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TAXICAB REGULATION AND URBAN RESIDENTS' USE AND PERCEPTION OF TAXI SERVICES: A SURVEY IN EIGHT CITIES

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ABSTRACT

Taxicab regulation and urban residents' use and perception of taxi services: a survey in eight cities

Several market failures would justify some forms of price control and entry regulation in the taxicab industry. Unfortunately, history shows that very often the taxi regulators get captured by taxi operators' lobbies and fail to adapt their regulation to changing market conditions. Hence, faced with a sclerotic service supply, several cities and countries have thoroughly deregulated their taxi industry... only to gradually bring back some elements of regulation later on.

Since the late 1960s academics have at length debated the pros and cons of price and entry regulations for the taxi market, either using very simplified models of selected segments of the market or referring to empirical data comparing service supply before and after deregulation in one or in several case studies.

Because of the paucity of available data on the demand side, most of these empirical studies generally only consider the supply side, overlooking the impact of regulation or deregulation on taxi use and on the perception of taxi services by their clients.

We have selected eight capital cities with contrasting regulatory systems and carried out a survey among their residents to understand why and how they use taxis and to collect their opinion about the quality of the service provided. Some 3200 respondents answered about 40 questions. Taxi use varies greatly from one city to the other, both in terms of trip frequency and of trip purposes. A statistical analysis of the results enabled us to draw some conclusions about the impacts of various elements of taxicab regulation on the mobility of urban residents.

Please note:

The SPSS raw files from the survey for each city and the Excel calculated files are freely available upon request to the IVM at vilmouv@vilmouv.com.

EIGHT CAPITAL CITIES

As many cities, as many different models of regulation, and thus differences in the abundance and quality of the services delivered by taxis and Private Hire Vehicles (PHVs). Are some models better than others? Ultimately, since the purpose of these services is to provide mobility, a way of answering this question is to observe how, how often and why do people who travel in these cities use these services and for those who do not use them, what are the reasons for their abstinence.

With the exception of Great Britain, the available data on taxis' uses are scarce. When available they also vary widely in definition and scope from one city to another, making comparisons impossible. To overcome this shortcoming the IVM commissioned GfK to carry out a survey among the residents of New York and seven major European cities: Paris, London, Berlin, Lisbon, Dublin, Amsterdam and Stockholm.

There were several reasons for selecting these eight cities. The first one was to provide a broad range of the regulatory systems organizing the supply of taxi services. The choice was also on cities rather than towns or rural areas because these economic, administrative or cultural capitals exhibit many similarities that affect the demand for taxi services: the presence of airports and railway stations, congested downtowns and a diversified public transport system including metro lines, bus networks and commuter trains.

Finally, the party of retaining only European cities and New York, perhaps the most European of the American cities, avoids the bias that might be introduced by too large differences in living standards and culture.

But before describing the uses made of taxis, we should give a quick overview of the various regulatory frameworks that control the taxi supply in the cities of our sample and a measure of the consequent availability of these services.

THE SUPPLY OF TAXI SERVICES

The cities in our sample were chosen so as to present contrasting regulatory frameworks. We can schematically describe these frameworks by presence or absence of three regulatory elements: (i) the fact that the number of taxis is whether or not capped, (ii) the fact that taxi fares are set by the regulator or left the choice of the operators, and (iii) the fact that besides metered taxis the regulator has accepted or forbidden the operations of Private Hire Vehicles (PHVs).

The table below gives a synthetic and simplified vision of the regulation's key characteristics in the eight cities in our sample. Of course, every regulation must be qualified in each city. For example, although the number of metered taxis (black cabs) authorized to pick up customers who hail them in the streets of London is not limited by a quota, access to the occupation of taxi driver is the subject to a highly selective review, the "Knowledge" which has the effect of moderating growth in the number of taxis. Similarly, if taxi fares in Stockholm are left to the free choice of operators, they must nevertheless be filed with the supervisory authority, applied equally to all the taxis that are affiliated to the same telephone-booking centre and clearly advertised on the body and inside the vehicle.

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Note that in both cities where fares are free and vehicles not subject to any quota, i.e. Amsterdam and Stockholm, the distinction taxi / PHVs, is irrelevant.

Table 1 - Key characteristics of regulation in the eight cities

	Taxi number capped	Regulated fares	PHVs allowed
London	No	Yes	Yes
Paris	Yes	Yes	No
New York	Yes	Yes	Yes
Amsterdam	No	No	X
Lisbon	Yes	Yes	No
Berlin	No	Yes	Yes
Dublin	No	Yes	Yes
Stockholm	No	No	X

Both the quantity and the quality of the services provided by taxis depend on the combination of these regulatory elements. Measuring the taxi supply is an exercise full of traps, traps in which sometimes fall not only journalists, but also economists not familiar with the taxi industry.

The ratio most commonly used and easiest to calculate is the number of taxis per capita. Yet one must be very careful to check that the population data corresponds exactly to the boundaries of the area in which the taxis operate. As an example, a common mistake found in various publications is to forget that the jurisdiction of the taxis parisiens' regulator is neither the city of Paris (2 millions) nor the Paris Région (10 millions) but the long ago defunct Département of the Seine. It therefore relates to almost six million inhabitants.

The number of vehicles itself is not always the best indicator of the abundance or scarcity of the supply of taxi services because in cities like New York where two or three drivers take turns driving the same car, these vehicles are constantly in the streets. It is far from being the case in cities like Paris, where virtually every driver has his own vehicle and where working hours are strictly limited. Thus, in many cases it is preferable to refer to the number of drivers rather than the number of vehicles. This indicator is not perfect either to the extent that available statistics on the number of people with taxi driver's licenses can include persons who work as taxis only occasionally and have sought and obtained the license in order to have a sideline.

Last but not least, when comparing the supply of taxi services available to the residents of different cities, one must pay a special attention to the regulation regarding the PHV operations. These vehicles are totally banned in the Paris metropolitan region where the 16,000 regulated metered taxis enjoy a complete monopoly over both the street hail market and the telephone booking market. In London some 40,000 PHVs share the telephone booking market with some 23,000 Black Cabs. New York offers yet an other arrangement: some 40,000 PHVs enjoy a monopoly over the telephone booking market since the 14,000 metered Yellow Cabs are only allowed on the street hail and taxi ranks markets.

We have grouped in the table below the three main indicators to compare supply of taxi services in eight cities in our sample. Cities are ranked according to the criterion of the number of taxi and PHVs drivers per 1000 population (last column).

Table 2 – Supply of taxi services in eight cities according to three different criteria

	Population* (million inhabitants)	Taxis per 1000 population	Taxis & PHVs per 1000 population	Drivers per 1000 population
Dublin	1,19	10,58	11,15	17,28
Stockholm	0,77	6,80	6,80	16,99
New York	8,27	1,63	6,34	11,12
London	7,56	3,18	8,47	8,60
Berlin	3,42	2,04	2,28	4,67
Amsterdam	0,74	2,43	2,43	3,31
Lisbon	2,02	2,15	2,15	3,22
Paris	5,90	2,63	2,63	2,76

Note: * the population is the one of the area serviced by the taxi supply.

Examining this table one can see how misleading the sole criterion of the number of taxis per capita could be. According to this ratio, New Yorkers are the worst off of all the respondents of our sample, however, as we shall see later in this paper, they are among those that make the most frequent use of taxis, and among those complain the least of their shortage. At the same yardstick, the Parisians would seem to never stop moaning who, in our investigation, complain of inadequate supply, whereas, according to the taxis per capita criterion, their situation is more enviable than that of the New Yorkers or Berliners.

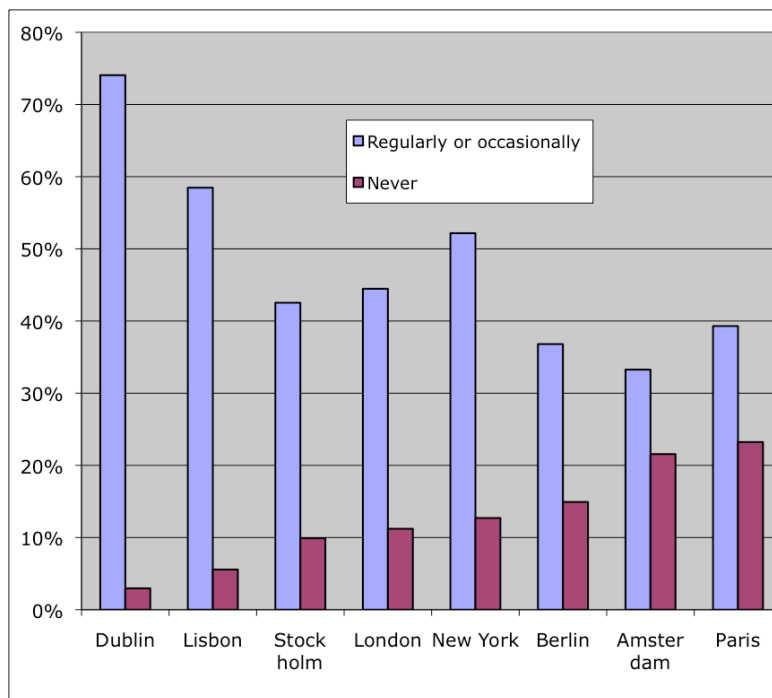
The ranking is significantly changed if one includes the PHVs in the provision of taxi services or if one considers the total number of both taxi and PHV drivers to reflect the fact that in some cities, cars are used much more intensively. According to this latter criterion, the supply of taxi services would be four times more abundant in New York than and Paris (last column).

THE RANGE OF TAXI USES

Many Parisians never use a taxi

One of the first questions of our poll was: “how often do you use the taxi to travel within your city and its surroundings?” Respondents could choose between four answers: regularly, occasionally, rarely or never. The figure below shows the answers frequency by cities, ranked by the increasing proportion of people reporting never using taxis.

Figure 1 - Reported frequency of use of taxi services by city



Source: IVM survey

The results may appear paradoxical if one sticks to the simple dichotomy of regulation / deregulation since there are indeed, at both ends of the graph, side by side, a city deemed to have fully deregulated its taxi market and a city that has maintained tight control over prices and quantities.

The two cities with the highest proportion of non-users are Amsterdam, which underwent a rather chaotic total deregulation in 2000 and Paris the city in our sample whose system is the most sclerotic.

Conversely, at the other extreme, the highest proportion of frequent and occasional users is found in Dublin and Lisbon. In the first city, the taxi market was deregulated in 2001, in the second; taxi licenses are subject to a quota.

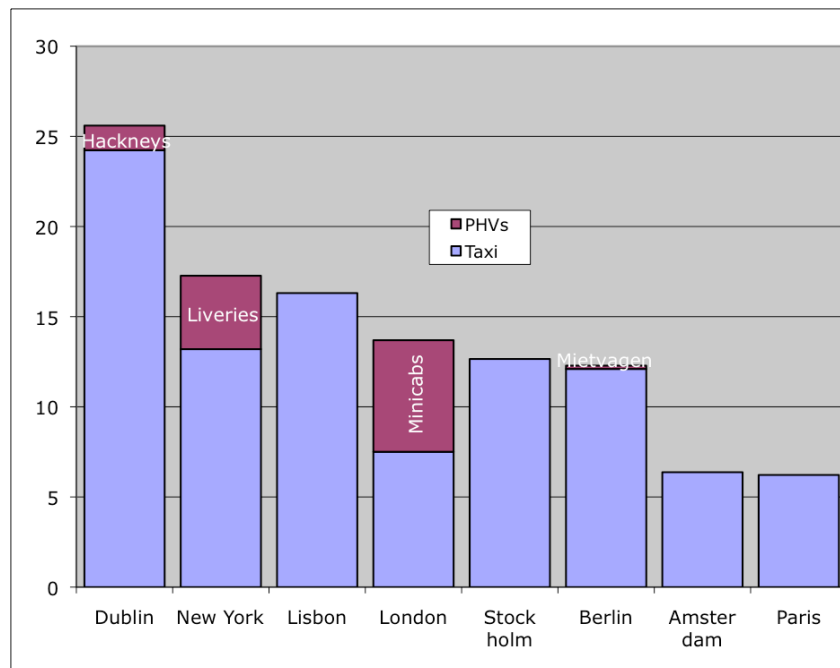
This result must however be taken with caution. It is indeed possible that cultural differences between countries and translation difficulties do not exactly give the same meaning to the terms “regularly, occasionally, rarely or never.” Also, for a more factual data to estimate the frequency of taxi use, a little further in the questionnaire, the question was asked: “When was your last taxi ride? In the past week, month, quarter, semester, or year?”

Half of Londoners’ “taxi trips” are actually minicabs trips.

In the graphic below we have translated the responses obtained into number of taxi trips per person per year. Dubliners are the biggest taxi users with 25 trips per year. At the other end, Parisians and Amsterdam residents ride taxis little more than six times a year. The questionnaire distinguished taxis vs. PHVs. This distinction shows that nearly half of Londoners’ “taxi trips” are in fact minicabs trips and that the liveries of New York account for one quarter of these trips. However, in Dublin and Berlin, PHVs’ role is marginal, in Dublin because since deregulation, competition from taxis became very strong, in Berlin since riding

PHVs usually turns out more expensive because of constraints imposed on their operations (e.g. compulsory return to the base after each fare) and since their fares are subject to VAT at 19% instead of 7% for taxis [lau-idf, 2009, p.23].

Figure 2 - Number of taxi trips per year



Source: IVM survey

Are PHV users in London and New York different from the taxis users? To answer this question, we performed a Correspondence Analysis. In the case of London, the first two dimensions gave a fairly good result as they explained 70% of the variance. They showed that black cabs users are mostly men, older people and people who live in neighbourhoods well serviced by public transport. Minicabs users are mostly women, youth and persons with lower incomes. We find similar characteristics in New York. According to our survey, liveries' customers are mainly women, residents of the Bronx, Brooklyn or Queens, living in families with low incomes and are not the main user of the household car. Yellow cabs' customers are male, live in Manhattan, are single and have higher incomes. Thus, in these two cities, the PHVs appear as an extension of the taxi service to people with lower incomes, women, residents of neighbourhoods under-served by public transport.

In London as in New York, the analysis shows however that household car ownership is not a significant factor to the choice between taxi and PHV. This reflects the fact that the category "non-motorized households" in fact covers two distinct populations: (i) the richest households who live in Manhattan or central London, in areas well serviced by public transport, who do not need to own a car and use taxis as a substitute, and (ii) the poorest households living in the suburbs who cannot afford to have a car and use PHVs out of necessity.

The survey identified the relative weights of the various purposes of the taxi or PHV trips made by residents of our eight cities. Everywhere the taxi is first used for recreation in the evening and at night (exhibitions, cinema, bar, restaurant, etc.). These activities are generally the purpose of one third of the taxi trips, but as much as one half in Dublin and only one quarter in Lisbon. Then comes commuting to work, for about 10% of taxi trips. But again,

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significant differences exist between cities. In Paris, they represent only 3% taxi travel as against 17% in Stockholm. Table 3 gives for each trip purpose its share in all the taxi trips made by the residents of our eight cities.

Table 3 - Taxi or PHV trips by purpose

Trip Purpose	Paris	London	New York	Amsterdam	Lisbon	Berlin	Dublin	Stockholm
Night time leisure	31%	36%	26%	47%	23%	31%	50%	31%
Work	3%	8%	16%	2%	17%	13%	9%	17%
Business	7%	11%	7%	12%	19%	5%	3%	7%
Medical care	9%	8%	10%	8%	5%	12%	5%	8%
To airport	16%	3%	4%	8%	8%	13%	8%	4%
Other	7%	6%	6%	5%	8%	5%	3%	8%
Visit friends/family	11%	6%	9%	4%	3%	2%	5%	6%
From airport	4%	2%	2%	4%	7%	1%	9%	6%
Other evening and night trips	2%	4%	5%	1%	3%	9%	3%	3%
From train station	6%	6%	1%	6%	2%	3%	1%	2%
To train station	5%	3%	5%	2%	2%	5%	0%	3%
Weekly shopping	0%	4%	5%	0%	0%	0%	3%	3%
Sports	0%	1%	3%	0%	0%	0%	0%	1%
Children to/from school	0%	0%	1%	0%	2%	0%	0%	0%
Daily shopping	0%	1%	1%	0%	0%	0%	0%	1%

Note: Significantly higher (green) or lower (red) than average at 5% confidence interval

Source: IVM survey

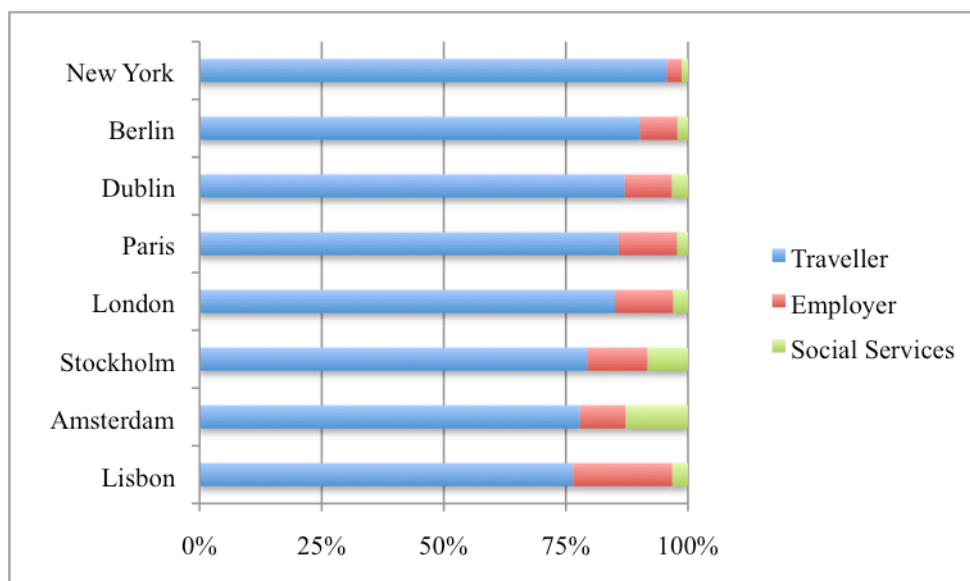
Figure 2 showed that the Parisians rarely take the taxi. Table 3 shows that when they do take it, more than elsewhere, it is to go to the airport or to go and visit friends or family. Conversely, in cities where the use of taxis is very common, as in Lisbon, New York or London, it is taken more often than elsewhere for rarer trip purposes like going to the supermarket, going to practice a sport, to drop or pick up children at school or nursery, and even for daily shopping.

WHO PAYS THE FARE?

The person taking the taxi is not always the one who pays the fare. In rural areas of several European countries, a significant portion of these trips is subsidised, partly or totally by various social services. In cities, the share of taxi trips subsidised by social services is generally lower, however business trips are much more frequent and are often fully reimbursed by employers.

Significant differences exist between cities. Our survey shows it.

Figure 3 - Who pays for the taxi trip?



Source: IVM Survey

Our survey shows that everywhere the expense is almost always borne by the traveller.

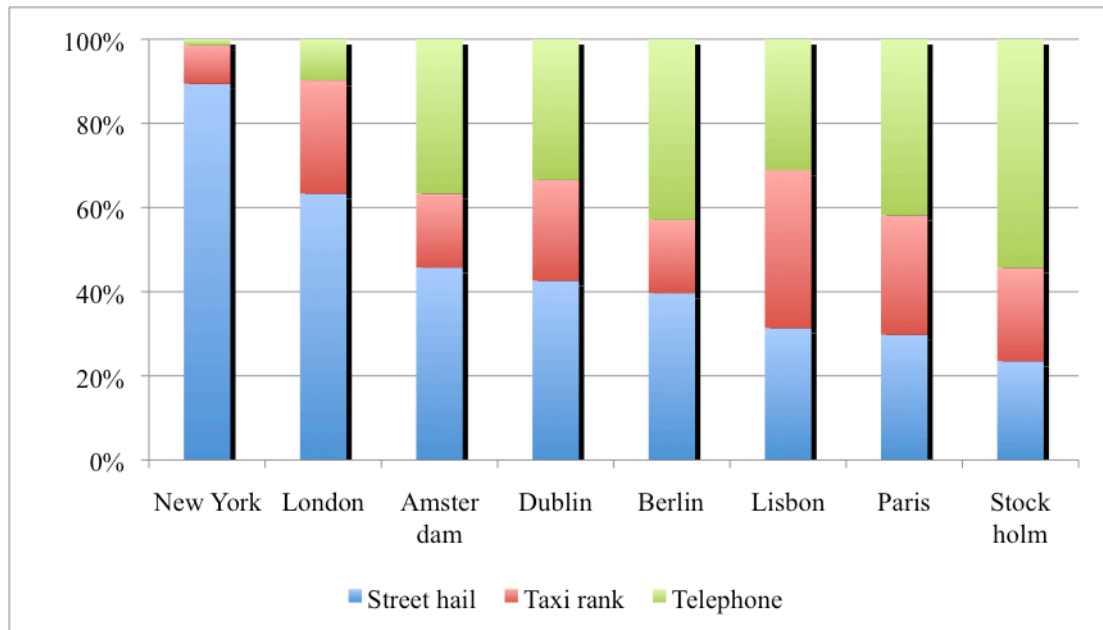
It is in Holland and in Sweden that social services most often resort to taxis to transport their beneficiaries. Indeed, in these two countries, the only ones in our sample, taxi fares are not regulated and thus subject to competition. Social services can then proceed to tendering and get more favourable terms.

In Lisbon, the employer reimburses one out of five trip. In contrast to New York where travellers usually pay their trips out of their own pocket.

WHERE ARE THE TAXI TAKEN FROM?

There are three ways to find a taxi. You can (i) hail it on the street, (ii) go and get one at a taxi rank or (iii) book it by telephone. The relative importance of these three markets differs significantly from one city to another, as shown in the chart below, where we ranked the cities according to the decreasing share of street hailing.

Figure 4 – Relative market shares of street hail, taxi rank and telephone booking



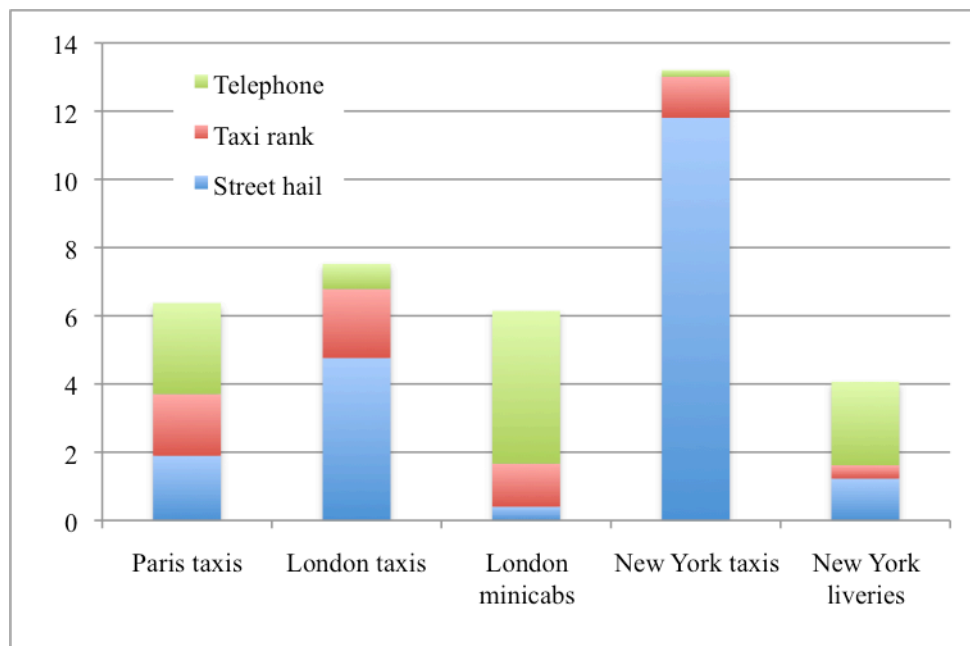
Note: For New York, London, Dublin and Berlin, only metered taxis are considered. There are no PHVs in the three other cities.

Source: IVM Survey

Generally, the larger the city and denser its central business district, the greater the probability for a taxi to find customers who would hail him in the street. In contrast, in medium and small cities, it is better for taxis to wait for customers at taxi ranks, usually near train stations and other traffic generators, and obviously at airports. In small towns, the main market for taxis is made up of trips booked by telephone. From this view point, if, as expected, New York and London are to be found on the left hand side of the chart with a predominant share in the street-hail market, it is surprising to see Paris at the other end of the chart, right next to Stockholm, a city ten times smaller, with a very small proportion of fares taken from the street.

The difference in market shares among the three largest cities in our sample, Paris on the one hand, and New York and London on the other hand, has two explanations: the first, obviously, is that there are very few taxis in the streets of Paris, as explained earlier, the second is that in New York and London the telephone booking market is primarily a market for PHVs, a transport mode banned by the Paris regulator. In the chart below we translated in number of trips per capita per annum, the shares of the three markets for both taxis and PHVs.

Figure 5 - Markets shares between taxis and PHVs (in average number of trips per capita per year)



Note: This is the average annual number of trips per city residents 18 years and older.

Source: Survey IVM

Londoners ride taxis more often than the Parisians do, and they mostly hail them in the street (two and a half times more often than the Parisians). They also make twice as many trips ordered by telephone, but for those trips, they mainly use minicabs, which typically offer lower rates. New Yorkers, meanwhile, are seven times more likely to ride vehicles hailed in the street than the Parisians are. These vehicles are mostly Yellow Cabs. For rides booked by phone, New Yorkers call liveries. Indeed, as we explained earlier, in New York the two markets are strictly separated. The yellow taxis have a monopoly over the rides taken from the streets and liveries enjoy a complete monopoly over the telephone booking market. Our survey shows however that things are not that clear cut in actual practice. If the New York taxis seem to comply with the ban enforced upon them not to take rides booked over the telephone, the liveries do marginally infringe upon the street hail market. In fact, and it is a tolerance, in poor neighbourhoods where yellow cabs are reluctant to venture, a category of liveries, known as “car services” do pick up passengers from the streets. The other liveries that take passengers from taxi ranks are mainly airport shuttles.

The phenomenon also exists in London, where, despite occasional crackdowns by the police, illegal touting by minicabs often happens at key hotspots and nightlife venues, when late night transport options are scarce. The black cabs drivers, through their Cabbies' unions, regularly denounce the alleged laxity of the police.

THE IMAGE OF THE DIFFERENT TRANSPORT MODES

In what aspects does the image of the taxi to the public differs from one city to another? The survey contained two separate questions to investigate this issue. The purpose of the first was to position the image of taxi in relation to other modes of transport. To do so, it presented a series of features together with a wide range of transport modes. The question asked was: “Here is a list of features which may apply to the means of transport that you use

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or not when you are travelling in your town and neighbouring areas. Based on your own experience and impressions, which means of transport does each of these features best apply to?" The second question was about taxis only. It presented the same set of 23 features and respondents were asked to grade from 1 to 10, the relevance with which they applied to the taxi.

Almost everywhere, the taxi surpasses all other transport mode when it comes to choosing one that can be used regardless of the state in which we are (tired, after drinking alcohol (inebriated?), etc.). The only exception is New York, where the subway seems more appropriate, perhaps because New York taxi drivers, who are more often victims of mugging than elsewhere, refuse to pick up clients who may appear slightly odd (See Gambetta and Hamill, 2005). Conversely, except in New York and Dublin, the taxi is the mode of transportation less often cited as offering good value for money.

In terms of comfort and personal safety, the private car is overwhelmingly selected everywhere, but the taxi arrives immediately in the second position. The only exception is Amsterdam where, about safety, the bicycle comes in second, just before the taxi. Everywhere the taxi is selected as a means of transportation that offers personalized service and quality, but in New York this mostly applies to the liveries rather than the Yellow Cabs.

Getting to your destination without getting lost

The two transport modes most often cited to reach one's destination without getting lost are taxis and subways. The few motorists who cited their own car to have this quality probably had it equipped with a GPS! It is interesting to note that in New York, the liveries are cited more often than the yellow cabs (66 times against 51). The very low level of qualifications of yellow cabs drivers [Bearak, 1998; Schaller, 2006] probably explains it. In London it is obviously the opposite: Cabbies (drivers of black cabs) are much better appreciated (97 citations against 30) than minicab drivers.

The question of our online survey which asked to assign a grade from 1 to 10 to each of 23 qualities as they apply more or less to taxis were laid on the same terms to taxi users, and to non-users, that is to say, people who had not taken a taxi in the year preceding the survey. Users, in general, gave slightly higher grades than non-users, but they made much the same hierarchy.

It is difficult to interpret differences in the average scoring among cities because they are perhaps cultural differences. It may be noted that users with the most severe judgment to their taxis are the Dutch and the French, and those who seem most satisfied with them are the Germans. If we offset this difference in average severity to display the ranking of qualities appreciated in taxis, the best grades reward the taxi's availability and convenience, and the worst sanction their high cost and the fact of being subject to road congestion. The ranking is presented in the table below.

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Table 4 - Features that may be used to describe taxis graded from 1 to 10 by their clients

	Paris	London	New York	Amsterdam	Lisbon	Berlin	Dublin	Stockholm
... I can use whatever state I'm in (tired, after drinking alcohol, etc.)	8,3	7,9	8,1	8,2	8,5	7,9	7,8	8,2
... can get me all around my town and neighbouring areas	8,3	8,1	7,5	8,4	8,6	8,1	8,0	7,7
... is available anytime, day and night	7,9	8,0	7,7	8,5	8,2	8,0	7,9	8,3
... allows me to get to where I am going without getting lost	8,6	7,8	7,7	8,1	8,3	8,0	7,7	6,8
... is comfortable	8,2	7,6	6,9	8,0	7,5	7,8	7,4	8,2
... is easy to use / practical	7,5	7,2	7,0	7,3	7,7	7,4	7,3	7,3
... is available wherever I am	6,8	6,7	6,9	7,3	7,4	7,1	7,3	7,4
... is safe (no assaults, no attacks...)	7,5	7,4	7,2	6,8	6,7	7,0	7,2	6,4
... offers a personalised service	6,5	6,9	6,3	7,0	6,8	6,7	6,6	6,9
... allows me to do something else (read, telephone, work ...)	7,3	6,6	6,7	6,6	7,1	6,6	6,6	6,3
... is quick	6,2	6,5	6,8	7,1	6,6	6,6	6,7	6,8
... offers good quality customer service	6,6	6,6	6,0	6,5	6,4	6,4	6,0	6,7
... is punctual	6,2	6,4	6,2	6,4	6,3	6,5	6,4	6,3
... is easy to access (with prams, packages, elderly people)	5,4	6,4	7,1	6,2	5,7	5,1	5,9	6,1
... is friendly	6,0	6,6	6,0	5,3	4,5	6,2	6,4	6,4
... accepts different methods of payment	5,4	5,3	5,0	4,8	5,2	6,0	4,5	7,4
... gives a good image of myself	6,4	5,6	5,6	5,0	5,5	5,2	5,2	4,8
... I am in the habit of using	4,7	4,5	5,4	4,7	5,5	5,5	5,6	5,8
... always offers me the same travelling time	4,6	5,4	5,5	5,2	4,6	5,2	5,5	4,7
... offers good value for money	4,2	4,6	5,2	4,4	4,8	4,5	4,5	4,5
... allows me to avoid the traffic jams	4,2	4,3	4,3	4,5	4,5	3,9	5,7	4,2
... is good for the environment	3,7	3,8	4,3	4,0	4,0	4,2	3,9	3,3
... is cheap	3,5	3,6	4,4	3,5	3,6	3,8	3,8	3,2

Note: Significantly higher (green) or lower (red) than average at 5% confidence interval

Source: IVM survey

Scoring differences between cities should be interpreted with caution, especially because some of the taxi features can be assessed only relative to those of other modes of transport. Thus, for the people of Stockholm the taxi does not appear to offer a particular level of security in relation to assaults or attacks. They did not assign a high note. It is not the same in Paris, which has experienced two deadly bombings in the Métro in 1995 and 1996 and most recently the spectacular attacks on buses in the suburbs, or in London where in July 2005 a series of four bombings in public transport had 56 dead and 700 wounded. So it is in Paris and London that the taxi gets its highest grades as a mode of transportation that protects from assaults and attacks. It is also possible that the inhabitants of Amsterdam who find their taxis to be fast compare them to the bicycle, while the Parisians find them slow, most likely by comparing them to the RER, the fast Métro network.

Other differences in grading are due to the local habits. In Stockholm, six out of ten taxis are booked by telephone. As the taxi supply is abundant, the inhabitants of Stockholm therefore believe that their taxis are available regardless of where they are or when they call. In

London, however, six out of ten taxis are hailed in the street, since telephone bookings from residents are mainly directed towards minicabs. Although the supply of London taxis is as abundant as it is in Stockholm, the probability of hailing a taxi in the street regardless of where one is located in London is not as good as finding a taxi by calling a taxi dispatch centre in Stockholm.

THE REASONS WHY USING OR NOT USING THE TAXI

The reasons why we chose the taxi among different modes of transport vary considerably from one city to another, but usually at the forefront of these reasons are its speed and comfort. To our survey question: “during your last trip by taxi, why did you chose the taxi rather than other means of transportation?” One quarter of respondents answered: “because I was tired.” Then come the deficiencies in the provision of public transport, timetables, slowness, and too many transfers. Finally come the more specific reasons such as fear of getting lost or the fact of wanting to travel with animals.

However, the differences between cities remain significant, as shown in the table below.

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Table 5- Reasons for choosing a taxi rather than another means of transport

	Paris	London	New York	Amsterdam	Lisbon	Berlin	Dublin	Stockholm
Safety	8%	8%	6%	4%	5%	6%	6%	5%
Faster	12%	15%	19%	15%	16%	15%	14%	17%
Available immediately	12%	7%	6%	13%	17%	13%	17%	15%
Suited the situation: cumbersome – heavy packages, prams ...	6%	12%	12%	6%	3%	5%	4%	7%
Easy to use / practical	8%	12%	12%	9%	9%	7%	8%	9%
Out of habit	3%	2%	2%	1%	3%	1%	2%	2%
Difficulties parking in the area I was going to	3%	2%	4%	2%	9%	4%	4%	0%
Public transport does not serve the area I was going to	3%	4%	3%	5%	7%	3%	7%	2%
The public transport timetable did not suit me	10%	7%	4%	11%	8%	7%	10%	8%
I was tired	9%	9%	9%	10%	4%	9%	7%	11%
The area I was going to was difficult to find	1%	1%	1%	1%	1%	1%	1%	1%
Too many connections with public transport	6%	0%	0%	3%	3%	7%	4%	4%
The only one that would accept animals	0%	5%	4%	0%	0%	0%	0%	0%
Temporary handicap, difficulties getting around	1%	1%	2%	1%	2%	2%	1%	2%
The car was not available (being repaired, borrowed by someone...)	1%	1%	1%	1%	3%	2%	1%	1%
For my comfort / that of the person who was travelling with me	7%	6%	7%	9%	5%	10%	6%	10%
The travel time on public transport was too long	7%	6%	6%	4%	5%	7%	6%	6%
Other	2%	2%	2%	3%	1%	1%	3%	2%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Note: the sample of taxi users was different for different cities; The total of 2447 users are divided as follows: Paris = 255, London = 359, New York = 302, Amsterdam = 261, Lisbon = 309 = Berlin 306, Dublin = 361, Stockholm = 294. On average, respondents gave three answers to justify their choice.

Note : Significantly higher (green) or lower (red) than average at 5% confidence interval

Source : IVM survey

One reason often cited for the low use of taxis in Paris is the supposedly good quality public transport provision. Parisians would ride taxis less often than Londoners or New Yorkers because they would benefit from a subway system better than London's and safer than New York's. This explanation seems contradicted by the answers that the Parisian taxi users gave to our survey. Significantly more frequently than elsewhere, the reasons put forward by the Parisians for choosing the taxi rather than public transport are safety, inadequate schedules and too long journey times, and even, but less than in Berlin, too many transfers.

It was in New York that inadequate public transport timetables are cited the least often to justify the choice of the taxi. This is not surprising when considering that the New York subway system is one of the few in the world to provide a metropolitan network that works 24 hours a day.

More than anywhere else the London taxis are chosen when travelling with a pram (stroller), with cumbersome objects or animals. It is true that black cabs are particularly well suited to this type of transport.

Twenty good reasons not to take a taxi

The survey also asked non-users why they had not taken a taxi during the past year. The reasons that come across are primarily linked to the high cost of taxi rides. Taxis in New York are by far the least expensive of our sample of cities [Darbéra, 2009, p. 221], yet they are found too expensive by 60% of the New Yorkers who do not use the taxi. However, and there lies the interest of such surveys, international comparison shows that the problem of taxis' high cost is felt even more strongly in all the seven other cities of our sample.

If the London residents who do not use taxis do agree with those of other cities to find that taxis are too expensive (81%), they stand out, however, and in a very dramatic way, from the view that taxis offer poor value for money. They are only 1% with that opinion when the average for the seven other cities reached 60% (or 52%, including London, as shown in the table below). Londoners are very aware of the exceptional quality of service their taxis offer. Their other answers prove it: as shown in Table 6, they are the last to criticize their taxis for lack of friendliness, quality of service or for not being easily accessible with prams, to the disabled etc. If Dubliners find their taxis give them a bad image of themselves, this is not true of Londoners. The only criticism they make to their taxis is that they do not easily accept other payment than cash.

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Table 6- The reasons for not taking a taxi when travelling in town or neighbouring areas

	Paris	London	New York	Amsterdam	Lisbon	Berlin	Dublin	Stockholm
lack of safety (risk of assault, theft...)	1%	3%	2%	3%	4%	0%	2%	4%
not quick	4%	1%	4%	3%	3%	2%	2%	2%
lack of punctuality	3%	2%	4%	3%	2%	1%	4%	3%
lack of comfort	0%	1%	2%	2%	2%	0%	2%	0%
poor value for money	14%	0%	1%	19%	13%	18%	12%	18%
doesn't allow you to do something else (read, telephone, work ...)	1%	15%	12%	1%	0%	1%	2%	1%
doesn't offer good quality customer service	2%	1%	5%	5%	4%	1%	3%	3%
doesn't offer a personalised service	1%	1%	2%	3%	2%	1%	2%	0%
not available when I need it	4%	6%	6%	1%	1%	4%	4%	2%
not available where I need it	7%	5%	5%	1%	1%	3%	4%	1%
doesn't always offer me the same travelling time	7%	4%	4%	3%	6%	6%	6%	3%
isn't always easy to access (with prams, packages, for elderly people, etc.)	4%	1%	2%	2%	4%	3%	3%	1%
isn't good for the environment	4%	3%	3%	3%	5%	6%	5%	8%
not friendly	3%	1%	3%	4%	3%	4%	2%	4%
isn't easy to use / not practical	2%	1%	3%	1%	0%	1%	3%	1%
isn't cheap	15%	21%	15%	22%	16%	22%	13%	24%
doesn't give a good image of myself	1%	1%	1%	2%	1%	1%	1%	1%
I am not in the habit of using it	11%	5%	4%	8%	14%	5%	11%	10%
doesn't accept different methods of payment	6%	16%	13%	3%	5%	4%	6%	1%
doesn't allow me to get to where I am going without getting lost	1%	0%	0%	0%	0%	0%	0%	2%
cannot take me all around my town and neighbouring areas	2%	1%	1%	0%	0%	1%	1%	0%
doesn't allow me to avoid the traffic jams	6%	8%	6%	5%	10%	10%	7%	6%
I cannot use it whatever state I'm in (tired, after drinking alcohol ...)	0%	1%	1%	1%	4%	2%	2%	1%
Other – specify	1%	1%	2%	4%	1%	1%	1%	2%
Total répondants	100%	100%	100%	100%	100%	100%	100%	100%

Note: the sample of taxi non-users was different for different cities; The total of 743 people divided as follows: Paris = 148, London = 97, New York = 99, Amsterdam = 130, Lisbon = 56, Berlin = 103, Dublin = 48, Stockholm = 62. On average, respondents gave four answers to justify their choice.

Note : Significantly higher (green) or lower (red) than average at 5% confidence interval

Source : IVM survey

The Parisians complain that they do not find available taxis where they need them, a complaint ten times less frequently mentioned by the Stockholm residents. The explanation is probably due largely to the fact that the quota on the number of taxis in Paris has remained virtually static for several decades whereas the Swedish taxis were completely deregulated about thirty years ago.

IS THE TAXI TOO EXPENSIVE FOR THE POOR?

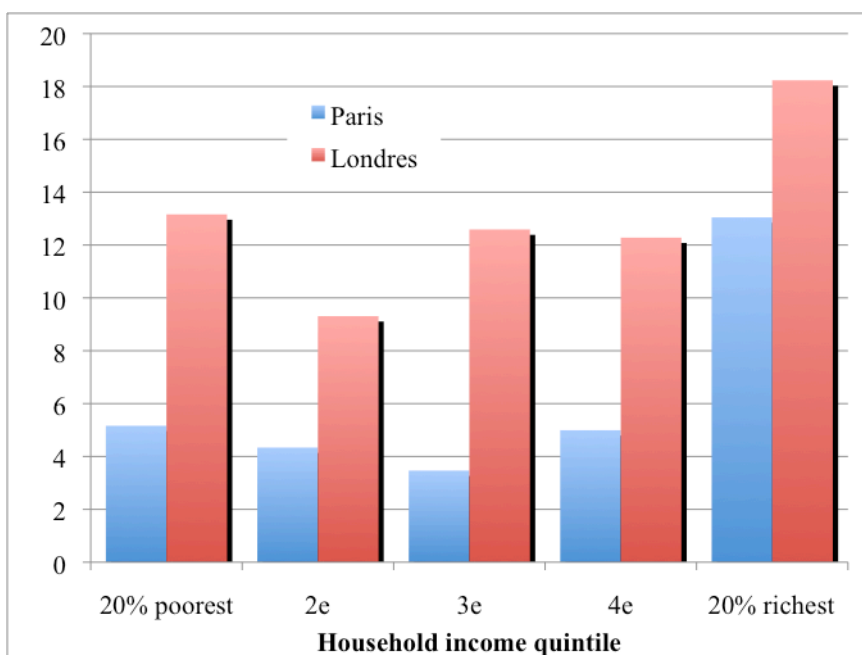
The main reason given by those who do not use the taxi is its price. Would the taxi be a mode of transport for the rich? To answer this question seriously, we must be able to relate

the frequency of taxi use to the household income. Unfortunately, our sample in each city was too small to define sufficiently reliable income classes. For London and Paris, however, that question can be answered by using the household the surveys regularly conducted in those two cities.

The national travel survey (NTS) that we used for London is a continuous survey which questioned 3800 households over three years and made them fill out a detailed log of their trips for a week. Households are classified into five quintiles according to their income per consumption unit. We used three surveys that range from 1996 to 2003 and cover a sample of 2,510 travels by taxi (black cabs) and PHVs (minicabs).

To obtain comparable data on Paris we used the Global Survey of Transport (EGT) of the Paris region. This survey collects the travel habits of each member of about 10,000 households. The EGT provides for 85% of them a level of declared income. On this basis, we estimated the average income per quintile of households ranked by income per consumption unit. We used the last two surveys (EGT-1991 and EGT-2001) covering a total sample of almost 500 taxi journeys including 430 for which it was possible to calculate the household income class. These results are presented in the graphs below. For better comparability with London we have converted the data into annual number of trips.

Figure 6 - Annual number of trips by taxi and PHVs, per person in London and Paris by household income class.



Sources: Paris: EGT 1991 and 2001 - DREIF / INSEE; NTS London from 1996 to 2003 - Author's calculations

In Paris as in London, the richest usually ride taxis more frequently than the poorest do, but in Paris the gap is much greater than in London, a ratio of 2.5 in Paris against only 1.4 in London. In fact, the poorest Londoners make use of the taxi as frequently as the wealthiest Parisians: 13 trips per capita per year. As shown in the factor analysis mentioned above, the “taxis” used by the poorest Londoners are in fact essentially minicabs. The industry is highly competitive and rates for minicabs are very diverse, but they are on average much lower than the regulated fares of the black cabs.

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Note also that in both cities for the first four quintiles, the use of the taxi does not increase with income. In fact, car ownership, which increases with income, reduces the need to use the taxi. In other words: despite its cost, the poorest use a taxi because they have no car. The effect of car ownership in their use of taxis is well documented in London.

Figure 7 - London residents' travel analysed by car ownership (number of trips per person Monday to Friday)

Main mode	Residents without cars		Residents with cars	
Bus	2.95	49%	1.07	10%
Underground	1.38	23%	0.82	8%
National Rail	0.61	10%	0.64	6%
Car/Van	0.81	13%	8.15	75%
Taxi/Minicab	0.25	4%	0.15	1%
Motorcycle/bicycle	0.06	1%	0.09	1%
All mechanised modes	6.06	100%	10.92	100%

Source: TfL [2003] *London Travel Report 2003*, Transport for London, 57 p., Table 3.4 p. 19.

Note: Trips are classified according to the mode used for the longest distance.

The data presented above are from the London Area Travel Survey of 2001. They show that London's non-motorized households are almost half as mobile as motorized households but they make twice as many trips by taxi or minicab as households with cars.

From the data presented we can therefore conclude that in Paris because of the metered taxis' monopoly over the whole for-hire transportation (public carriage) sector, this industry is predominantly directed to servicing the rich whereas in London the service is more evenly distributed over the whole population.

REFORMING THE TAXI

Whatever the city, the answers to a question of our survey show that taxi users are predominantly (65%) in favour of government intervention to promote taxis as a means of reducing car use in downtown. Non-users are less favourable (43%). Not surprisingly, the consensus is greater for government intervention to ensure that taxis are a means of transportation that best meets the needs of urban residents (77% and 57% respectively). In the questionnaire, almost all the questions were multiple choices. However, at the end of the questionnaire, two open questions were asked, where participants could write their own comments.

The first question was "What are all the measures that the authorities should put into place so that taxis may be a means of transport that better meets your needs?" Of course, in the eight cities, residents want measures for lowering fares, and for making taxis more readily available and practical. More interesting is the analysis of the differences between the requests put forward in different cities.

Everywhere, people want governments to adapt the regulation of taxis to reduce the costs of riding them, and improve service quality. Only New Yorkers seem quite satisfied with the existing regulations, especially because they are less likely to complain about high prices, only 20% do, against 46% of the Portuguese or 41% of Londoners. An international comparison of taxi fares [Darbéra, 2009, p. 221] shows that the New York rates are the lowest in our sample, less than half those in London. To reduce costs, 4% of Londoners

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would be able to share taxis and 4% of Parisians want to create shared-taxi services (as they existed in Paris until the 1950s). In Stockholm, where the taxi companies freely set fares, residents do not demand the return of regulated prices, however they want the government to reduce the burden of taxis by reducing their taxes, and exempting them from the congestion charge. The Portuguese (8%), and to a lesser extent the French, believe that exempting taxis from taxes (particularly fuel taxes) is a means of reducing tariffs. They are probably wrong. Experience shows that regulated fares are never revised downwards. Unlike in Stockholm, the number of taxis in Lisbon and in Paris is capped. In this case reducing taxis' operating costs only increases the rent and thus the value of the license; those who benefit are not the customers but the owners of licenses. The Portuguese are also more likely (7%) together with the Berliners (6%) to ask for subsidies in the form of direct payments to different categories of users.

The second most frequent request put forward is for the government to intervene to ensure that taxi drivers are better trained and more strictly controlled. Unsurprisingly, Londoners are least keen for it (only 6%), and the Amsterdam's residents most impatient (56%). They also want their taxi drivers to know the city better, drive more safely, and understand and speak Dutch. They are closely followed by New Yorkers for the last request, since, according to Schaller [2006, p. 54] 40% of New York taxi drivers do not speak English once they return home from work. The Dutch also want government intervention to "clean up the profession" and, together with the French, they want the government to enforce the regulation requiring taxis to accept short trips. We may see this as a consequence of the chaotic deregulation of the Dutch taxi industry in 2001, which, unlike the Swedish deregulation has not been accompanied by strong measures to control access to the profession.

It is in Paris that the third request, i.e. more taxis, is the most frequent. One Parisian out of four wishes there were more taxis in the city against one of every eight elsewhere, and only one in 25 in Stockholm and Amsterdam, where there is no taxi quota.

The Dubliners are more likely to ask for a better quality of the service provided by the taxicabs, in particular for vehicles in better condition and for drivers to accept payment by credit cards. They also want to have a single telephone number to call to book a trip. Indeed, at the time of our survey, the process of concentration of telephone booking centres was just beginning, and there were still nearly a hundred in the city.

New Yorkers also want their taxis accept all payment types, and the vehicles to be cleaner. The French want subscriptions at reduced rates for regular users. In fact, for the moment it is exactly the opposite: frequent users in Paris can purchase membership cards with one of the two major taxi companies to be given priority when booking a trip, but this type of subscription increases the cost of using a taxi, it does not decrease it. Some people are willing to pay for it mostly because of the scarcity of available taxis at peak hours. The Dutch want a review of legal framework.

According to our survey, the authorities should improve traffic conditions for taxis in Paris by creating taxi lanes on highways, and in Lisbon by limiting other vehicles traffic in the city. Londoners want taxis to be allowed to use bus lanes, as they do in Paris.

Regarding the quality of vehicles everywhere, especially in Lisbon, citizens want their cabs to comply with the most severe environmental standard. The New Yorkers even specify they want hybrid and electric vehicles. The Portuguese also want larger and more comfortable vehicles.

The second open question was: "Thinking again about your taxi trips in another town in your country or abroad, what are all the aspects that you appreciated and that you would like to find during your next taxi trips in your town?" The answers to this question are consistent with those obtained in the previous question.

The most popular feature among taxis abroad is the competence and friendliness of their drivers. This is particularly true for Dubliners and New Yorkers, but of course, much less for the Londoners. Londoners complain of high prices on their taxi fares, but it was the Dutch who think they have the worst value for money. What the French most envied abroad is the abundance of taxis, and the Portuguese the better quality of the vehicles.

The Swedes are three times as many as the French or the Irish to think that taxis from their own city are better elsewhere. They are followed in this by the New Yorkers.

CONCLUSION

The IVM - GfK survey found that our eight cities have many similarities regarding the image of taxis, their use and expectations of citizens of these cities. It also revealed very large differences that can largely be attributed to differences in the regulatory frameworks governing the taxi industry in these cities.

Regulation that cap the number of taxis, without allowing a vibrant PHV sector to complement it, results in much lower use of taxi services and limits this use to the essentials: getting to the airport and travelling at night, that is to say when and where public transport services are most deficient. This is the case in Paris, in strong contrast with New York, for example, where taxis are also used for other purposes such as weekly shopping or travel between home and work. Naturally, it is in Paris, that the residents more frequently ask the government to increase the number of taxis. Conversely, in our sample, the Parisians are, with the Dubliners, the least likely to consider that taxi services are best in their own city.

The use taxis in Amsterdam is as low as in Paris, but for exactly opposite reasons. The Dutch deregulation has led to a sharp increase in the number of taxis that was accompanied by a decline in the quality of services. Consequently, the Dutch complain of inexperienced or dishonest taxi drivers, their dangerous driving and poor vehicle conditions.

Lisbon shows better results. Taxis are also subject to quotas, but unlike Paris, the quota has not stood still over several decades and their number is sufficient for the sector to be competitive and meet the needs of the population at any time. One drawback is the poor quality of the vehicles.

According to the survey, right after the Stockholm residents, Londoners and New Yorkers are the ones who are most satisfied with their taxis. In these last two cities, the regulator has clearly identified two distinct markets, one for regulated taxis that can take customers on the street and at taxi ranks, and another, very competitive for PHVs (known to minicabs London and liveries in New York) that meet the orders booked by telephone.

It follows from this abundant and varied supply that the use of taxi services is very common but also very diverse: from travelling to the airport to bringing children to school. The main difference between London and New York is the skill level of taxi drivers. A stringent selection in London ensures that drivers know the plan of the city, speak English properly and drive safely. In New York, however, many drivers are poorly paid and low skilled. Accordingly, New Yorkers complain about the poor quality of services but have very low

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prices that accompany them. In both cities, more than elsewhere, taxis are regarded as easy to use and practical.

As we have said, the Swedes are the most likely to think that their taxis are better than the ones in other cities of the world, perhaps because the Swedish regulator is not involved in setting fares, or limiting the number of taxis.

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