challenge is to reach a wider public in order to include those of lower socio-economic status who are in need of a car and to support locally run operators.

*The authors wish to thank the carsharing operators and parking.brussels for providing access to the analysed data.*

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## NOTES

1. <https://bestat.economie.fgov.be>
2. [http://ibsa.brussels/sites/default/files/publication/documents/Mini-Bru\\_2020-FR-WEB\\_0.pdf](http://ibsa.brussels/sites/default/files/publication/documents/Mini-Bru_2020-FR-WEB_0.pdf)
3. For confidentiality reasons, data referring to individual operators are indicated by operator 1, operator 2, etc.

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## ABSTRACTS

The aim of this fact sheet is to highlight the differences and commonalities between the user profiles of station-based and free-floating carsharing services based on the analysis of a survey of

5 375 car sharing users in Brussels. The analysis shows that free-floating users have a higher rate of car ownership, higher share of males and they are slightly younger. Both types of services cater to individuals with a high level of education and are used approximately 1 to 3 times a month. The two services clearly serve different purposes, with a greater variety of travel motives stated by the users of free-floating services and the rates of car ownership much higher. In addition, users reportedly reduce their car use once they become members, while the impact on public transport use remains unclear, with free-floating users replacing public transport trips partly with carsharing.

Cette *fact sheet* vise à mettre en évidence les différences et les points communs entre les profils des usagers des services d'autopartage avec stations et des services d'autopartage en « flotte libre », en s'appuyant sur l'analyse d'une enquête menée auprès de 5 375 usagers bruxellois. Il en ressort que chez ceux des services en flotte libre, qui sont quelque peu plus jeunes, le pourcentage de propriétaires de voiture(s) est plus important, tout comme le nombre d'hommes. Les deux types de services s'adressent à des personnes disposant d'un niveau d'instruction élevé et sont utilisés une à trois fois par mois environ. Ils servent manifestement à des fins différentes, sachant que les usagers de l'autopartage en flotte libre ont fait état de motifs de déplacement plus variés et sont nettement plus nombreux à posséder une voiture. Par ailleurs, si apparemment les usagers une fois inscrits utilisent moins souvent leur voiture, il reste difficile d'en déterminer les répercussions au niveau de l'utilisation des transports publics, car les usagers des services en flotte libre délaissent partiellement les trajets en transports publics au profit de l'autopartage.

Het doel van deze factsheet is om de punten van verschil en overeenkomst tussen de gebruikersprofielen van station-based en free-floating autodeeldiensten te belichten op basis van de analyse van een enquête bij 5 375 gebruikers van autodeeldiensten in Brussel. Uit de analyse blijkt dat bij free-floating autodelen meer gebruikers een eigen wagen bezitten en van het mannelijke geslacht zijn en dat ze iets jonger zijn. Beiden soorten van autodeeldiensten trekken hoogopgeleiden aan en worden ongeveer één tot drie keer per maand gebruikt. Alle twee de diensten worden duidelijk om verschillende redenen gebruikt, maar bij de gebruikers van free-floating autodelen zien we dat hun verplaatsingsredenen uiteenloper zijn en dat meer van hen een eigen wagen bezit. Daarnaast verklaren de gebruikers dat ze minder vaak een privéwagen gebruiken sinds ze lid geworden zijn van een autodeeldienst. De impact op het openbaar vervoer blijft onduidelijk, hoewel de free-floating autodelers hun verplaatsingen met het openbaar vervoer deels hebben vervangen door autodelen.

## INDEX

**Mots-clés:** mobilité

**Keywords:** mobility

**Subjects:** 7. aménagement du territoire – logement – mobilité

**Trefwoorden** mobiliteit

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