

# Brussels trade in figures



MOBILITY AND LOGISTICS  
IN COMMERCIAL CENTRES

## Colophon

**Study by** hub.brussels

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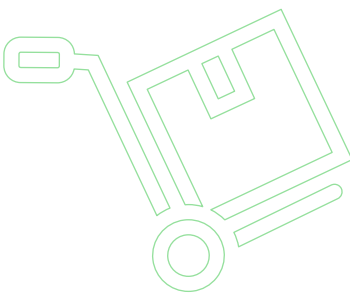
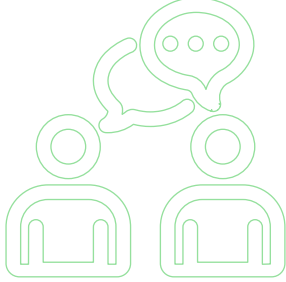
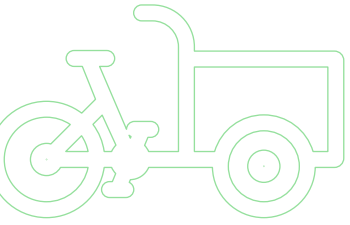
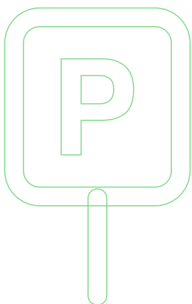
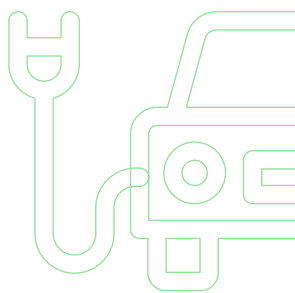
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# Context of the study

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In its 2018 diagnosis, the Brussels-Capital Region's Commercial Development Scheme identified seventeen themes on which to work to improve the framework in which the commercial function was evolving. These included the "Mobility and accessibility" theme for which one of the priority actions identified was to:

 **Develop a mobility profile for commercial centres:** despite the existence of a great deal of data on commerce and mobility, few detailed cross-case analyses exist. So, before taking any action to reconcile commerce and mobility, it seems important to strengthen this integrated knowledge.

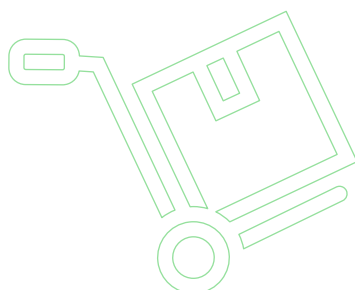
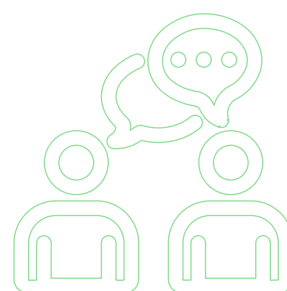
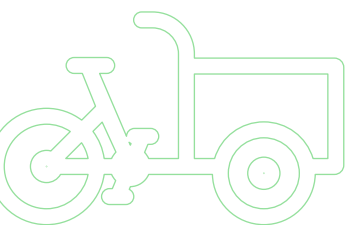
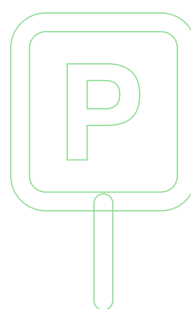
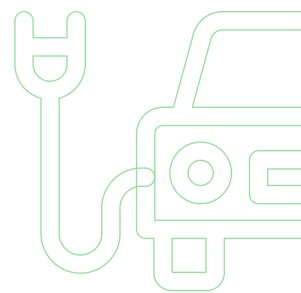


Divided into four parts, this study, carried out in partnership with the IGEAT-ULB, aims to respond to this action. The first part of the study is an introduction explaining the issues of mobility in Brussels and the analysis framework. The next two parts will seek to establish profiles of the commercial centres through the creation of indicators linking commerce and mobility (part 2) or commercial logistics (part 3). The last part of the study proposes a discussion evaluating the room for manoeuvre for establishments to improve logistics in these same centres.

The creation of indicators is mainly based on data available in open data or made available to us by the Brussels regional institutions. All are updated regularly. Thus, while this study allows us to analyse Brussels commercial centres from a new angle, it is also the opportunity to create new statistical series that hub.brussels will update over the years to analyse their development.



# The challenges of mobility and commerce in Brussels



Mobility issues are regularly in the news in Brussels. The implementation of the “Good Move” regional mobility plan is just one such example. Travel related to shopping behaviour and commercial activity is no exception. Whether in terms of customer access to stores or for deliveries (both inbound and outbound), the links between commerce and mobility raise many issues.

For customers, travel related to commercial activities is **the second reason for travelling within the Brussels area** or between the capital and the rest of the country, after commuting. Weekends are by far the leading cause of mobility<sup>1</sup>.

Nevertheless, in Brussels, it must be stressed that **the car is not the main mode of transport used for shopping**. In the Barometer of Retail Districts<sup>2</sup>, within the 60 areas monitored by hub.brussels, the median proportion of shoppers coming by car or motorcycle is 17%, compared to 48% for shoppers coming on foot or by bike and 43% for public transport users.

However, when Brussels households are interviewed at home (which makes the survey more complete since it includes people who do not live in the 60 districts monitored), the share of the car as the main mode of transport used for shopping rises to 57% on average<sup>3</sup>. Despite the difference in survey methodology, this is also due to the lack of differentiation between types of purchases. The figures include travel for big shops (frequently conducted outside commercial centres,

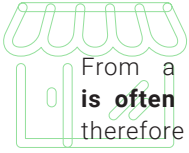
in areas that are less accessible without the use of a car) and purchases of heavy equipment (for which the proportion of purchases made outside the region is significant, and the use of a car is also important).

Moreover, this average share of 57% hides a real variability within the population. On the one hand, depending on age, the percentage increases from 50% for 18-29 year olds to over 60% for 45-64 year olds. On the other hand, depending on the socio-economic level, the figure rises from less than 50% for people living in working-class districts to over than 70% in the most affluent districts, which are also located more on the outskirts, less densely populated and less well served by shops and public transport.

This variability is also observed depending on the destination. Commercial centres where shoppers come mainly by car are diversified working-class districts with a broad reach, such as the Brabant district or Molenbeek - Centre, and the shopping centres and business parks at the entrance to the city, which have been developed as a result of the spread of car mobility, such as the Basilix Shopping Centre or Stalle. This is also a reminder that the effect of the centre's structure (especially the share of heavy goods such as furniture, appliances, etc.) requires even customers living nearby to use the car. Nevertheless, for customers in the immediate vicinity who are highly dependent on cars<sup>4</sup>, the question of access time and congestion is at least as important as that of parking.



1 Deuxième Cahier de l'Observatoire Régional de la Mobilité de la Région de Bruxelles-Capitale (2013): les pratiques de déplacement à Bruxelles [https://mobilite-mobiliteit.brussels/sites/default/files/cahiers\\_mobilite-2\\_.pdf](https://mobilite-mobiliteit.brussels/sites/default/files/cahiers_mobilite-2_.pdf)  
2 hub.brussels, 2022. Barometer of Retail Districts. Available at: <https://analytics.brussels/#/>  
3 VAZQUEZ PARRAS, Juan, TREUTENS, Pierre-Philippe, CONDÉ, Gilles and WAYENS, Benjamin, 2019. Le commerce bruxellois en chiffres. Analyse des comportements spatiaux d'achat des ménages bruxellois [online]. Brussels: Brussels-Capital Region: Retail Observatory Available at: <http://perspective.brussels/fr/etudes-observations/economie-urbaine/observatoire-du-commerce>  
4 STRALE, Mathieu, 2019. Travel between Brussels and its outskirts: contrasting situations, Brussels Studies[online], 137, <https://journals.openedition.org/brussels/2848>.



From a retailer's perspective, **good accessibility is often a key element of their attractiveness** and therefore the health of their commercial activity. Thus, retailers are very sensitive to the measures taken on this issue, particularly those related to car accessibility<sup>5</sup> and deliveries. A recurring fear on the part of retailers is the loss of accessibility by car. Retailer representatives often associate increased retail attractiveness with more parking spaces and lower parking costs<sup>6</sup>. This fear is partly well-founded, although it is also frequently empirically demonstrated that retailers often overestimate the importance of "strict" motorists in their customer base<sup>7</sup>.

In the City Centre and Upper Town centres, the public car parks, although paid, are not usually full<sup>8</sup>. Often awarded to private operators, they are too often seen primarily as a source of revenue (including for public bodies) and not enough as a mobility management tool (in particular by relieving the pressure on parking in the public space). In the rest of the Region, where payment for on-street parking is widespread and standardised, the initial role of parking meters, i.e. to ensure vehicle rotation, has been forgotten, particularly in commercial spaces. Therefore, it is probably right that retailers feel increasingly less benefit from parking policies.

As for public bodies, they must **reconcile (or arbitrate) sometimes antagonistic issues**. On the one hand, they must try to adapt the fundamentals of mobility to current societal and environmental challenges (notably by reducing the share of car use and encouraging the use of public transport, cycling and walking). On the other hand, they must maintain an attractive and economically healthy urban commercial fabric. Furthermore, this management of the issues is carried out in an urban context where space is densely occupied and multi-functional and where mobility policies have an immediate effect on other dimensions of urban management.

Finally, there is **the question of logistics**. While the majority of commercial deliveries involve small commercial vehicles (less than 3.5 tons), there is no systematic record of their number, activity, origin or destination. However, the kilometre tax provides usable information about heavy goods vehicles, which are often perceived as the most visible (and most annoying or least suitable) element of urban logistics, although they do not constitute the majority of movements (or annoying parking). With the increase in home deliveries and parcel shipments that have accompanied the rise in online shopping, this limited view of logistics is problematic, as it does not quantify, anticipate and respond specifically to these trends. In this context, it is nevertheless possible to draw on current knowledge, more qualitative approaches and the many tests and studies underway to map out and evaluate alternatives to the current operation of deliveries.



5 WAYENS, Benjamin, DEBROUX, Tatiana, GODART, Pernelle, MAHIEU, Céline, STRALE, Mathieu and D'ETEREN, Emmanuel, 2020. Retail trade in Brussels: reconciling the city with a changing sector. BSI synopsis. Brussels Studies [online]. 2020. DOI 10.4000/brussels.4311. Available at: <http://journals.openedition.org/brussels/4344>.

6 Ibid.

7 Ibid.

8 BREES Gwenaël, 2015, De l'art d'enterrer un parking, Dérivations, [https://derivations.be/archives/numero-1/plateforme\\_marolles.html](https://derivations.be/archives/numero-1/plateforme_marolles.html)



In carrying out this study and examining **the accessibility and logistics profile of commercial centres, the objective is to go beyond the overly simplistic “no parking, no business” vision and appreciate the diversity of local situations**, which should nevertheless be summarised in order to allow public action to be taken and classify the measures, which are obviously not only local. The aim of this analysis is therefore to objectivise and quantify as far as possible the mobility issues in urban environments where there is a good deal of commercial activity, by looking at the parking supply, accessibility by public transport and delivery practices<sup>9</sup>.

**The territory covered by this study is the Brussels-Capital Region and the scale of analysis is that of the commercial centres** defined by hub.brussels within the framework of the Commercial Development Scheme<sup>10</sup>. There are 123 of these, and they include both commercial centres considered traditional (Brabant district in Schaerbeek, Porte de Namur in Ixelles, Place Miroir in Jette or Uccle - Centre) and more recent areas (Docks Bruxsel, Woluwe Shopping Centre or

major arteries such as the Chaussée de Ninove or Chaussée de Mons). The perimeter and location of these centres are shown in Figure 1. **These centres include just over 16,000 of the 25,000 retail units in the Brussels-Capital Region, which represents 65% of sales outlets.** As we do not have access to the data on retail space for all stores, the surface areas used here are estimated using the floor area of the buildings occupied by a store. These are therefore gross surface areas that most certainly overestimate the real footprint of the sector.

The access conditions for these commercial centres, whether for customers or goods, are not limited to the strict perimeter of the commercial centres. Indeed, the availability of parking and public transport stops near the commercial space can influence its mobility. In order to take the influence of this nearby environment into account, there are several analyses based on a perimeter of one hundred meters “as the crow flies” around the commercial centre. Use of this expanded perimeter is systematically reported in the methodological section of the figures in this study.

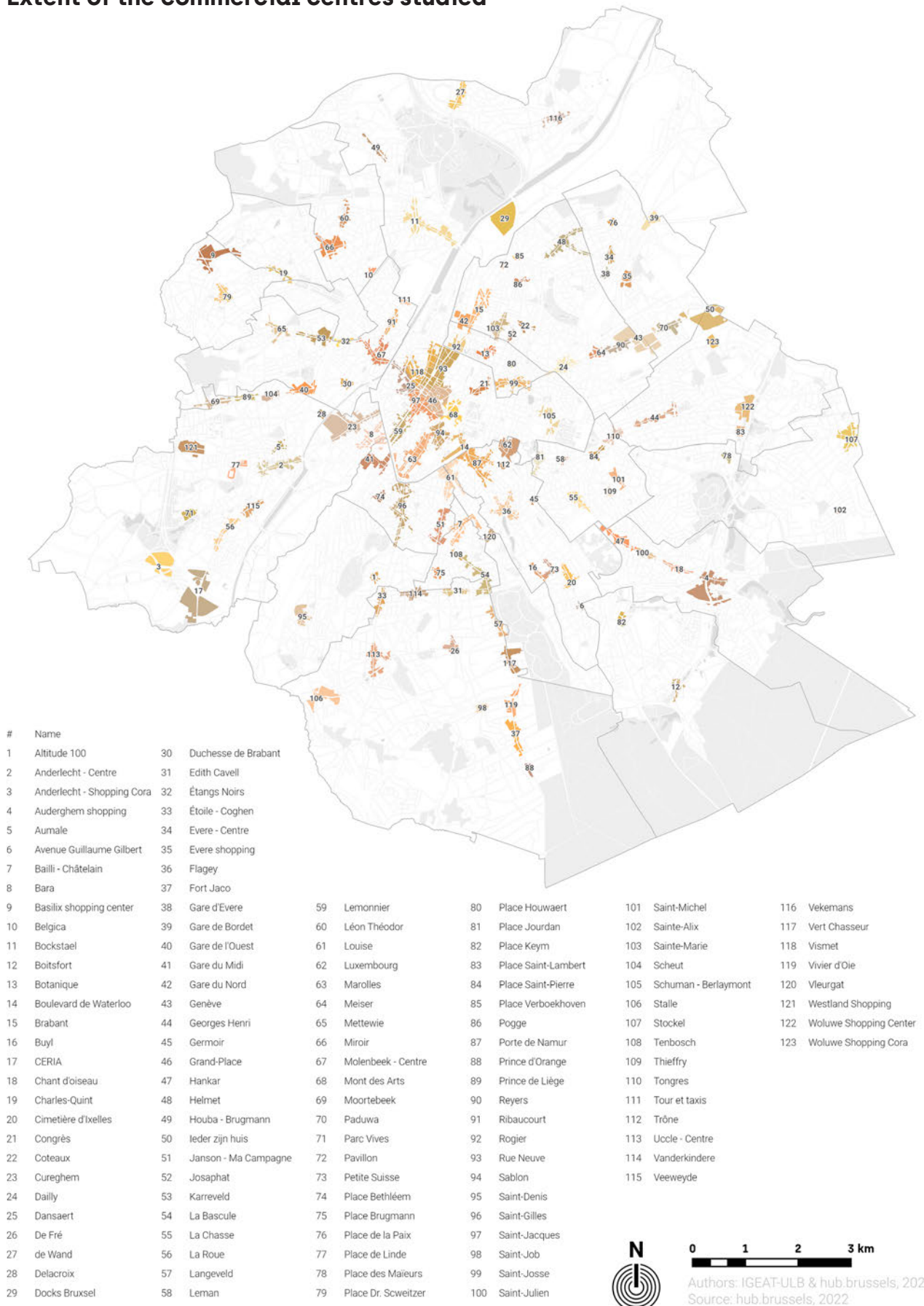


9 Although the quality of public spaces and pedestrian and bicycle accessibility are also important issues in terms of attractiveness and mobility in relation to shops, they are not mapped at this level, as they are on a finer and more local scale than that of the commercial centres (street frontages, pavements, etc.). Voir CRETEN, Alexis, MEZOUED, Aniss M. and LETESSON, Quentin, 2021. Fluidity of movement and pedestrian inconvenience in the shopping streets of Brussels. Brussels Studies [online]. 2021. No. 158. DOI 10.4000/brussels.5630. Available at: <http://journals.openedition.org/brussels/5630>.

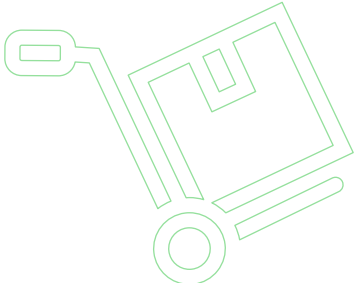
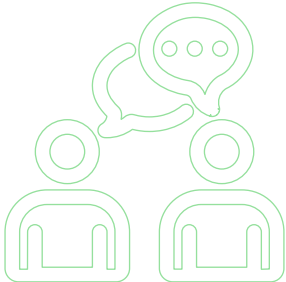
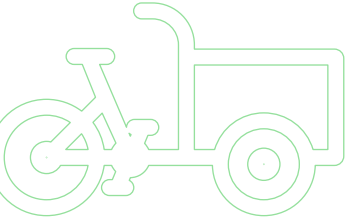
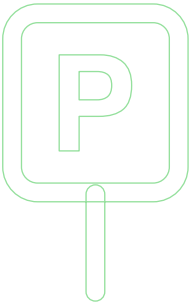
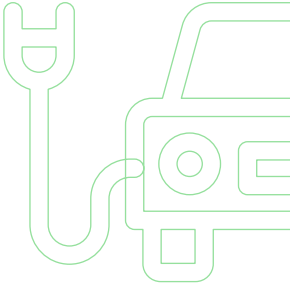
10 The detail of the initial division of the commercial centres ([https://hub.brussels/app/uploads/2019/07/Structuration\\_du\\_paysage\\_commercial\\_bruxellois\\_SDC3\\_hub-brussels.pdf](https://hub.brussels/app/uploads/2019/07/Structuration_du_paysage_commercial_bruxellois_SDC3_hub-brussels.pdf)) has been refined for the very large centres of Brussels - Centre (divided into eight: Dansaert, Grand-Place, Mont des Arts, Lemonnier, Rogier, Rue Neuve, Saint-Jacques and Vismet) and the Upper Town (divided into two: Louise and Porte de Namur) to allow for a more detailed analysis.

Figure 1

## Extent of the commercial centres studied



# The mobility of customers of Brussels stores



# Customer modes of transport

## Source

hub.brussels, 2011 to 2020

In the surveys conducted by hub.brussels in the 60 districts of the Barometer of Retail Districts<sup>11</sup>, information is provided on the modes of transport used by the respondents to visit the districts. It should be noted that shopping centres and other privately managed developments are not monitored in the Barometer of Retail Districts and are therefore excluded from this indicator<sup>12</sup>.

## Indicator

### Reported modal share

The reported modal share represents the percentage of respondents using a given mode of transport to visit the district. For the sake of clarity, the responses given by shoppers have been grouped into three categories:

- "On foot or by bike" combines the responses "walking", "cycling" or "on a scooter";
- "By public transport" includes the answers "by bus", "by tram", "by metro" and "by train";
- "By car and motorcycle" includes the responses "by car"<sup>13</sup>, "by motorcycle" and "by taxi".

## Interpretation

Across all the districts surveyed, walking or cycling accounted for nearly half of the reported modes of transport to travel to the districts by survey respondents (48%). This is followed by the use of public transport (43%) and finally the use of a car (17%)<sup>14</sup>. Nevertheless, there are strong variations between the retail spaces and this is essentially explained by their reach<sup>15</sup>.

In fact, walking and cycling are particularly over-represented in the retail districts of the inner suburbs (Saint-Josse - Centre, Flagey, Molenbeek - Centre, Bockstael, etc.) because of their mainly local or even regional reach. In contrast, these modes of transport are under-represented in two other types of districts. Firstly, in the more peripheral retail districts (Stalle, Herrmann Debroux, Charles-Quint, etc.) where the urban fabric is less dense, where the structure of the commercial offer leads to more frequent use of the car and, finally, where part of the attracted customer base lives in the immediate outskirts of Brussels. For these districts, the car has a particularly high modal share. Secondly, the share of walking and cycling is also low in the main retail districts of the hypercentre (Rue Neuve, Louise or Sablon) because of their metropolitan or even national reach. The customers who frequent them come from all over the country, so they make longer trips and make greater use of cars or public transport.

As regards the use of public transport, it is over-represented in the city centre, in the retail districts of the inner suburbs, but also in the peripheral districts located along the fast metro or tram routes (Stockel and Auderghem shopping, for example). However, public transport is used much less in the retail districts in the outskirts that are poorly connected to the public transport network (Evere - Centre, de Wand, etc.).

Finally, car use is highest in the Region's more peripheral retail districts, where there is less public transport available and the distances to stores are greater. An overrepresentation also appears in the districts with a strong reach from the hypercentre or in the districts at the entrance to the city. They attract metropolitan and Belgian customers who are proportionally more motorised and come to Brussels for less frequent and/or larger purchases. These elements lead to a greater car use. Conversely, small retail districts and those located in the inner suburbs generate low car use, due to their smaller size, a good public transport offer and, no doubt, high car congestion and parking constraints in densely urbanised areas.

11 Idid.

12 Since information is only available for a limited number of retail spaces, the term "retail district" will be used instead of "commercial centre" for this section only.

13 The surveys do not ask about vehicle ownership and do not distinguish between personal and shared cars.

14 It should be noted that respondents had the option of giving more than one answer, which explains the total percentage greater than 100%.

15 The issue of reach is multifactorial because it depends on the location of the commercial centres, their size and their composition (type of stores but also type of business management). This article looks at these issues in particular: <https://perspective.brussels/fr/actualites/la-structure-du-commerce-bruxelles>

In summary, we can therefore distinguish, depending on the modal profile, three differentiation rationales for the commercial centres:

- retail districts with a strong reach (typically Rue Neuve, Porte de Namur, Brabant, etc.) where the balance between modes of transport is between the car and public transport;
- centres with a municipal or regional reach (in particular Anderlecht - Centre, Molenbeek - Centre, Saint-Gilles - Centre, etc.) where the balance is between three modes of transport, and where walking or cycling and public transport dominate for the most central areas, and the car and soft modes are preferred for the most peripheral areas;
- small centres where the balance is between walking or cycling and cars with a centre-periphery gradient.

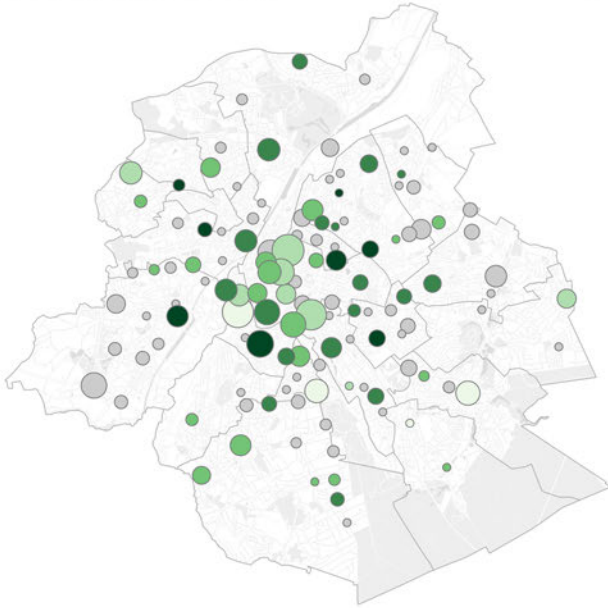
The rest of the analysis must be read in light of these different practices. Areas with a strong reach will require far-reaching transport infrastructure, both in terms of parking and public transport. For medium-sized districts, the issue will be a local and regional public transport service and a relatively high level of available parking. In dense areas, the challenge of accessibility by public transport will be greater, given the higher levels of congestion. Everywhere, the good quality of the pedestrian and cycling infrastructure will affect a large number of customers.



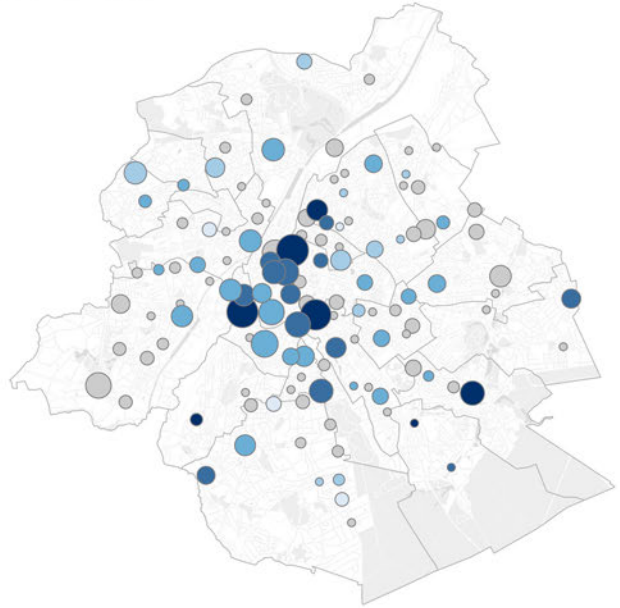
Figure 2

## Primary means of transport used to reach a commercial centre

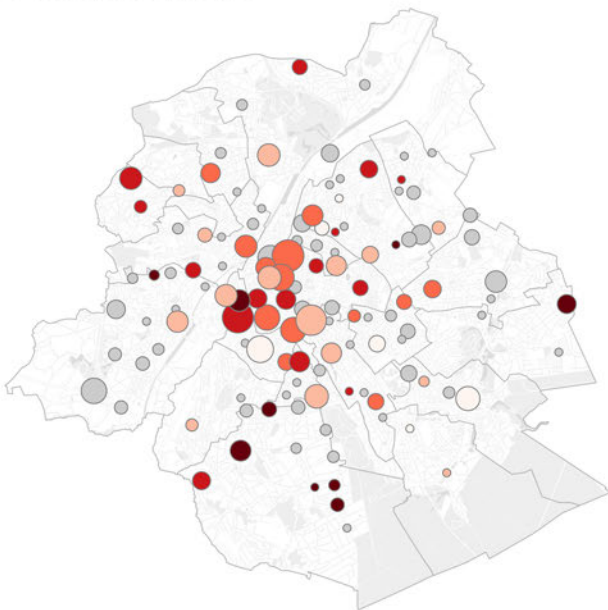
A. Walking and cycling



B. Public transport

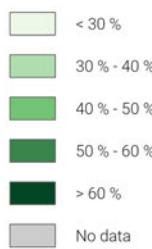


C. Car and motorbike

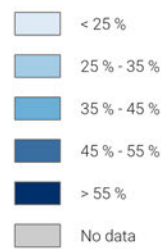


### Reported modal share

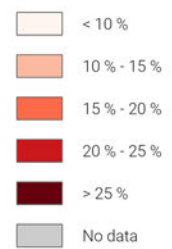
#### Walking and cycling



#### Public transport



#### Car and motorbike



### Surface area of buildings occupied by a store



0 2,5 5 7,5 km

Authors: IGEAT-ULB & hub.brussels, 2022  
Source: hub.brussels, 2011 to 2022

# Parking supply

## Source

parking.brussels  
& Brussels Mobility, 2019

Parking data are based on surveys carried out by parking.brussels and Brussels Mobility for each street section and block in the Region. On-street parking is available to customers in all green, blue, orange and red zones. Regulated spaces (deliveries, kiss & ride, car sharing, heavy goods vehicles or spaces for people with disabilities) are excluded. Off-street parking is made up of spaces offered directly by stores and car parks accessible to the public, both paid and unpaid.

## Indicators

total parking supply (on and off-street)  
and proportion of off-street parking

To determine the number of parking spaces per commercial centre, the on- and off-street spaces of the sections and blocks located within the perimeter of the centre as well as those located within a 100-metre perimeter of this centre were counted. As a result, some parking spaces may be counted for more than one centre if these 100 metre perimeters overlap. The proportion of off-street parking is calculated as a ratio of the number of off-street parking spaces to the total parking supply.

## Interpretation

There are approximately 124,000 parking spaces in the 123 commercial centres considered. Of these, 59% are located on roads and 41% in parking facilities. On average, there are just over seven customer parking spaces available for each store in the study areas. However, this average is only theoretical, since these parking spaces also cover other needs (parking for residents, workers and other visitors to the district). Moreover, these ratios vary greatly from one district to another.

The large commercial centres in the inner suburbs (e.g. the centres of Saint-Gilles, Molenbeek and Anderlecht) are characterised by a low ratio of parking per store and a limited supply of off-street parking. These are older retail spaces, integrated into dense, built-up areas, where the provision of additional parking spaces is complicated<sup>16</sup> and costly<sup>17</sup> from an urban planning and social point of view. Insofar as their commercial reach is essentially municipal or regional, the issue of road accessibility from outside the city is less important. Nevertheless, several of these centres are distinguished by a strong reach, sometimes permanent (Brabant, Molenbeek - Centre or Porte de Namur), sometimes occasional (Cureghem during the weekly markets). In these areas, the limited supply of parking is therefore more problematic.

Conversely, two types of centres stand out because of their large parking supply. These are the retail spaces of the city centre on the edge of the inner ring road (Rue Neuve, Vismet, Dansaert, Boulevard de Waterloo, Sablon, etc.), and the Louise centre, which is also part of this reasoning. These centres benefit from a significant supply of off-street parking. All of them take advantage of the large public car parks along the inner ring road, which date from its transformation into an urban motorway. This situation is compatible with their commercial offer with a strong reach, based on attracting a regional, metropolitan and Belgian clientele. It should be noted that while the pedestrian area has a lower parking ratio, it benefits indirectly from the surrounding car parks, where car users find an abundant supply.

The other category of areas with a large number of parking spaces consists of the shopping centres and business parks in the outer suburbs (Woluwe Shopping Centre, Auderghem Shopping, Basilix Shopping Centre, Anderlecht - Shopping Cora, Westland Shopping, etc.). These commercial centres were built and located with good car accessibility and the availability of large off-street parking spaces reserved for customers.

<sup>16</sup> BRES Gwenaël, 2015, De l'art d'enterrer un parking, Dérivations, [https://derivations.be/archives/numero-1/plateforme\\_marolles.html](https://derivations.be/archives/numero-1/plateforme_marolles.html);

<sup>17</sup> See <https://www.7sur7.be/home/les-parkings-souterrains-pas-rentables-meme-a-deux-euros-de-l-heure-ab925500/?referrer=https%3A%2F%2Fwww.google.com%2F> and <https://www.arau.org/content/uploads/2014/05/CP-projets-de-parkings-pentagone-08-05-2014.pdf>

Finally, for comparable locations, small commercial centres generally have a smaller parking supply than larger ones, most often limited to on-street parking. However, the issue of accessibility here is essentially local, which does not exclude problems of road mobility and pressure on parking, whether these are specific or not.

It should be noted that, beyond the availability of parking, road accessibility is of course also a function of traffic saturation and congestion. While there is no systematic public record of this information, the available data attest to high overall congestion, which is higher the more densely populated the urban areas in which customers are travelling.<sup>18</sup>

This is particularly true for commercial centres in densely-populated districts and around narrow roads, such as Molenbeek - Centre (with the Chaussée de Gand), Brabant, Bockstael (rue Marie-Christine) and Anderlecht - Centre (rue Wayez), which will be the most impacted by this congestion. Indeed, the dense urban fabric makes the development of public space complex and the decision between road, bicycle and public transport traffic, parking and pedestrian space difficult. In this context, the municipal and regional authorities sometimes try to break with these situations by making the streets one-way and opening up off-street parking spaces or even pedestrianising them.



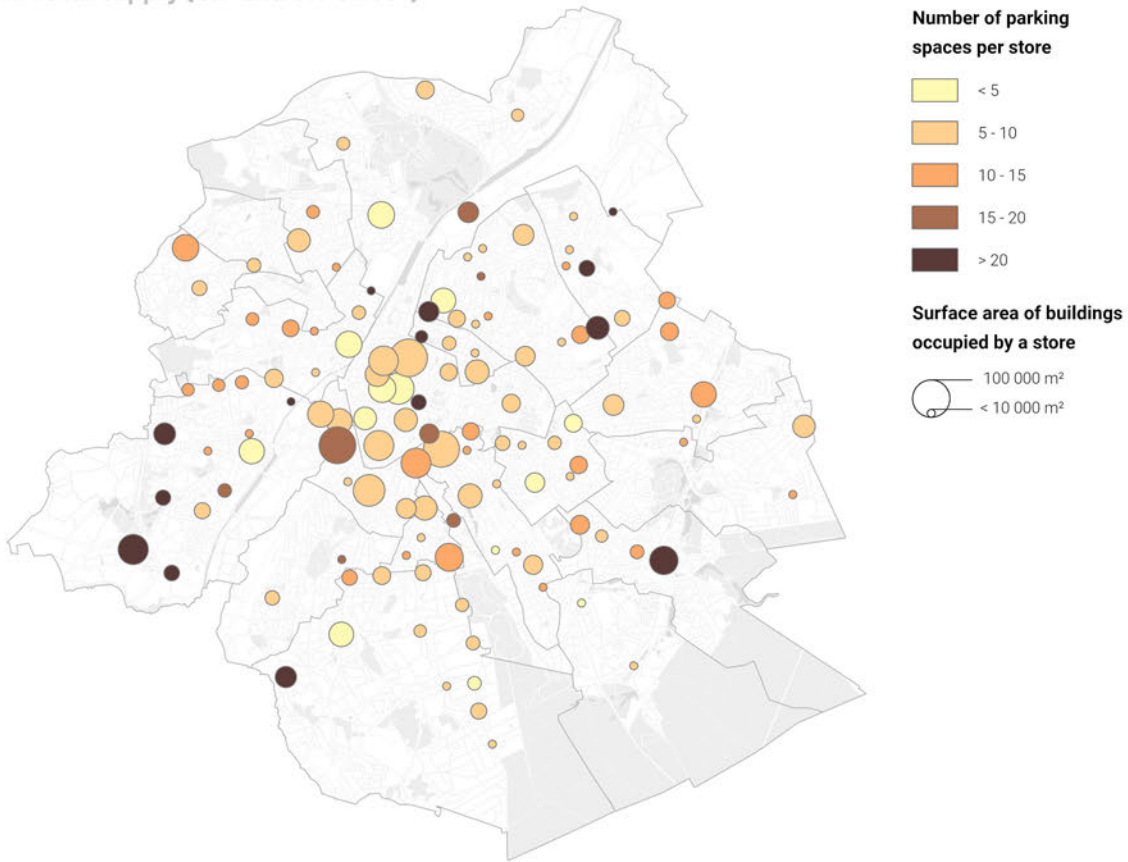
<sup>18</sup> See in particular the data from TomTom ([https://www.tomtom.com/en\\_gb/traffic-index/brussels-traffic/](https://www.tomtom.com/en_gb/traffic-index/brussels-traffic/)) or GoogleMaps (<https://www.google.be/maps/@50.8274276,4.3410342,14332m/data=!3m1!1e3!5m1!1e1?hl=en>)



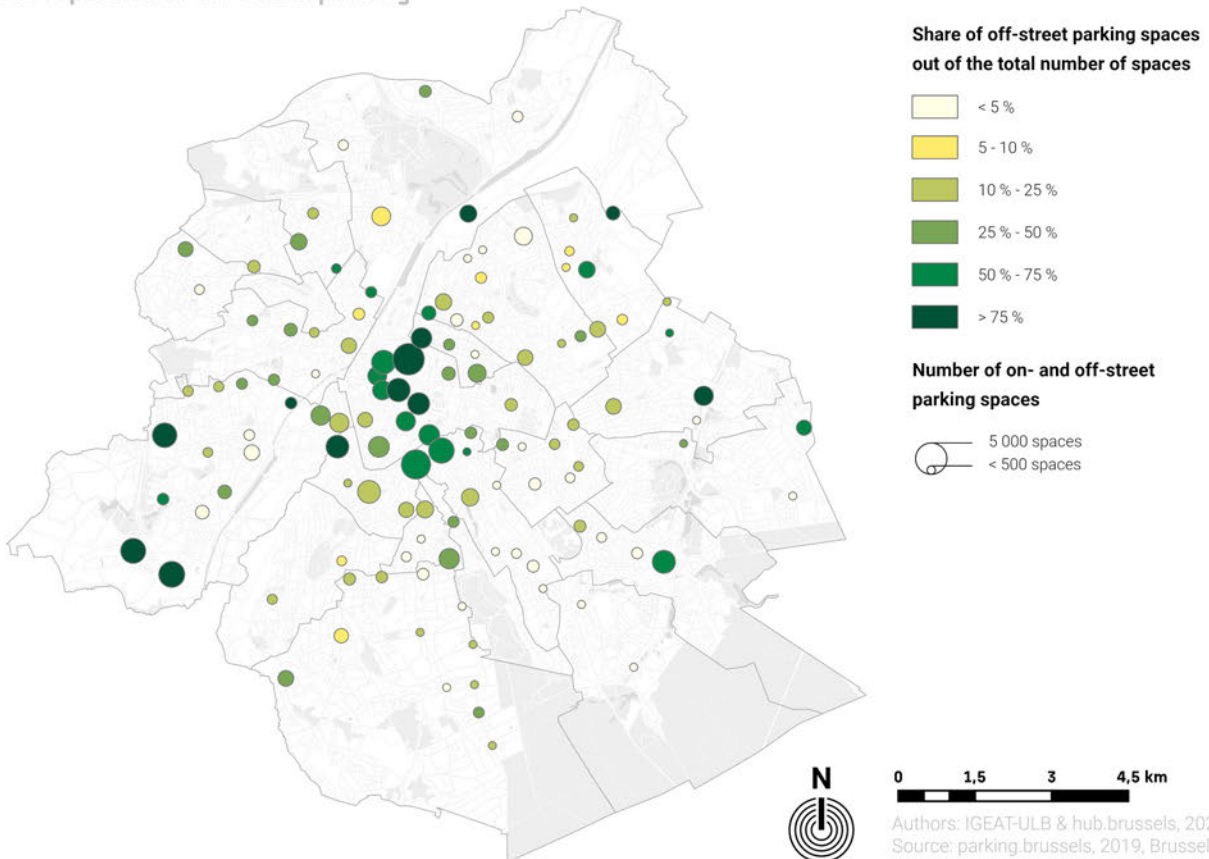
Figure 3

## Parking supply accessible to customers of the commercial centres

### A. Total supply (on- and off-street)



### B. Proportion of off-street parking



# On-street parking occupancy

## Source

parking.brussels  
& Brussels Mobility, 2019

Parking data are based on surveys carried out by parking.brussels and Brussels Mobility for each street section and block in the Region. Occupancy data are the result of field surveys by parking.brussels and only concern on-street parking. There is no systematic survey of off-street parking occupancy, probably because there is less pressure on off-street parking and these commercial data are the property of the car park managers<sup>19</sup>.

## Indicator

on-street parking occupancy rate  
on weekdays

The on-street parking occupancy rate is the ratio of the number of spaces occupied by a vehicle at the time of the survey to the total number of spaces available. This rate is calculated per centre according to the same perimeter as that used to determine the parking supply (perimeter of commercial centres as well as roads and blocks located within 100 meters of such centres). The occupancy rate is broken down into four time slots: 5am - 7am, 10am - 12am, 3pm - 5pm and 8pm - 10pm. While the first slot allows us to assess the occupation of parking spaces by local residents, the following two show the pressure that other people frequenting the centres (workers, shoppers, etc.) exert on parking. The last slot is meant to be intermediate since, depending on the centre, it could be both residents and people frequenting the centre in the evening (for the hospitality or cultural offer in particular).

## Interpretation

Parking spaces are considered to be saturated (i.e. difficult to find a space) at 90% occupancy. However, this rate is reached in many commercial centres in the city centre and inner suburbs during the day<sup>20</sup>. These occupancy rates are not specific to retail spaces; they are generally observed in densely occupied districts in the Region. However, these parking problems are undoubtedly more problematic for retail, since it bases its operations on attracting a flow of customers, particularly motorists, who visit the district for a limited period of time and for whom time lost searching for a space is therefore proportionally more detrimental.

The commercial centres in the city centre are distinguished by the large range between the intense daytime occupation linked to commercial and professional activities and the low night time occupation due to the low density of inhabitants and their lower car ownership rate. The situation is particularly visible in Rue Neuve, the Sablon and in Mont des Arts. It should be noted that this high parking occupancy continues into the evening hours, due to the importance of hospitality and leisure activities.

On the contrary, the commercial centres in the inner suburb have a permanently high parking occupancy rate, due to the higher density of inhabitants (with relatively similar car ownership rates) and activities, as well as the lower parking supply. This is the case, for example, in the centres of Saint-Gilles, Molenbeek, Saint-Josse and even in the most central centres of Schaerbeek (Sainte-Marie, Josaphat, Coteaux, etc.).

In the outer suburbs (i.e. in the municipalities of Uccle, Auderghem, Evere, etc.), the lower density of inhabitants and activities and the higher ratio of parking spaces per establishment lead to less pressure on the supply of on-street parking, despite a higher car ownership rate.

The saturation of on-street parking in the main commercial centres of the city centre is, in quantitative terms, relatively unproblematic for the accessibility of stores by car, because it is offset by a large supply of off-street parking, the occupancy rate of which is lower. Even in the city centre, this saturation rate is estimated at less than 60%<sup>21</sup>.

<sup>19</sup> [https://mobilite-mobiliteit.brussels/sites/default/files/gm\\_q7\\_stationnement\\_fr\\_v4.pdf](https://mobilite-mobiliteit.brussels/sites/default/files/gm_q7_stationnement_fr_v4.pdf)

<sup>20</sup> [https://mobilite-mobiliteit.brussels/sites/default/files/plan\\_stationnement.pdf](https://mobilite-mobiliteit.brussels/sites/default/files/plan_stationnement.pdf)

<sup>21</sup> [https://derivations.be/archives/numero-1/plateforme\\_marolles.html](https://derivations.be/archives/numero-1/plateforme_marolles.html)

However, the effective use of off-street parking still needs to be maximised and better utilised. On the other hand, the situation is more critical in the inner suburbs, partly because of the permanent saturation of parking, and partly because of the lower supply of off-street parking available to customers. This reinforces the previous observations: in these spaces, the centres targeting non-Brussels customers or those accommodating large markets experience strong, permanent or occasional parking pressure.

Of course, more recent commercial centres (particularly shopping centres) organised around vast off-street parking spaces are, except in exceptional cases<sup>22</sup>, much less affected by this problem.



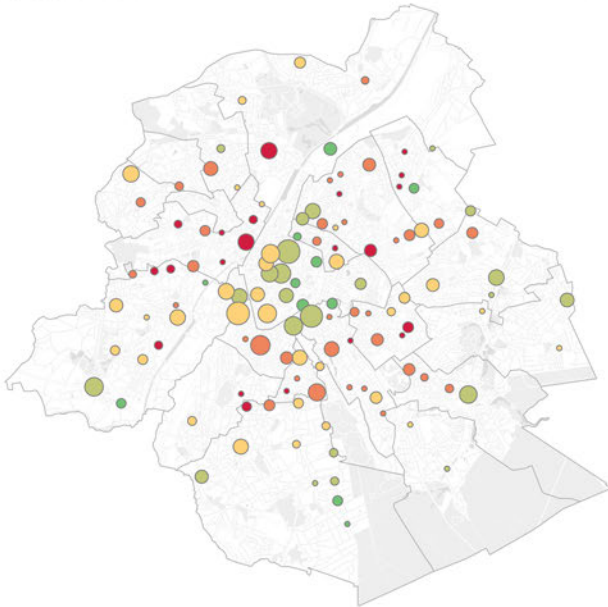
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22 Think for example of match days in Anderlecht, which require specific management for the Westland Shopping Centre.

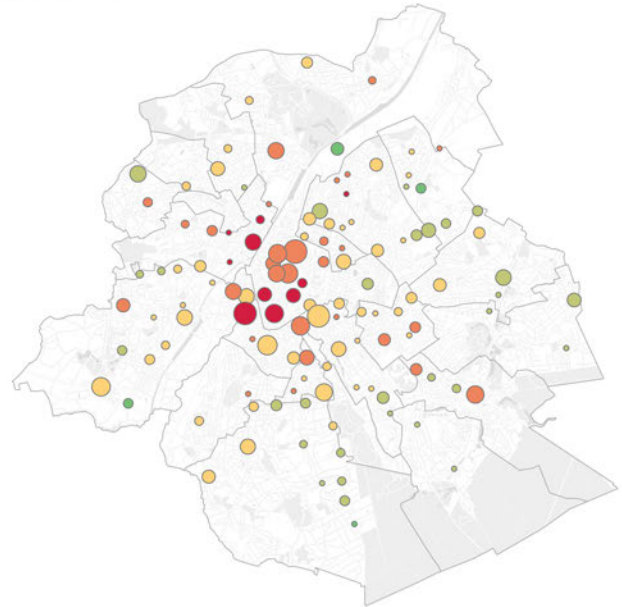
Figure 4

### On-street parking occupancy on weekdays in the commercial centres

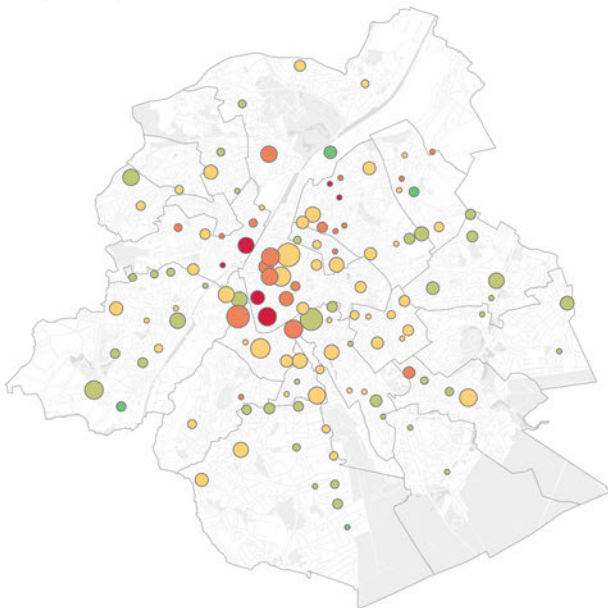
A. 5am - 7am



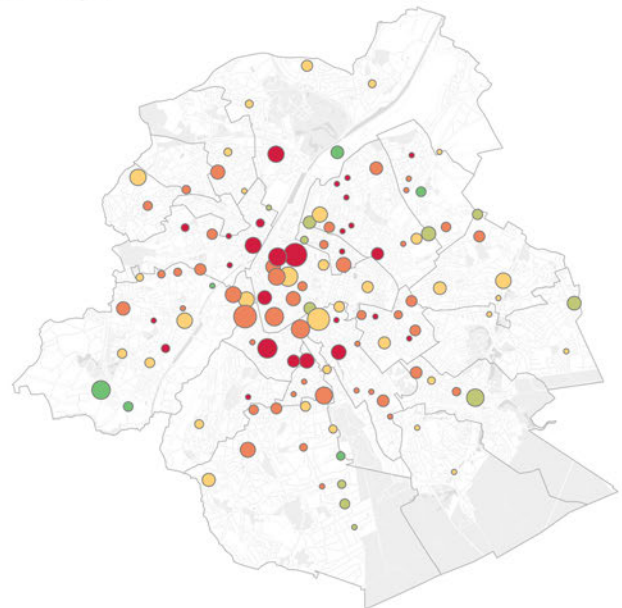
B. 10am - 12pm



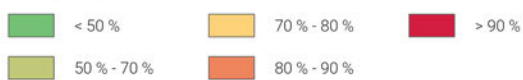
C. 3pm - 5pm



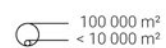
D. 8pm - 10pm



**Occupancy rate**



**Surface area of buildings occupied by a store**



0 2,5 5 7,5 km

Authors: IGEAT-ULB & hub.brussels, 2022  
Sources: parking.brussels, 2019, Brussels Mobility, 2019 & hub.brussels, 2022

# Accessibility of commercial centres using public transport

## Sources

STIB, De Lijn, TEC and SNCB, 2021

The indicator for the quality of public transport accessibility is based on data in GTFS format produced by public transport operators. This data format provides information about the transport network (route, stops, etc.) from a geographical perspective but also gives access to temporal information related to the movement of the rolling stock (frequency of travel, travel time between stops, etc.).

## Indicator

Average access time by public transport

To assess the quality of the public transport accessibility of a commercial centre, an average access time from all public transport stops in the Brussels-Capital Region to this centre is calculated. This calculation combines the offer of the four operators (STIB, De Lijn, TEC, SNCB) at three times of the day (average access times at 8am, 12pm and 4pm on weekdays) and is then used to assess the quality of the regional public transport service. Public transport stops within 100 meters of the commercial centres were taken into account.

## Interpretation

The average access time from all possible departure points in the Brussels area to the commercial centres is about 32 minutes. Nevertheless, this average time hides a high variability in the quality of the service between the centres. Thus, there is a strong centre-periphery gradient resulting from the organisation of the public transport offer designed to provide the city centre with a good service. Indeed, the metropolitan and national rail service, organised mainly for commuters' journeys, is centred on the main stations in the capital (Nord, Centrale, Midi and Schuman). Similarly, the metropolitan offer of the interregional operators (TEC or De Lijn) also targets the office districts of the city centre by running along the main roadways (in particular, the Chaussée de Ninove, Chaussée de Louvain, Chaussée de Wavre, Chaussée de Waterloo or Chaussée de Gand). Even the STIB's offer is organised around serving the main activity centres to and from the major stations. The best accessibility by public transport is therefore in the areas surrounding the Nord, Centrale and Midi railway stations, as well as the European district.

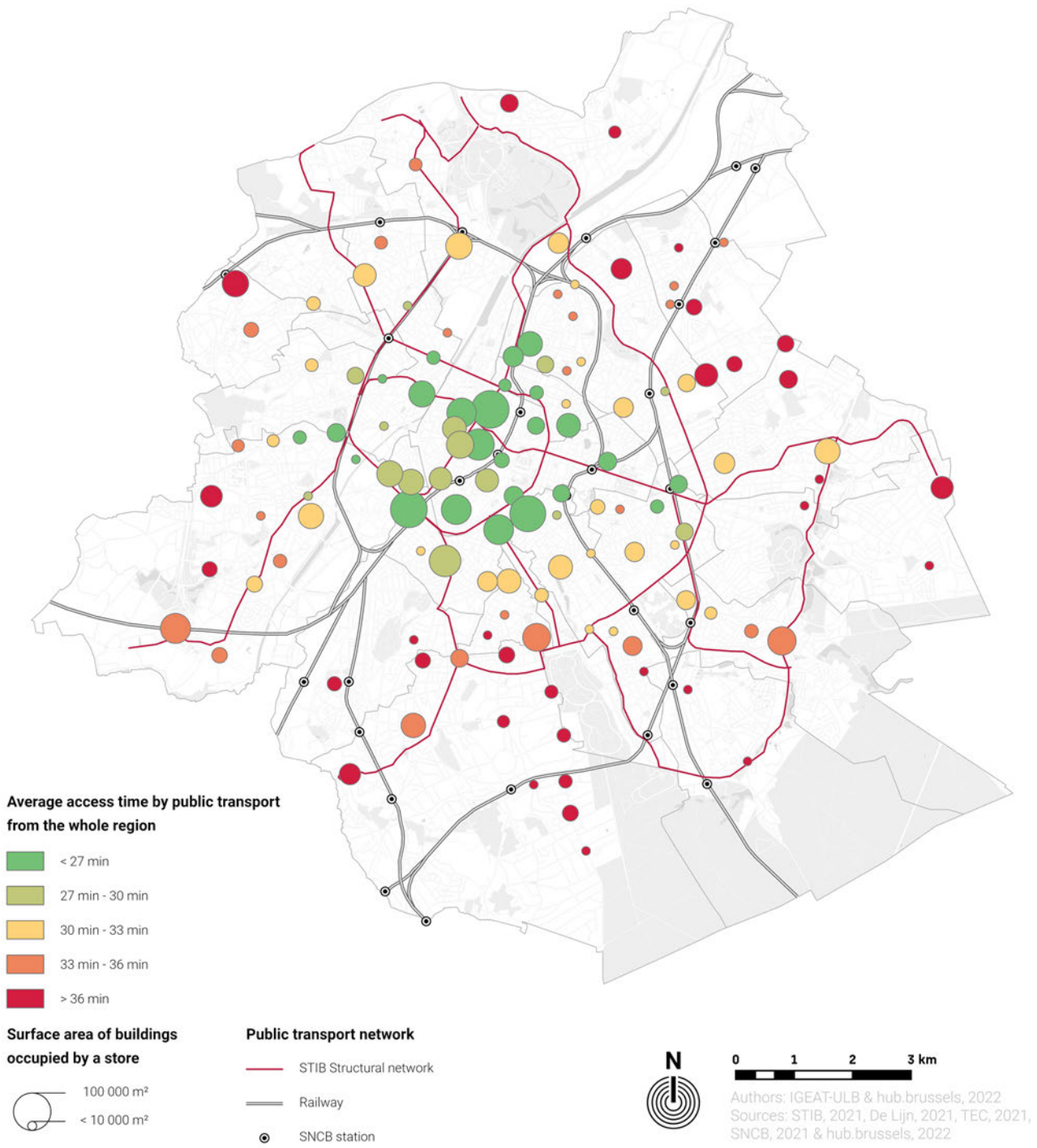
The positive impact of urban public transport lines (metros and trams with dedicated routes) on the accessibility of the commercial centres is clear. In the inner suburbs, they provide a good quality service to the commercial centres located along the Chaussée de Gand (Molenbeek - Centre, Étangs Noirs and Karreveld), the avenue Louise (Vleurgat and Bailli - Châtelain) or near centres such as Mérode (Place Saint-Pierre and Tongres), the Gare de l'Ouest railway station, etc. In the outer suburbs, this better service is apparent at Miroir, Woluwe Shopping Centre, Docks Brussel and Hankar. However, the commercial centres of Uccle, Evere, Forest, Boitsfort or Ganshoren and Neder-Over-Hembeek, which are far from the centre and are not served by rapid urban public transport lines, appear to be poorly accessible. In relation to their proximity to the centre, this is also the case for the commercial centres of Schaerbeek and Ixelles, for which the public transport offer depends essentially on buses and trams running on the surface, but not necessarily in dedicated lanes.

From the point of view of the link with the structure of the commercial offer, the commercial centres with a strong reach from the city centre have good accessibility by urban, metropolitan and national public transport. Think for example of the Rue Neuve, Louise or the Sablon. This potentially allows them to attract regional and metropolitan customers by avoiding the use of the car. This is also the case for a limited number of shopping centres or business parks in the outer suburb, those located near a metro station (which generally also corresponds to the terminus or a transit point for the interregional buses of the TEC or De Lijn connecting Brussels to its nearby outskirts) such as the Woluwe Shopping Centre, Docks Brussel or Auderghem Shopping Others, such as the Basilix Shopping Centre or Westland Shopping Centre, therefore continue to rely more heavily on road accessibility. In the inner suburbs, the accessibility of the south-eastern and eastern centres of Brussels is poorer, due to the absence of major public transport lines and the poor performance of the surface network in this dense urban fabric. This is the case for example for Janson - Ma Campagne, the Bascule and the Cimetière d'Ixelles.

For the smaller commercial centres, such as Place Brugmann in Ixelles, Parc Vives in Anderlecht or Vekemans in Neder-Over-Hembeek, the poorer average accessibility by public transport is less detrimental, given their more limited reach. A calculation for local public transport accessibility would probably provide a more refined, but probably very similar picture. The structuring lines (metro and trams lines, but also railways) also polarise the local public transport offer; the classic bus and tram lines seek to bring passengers back to the main metro and trams stations and stops.

Figure 5

### Quality of public transport accessibility of commercial centres



# Typology of the mobility of the commercial centres



In order to summarise the results obtained above, a typology has been created using a factorial analysis designed to summarise the parking supply and demand described by the indicators relating to the supply of on- and off-street parking (Figure 3), the occupancy rate of on-street parking (Figure 4) as well as the quality of accessibility by public transport (Figure 5). The results for customer mobility (Figure 2) are not included since they are not available for all centres.

This summary has resulted in a **typology of six categories** based on a dual opposition. The first creates a centre-periphery divide and differentiates between commercial centres which are more central with good public transport accessibility and high pressure on on-street parking on the one hand, and centres with poor public transport accessibility and low pressure on on-street parking - characteristics found mainly in the inner suburbs, on the other. The second opposition differentiates the commercial centres according to the share of off-street parking they provide.

**The first category (“A”, in red) includes centres with good public transport accessibility, high pressure on on-street parking, and little off-street parking.** These are central retail spaces, well located on the STIB’s key arteries, but where the pressure on parking is significant because on-street saturation is not offset by the off-street offer. This category mainly includes the centres and main districts of the municipalities in the inner suburbs (Saint-Gilles, Molenbeek and Saint-Josse for the centres and Bara, Cureghem, Brabant and Sainte-Marie for the rest), but also the Marolles and Lemonnier in Brussels and Tongres and Saint-Michel in Etterbeek. These are mostly older retail spaces with narrow streets and a dense urban fabric limiting the parking supply (both on- and off-street) but with a high demand for parking due to population density. While, despite everything, this pressure on road accessibility is offset by good accessibility by public transport, it becomes concerning for those centres with a national or even international reach (Brabant, Lemonnier, the Marolles or Molenbeek - Centre) and should prompt a priority analysis of the mobility situation and the feelings of retailers and shoppers.

**The second category (“B”, in orange) includes centres with average accessibility by public transport and a low supply of off-street parking.** These are village centres or old districts (Anderlecht - Centre, Flagey, Bockstael, Miroir, La Chasse, Bailli - Châtelain, Dailly, Cimetière d’Ixelles and Helmet). These are retail spaces with municipal or regional scope. Parking pressure is still high, although a little less than in the previous category. Accessibility by public transport is relatively good on a regional scale, but not very efficient on a metropolitan or Belgian scale, due to the distance from stations or major urban public transport routes. In the case of centres with a greater reach (e.g. Bockstael or Bailli - Châtelain) this average accessibility is more problematic.

**The third category (“C”, in yellow) groups together centres with poor public transport accessibility, a low supply of off-street parking and low pressure on on-street parking.** These are essentially small commercial centres (with the exception of Uccle - Centre) located in the outer suburbs, such as Evere - Centre, Chant d’oiseaux, Moortebeek or Vivier d’Oie. These centres are essentially local in reach and have either road or pedestrian access. The poor accessibility by public transport on a regional scale is of lesser importance and the supply of on-street parking is sufficient to meet the needs of shoppers.

**The fourth category (“D”, in purple), groups together centres combining good public transport accessibility and a high supply of off-street parking, which compensates for the pressure on on-street parking.** These are essentially the commercial centres of the city centre and its surrounding areas: Grand-Place, Dansaert, Rue Neuve, Boulevard de Waterloo, Louise and Porte de Namur. These are centres with a strong regional and national reach, which concentrate the large chain stores of integrated trade and commercial activities linked to the tourist hypercentre. They take advantage of the large public car parks on the inner ring road and its surrounding areas. Their good multi-modal accessibility, both by car and by public transport, is consistent with their extensive reach. This category also includes smaller centres located in the immediate vicinity of train or metro stations, such as Gare de l’Ouest, Trône, Aumale, Luxembourg, Gare du Nord and Belgica. The majority of these centres live off the Brussels or metropolitan customers that are passing through.

**The fifth category (“E”, in bright blue), includes planned shopping centres located on fast metro or tram routes (Docks Bruxsel, Woluwe Shopping Centre, Auderghem Shopping).** They combine very good road accessibility and a large parking supply for their metropolitan and national customers with good public transport accessibility for their urban customers. In this context, it is interesting to find Tour & Taxis in this category, as the commercial developments underway are indeed aimed at a high profile customer base. There are also a few commercial centres with a large supply of off-street parking and relatively good accessibility by public transport (Veeweyde, Vleurgat, Jourdan).

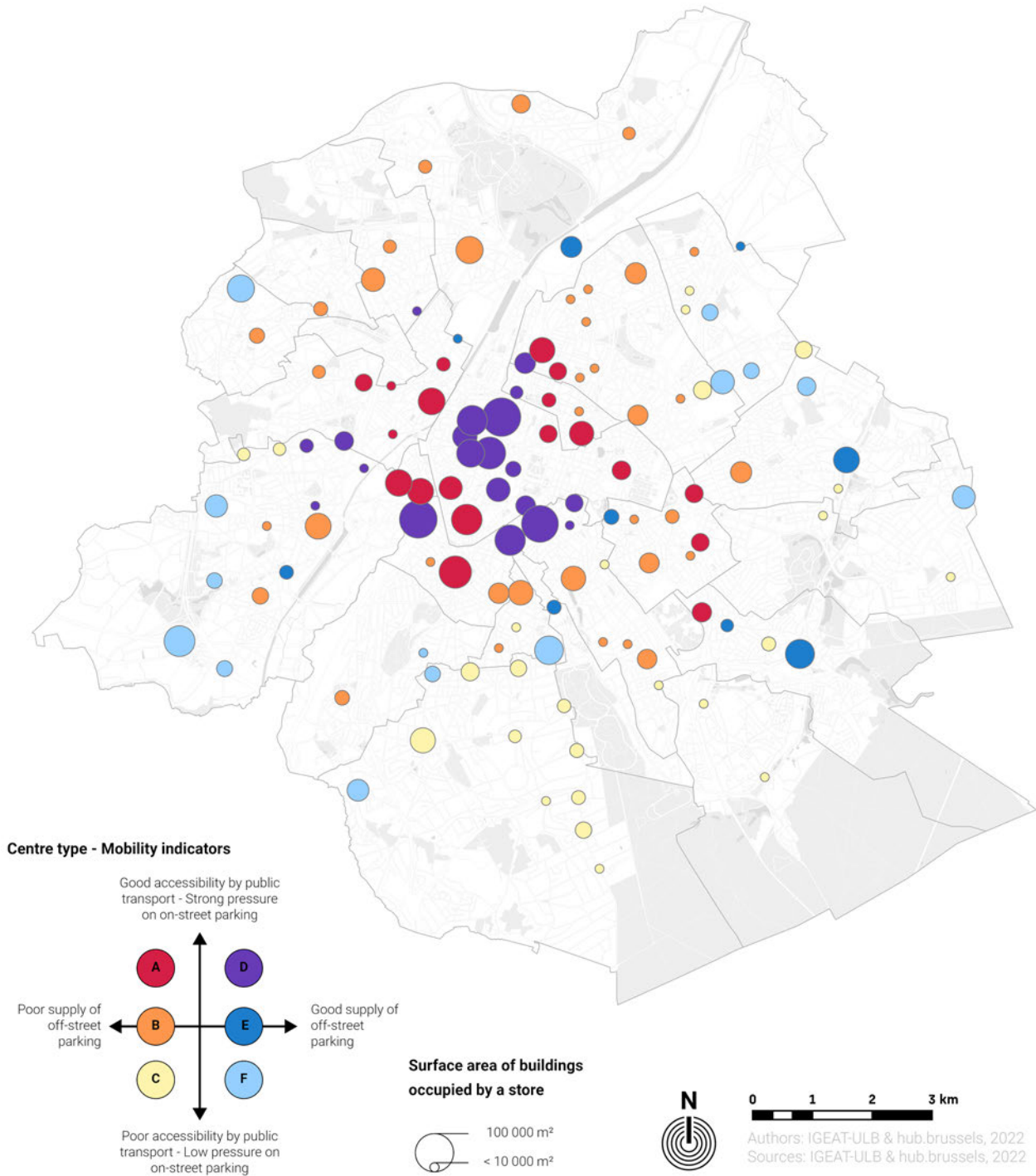
**The last category (“F”, in light blue) groups together centres with poor public transport accessibility but a good supply of off-street parking.** This time, these are commercial centres on the outskirts containing large supermarkets (Basilix Shopping Centre, Woluwe Shopping Cora, Stalle, Westland Shopping, Anderlecht - Shopping Cora), but also commercial centres located in the outer suburbs (Bascule, Étoile - Coghen, Evere Shopping, and in the areas surrounding the Leuven, Ninove and Waterloo motorways), which also include generalist supermarkets. These centres have a regional or even metropolitan reach and are mainly accessible by car, especially those located at the entrance to the city. These are relatively new centres, developed in line with the spread of road mobility.





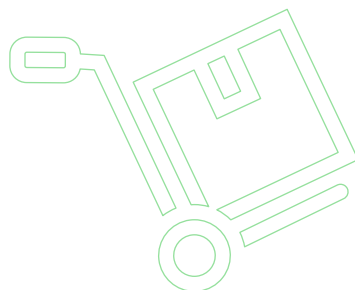
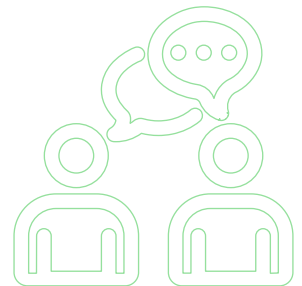
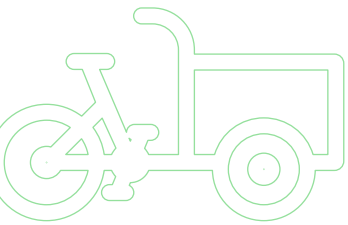
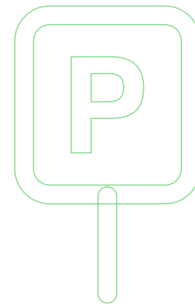
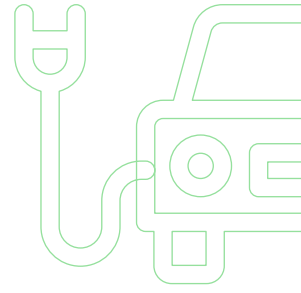
Figure 6

## Typology of commercial centres according to mobility indicators



# Retail logistics

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# Estimated weekly deliveries generated by commercial activity

## Source

Bruxelles Mobility, 2012 based on the Freturb model developed by the LAET (Université de Lyon)

The estimated deliveries are based on the Freturb model developed by the Laboratoire Aménagement Economie et Transports of the Université de Lyon, which estimates the flows of goods and vehicles generated by economic activity. Each activity is assigned a delivery ratio that depends on the size of the establishment, the volume of sales and the organisation of deliveries. This Freturb model has been used and adapted to the Brussels situation as part of an order from Brussels Mobility<sup>23</sup>.

## Indicator

density of deliveries per store and per 100 m<sup>2</sup> of estimated retail space

Thus, depending on the type of products sold, whether the establishment belongs to a chain store network and its size, each store is assigned a value estimating the number of deliveries it receives each week. These individual values are then grouped by commercial centre and therefore provide an estimate of the total number of weekly deliveries taking place in the centre. This total is then divided by the number of stores in the centre or by the recorded surface area of these stores to obtain two average values and thus support comparability between centres.

## Interpretation

For a better understanding of the data from the model, it is important to know that:

- all things being equal, the average frequency of deliveries per store increases with store size, as the volume of goods sold follows the same trend, resulting in a greater need for deliveries;
- for the same sales area and similar activity, the frequency of deliveries is higher in independent stores than in chain stores or branches, due to the more limited integration of the supply chain and the more frequent use of small vehicles (private cars and vans);
- from an activity point of view, food stores, pharmacies and kiosks generate a greater frequency of deliveries than non-food stores for organisational reasons: newspapers have to be delivered every day, medicines several times a day because of storage constraints and the urgency of making them available, and food products also have a limited shelf life.

On a regional scale, it is estimated that retail generates about one third of the road freight journeys in Brussels, making it the activity that generates the most flows<sup>24</sup>. On average, the stores studied receive about one delivery a

day. In relation to the estimated sales area, 100 m<sup>2</sup> of stores generate approximately four deliveries per week. Across the 123 commercial centres considered, the average number of weekly deliveries is estimated at 118,000. Obviously, this total is distributed very differently depending on the size of the centres. Those with many outlets (such as Saint-Gilles - Centre, Saint-Jacques, Grand-Place, Porte de Namur and Rue Neuve) receive almost 4,000 deliveries per week, while the smaller centres (Parc Vives in Anderlecht, Sainte-Alix or Altitude 100) receive fewer than 250 deliveries per week.

When we analyse the density of deliveries in relation to the number of stores, new logistics profiles emerge that differentiate between the centres independently of their size. The frequency of deliveries per store is higher in the shopping centres at the entrance to the city and in the centres located along the roadways. This result can be explained by the predominance of general or specialised mass retailing, where the surface area per store leads to large sales volumes and therefore deliveries. On the other hand, we observe lower delivery frequencies per store in the central centres (because they contain smaller outlets generating lower sales volumes) and in those which are mainly composed of non-food stores (Shopping centres in Woluwe and Anderlecht and specialised centres in the city centre such as the Marolles, Dansaert and Sablon).

<sup>23</sup> [https://mobilite-mobiliteit.brussels/sites/default/files/le\\_transport\\_de\\_marchandises\\_0.pdf](https://mobilite-mobiliteit.brussels/sites/default/files/le_transport_de_marchandises_0.pdf)

<sup>24</sup> idem

Compared to estimated retail space, the picture of delivery density is quite different. A gradient appears between commercial centres with a high proportion of chain store outlets, where the density of deliveries is lower due to more integrated supply chains, and those dominated by independent retailers, where the density of deliveries is higher. As a result:

- the shopping centres in the outer suburbs as well as the central centres with a strong reach (with numerous chain stores) present a low ratio of deliveries per m<sup>2</sup> (and in fact also a greater concentration of these, by grouping and use of trucks);
- the small centres and those in the inner suburbs have high delivery densities because of their commercial structure, but also probably because of higher rents, which lead to higher sales volumes per m<sup>2</sup> of retail space, and a higher intensity of use of the sales areas;

- the effect of the hospitality industry, which generates a greater density of deliveries, is visible around the Grand Place and in the central centres of the Brussels municipalities (Saint-Gilles with the Parvis, Bockstael, Place de la Vairance in Anderlecht and Place Saint-Josse).

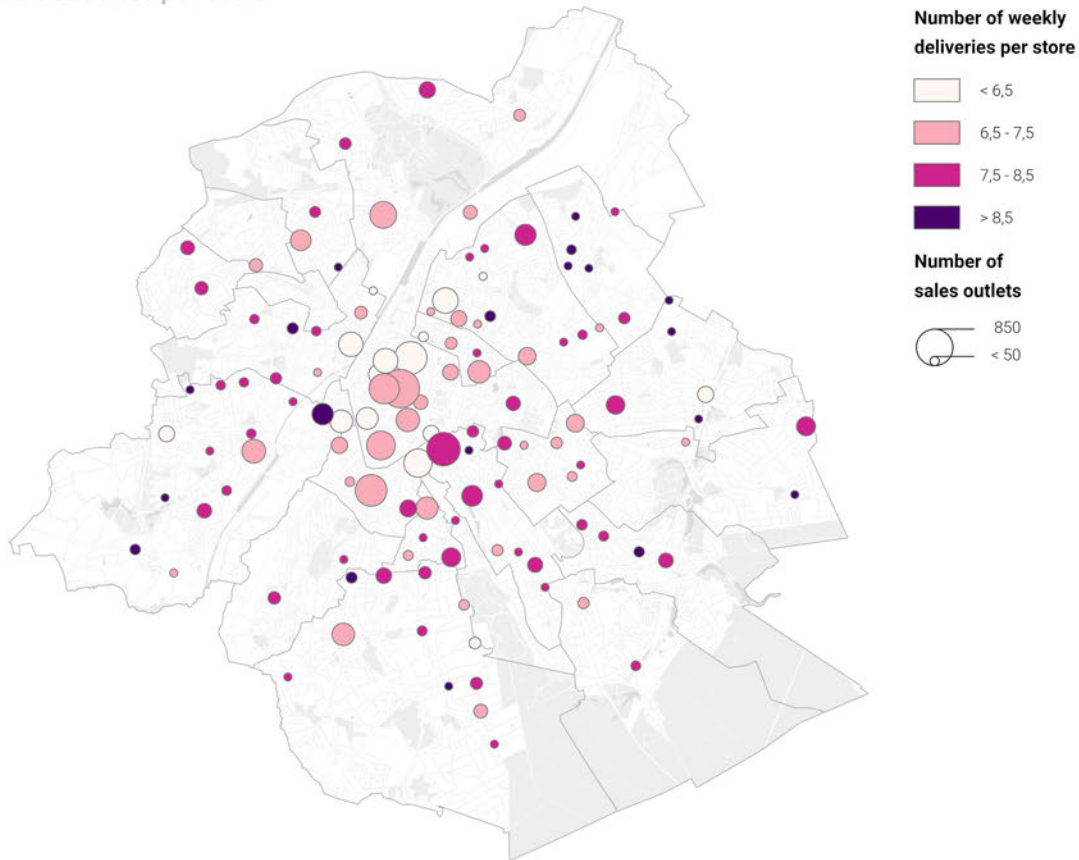
It should be noted that these delivery density profiles lead to different needs in terms of delivery spaces. In general, shopping centres and large chain stores have dedicated off-street logistics spaces. On the other hand, the more central commercial centres and independent retailers are more dependent on on-street parking and logistics spaces.



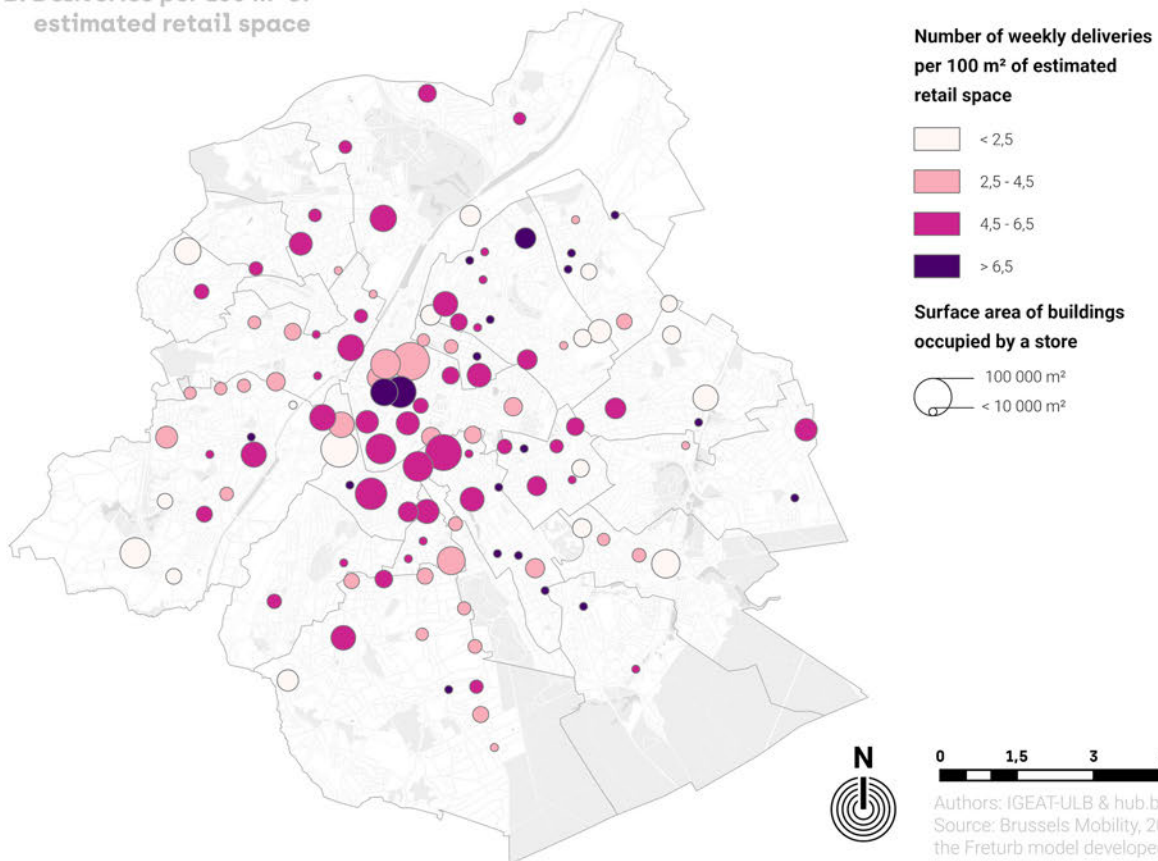
Figure 7

## Delivery density in commercial centres

### A. Deliveries per store



### B. Deliveries per 100 m<sup>2</sup> of estimated retail space



0 1,5 3 4,5 km

Authors: IGEAT-ULB & hub.brussels, 2022  
Source: Brussels Mobility, 2012, based on the Freturb model developed by LAET (Univ. de Lyon) & hub.brussels, 2022.

# Heavy goods vehicle traffic generated by commercial activity

## Sources

Brussels Mobility, 2021 & Brussels Mobility, 2012 based on the Freturb model developed by LAET (Université de Lyon)

The indicator for heavy goods vehicle traffic is estimated from data from the national kilometre tax on vehicles with a payload of more than 3.5 tonnes. In order to collect this tax, all relevant vehicles must be equipped with a GPS terminal that allows them to record their route accurately and determine the amount of the tax. An anonymous extract of these readings was made available to us by Brussels Mobility for the purposes of this study. It covers a typical week (week of 22 March 2021).

It is important to note that the data do not provide any information on the nature of the lorries (dump trucks, conventional heavy goods vehicles, waste trucks, etc.), nor on the goods transported (or not), nor on the associated activity (delivery, construction site, waste collection, postal activity, etc.). It is therefore an estimate based on vehicle travel alone. However, this method has already been used for other traffic analyses in Brussels and validated by field surveys. In addition, because the data provides information on lorries, the indicator does not cover journeys made by vans. However, vans represent the majority of traffic linked to retail logistics (even if their presence is often perceived, sometimes wrongly, as less of a nuisance than heavy goods vehicles).

For this reason, a second indicator has been created which assesses the proportion of heavy goods vehicles in all deliveries based on data from the Freturb model.

## Indicators

Density of heavy goods vehicle deliveries and proportion of heavy goods vehicle deliveries

The estimated density of heavy goods vehicle deliveries in the commercial centres is based on the stops of vehicles affected by the tax within the perimeters of the commercial centres and within a radius of one hundred metres around them. A stop of more than 20 minutes in a commercial centre is considered a probable delivery. The indicator obtained is the sum of the number of stops counted in a centre over the period of the anonymous extract obtained in relation to the number of stores, which allows comparability between centres that vary greatly in size.

The index of the proportion of heavy goods vehicle deliveries, based on estimates from the Freturb model, is the ratio between the number of deliveries made by heavy goods vehicles and the total number of deliveries. The number of weekly deliveries (heavy goods vehicles and total) varies for each store, depending on the type of products sold, whether they belong to a chain store network and their size. These individual values are grouped by centre and the index calculated gives a proportion that supports comparability between centres.

## Interpretation

Regionally, estimates from the kilometre tax show that just over 13,000 deliveries would be made by heavy goods vehicles every week in the commercial centres, which is equivalent to 0.8 deliveries per store. This average once again hides differences between the different centres in the Region. For example, higher values are observed in the commercial centres of the outer suburbs where general and specialised supermarkets are located (Cora in Anderlecht, Basilix Shopping Centre, Auderghem Shopping, etc.). These companies use heavy goods vehicles more systematically, enabling them to streamline their logistics, organise deliveries into rounds and reduce the number of journeys and the frequency of deliveries. In addition, the predominance of large food stores in the centres results in a high use of heavy goods vehicles since goods deliveries are often daily (e.g. Stalle).

Centres bordering the roadways (Gare de l'Ouest, Reyers, Mettwie, etc.) also make greater use of heavy goods vehicles because of the higher presence of chain stores (food and non-food), but also because of the over-representation of shops selling bulky products (building materials, car-related shops, furniture, household appliances) which encourage the use of lorries.

However, the use of heavy goods vehicles is less frequent in the inner suburbs and the city centre, where the proportion of independent retailers is higher: Grand-Place, Saint-Gilles - Centre, Saint-Jacques, Schuman-Berlaymont, etc. Individually, these stores do not generate a volume of deliveries that would justify the use of heavy goods vehicles and their logistical organisation is more rarely based on rounds. Therefore, vans are more systematically used.

The proportion of deliveries made by heavy goods vehicles is estimated at 31% according to data from the Freturb model. While the observations for the inner and outer suburbs remain broadly similar to the density index, the city centre does not present the same results.

This difference can be explained by the specific offer of these centres which, proportionally, have fewer food stores (which limits daily deliveries by lorries) and more specialised stores (clothing for the Rue Neuve or the Grand-Place and bulky products for the Sablon and the Marolles) which nevertheless require the use of lorries and result in a significant share of this type of vehicle in the total number of deliveries made.

These observations lead to several conclusions. Firstly, while heavy goods vehicles have a major individual impact on traffic, road safety and noise, they also make it possible to reduce the frequency of deliveries for their users and streamline flows. For the same volume of goods, their

replacement by vans (due to a ban on heavy goods vehicles, for example) would lead to additional traffic and higher space and energy consumption, given the dispersion of flows in a larger number of vehicles.

Secondly, the composition of the commercial fabric generates different logistical needs. Centres with many general and specialised mass retail stores (textiles, furniture, DIY, etc.) require roads and parking areas adapted to heavy goods vehicle traffic.

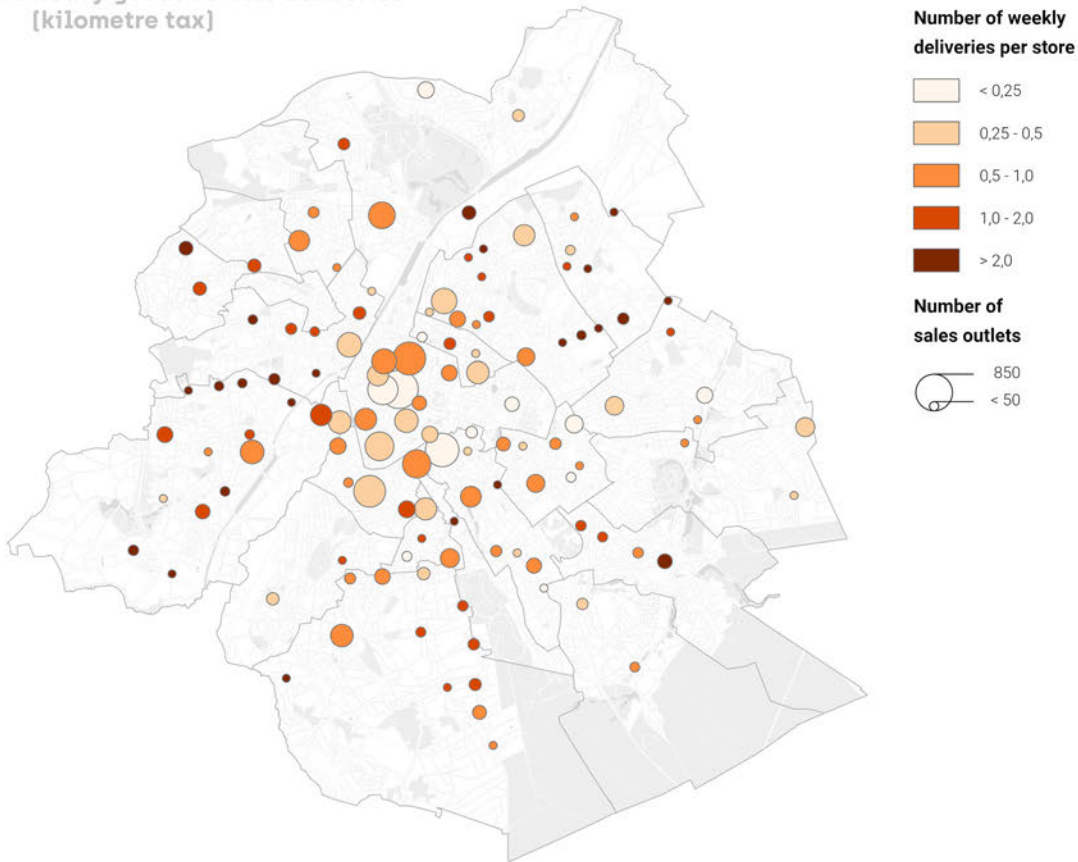
Lastly, a third and final element is the development of chain store networks and the diversification of their concepts: small supermarkets replacing independent grocery stores, increase in the number of hospitality chains, etc. This trend leads to a change in logistics needs, even without any apparent transformation of the commercial fabric, with more frequent use of heavy goods vehicles by the increasing number of integrated trade businesses (but at the cost of less frequent deliveries).



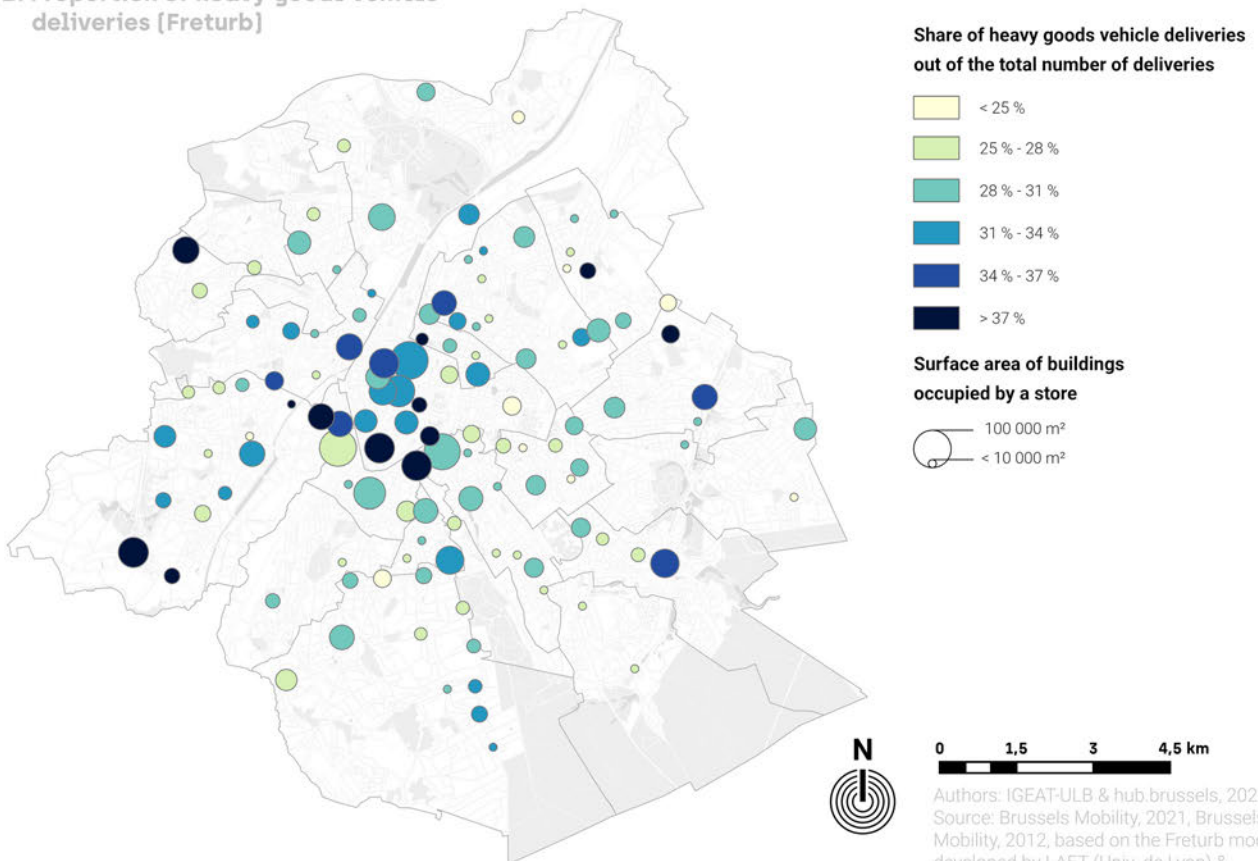
Figure 8

## Density of heavy goods vehicle deliveries in commercial centres

### A. Heavy goods vehicle deliveries [kilometre tax]



### B. Proportion of heavy goods vehicle deliveries [Freturb]





# Parking for deliveries

## Sources

parking.brussels & Brussels Mobility, 2019 & Brussels Mobility, 2012 based on the Freturb model developed by LAET (Université de Lyon)

Information about on-street parking for deliveries is taken from parking.brussels data. While the number of parking spaces is available, information on the size of those spaces is not. In addition, no information is available on off-street spaces (which are typically stores with larger sales areas, integrated trade or shopping centres).

The estimated deliveries are based on the Freturb model, which estimates the flows of goods and vehicles generated by economic activity. Each activity is assigned a delivery ratio that depends on the size of the establishment, the volume of sales and the organisation of deliveries.

## Indicators

### Number of delivery spaces and deliveries per space

Parking for deliveries counts the number of dedicated parking spaces in a perimeter that includes the roads and blocks located in the centres or within 100 meters of their boundary. With regard to the problem, this makes it possible, for example, to take into account new processes imposed on the pedestrian area of the city centre or even the “service” entrances at the back of the block. This total number of spaces is then divided by the number of stores located in the centre. The spaces taken into account are those reserved for deliveries and heavy goods vehicles as well as permitted spaces dedicated to deliveries.

The second indicator is the ratio between the estimated number of weekly deliveries in the centre and the number of parking spaces dedicated to deliveries.

## Interpretation

The geography of on-street delivery spaces in and around Brussels’ commercial centres is complex to interpret.

There appears to be a centre-periphery gradient, with a greater density of delivery spaces in the city centre. This would be consistent with the following logic: within dense areas, there is less opportunity for off-street delivery zones and more pressure on parking. Spaces dedicated to on-street deliveries are therefore all the more useful. However, a great heterogeneity appears, including between centres in the same municipality or neighbouring districts.

The very low ratios of delivery spaces in developed shopping centres are explained by the presence of off-street logistics zones developed on the shopping site itself. Several commercial centres offer a low ratio of parking for deliveries, such as the pedestrian area in the centre of Brussels, the paved square in the centre

of Saint-Gilles or the Place Miroir in Jette, because they have public squares or pedestrian streets that serve as parking areas for deliveries at certain times of the day. On the other hand, the relatively low rates in the Brabant, Molenbeek - Centre and Bockstael districts are more unexpected in view of the commercial and urban fabric. Retailers in these densely-populated districts, where the offer is made up of small retail spaces, are likely to rely on on-street parking for delivery vehicles.

In this context, a 2012 study on the organisation of deliveries to stores in Brussels quantified the need for delivery spaces according to the commercial structure and based on the French figures<sup>25</sup> that continue to be used as a reference<sup>26</sup>. The estimate is based on the assumption that an on-street delivery area can handle an average of 3 deliveries per hour, or about 20 deliveries per day or 100 per week.

25 2012, Les livraisons en voirie en Région de Bruxelles-Capitale, Les cahiers du moniteur de la Mobilité et de la Sécurité routière, n°8, <https://mobilite-mobiliteit.brussels/sites/default/files/organisationdeslivraisonsenvoie.pdf>

26 Certu (2013), Aires de livraison: planifier, aménager et gérer l'accueil des véhicules. Mobilités et transports, Outils et Méthodes, [http://www.drome-ecobiz.biz/upload/docs/application/pdf/2014-09/aires\\_de\\_livraison.pdf](http://www.drome-ecobiz.biz/upload/docs/application/pdf/2014-09/aires_de_livraison.pdf)

In the current situation in Brussels, the relationship between the estimated frequency of deliveries per commercial centre and the dedicated supply of on-street parking reveals very different situations. As already explained, certain ratios of deliveries per available space seem high (notably in the City Centre, the Miroir or Saint-Gilles - Centre centres) but hide the presence of pedestrian areas accessible for deliveries at certain times of the day.

Apart from these exceptions, the ratios are lower in the centre of the agglomeration than on the outskirts. This could be explained by greater pressure on parking in general and less availability of off-street delivery space, which requires greater regulation and organisation of on-street deliveries. Situations also seem to vary from one municipality to another, with high rates in Etterbeek, Uccle and the two Woluwe, and lower rates in Ixelles, Schaerbeek and Evere.

This could illustrate different municipal policies. Finally, some commercial centres that do not offer any delivery spaces or have very high rates correspond to shopping centres that organise most of their logistics off the street: Docks Bruxsel, Woluwe Shopping Centre or Cora in Anderlecht for example.

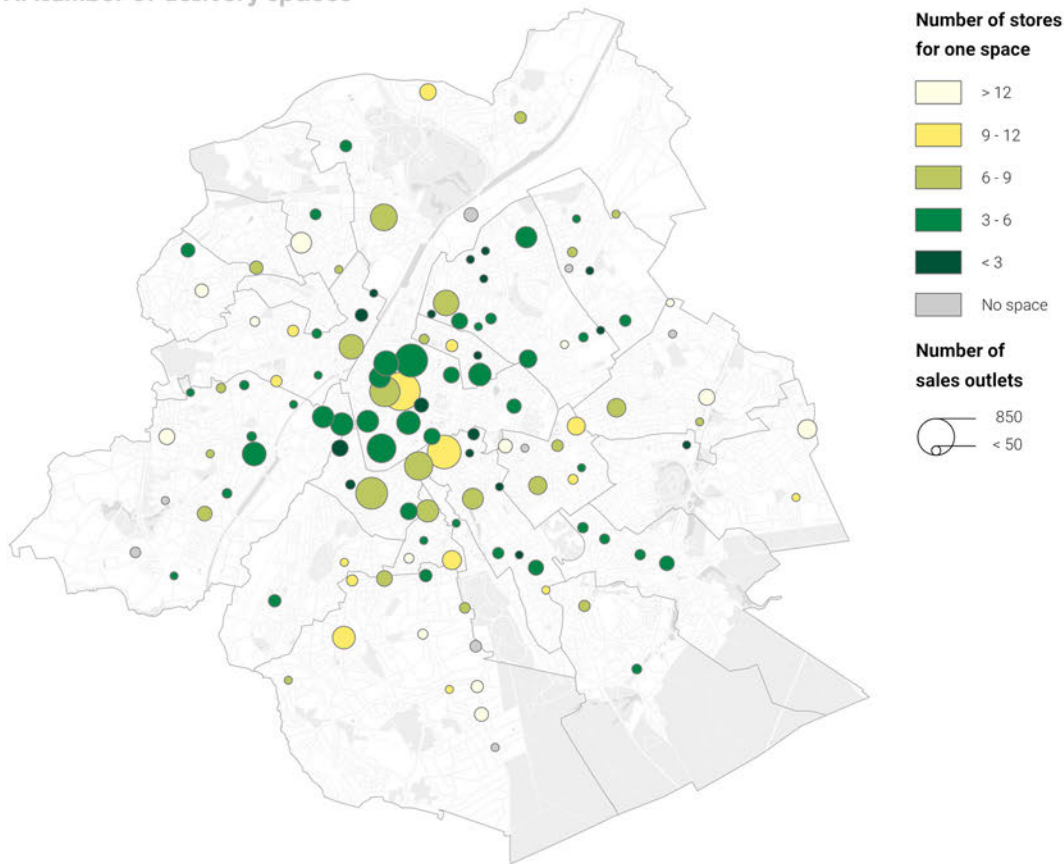
This indicator is therefore not a direct picture of the pressure on delivery spaces, as this also depends on the off-street supply, which is not known. In addition, the estimated capacity of the delivery areas of around 100 deliveries per week, also depends on other road users respecting these spaces and the actual pace of deliveries in the district. A field analysis and retailer surveys would therefore be a useful addition to this indicator, to clarify and refine the results and determine whether or not the supply of delivery spaces is sufficient.



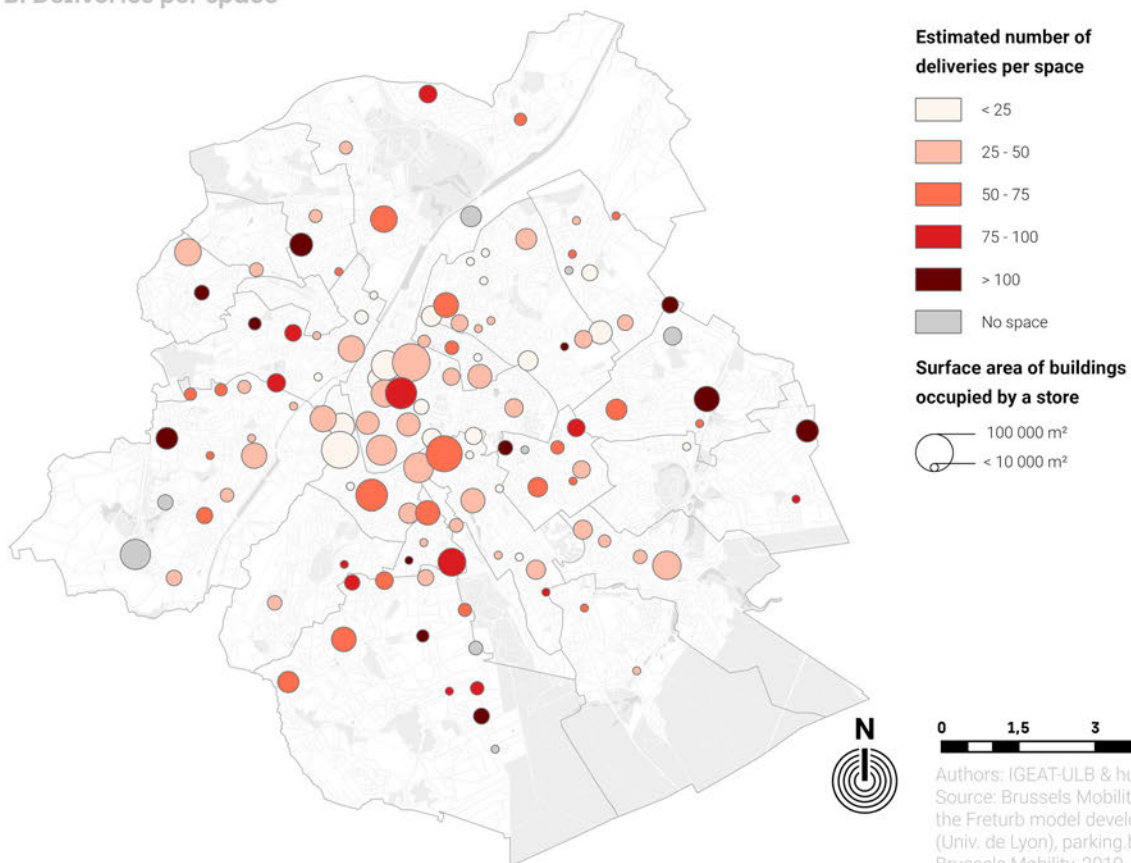
Figure 9

## Dedicated delivery spaces in the commercial centres

### A. Number of delivery spaces



### B. Deliveries per space



# Typology of logistics mobility for central centres



To summarise the results of the indicators related to deliveries, a typology resulting from a multivariate analysis (in principal components) is performed. It is based on the following indicators: density of deliveries per store and per m<sup>2</sup> of retail space (Figure 7), density of heavy goods vehicle deliveries per store (Figure 8), and estimated share of heavy goods vehicles among the centre's deliveries (Figure 8).

This results in a classification of the centres according to two summary variables. The first distinguishes commercial centres according to a dimension that can be assimilated to the frequency of deliveries. The second differentiates them according to a dimension associated with the more or less frequent use of heavy goods vehicles for deliveries. The typology is built on the positioning of the centres on these two variables and makes it possible to distinguish **seven categories of centres** that can however be grouped into two sets to facilitate the reading of the results.

The first set includes centres with low delivery frequencies. These are retail districts with a strong reach or with a high proportion of organised commerce, whether they are general or specialised stores:

**Centres with a low delivery frequency and a high use of heavy goods vehicles ("A", in bright blue)** are those with a large number of mass retailers: Auderghem Shopping, Docks Bruxsel, Geneva, Hankar, Stalle, etc. Relative to the retail areas, deliveries are few, but they are highly concentrated and frequently based on heavy goods vehicles, because of the centralised organisation of the logistics for these chain stores.

**Centres with a low delivery frequency and average use of heavy goods vehicles ("B", in light blue)** correspond in particular to the Rue Neuve, Boulevard de Waterloo, Bascule and Louise centres. They have characteristics similar to the previous type, with a low delivery frequency due to a commercial structure based on non-food trade. However, the use of heavy goods vehicles is more frequent there, due to the high proportion of national and international brands in the commercial fabric, the logistics of which are more often based on rounds by heavy goods vehicles.

**Centres with a low delivery frequency and a low use of heavy goods vehicles ("C", in yellow)** correspond to retail spaces with a strong reach (Dansaert, Porte de Namur, Brabant, Molenbeek - Centre, etc.). These are centres with a large number of small retail units and a relatively limited number of chains, leading to the high use of vans. The commercial structure is dominated by non-food stores, which implies a relatively low delivery density.

The second set includes categories of centres with different types of logistic organisation for specific situations:

**Commercial centres with an average delivery frequency and an average use of heavy goods vehicles ("D", in purple)** correspond to mixed retail spaces, with small and large surface areas and a very general offer.

We're thinking of Flagey, Dailly, La Chasse or Étoile - Coghén. As a result, they do not have different logistics characteristics.

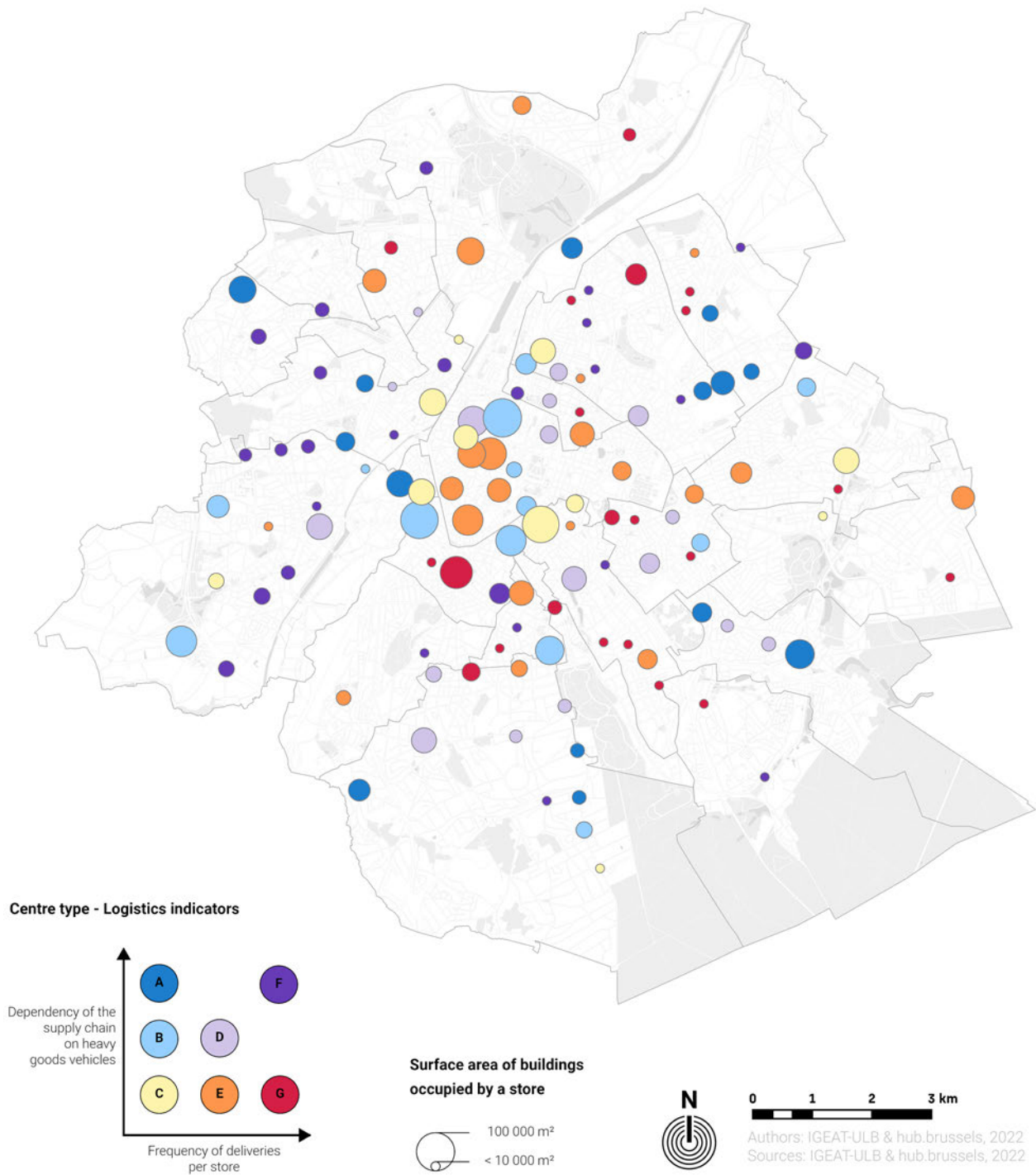
**Centres with an average delivery frequency and a low use of heavy goods vehicles ("E", in orange)** correspond to several retail areas in the hypercentre (Grand-Place, Saint-Jacques, Marolles, Sablon) and to the centres of Schuman, Tongres, Bockstael, de Wand and Place de Linde. These are centres dominated by independent stores, which means little use of heavy goods vehicles. The diversified commercial fabric or with a stronger hospitality component leads to an average delivery frequency.

**Along the Chaussées de Leuven, Mons, Ninove or Waterloo, there are centres with a high delivery frequency and a high use of heavy goods vehicles ("F", in purple).** These are centres with numerous stores generating high volumes of goods: furniture stores, building material sellers, car dealers and garages... There are also mass retail chain stores that lead to numerous deliveries. For all these reasons, the use of heavy goods vehicles is frequent and the density of deliveries is high. The dependence on heavy goods vehicles is all the greater when the proportion of stores generating heavy flows (construction materials, etc.) or massive flows (mass retailing) is high.

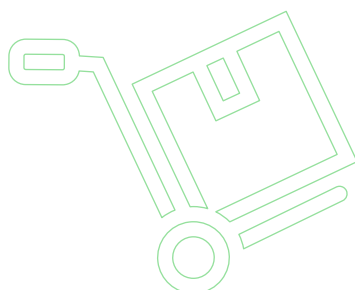
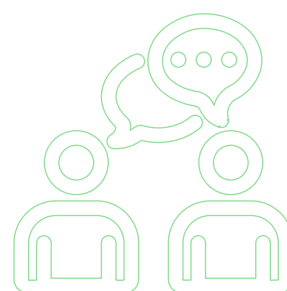
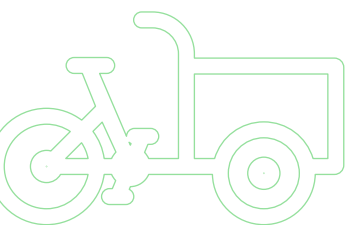
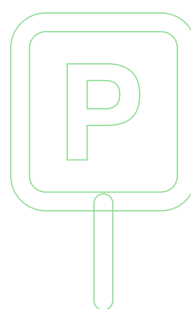
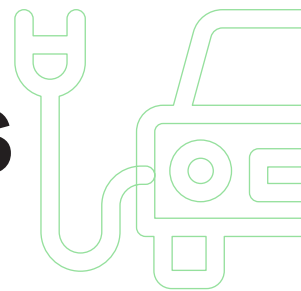
**Commercial centres with a high delivery frequency, but low use of heavy goods vehicles ("G", in red).** These are districts with little reach and outside the main arteries, such as Petite Suisse, Evere - Centre, Place Houwaert and Vekemans. These centres are made up of independent stores serving local customers: bakeries, bookstores, pharmacies, etc. Because of the products they sell, these stores require a high delivery frequency mainly using small vehicles. The centre of Saint-Gilles is an exception in this category, since its reach is greater and its commercial fabric more diversified (with a strong hospitality component).

Figure 10

### Typology of commercial centres according to logistics indicators



# What are the development areas for logistics?



Retail logistics is almost exclusively dependent on motorised road vehicles. Given the social, economic and environmental impacts of this organisation, the question of potential alternatives arises. **Without organisational changes, these retail logistics road flows are likely to continue to increase.** There are many reasons for this: an increase in the Brussels population and in the volume of goods bought and consumed in the Region, the widespread use of online shopping, the fragmentation of orders and home deliveries which lead to new types of flows<sup>27</sup>. The literature and the empirical review of practices mobilise **four main levers of action**<sup>28</sup>, which can obviously be combined:

- use of other types of vehicles: use of rail, waterways or modes of transport without combustion engines (cargo bikes etc.);
- change the engine power of vehicles: use of electric or hydrogen engines to replace dominant diesel engines;
- introduce rules to guide delivery practices: access restrictions, vehicle bans, incentives to make deliveries at specific times;
- organise the supply chain differently: setting up shared storage spaces, pooling vehicles, creating urban distribution centres, etc.

In order to make these elements a reality, this final section proposes to begin thinking about improving logistics in the commercial centres by examining each of these levers in terms of their potential for logistics mobility and by discussing the room for manoeuvre that institutions have in this regard.

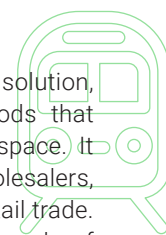
### The modal shift

The modal shift aims to reduce the share of goods transiting by road and the related nuisances: congestion, air and noise pollution, energy consumption, and road safety. There are many alternative transport infrastructures to the road in Brussels, such as the canal, but also the railways, and even the urban tram and metro network.

This raises the question of the possibility of using these modes as substitutes for lorry and van deliveries<sup>29</sup>. From the literature and field studies opportunities, but also limitations, emerge for each of these alternative modes of transport.

**The waterway** is a mode adapted primarily to massive flows and transported in bulk. Consequently in Brussels, it is primarily used for building materials and is an alternative for stores selling this type of product, as long as they are close to the waterway. However, its use for fine distribution is more complex. There are experiments with the distribution of containers or pallets using smaller vessels<sup>30</sup>, but the economic and commercial geography of Brussels does not lend itself to this: the canal does not correspond to a strong commercial axis. With the exception of some wholesalers who would be located near the waterway and whose customer base would have a compatible geography, the possibilities for implementation are limited. In addition, the central part of the canal, the most commercially interesting section, is narrow and bordered by high quay walls, making the handling of vessels and goods complex. **The potential of the waterway for Brussels commerce is therefore limited.**

**Rail** is also often considered as a logistics solution, especially for importing large volumes of goods that could then be distributed in the dense urban space. It therefore targets large companies: major wholesalers, retail warehouses, industrialists supplying the retail trade. Several European cities are hoping to use this mode of transport to reduce the impact of their urban logistics<sup>31</sup>. There are many rail infrastructures in Brussels, but these are saturated with passenger traffic. As a result, **Infrabel prohibits the transit of goods on most of the lines in the capital, making the development of this alternative solution highly hypothetical for urban distribution.** However, the morning market or the future logistics platform of Schaerbeek Formation<sup>32</sup>, if it sees the light of day, could use the railway to bring in goods from the rest of Belgium and Europe to Brussels stores, indirectly, via wholesalers.



27 DABLANC L. (2020). La logistique, une activité urbaine qui passe au premier plan. Terra Nova, 2020,8p. <https://hal.archives-ouvertes.fr/hal-03155209/document>

28 LEBEAU P., MACHARIS C. (2014), Freight transport in Brussels and its impact on road traffic?, Brussels Studies, General Collection, no. 80, <https://journals.openedition.org/brussels/1239>; Interreg Europe (2020), Sustainable Urban Logistics, A Policy Brief from the Policy Learning Platform on Low-carbon economy, [https://www.interregeurope.eu/fileadmin/user\\_upload/plp\\_uploads/policy\\_briefs/Sustainable\\_urban\\_logistics.pdf](https://www.interregeurope.eu/fileadmin/user_upload/plp_uploads/policy_briefs/Sustainable_urban_logistics.pdf); TU Delft (2021), Open Courses, City logistics solutions: <https://ocw.tudelft.nl/courses/sustainable-urban-freight-transport-global-perspective/subjects/module-3-city-logistics-solutions/>

29 STRALE M., LEBEAU Ph., WAYENS B., HUBERT M., MACHARIS C. (2015), Le transport de marchandises et la logistique à Bruxelles: Etat des lieux et perspectives, Cahiers de l'observatoire régional de la mobilité, 4., [https://mobilite-mobiliteit.brussels/sites/default/files/le\\_transport\\_de\\_marchandises\\_0.pdf](https://mobilite-mobiliteit.brussels/sites/default/files/le_transport_de_marchandises_0.pdf)

30 Cerema (2020), La logistique urbaine fluviale. Connaitre pour agir, <https://doc.cerema.fr/Default/doc/SYRACUSE/1401>

31 BONNAFOUSA A., DABLANC L., 2017. Marchandises en ville et logistique urbaine: de l'ignorance à l'action. Transports, <https://halshs.archives-ouvertes.fr/halshs-01661991/document>; DABLANC L., RAIMBAULT N. (2015). Penser autrement la métropole logistique: questions d'aménagement et d'urbanisme. Dablan, L., Frémont, A. La métropole logistique, Armand Colin, pp. 270-308, <https://halshs.archives-ouvertes.fr/halshs-01438854/document>

32 <https://perspective.brussels/fr/projets/territoire-du-canal/schaerbeek-formation>

**The use of the tram or metro network** is an alternative that is being considered more and more regularly in the scientific literature and in the discourse of public authorities<sup>33</sup>. It has already been used in the past, a local traffic of goods having existed until the mid 20<sup>th</sup> century. This network offers the advantage of a good service to the urban area and in particular to the main business centres. **In particular, it could be used for goods distribution during off-peak hours or at night, when passenger traffic is lower.** Nevertheless, these potential new uses come up against several obstacles: the unsuitability of infrastructures for the transport of heavy goods, the lack of loading and unloading sites, conflicts with passenger transport, and the question of nuisances generated at loading and unloading points (noise, congestion). Moreover, in Brussels, the main commercial centres are located along underground tram and metro lines, which would mean major investments to allow for goods handling. **Therefore, while this alternative is worth studying, its achievement would only take place in the medium or long term.**

**The use of bicycles and cargo bikes** is currently the only alternative to the lorries and vans used in Brussels for commercial deliveries. They have the advantage of being highly flexible, have a low impact on congestion and adapt well to the dense urban fabric<sup>34</sup>. They are therefore particularly suitable for urgent deliveries of small volumes of goods: medicines, parcels, press articles, home deliveries for orders placed in stores or in the hospitality industry<sup>35</sup>. In this context, the electrification of bicycles increases their potential. To date, **it is without a doubt the best alternative to vans.** Furthermore, experiments are increasing in Brussels<sup>36</sup>. However, this remains an emerging and limited trend, **which is not suited to larger volumes of goods,** whether for supermarket deliveries, for businesses selling heavy or bulky goods or for round-trip deliveries.

**These issues of modal choice are of course also linked to the question of reorganising supply chains and transloading.** Indeed, combining modes of transport means adding consolidation and deconsolidation stages, which raises organisational, financial and regulatory issues that vary depending to the type of business

## The change in engine power

The use of alternative engine power is a lever that can be used to **act on air pollution, but also on noise**, which are among the main issues with road freight transport. However, **this change in engine power does not solve the congestion issue**, since the number of vehicles on the road remains the same. From this perspective, both in the literature and in the measures taken in Europe and Brussels, the preferred option is the electrification of the road fleet, lorries and vans. This can be done by means of batteries or by using alternative fuels<sup>37</sup>. To guide this shift, the Brussels and European authorities intend to encourage, or even impose, this shift by prohibiting the circulation of vehicles with conventional engines. Firstly the oldest ones, then the whole fleet. The timeframes currently being considered are 2030 or 2035.

The electric solution seems particularly interesting since this type of engine does not emit any pollutants when used in an urban environment. The electric vehicle is also very smooth and quiet<sup>38</sup>. In theory, it also requires less maintenance. Nevertheless, it presents the difficulty of the duration of charging times, the availability of charging stations and the pressure on the electricity network in the event of mass usage. Other limitations include reduced payload and range, which may require some users to increase the size of their fleet to handle the same volume of cargo. As a result, the share of electric or hybrid vans in the Belgian road fleet will still be less than 1% in 2021<sup>39</sup>, although announcements by major players such as bpost show a willingness to expand this fleet rapidly<sup>40</sup>. Finally, there is the question of the overall environmental balance, from production to disposal, which remains scientifically debated. For retailers, these vehicles still have a significant cost premium over conventional engines, but according to experts, this premium will decrease and should disappear by 2025 or 2030<sup>41</sup>. In addition, there are purchase subsidies at the Brussels regional<sup>42</sup> and federal levels which were increased in 2021<sup>43</sup>.

33 STRALE M. (2014), The cargo tram: Current status and perspectives, the example of Brussels, Transport and Sustainability, 6, pp. 245-263, <https://www.emerald.com/insight/content/doi/10.1108/S2044-99412014000006010/full/html>

34 DE SMET D'OLBECKE et coll. (2020) Le vélo en Région de Bruxelles-Capitale, Cahier de l'observatoire régional de la mobilité, 7, <https://mobilite-mobiliteit.brussels/sites/default/files/2020-12/Le%20v%C3%A9lo%20en%20R%C3%A9gion%20de%20Bruxelles-Capitale.pdf>

35 Ministry of Ecological Transition (2021), Plan national pour le développement de la cyclo-logistique [https://www.ecologie.gouv.fr/sites/default/files/210503\\_dp-Plan-de-developpement-cyclo-logistique.pdf](https://www.ecologie.gouv.fr/sites/default/files/210503_dp-Plan-de-developpement-cyclo-logistique.pdf)

36 See the census carried out by Brussels Mobility: <https://mobilite-mobiliteit.brussels/en/node/617>

37 Transport & Environment (2020), Comparison of hydrogen & electric trucks, [https://www.transportenvironment.org/wp-content/uploads/2021/07/2020\\_06\\_TE\\_comparison\\_hydrogen\\_battery\\_electric\\_trucks\\_methodology.pdf](https://www.transportenvironment.org/wp-content/uploads/2021/07/2020_06_TE_comparison_hydrogen_battery_electric_trucks_methodology.pdf)

38 LEBEAU Ph., MACHARIS, C. (2014) op. cit.

39 <https://statbel.fgov.be/en/themes/mobility/traffic/vehicule-stock>

40 [https://www.rtbef.be/info/economie/detail\\_bpost-attend-1200-camionnettes-electriques-d-ici-la-fin-2022?id=10852894](https://www.rtbef.be/info/economie/detail_bpost-attend-1200-camionnettes-electriques-d-ici-la-fin-2022?id=10852894)

41 <https://www.transportenvironment.org/discover/en-france-les-camions-%C3%A9lectriques-peuvent-devenir-moins-chers-que-les-diesel-d%C3%A8s-2024/>


42 <https://economie-emploi.brussels/prime-lez>

43 <https://www.lecho.be/economie-politique/belgique/bruxelles/bruxelles-multiplie-par-5-la-prime-pour-l-achat-de-vehicules-utilitaires-electriques/10348910.html>




## Changes to delivery regulations

This lever aims to change the rules that apply to deliveries in an attempt to reduce nuisances, locally or on a city-wide scale. From this perspective, the forms of action can concern **delivery times, permitted vehicles or the organisation of these deliveries.**



The first challenge is the provision (and verification of compliance by other users) of delivery spaces, particularly in the densely-populated districts of the city where there are many independent retailers, who rarely have separate logistics spaces. This may include on-street spaces, sharing of private parking spaces or the use of underutilized public car parks. With this in mind, for example, policies to decriminalize delivery areas have been implemented in several Brussels municipalities to facilitate control by enforcement officers. **From the previous results, it is clear that it is particularly important to provide delivery spaces in the most central commercial centres.** Of course, it is also in these areas that the pressure on public space is greatest, which involves complicated policy choices.



Acting on delivery times aims to **shift these activities to times when they generate less nuisance.** This targets a reduction in the impact on traffic congestion in particular. Currently, the preferred times for deliveries also coincide with the peak times for traffic: mornings and store opening hours. Experts and city authorities are therefore seeking to change these practices, for example by allowing deliveries early in the morning, later in the evening, or even at night, when the road network is quieter. While this alternative is often valued in the literature on urban and commercial logistics, in reality it has several limitations. First of all, it is **not very suitable for independent retailers,** as they are rarely present outside business hours and find it more difficult to create temporary storage spaces to receive deliveries. However, it is **a potentially more interesting alternative for integrated trade chains and supermarkets,** which more often have dedicated logistics spaces where goods delivered outside business hours can be received. As a result, mass retailer chains and their representative body, COMEOS, are keen to develop these staggered delivery times<sup>44</sup>. That said, there is the question of the noise generated by the vehicles and by the loading and unloading operations in the evening, in the morning or at night. This means using either adapted and less noisy vehicles, which are more expensive<sup>45</sup>, as well as a review of practices, or reserving these solutions for stores with an enclosed logistics space or located outside dense urban districts.

Based on a similar idea, it is also possible to regulate the times when deliveries are permitted **by opening up roads or delivery spaces at certain times of the day.** This is very often the way pedestrian retail areas are organised, such as the city centre pedestrian area or the Place Flagey and Place Miroir, as well as the Parvis de Saint-Gilles for example. Chain stores and retailers organised around a centralised and planned logistics system can adapt to this without too much difficulty. However, it is a mode of organisation that is much less suited to the operating methods of independent retailers or those who rely on irregular or urgent deliveries, such as pharmacists, garage and spare parts dealers or bookshops for example. As a result, a recent survey of the city centre pedestrian area revealed many criticisms of this measure<sup>46</sup>.

Regulating the vehicles that can be used for logistics activities is generally aimed at banning those that seem least suited to deliveries in the city, particularly heavy goods vehicles. This is a tool to be used with caution. Indeed, heavy goods vehicle traffic generates significant local nuisances, whether on their journey with noise, congestion, pollution and road safety, or at their stopping point with the unsuitability of roads, congestion and noise. However, overall, **a full lorry generates less pollution, noise and congestion than all the vans that would be needed to transport the same volume of goods**<sup>47</sup>. Current analyses of the situation in Brussels show that most of the lorries in circulation in Brussels are delivering and collecting goods<sup>48</sup>. Because of the heavy congestion and complex traffic movements, very few lorries transit Brussels "without reason". Prohibiting them on a road, in a district or in a municipality therefore means risking an increase in the number of light delivery vehicles, which may reduce certain nuisances locally, but will increase the overall impact of urban logistics. As such, this type of measure must go hand in hand with land use, mobility and permit issuing policies. This would make it possible not to accept commercial activities that generate flows that are unsuitable for roads or to control them by making their authorisation subject to conditions and set up facilities in the public space that do not block activities that are already in place. It is a complex aspect that requires a global vision. The same commercial activity, depending on whether it is managed by an independent, a franchisee or a chain, will generate very different logistics organisations and therefore requires very different facilities. This observation concerns all the commercial centres in Brussels, given the spread of the small outlet formats of the mass retail chains and the continuing integration of the retail trade.

44 LEBEAU Ph., MACHARIS, C. (2014) op. cit. et [https://www.sustainabilityreports.be/sites/default/files/reports/csr\\_report\\_comeos\\_2018\\_le\\_commerce\\_comme\\_miroir\\_de\\_la\\_societe\\_.pdf](https://www.sustainabilityreports.be/sites/default/files/reports/csr_report_comeos_2018_le_commerce_comme_miroir_de_la_societe_.pdf)

45 BOUGHRIET R. (2010), Vers une réduction des nuisances des véhicules de livraisons en ville, Actu-Environnement, [https://www.actu-environnement.com/ae/news/region\\_ile-de\\_france\\_casino\\_carrefour\\_monoprix\\_livraisons\\_vehicules\\_villes\\_9480.php4](https://www.actu-environnement.com/ae/news/region_ile-de_france_casino_carrefour_monoprix_livraisons_vehicules_villes_9480.php4)

46 VERLINDE S., KIN B., STRALE M. & MACHARIS C. (2016), Sustainable freight deliveries in the pedestrian zone: facilitating the necessity, Brussels Center Observatory, <https://bsi-bco.brussels/wp-content/uploads/2016/12/BSI-BCO-P1-Verlinde-et-al.pdf>

47 VIOLA C. (2017), La prise en compte de la logistique urbaine par les collectivités territoriales, <https://dumas.ccsd.cnrs.fr/dumas-01588993/document>

48 Unpublished analyses of Brussels mobility

## The reorganisation of supply chains

This last lever seeks to act upstream of deliveries, by reorganising flows and their geography. The objective is to **reduce the number of delivery journeys and their impact**<sup>49</sup>. Within this framework, there are two forms of action:

- **Vehicle pooling:** the objective is to reduce the number of vehicles on the road by grouping flows and increasing their fill rate, as well as reorganising the routes to reduce their number and length.
- **The creation of urban logistics spaces:** here the idea is to create temporary storage spaces in the city, near commercial centres or at the entrance to the city, in order to consolidate deliveries. Delivery rounds can then be set up to or from these locations that reduce the number of journeys and vehicles on the road.

These two levers use changes in regulations, incentives for economic actors and even public investments in new logistics spaces and dedicated vehicles.

While these alternative solutions seem attractive and are popular in scientific literature and the public policies that seek to take charge of urban logistics, practical examples of how they work are much rarer<sup>50</sup>. Indeed, there are several obstacles that make them rather impractical.

Firstly, **economic actors who can streamline their logistics flows have already done** so on an individual basis. These are the large generalist and specialist chains, all of which operate from large distribution centres from which optimised routes are taken. They are located outside the Brussels regional boundaries around the ring road and the major motorways linking Brussels to the rest of Belgium, to ensure good national accessibility<sup>51</sup>. As a result, these companies are not interested in adding additional steps to their supply chains.

On the other side of the spectrum, **independent retailers operate on an individual basis** and their logistics are often based on wholesalers and wholesale markets located in dense urban areas. Their interest in adding additional players or working with other potentially competing retailers is therefore limited. Pooling of flows also raises the question of the distribution of economic and legal responsibilities, in case of delay, breakage or theft of goods, or to arbitrate between the potentially contradictory interests of retailers.

As a result, **the businesses most interested in these shared spaces are those whose economic activity is already based on this grouping of flows: express transport and parcel delivery companies.** Having urban logistics spaces allows them to serve their customers more quickly and to consolidate flows to and from their large Belgian and European warehouses. These companies are the only ones to have launched pooling tests in Brussels<sup>52</sup>.

These difficulties do not mean that we should give up on considering alternatives. The development of e-commerce and home deliveries means thinking about accompanying policies: creating logistics spaces or dedicated services such as parcel lockers, relay points or shared delivery services by district. It is also a question of linking the measures in terms of delivery for retail businesses with those relating to the establishment of regional logistics activities. Maintaining wholesale and warehousing operations in close proximity to densely-populated districts reduces the length of final deliveries for many retailers. These are the routes that are the least optimised and generate the most nuisance. It is therefore important that they are as short as possible.



49 DABLANC L., SAVY M., VELTZ P., CULOZ A., VINCENT M. (2017) Des marchandises dans la ville: Un enjeu social, environnemental et économique majeur. [Rapport de recherche] IFSTTAR – Institut Français des Sciences et Technologies des Transports, de l'Aménagement et des Réseaux, <https://hal.archives-ouvertes.fr/hal-01627851/document>

50 STRALE M. (2020), Sustainable urban logistics: what are we talking about? Transportation Research Part A, 130, <https://www.sciencedirect.com/science/article/pii/S0965856418304580>

51 STRALE M., LEBEAU Ph., WAYENS B., HUBERT M., MACHARIS C. (2015), op. cit.

52 See for example <https://www.citydepot.be/en/>, [http://homepages.ulb.ac.be/~mjanjevi/deliverables/TNT\\_Express.pdf](http://homepages.ulb.ac.be/~mjanjevi/deliverables/TNT_Express.pdf)



## Towards taking individual realities into account?

From this overview, but also from previous field studies in Brussels, the interest of a pragmatic approach emerges<sup>53</sup>.

A useful starting point is **the realities of the Brussels retailers, who consider logistics from an individual point of view**, in an economic context already strongly constrained by very low profit margins. Policy choices aimed at collective optimisation (changing delivery times, traffic bans, pooling of flows, road redevelopment, etc.) do not necessarily correspond to, or even contradict, the individual interests of these retailers and may even threaten their business. Moreover, **these interests may be antagonistic depending on whether they are independent retailers, franchisees or chain stores, or depending on the customer base and the type of goods sold**. As a result, a recent survey of the city centre pedestrian area showed little interest in the proposed solutions from retailers<sup>54</sup>. This does not mean rejecting any policy that would pursue a collective objective in the name of damaged individual interests. However, it is important to understand and take into account these realities in order to identify the potential winners and losers of the planned measures and set up accompanying, awareness-raising or compensation measures<sup>55</sup>. It is also important to be cautious about “turnkey” solutions from foreign examples. While European and Western cities share certain fundamentals in terms of their commercial fabric, local disparities and the realities specific to each city remain significant.

If there is a certain amount of scepticism, this is undoubtedly due to the need to communicate about the issues and include professionals in the discussions. Developing highly practical solutions, responding immediately to retailers’ demands and making them aware of the benefits of a collective approach to logistics organisation, creates a climate of trust that facilitates work towards more ambitious projects. This is the approach advocated in the Good Move Regional Mobility Plan<sup>56</sup>. In this context, **particular attention should be paid to independent retailers**, as their capacity to adapt is weaker. They are also the ones whose logistics organisation is currently the least optimised. However, for the time being, commercial supply chain reorganisation initiatives are also better suited to chain stores, as they have, on average, a greater investment capacity and the option to spread these costs over a wider range of activities. In addition, the fact that these chains control, integrate, and even internalise their logistics, makes the reorganisation of supply simpler, because it involves a smaller number of businesses and possibly divergent interests to reconcile.

To the contrary, independent retailers have much lesser control over logistics. They consider the issue at their level, where they have the capacity to act, i.e. at the end of the chain, at the level of final delivery. Therefore, from this link it is possible to raise awareness and involve these businesses. **In practical terms, this would mean solving, as a priority, the issues of on-street deliveries and traffic in the city with measures that do not involve challenging the logistics organisation of retailers:** creating sufficient delivery spaces and verifying their actual availability, integrating logistics issues into traffic plans and the redevelopment of roads, etc.



53 WAYENS, Benjamin, DEBROUX, Tatiana, GODART, Pernelle, MAHIEU, Céline, STRALE, Mathieu and D'ETEREN, Emmanuel, 2020. op. cit.

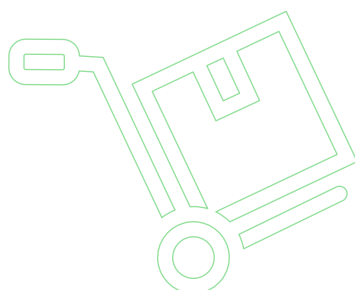
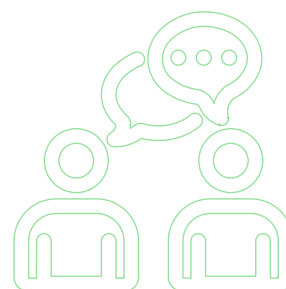
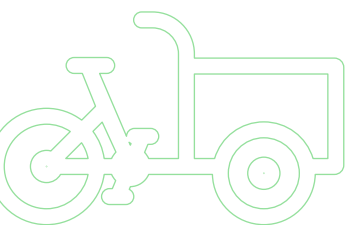
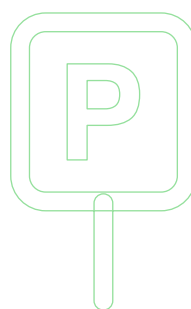
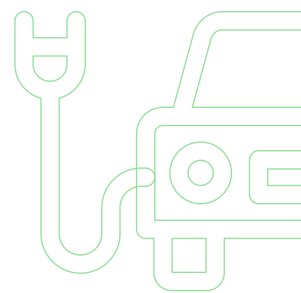
54 VERLINDE S., KIN B., STRALE M. & MACHARIS C. (2016), Sustainable freight deliveries in the pedestrian zone: facilitating the necessity, Brussels Center Observatory, <https://bsi-bco.brussels/wp-content/uploads/2016/12/BSI-BCO-P1-Verlinde-et-al.pdf>

55 WAYENS, Benjamin, DEBROUX, Tatiana, GODART, Pernelle, MAHIEU, Céline, STRALE, Mathieu and D'ETEREN, Emmanuel, 2020. op. cit.

56 Brussels Capital Region (2021), Summary of the Good Move plan [https://mobilite-mobiliteit.brussels/sites/default/files/2021-03/GOODMOVE\\_summary.pdf](https://mobilite-mobiliteit.brussels/sites/default/files/2021-03/GOODMOVE_summary.pdf)

# Conclusions

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The analysis of mobility in the commercial centres allows several observations to be made. **Car use to visit stores will continue in the short term.** This is not necessarily desirable or possible everywhere. The current conflicts surrounding the implementation of Good Move, in which access to stores is one of the central issues, attest to the sensitivity of this subject. Therefore, it is probably appropriate **to think constructively about the issue of the accessibility of stores.** It should be based on a systematic objectification of the mobility mix necessary for the proper commercial functioning of each area, which is facilitated by the mapping carried out in the first part of this document. This consideration should not be limited to parking and should include (the perception of) the accessibility of the centre by all modes of transport, taking into account the catchment area and reach of the commercial centre. Depending on the centres concerned, this could lead to a range of recommendations and businesses involved from very local measures (improving pedestrian accessibility, parking rotation, creating delivery areas, etc.) to city-wide issues (role of SNCB and incentivised parking for commercial traffic). This would help to develop a mobility policy that is less exclusively focused on commuting<sup>57</sup>. **Thinking about the mobility mix must also include the issue of deliveries, including those related to e-commerce.** Many retail outlets are in the process of becoming pick-up points, which has consequences in terms of the number and frequency of customer visits and deliveries<sup>58</sup>. As with waste, e-commerce risks increasing outflows from businesses.

**In terms of deliveries, the logistics of urban businesses are characterised by a very high use of vans.** Indeed, these light vehicles meet the requirements of flexibility and frequent transport of small volumes that correspond to the expectations of many independent retailers. These logistics are also highly individualised, due to the difficulty of grouping flows from multiple sources and collaborating between retailers with different and sometimes contradictory expectations. The flows are concentrated during the opening hours of the stores, which can conflict with pedestrian traffic and other road traffic and with the regulations that would like these deliveries to take place as early as possible in the day. **Integrated trade, i.e. national and international chains and their franchises, are organised around a more centralised logistics system than independent retailers, which therefore involves heavier vehicles, lorries and trailers<sup>59</sup>.** This is an important parameter to take into account, since it requires suitable facilities to accommodate such vehicles, including in pedestrian areas. A final interesting element is the gap that appears between the solutions proposed by the authorities and popular in scientific literature (staggered deliveries, urban distribution centres, bicycle deliveries) and the very low interest shown by retail professionals in the field. This shows the complexity for the authorities to understand and manage this problem, which is optimised at the individual level of the retailers who are largely responsible for it financially and in their organisation<sup>60</sup>.

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57 HUBERT, Michel, LEBRUN, Kevin, HUYNEN, Philippe and DOBRUSZKES, Frédéric, 2013. Daily mobility in Brussels: challenges, tools and priority undertakings. In: Brussels Studies. BSI synopsis.18/09/2013. Available at: <http://journals.openedition.org/brussels/1188>.

58 LIBESKIND, Jérôme, 2015. La Logistique Urbaine. 1. Limoges: FYP Éditions.

59 STRALE M., LEBEAU Ph., WAYENS B., HUBERT M., MACHARIS C. (2015), Le transport de marchandises et la logistique à Bruxelles: Etat des lieux et perspectives, Cahiers de l'observatoire régional de la mobilité, 4., [https://mobilite-mobiliteit.brussels/sites/default/files/le\\_transport\\_de\\_marchandises\\_0.pdf](https://mobilite-mobiliteit.brussels/sites/default/files/le_transport_de_marchandises_0.pdf)

60 SOTIAUX A., STRALE M. (2017), Enjeux logistiques du piétonnier et des réaménagements connexes. Synthèse des résultats d'une enquête auprès des professionnels, Brussels Center Observatory, <http://bco.bsi-brussels.be/enjeux-logistiques-du-pietonnier-et-des-reamenagements-connexes-synthese-des-resultats-dune-enquete-aupres-des-professionnels/>

However, the situation is not fixed. The latest attendance figures for commercial centres (dating from before the Covid-19 pandemic) show a decline in car use, in favour of soft modes and public transport. This is a major trend in urban mobility in Brussels, which concerns all reasons for travel. However, it will be important to revisit these perspectives with the most recent figures and determine whether or not the pandemic is challenging these trends. In addition, this reduced use of the car is much less clear for trips to the outskirts, where the alternative offer to the car remains weak. In terms of deliveries, the most immediate challenge will probably be the change in the engines of road vehicles and the ability of retail businesses and their delivery personnel to adapt to it. Here again, it will be necessary to update these perspectives in light of the post-Covid-19 situation and the accelerating emergence of new purchasing practices - home deliveries, e-commerce - which mean new logistical requirements.



