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Travel between home and work: current situation and perspectives for action for companies

BSI synopsis

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entreprises. Note de synthèse BSI*

*Woon-werkverplaatsingen: stand van zaken en actieperspectieven voor de
bedrijven. Synthesenota BSI*

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Florentine Sieux**

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AUTHOR'S NOTE

This synopsis is the result of a collaboration between *Centre d'Etudes Sociologique (CES)* at *Université Saint-Louis – Bruxelles* and *Laboratoire Urbanisme, Infrastructures et Ecologies (LoUIsE)* at *Université libre de Bruxelles* in the framework of the *Brussels Studies Institute* “Companies and Sustainable Mobility” interuniversity research chair financed by Renta, Febiac, Traxio, Solvay School Alumni, VAB, Touring, Acerta, BLV-ABM, FEGARBEL, BFFMM and SPF Mobilité et Transports. This note also benefited from the contribution of the authors' work carried out within the framework of the *Observatoire de la mobilité de la Région de Bruxelles-Capitale*.

Introduction

- 1 Travel between home and work structures the daily life of many workers in Belgium. How is this mobility organised and what are the factors which influence the modal choice of

workers? What are the levers which influence this choice and, in particular, what is the role of companies in this area?

- 2 The objective of this synopsis is to review the current situation of these complex questions by gathering the pertinent indicators from various sources of information.¹ It is organised in three parts. The first deals with the general framework of travel between home and work, in order to place it in its geographical context with respect to mobility as a whole, in particular in connection with the Brussels-Capital Region (BCR). The second part examines the modal evolution of these journeys, the deciding factors as regards the mobility of workers and the measures implemented at company level in favour of more sustainable mobility. Finally, the third part proposes three pertinent levers for public action as well as for companies, which are likely to reduce the congestion of transport infrastructures and the use of cars in the long term.

1. Commuting placed in context

1.1. Spatial separation of places of work and residence in Belgium

- 3 In Belgium, the housing environment is distributed spatially in a more homogeneous manner than economic activity. While employment is mainly located in the urban areas or their direct spheres of influence, with specific local concentrations such as in Brussels or around the port of Antwerp, the housing environment is much more scattered. This means that for the inhabitants of more remote regions with respect to these centres of activity, it is more difficult for a person to find a job near their place of residence [Boussauw *et al.*, 2011].
- 4 Figure 1 shows the concentration of the main centres of employment. The big cities stand out clearly (Brussels, Antwerp, Ghent, Liège, Namur, Charleroi, Leuven, Hasselt). However, the figure shows that the places of residence of workers are more scattered, even if they are concentrated mainly in and around cities (figure 2).

Figure 1. Working population according to municipality of work

Source: Statistics Belgium, Census 2011, <http://www.atlas-belgique.be>

Figure 2. Working population according to municipality of residence

Source: Statistics Belgium, Census 2011, <http://www.atlas-belgique.be>

- 5 In terms of employment, the Brussels-Capital Region is the biggest centre of employment in the country. It is also the biggest city in terms of population, while concentrating major transport hubs, at national and international level. This is the reason why we are focusing on Brussels and its metropolitan area (IRIS 2 area²), which is a relevant area in the analysis of workers' journeys and companies' location policies. In BCR, nearly one out of two jobs is held by a commuter. Here, the term "commuter" refers to a person who makes a journey between home and work and crosses an administrative boundary, in this case the regional boundary, on a regular basis ("daily" component of these journeys). We speak of inbound commutes for the people who come to work in BCR and who live outside the capital, and of outbound commutes for the inhabitants of Brussels who work outside the Region [Ermans *et al.*, forthcoming].
- 6 As regards BCR, the median distances³ for travel between home and work of workers within BCR are rather short, in relation to the other workers: 3,5 km as the crow flies or 3,6 km in declared distances. The median distances of inbound workers are on average the longest, with 30,5 km as the crow flies or 35 km in declared distances [Ermans *et al.*, forthcoming].

1.2. Institutional framework and stakeholders

- 7 The management of transport and road networks in the Brussels metropolitan area falls directly within the responsibility of three different levels of authority: the federal state, the regions and the municipalities. As regards the mobility of workers, the federal and regional authorities are responsible above all. The regions are responsible in particular in the area of urbanism and the environment (and therefore also parking standards), land-use planning, urban renewal, as well as public works and transport (roads, legal regime of road networks, regional public transport, road safety). The federal state is competent in the area of taxation, excise duties on fuel and control of SNCB (and therefore the implementation of the S-train), as well as Brussels-National airport. As regards employment policies, the regions are in charge, but the federal authorities are competent in the area of social security and taxation related to work (in particular the company car regime).
- 8 In the area of mobility, inter-regional coordination, as well as coordination between levels of authority and competence, is therefore essential. The 1988 institutional reform had already planned for a dialogue between the regions and the federal state, in particular regarding public works and transport, as well as cooperation agreements when projects go beyond the regional boundaries (such as, for example, the ring road or the E40) [Hubert *et al.*, 2013]. It should be noted, however, that not many of these agreements exist. Established in 1993 by an agreement between the federal state and BCR, Fonds Beliris is currently the only strong and long-lasting structure aimed at cooperation between these two levels of authority. It is aimed at supporting the international role of Brussels, in particular through the financing of transport infrastructures, such as the underground or the Schuman-Josaphat railway tunnel.
- 9 More recently, the sixth state reform planned the creation of a metropolitan community for a dialogue between the three regions in transregional matters such as mobility, road safety and road works from, to and around Brussels. This may concern in particular the planning of public transport, fare and ticketing integration and the coordination of timetables between operators. The dialogue may also concern competences such as

economic policy, land-use planning and the environment [Blero, 2015]. But this is an *a minima* consultative body, concerning the targeted competences as well as the means of implementation, with respect to the potential for cooperation of public means and public authorities in and around Brussels [Wunderle, 2011]. A federation of stakeholders does, however, appear to be essential for economic impetus in BCR and its outskirts, due to the division of material and territorial competences [Van Wynsberghe *et al.*, 2009].

- 10 While the economic environment – VOKA, UNIZO and BECI – was favourable to the implementation of a Brussels metropolitan community, and on several occasions had called for the creation of a community of interest which goes beyond the regional and linguistic boundaries, the political parties in the north of the country appeared to be quite divided [Van Wynsberghe *et al.*, 2009; Nassaux, 2015]. Consequently, this community has still not been established, as, in the best case, the political stakeholders favour bilateral relations involving concrete projects without necessarily a global vision, especially when different authorities or operators exist in the same territory [Damay, 2014]. Let us mention, for example, the implementation of the S-train, the Brabantnet project for the creation of three inter-regional tram lines managed by De Lijn, or the project to extend the ring road north of BCR. These three projects are emblematic of conflicting visions regarding mobility objectives and the target public, as well as a difficult dialogue between the regions, which result in obstructions and excessively slow implementation [Hubert *et al.*, 2013].

Table 1. Division of competences according to stakeholder/level of authority in connection with travel between home and work

	Federal	Regional	Companies	Social partners
Infrastructures	Major infrastructure works, including the S-train Beliris cooperation agreement with BCR	Public works, legal regime of road networks, regional public transport, road safety		
Operators	SNCB	STIB, De Lijn, TEC		
Land use planning		Housing, urbanism, environment (including air quality)		
Economy	Economy, employment, social security	Economy, employment	Working hours and places of work	

Cost and mode of transport	Excise duties on fuels Income tax (including company cars)	Car tax	Travel plans Reimbursement of commuting costs (rates, modes, etc.)	Collective agreements Inter-professional agreements
Location of residence/ companies		Property tax	Choice of location (accessibility) Recruitment choices	

- 11 Finally, beyond the institutional stakeholders, companies obviously play a key role in the configuration of travel between home and work through their choice of location, as well as through the privileged relationship they have with their workers and the levers of influence which depend on this. As we shall see below, their action may have an impact on the very organisation of journeys through the organisation of working hours and places of work, on the individual level of the modal choice by favouring certain modes, and on the distances of journeys through actions on the location of activities or even residential locations. Companies are therefore essential stakeholders in the management of travel between home and work.
- 12 Let us note that social partners play a role in the management of travel between home and work via social dialogue and the establishment of inter-professional and collective agreements. In particular, they set the amount of the employer's contribution towards the cost of public transport, which constitutes an important factor taken into account by workers in their choice of mode of transport between place of residence and place of work [CCE, 2016].

1.3. Evolution of the transport demand related to work

- 13 The population density of a region and the evolution of its economic activity have a direct impact on the transport demand and the organisation of mobility.
- 14 At demographic level, the population of Brussels and its metropolitan area has undergone sustained growth. On 1 January 2017, there were more than 1,19 million inhabitants in BCR, and 3,39 million in the entire IRIS area, i.e. nearly 30 % of the Belgian population.
- 15 For a long time, the evolution of the population of Brussels was characterised by the exodus of some of the households towards the outskirts, which is still happening today, contributing to urban sprawl beyond the regional boundaries [Hermia, 2018]. This “net internal migration” is nevertheless largely offset by a significant birth rate associated with a young population, maintained by steady external immigration, with the result that the growth of the population of Brussels reached 23,5 % over 20 years (1995-2015). The population growth of the outskirts is less spectacular but more steady, reaching approximately 12 % over the entire period (figure 3). The growth of the population of Brussels, however, has tended to become stable in recent years, and 2016 was marked by a particularly low growth rate (+0,3 %) with respect to the annual average rate of 1,4 % during the 2000-2015 period [Hermia, 2018].

Figure 3. Evolution of the population within the IRIS 1 and 2 areas between 1995 and 2015

Source: SPF économie, 2017

Author: Fanny de Smet, 2017

- 16 This internal and external population growth in BCR, weighs heavily on the demand for individual journeys, especially as it parallel to an increase in vehicle ownership among households (+26 % between 1990 and 2010 – see [Lebrun *et al.*, 2013: 36]).
- 17 As regards economic activity, the labour force survey (LFS) estimated that at the end of 2016, there were approximately 708 900 workers employed in BCR, i.e. 15,6 % of national jobs for only 10,5 % of the Belgian population. The number of jobs is growing in BCR, increasing by 8,2 % between the end of 2000 and the end of 2016. BCR receives a significant number of workers from the other two regions. 31 % of workers in Brussels live in the Flemish Region and 17,6 % in the Walloon Region, bringing the number of commuters to 345 250 people at the end of 2016 (LFS 2017 via IBSA)⁴.
- 18 This commuting phenomenon is not recent [see Vandermotten, forthcoming] and its continued existence shows the economic weight of Brussels, where many head offices and headquarters of companies and national and international institutions are located (figure 4).

Figure 4. Share of the working population according to place of residence, working in BCR

Source: Statistics Belgium, Census 2011, <http://www.atlas-belgique.be>

- 19 Figure 5 shows the gradual evolution of inbound and outbound commutes. As regards inbound commutes, a decrease is observed, in both absolute and relative terms⁵: the proportion of jobs in BCR held by inhabitants of Brussels rose from 44 % at the end of 1999 to 51,3 % at the end of 2016. This means, however, that almost one out of two jobs is still held by a commuter. Concerning the outbound commute, which is on the rise, the number of inhabitants of Brussels who work in another Region has increased by approximately 20 000 people, i.e. a total increase of 43 % during the period [see Ermans *et al.*, forthcoming]. These flows move essentially towards Flemish Brabant (51,1 % of the outbound commute in 2016), and mainly the very near outskirts [see De Maesschalck *et al.*, 2014 and Ermans *et al.*, forthcoming].

Figure 5. Evolution of the population of workers in connection with BCR, according to flow, between 2001 and 2015

Source: LFS 2001-2015 via IBSA

- 20 Finally, the increase in the number of workers must be considered with respect to the increase in part-time work, which is increasing more quickly than full-time work. While full-time employment increased by 3 % in BCR between 2010 and 2016, the number of part-time wage earners increased by almost 13 % during the same period.⁶

1.4. Travel between home and work with respect to all journeys

- 21 Travel between home and work represents only part of the total number of journeys. However, as it is characterised by specific constraints, namely a spatial constraint (between one or more places of residence and work) and a time constraint (relatively fixed working hours), travel between home and work is often at the heart of the daily journeys of the working population.
- 22 The BELDAM survey [2010] indicates that, on an average day, “going to work” is a motive which accounts for 17,6 % of the total number of journeys in connection with BCR. However, when we distinguish between the types of day (table 2), approximately two thirds (64,5 %) of individuals who travel on a working school day mention a journey related to work or school. This proportion drops to 38,9 % on a working day with no school, while maintaining significant proportions on Saturday and Sunday/holidays [Lebrun *et al.*, 2014]. This view according to type of day shows the structuring character of the “work” motive in the organisation of journeys for the working population, as well as the importance, for “employed” as well as “unemployed” people, of other motives for travel [Lebrun *et al.*, 2013: 8].

Table 2. Percentage of individuals whose day is structured by work or studies, according to the type of day

Main activity of the day	Working school day	Working day, no school	Saturday	Sunday and holidays

Work/school	64,5 %	38,9 %	18,5 %	15,8 %
Other activity	35,5 %	61,1 %	81,5 %	84,2 %
No. of journeys	6 763	1 508	1 442	1 648

Source: BELDAM 2010 [Lebrun et al., 2014]

- 23 Furthermore, the breakdown of journeys is far from being even throughout the day. They tend to be concentrated and form peak hours, contributing to the saturation of transport networks. Peak hours are on average more pronounced and earlier on working school days, concentrating a significant proportion of journeys towards Brussels.

Figure 6. Relative amount of travel in connection with BCR, according to time of departure, type of day, for any reason

Figure 6 is based on average numbers of journeys declared according to type of day for each time period (i.e. the total number of declared journeys divided by the number of days of this type during the year). The insufficient number of observations has limited us to presenting only the relationships between values, which are therefore relative and do not mention a quantitative scale.

Source: BELDAM 2010

- 24 Work is the reason for 47,2 % of inbound journeys in BCR on an average day. This figure therefore reflects the significant proportion of jobs held by non-inhabitants of Brussels and the fact that logically, inbound journeys tend to over-represent the “work” motive with respect to internal journeys in the Region, for example. Furthermore, the distance between the place of residence and place of work tends to influence people’s departure times. Workers who leave their place of residence earliest are usually those who live furthest from the urban centres, and the differences are significant between the municipalities on the outskirts and those in the capital [Verhetsel *et al.*, 2009: 36-39]. Knowing that, for a working school day, 59 % of journeys to and from Brussels are made using cars [Lebrun *et al.*, 2013], it is easy to understand how the commute to work contributes to car traffic and congestion.

2. The modes of transport used for travel between home and work

2.1. Modal findings

- 25 The scattered nature of places of residence probably has a more significant impact on mobility than the dispersal of places of work, which is much more relative. Both the increase in average distances and the scattered housing environment make it very difficult to implement an efficient public transport service throughout the territory and favour private car use.
- 26 For travel between home and work, the labour force survey (LFS) allows us to estimate the distances covered by workers and the main modes used. Logically, workers internal to BCR cover the shortest distances (less than 5 km for 40,7 % of workers), whereas 71,2 % of inbound workers cover more than 25 km. Outbound workers are characterised by more intermediate distances (58,3 % cover less than 25 km), which indicates that they usually work in the fairly near outskirts of BCR [Ermans *et al.*, forthcoming].
- 27 Apart from the commuting phenomenon and urban sprawl, the historical increase in distances between place of residence and place of work may be related to Zahavi's dual constraint, whereby a person who travels usually does so with a time constraint and a financial constraint [Zahavi, 1974]. Vehicle ownership, the democratisation of car access and the improvement of transport infrastructures have for a long time allowed an increase in distances covered while preserving the same time constraint. In other words, the gains in speed have allowed people to move further from the city without an increase in travel time. Although the saturation of transport networks has a negative impact on this time constraint, other factors also come into play. Beyond personal and property-related preferences with respect to the residential choices of households, it is possible that there has been an evolution in the importance of the place of work. For example, it seems less and less possible to work for the same company for one's entire career and, *a fortiori*, at the same site. Consequently, workers probably tend to accept longer distances between their homes and places of work rather than consider moving house, especially in the framework of precarious or fixed-term contracts. Furthermore, the increase in the number of households in which both partners work, which is due to a greater presence of women on the labour market, makes residential choices all the more complex, as two careers must now be considered [Vanoutrive, 2012].
- 28 The distances covered have a strong impact on the mode of transport used, with each mode being more competitive in certain categories of distance. Logically, walking and cycling are limited to relatively short distances and urban transport is often used for distances under 15 km, whereas the train is preferred for long distances (usually over 50 km). Car use is significant overall, regardless of the distance considered, although it is over-represented for distances between 15 and 40 km in connection with BCR [Ermans *et al.*, forthcoming].
- 29 In terms of modal use (table 3), close to one out of two workers in connection with BCR⁷ uses a car to go to work. This proportion is much more pronounced for inbound workers (52,7 %) and outbound workers (73,3 %). However, cars are used by 41,4 % of internal workers, which remains elevated with regard to the public transport service (MTB and

train – which, with 42,4 % of the modal share, is the first mode of travel for internal workers when going to work) and for average distances. The significant share represented by cars for outbound workers underlines the poor accessibility of places of work by public transport from within the Region, and in particular the poor connection between BCR and its nearby outskirts. Finally, let us note the modal share of the train for inbound workers, reaching 41,6 %, which is explained by the easy accessibility of places of work in BCR and by long distances between home and work (Ermans *et al.*, forthcoming).

Table 3. Main mode of travel for workers in connection with BCR

Characteristics	Main mode of travel									Total	Car (pass.) / Car (total) (%)	Workers (vol.)	Respondents (vol.)
	Walking (%)	Cycling (%)	Motorcycle / scooter (%)	MTB (%)	Train (%)	Car (pass.) (%)	Car (driver) (%)	Car (total) (%)					
Workers in connection with BCR	5,3	1,8	1,1	20,6	21,7	3,7	45,9	49,7		100	7,5	642.043	25.699
Flow of workers													
Internal	11,7	3,2	1,3	40,5	1,9	3,8	37,5	41,4		100	9,3	278.644	12.042
Inbound	0,3	0,7	0,9	3,8	41,6	3,1	49,6	52,7		100	5,9	304.890	11.191
Outbound	0,6	0,7	0,8	13	11,7	6,5	66,8	73,3		100	8,9	58.509	2.466
Distances													
< 5 km	26,2	4,8	1,2	33,9	0,7	3,3	29,9	33,2		100	10	120.618	5.173
5 - 10 km	0,9	2,6	1,3	44,6	1,6	4	44,9	48,9		100	8,1	122.001	5.187
10 - 15 km	0,3	1,5	1,8	29	4,9	4,4	58,1	62,5		100	7,1	66.210	2.720
15 - 25 km	0,1	0,9	1,2	13,9	17,6	4,3	62	66,4		100	6,5	76.560	3.112
25 - 50 km	0	0,5	0,9	2,7	42,4	3,4	50,2	53,5		100	6,3	128.249	4.883
> 50 km	0,2	0	0,4	1,1	51,9	3,6	42,8	46,4		100	7,8	124.510	4.435

Distances are the ones covered between place of residence and place of work declared by respondents

Source: LFS 2011-2014

2.2. Deciding factors in the mobility of workers

- 30 Let us now attempt to spatialise these observations. In order to do this, we shall use data from company travel plans (CTPs). These data only concern companies with more than 100 workers in BCR, but they have the advantage of allowing us to consider the places of work with respect to their accessibility by public transport, for example. In terms of modal evolution during the period between 2005 and 2014, a decrease in the use of cars was observed for all flows, and especially among internal workers, whose place of work is more accessible on average, and among inbound workers, whose place of work is well served by public transport.
- 31 On the following two maps (figures 7 and 8), we have shown the spatial distribution of the accessibility of destinations according to sector for internal and inbound workers, during the morning rush hour (connections with departure between 8am and 9am and arrival between 8 am and 10 am) on a working school day (type of day especially relevant for journeys between home and work).

Methodology for accessibility calculation

In the framework of his doctoral thesis, geographer Kevin Lebrun [2018] endeavoured to characterise accessibility by public transport (PT), for all operators, in all of the statistical sectors in the Brussels-Capital Region (BCR). To this end, thanks to the Region's multimodal travel model (MuSti)⁸, he developed a

measurement of accessibility based on the modelling of the PT offer in BCR. Based on this model, it is possible to produce the travel time by public transport from one sector to another.⁹ By synthesising the fastest travel time by public transport for each sector from or to all of the other sectors in BCR using the average or the median, an indicator of the accessibility of the sector considered is obtained, with respect to the origin or the destination, for all of the sectors of the Region: the shortest average travel times represent the best accessibility, and vice versa. Let us note that the public transport networks taken into consideration include the lines served by STIB, De Lijn, TEC and SNCB, i.e. the entire service in BCR.

Source: [Ermans *et al.*, forthcoming]

Figure 7. Modes of travel and accessibility of place of work by PT (according to statistical sector) for workers within BCR

Sources: CTPs 2014, MuSti 2011.

Authors: Thomas Ermans, Kevin Lebrun

Figure 8. Modes of travel and accessibility of place of work by PT (according to statistical sector) for workers entering BCR

Sources: CTPs 2014, MuSti 2011.

Authors: Thomas Ermans, Kevin Lebrun

- 32 Figures 7 and 8 provide a good illustration of the link between the accessibility of the place of work by public transport and the modal choice of the worker. Both of them show the travel modes used by workers in BCR according to their place of work. Figure 7 concerns internal workers. It is clear that the locations on the outskirts of the Region which are less accessible by public transport lead to a greater use of cars than those located in the centre and the inner ring. Figure 8 concerns inbound workers. It is easy to see that the proportion represented by the train is very significant in the central areas, near the main stations, and is gradually replaced by cars as the distance from them increases.
- 33 In addition to these observations, let us look at the modes used by workers according to their place of residence, in order to perceive the impact of the scattered residential locations on travel between home and work in connection with Brussels. In order to do this, we have used the two main modes of inbound workers, i.e. cars and train, to understand their spatial breakdown.
- 34 Figures 9 and 10 illustrate the modal share of cars and the train for people who work in BCR according to their place of residence. The map which represents car use (figure 9) seems to constitute the “negative” of the map which represents the use of the train (figure 10), where the major railway lines are clearly visible. It may also be observed that with a large proportion of train commuters, the areas of West Flanders, East Flanders and Hainaut stand out from the rest of Belgium. This is explained by the significance of the railway network, as well as by the fact that these areas form the historical employment

area of Brussels, at a time when the train was the only mode of travel for long distances. This demarcation may therefore also indicate a certain remnant of a “culture of train commuters” [Bastin, 2013: 19].

- 35 As regards car use, the nearby outskirts of Brussels stand out due to a high level of use, as well as the outer ring of Brussels. This spatialisation of modal shares underlines the influence of accessibility on modal choices and the importance of the implementation of a valid public transport alternative in the nearby outskirts, which would represent an obvious lever in the modal shift [Vanoutrive *et al.*, 2011 and 2012]. But the improvement of the train service (S-train) could also contribute to an increase in the distances between home and work through improved efficiency [Bonne and Gayda, 2000].

Figure 9. Modal share of cars for people working in BCR, according to place of residence

Source: CTPs 2014.

Author: Thomas Ermans, based on Bastin [2013]

Figure 10. Modal share of the train for people working in BCR, according to place of residence

Source: CTPs 2014.

Author: Thomas Ermans, based on Bastin [2013]

- 36 The distances covered by workers and the modes of transport used depend greatly on place of residence and work, and on accessibility. But they also depend on statutes, sectors of activity of workers and their level of education (table 4).
- 37 The LFS data allow us to estimate whether certain modes are over- or under-represented according to the characteristics of workers. These data thus allow us to observe an over-representation of walking for workers with a lower secondary diploma, whereas cycling tends to increase with the level of education. Conversely, as the level of education increases, the use of urban public transport decreases. Car sharing has specificity for less qualified workers, which is probably due in part to the cost of owning a car [Lebrun *et al.*, 2014], as well as the organisation of work (shifts as a team), which is quite typical of industrial sectors. In terms of statutes, self-employed people are more likely to use cars, which is probably due to the various constraints related to their profession (work-related travel, merchandise, etc.).
- 38 If a distinction is made between sectors, we see that the private sector is characterised by a significant car use, which is probably related to the importance of company cars in this sector, as well as the construction sector and the manufacturing sector. On the contrary, the public sector is marked by the significant use of the train, which is explained in part by the recruitment of workers who are further away and by the more systematic reimbursement of public transport passes in this sector, in which company cars are very rarely offered to workers. Finally, urban public transport is marked by the fact that it is specific to sectors which are very typical of Brussels, such as activities to support companies, hotels and restaurants, or healthcare and social action [Ermans *et al.*, forthcoming].

- 39 Furthermore, the fact that almost one out of two jobs in the Brussels-Capital Region is held by a commuter, coupled with a high unemployment rate in BCR, in particular among young people, suggests a possible inadequacy between supply and demand in terms of employment. Brussels is not the only European city with a relatively young population, which is struggling to meet the demands of local employment offers [Eurostat, 2016: 38]. The specificity of Brussels as national capital and its international functions, with many service sector activities, tends to attract more highly qualified workers who cover longer distances on average. This employment structure is not to the advantage of less qualified workers, who are represented predominantly in the outbound commute. Other factors obviously come into play (such as the effects of “cascading qualifications” [Deville, 2008]), but the inadequacy between employment supply and demand seems to impose greater distances, for both the inbound commute and the outbound commute.

Table 4. Main mode of travel according to the characteristics of workers in connection with BCR and their companies

Characteristics	Walking (%)	Cycling (%)	Motorcycle / scooter (%)	MTB (%)	Train (%)	Car (pass.) (%)	Car (driver) (%)	Car (total) (%)	Total (%)	Car (pass.) / Car (total) (%)	Workers (n)	Respondents (n)
Workers in connection with BCR	5.3	1.6	1.1	20.9	21.7	5.7	45.3	48.7	100	7.8	642,000	25,000
Flow of workers												
Inbound	11.7	3.5	1.5	40.5	1.8	3.4	27.5	41.4	100	9.8	278,841	12,042
Outbound	0.5	0.7	0.6	3.9	41.9	3.7	48.6	52.7	100	6.9	359,659	11,191
Gender												
Women	0.5	1.2	0.3	27.8	23.0	4.3	39.4	41.6	100	10.3	287,247	11,808
Men	9.1	2.2	1.7	14.7	20.2	3.3	52.8	56.2	100	6.8	354,766	13,841
Age												
18 - 24	6.0	1.6	0.9	36.1	17.0	7.3	31.2	36.7	100	10.4	30,960	1,221
25 - 34	8.9	2.6	0.7	26.6	21.4	4.1	37.9	42.1	100	9.8	83,965	3,086
35 - 44	5.4	1.6	1	23.0	21.2	3.8	43.4	47	100	7.8	95,389	3,633
45 - 54	4.4	2.2	1.1	20.5	21.9	3.9	46.1	50.5	100	7.8	92,602	3,660
55 - 64	3.3	1.7	1.2	17.9	20.1	3.7	50.7	53.9	100	6.9	91,584	3,699
65 - 74	4.3	1.7	1.5	16.1	21.3	3.2	51	54.2	100	6.8	87,079	3,555
75 - 84	2.9	1.4	1.3	14.1	20.4	3.4	48.6	53	100	6.9	77,682	3,203
85 - 94	3.3	0.8	0.8	16.8	24.8	3.7	47.2	51.3	100	7.2	57,561	2,482
95 - 104	7.1	1.3	0.8	16.2	20.2	3.3	51	54.2	100	8	21,776	961
105 years and over	10.4	1.6	0	12.8	9.8	2.4	60.1	64.5	100	10.8	2,907	137
Education												
Lower secondary	8.9	0.6	1.2	30.3	10.7	6.4	41.4	48.1	100	10.8	106,311	4,379
Upper secondary	4.6	1	1	21.6	22.0	4.3	45.2	48.4	100	8.8	174,710	6,898
Higher short	3.7	1.0	1.2	16.9	20.7	3.3	48	51.2	100	6.2	155,141	6,104
Higher long	5.3	3.2	1	17.5	23.0	3.3	47.3	48.6	100	4.8	238,898	8,278
Worker status												
Worker - private	5.3	0.9	1	26.6	7.7	7	41.8	48.4	100	14.0	133,781	4,207
Employee - private	3.6	1.7	0.8	17.9	21.3	7	51.9	54.7	100	9.4	234,975	11,243
Self-employed	4.6	2.1	1.6	19.1	28.4	2.9	48.2	56.1	100	7.7	137,270	5,961
Contract employee	7.5	3.0	1	20.4	28.4	2.9	48.2	56.1	100	8.8	69,202	2,887
Self-employed	11.9	1.4	1.4	32	4.6	4.6	66.6	71.9	100	6.4	57,786	2,426
Sector of activity												
Construction	4	0.6	0.7	11.1	9.6	10.2	64.6	76.3	100	16.9	30,584	1,188
Manufacturing sector	3	1	1	31	7.8	4.8	71.3	76.4	100	6.4	33,815	1,333
Wholesale and retail trade	9.4	1.3	0.7	20.4	7.7	3.8	57.9	61.4	100	10.3	42,202	2,030
Transport, storage and information and communication	4.5	2.6	1.4	12.7	19.4	2	57.2	69.2	100	10.8	38,872	1,546
Health and social work	2.6	1.6	1.3	13.9	20.7	2.1	54.1	58.2	100	10.8	42,011	1,631
Education	3.5	1.0	0.8	12.9	20.9	3.1	46.6	51.7	100	8	33,279	1,386
Other service activities	6.1	1.9	1.2	26.7	12.5	3.2	46.8	50	100	6.9	62,776	2,614
Administrative and support service activities	6.5	2.6	1	22.5	20.8	3.4	43.3	48.9	100	7.2	45,082	1,860
Information and communication	3.1	1.1	1	36.6	12.7	4.4	38	43.5	100	10.2	42,966	1,807
Financial and insurance activities	10.1	0.6	1.2	24.8	7.8	4.3	38.1	43.4	100	9.8	24,214	967
Extra-territorial activities	2.5	1.4	1.1	14.5	30.7	2.7	38.6	41.3	100	6.5	58,036	2,162
Other territorial activities	10.9	4.1	1.5	20.7	13.4	3.6	37	42.5	100	6.9	31,620	1,302
Public administration and health insurance	9.5	3.0	0.9	26.4	24.3	3.3	35.3	35.5	100	9.2	16,886	692
Health insurance	3.9	1.6	1.2	17	45.9	2.9	27.9	30.9	100	9.9	90,277	3,445

The figures presented above are highlighted in the table if they differ significantly (chi-squared test; 1 degree of freedom; alpha = 0,05) from the theoretical value for all of the workers in connection with BCR. They are presented in red if they are over-represented and in blue if they are under-represented. This layout is intended to facilitate the interpretation of tables (How do the sub-populations differ with respect to all of the workers in connection with BCR? Which value should be trusted?) rather than being a group of results of statistical tests to be analysed [see Ermans et al., forthcoming].

Source: LFS 2011-2014

2.3. Measures in favour of a modal shift for travel between home and work

- 40 Let us now examine the measures taken to improve the mobility of workers. They are usually the work of sectors or companies and are compulsory or non-binding, according

to the case. At this stage, it is interesting to note that most of the measures implemented concern mobility and are not an aid in the relocation of companies or workers, for example.

- 41 It is worthwhile to prompt a modal shift among workers at company level, as employers have a privileged relationship with commuters, at contract and financial level [Vanoutrive, 2012]. Collective solutions may also be organised at company level (transport organised by the employer, organisation of a car sharing system among staff, etc.).
- 42 Since 2004, *SPF Mobilité et Transports* has asked companies which employ at least 100 (200 before 2011) workers to carry out a mobility diagnosis every three years for each site with at least 30 workers. These are referred to as “federal diagnostics”. Since 2011, this initiative has been compulsory in Brussels for companies with more than 100 workers and is managed by *Bruxelles Environnement*, thus becoming “Company travel plans (CTPs)”. These two tools allow us to access an interesting database on the measures taken by companies in the area of the mobility management of their workers. In Brussels, the sample of CTPs represents 37 % of employment in Brussels [Bruxelles Environnement, 2016].
- 43 During the 2005-2014 period, companies increased the number of measures taken to promote more sustainable mobility behaviour. The average number of measures taken by companies in Brussels subject to CTPs is approximately 27. With the CTPs, 8 measures have been compulsory since 2011. These are mainly information and awareness-raising measures, as well as modal shift incentives with the obligation to take at least two initiatives in favour of public transport (reimbursement of passes, providing information, etc.), as well as the creation of a bicycle parking area [Bruxelles Environnement, 2016].
- 44 The main measures which may be taken at company level may be divided into three categories [cf. Vanoutrive *et al.*, 2010]:
 - The measures aimed at the promotion of alternatives to driving solo (encourage cycling, car sharing and public transport). Generally speaking, these measures are easily acceptable and relatively affordable for the employer. This results in their widespread application at company level: approximately 81 % of companies in the sample offer a reimbursement for kilometres cycled and approximately 64 % of companies offer a 100 % reimbursement for public urban transport (73 % for SNCB) [Bruxelles Environnement, 2016]. Let us point out that this involves companies with more than 100 workers, which constitutes a significant bias in this evaluation, as the size of the company may facilitate the organisation of measures in support of alternative mobility, and may also have an impact on the situation of workers (union representation, collective labour agreements, etc.).
 - The restrictive measures: measures which involve mainly a limitation in the number of parking spaces and the number of company cars. The availability of a free parking space at the destination and a company car constitute major obstacles to a modal shift. Few companies consider the implementation of these measures. Only 14 % of company CTPs require their workers to pay for parking [Bruxelles Environnement, 2016] and the number of company cars is rising [May, 2017].
 - The incentive measures: flexible working hours, “compressed” work weeks, telework, etc. are good tools but are not adapted to all sectors of activity. Telework is growing quickly, and in 2014, 63 % of workers in a company participating in CTPs had the possibility to work from a distance [Bruxelles Environnement, 2016].

- 45 In addition to the data gathered, CTPs constitute an interesting regional tool which allows action to be taken on the travel practices of workers and a contribution to the institutionalisation of the management of mobility within companies. In the following section, we shall discuss the potential of several measures being considered.

3. Levers in favour of a modal shift

- 46 Many factors influence the choice of travel mode and modal shift. Let us mention three types [De Witte, 2012]. They are difficult to distinguish, however, as they tend to be linked and influence each other mutually:

- Personal factors (age, sex, family situation, etc.);
- Factors related to mode (car ownership, parking facilities, etc.);
- Factors related to travel (motive, distance, accessibility, etc.).

- 47 The analysis also highlights the fact that the modal choice for journeys in connection with BCR (inbound, outbound or internal) is related above all to the distance covered [De Witte, 2012: 123-142]. As regards travel between home and work in particular, while it is difficult to influence personal factors, it is possible to influence factors related to modes and journeys.

- 48 We have identified three major categories of levers which are likely to have an impact on these factors:

- The first lever involves measures aimed at rationalising travel, either by decreasing the number of journeys (telework), by smoothing out the peak hours (flexible working hours) or by organising solutions to reduce solo driving (car sharing). These measures may usually be taken at company level.
- The second lever involves measures aimed at a modal shift and the attractiveness of alternative travel modes. This takes place via an increase in compulsory measures for companies, as well as via measures which do not only depend on the world of work, such as an improvement in the transport service or a modification of advantages related to company cars with the implementation of a mobility budget, for example.
- Finally, the third lever is related to land-use planning. It concerns the location of companies and their accessibility by public transport, and a reflection on the separation between places of activity and places of residence.

3.1. Measures aimed at rationalising travel

- 49 New technologies in the area of telecommunications have made telework more and more popular among companies and workers. In 2014, 16 % of workers subject to CTP obligations did telework for an average of one day per week [Bruxelles Environnement, 2016]. Telework is often presented as an instrument which allows the socio-economic and environmental impacts of travel between home and work to be reduced.

- 50 There are three types of telework. It can be done in a sub-branch of the company which is closer or more accessible for the worker from home, in satellite offices or *telecottages*. Telework may also be done at home. This is often what people refer to as telework. Finally, telework may be done in different places. This is nomadic work, from the train, from a hotel during a trip, etc. [Van Lier *et al.*, 2014]. The first two types of telework are especially interesting in terms of mobility as they involve a reduction in the number of

weekly journeys or of their distance and length, with the beneficial effects this may have on transport networks. At individual level, telework from home allows a reduction in the time spent travelling to/from work, allowing more time for other activities. In this respect, it is interesting to note that telework concerns more inbound workers, who cover the longest distances on average [Ermans *et al.*, forthcoming]. Nevertheless, certain authors argue that teleworking possibilities may also encourage people to live further from their place of work, which in the end would tend to increase the total number of kilometres covered, despite a reduction in the number of journeys [Vanoutrive *et al.*, 2010], or to take advantage of telework days to make other journeys (sports activities, visits with family and friends, etc.).

- 51 However, in the field, telework is still relatively limited, or limited to certain sectors of activity. Due to its nature, telework may not be possible in all sectors of activity or for all functions, but is instead limited to office activities. For example, the service sectors (hotel and restaurant, industry, construction, health, education sectors, etc.), which require a physical presence, have a lower rate of telework [Van Lier *et al.*, 2014].
- 52 Another measure which may contribute to a better time distribution of journeys is flexible working hours, which allows greater variability in departure and arrival times of workers. Thus, in 2014, flexible hours concerned 12 % of workers [Ermans *et al.*, forthcoming, LFS figures, 2014]. This flexibility is positive if it is the worker's choice. However, flexible hours often go hand in hand with an increase in atypical or flexible working hours which are imposed on workers, especially on those who are the least qualified (16 % of labourers, 13 % of workers with a secondary school diploma at most), and even more in certain sectors of activity: hotels and restaurants (22 %), transport and storage (21 %), public healthcare and social action (18 %), shops, vehicle repairs (13 %) or company support activities (12,5 %) [LFS 2011-2014]. These categories of worker risk being even more affected by this flexibility as it concerns workers who are least likely to have the tools to manage this complex mobility (private car, intermodality and multimodality practices, etc.) This imposed flexibility may also have an impact on women who work part-time more often than men and who also tend to travel more compared with full-time workers [Ermans *et al.*, forthcoming].
- 53 Finally, new technologies shed new light on a practice which is losing momentum in many sectors of activity, i.e. car sharing. On the one hand, mobile applications and a computerised system for the management of car-sharers may remove some of the obstacles to this practice and, on the other hand, the car-sharing systems may contribute to decreasing the number of cars owned. However, challenges still exist. Although the practice of car sharing does not have a strong social connection, car sharing nevertheless tends to be most common among workers with the lowest income. This is probably related to the fact that car ownership depends partly on the level of income. Furthermore, the practice of car sharing varies strongly according to the sector of activity. It is more common in the construction sector, manufacturing sector and transport sector, whereas it does not exist in other sectors [Ermans *et al.*, forthcoming].
- 54 The three main factors which influence the practice of car sharing are: the location of the company and its accessibility by public transport, the organisation of work and the sector of activity, as well as the promotion of car sharing by the employer via measures such as a database of car-sharers or reserved parking spaces [Vanoutrive *et al.*, 2012]. As regards the location of the company, car sharing competes with public transport. When there is good accessibility by public transport, car sharing tends to be less common among

workers. In other words, car sharing often constitutes a stopgap for a defective public transport service or a company location which is too far away. Furthermore, the residential location of workers has a significant impact on the practice of car sharing. When workers' homes are far away and scattered, the practice of car sharing is more difficult. In this respect, big companies have an advantage as they have a larger pool of workers, allowing better chances to match destinations among workers.

- 55 As regards the organisation of work, the flexibility of working hours is a factor which discourages car sharing as it is more difficult to coordinate working hours. This difficulty of coordination of working hours is linked to more psychological factors among workers who seem reluctant to lose the control and independence which their cars offer. Finally, the promotion of car sharing is an important dimension. Beyond the organisational help and information provided to workers, incentives such as reserved parking spaces and flexible working hours provide good results, but the most effective measures are coercive: paid parking or an end to the reimbursement of car travel are more of an incentive for workers to practise car sharing [Vanoutrive *et al.*, 2012].

3.2. Measures which are direct incentives for a modal shift

- 56 Attempts to make alternative travel modes more attractive constitute a second important type of lever.
- 57 At company level, measures which are direct incentives for a modal shift are usually part of CTP actions. While their numbers are increasing in companies which are subject to this obligation, their impact on the modal shift of workers is often difficult to identify with respect to other factors (workers' personal needs, accessibility of the company, improvement of cycle paths or frequency of public transport lines, etc.).
- 58 If we look at the details for each type of measure by analysing the results of CTPs, the measures which seem to be the most effective are:
- for cycling, the reimbursement per kilometre, as well as the availability of bicycles and bicycle parking areas;
 - for public transport, the reimbursement of journeys and the availability of targeted information regarding public transport possibilities.
- 59 These measures appear to be all the more effective when the place of work is easily accessible and the average distances between home and work are not very long.
- 60 Other factors reinforce the impact of actions to promote cycling and the use of public transport. Thus, the flexibility of working hours may have a negative impact on the organisation of car sharing, but a positive effect on the use of the train or cycling. In the same way, the availability of parking spaces for workers greatly influences the modal shift. It is usually observed that a lack of parking spaces increases the likelihood of cycling or the use of public transport for travel between home and work [Van Malderen *et al.*, 2012]. However, limited parking, paid parking and company car restrictions are among the least popular measures. These mobility "advantages" are often considered as part of the employee's "pay package" and not as a mobility policy of the company.

Company cars and mobility budget

In the strict sense, a company car may be defined as a car which is provided to a worker by his or her company or employer and which may be used for private

purposes [May, 2017]. The use of company cars has been increasing constantly over the past 10 years, and is positively correlated with the level of income of workers and the distances between home and work [Ermans, 2017]. According to the Conseil Central de l'Economie (study based on SD Works data), approximately 40 % of employees for whom the distance between home and work is greater than 56 km have a company car [CCE, 2016]. One of the main arguments for continuing the system of company cars is the cost of work in Belgium. A company car is often offered to workers as part of their wages and not because they actually need one for professional reasons.

Furthermore, many companies allow their staff to deduct part of their car-related costs for travel between home and work, which encourages car use and the possibility to live further from their place of work [Potter *et al.*, 2006]. According to the Conseil Central de l'Economie, 30 % of workers who travel more than 56 km receive a car allowance for their travel between home and work [CCE, 2016].

The objective of a mobility budget is to propose alternatives to company cars and to encourage more multimodality among employees. In other words, the target group of the mobility budget is company car users who usually travel long distances between home and work thanks to advantageous tax treatment [Zijlstra and Vanoutrive, 2017]. However, it is likely that this budget will have a relatively marginal impact in terms of modal shift for company car users [Zijlstra, 2016], in view of the advantages of a private car, as well as the lack of alternatives in terms of public transport, which is due to poor territorial coherence between places of activity and places of residence in particular.

- 61 Part of the attractiveness of measures proposing alternatives to car use is beyond the scope of company action. On the one hand, at individual level, the choice of mode of transport is influenced directly by time/cost constraints. The reimbursement of travel by public transport or by bicycle is a significant incentive, but would probably be insufficient if there are poor facilities for pedestrians and cyclists, if the average distances between home and work remain high and if public transport services (frequencies, reliability, transfers), as well as solutions in favour of multimodality and intermodality (P+R, etc.), are lacking.
- 62 On the other hand, travel between home and work is often combined with another activity (collecting someone, shopping, etc.). Approximately 20 % of days which are structured by work or studies include at least one other activity on the way home [Lebrun *et al.*, 2014]. Individual or family constraints have a strong influence on the modal choice of individuals, and these specific constraints are not always taken into account in actions at company level [Dickinson *et al.*, 2003].
- 63 It is also important to underline that intermodality and multimodality in travel between home and work are sometimes hindered by the many regulations in terms of reimbursements, which vary according to the type of journey (private, commute, services), the mode of transport and the sector (which may determine the tax treatment) [CCE, 2016].
- 64 Generally speaking, the accessibility of the place of work seems to be one of the main factors in the success of these measures, and in particular, accessibility by public transport. Car use usually decreases among workers who live near a main railway line or in a place which is well served by public transport [Verhetsel and Vanelslander, 2010].

However, cars often represent significant proportions in terms of modal share, even when the accessibility of the place of work by public transport is excellent. Therefore, while the increase in the number of compulsory measures at company level for the promotion of alternative modes is probably a good way to favour a modal shift among workers, these measures alone risk having a limited impact if they are not accompanied by a restriction of car-related advantages (company cars, reimbursement of fuel, availability of parking spaces, etc.).

Modulate mobility measures according to company location

While it is sometimes difficult for a company to relocate, certain measures prove to be more appropriate with respect to the company's accessibility and location. Thus, for a company located on the outskirts and which is not easily accessible by public transport, it would be better to develop car sharing or shuttle solutions for its workers up to the closest main station. But these measures will, however, remain limited with respect to a company located in the city centre, due to the many transport possibilities there, the local services available and the difficult access by car (congestion, limited parking spaces, etc.).

However, this more central location is not necessarily suited to large companies or companies with many logistical needs, and is faced with high rental costs and many urbanistic constraints. Furthermore, car congestion may prompt certain companies to leave big cities altogether and move to outlying areas or average sized cities, with the risk of cutting themselves off from part of their staff who live in the urban centre.

In other words, the location policies of companies – and therefore, for the public authorities, the land-use planning policies – constitute an important aspect of mobility management, and these choices are often out of reach of workers.

See figures 11a and 11b

Figure 11a. Example of typical mobility measures according to the location of companies: large company located on the outskirts.

Author: Florentine Sieux (Louise/ULB)

Figure 11b. Example of typical mobility measures according to the location of companies: smaller company located in the city.

Author: Florentine Sieux (Louise/ULB)

3.3. Land-use planning and employment policies

- 65 As we can see, the location of companies in areas which are accessible by means other than by car as well as relatively short distances between home and work, are important deciding factors in workers' choices in favour of more sustainable mobility. A compulsory relocation policy for companies is probably unrealistic, but a coherent policy regarding the location of economic activity and the concentration of the housing environment, with a parallel development of public transport, may have an important impact on the transport demand [Vanoutrive *et al.*, 2010; Verhetsel and Vanelslander, 2010].
- 66 The third lever which we have identified therefore concerns land-use planning and greater coherence in the development of economic activity. As we have seen, the scattering of places of residence and the continued urban sprawl have contributed to an increase in the distances between home and work and have favoured considerable car use. Land-use planning aimed at more sustainable mobility takes place in two stages: on the one hand, the limitation of urban sprawl and the densification of the housing environment and, on the other hand, the integration of places of activity and residence (or at least a good connection between them).
- 67 Apart from professional activity, the centres of activity tend to be spread throughout the territory (schools, leisure, services, etc.), making it difficult to design appropriate public transport networks. Therefore, territorial planning favouring the location of homes, schools and employment around public transport hubs would make a more pertinent

service available to everyone, in particular for people who do not have easy access to a car [see Boussauw and Vanoutrive, 2017].

- 68 The actions related to this integration are split between different stakeholders and levels of authority. With regard to Brussels and its metropolitan region, it should be noted that this integration is subject to Belgian institutional division. Thus, the replacement of the company car system and the development of the S-train are federal responsibilities and are deciding factors regarding car use for travelling to work in Brussels. Furthermore, the fact that income taxes are collected at the place of residence of the worker and not at his or her place of work raises questions regarding the responsibility for transport infrastructures. The Beliris cooperation agreement was created for this in part, but the pressure caused by commuters on the regional road network is such that the proposal for a city toll keeps emerging, but has not been accepted unanimously.
- 69 Another interesting approach with respect to taxation would be to link property tax and the proximity of the place of work. A proposal by several business people¹⁰ was recently made to reduce the property registration fees for people who choose to live close to their place of work. Although this proposal is economically and socially problematic in certain ways (in particular for unemployed people, precarious employment, etc.), it has the virtue of proposing a residential relocation of workers rather than a mobility solution.
- 70 In the area of cooperation between the regions, the dominant modal share of the car indicates the need for a coordinated and more integrated public transport service, which goes beyond the administrative boundaries of BCR (STIB, De Lijn and TEC), as well as the need to boost the management and creation of P+R car parks whose realisation is lagging. Once again, there is a true interest in the activation of the inter-regional dialogue via the creation of a metropolitan community.
- 71 Companies are not left out. Beyond company relocation policies, the workers who live in an area relatively close to their place of work could be favoured during the recruitment phase, under circumstances of equal qualifications. Companies could also encourage their workers to live closer to their place of work via a removal allowance [Cairns *et al.*, 2010].
- 72 Finally, as regards the integration of places of activity and residence, by favouring the creation of low-skilled employment in BCR, jobs could be created to a certain extent for a nearby workforce, and the growing distances could be decreased for the outbound commute, in particular for workers from the poor area [Ermans *et al.*, forthcoming]. Brussels – like other metropolises – has a large population of young people, with a large gap between their aspirations and the employment opportunities available to them [Eurostat, 2016: 38]. Generally speaking, BCR is characterised by a stagnation in the average taxable income or, at the very least, by a slower growth of this income with respect to its outskirts, which has an impact on access to different travel modes and, therefore, on mobility [Lebrun *et al.*, 2012].

Conclusion

- 73 As we have shown throughout this synopsis, the daily mobility of workers is not only a transport issue. It is related to their residential situation. A residential location far from one's place of work, for example, is determined by economic necessities (cost of housing, professional instability, etc.), a dream (a detached house), a social status to protect (appeal of the green suburbs) or a need for roots in a territory. These residential

situations depend on land-use planning policies which lead to the scattering of the housing environment and make the implementation of true alternatives to car use nothing but an illusion, following the gradual dismantling of the exceptional railway and byroad network which existed in industrial Belgium. The implementation of more sustainable mobility for companies and their workers suffers because of the institutional division of Belgium and lack of coordination between levels of authority, in particular at metropolitan level in Brussels. This division also allows contradicting policies to be maintained. Thus, as long as the tax regime for companies favours the availability of company cars and petrol cards as it does now, it will be very difficult to balance this advantage with other measures which favour the use of alternative modes of transport or a location policy for companies as well as workers, which is more in keeping with sustainability demands.

- 74 Despite this context which restricts the room for manoeuvre of companies, they are not devoid of means for action to contribute to the transition towards more sustainable mobility. In this synopsis, we have mentioned the three areas in which the contribution of companies may be substantial: the organisation of work, the management of the mobility of workers and accessibility.
- 75 Firstly, concerning the organisation of work, we have seen that it may have a significant impact on the rationalisation of the number of journeys made by workers. The main tools for this rationalisation are telework and flexible working hours. Although these tools cannot be applied to all sectors, their implementation is making progress in the world of work. At the risk of unintended consequences (deterioration in working conditions, isolation of workers, etc.), it must be carried out voluntarily and with support. Secondly, given the growing number of measures taken in the framework of CTPs, companies seem to be more involved in the management of their workers' mobility. While the main measures taken concern above all the promotion of car sharing and alternatives to car use, let us bear in mind the advantage of more restrictive measures (limitation of parking spaces and decrease in the number of company cars), which are also part of the range of tools for the management of workers' mobility, but which are not often implemented at company level. New technologies probably provide new means of action in this area, facilitating car sharing, vehicle pooling and the management of parking spaces. The different measures taken at company level must also be modulated according to the location of the place of work. This brings us to the third area for action – the most cross-cutting – which concerns accessibility. It is also the one which is played out over the longest term as it concerns the location of places of work and the policy for the recruitment of workers.
- 76 Companies are therefore full stakeholders in the mobility of workers. Their actions alone will not be a solution to the drudgery of commuting or traffic congestion problems. As we have seen, this takes place via a coordination of actions between stakeholders and via policies, in particular in the area of taxation and land-use planning. Nevertheless, a strong-willed policy at company level, which also includes more restrictive measures, may make a true contribution to the development of more sustainable mobility for workers, as well as to the improvement of their competitiveness and the economic development of Brussels and its metropolitan area.

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NOTES

1. Readers will find more methodological explanations on the different sources used in the 6th *Cahier de l'Observatoire de la mobilité de la Région de Bruxelles-Capitale* [Ermans et al., forthcoming].

2. Division of 116 municipalities, in addition to the 19 municipalities of Brussels, determined by the Plan IRIS 2 for travel in BCR. This area is close to the so-called “RER” area [Lebrun *et al.*, 2012: 7].
 3. The distances as the crow flies are calculated based on data from the 2011 Census, and the declared distances are based on LFS data from 2011 to 2014 [see Ermans *et al.*, forthcoming].
 4. IBSA, “Population active occupée au lieu de résidence”, LFS data, retrieved on 24/05/2018: <http://ibsa.brussels/themes/marche-du-travail#.WwZ2lxkuBGM>
 5. A decrease of more than 25 600 jobs held by inbound workers is observed between 2010 and 2016, with the proportion of commuters dropping from 52,3 % to 48,7 % in the share of employment in Brussels (IBSA, “Population active occupée au lieu de residence”, LFS data, retrieved on 24/05/2018: <http://ibsa.brussels/themes/marche-du-travail#.WwZ2lxkuBGM>).
 6. IBSA, “Un Bruxellois salarié sur trois travaille à temps partiel”, data from *Steunpunt Werk*. Article online, retrieved on 24/05/2018: <http://ibsa.brussels/publications/titres/a-la-une/mai-2018-un-bruxellois-salarie-sur-trois-travaille-a-temps-partiel#>
 7. “Worker in connection with BCR” refers to people who work in Brussels, whether or not they live there, as well as people who live in BCR and work outside the regional boundaries. Therefore, the term includes workers who are internal, inbound and outbound with respect to BCR.
 8. This multimodal model is a tool to assist with political decisions (territorial and environmental planning in particular). Among others, it allows a representation of the flow of journeys in connection with BCR from a micro (statistical sector and *infra*) to a macro (BCR, Iris areas, etc.) level of analysis. It concerns the journeys made during peak hours, on a working school day (representative of all days apart from weekends, annual holidays and school holidays) with flows which may be broken down according to mode and motive.
 9. The statistical sectors are identified from a spatial point of view according to their centroid. The pre- and post-journeys between centroids and public transport stops are made on foot, and these journey times are included in the total travel time.
 10. L’appel des XI : “Quel avantage fiscal obtiendriez-vous si vous vous rapprochiez de votre lieu de travail ?” published in *L’Echo* on 26 January 2018. URL: <https://www.lecho.be/dossiers/l-appel-des-xi/9976160.html>
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ABSTRACTS

Travel between home and work structures the daily life of many workers in Belgium. How is this mobility organised and what are the factors which influence the modal choice of workers? What are the levers which influence this choice and, in particular, what is the role of companies in this area? The objective of this synopsis is to review the current situation of these complex questions and it is organised in three parts: the context of these journeys, the evolution of mobility behaviour and its deciding factors, and the levers for action in order to evolve towards more sustainable mobility. This synopsis also shows that travel between home and work is not only a transport issue, but is also related to people’s residential situation and land use planning. The latter suffers because of the institutional division of Belgium and calls for more coherence and dialogue among stakeholders. Despite this context, companies have significant room for manoeuvre, which this synopsis illustrates through three areas for action: the organisation of work, the management of the mobility of workers and accessibility.

Les déplacements domicile-travail structurent le quotidien des nombreux travailleurs actifs en Belgique. Comment s'organise cette mobilité et quels sont les facteurs qui participent au choix modal des travailleurs ? Quels sont les leviers qui permettent d'influer sur ce choix et quel est, en particulier, le rôle de l'entreprise en la matière ? L'objectif de cette note de synthèse est de faire un état des lieux actualisé de ces questions complexes et s'articule en trois parties : le contexte de ces déplacements, les évolutions des comportements de mobilité et leurs déterminants, ainsi que les leviers d'actions pour évoluer vers une mobilité plus durable. Cette note est également l'occasion de montrer que les déplacements domicile-travail ne se résument pas uniquement à une question de transport, mais sont aussi fonction des parcours résidentiels des personnes et de l'aménagement du territoire. Ce dernier pâtit du morcellement institutionnel belge, appelant à davantage de cohérences et de concertations entre acteurs. Malgré ce contexte, la marge de manœuvre des entreprises est loin d'être négligeable, ce que cette note illustre à travers trois domaines d'action : l'organisation du travail, la gestion de la mobilité des travailleurs et l'accessibilité.

De woon-werkverplaatsingen structureren het dagelijkse leven van de vele werknemers die in België aan de slag zijn. Hoe wordt die mobiliteit georganiseerd? Welke factoren beïnvloeden de werknemers bij de keuze van hun vervoersmodus? Welke hefboomen kunnen die keuze beïnvloeden? Wat is de rol van de bedrijven op dat gebied? Deze synthesenota strekt ertoe een up-to-date stand van zaken te geven van die complexe kwesties en bestaat uit drie delen: de context van de verplaatsingen, de evoluties van de mobiliteitspraktijken en hun bepalende factoren en de hefboomen om evoluties naar een duurzamere mobiliteit te bewerkstelligen. De synthesenota toont tevens aan dat de woon-werkverplaatsingen meer zijn dan een loutere kwestie van vervoer, maar ook afhangen van de woontrajecten van de werknemers en de ruimtelijke ordening. Deze laatste lijdt onder de Belgische institutionele versnippering. Meer coherentie en overleg tussen de actoren is dan ook nodig. Toch hebben de bedrijven een aanzienlijke manoeuvreerruimte. Dat wordt in deze nota toegelicht via drie actiegebieden: de organisatie van het werk, het beheer van de mobiliteit van de werknemers en de bereikbaarheid van de tewerkstellingsplaats.

INDEX

Mots-clés: aire métropolitaine, emploi, infrastructures urbaines, marché de l'emploi, mobilité, planification urbaine, transports publics

Subjects: 7. aménagement du territoire – logement – mobilité

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