

# **PUBLIC URBAN TRANSPORT, TRAVEL BEHAVIOUR AND SOCIAL EXCLUSION - THE CASE OF SANTIAGO DE CHILE**

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## **ABSTRACT**

What are the social impacts of a new but problematic public transport system in a city known for its inequalities concerning access to daily activities and participation in urban life? More in detail, what are the implications of a re-regulated transport service, if the city has previously gone through a long period of de-regulated services? Are the changes just related to distorted accessibility conditions, or are there further implications for people's mobility competences and travel behaviour, and what does that mean for the manifestation or dissolution of social inequalities?

With a specific regard to those interests, the paper intends to identify how the public urban transport policy and system has affected the dynamics of social inequalities, focusing particularly on the case of Santiago de Chile. There the public transport policy has developed from a de-regulation period in the 1980s to a re-regulation since the 1990s, which has had an important impact on users' travel habits and the citizens' image of public transportation. During the deregulation period the service was characterized by an uncoordinated, private bus-oversupply, complementary to the efficient public metro. In order to suspend the stigmatization of public transportation as 'mode for the poor', the sophisticated 'Transantiago' bus system was implemented in February 2007. Unfortunately, the ambitious project failed, due to a set of technical and social issues. Being aware of the importance of the technical errors, the own research concentrates on the social implications related. So the Transantiago appropriation process by the inhabitants in the first three years of existence is examined.

The paper consists of six basic parts: After an introduction into the topic (1), the theoretical framework is exposed, dealing with the so-called motility concept and the risks of social exclusion due to transport (2). Subsequently, the methodological approach is described, incorporating a set of qualitative and quantitative methods (3), and the case study area of Santiago is introduced (4). The focus is then put on the own empiric results, emphasizing the Transantiago implementation from the user's point of view (5). Finally, some conclusions are drawn (6), considering the role of transport modernization in the context of travel behaviour and social exclusion risks, and an outlook on further work is given.

## **1. INTRODUCTION**

This paper intends to identify the relationship between public transport policy and people's travel behaviour as well as related social implications. With a specific regard to the case of Santiago de Chile, the impacts of the modernization of a public transport system on people's daily activity patterns and mobility practices as well as potential sources of social inequalities and exclusion are examined. In Santiago, public transport policy has developed from a deregulation period in the 1980s to a re-regulation since the 1990s, which seems to have had an important impact on users' travel habits and mobility competences. During the deregulation period the service was characterized by an uncoordinated, private bus-oversupply, complementary to the efficient public metro. In order to suspend the stigmatization of public transportation as 'mode of the poor', the re-regulation period culminated finally in the establishment of the sophisticated 'Transantiago' system in February 2007. The Transantiago project envisaged the total modernization of the transport industry by re-organizing the bus network under private operation, renewing the fleet and bus infrastructure, establishing advanced public regulation and monitoring tools, introducing a tariff union with the metro and new electronic tickets. But the design and implementation process of this ambitious project failed, and in its first three years of existence the Transantiago has been rejected by wider parts of the population.

The subsequent paper consists of five basic parts. First of all, the theoretical concepts of motility and social exclusion are introduced. The motility concept is assumed to be an adequate approach for explaining important parts of the Transantiago rejection, and the social exclusion concept identifies the multidimensional character of social deprivation where transport might play a crucial role. Second, the main research interests and the methodological approach are exposed. Subsequently, the case study area of Santiago is introduced, giving a short overview on the technical and planning failures of the Transantiago. In the fourth part the results of the own empirical works, based on 40 in-depth qualitative interviews with inhabitants and a quantitative survey in 2000 households, are presented and discussed under support of the motility concept. Finally, some conclusions are drawn, summarizing the findings described and deriving some general lessons concerning transport modernization and related social drawbacks.

*Keywords: public transport, travel behaviour, mobility practices, social exclusion*

## **2. MOTILITY POTENTIAL AND THE RISK OF SOCIAL EXCLUSION**

To understand the reasoning of the user-related problems related to the adoption of the new public transport system in Santiago de Chile, the *motility* concept defined by Kaufmann (2008) forms a convenient theoretical construct. Motility can be understood as the conglomerate of conditions and possibilities of an individual to be mobile, i.e. to move within space or society (Kaufmann, 2008). Hereunder three different dimensions can be identified:

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(1) Spatial, temporal and economical *access*, (2) *Competences* and *skills* as well as (3) Individual *appropriation*. All three dimensions bear the risk to differ among the population and thus, to contribute to social inequalities and exclusion.

First of all, there is the question of *spatial and temporal accessibility*, i.e. the availability of transport infrastructure and services in relation to land use and spatial structure of territories. Remembering also the space-time prisms by Hägerstrand (1970), an individual is object to space- and time-related restrictions, i.e. disposes of a specific daily travel time budget in order to carry out the various daily out-of home activities, i.e. getting there and spending time at the activity location (van Wee et al., 2010). Hereunder do not only count the so-called obliged activities related to work, study, grocery shopping and health but also the non-obliged activities such as leisure and social activities. An inappropriate transport system or land use structure may therefore enforce reduced activity spaces, especially for non-obliged activities. The reduction of activity spaces due to inadequate transport as well as related social implications have been subject in various studies, for instance for two German cities by Schönfelder and Axhausen (2003) or for the a Belgian city by Neutens (2010). Nevertheless, in both cases no direct social impacts of transport-related accessibility changes on activity spaces could be found, and other features such as opening and usage hours of the activity location were determined as being more important than an improved transport system.

Anyway, this motility field includes also the *economical accessibility*, i.e. affordability of transport, and individuals' transport budget in monetary terms. Especially financially deprived households are exposed to the risks of exceeded transport costs, since there is often some mismatch between their actual residential location, e.g. at the lower density periphery of an urban agglomeration, and preferred easily accessible areas in the multifunctional urban centre and daily trips are of comparably longer distances (Gonzalez et al., 2006; Páncs and Vriend, 2007). Often not disposing of a private car, the deprived households depend exclusively on the public transport system (the so-called *captive riders*), which is often less performing in their residential areas. Thus, spatial, temporal and economical accessibility form together important determinants of an individual's mobility potential.

Furthermore, there is the second motility dimension that can be considered as particular crucial in the frame of the present research. It refers to the traveller's need of specific *competences and skills* in order to be able to program the trip, and - if needed - to improvise under the given framework of spatial and temporal activities. Being inventive and to know the rules of the game is part of the human and social capital that has become more and more important in order to be mobile and to travel within space (De Certeau, 1990; Hofmeister, 2005). Certain mobility practices are required, including the use of maps, planning and tracking of routes, as well as getting access to information based more and more on advanced technology (automatic phone hotlines, internet platforms etc.). These practices both require and develop specific competences in favour of programming and improvising the own activities in space and time. If these competences are not available, resultant bad travel choices may cause stress or additional financial burdens. On the other hand, better travel competences may form a tool for deprived households to compensate limited access

to communication and affordable transport systems by better organisation. Putting emphasis on emerging economies, several researchers have identified remarkable potentials of creativity, especially among deprived households, which help to overcome mobility bottlenecks via some collective practices, for instance the private organization of car-pooling or the set-up of a family-owned taxi business (Pedrazzini, 2007).

Last but not least, the third mobility aspect deals with the individual interpretation and *appropriation* of travel ends. Understanding transport as a derived demand, trip making means carrying out a personal project and requires physical movement (Kaufmann et al., 2001). Based on several surveys in deprived areas the difficulties for certain people to push themselves to leave their residential area to carry out non-obliged activities have been identified (Le Breton, 2005). Hence, the observed and measurable transport demand is not necessary equal to the *real demand* beyond, since mobility restrictions may affect the omission of some activities and trips, especially related to non-obliged activities. Again, a serious social consequence might be the reduction of activity spaces and activity frequencies.

Regarding resultant normative requisites for adequate transport policy, a good (public) transport system effectively bears potential to enhance people's possibilities to move and to participate in societal life. Nonetheless, it is not the only sufficient condition, since the adoption of a new transport system rather asks for the reorganization of people's daily activity patterns and travel habits. These habits are strongly influenced by previous travel experiences such as the people's individual preferences, values and attitudes (Flamm and Kaufmann 2006), which together are often described as the people's *lifestyles*. The lifestyle concept, including an individual's conglomeration of consumption and activity patterns and attitudes, plays a more and more important role for understanding and explaining travel behaviour, particularly mode choice decisions (Cao et al., 2005; Scheiner et al., 2007; Ohnmacht et al., 2009; Thomas et al., 2009). Furthermore, it has to be taken into account that travel habits are often based on rather un-reflected, unreasoned behaviour (Kaufmann et al., 2004; van Wee et al., 2010) and hence very difficult to influence.

So, people's motility potentials vary among the population and over individual lifecycle stages, with some groups more and others being less powerful (Geurs et al., 2004 and 2009). Groups which are more likely to have problems are for instance lower-educated, older or handicapped people as well as lower-income households and captive riders living in less accessible areas at the urban periphery. Besides, in more traditional societies some women may experience motility problems since they often do not have access to a private car, are less integrated into the formal labour market and have less access to stable income opportunities. Low motility levels may have significant social impacts, if participation in societal life is somehow limited and restricted. More and more research is carried out in this field, often titled under the phenomenon of *social exclusion*.

Originating from French social policy debates of the 1970s and building on Marxist notions of socio-spatial exclusion as necessary condition of capitalism (Urry, 2007), the European commission used the term first in 1989. There the Council of Ministers requested a study of

policies to combat social exclusion and put so an important milestone for deeper awareness of the multidimensional character of social deprivation wherefore transport policy can play an important – exacerbating or alleviating - role. Exactly, the social exclusion term describes the co-existence of a set of social problems associated with the fragmentation of traditional social structures, the decline in participation in normal processes of society, as well as increasing deprivation among particular social groups (Burchardt, 1999). According to Burchardt, an individual may be described as socially excluded if 'he/she is geographically resident in a society but does not participate in the normal activities of that society' (ibidem). Hence, reduced access to employment opportunities, services and social networks, putting the individuals' participation in daily life into risk, bears a strong transport and mobility-related connotation. Finally, also the transport system itself may generate diseconomies in the form of environmental and social externalities such as pollution, increased congestion, negative employment affects and forced residential displacements (Centre for Transport Studies, w.y., 19-20). In the following the research focus is done on the first connotation, dealing with the changes of inhabitant's mobility potential due to the changes in the public transport system in the metropolitan area of Santiago de Chile.

### **3. RESEARCH INTERESTS AND METHODOLOGY**

Central hypothesis of this research is that an important part of the Transantiago failures is not only related to basic technical and planning errors of the system itself and thus, to spatial accessibility problems, but also to appropriation difficulties and a misperception of the actual supply by the users. These difficulties can be explained by the existing travel habits, which themselves are a consequence of the previous deregulation processes. I.e., during the previous two decades of liberalized transport market certain travel competences and preferences as well as images of public transport have been developed, which significantly complicated the appropriation process of the new system and formed a barrier to the acceptance of technological improvements. However, the Transantiago failures affect certain social impacts, which hit especially hard on the socio-economically disadvantaged groups.

In order to testify this hypothesis, a so-called *ad-hoc approach* is applied. I.e., being aware of the influence by multiple geographical, technical and social factors, only some urban areas have been selected, which are analyzed in detail. These areas represent five municipalities of the metropolitan area of Gran Santiago, which differ among each other concerning their accessibility and transport conditions, their predominant socio-economical structure as well as predominant mobility and lifestyle patterns (figure 1). There are the metropolitan centre (Santiago Centre), a very up-marked borough (Las Condes) located in the Northeastern sector, two middle-class municipalities at the periphery (Puente Alto and Maipú) as well as a very deprived and socially difficult area in the second concentric ring (Lo Espejo). While the first three municipalities benefit from access to the metro network, the two latter ones exclusively depend on the new bus services.

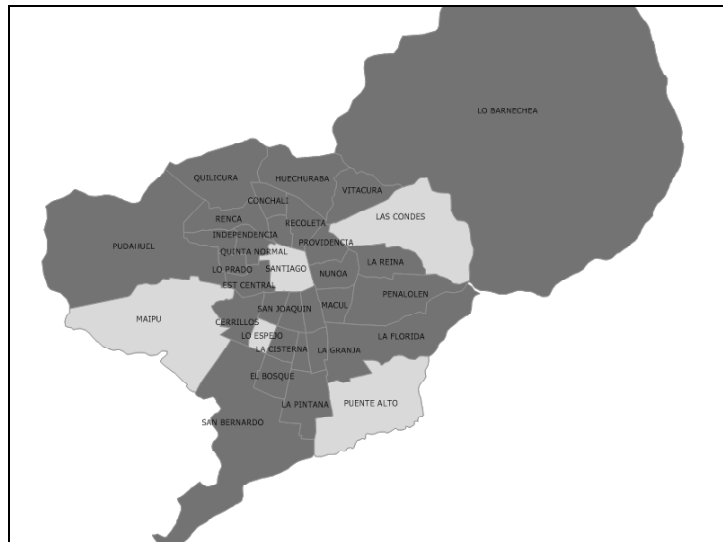


Figure 1 – Location of focus municipalities (Own elaboration)

In these areas a set of qualitative and quantitative measures has been implemented. First, 40 qualitative in-depth interviews with inhabitants have been carried out in two rounds: about 20 interviews (five per municipality) in May/June 2008 (one year after the Transantiago implementation), and further 20 interviews in April/May 2009 (two years after the Transantiago implementation). Second, 2000 face-to-face home-based interviews along a structured questionnaire have been put into practice from October to December 2009. The questionnaire based on the motility concept was composed of five parts: Questions related to (1) people's satisfaction in their residential area and related lifestyle preferences and attitudes, (2) frequencies, locations and mode uses for eleven different purposes before and since the Transantiago implementation, (3) use, perceptions and associations of different public and private modes, i.e. private car, bus and metro, (4) the concrete evaluation of the new Transantiago system, as well as (5) additional socioeconomic information related to the person and his or her household structure. However, the interviews aimed at getting to know the people's conditions and capabilities respectively difficulties to get used to and make use of new Transantiago system as well as to identify potential impacts on their daily activity patterns and daily life. Additionally to the interviews with inhabitants, around 20 experts involved in the planning and implementation process such as public authorities, politicians, academic researchers, private consultants as well as transport operators were interviewed in order to get a better idea of the Transantiago design and implementation process.

The qualitative interviews were analysed under support of the coding software ATLAS T.I. The results of the quantitative survey were examined under support of the statistical software packages SPSS and SPAD, which enabled in addition to simple descriptive statistics also the implementation of some dimension reduction procedures (factor and cluster analysis) as well as correlation and linear regression analysis. For the future is furthermore envisaged to develop under support of AMOS/SPSS a structural equation model, identifying the relationships between public transport policy and mobility practices in the context of social inequalities. Some further methodological details will be discussed in the frame of the description and discussion of the empirical results for the case study of Santiago de Chile.

## 4. CASE STUDY AREA OF SANTIAGO DE CHILE

As mentioned above, the metropolitan area of Santiago de Chile comprises 37 so-called comunas (municipalities or boroughs) with approximately 6 million inhabitants (census 2002) on a surface of 76,000 hectares. Morphologically, the city is characterized by a rather mono-centric-radial structure with the traditional CBD in the central (homonymous) municipality of Santiago Centre and radial transport axes, connected by a private ring road highway. Besides, in the last decade has emerged a second economical centre in the affluent cone of wealth in the Eastern part of the city, which has gained more and more economical dominance over the traditional CBD. There also the better-off households concentrate, while the residences of the deprived households are mainly located in the Western and Southern periphery (figure 2). There many households can be described as captive riders, depending exclusively on public transportation in order to overcome long distances for all kind of purposes. Thus, social inequalities are also manifested over space, expressed in strongly manifested residential segregation patterns (Figueroa, 2004). Moreover, people with already worse access conditions are often also characterized by a lower mobility potential. Transport policy plays therefore a crucial role in the context of social integration and cohesion.

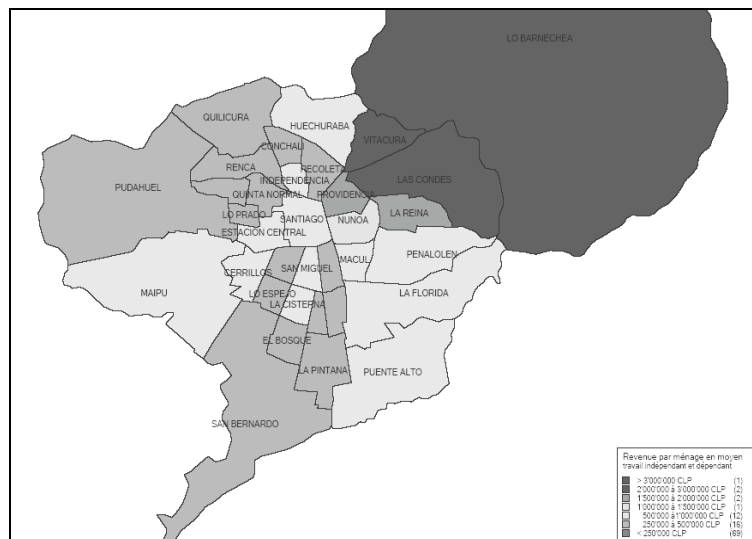


Figure 2 - Average income distribution per municipality (Own elaboration, based on Greene and Soler, 2004, p. 50, 123 and INE, 2008).

### The birth of the Transantiago project

The idea to modernize and improve the public transport system in the capital of Chile was born almost a decade ago. Background was that in a national user survey, carried out in 2001, the local bus-based transport was evaluated as very bad (Adimark, 2001). Bus-based transport in Santiago had gone through a deregulation period in the 1980s – according to the liberalization politics under Pinochet, resulting in its oversupply by a huge range of private micro-entrepreneurs who competed on 380 lines and in over 8000 busses, the so-called ‘yellow micros’ (Muñoz et al., 2008). Despite effecting a wide range of environmental and safety problems ought to deficient public regulation and control, this service was especially

convenient for the deprived households located at the urban fringe who did not benefit from direct access to the publicly owned metro system. Accordingly, the choice of motorised trip modes was strongly correlated to household incomes, with the affluent households mainly using their private vehicles, the middle-income households mainly the metro and the lower income households predominantly the deficient bus system (SECTRA, 2002; Jirón, 2007). Socioeconomic status and mode choices were important determinants for people's daily activity locations and resultant trip rates (lower in motorised modes for the lower income people) as well as daily travel time budgets (for low income people twice as much than for high income people). Accordingly, residential segregation and spatial fragmentation were at the same time both, cause and consequence of accessibility inequalities (Figueroa, 2004).

As answer on the transport deficiencies, the so-called PTUS (Plan de Transporte Urbano de Santiago) was born in 2002. It comprised a set of proposals related to a more sustainable urban development, such as promoting a more compact urban shape, rationalizing the private vehicle use by the internalization of external costs, the encouragement of alternative transport modes and the long-term maintenance of the modal shares at that time, wherein more than half of all motorized trips were done in public transport (Quijada, 2003). The latter implied a renewal of the bus services as backbone system of the public metro that was reputed as being very efficient but underused. Thus, new licenses for few operator companies, chosen in an international tendering procedure, as well as formed drivers were required. Moreover, the development of dedicated bus infrastructure (proper bus lanes) and transfer-nodes among bus lines and to the metro was a central aim. Since 2003 these plans were titled the Transantiago plan, following the example of the famous Bus Rapid Transit (BRT) System Transmilenio in Bogotá. The Transantiago plan previewed the re-design of the network in form of a trunk-and feeder system, the acquisition of new, articulated high-capacity busses, the establishment of a tariff union between busses and metro, the introduction of a contact less ticketing system, as well as the monitoring of the private operators and a comprehensive user information system under support of GPS-based technology. This ambitious project was considered as one central item in the context of national modernization and economical progress. Attracting international financial support, the Transantiago had as central objective to provide high-quality services in a cost-efficient way, but without requiring public subsidies in a long-term run.

### **Since the Big Bang until today**

After a considerate planning and preparation period and having several times been postponed, the entire Transantiago system was launched on February 10, 2007 (Muñoz et al., 2008). Unfortunately, the initial start was characterized by a lot of failures, affecting chaotic conditions due to lack of orientation, network gaps, very irregular frequencies, long waiting times, and serious capacity bottlenecks in busses and the metro. All these problems affected a strong resistance against the system and a very low level of satisfaction among inhabitants. With regard to the abrupt start and the chaos the new system provoked, the event was later on titled as Big Bang. Today, more than two years after, there have been published a set of political and academic studies, which tried to understand the concrete



errors that had been committed by public authorities, private consultants and operators. Without entering in details<sup>1</sup>, one can state that the bad start was due to a composition of many problems. On the one hand there was a set of *technical* failures, concerning for instance the shortcoming of the GPS-based control and information system and the sophisticated electronic ticketing system. The latter was generally welcome but its initial functioning problems affected a low confidence level and its use appeared to be particularly difficult for older people. Second, the trust in the well-reputed national *transport modelling* technocracy did not prevent from modelling errors affecting a loose network and inconvenient routes. Third, the strong *lack of financial commitment* affected deficiencies concerning the vehicle fleet and adequate infrastructure in form of proper bus lanes and fast-entrance bus stops etc. Finally, one could certainly state a *weak regulation and coordination process* between the different public and private stakeholders (top-down approach by the national government), as well as the lack of civic participation and foregoing ignorance of user concerns (Ureta, 2009).

Being aware of the Transantiago impacts on the political satisfaction, the government bundled all its efforts and resources in order to improve the system. Summarizing some key facts, between February 2007 and February 2009 the vehicle fleet was extended by 42%, the amount of lines even by 46%. Daily service kilometres offered were increased by 58%. Additionally, the serious lack of infrastructure was far going resolved, by providing almost three times as much segregated bus lanes and 1.5 times as much bus stops with adequate shelters than at the beginning. Besides, 155 out-of-vehicle payment zones were created and today, there are more than double locations to recharge the electronic ticketing card as in 2007. Today the system runs more or less regularly, an important part of the technical, accessibility and capacity problems have been resolved, operators procure in a not optimal but acceptable way, and people seem to get used to the new transportation services. Average waiting times have been reduced to the half, and average travel times are today only slightly higher as before the Big Bang (Gschwender, 2009; Albaran, 2009). Of course, all these ex-post adjustments had their price. Currently Transantiago tickets are hardly more expensive than previous bus tickets (400-450 compared to 380 CLP) but enable the use of up to three modes within two hours instead of requiring the purchase of a new ticket for each mode. But this ticket price is about 10-20% too low and the financial deficit since the Big Bang in 2007 is immense (Muñoz et al., 2008).

## **5. TRANSANTIAGO IMPACTS ON PEOPLE'S MOBILITY**

Without neglecting the importance of the planning and design failures as well as the serious lack of political and financial commitment for the system implementation, in this paper the focus is put on the individual perception and acceptance process of the Transantiago by the inhabitants, according to the central research hypothesis. In the following are presented and discussed the results of the own empirical works under support of the motility term, comprising *access*, *competences* and *appropriation*.

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<sup>1</sup> For more details the texts by Muñoz et al. (2008) and Quijada et al. (2007) are recommended.

## Access

Considering first the spatial and temporal accessibility conditions, a wide set of crucial changes could be identified due to the Transantiago with some significant impacts on public transport users' daily life. The restructuring of the whole bus network into a hierarchical trunk - and feeder system affected the abolishment of the possibility to travel from origin to the final destination in one single bus and made the implementation of mode changes between different public modes as well as longer walking to and from transit stops necessary. Moreover, the hierarchisation of the network affected important differences concerning headways between trunk and feeder lines and implied thus longer waiting times especially at the deprived periphery where no – more reliable - metro access is given. These features were revealed already in the qualitative interviews with inhabitants as central disadvantages. Especially in the rather deprived areas periphery and especially among older and handicapped people the preference of longer, but comfortable trips instead of shorter trips with mode changes was a common fact. The lower travel time sensitivity due to a more flexible travel time budget under lower income groups has also been revealed in other studies related to Santiago de Chile, such as Jara-Diaz et al. (2009).

Anyway, the strong aversion against mode changes, longer walking distances and longer waiting times has also been confirmed in the quantitative survey 2.5 years after the Transantiago implementation. Though, even if overall travel times are in most urban parts today equal to the previous system of the yellow micros, there is still a strong mis-perception of the actual supply, and a particularly negative perception of actual door-to-door travel times, frequencies and walking distances. An important question of the survey was related to the person's knowledge of the public transit stops in approx. 400 metres walking distance<sup>2</sup>. The answers have been superposed under support of a GIS system with the real public transport locations as catchments areas of 400 metres isochrones (with +/- 100 metres as fuzzy zone) around the interview locations. The tables below identify that despite the rather good public transport access – except of in the up-marked municipality of Las Condes with predominant car use -, important parts of the respondents under- or also overestimate the actual supply. Comparing the different public modes such as metro, trunk and feeder bus, one can observe that metro access is rather overestimated, while bus access (especially of trunk lines) is rather underestimated, - a fact that also explains the generally more positive image of the metro than the bus service (to be discussed later on under '*appropriation*'). Comparing moreover the different municipalities, one sees that frequent metro users due to direct access in their municipality such as Santiago Centre and Puente Alto tend to overestimate the actual supply. The opposite effect, i.e. under-estimation, can be stated for predominant bus users without direct metro access, such as for captive riders living in Maipo and Lo Espejo. Finally, considering the over- and under-estimation together, one identifies a comparably high value of misperception for the municipality of Las Condes where the majority rarely uses public transport and a very low value of misperception in the municipality of Lo Espejo where the majority of respondents represent captive riders without any private

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<sup>2</sup> Due to the colonial morphological structure of the city, one building block is known as a distance of approx. 100 metres. Thence, people were required to announce the existence of public transport stops in the distance of ca. 4 blocks, which should better estimation results than the pure distance value, also according to the National Transport Secretary (SECTRA, 2009).

vehicle available. Indeed, it is a non-surprising fact that the actual experiences with a transport mode affect higher recognition and a more realistic image of the actual situation (see also Kaufmann et al., 2004; Rietveld, 2010).

Table 1 – Actual access to public transit stops (Own elaboration)

Actual access (400 m)	Las Condes	Santiago Centro	Maipu	Puente Alto	Lo Espejo	Total
Nothing	6.8%	0%	0.5%	1.5%	0%	1.8%
Only bus	88.7%	79.7%	99.5%	93.3%	100%	92.2%
Bus + metro	4.5%	20.3%	0%	5.2%	0%	6.0%
Total	100%	100%	100%	100%	100%	100%

Table 2 – Perceived access to public transit stops (Own elaboration)

Actual access (400 m)	Comuna	Correct estimation	Super-estimation (perceived, but doesn't exist)	Under-estimation (not perceived but exists)	No idea / no response	Total
<b>METRO</b>	Las Condes	90.40%	7.50%	0.50%	1.50%	100.00%
	Lo Espejo	99.50%	0.30%	0.00%	0.30%	100.00%
	Maipu	97.20%	1.80%	0.00%	1.00%	100.00%
	Puente Alto	71.60%	24.70%	3.70%	0.00%	100.00%
	Santiago	53.10%	42.40%	4.30%	0.30%	100.00%
<b>TRUNK LINE</b>	Las Condes	83.90%	11.30%	3.50%	1.30%	100.00%
	Lo Espejo	89.00%	2.30%	8.50%	0.30%	100.00%
	Maipu	85.00%	4.60%	10.20%	0.30%	100.00%
	Puente Alto	65.40%	27.20%	7.20%	0.20%	100.00%
<b>FEEDER LINE</b>	Las Condes	72.80%	8.80%	11.80%	6.30%	100.00%
	Lo Espejo	96.80%	0.00%	3.00%	0.30%	100.00%
	Maipu	92.10%	1.00%	6.40%	0.60%	100.00%
	Puente Alto	97.50%	0.70%	1.70%	0.10%	100.00%
	Santiago	88.30%	3.30%	4.00%	4.50%	100.00%

Concerning the economical accessibility of people, again the actual accessibility conditions are compared with the individually perceived ones. Already the qualitative interviews identified significant differences among users fare perception. So, all inhabitants did not realize the gains of the tariff union between bus and metro in the same way. Especially at the beginning of the Transantiago existence (first qualitative interview round) the probable economical advantages of the tariff union were ignored, particularly by people with a generally bad Transantiago opinion, i.e. the lowest income and also many higher income people. The first group is effectively more impaired by the changes in the payment structure, since before they used to go by one single bus, paying a lower price than for the metro and supporting instead long travel times. Nevertheless, the quantitative survey approx. 1.5 years later showed that fare prices and the affordability of transport come only up as a topic if they are concerned as explicit questions. In the open question block on mode associations the item of high costs are exclusively related to the private car; for public transport it is not realized as an important feature. Moreover, the comparison between the previous 'yellow micros' and the new Transantiago system along twelve different evaluation criteria approves that one of the few positive advantages of the Transantiago are related to a better price-

quality ratio. Thus, the economical affordability of the Transantiago itself does not seem to be a crucial source of social exclusion risks.

Nevertheless, it has to be considered more in detail how people's misperception of the actual supply influence on their individual coping strategies and related changes in activity and mode use patterns. Misperceptions and coping strategies lead us to the next two items of motility.

## **Competences**

The public transport modernization process in Santiago has gone along with a significant augmentation in sophistication, related to technology use, organization level and user information techniques. Concerning the use of new technology one could reveal especially at the beginning (first qualitative interview round) rather high scepticism against the electronic ticketing and the GPS-based fleet control system. This is definitely ought to actual functional problems at the Transantiago beginning. Nevertheless, observing the adaptation and learning process over time (second qualitative interview round and quantitative survey), one could also identify differences among people, with generally a stronger aversion by lower educated (mostly lower income people, see also INE, 2003) and older people, as well as a rather positive adoption by higher education (mostly higher income people, see also INE, 2003) and younger people. The same social phenomena could be revealed for the trip organization, which the hierarchical trunk- and feeder line system requires, and the use of information sources. Already the two rounds of qualitative interviews had shown that most people still continue to stick to informal, rather 'mouth-to-mouth'-based information sources according to the previous system of the yellow micros where no official information was available. I.e., most people prefer also today to ask family members and friends or the Transantiago staff how to get to a certain destination, instead of using a network map or having a look into internet. A frequent alternative was the simple 'muddling-through' by going to the next transit stop and asking people. It is argued that people's behaviour was not only related to personal preferences and long-lasting habits but also to the lack of competences and actual access to more sophisticated information sources.

This assumption was confirmed by the results of the quantitative survey. People without and a lower education level rely on the information by family and friends or ask at the transit stop close by. Internet use increases with increasing education level, whilst other formal information sources such as using a network map or calling the Transantiago hotline are little used. With increasing education level decrease also the actual experiences and use of public transport and thus, the need of concrete information sources.

In order to getting to know the sophistication level of the Transantiago from the users' point of view, in the quantitative survey people were asked to describe their easiness respectively difficulties related to the Transantiago start. This was done under regard of eight different criteria related to the use of the new network (new stops, lines, mode changes and schedules) as well as corresponding infrastructure (new busses, electronic tickets and new

information sources)<sup>3</sup>. The results were grouped in one single regression factor, the 'easiness factor'<sup>4</sup>. As can be seen below (table 3), this factor is highly influenced by people's actual mode use experiences (car versus public transport use), education and income level<sup>5</sup>. So, people living in bigger households (families with children) who often use public transport, having a lower education level and a lower household income, tend to have had more problems to get used to the new Transantiago system. Moreover, more difficulties for women than for men are revealed, - a fact that was also assumed due to the qualitative interviews.

Table 3 – Influence on regression factor « Initial Transantiago easiness » (Own elaboration)

<b>Regression-Factor TS initial easiness</b>	<b>Pearson correlation factor</b>	<b>Significance (2-tailed)</b>
Frequency of car use in the last 12 months	.123**	.000
Frequency of public transport use (Transantiago and metro) in the last 12 months	.069**	.002
Education level of person interviewed	.208**	.000
Socioeconomic / income level of household	.170**	.000
Gender	-.119*	.000
0 = man		
1 = Woman		
Age	-.0141*	.000

Finally, the easiness regression factor was examined as an explanatory variable for the today's Transantiago evaluation, which was again approved by summarizing 14 different criteria under support of a principal component analysis<sup>6</sup>. A rather strong positive correlation was found between the initial easiness and the today's Transantiago evaluation factors (Sp.-Rho = 0.402; Sign. = .000). Thus, people who have found it initially easy to get used to the Transantiago evaluate today the Transantiago in a more positive way. Nevertheless, a deeper analysis of this finding pointed out that these people are frequent car and less frequent public transport users, living predominantly in the higher and middle-income areas of Las Condes and Maipu. On the other hand, the real captive riders living predominantly in the deprived areas such of Lo Espejo and Puente Alto evaluated the Transantiago as worse than the previous bus system. Interesting is also the fact that the majority of people living in Santiago centre had a rather negative opinion about the Transantiago, despite reduced congestion and pollution in the city centre since the Transantiago implementation. This result of the quantitative survey is one of the few contradictory results of the previous qualitative interviews.

However, the evaluation of the Transantiago – being rationally grounded or rather due to individual preferences or long-lasting travel habits –, as well as resultant trip appropriation leads us to the motility field of appropriation.

<sup>3</sup> A Likert scale from 1 (very easy) to 7 (very difficult) was applied.

<sup>4</sup> A simple factor analysis based on principal component analysis was applied and turned out to be highly significant. The one retained factor explained a cumulative variance of 80%.

<sup>5</sup> Since the data are ordinally scaled and not perfectly normally distributed, the Spearman correlation factor (Spearman-Rho) is applied. Moreover, the different independent variables such as mode use, education, income and residential location are equally correlated to each other, and the easiness factor is not submitted to a regression analysis (problem of multicollinearity).

<sup>6</sup> This time a 3-step Likert scale was applied (the Transantiago is 'worse', 'equal' respectively 'better' than the previous public transport system). The one regression factor retained explains 58% of the cumulative variance in the sample.

## **Appropriation**

Having first a look to the findings of the qualitative interviews, some results to underline are related to the coping strategies households without a private vehicle had developed in order to front the initial Transantiago difficulties. Many captive riders, especially women, living in deprived, mono-functional and peripheral areas declared to have reduced since the Transantiago implementation their number of trips to other urban areas. Especially activities for non-obliged (recreational, social, special shopping) purposes on the weekend and in the evenings were concerned. Some economically active persons announced to have extended their daily travel time budget and to carry out more trip chaining, resulting in one big activity loop leaving the home early in the morning and coming home late in the evening. Two women in Lo Espejo even explained to have quitted their formal job elsewhere and preferred to work informally in a home-based way, avoiding transport efforts. Other households declared to have made the financial sacrifice of purchasing a car in order to be more independent from public transport. Some people in the very deprived areas of Lo Espejo commented furthermore that it had become more and more common to organize car pools in the neighbourhood in order to travel between their district and important destinations in central urban areas. Many car owners explained to use more and more their private car for all kind of purposes, since public transport quality, especially of the previously 'elite' metro, had significantly decayed since the Big Bang. If true, these various travel behaviour changes would indicate important social impacts of the Transantiago. Hence, they also had to be checked in the quantitative survey.

The question block on the activity frequencies, locations and mode use before and since the Transantiago implementation provides useful information on potential changes of activity and travel patterns due to transportation changes. First of all has to be underlined that the overall number of activities revealed in the survey has not decreased but even increased, for the overall sample even by 13%<sup>7</sup>. Moreover, it can be observed a generally strong positive correlation between the frequency of all kind of out-of home activities and income (highly correlated to the residential location; before Transantiago: Sp.-Rho=0.296, Sign.=.000; since Transantiago: Sp.-Rho =0.313, Sign.=.000) as well as age (before Transantiago: Sp.-Rho=-0.446, Sign.=.000; since Transantiago: Sp.-Rho=-0.436, Sign.=.000). Furthermore, women do normally less trips to other areas, and differences with men have even increased since the Transantiago implementation (before Transantiago: Sp.-Rho=-0.164, Sign.=.000; since Transantiago: Sp.-Rho=-0.194, Sign.=.000). Considering the different types of activities (obliged versus leisure-related), one can see that since the Big Bang the rate of out-of home working and studying activities is higher for higher income people (before Transantiago: Sp.-Rho =0.168, Sign.=.000, since Transantiago Sp.-Rho =0.204, Sign.=.000) as well as for men (before Transantiago: Sp.-Rho=-0.226, Sign.=.000, since Transantiago Sp.-Rho =-0.259, Sign.=.000). These facts underpin the higher importance of informal jobs for lower income groups and especially for women, according to the results of the qualitative interviews. Anyway, also non-obliged trips, related to leisure, social visits, club and community activities have especially increased in higher income areas (before Transantiago: Sp.-Rho=0.290,

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<sup>7</sup> Only activities with a frequency of once a week and more are counted. Since the data are ordinaly scaled and not perfectly normally distributed, the Spearman correlation factor (Spearman-Rho) is applied.

Sign.=.000; since Transantiago: Sp.-Rho=0.297, Sign.=.000), and particularly for bar and restaurant visits can be manifested again a higher value in affluent areas. Nonetheless, neighbourhood-related activities not requiring motorized transport are frequently carried out today both in very affluent but also in very deprived areas. In the first case this phenomenon is probably dedicated to some kind of NIMBY<sup>8</sup> initiatives, in the latter rather to the common defence of social interests and rights<sup>9</sup>. To sum up, upper-income households and men represent higher mobility levels since the Transantiago start. On the contrary, people in deprived households and rather women have indeed decreased their daily activities (see also Contreras et al., 2009)<sup>10</sup>. Older people do not really seem to have reduced their daily out-of-home activities since the Transantiago but dispose of generally lower mobility potentials and are thus stronger exposed to social exclusion risks.

Going one step further, tables 4 and 5 below summarize the predominant *location* of the two groups of obliged and leisure-related activities. Being aware of the fact that there may be various predominant locations for the same activity with equal importance, the division of the locations into six somehow homogeneous metropolitan sectors, following the examples of the Origin destination survey in 2001, allows identifying the locations in the same area the respondent lives in and all others. Comparing thus the locations of obliged and leisure activities before and since the Transantiago implementation, one can easily manifest that the so-called 'auto-contention' (share of trips done starting and ending in the same sector of residential location)<sup>11</sup> has increased for all urban sectors, and particularly for leisure-related activities. Only residents of Santiago centre have really extended their geographical activity spaces and carry out today more activities also in other areas of the metropolitan area, a fact that is probably ought to a stronger land use mix in pericentral and peripheral municipalities. As mentioned before, a *smaller* geographical scope of activity spaces and thus, more autocontention, are not necessarily ought to lower mobility potentials. According to increasing spatial segregation between societal groups, they may equally be ought to individual decisions and preferences. Nevertheless, in addition to changes in socio-spatial and also household-related structures, it cannot be ruled out that the new transportation system had some kind of influence on the higher autocontention phenomenon.

Table 4 – Declared predominant location of weekly activities in 2006 (Own elaboration)

Before TS	Location	Las Condes	Santiago Centro	Puente Alto	Maipú	Lo Espejo
Obliged	Others	23.52%	17.60%	33.90%	26.09%	34.31%
	Autocontention	27.31%	36.42%	24.62%	22.13%	10.56%
Leisure	Others	16.61%	16.39%	14.96%	18.58%	25.83%
	Autocontention	32.55%	29.59%	26.52%	33.20%	29.31%
<b>Total %</b>	<b>%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>
<b>Total abs.</b>	<b>3536</b>	<b>897</b>	<b>659</b>	<b>528</b>	<b>732</b>	<b>720</b>

<sup>8</sup> NIMBY: 'Not in my backyard'. The term is used pejoratively to describe opposition by residents to a proposal for a new development close to them. The high engagement for NIMBY activities in very upmarked areas of Las Condes, for instance related against new housing projects or the metro extension have been confirmed in several expert interviews (Ducci, 2009, Sandoval, 2009)

<sup>9</sup> The engagement into neighbourhood activities, for instance related to a better public transport supply or for the Regulatory Plan of the municipality of Lo Espejo have equally been confirmed in several interviews and studies, e.g. Parraguez 2008, Herrera Benavides, 2009.

<sup>10</sup> The gender differences in daily mobility patterns have already been examined for the Santaigo case by Contreras et al. (2009).

<sup>11</sup> This approach of 'autocontention-analysis' roots back to a study by Contreras and Figueroa (2008), analyzing daily and residential mobility in the metropolitan area of Santiago de Chile.

*Public urban transport, travel behaviour and social exclusion – the case of Santiago de Chile*  
 WITTER, Regina

Table 5 – Declared predominant location of weekly activities since the Transantiago implementation in 2009 (Own elaboration)

Today	Location	Las Condes	Santiago Centro	Puente Alto	Maipú	Lo Espejo
Obligated	Others	20.92%	19.17%	32.49%	26.26%	32.50%
	Autocontention	28.80%	32.71%	24.13%	22.33%	11.76%
Leisure	Others	15.57%	16.29%	15.14%	17.06%	21.76%
	Autocontention	34.71%	31.83%	28.23%	34.36%	33.97%
<b>Total</b>	<b>%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>
<b>Total abs.</b>	<b>3933</b>	<b>1006</b>	<b>798</b>	<b>634</b>	<b>815</b>	<b>680</b>

Analyzing moreover the predominant mode changes since the Transantiago implementation (being aware again of the methodological drawback of *one* single predominant mode to declare), one could see that indeed, about 30% of the respondents use today more often the private car and 25% a more expensive taxi or collective taxi. Moreover, the metro use (as single mode and in combination with a Transantiago bus) has increased by 36%, thanks to the tariff union, while single bus decreased by even 41%. Indeed, the metro seems to have become the most important - since well performing and more reliable - mode for exclusive public transport users, but not all people really enjoy direct access and the underground travelling it requires. Moreover, timetable restrictions limit its use in the evening and night. Finally, almost 56% of all people declared to walk and cycle more, a fact that is related to the longer walking distances to the transit stops discussed under the access–chapter, but that is also correlated to changes in the activity patterns, particularly to higher autocontention rates for leisure activities (see above).

Among the 10.5% (234 respondents) of the overall interviewed who explicitly declared to have changed their mode habits due to the Transantiago, the changes were even more drastic, with 36% more car and 31% more taxi use, 47% more metro use and 43% less bus use as well as 60% of increased non-motorised transport. On the other hand, for 23% of this group could also be revealed an increased bus use (+23 instead of +21 %) and a reduced taxi and colectivo use (-29% instead of -26%). The latter facts underline also some positive impacts of the Transantiago implementation in terms of public transport use as well as household expenditures for transport purposes. Table 6 below illustrates the mode use changes declared by all people as well as by the 10.5% who explicitly declared to have changed their mode use habits due to the Transantiago.

Table 6 – Mode changes since the Transantiago implementation declared by all users and the explicit Transantiago changers (Own elaboration)

% of rows per group	Less		Equal		More	
	All users	TS changers	All users	TS changers	All users	TS changers
<b>Bus</b>	40.95	43.16	30.50	33.76	20.55	23.08
<b>Metro</b>	28.56	27.35	35.82	25.64	35.62	47.01
<b>Taxi</b>	25.57	28.76	49.00	40.34	25.25	30.90
<b>Car</b>	17.68	17.60	50.41	45.49	31.91	36.91
<b>Bike</b>	26.47	27.93	62.24	59.91	11.29	12.16
<b>Walking</b>	13.34	13.79	40.98	38.36	45.68	47.84



Finally, the open survey questions concerning associations and perceptions of the three modes bus, metro and private car help to identify people's transport and travel attitudes. As can be seen in table 7 below, the bus is predominantly linked to many negative evaluations, related to disadvantages concerning travel times, comfort, security and safety but also to more personal impressions related to simple disgust and unpleasantness, e.g. due to other passengers or the drivers. This result is revealed over all residential and thus, all socio-economic groups of the sample, with an even slightly worse evaluation by the captive riders. In contrary to many other studies, (e.g. Kaufmann et al. 2004, Rietveld 2010), frequent car use affects a more positive bus evaluation than frequent public transport use, but certainly due to the availability of alternatives and thus, less negative experiences with the Transantiago. Anyway, the metro and the bus get much better spontaneous evaluations. Whilst for the metro prevail the associations related to functional rationality, i.e. short travel times, security and reliability, the car is rather associated with alternative quality criteria and less rational, emotional items such as high comfort, privacy and personal driving pleasure. As could be identified via a crossed analysis with actual mode use, cost and congestion disadvantages of a private car are rather realized by frequent car users, whilst often neglected by other people. Anyway, comfort and privacy are exactly the features that make the car to the best-evaluated mode, while the negative perceptions of the metro are mainly related to being overcrowded, lack of ventilation and fresh air and thus, lack of travel comfort.

So, which weight and importance have the so-called functional motives as mode choice decision drivers in comparison with rather sensible, social and emotional reasons? The in-depth analysis of the mode associations for the Santiago case leads to the result that only half of them can be categorized as really rational, either related to classical time-cost advantages or also to alternatively important comfort, service and orientation criteria<sup>12</sup>. Thus, the rest of the associations describe some type of sensible, emotional and social attitudes (see also Thomas et al., 2009), such as the presence of other users and privacy, the simple pleasure or not to use a mode. Especially in this framework the car combats the bus with predominantly positive versus predominantly negative associations. Moreover, analyzing the associations concerning some kind of community awareness, i.e. related to pollution, noise, congestion, social discrimination, but also modernism and progress, only 4% of all answers strive into this direction, logically more in the case of public transport modes than for the private car. More concrete, only 0.1% (2 answers) pointed out the ecological advantage of public transport. On the other hand, 91% of the answers were related to individual perceptions and values, which already identify a generally low awareness for societal gains of a modern public transport system. These findings underpin the difficulties to raise social acceptance and improve the reputation of public transport, in order to abolish its old image as mode for the poor. Interestingly, on the concrete question if public transport represents a mode for the people who do not have enough money for a private car, occasional public transport users (threshold of less than twice a week) reacted rather moderate on this statement, declaring thus their indifference about it. On the contrary, the captive riders either strongly agreed or strongly disagreed. Remember here the theoretical assumption that mode

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<sup>12</sup> In another question on the three most important quality criteria of an efficient public transport system, the classical price-time criteria are mentioned in 40% of all responses, while the other 60% of responses relate to alternative quality criteria, particularly comfort, safety, security, reliability and orientation.

choices are not always based on practical, rationally grounded reasons or personal individual preferences, but also on unreflected behaviour and habits or simply the lack of alternatives. Hence, the availability of alternatives to public transport has a strong explanatory power of travel behaviour and particularly, the opinion and acceptance of public transport.

Table 7 – The 10 important associations for bus, metro and car in dependence of the residential location of respondent (Own elaboration)

<b>Bus</b>	<b>Las Condes</b>	<b>Santiago Centro</b>	<b>Maipu</b>	<b>Puente Alto</b>	<b>Lo Espejo</b>
1	slowly	slowly	slowly	uncomfortable	slowly
2	crowded	uncomfortable	uncomfortable	slowly	uncomfortable
3	uncomfortable	crowded	crowded	crowded	unsafe
4	bad network	unsafe	bad service	bad network	crowded
5	dirty	bad service	bad network	fast	bad network
6	bad service (staff)	dirty	bad service (staff)	dirty	old and bad
7	bad service	dirty	bad service	dirty	old and bad
8	hot	good	unsafe	comfortable	dirty
9	fast	bad service	old and bad	unsafe	practical
10	transport	fast	practical	old and bad	fast
<b>Metro</b>	<b>Las Condes</b>	<b>Santiago Centro</b>	<b>Maipu</b>	<b>Puente Alto</b>	<b>Lo Espejo</b>
1	fast	fast	fast	fast	fast
2	crowded	crowded	crowded	crowded	crowded
3	hot	hot	hot	hot	hot
4	safe	clean	comfortable	clean	good
5	clean	Good	clean	comfortable	safe
6	comfortable	uncomfortable	safe	safe	clean
7	Good	comfortable	uncomfortable	uncomfortable	comfortable
8	uncomfortable	safe	good	good	uncomfortable
9	good network	people	dirty	dirty	unsafe
10	on time	practical	on time	unsafe	dirty
<b>Car</b>	<b>Las Condes</b>	<b>Santiago Centro</b>	<b>Maipu</b>	<b>Puente Alto</b>	<b>Lo Espejo</b>
1	comfortable	comfortable	comfortable	comfortable	comfortable
2	fast	fast	fast	fast	fast
3	safe	safe	safe	safe	safe
4	expensive	expensive	expensive	expensive	expensive
5	congested	practical	good	congested	practical
6	practical	congested	private space	private space	clean
7	private space	private space	clean	practical	good
8	good	good	congested	accessible	congested
9	on time	clean	practical	clean	unsafe
10	familiar	pleasure	accessible	good	collective taxi

## 6. CONCLUSION

On the basis of two rounds of qualitative in-depth interviews and a home-based survey in 2000 households in different municipalities of the metropolitan area of Santiago, the acceptance and appropriation process of the Transantiago in its first three years of existence has been analyzed. This process seems to have been especially difficult for the captive riders living in less accessible areas and disposing of lower income and education levels. Among them, especially women and maybe also some elderly seem to be the more vulnerable groups. Thus, by the accumulation of different socioeconomic deprivation criteria, geographic accessibility and personal mobility disadvantages, the people stronger impaired by the Transantiago are those who are generally more exposed to social exclusion risks.

Under support of the motility concept has been suggested that the changes of the urban transit system are not only problematic by exacerbating accessibility disadvantages for the deprived groups but also by requiring new mobility skills and behaviour that has got little to do with the previous public transport system. It could be shown that until today there is an eminent gap between the actual and the perceived supply, which is not only ought to individual ignorance but also to the character of the current, comparably sophisticated, transit system. Thus, the need to get to know and make use of a totally new network, organize daily trips beforehand under use of advanced information technology, the reductions in travel comfort due to longer walking distances and mode changes as well as the reduction of travel choice variety represent crucial changes compared to the previous deregulated system. These changes have especially at the beginning caused significant discomfort and stress, which also affects a more negative evaluation of the Transantiago system today, despite significant technical improvements in the last years.

Of course it is very difficult to determine the concrete impact by the new Transantiago system, and the accumulation of many influence criteria on individual travel behaviour has to be taken into account. Being aware of the fact that changes in activity and travel patterns might be ought – among others - to changes in the urban and household structure and also to individual amendments, it is assumed that the Transantiago has indeed induced some changes in people's travel behaviour. So, especially lower income people and particularly women as predominant captive riders have effectively modified their daily trip rates in motorised modes as well as the location of some activities. While formal jobs are tied to fix locations, the location and frequency of informal jobs as well as non-obliged trips (mainly social and recreational trips) are more flexible. These modifications require the re-organization of daily activity patterns, bear the risk of inclusion of people in their local neighbourhood and the exclusion from the metropolitan life. Anyway, social impacts have partly been ameliorated by strong social networks in the local neighbourhood, wherein travelling in a motorized transport mode is not necessary. The augmentation of autocontention rates especially for leisure activities consolidates this assumption. Since the higher autocontention rate is a common fact for all municipalities except of Santiago de Chile, social segregation seems effectively to have increased, despite land use development also in peripheral areas of the metropolitan area.

Concerning modal split development could be stated that the bus continues to be the worse evaluated motorized mode and its use has rather decreased, also due to a more intensive metro use. Since other modes such as private cars, taxi and colectivos, but also walking have increased, it can be assumed that for many people public transport use is seldom really related to a voluntary choice but to the lack of alternatives. The initial public goal to improve the image of public bus transit, also in terms of environmental and social gains, has therefore hardly been achieved. The spontaneous associations and perceptions of the several motorized modes, and the approval of agreement concerning statements about social issues of public transport solidify this impression. These associations confirm also the importance of irrational behaviour and long-lasting habits for mode choice decisions and mode perceptions, according to a lot of studies in other countries. So have rational and rather emotional,

sensible criteria almost the same weight, and especially bus and private car use are linked to unreasoned negative respectively very positive mode evaluations.

Without having analysed the planning and implementation failures in detail, it has been argued that public authorities in Santiago de Chile are mainly responsible for the various problems, also related to the ignorance of social expectations, personal preferences and – not always rationally grounded – travel behaviour reasons. The certain lack of political and financial commitment in the development process of the Transantiago as well as little willingness to cooperate with other public, private and civic stakeholders have affected an initially very mediocre planning result which has its negative and cost-intensive consequences until today. Even if the findings may come late for the case of Santiago de Chile, the Transantiago lets derive some important lessons in the context of public transport modernization, taking into account the fact that the development of sophisticated and privately-run BRT-like systems forms a goal in many developing cities worldwide. Without going into detail and being out of scope of this paper, it has become obvious that ambitious transport projects ask for their smooth and step-wise introduction to inhabitants, both current and potential future users. An augmentation in technology and organization requires on the one hand technical functioning, on the other hand also social awareness for people's learning, adaptation and acceptance process, which may differ significantly over various societal groups. Moreover, potential social risks due to increased user prices and loss of public control in the case of deregulation and private operation have to be taken into account in the context of social acceptance and long-term sustainability. This leads to the topic of equity-oriented transport policy, which puts the focus on the most vulnerable groups, in many cases the rather lower income households living at urban peripheries and not disposing of private vehicle as 'mobility catalyst'. A balanced relation between public and private transport development and thus, maybe a more intensive concern for public transit in a short and medium term, form a central challenge and should finally become an important goal for local transport development policy, especially in emerging economies.

Taking into account the ongoing PhD-related research, the paper would like to conclude with an outlook on further work need. As already mentioned, the central goal is to put under support of structural equation modelling the three different motility issues, effective travel behaviour changes and thus, the exposition towards social inequalities and social exclusion risks due to the Transantiago into relation. For this aim the quantitative survey has to be analysed more in detail, concerning the three motility items and also their mutual interaction. Besides, a further look on the role of divergent urban lifestyles has to be done. Finally, the concrete role of the public and private transport supply and policy in the frame of a wider set of influencing factors for social inequalities and exclusion has to be determined, always being aware of the fact of some inseparable and hardly determinable impact-effect relations.

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