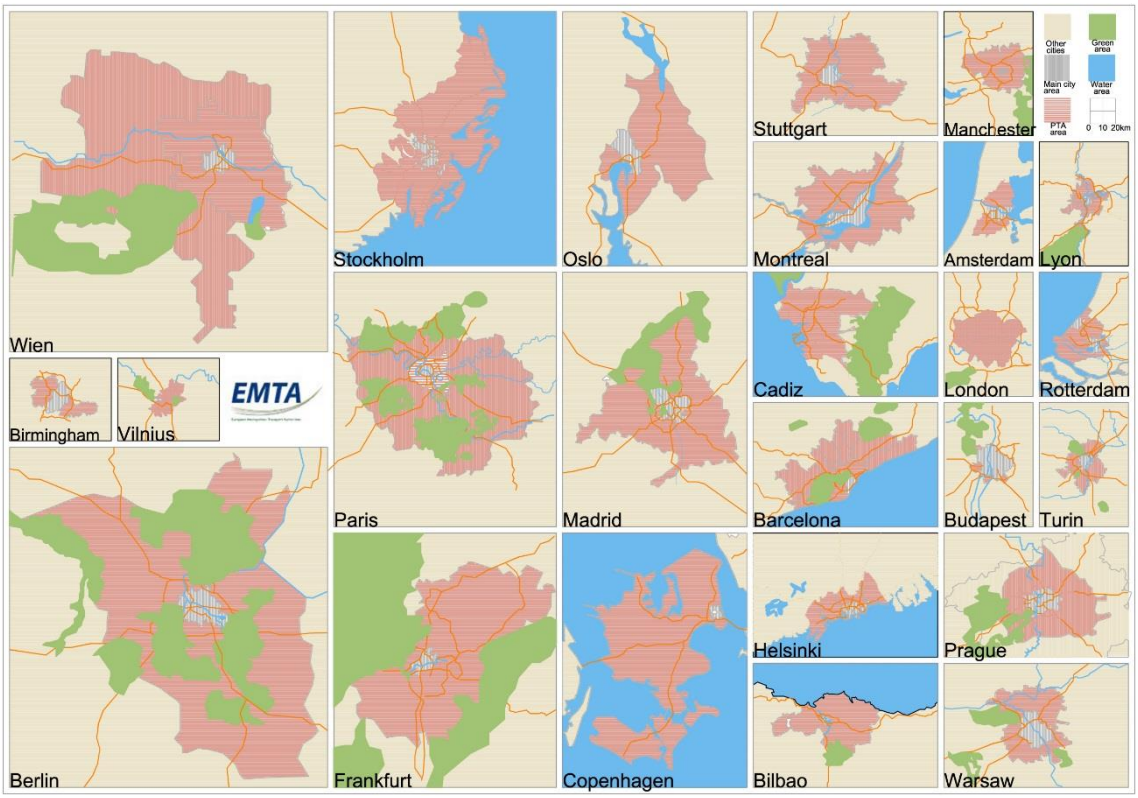
EMTA

European Metropolitan Transport Authorities

europe sustainable mobility metropolis transport authority

2014 Barometer



CONSORCIO TRANSPORTES MADRID

The barometer is produced by CRTM Madrid

Foreword

It is a great privilege to present you the EMTA Barometer 2014, that celebrates its tenth edition. Since 2004 this Barometer has been shaped into an easy accessible overview of key figures, performances and mobility indicators of EMTA's transport authorities in 24 larger cities and metropolitan areas in Europe and one valued partner (Montreal, Canada). For over more than a decade the EMTA Barometer is meticulously produced by Madrid's Regional Public Transport Authority (CRTM) into a trusted observatory of performance to the composition of this leaflet. Adding value to this 2014 Barometer are new features such as the key missions and policy objectives of EMTA-members and the mapping of the core of the transport area set off against the actual inner city perimeters. It provides an impression of each authority's administrative area set off against the actual city limits.

EMTA members have outdone themselves to collect harmonised data on supply and demand on 2014 in compliance with the indicators defined. An exhaustive collation of unified data of the network in term of demand, supply and costs and revenues may sometimes be constraint by regulations aimed at protecting sensitive business data from stakeholders and their businesses, to avoid business development data to be unduly compromised. Nevertheless, authorities showed perseverance to acquire the scaled indicators to the best of their abilities, making this edition a fine tool to monitor basic figures and review the comparative progress of mobility in their areas. To compare authorities on a consistent range of key indicators is often a demanding exercise.

European Metropolitan Transport Authorities

Albert Einstein: "**Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted**."

Data displayed are prone to be misperceived so they need to be verified and well accounted for. As collection methods do differ from one authority to another, all figures are double checked with the providers. I am sure that also looking at other data surveys the EMTA Barometer on its own merits provides a consistent tool, as it derives from original data sources, hence providing for a trustworthy profile of metropolitan public transport features.

Hopefully the 2014 Barometer provides you with a comprehensive overview of main performance indicators from EMTA's authorities. May the information be useful to your needs! I wish you lots of pleasure reading this publication.

Ruud van der Ploeg
EMTA Secretary general

GENERAL INFORMATION

Public transport authorities` partners

Stadsregio Amsterdam

Amsterdam

www.stadsregioamsterdam.nl

The Stadsregio Amsterdam ('City Region of Amsterdam') is a partnership between 15 municipalities in the Amsterdam region. These municipalities work together in the sphere of spatial development, traffic and transport, economic affairs, housing. Stadsregio focuses on direct results for participating municipalities in the form of improvements to quality of life, accessibility and economic development. Stadsregio encourages cooperation between municipalities and promotes the interests of the region at upper government level. Stadsregio also strives towards an efficient and customer-oriented way of working.

Autoritat del Transport Metropolità (ATM)

Barcelona

www.atm.cat

Autoritat del Transport Metropolità (*Metropolitan Transportation Authority*), shortened as ATM, is the organization in charge of the coordination of several public transportation systems in the city of Barcelona, its metropolitan area and other regions under its influence, including the setting of a shared fare, as well as the management, planning and/or construction of infrastructure for the global network. ATM is also in charge of the Mobility Master Plan of the Barcelona Region which establishes the mobility and environmental targets to be attained at regional and municipal scale.

Verkehrsverbund Berlin-Brandenburg (VBB)

Berlin

www.vbb.de

The Verkehrsverbund Berlin-Brandenburg is the public transport authority covering the federal states of Berlin and Brandenburg – the capital area of Germany. The VBB can trace back its roots as far as to the German Unification Contract in 1990. Feeling the necessity to reconnect Berlin to the surrounding Brandenburg and to create a high-quality public transport were the reasons for introducing the VBB as a common public transport authority. The main tasks of VBB are the co-ordination of the services of around 40 public transport companies and their better connections, the introduction and development of a common fare system and the improvement and quality control of public transport services. Also the VBB assists the authorities in charge of public transport in planning, tendering and management of regional railway services.

Consorcio de Transportes de Bizkaia (CTB)

Bilbao

www.cotrabi.com

It was founded in 1975 as a local entity with its own legal identity and independent of the entities within the consortium. It is made up by the Basque Government, the Biscay Provincial Government, the Bilbao City Council, and other city councils that control areas through which the Bilbao Metropolitan Railway runs. It is financed by the Basque Government and the Biscay Provincial Government. Its work was initially begun with the fundamental objective of building the Bilbao underground or Metro and to manage public transport in Biscay after starting up the underground rail service.

West Midlands Integrated Transport Authority (WMITA)

Birmingham

www.wmita.org.uk

The West Midlands Integrated Transport Authority (ITA) is responsible for formulating the transport strategy and policy for the Metropolitan Area; incorporating strategic highways, freight, rail, bus and rapid transit networks. Centro's role is to deliver the major public transport schemes and ensure improvements to bus, rail and tram services which people use every day. Centro works in partnership with bus operators, train operators and Midland Metro.

Budapesti Közlekedési Központ (BKK)

Budapest

www.bkk.hu

Budapesti Közlekedési Központ (Centre for Budapest Transport) was established by a ruling of the General Assembly of the Municipality of Budapest on the 27th of October, 2010. The main objectives are: prepares and implements the Budapest transport strategy, incorporates sustainability and equality considerations in the operation and development of transport in Budapest; integrates the management and supervision of the Budapest transport sectors, particularly in public and road transport; orders and finances the public services of public and road transport; improves urban transport; supports, enables and assists the proliferation of pedestrian and bicycle transport; creates a balance between the development and operation of the transport system; operates a standard financing scheme; supervises the public and road transport service companies owned by the capital; co-ordinates all investments which involve public and road transport, including those undertaken by local governments or public utilities; and plays an active role in regional transport cooperation.

Consorcio Metropolitano de Transportes de la Bahía de Cádiz (CMTBC)

Bahía de Cádiz

www.cmtbc.es

The Consorcio Metropolitano de Transportes de la Bahía de Cádiz is established in order to coordinate the economic, technical and administrative cooperation between the associated administrations to exercise together and coordinated the powers of them in the creation and management of infrastructure and transport services inside the limits of the municipalities added. The main objectives are: promote the sustainability of the transport network of the Bay; promote the use of public transport; promote non-polluting modes of transport, and not subject to congestion; and increase the level of integration of the metropolitan area.

Trafikselskabet Movia

Copenhagen

www.moviatrafik.dk

Trafikselskabet Movia is the public transport agency that is responsible for buses and certain local railways in Copenhagen and part of Denmark east of the Great Belt, covering the regions Sjælland and Hovedstaden, except for Bornholm. It does not own any buses and trains itself, but pays subcontractors to run them. It has an integrated fare system in collaboration with the Copenhagen metro and DSB, such that the same tickets are valid on all buses and trains. Cooperation with municipalities and regions are the cornerstone of Movia work to ensure an attractive public transport. Movia has a wide range of skills to ensure the best possible advice to municipalities and regions in all aspects of public transport related analysis, mobility, accessibility and promotion of public transport.

Rhein-Main Verkehrsverbund

Frankfurt

www.rmv.de

Rhein-Main-Verkehrsverbund (RMV or Rhine/Main Regional Transport Association) is one of the biggest transport associations in Germany. It coordinates and organizes regional bus and rail transport services across an area of around 14,000 square kilometers. That's around two-thirds of the area of the Federal State of Hesse. It is a key contributor to the development of the Rhine/Main area as a pulsating metropolitan region.

Helsingin Seudun Liikenne

Helsinki

www.hsl.fi

Helsinki Regional Transport Authority (*Helsingin seudun liikenne, HSL*) began its work on January 1, 2010. The work of the new intercommunal authority is based on the new Finnish public transportation law in force since December 3, 2009. HSL is one of the largest intercommunal bodies in Finland, having 1.1 million people in its

area of influence. According to the law HSL is responsible for the planning and procuring of the public transportation in Greater Helsinki. The traffic functions of YTV and planning, procuring and tendering functions of HKL were moved into the transport authority.

Transport for London

London

www.tfl.gov.uk

Transport for London (TfL) is a local government body responsible for most aspects of the transport system in Greater London in England, formerly named "London Transport" (LT). Its role is to implement the transport strategy and to manage transport services across London. TfL has responsibility for London's network of principal road routes, for various rail networks including the London Underground, London Overground, TfL Rail, for London's trams, buses and taxis, for cycling provision, and for river services. The underlying services are provided by a mixture of wholly owned subsidiary companies (principally London Underground), by private sector franchises (the remaining rail services, trams and most buses) and by licensees (some buses, taxis and river services).

Syndicat Mixte des Transports pour le Rhône et l'Agglomération Lyonnaise

Lyon

www.sytral.fr

The major objective of the SYTRAL is to provide the best offer transportation for the inhabitants of the department developing the TCL network, cars of the Rhone and Dragonfly and the Optibus Rhôn Express and services. His political development of urban and interurban transport is based on the mesh of the territory and the link between different clusters. The main objectives are: explore the possibilities of implementation, identify new equipment requirements and create new lines represent the major activities of SYTRAL and its teams. In time client, projects undertaken by the SYTRAL have a threefold purpose: rebalance modes of travel within the PTU; develop efficient public transportation and clean energy; and develop the space for social cohesion and socio-economic development.

Consorcio Regional de Transportes de Madrid (CRTM)

Madrid

www.crtm.es

The Consorcio Regional de Transportes de Madrid (CRTM) is the Public Transport Authority of the Region of Madrid. Created under Law 5/1985 of the 16th of May, passed by the Madrid Assembly, the CRTM is an Independent Agency of the Madrid Regional Government. It is responsible for providing and managing all public passenger transport services attached to the Madrid Regional Government and to all the municipal councils in the region. Within the scope of the law by which it was created, its principal functions and objectives are as follows: Planning public transport infrastructures, with a particular emphasis on the migration to modal integration; creating an integrated fare system for all transport modes; establishing a stable financing framework; planning services and coordinating the operating programs of all transport modes; controlling and monitoring the financial management of the different operators; and creating a global image for the public transport system by creating a closer relationship with the users.

Transport for Greater Manchester (TFGM)

Manchester

www.tfgm.com

Transport for Greater Manchester is the new name for the organization responsible for implementing local transport policies that affect the ten districts of Greater Manchester. Transport for Greater Manchester is responsible for investments in improving transport services and facilities. It is the executive arm of the Transport for Greater Manchester Committee (the Greater Manchester Passenger Transport Authority between 1974 and 2011) which funds and makes policies for TfGM. The authority is made up of 33 councilors

appointed from the ten Greater Manchester districts.

Agence métropolitaine de transport de Montreal (AMT)

Montreal

www.amt.qc.ca

AMT since 1996 plans, operates and promotes public transport in the metropolitan area of Montreal. The main objectives are: plan, coordinate, integrate and promote the public transit services in close cooperation with their partners; manage the commuter rail and the metropolitan transport bus network; contribute to improving the efficiency of roads that have a metropolitan vocation; plan and build any extension of the subway system; finance the operation of services of 14 transit agencies in the region; support, develop, coordinate and promote the special transportation services for disabled people; and offering to the partners the expertise and tools that meet the diverse needs of finance and travel management. (AMT is a EMTA valued partner)

RUTER

Oslo

www.ruter.no

Ruter as is the public transport authority for Oslo and Akershus, Norway. The company, organized as a limited company is responsible for managing, but not operating, public transport in the two counties, including bus, the Oslo Metro, the Oslo Tramway and ferries. It also holds agreements with the Norwegian State Railways for price regulation on commuter trains operating within these two counties. Ruter is responsible for administrating, funding and marketing public transport in Oslo and Akershus. It is owned by the City of Oslo (60%) and Akershus County Municipality (40%), and organized as a limited company.

Syndicat des transports d´Île-de-France, Paris (STIF)

Paris

www.stif.info

STIF designs, organizes and finances the public transport for all Île-de-France inhabitants. At the heart of the Île-de-France public transport network, STIF brings together all stakeholders (passengers, elected representatives, manufacturers, transport operators, infrastructure managers …), invests and innovates in order to improve the service offered to passengers. STIF, which consists of the Île-de-France Region, the City of Paris and the seven other Île-de-France 'départements', is the body that lays out the vision for all transport in Île-de-France (railway, RER, metro, trams, T Zen and buses). It is therefore responsible for initiating and managing projects aimed at developing and modernising all the transport systems, the operation of which it entrusts to transport operators. STIF is responsible for balancing transport costs in Île-de-France, manages the operating budget (EUR 9.242 billion in 2014) and is involved in funding investments (renovating and ordering new trains, underground trains, buses, RER, trams; road and rail infrastructures…). STIF is responsible for producing the tickets and setting the fares.

Regional Organizer of Prague Integrated Transport (ROPID)

Prague

www.ropid.cz

Prazska Integrovaná Doprava (Prague Integrated Transport), PID, is a transport system including metro, trams, railways, city and suburban bus lines, funicular and ferry. This system is gradually integrated by common transport and tariff conditions and by a unified transport solution including coordination of schedules. It is built with the objective to ensure good quality servicing of the territory supporting competitiveness of public transport against individual transport. PID is being coordinated by ROPID (Regional Organizer of Prague Integrated Transport) a specialized organization, *responsible for the operation of Prague Integrated Transport*, was uncharged by creation and development of the system of Prague Integrated Transport. *Its task is organizational and checking.* It is responsible for its work towards bodies of the municipality and state authorities, that uncharged it by organization of the transport.

Metropoolregio Rotterdam Den Haag (MRDH)

Rotterdam-The Hague
http://mrdh.nl
In the southern Randstad (the urban agglomeration of Western Holland) 23 local authorities bundle their forces in the Metropolitan region Rotterdam The Hague (MRDH). The local authorities work together to improve accessibility and strengthen the economic business climate. The MRDH has an approved policy framework for European cooperation, and is working on a Roadmap for the implementation of the set-up goals. MRDH has internal working group for preparing policy documents and screening opportunities, and a regional knowledge exchange platform with the 23 municipalities for sharing experience and coordinated actions.

Stockholms Lokaltrafik AB (SL)

Stockholm
www.sl.se
Storstockholms Lokaltrafik AB, (Greater Stockholm Local Transit Company), commonly referred to as SL, is the organization running all of the land based public transport systems in Stockholm County. SL has its origins in AB Stockholms Spårvägar (SS), a city-owned public transit company which started in 1915 by the City of Stockholm with the aim to deprivatize the two separate private tramway networks into one more efficient company. In 1993 SL began to use independent contractors for the operation and maintenance of the different transport systems. For bus traffic the operators own the buses, but for rail bound traffic the SL own the trains, and the contractors operate them.

Verband Region Stuttgart (VRS)

Stuttgart
www.region-stuttgart.de
Founded in 1994, the Verband Region Stuttgart is the political entity for the Stuttgart Region with its own regional parliament which is elected every five years. The Verband works for a sustainable and a future-oriented development of the Stuttgart Region. The aim is to promote diversity, a high standard of living, mobility, and economic strength. Important responsibilities of the organization are spatial planning, economic development, and public transportation. In this sector, the Verband Region Stuttgart is responsible for such things as the suburban railway system, and the new express bus services. Seamless tariffing allows passengers to use one ticket for all buses and trains in the Stuttgart public transport area. The new "polygo" travel card will extend services to include car sharing, e-mobiltiy, and bike rentals.

Agenzia Mobilità Metropolitana di Torino (AMMT)

Torino
www.mtm.torino.it
The AMMT is the public authority in charge of public transport in the Turin metropolitan area that aims to improve sustainable mobility by optimizing public transportation service by means of targeted projects aimed at specific passenger needs: planning mobility strategies; improvements in public transportation (infrastructure, rolling stock and fleet monitoring technologies quantity and quality of service, funding for operations, both new and existing and targeted investment); administration of the tariff system; funding mechanisms from the Consortium members; service contracts with the transport operators; publicity; and information to citizens.

Verkehrsverbund Ost-Region (VOR)

Wien
www.vor.at
Austria's Eastern Region Travel Association (Verkehrsverbund Ost-Region Gesellschaft m.b.H., VOR) offers a coordinated range of public transport options in Austria's eastern region (Vienna, Lower Austria and Burgenland). At the intersection between passengers, transport companies, regional authorities and political bodies, VOR ensures that all current mobility requirements, both in urban and rural areas, are met systematically and with a high standard of quality. As Austria's oldest and largest transport association, VOR has been uniting rail transport operators and bus companies into a transport

association for about 3.7 million inhabitants since 1984. The VOR network comprises about 900 lines with roughly 11,500 stops in Vienna, Lower Austria and Burgenland. In 2014, more than 1 billion passengers used the public transport services in Austria's eastern region. At the intersection between passengers, transport companies, regional authorities and political bodies, VOR pursues the advancement of the region's mobility services, well beyond the mere organization of public transport. Comprehensive and intermodal mobility as well as efficient and sustainable planning of public transport are among VOR's principal concerns and pursuits. To ensure a wide range of public transport services within the region, VOR orders and appoints, within the scope of public tenders, the necessary bus connections. VOR thereby acts as the principal client of most public transport companies in Vienna, Lower Austria and Burgenland and as the clearing house for the revenue breakdown between VOR partners.

SUSISIEKIMO PASLAUGOS

Susisiekimo Paslaugos (MESP)

Vilnius

www.vilniustransport.lt

Municipal Enterprise 'Susisiekimo paslaugos' was founded on August 15, 1998, by Municipal Council. It is a local public transport authority responsible for the organization of the public transport in Vilnius city, maintenance of routes' network, scheduling, issuing and selling of public transport tickets, ticket inspection of the passengers, maintenance of information system for passengers, gathering and analyzing data on passenger carriage within the city, management of parking system and traffic management centre.

PUBLIC TRANSPORT AUTHORITY OF WARSAW

Zarzad Transportu MiejKiego Warszawie (ZTM)

Warsaw

www.ztm.waw.pl

Public Transport Authority came into being on the 1st of January 1992 by virtue of resolution of the Council of the Capital City of Warsaw. Its main goals are stated in charter and include organization, management and supervising of Public Transport in the urban complex of Warsaw. 20 years of experience with public transport organization as well as cooperation with executive organs related to local transport in major European metropolis resulted in creating an offer which is still expanding and fully meets the passengers' needs.

URBAN INFORMATION

Description of the PTA [1] area surveyed

Authority responsible		Main city population	PTA area population	PTA surface (km²)	PTA urbanised surface (km²)	PTA density (inhab. /urb. surface)	Annual PTA GDP per capita (€)
Stadsregio Amsterdam	*Amsterdam*	822,272	1,464,578	1,004	807	1,815	34,000 €
ATM	*Barcelona*	1,620,386	5,026,709	3,239	634	7,929	29,671 €
VBB	*Berlin*	3.469.849	5,927,721	30,546	3,419	1,734	30,517 €
WMITA	*Birmingham*	1,101,400	2,808,400	902	498	5,642	27,833 €
BKK	*Budapest*		1,757,618	525	358	4,910	20,798 €
CMTBC	*Cádiz*	333,344	822,792	3,191			
MOVIA	*Copenhagen*	683,376	1,768,125	2,559			56,160 €
RMV	*Frankfurt*	717,624	5,003,889	14,000	12,342	405	41,106 €
HSL-HRT	*Helsinki*	620,715	1,198,989	1,558	411	2,919	56,467 €
TFL	*London*	8,600,000	8,600,000	1,572	1,042	8,253	55,598 €
SYTRAL	*Lyon*	636,302	1,300,000	613	360	3,611	42,830 €
CRTM	*Madrid*	3,165,235	6,454,440	8,028	1,043	6,188	31,004 €
TFGM	*Manchester*	517,000	2,724,000	1,272	959	2,840	24,454 €
AMT	*Montreal*	1,988,243	3,975,711	3,980	1,624	2,448	31,279 €
RUTER	*Oslo*	647,676	1,232,575	5,005	208	5,926	61,200 €
STIF	*Paris*	2,266,000	12,014,814	12,000	2,530	4,749	52,298 €
RODIP	*Prague*	1,259,000	1,912,000	3,100	644	2,969	23,662 €
MRDH	*Rotterdam*	1,135,759	2,250,000	990	440	5,114	36,500 €
SL	*Stockholm*	911,989	2,198,044	6,524	880	2,498	60,517 €
VRS	*Stuttgart*	612,441	2,443,892	3,011	722	3,385	43,771 €
AMMT	*Torino*	898,714	1,550,216	838	233	6,668	21,399 €
VOR	*Wien*	1,797,337	3,722,471	23,563	14,438	258	
MESP	*Vilnius*	529,022	529,022	401	148	3,574	17,000 €
ZTM	*Warsaw*	1,735,442	2,507,382	2,429	385	6,513	16,329 €

(1) PTA: Public Transport Authority (2) GDP: Growth Domestic Product

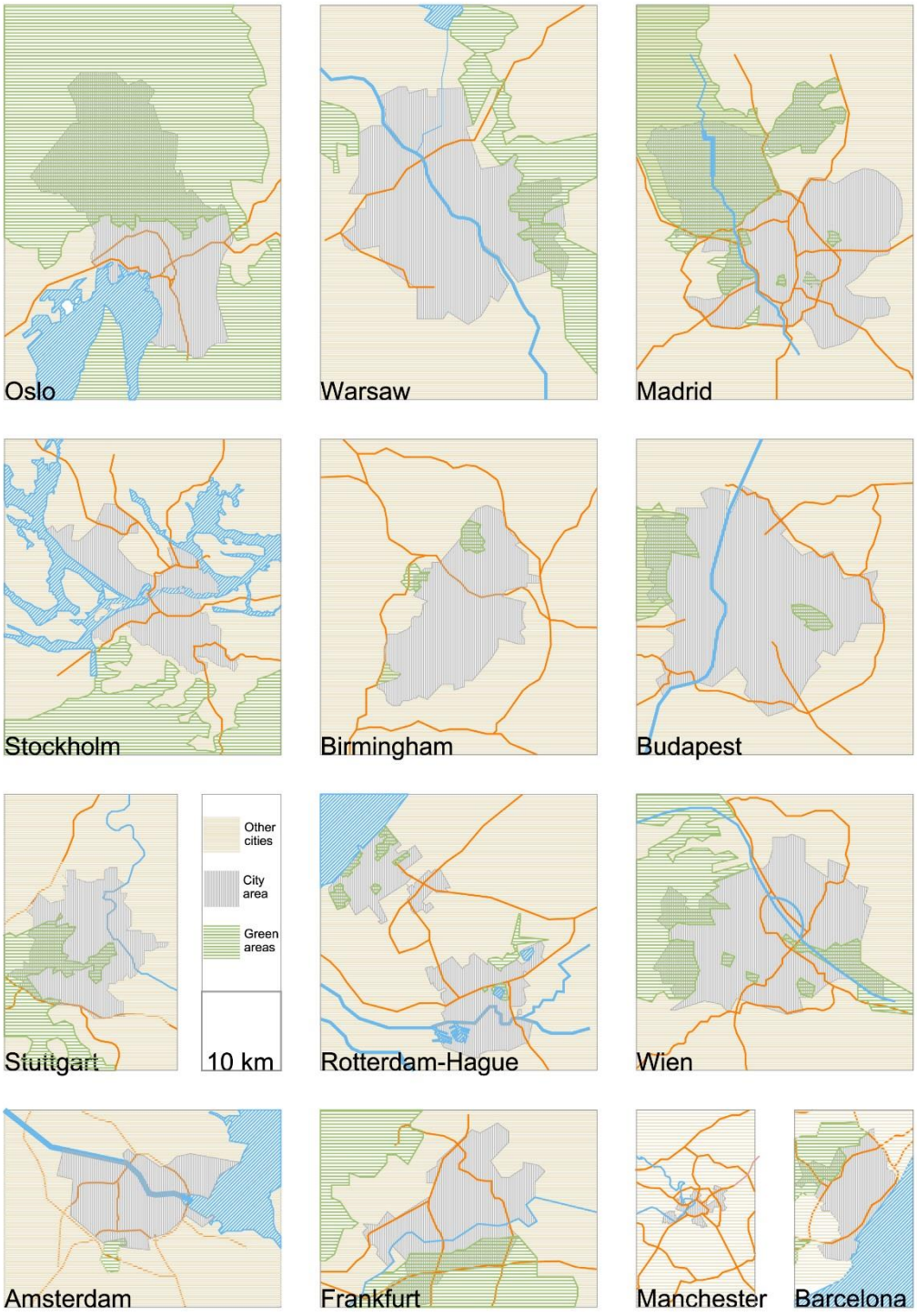
The EMTA Barometer periodically allows a comparison of the public transport system between 24 different metropolitan areas. From the results of this geographical, political, urban and economic diversity can be drawn ratios that allow us to understand the evolution of mobility and the influence on the territory itself. We can have a quick look to authorities as diverse as TFL (London) and CMTBC (Bay of Cadiz), but they all play an equal important function for their inhabitants:

PTA	PTA area (km²)	Population	Demand/year (million)	Annual operation cost/inhabitant (€)
Greater London	1,572	8,600,000	3,721	1,154
Bay of Cádiz	3,191	822,792	5.09	14
Barometer average	5,452	3,295,458	1,092	405

The following maps represent main cities limits and the total administrative area of each PTA, in order to be able to locate and understand the values expressed in the current 2014 Barometer.

URBAN INFORMATION

Cities limits and surroundings

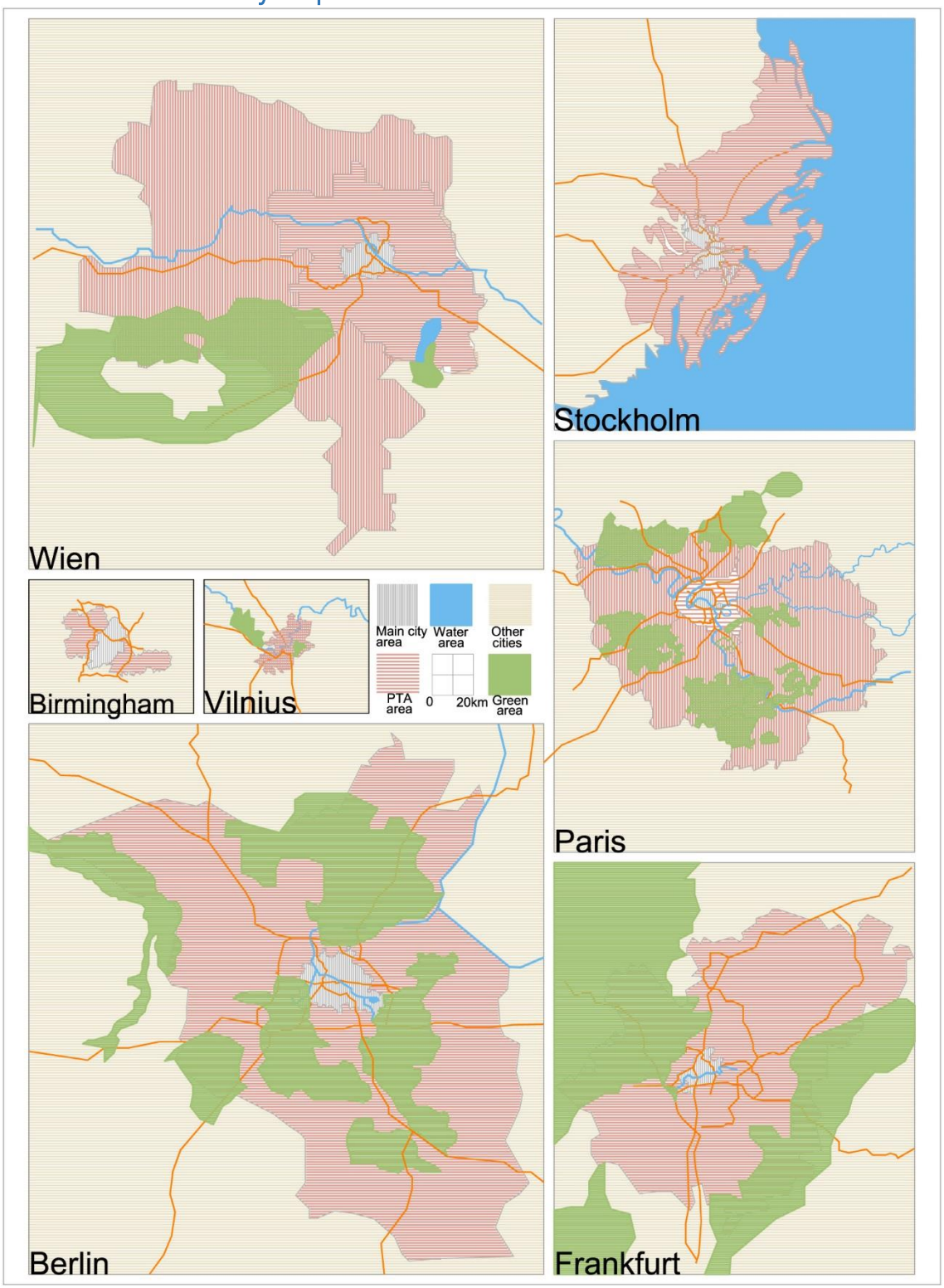


URBAN INFORMATION

Cities limits and surroundings

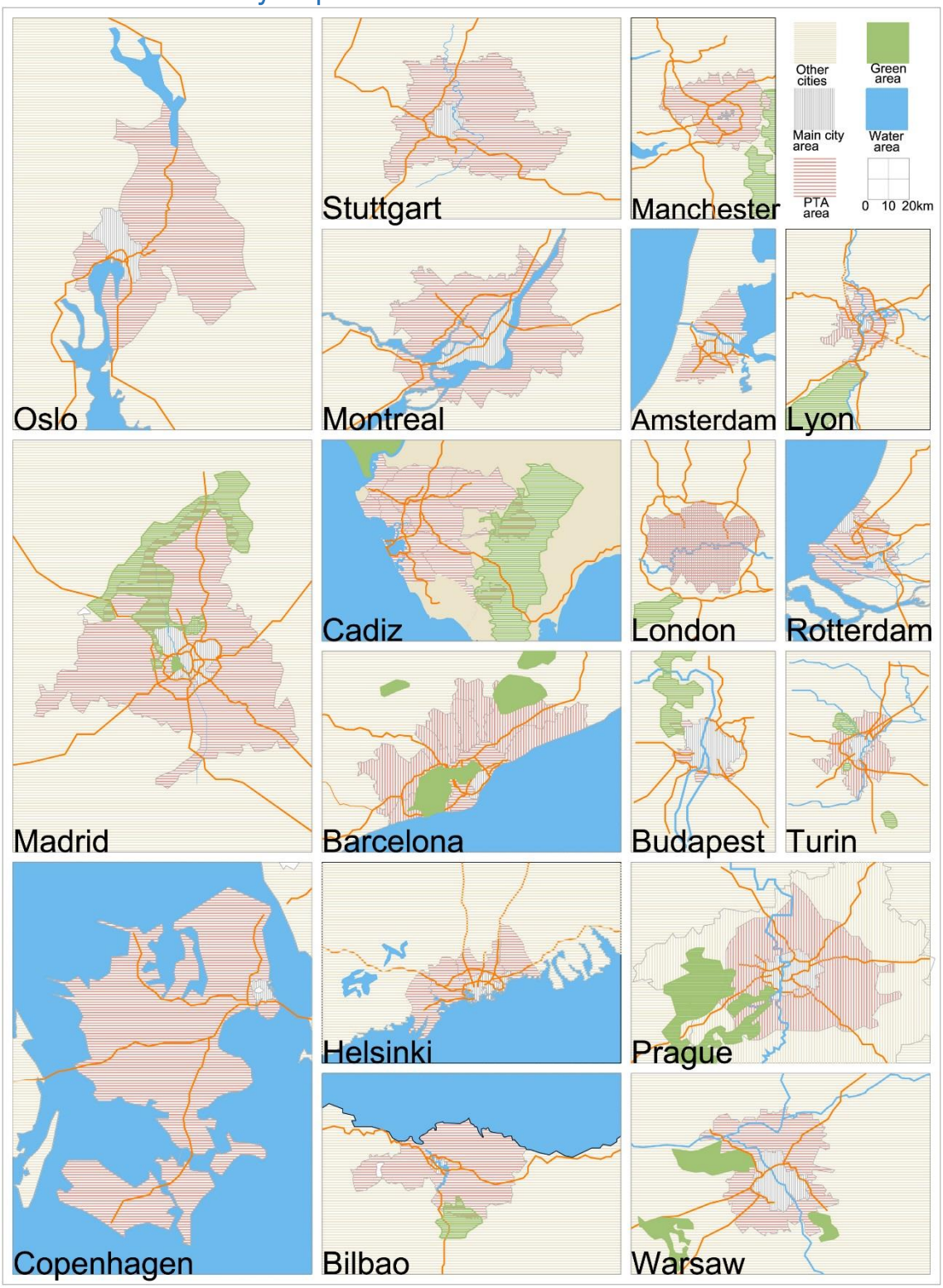
URBAN INFORMATION

PTA limits and main city shape



URBAN INFORMATION

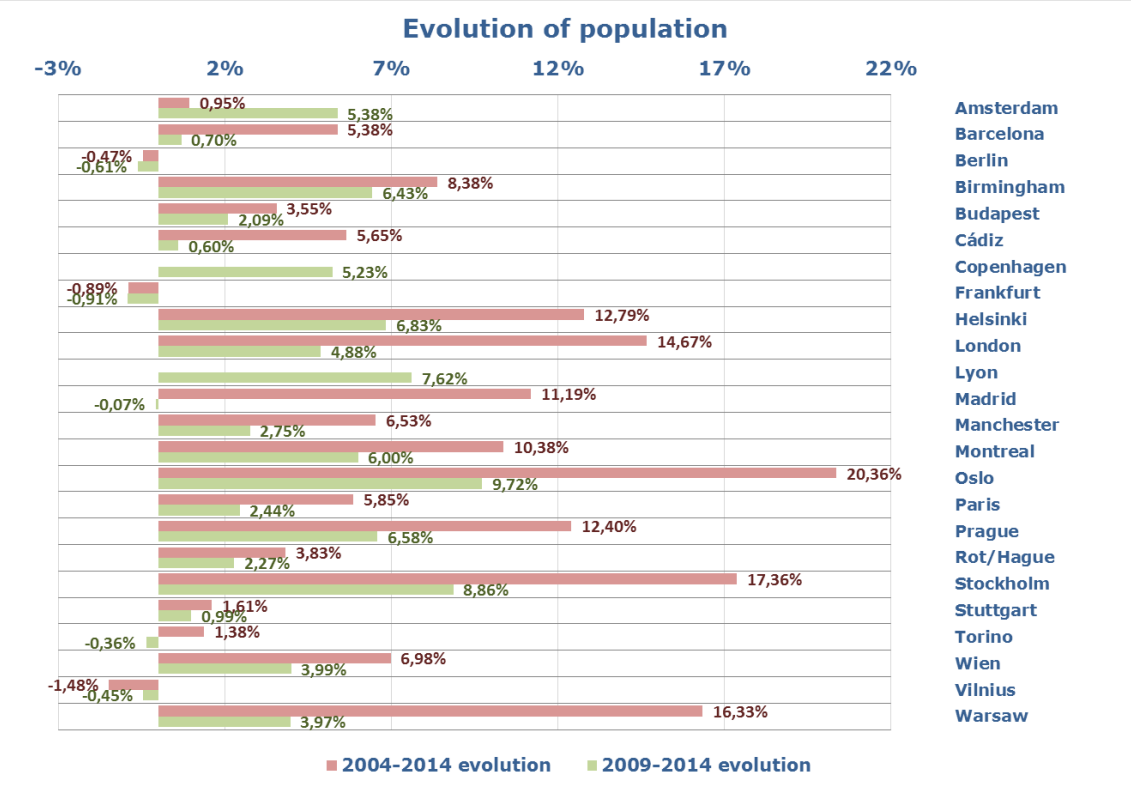
PTA limits and main city shape

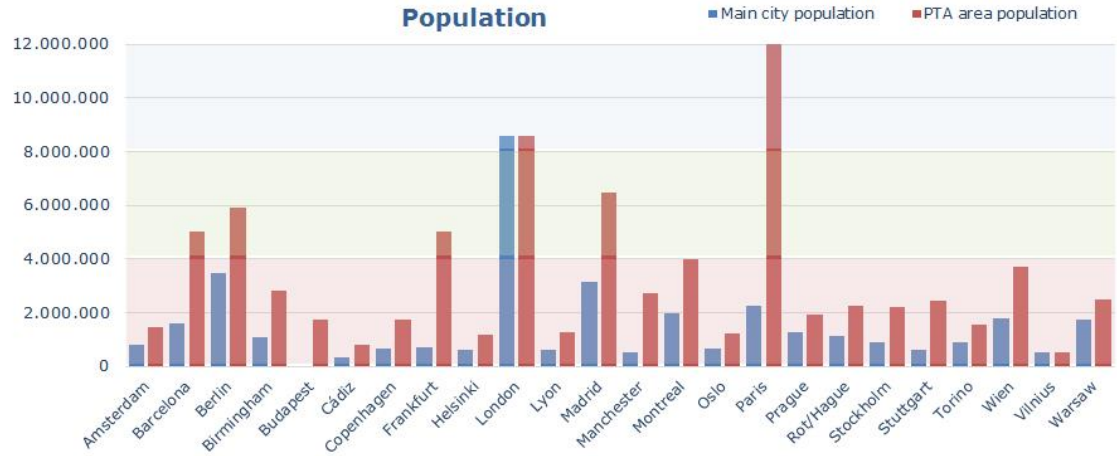


URBAN INFORMATION

Evolution of population

The average population of cities is about 1.56 million inhabitants and 3.3 million for the PTA area. The average for the PTA population increased in the last five years in 2.75% and in 2.16% for the last 10 years. Regarding the average area for the main cities is 409 km^2 and 5,452 km^2 for the PTA area, with an urbanized area of 2,024 km^2 that represents a 37% of the total PTA surface. In the case of the main cities this percentage rise up to 56%. Finally, the average GDP in PTA area have increased from 32,169 € in 2013 to 36,952 € in 2014. It should be highlighted the increase of population that has occurred in cities such Oslo, Stockholm and Warsaw. Contrary to the loss of population over the years is taking place in Berlin, Frankfurt or Vilnius.

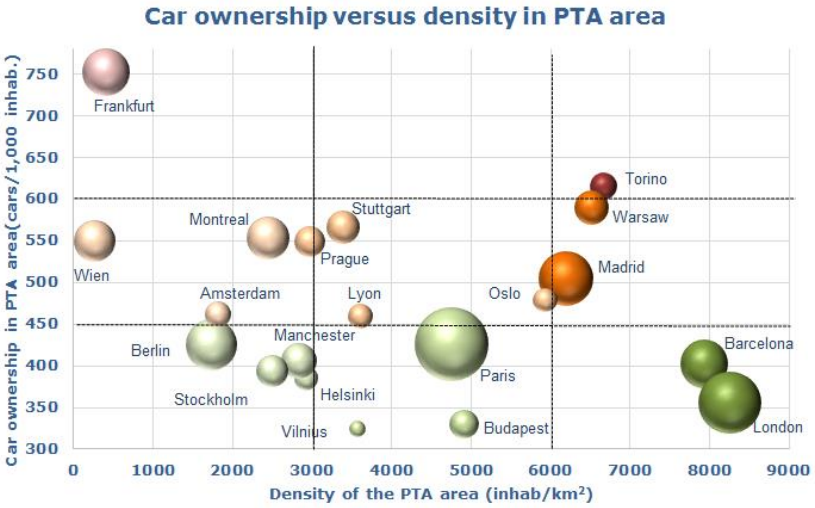




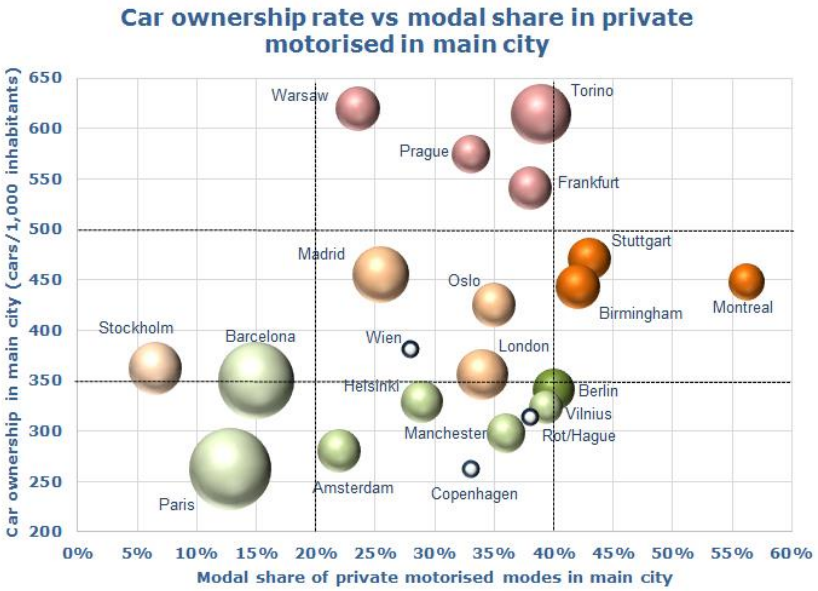
MOBILITY

Car ownership rate

The first image represents the relation between car ownership expressed as cars per 1,000 inhabitants and urbanized PTA area density. The size of the balls represent the population in the PTA area. The average density of cities is 4,175 inhab/km^2, but two cities (Barcelona and London) have more than 8,000 inhab/km^2 (urbanized area/population), having double density than the average PTA density (4,175 inhab./km^2). For the great majority of cities its car ownership rate lies between 350 and 550 cars / 1,000 inhabitants.



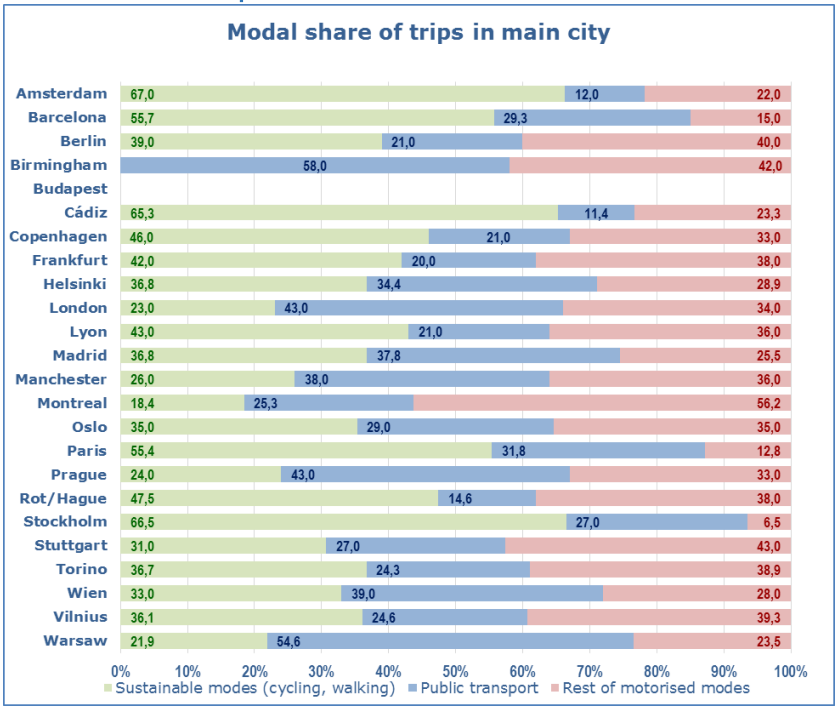
The second image represents the relation between car ownership and modal share of private motorized mode in main city. The size of the balls represents the density of the main cities. We can appreciate two tendencies. On the one hand, the higher is the car ownership in the city, the higher is the use of private car. On the other hand, the greater the density is, the less use of private car.

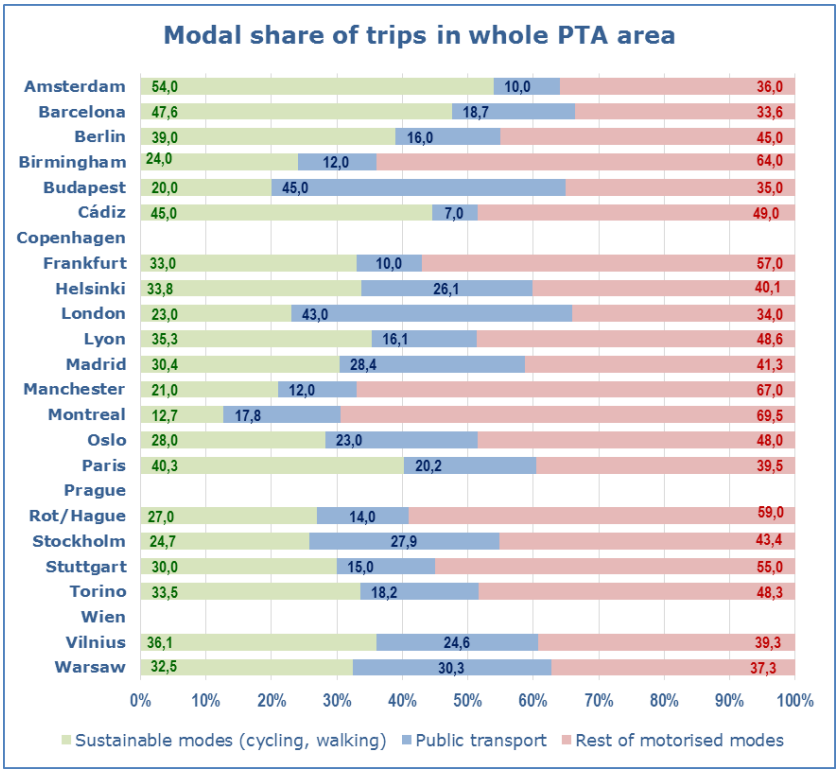


The colours of the graphics represents three levels of cars ownership rate (cars/1,000 inhabitants). (Wien, Copenhagen and Rotterdam-De Hague are not been represented by their density).

MOBILITY

Modal share of trips in whole PTA & main cities





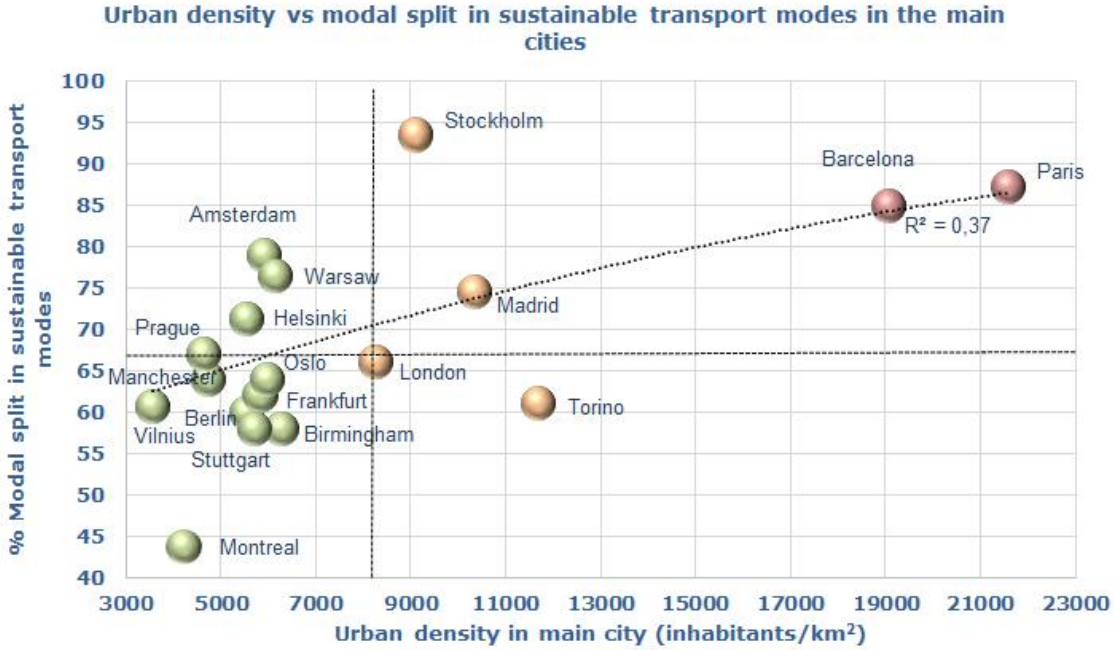
The number of trips average per capita and day in selected cities and PTA areas is of 2.9 and 2.8 respectively (higher than in 2013, 2.7 main city and 2.8 PTA area). Of the latter, 31.9% is made in sustainable modes (cycling, walking,…), 19.9% in public transport and 44.1% by private transport. But in the main cities, public transport raises the average to 28.8% over other motorized modes that gets down to 32.8%. (Birmingham only represents the value for private or public transport, is not included sustainable modes in the total average in main city).

The PTA areas of Amsterdam, Barcelona, Berlin, Helsinki, London, Lyon, Madrid, Oslo, Paris, Stockholm, Turin, Vilnius and Warsaw are above average with respect to the use of alternative transport to the car and on the other hand, cities as Birmingham, Frankfurt, Manchester and Montreal use motorized modes above the average in the PTA area.

MOBILITY

Urban density and modal split in sustainable transport modes in main city

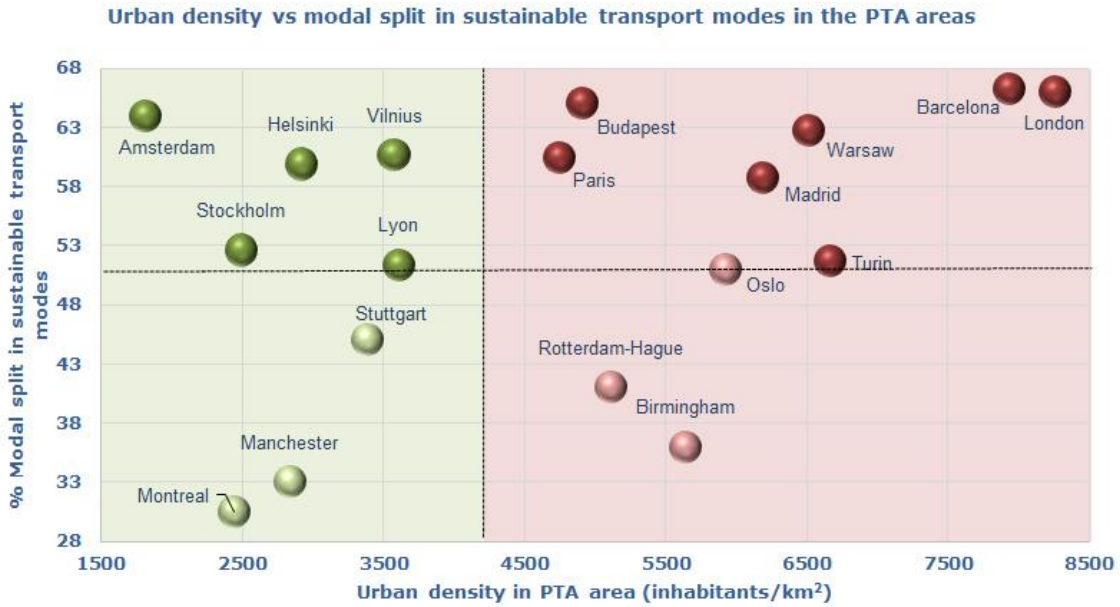
The following graphic displays the share of total daily trips by sustainable modes –walking, cycling and public transport- explained by urban population density in the main city. The average of the modal share of sustainable transport modes in main cities is 68% and the average of urban density (population/urbanized area) in main cities is 8,012 inhabitants/km^2 of urbanized area. London with a value of 66.00% and 8,253, respectively, represents the medium city for this concept. Only five cities have an upper limits density higher than average, i.e. Stockholm, Madrid, Turin, Barcelona and Paris. This last one and Barcelona are in the upper urban density score with 21,581 and 19,063 inhabitants/km^2 respectively. On the other hand, Stockholm represents the upper limit in modal split in sustainable transport modes with a 93% and Montreal the lower with a 43%. The rest of PTA are between 60% and 80% of sustainable transport modes share.



MOBILITY

Urban density vs modal split in sustainable transport modes in the PTA areas

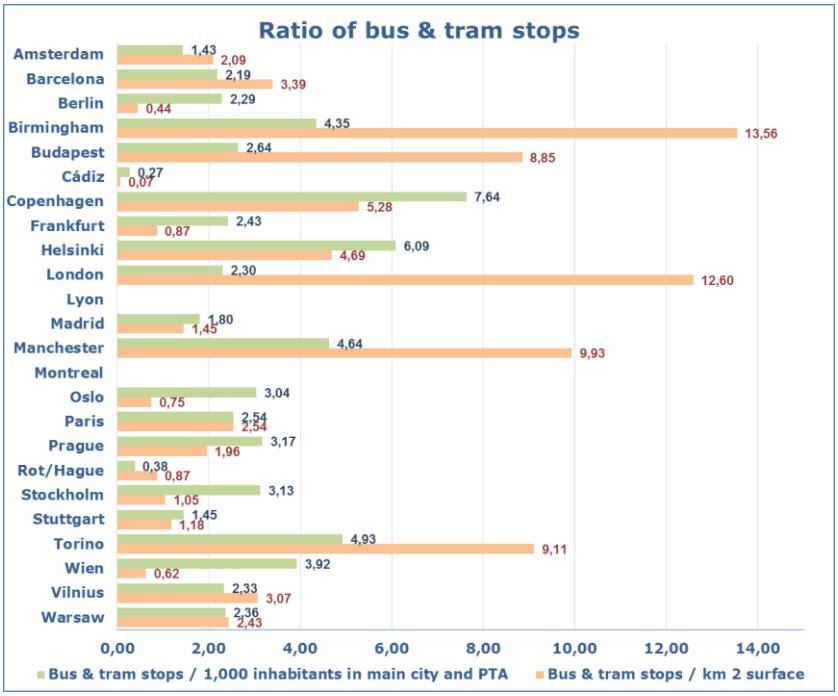
If we analyze the PTA areas for the same concept the outcome is quite different. Urban density (population/urbanized area) in PTA areas is understandably much lower than the main cities and consequently the use of motorized modes is common and more necessary to the detriment of the use of sustainable modes. In this sense the average of urban density in the PTA areas is 4,185 inhabitants/km^2 (50% approximately of the ratio in the main cities) and the share of use of sustainable transport modes (walking, cycling and public transport) is 52.7%. Barcelona and London have highest urban PTA area density (population/urbanized PTA area), and a high rate of sustainable modes. A particularly significant case is displayed in Amsterdam, where we see almost a two-third use of sustainable modes with a very low urban density, whilst Greater Manchester, Rotterdam-The Hague, Montreal, Stuttgart and Birmingham account for low rate of use of sustainable transport modes in comparison with the average.

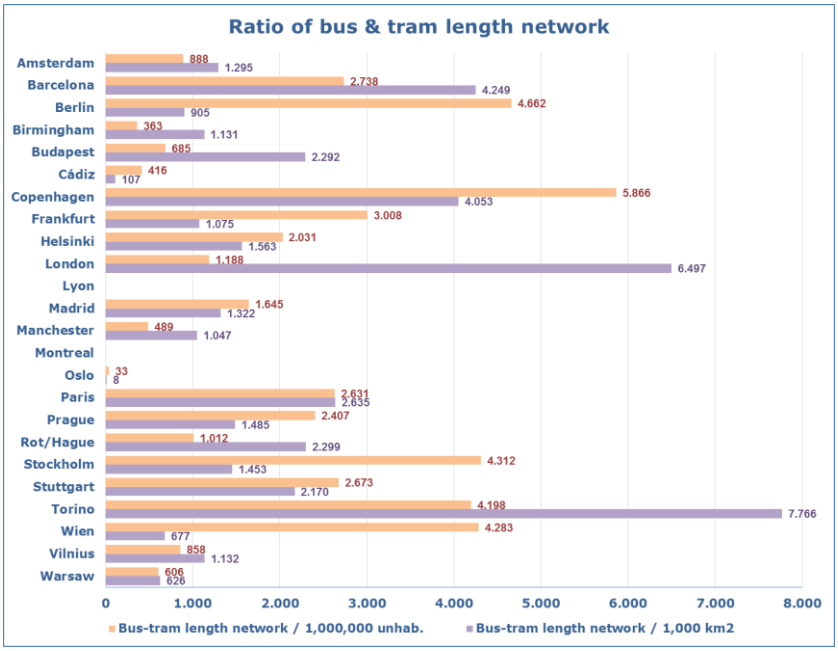


The colours use in the graphic represent the cities that are below or above average (4,185 inhabitants/km^2 of urbanized area and 52.7% of sustainable modes).

SUPPLY

Ratio of bus and tram stops and length network





It is important when a planner is designing to know the average ratio of number of bus and tram stops or number of railway stations per network length or surface of the affected territory. Among the cities studied, we can conclude that the average ratio of bus stops per 1,000 inhabitants has increased from 2.6 in 2013 to 2.8 in 2014 and from 3.2 (2013) to 3.9 (2014) in the case of km^2.

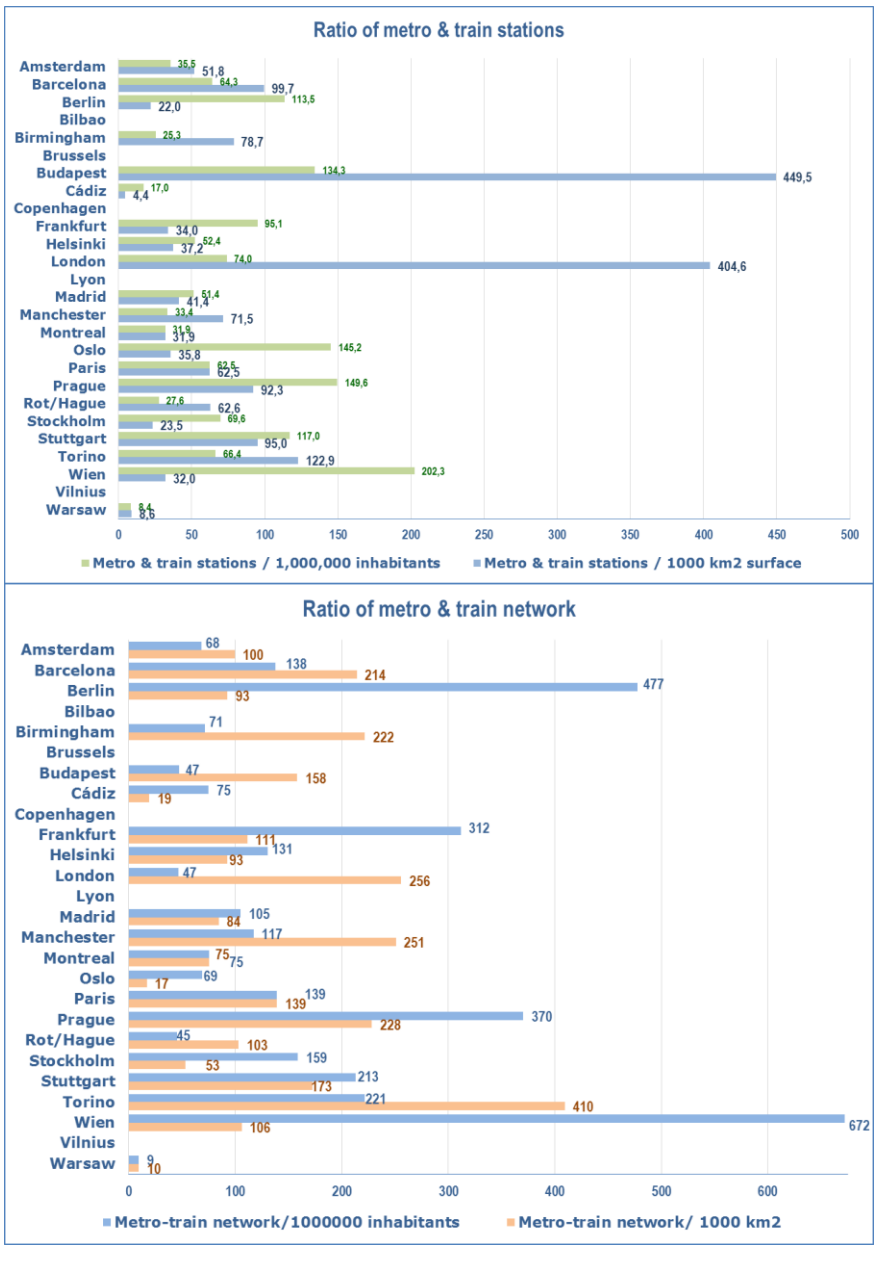
Copenhagen has the highest number of bus and tram stops per 1,000 inhabitants (7.6) and Birmingham, London, Manchester and Turin have a density of stops per km^2 well above the average (13.5; 12.6; 9.9; 9.1; respectively).

Regarding the length of bus network, the average is 2,155 km per million inhabitants and 2,353 in the case of 1,000 km^2.

SUPPLY

Ratio of metro and train stations and length network

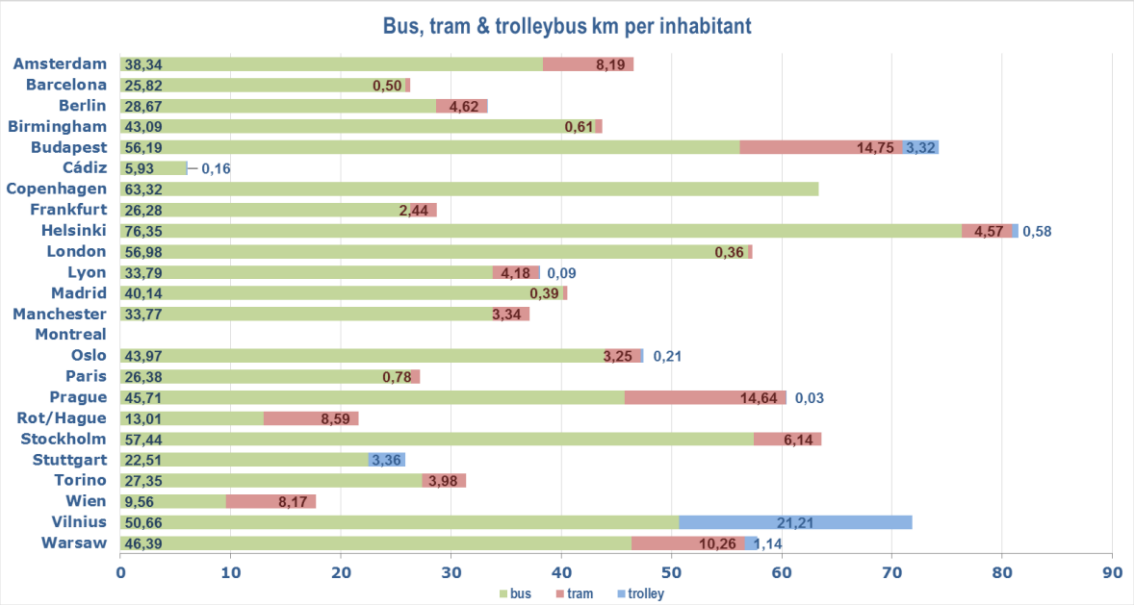
Railway systems are quite different. As average rate, they have 75 stations per million inhabitants and 88.6 stations per 1,000 km^2 of surface. Budapest and London stands out in terms of number of stations per 1,000 km^2 of surface with more than 400. In relation to the number of stations per million inhabitants, there are six cities that are above 100. In contrast to the bus network, the average length of metro and commuter train network per million inhabitants gets down to a tenth, 75, and the same applies per 1,000 km^2 of surface that goes down to 88 stations.



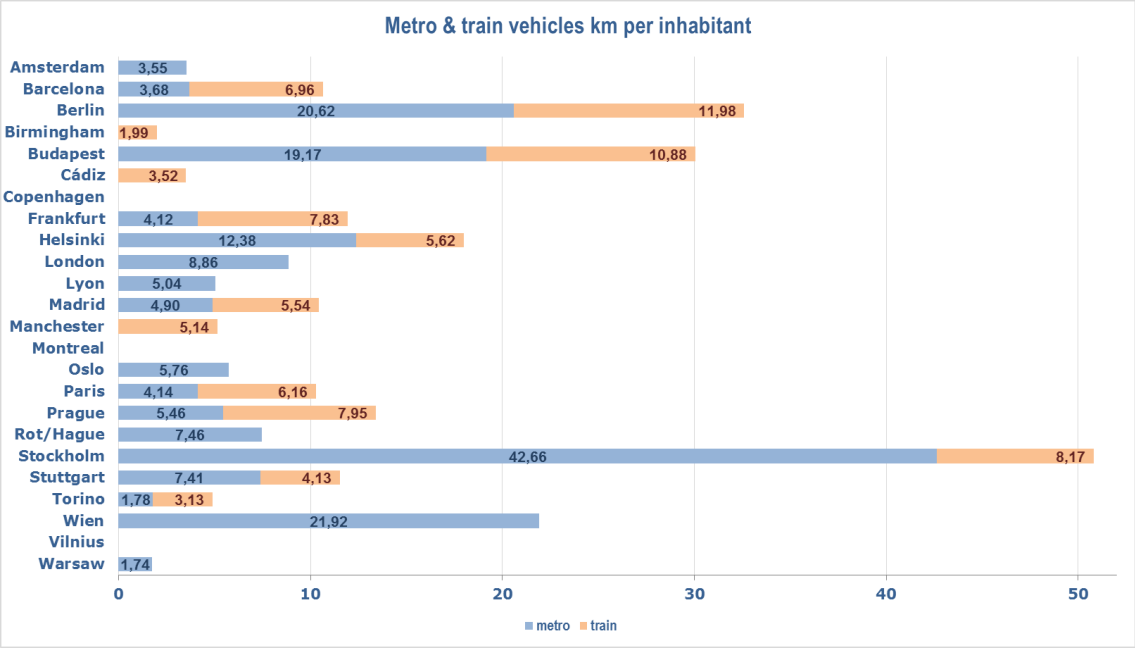
SUPPLY

Vehicles-km per inhabitant and PTA area

The average number of bus-km per inhabitants is 38, seven times more than the number of trams-km per inhabitant that it is 5.3. Just Budapest, Copenhagen, Helsinki, London and Stockholm are above 55 bus-km per inhabitant.



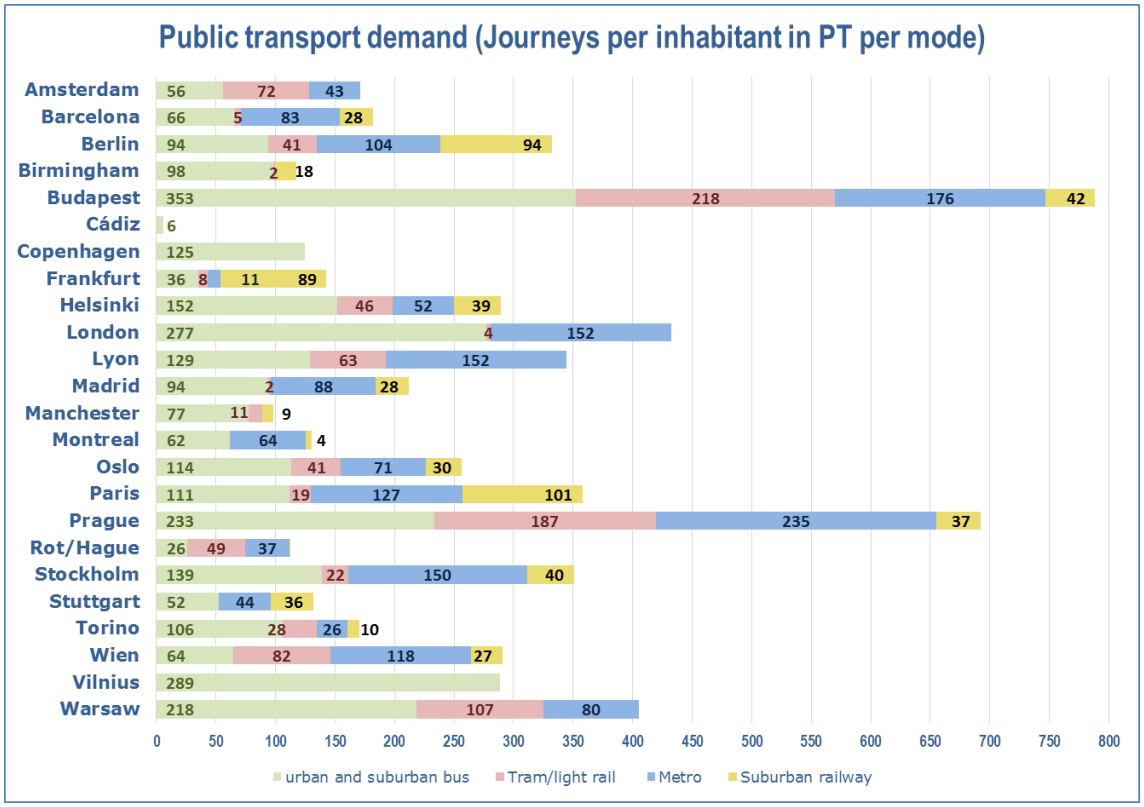
In relation with rail services, metro has an average of 10 vehicles-km per inhabitants, higher than the ratio for commuter train that goes down to 6.4 vehicles-km per inhabitants. Remarkable is the high ratio of train that Berlin, Budapest, Stockholm and Wien has.



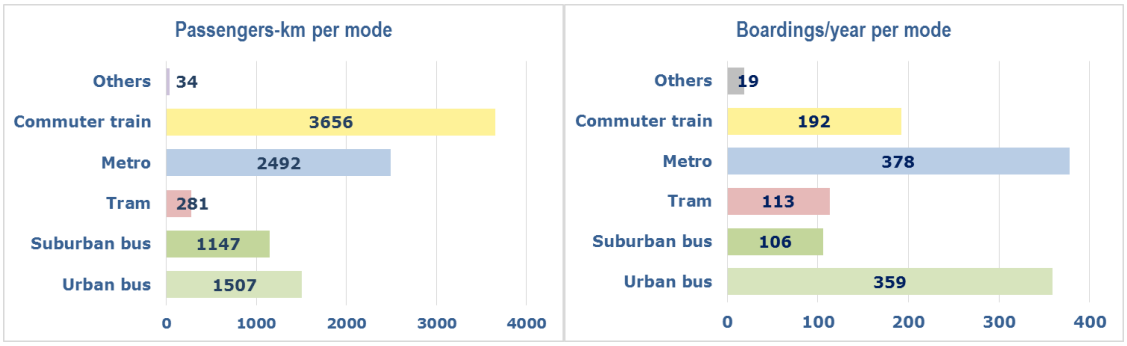
DEMAND

Public transport demand per inhabitant in PTA areas

Regarding the public transport demand, the trend continues to go upward in the use of PT. In 2011 on average 244 journeys per inhabitant; 262 in 2013; and 276 journeys per inhabitant in 2014 were made, the bus being the most used transport mode (124 journeys per inhabitant, 120 in 2013) followed by the metro (95 journeys per inhabitant, 83 in 2013).



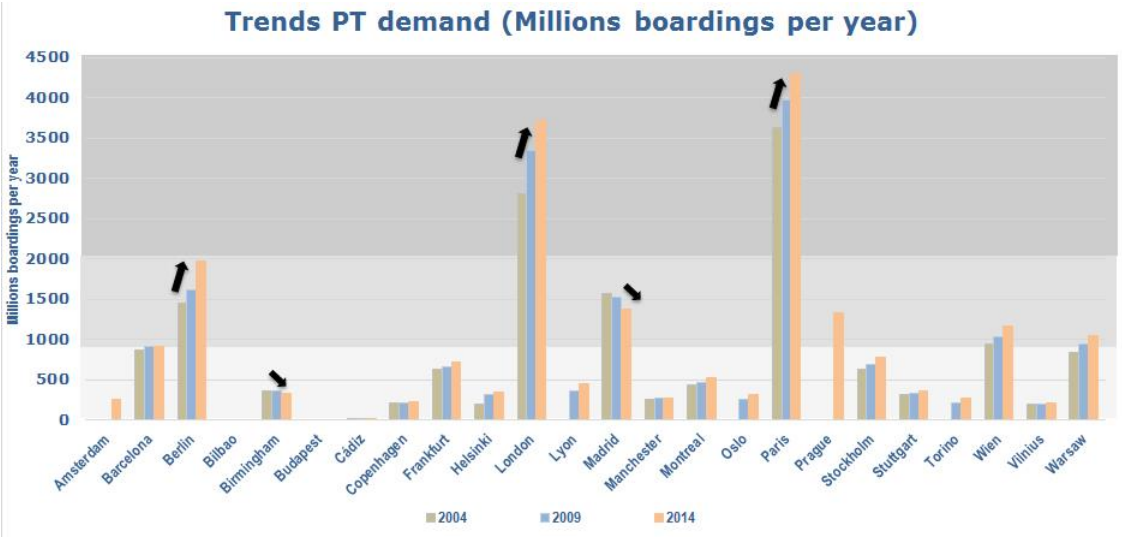
The average of passengers-km and boardings/year per mode is as we can see in the next figures:



DEMAND

Public transport demand trends

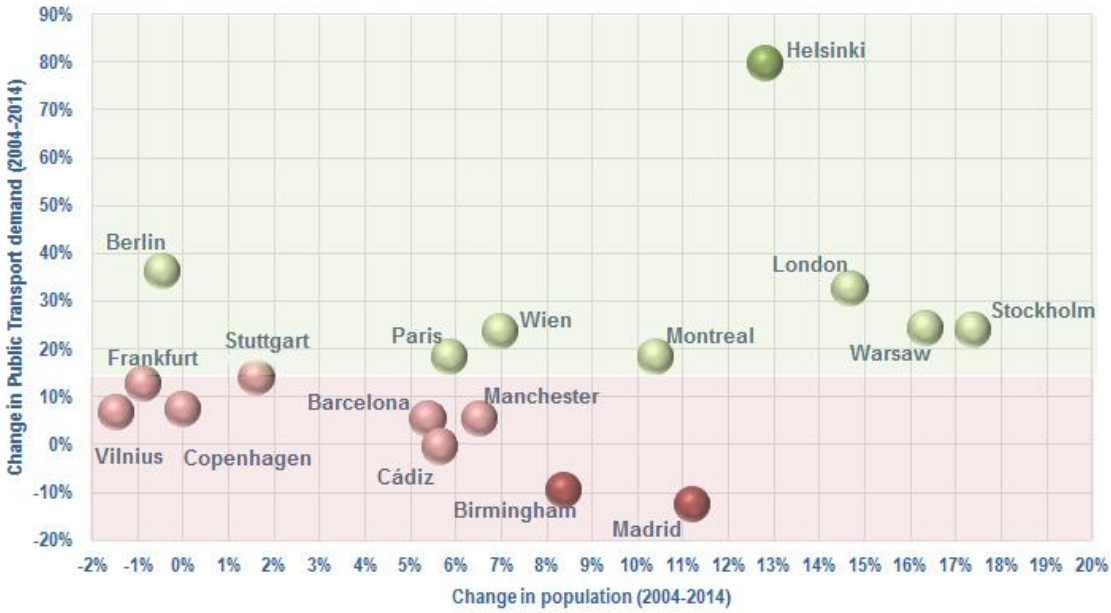
Public transport demand trends have evolved differently over the last ten years. The average of 2004 was 938 million of boardings in public transport, in 2009 the PT system lost 5,8% of boardings (884 million of total demand) and in 2014 it has recovered with +7%, rising to 947 million, 19 million more than ten years ago. The PTA of Greater London and Paris Île-de-France represent the 43% (2004), 41% (2009) and 38% (2014) of the total public transport demand in the studied PTA areas, whilst they represent only 26% of the total inhabitants in 2014. From 2009 to 2014, 50% of the PTAs experienced an increased demand in the public transport system over a 10%. On the contrary, Birmingham and Madrid continue a declining demand in their public transport system. In terms of demand we can distinguish three main groups: a first one that moves between 0 and 1,000 million boardings (with 15 PTAs); a second one from 1,000 to 2,000 million boardings (with 5 cities); and more than 2,000 million that accounts for two of the largest PTA areas (Greater London and Paris Île-de-France).



DEMAND

Change in population vs transport demand in PTA area

The following graphic represents the change in the number of inhabitants in the PTA areas between 2004 and 2014 with respect to the change in the number of total journeys undertaken by public transport. As we have seen before, the trend continues upward, most of the PTAs have increased the public transport demand in the last 10 years and Helsinki has done over an 80%. In this last ten years, the PTA areas studied has increased an average of 17% in public transport demand with only an average of 7% more inhabitants. This means that the number of journeys by public transport increased as faster rate than the population in PTA areas. It is significant that Berlin, that continue loosing inhabitants, has increased a 36% the number of journeys in public transport.

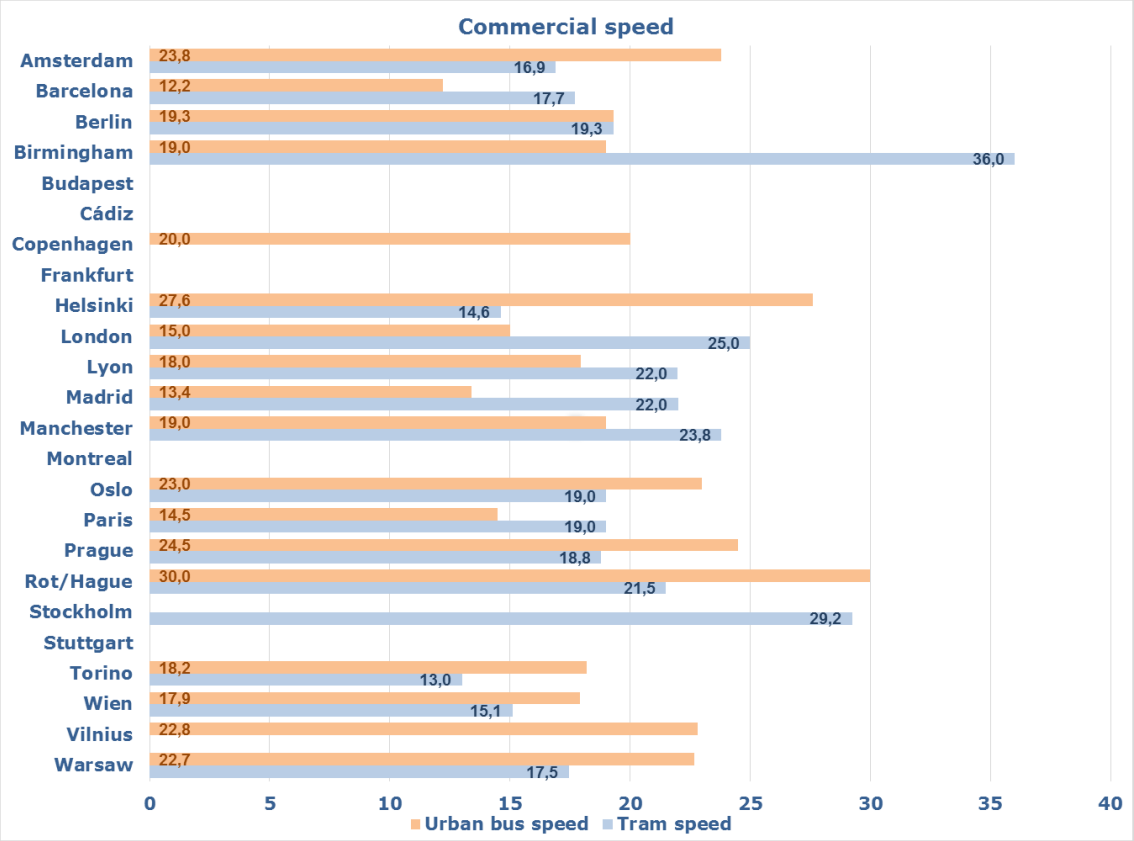


SERVICE QUALITY

Commercial speed

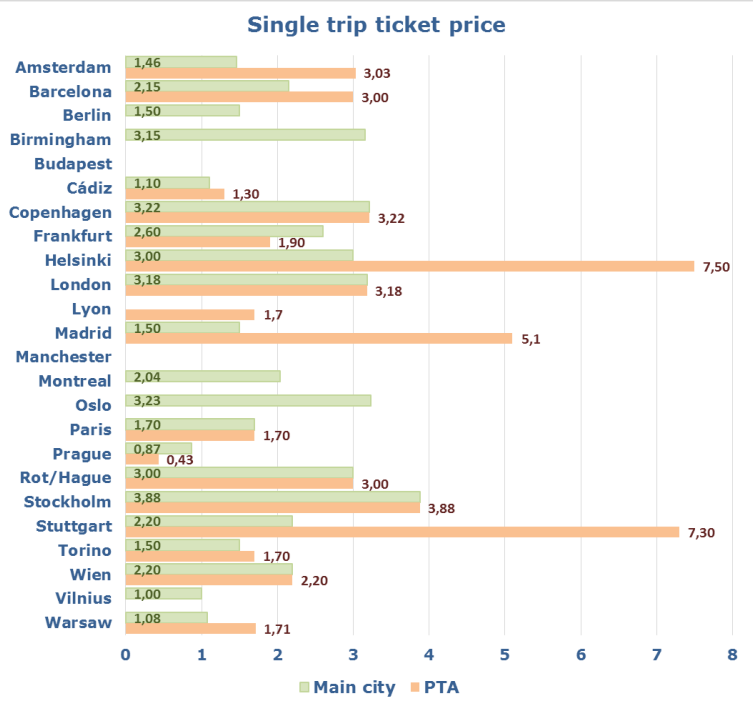
The commercial speed for the public transport is one of the main issues that the planners have to deal with it in the urban areas. The average speed for the urban bus and the tram is about 20 km/h and for the suburban buses the average rise up to 30 km/h. The same happens with the metro and the commuter train. The metro runs at 36 km/h in average and the commuter train rises up to 50 km/h.

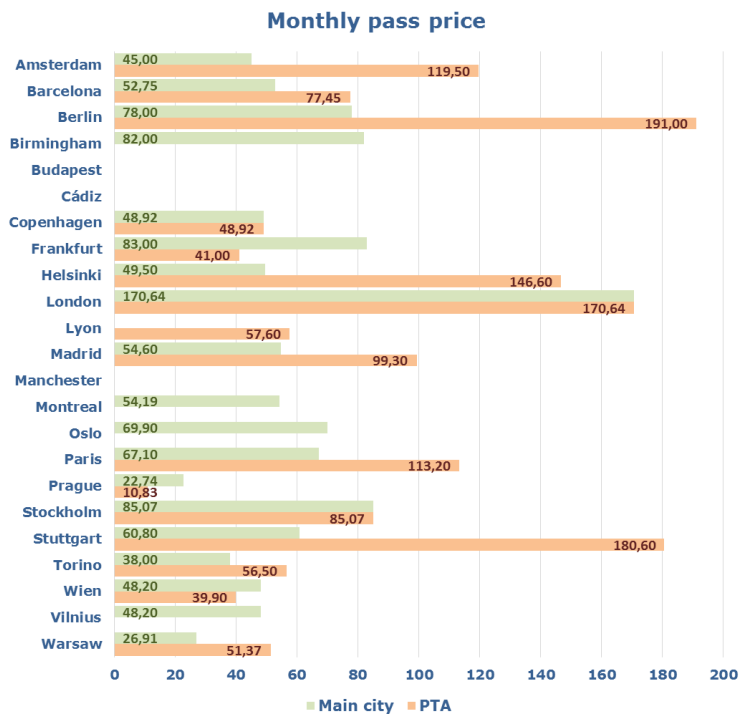
It is important the use of bus lanes for the public transport in order to increase the commercial speed of the urban or suburban buses.



FARES

Ticket price for the main city & PTA area





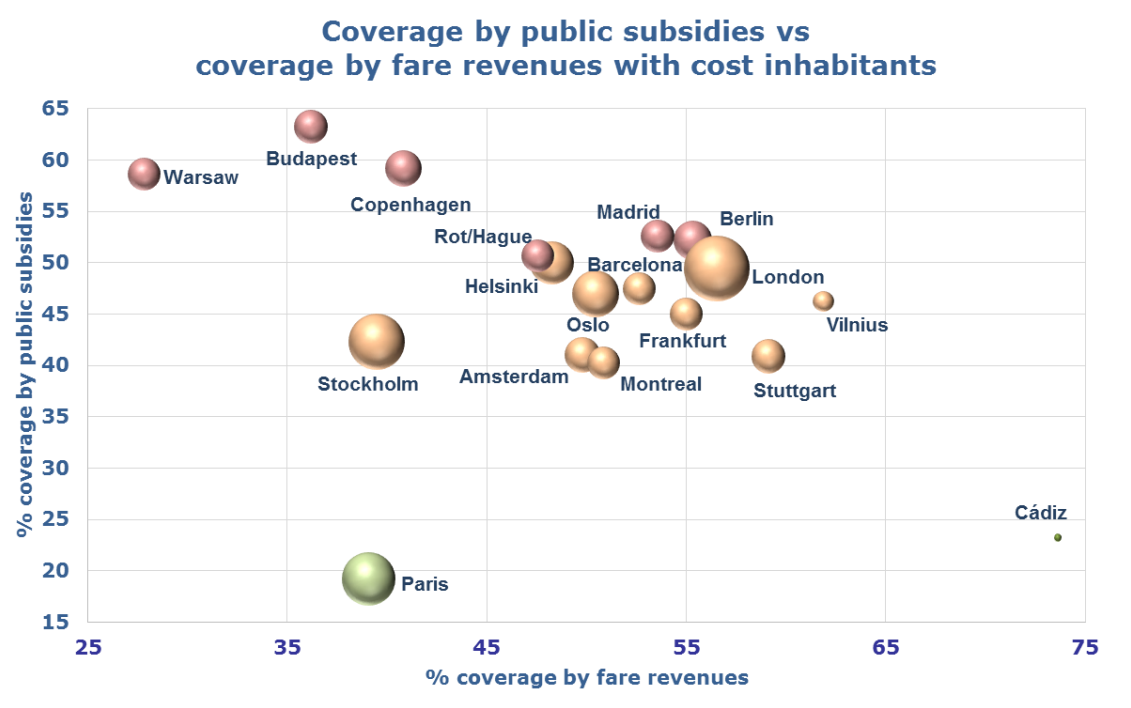
The average price for the single ticket in 2014 has raised with respect to 2013. In the main city is 2.17 € (2.1 in 2013) and 3.05 € (2.8 in 2013) in the PTA area. For the monthly pass is 62 € and 101 € respectively. Regarding the monthly pass in the PTA area it should be noted that are six cities that exceed 100 € without a direct relation to neither the surface nor the GDP in the PTA area.

The average rate between GDP and monthly pass fare is 1.7% in main city and 3.3% for the PTA area. London continues to be the PTA with a higher rate, 3.7%, Berlin PTA with more than 7% rate and Copenhagen and Prague are in 2014 the cities and PTAs with a lower rate with respect to the monthly pass and the monthly GDP.

FINANCIAL

Coverage of operational costs

The size of the balls of the picture indicate the yearly cost of operations of public transport divided by the population of the PTA area (costs/inhabitants). The average ratio of yearly operational costs per inhabitant for the PTA areas is about 398 €. The PTAs of Paris, London and Stockholm has the highest rate (more than 700 € per inhabitant yearly) and Bay of Cadiz the minimum (14 € per inhabitant and year).

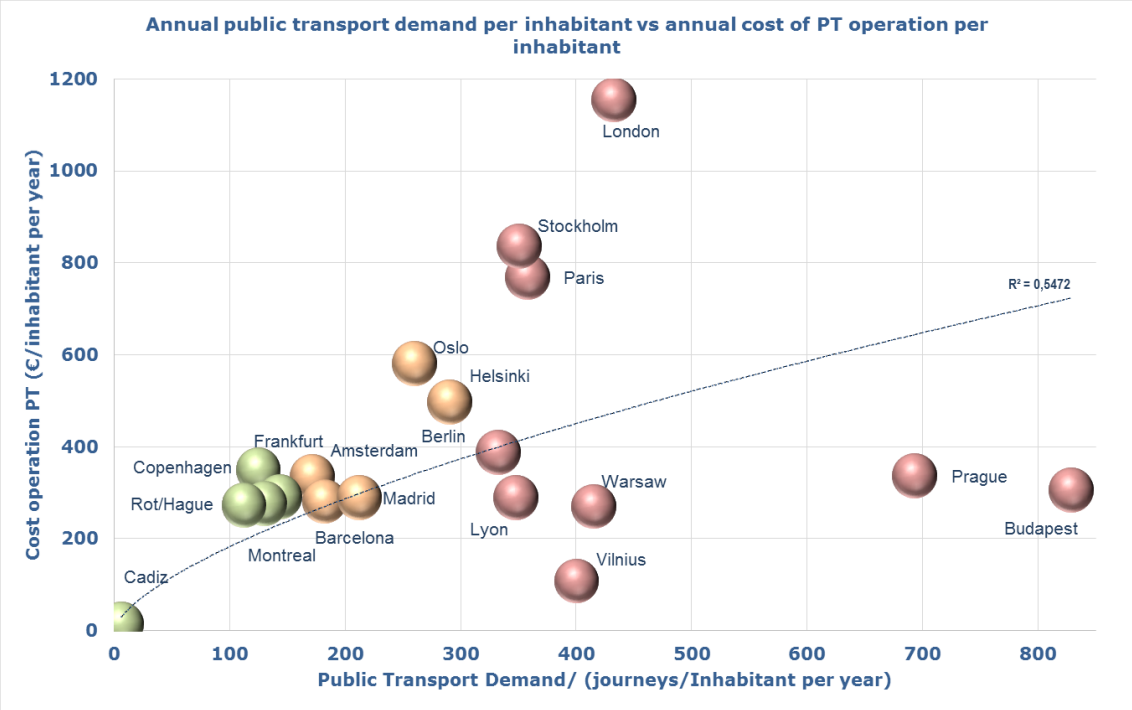


Most of the cities has a coverage of 40-60% of public subsidies with an average of 47% and 35-55% of fare revenues with an average of 48%. Paris has the minimum coverage by public subsidies (19.2%) but it has a 41.7% of coverage of operational costs that comes by other revenues (i.e. in Lyon and Paris Île-de-France "Versement Transport"). Prague has the maximum coverage by public subsidies with a 75%. We have to take into account that Prague also has the cheapest fares of all the cities so the coverage by fare revenues is only a 25%.

FINANCIAL

PT demand/inhabitant vs cost/operation inhabitant

As we have seen in the introduction of the 2014 Barometer, the EMTA PTAs oscillates from Bay of Cadiz with a PT operational cost of 14 € per year and inhabitant to Greater London that needs 1,154 € per year and inhabitant for support the public transport system. In the following graph, we can observe a tendency of 0.5 in which an increasing in public transport demand means an increasing of the operational costs per inhabitant. That means that, in general, the fixed costs of maintenance of the PT system does not have influence if the demand increase. We have to except the case of Greater London that is in the top position. On the other hand, Vilnius has a low rate of operation cost per inhabitant but a high rate of demand/inhabitant per year.



Conclusions

The Barometer 2014 provides information on how organizing 23 European public transport authorities plus Montreal perform and how their economic and social development is affected by prices, operational costs and investment in the public transport system.

Data gathered and presented in this report shows that overall, public transport demand is on a growing trend increasing faster than the population increase. This puts accessibility and the capacity of public transport systems on the main agenda of urban mobility policies.

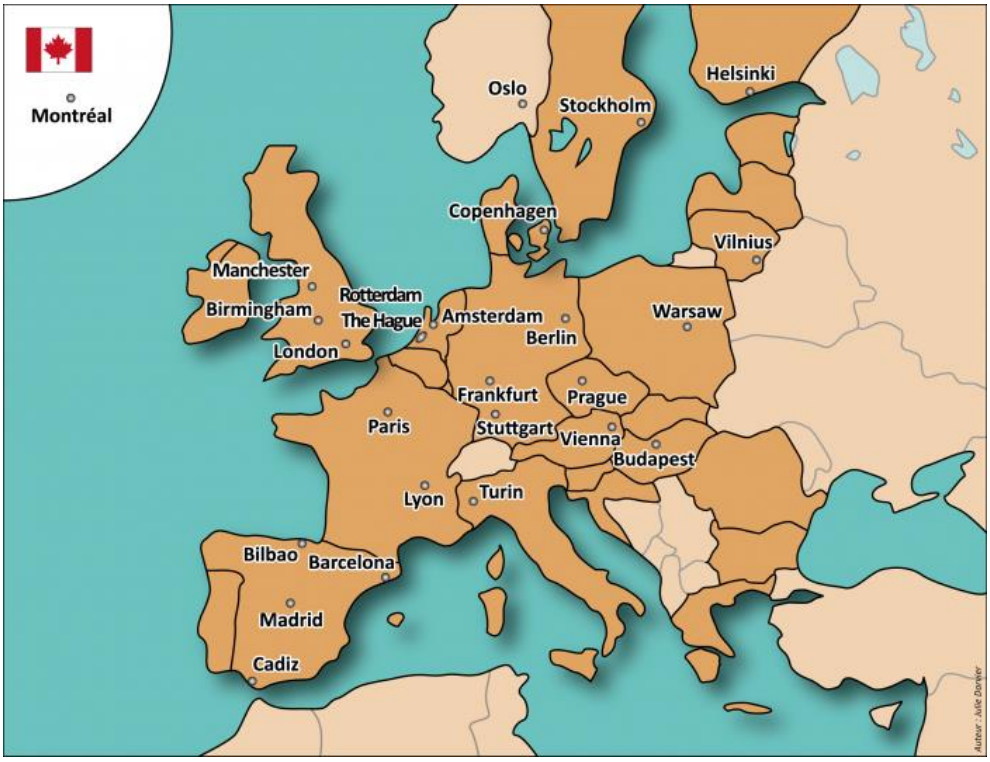
The report also highlights the changes relative to the previous edition (2013) and to the last decade showing among others:

- Population growth. The average PTA population increased in the last five years in 3.5% and in 7.4% for the last 10 years.
- An increase in the number of average trips per capita and day. In 2014, the average trips per capita and day in main cities and PTA areas was of 2.9 and 2.8, respectively (higher than in 2013, 2.7 in main city and the same 2.8 in the PTA area).
- Public transport supply growth. Among the studied cities, the average ratio of bus stops per 1,000 inhabitants has increased from 2.63 in 2013 to 2.82 in 2014.
- Public transport demand trend continues upward. In 2011 it was 244 journeys per inhabitant, 262 in 2013 and 276 in 2014, being the bus the most used transport mode and followed by metro (124 and 95 journeys per inhabitant, respectively in 2014).
- Public transport demand increased as faster rate than the population in PTA areas. In this last ten years, the PTA areas studied has increased an average of 17% in public transport demand with only an average of 7% more inhabitants.

Finally, the 2014 EMTA Barometer collected 200 indicators per each PTA, which allows us to establish a "standard" for a city, or metropolitan area that represents the average PTA associated with EMTA. Seven indicators, out of 200 indicators, have been selected that could be considered the most representative and comparable between all the metropolitan areas. They represent general elements in public transport mobility: urbanization, mobility, demand, fares and financial indicators. Conversely, other values do not allow to derive a standard value such as inhabitants, areal size and GDP. In fact, social and geographical conditions of each metropolitan areas are quite different from one another. What matters most are the collection of homogenous values that all might have to contribute to a more sustainable mobility pattern and include a main role for metropolitan and urban public transport systems.

These PTA area standardized values obtained from the 2014 Barometer are:

Indicators	"Standard" PTA area
Density (inhabitants/urbanized PTA area km^2)	4,000 – 4,500
Mean number of trips per person and day	2.8 – 2.9
Modal share of sustainable transport modes	50% - 60%
Boarding/ year per inhabitant	275 - 290
Monthly pass / monthly GDP per capita	3.2% - 3.7%
Yearly cost of operations of public transport per inhabitant	400€ - 500€
Coverage of operational costs by public subsidies	45% - 50%



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