“The influence of community daily mobility on urban sustainability”

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Abstract:

On a local urban scale, the sustainability was initially linked to Perry’s “Neighborhood Unit” (1929), and lately to the “Sustainable Communities” (Office of The Deputy Prime Minister, 2003) and “Urban Villages” (Urban Villages Forum, 1998).

Since the beginning of urbanization, accessibility and mobility were and remains important factors to the urban development and won a special relevance to improve the urban sustainability. However, it’s understandable that there isn’t only the accessibility and mobility infrastructures or services that can promote the sustainability, especially in relation to consumption of resources and pollution. The main agent of greater or lesser sustainability is the community, their behavior and their urban lifestyle.

We present a study focusing the daily mobility patterns related to labor and school movements in two communities localized in different zones of the Lisbon Metropolitan Area (one in the center of Lisbon – Telheiras, and other in a peripheral area - Quinta do Conde). This study is based on surveys and associated to the characterization of the neighborhoods, the cities and even the metropolitan area. The localization of home and the trip destination or the adaptations of public transport system to the needs are important conditions with reflections on community’s attitudes.

This specific analysis, like many others, it’s essential to local institutional agents, to make better and concrete decisions moving towards the urban sustainability.

Keywords: Sustainable communities, daily travel to work/school, accessibility and mobility, Lisbon Metropolitan Area
Introduction

The analysis of daily patterns of each family member provides very good indications of families lifestyle, sometimes conditioned for the existent (or non-existent) infrastructures or equipments, sometimes just for the individual choices. Local sustainability is influenced for these items. For example, the mobility of the communities and the accessibility of neighborhoods are important aspects to consider for a more or less sustainable community. Between them there must be a strong connection. The higher the compatibility between people and infrastructures, largest is the urban sustainability.

This paper want to initiate a methodologic test to turn operational some of the theoretical assumptions of sustainable communities about accessibility and mobility, focusing the daily labour movements of two communities, through an analysis, on one hand, highlighting the existent accessibility infrastructures, especially the public transport networks, in each neighborhood and, on the other hand, the daily movements of families to go to work or school (relating the location of homes (origin trip) to the location of trip destination to work, to the time spent and the transport mode chosen). This confrontation was made in two different neighborhoods, onde within Lisbon, the capital, and the other in Sesimbra, a suburban municipality, both within Lisbon Metropolitan Area (LMA).

This article was done in academic context, within a major investigation project – FURBS, about sustainable development and urban form and is a work in progress.

This paper is structured into five parts. After the introduction, we focus the theoretical background about urban sustainability, centered on Sustainable Community, and stressing particularly the role of mobility and accessibilities (part 1). After that, we present the methodology applied in this analysis associating the results of data survey realized with an analysis to some physical characteristics of the neighborhoods within LMA (part 2). The presentation and characterization of the case studies (part 3) gives the context to explain the family behaviour relating to mobility (part 4). This knowledge proves to be fundamental to operate on urban planning and understand the individual choices relating to daily travels and according to the residence localization within LMA. The last part refers the principal conclusions.

Urban Sustainability on a small urban scale: The Sustainable Comunities

In the 1980’s the concept of Sustainability becomes a new concern to the United Nations. In 1983, is convened a World Commission on Environment and Development (WCED), most known for Brundtland Commission, chaired by Gro Harlem Brundtland (prime minister of Norway, 1986-1989). Initially interested on develop the political concept of sustainable development and define some policies, the major focus was to the human environment and the waste of natural resources that affects the economic and social development. In 1987 the Brundtland Commission published a Report named “Our common future” or “Brundtland Report”, where was defined Sustainable Development as “development that meets the needs of the present without compromising the ability of future generations to meet without compromising the ability of future generations to meet their own needs.”
With the time appear some documents representing a new desired urban planning model (post-modern). In Europe, arises the Aalborg Charter (1994). From it came the document “The European Sustainable Cities and Towns Campaign”. After one decade, in 2004, in the Aalborg +10 conference were reaffirmed the Urban sustainability principles: governance, local management towards sustainability, natural common goods, responsible consumption and lifestyle choices, planning and design, better mobility and less traffic, local action for health, vibrant and sustainable local economy, social equity and justice, local to global.

But the concept of Sustainable Development still under development with annexation of more activity sectors beyond the initial three: society, economy and environment. This situation difficults the application of the concept, for example, on urban planning and policies.

The concept of Sustainable Community is one more concept that haven`t a unique definition, but one of the most applied is: “(…) Sustainable communities are places where people want to live and work, now and in the future. They meet the diverse needs of existing and future residents, are sensitive to their environment, and contribute to a high quality of life. They are safe and inclusive, well planned, built and run, and offer equality of opportunity and good services for all. (The Government of the United Kingdom, Sustainable Communities Plan, 2003). This is the basis of this paper.

Our theoretical basis was the “The Egan Review: skills for Sustainable Communities” (ODPM, 2004) that permits apply some ideas in the empirical component of this article. This report, online available, presents three major objectives: clarify what the term 'sustainable community' means, identify who is responsible for leading the delivery of sustainable communities, and recognize the skills necessary to achieve sustainable communities. In this report were defined seven components with several principles that, all together, constitutes the “common goal” (fig.1). They are: Governance, Transport and Connectivity, Services, Environmental, Economy, Housing and the Building Environment, Social and Cultural.

For now, we will only focus the Transport and Connectivity component. On Egan Review are defined some topics about this theme as the needs or goals to have a sustainable community:

- Transport facilities, including public transport, that help people travel within and between communities
- Facilities to encourage safe local walking and cycling
- Accessible and appropriate local parking facilities
- Widely available and effective telecommunications and Internet access
But to enter in this theme we have to distinguish two important and interrelated concepts: accessibility and mobility, both are key elements for urban planning and for urban sustainability.

According to Costa (2007), the accessibility “is a characteristic that describes a location, enhancing the ease of reaching certain points. As the movement becomes easier, cheaper or/and less time consuming, it increases the accessibility and with it the propensity to travel, increasing the potential for interaction between places.” (2007, p.22) The accessibility analysis can have several approaches: displacement approach (which is the ease of travel in the network according to the use of time or cost?), approach from the place (which the ease of a given place be achieved?), approach from the individual (which is the number of choices of destination at a certain distance from the point of locating of an individual?), like others.

The concept of mobility is “the capacity that each person has to move between two points, using the different modes of transport available.” (Costa, 2007, p.23) The capacity of mobility depending of various factors: personal factors (age, sex, technical competences like driving license, economic capacity, possession of vehicle), geographical factors (distance, hydrographical system, relief) and technical factors (existence of a public transports network, costs and time-schedule, and others).

**Methodology**

The selected methodology was composed for three steps: the first step was the selection and characterization of the two case-studies - Telheiras (Lisbon) and Quinta do Conde (Sesimbra). The second step was the data collection, on one side, the existent
accessibility infrastructures (like roads and the public transport networks, their stops, starts and ends, pathways), and on the other side, the surveying of mobility patterns of 60 families, wondering about the movement of all elements of the household in each neighborhood to workplaces and schools, focusing on destination, time spent on travel and the mode of travel. The implementation of surveys was done in the centers of neighborhoods, where most public facilities such as schools, services and trade are localised.

Geographical context of LMA, the municipalities and the neighborhoods

The Lisbon Metropolitan Area is the functional center of the Lisbon metropolitan region, divided in two units: Greater Lisbon (north side) and Setubal Peninsula (south side). The LMA concentrates 25% of resident population and almost 40% of the economy in less of 3% of country surface.

![Geographical location of the case studies: Telheiras (Lisbon) and Quinta do Conde (Sesimbra). Source: own](image)

The two municipalities where are included the two case studies are different characteristics (table 1). Whilst Lisbon municipality, on north side of LMA, is divided in 53 urban neighborhoods in a small but very dense area (85 Km2) and with a great number of population and building, Sesimbra, on south side of LMA, have most of twice of Lisbon area (196 Km2) but have a low human and constructed density, caused by the rurality of the area, still above the average of LMA.
Table 1. Indicators of LMA, Lisbon and Sesimbra (Source: INE, 2001)

<table>
<thead>
<tr>
<th>Indicators</th>
<th>LMA</th>
<th>Lisbon</th>
<th>Sesimbra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area (Km²)</td>
<td>29.623</td>
<td>85</td>
<td>196</td>
</tr>
<tr>
<td>Municipalities</td>
<td>18</td>
<td>_</td>
<td>_</td>
</tr>
<tr>
<td>Neighborhoods</td>
<td>53</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Population (2001)</td>
<td>2.661.850</td>
<td>564.657</td>
<td>37.567</td>
</tr>
<tr>
<td>Population density</td>
<td>90</td>
<td>6.643</td>
<td>192</td>
</tr>
<tr>
<td>Nº buildings (2001)</td>
<td>394.520</td>
<td>53.387</td>
<td>15.760</td>
</tr>
<tr>
<td>Buildings density (Hab/Km²)</td>
<td>13</td>
<td>628</td>
<td>80</td>
</tr>
</tbody>
</table>

The neighborhood of Telheiras isn’t an institutional or statistical unit, without a concrete delimitation, but have a strong identity within the city, especially for their residents. This neighborhood belongs to two parish (Carnide and Lumiar), difficulting its coherent urban development. The urban grow of Telheiras started in 1970’s with an intervention done by EPUL (Public Company for Lisbon Urbanization) for the south Telheiras (1975) led the neighborhood to grow. The proximity to the University Campus attracted young couples with university frequency (Matos, 2009:11-12). Telheiras have different areas according to different urban expansion phases. Someones are well planned, with arborized streets and harmonious housing, mostly with residential function, both unifamiliar houses and apartments (as the historical centre and the first urban expansion area), others didn’t have any expansion plan (as Paço do Lumiar), without public equipments or open spaces.

Quinta do Conde, a neighborhood within a parish with the same name, in Sesimbra municipality, is in the south merge of the river, about 20 quilometers from Lisbon. Sesimbra is characterizes by several settlements like Sesimbra historic centre and small others, but is a municipally mostly rural. Quinta do Conde is a peripherical settlement that is closer to Seixal municipality than Sesimbra centre, presenting the same urban morphology of Seixal.

Like Telheiras, Quinta do Conde starts to grow at 1970’s, with a split of a huge rustic area, ilegaly sold. Because of that, it’s urban morphology and the sprawl verified don’t reveal any urban strategy proved by the streets unfinished or the lack of equipments and public and open spaces. In this neighborhood there are a lot more unifamiliar houses than in Telheiras, with apartments localized in new urbanizated areas (since 1990’s). In this area we still verified some unoccupied spaces between the residences and unfinished infrastructures, like some roads. In this neighborhood, the commerce and services are concentrated, presenting some economic and employment local dynamic. In the rest of the area these functions are residual.

1. Accessibility and mobility

The accessibility of one neighborhood can’t be read just looking that small area, it’s important to understand the connection of neighborhood with their geographical context. This location associated, on one hand, with the role play of these urban centers in the regional hierarchy (capital versus periphery) or, on the other hand, with the urban context (integration on an urban continuous, populational and functional dense tissue
versus an isolated and decentralized neighborhood within his municipally), can promote different mobility conditions.

Telheiras have a very central location, close to three principal highflow roads in Lisbon (Segunda Circular, Av. Padre Cruz and Eixo Norte-Sul). The area is well served by public transports: it presents a metro station with a network sprawl to the city and out too, and several road bus routes (8 routes) passing through Telheiras. Quinta do Conde is relatively near (7Km) to a principal train station (Coina) and have 14 bus routes of two public transports operators (TST and SulFertagus). There are 35 bus station both the periphery and inside the neighborhood. The neighborhood has in the proximities a high-speed road (A2) and a national road (N10). The fact of the neighborhood be located on the south merge of the river promotes a difficulty in daily mobility (it’s mandatory to pass the bridge or take the boat to go to north), increasing the costs of travel and the time spent.

Despite the difference of the number of bus stops in each neighborhood, the density is similar: one station for every 10 ha (table 2). The geographic location influences: while in Quinta do Conde exists 8 in 14 lines that start / end in the neighborhood, highlighting the central housing function; in Telheiras all lines just crossing the neighborhood. The main destinations of the lines also vary: in Quinta do Conde, the origin or destination points are intermodal stations (e.g. Coina with trains and buses, Cacilhas with boats and buses, Praça de Espanha – bus and metro and near Sete Rios with trains). Telheiras has a limited road public transports network in the neighborhood, with arrival/departure in peripheral centers of Lisbon (e.g. Damaia, Pontinha), to transportation hubs in the vicinity (Campo Grande – metro and bus). But as important as the number of stops and network is the frequency of the buses. In this aspect, we highlight the network in Telheiras, strengthened by the passage of buses throughout the day and a intensification in the critical hours of traffic. Telheiras while in most careers have a relatively high frequency (3 per hour and careers 4 per hour at peak times), now in Quinta do Conde frequency is very low (most career passes once per hour, with hours which is nothing) (source: Carris, TST).

<table>
<thead>
<tr>
<th>Neighborhoods Accessibility</th>
<th>Q. Conde</th>
<th>Telheiras</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.º stops of Public Transport Network</td>
<td>35</td>
<td>14</td>
</tr>
<tr>
<td>N.º stops of Public Transport Network per acre</td>
<td>0,085</td>
<td>0,071</td>
</tr>
<tr>
<td>N.º routes of Public Transport Network</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>N.º routes of Public Transport Network with origin or destination in the neighborhood</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 2. Indicators of the public transports networks (Source: Carris, TST, 2010)

Focusing on the issue of mobility, and before the survey analysis, it’s possible to highlight some trends within LMA about the daily travel to home-work or home-school. According to INE data, since 1981 until 2001, the labor traveling within Lisbon municipally decreased (31% for 17%). Some phenomen can explain this trend. For example, the travels of the residents to peripherical municipalies due now to the dislocation of jobs for new peripherical technological and development centers as Tagus Park or Lagoas Park). Consequently, within the north side and within south side of LMA there was an increase of daily movements.

In LMA, the private vehicle as gain importance (from 13% to 42%), while the public transport lost the majority presented in 1981 to 2001 (from 62% to 34%). Lisbon
presents a trend very similar to LMA. Sesimbra municipality presents a higher use of car (from 8% to 50% moves), decreasing the use of public transports (from 37% to 20% moves).

**Daily mobility of surveyed families**

Before examining the mobility data, it is important to characterize the families. Some of these variables that define them demographic and professionally can explain the conduct of labor movements.

The typology of households surveyed in Quinta do Conde and Telheiras are similar: it presents a high proportion of families consisting of a married couple and minor children, 40% and 30% respectively, and a similar proportion of couples with adult children (13% in Quinta do Conde and 17% in Telheiras). The percentage of married couples is 18% and 23%, respectively.

Looking the adults surveyed (18 to 64 years), it’s visible a higher education level in Telheiras (79% are graduated), against a partition of Quinta do Conde people (with 27% graduated and 43% have the minimum education level (9th grade)). Relating to the professional groups of respondents, the sample reveals considerable differences: in Telheiras the prevalence of higher professionals and intellectuals and science professionals is 66%. In Quinta do Conde, although we found all levels, the prevalence is administrative and professional services and Sales (29%).

One last feature of the families is the household budget. Again, the households surveyed in the Quinta do Conde are scattered through various grades: 13% of families receive between 500-1000 euros per month, 17% between 1000 and 1500 euros and 38% receives between 1500 to 2500 euros. Already in Telheiras 18% of the households surveyed receive between 1500 to 2500 euros and 32% receives between 3500-5000 euros.

The number of cars per household is also an indicator to be taken into account. At Quinta do Conde almost half of households surveyed (47%) owns a car, a third of families have two cars and 13% of households do not own any car. In Telheiras, one quarter of households own one car, 48% of households have two cars, and 17% have three cars.

Before focus the analysis on daily movements, it’s important to understand the reasons of choice the current property. In both neighborhoods, the choice of the current house was motivated primarily related to housing itself. The proximity to the workplace and then access to public transport are also listed reasons, with a weight very similar in the two neighborhoods: to the first one, about 20% of respondents in each neighborhood have said it and the second almost 10% indicated the reason (with a slight increase in Telheiras). When asked for a possible location for a new residence, in both neighborhoods over 50% of respondents would want to stay in the same place. Still, 28% of respondents from Quinta do Conde would want to move to a location closer to their work.
Daily mobility patterns related to workplace and school

The main goal of this paper is to analyse the daily travel patterns of children and young (0-17 years) and working-age adults (18-64 years) on two different neighborhoods. These patterns will be characterized by three features: a. workplace or school location, b. travel modes and c. time spent in travel. It should be emphasized that the behavior of households is due to the infrastructure at the place of residence but also the will of the families according to their needs (like the multipoint travel, undefined schedules or carrying babies or very dependent children).

a. Workplace and school location

In this chapter we will analyze in parallel the movements of adults (18 to 64 years) for work and travel for children and youth (up to 17 years) to school, not forgetting that the movement of children and young people, sometimes, it’s totally dependent on parents or other individuals (family or not).

According to some assumptions of local sustainability, communities should provide some momentum for employability within the neighborhood itself. The existence of jobs generates movement in the streets and thus a greater feeling of security and community. The existence of a large number of jobs shows that there is a greater range of trade and services, maximizing the life of the neighborhood. Of course the location of the workplace is also related to the type of work, for example some Professional types as engineering or academics in the new technology parks, concentrated but isolated, but also related with the neighborhood urban context.

Graphic 1 – Daily travel destination to workplaces and schools

In Telheiras it’s observed that 70% of respondents work in the municipality outside the district of Lisbon (capital of the country, the center of large multinational corporations and qualified services and trade), with only 11% work in the neighborhood and 20% moving out of Lisbon to work. The main destination of respondents remains on the north bank of the River Tagus to work.

Already in the Quinta do Conde is quite different. Since most families have lower qualifications than in the previous quarter, and being a neighborhood that has a very dynamic business, retail trade and services, is observed a greater percentage of the population lives and works in Quinta do Conde (40%). In proportion to the vast rural
area of the municipality of Sesimbra, only 12% of respondents claim to work in Sesimbra, with almost 50% of respondents said leaving the municipality to work. The phenomenon of labor mobility in this neighborhood is similar to the first one. Almost 50% of respondents live and work in other municipality of the south bank of the Tagus. But respondents who have left the municipality of residence to work, is the municipality of Lisbon which attracts more workers (51%), fruit of the importance that the capital has in the world of employment at regional and national levels.

It is clear that the location of jobs is closely related to the professional category. While residents of Telheiras moving mainly to the major centers employers working in research and technological development, universities, government and businesses, residents of Quinta do Conde respondents with less to accomplish great commuting, are more dispersed between the centres nearby.

As for the daily lives of children and youth, the dynamics are different from previous ones. According to the conditions for a sustainable community, large public facilities like schools, health centers and other facilities of social support are key elements for organizing and planning a neighborhood. This structure would seek to avoid large movements of the youngest in their day to day.

In both areas there is a greater tendency for children and young people spend the day on equipment located in the district of residence: 64% in Telheiras and 88% in Quinta do Conde.

But we may note a phenomenon: 32% of young people resort to Telheiras schools in Lisbon, outside the neighborhood. It is the residual value of individuals who have left the city of residence to attend school.

This dynamic is justifiable in the context of the two urban districts. While Telheiras is inserted in the center, presenting a large range of educational facilities in the surrounding areas of the neighborhood, Quinta do Conde, as a isolated neighborhood but sufficiently equipped, attract the majority of individuals of school age.

**b. Daily travel modes home-workplace-home**

The mode of transport is also a vector for urban sustainability. The choice of these depends on various dimensions: socio-demographic, individuals and families characteristics, location of housing and workplace, structures and transport equipment in the place of residence and workplace, among many others.
Looking initially at the choices of individuals of working age, there is a high tendency to choose the car to travel home and office. Despite the different conditions of infrastructure, the choice of using public transport is very similar in the two districts (between 17% and 19%). Finally, the number of people moving daily pedestrian is still relevant, focusing on the respondents of Quinta do Conde, about 17%, (where there is also the highest percentage of workers in the neighborhood), compared with 12% of Telheiras.

The younger ones have a more sustainable behavior that adults previously studied, but given the dependence that the vast majority of individuals younger hold on the issue of mobility, there is a high prevalence on car use (50% in Quinta do Conde and 39% in Telheiras). The percentage of individuals under 18 who go to school by foot is much higher than the values of adults, being facilitated by the proximity between homes and school equipment. Finally, in Telheiras, a quarter of young people make their travel using one or more public transport (being only 7% in Quinta do Conde). This value is justified by the existing public transport network in Lisbon that in comparison to the networks that serve Sesimbra, presents a number of stops, lines and frequency much higher.

The perception of respondents regarding the public transport network in their neighborhood is diverse in each of the neighborhoods. In Telheiras, most people do not agree or disagree that public transport network is good (60%), whereas only 8.3% consider it good. However 10% of respondents have no opinion on this matter.

The evaluation of public transport networks in Quinta do Conde is very diferente. While here the percentage of individuals who consider this good service is higher (26.7%), decreasing the answers "Neither agrees nor disagree" (26.7%), the number of unsatisfied people is considerably higher (40%).
c. Time spent in travel

Nowadays, time is an increasingly scarce resource, other than employment, the tasks of primary necessity, recreation and leisure, the use of time in travel is an important aspect for the welfare of individuals.

<table>
<thead>
<tr>
<th>Time spent on daily travels</th>
<th>Quinta do Conde</th>
<th>Telheiras</th>
</tr>
</thead>
<tbody>
<tr>
<td>To work</td>
<td>31,0%</td>
<td>10,7%</td>
</tr>
<tr>
<td></td>
<td>59,5%</td>
<td>75,0%</td>
</tr>
<tr>
<td></td>
<td>4,8%</td>
<td>10,7%</td>
</tr>
<tr>
<td>To school</td>
<td>14,3%</td>
<td>39,3%</td>
</tr>
<tr>
<td></td>
<td>19,6%</td>
<td>26,8%</td>
</tr>
<tr>
<td></td>
<td>51%</td>
<td>46,6%</td>
</tr>
<tr>
<td></td>
<td>32,2%</td>
<td>16,1%</td>
</tr>
</tbody>
</table>

About the travel time spent, we can reveal some similarities and differences between neighborhoods. Almost all in both neighborhoods takes less than 15 minutes on the course hopme-workplace (90,5% in Quinta do Conde and 85,7% in Telheiras), and of these 59,5% and 75% take between 6 to 15 minutes to complete the course at Quinta do Conde and Telheiras correspondingly.

At Quinta do Conde it’s observed that there are fewer cases of longer duration of the journey - more than 16 minutes (9.6%) than in Telheiras (14.3%). Not forget the dynamics of employment in Quinta do Conde, where the district absorbs enough but because the lack of continuity of the urban tissu, there is need to travel more and take longer distances to travel outside the neighborhood. In Telheiras there isn’t such absorption of employment (up by more highly qualified individuals) but exists in its surroundings (municipality of Lisbon). In this case, the distances are "lower" (distance-time) for better infrastructure and facilities.

For children and young people, about 50% in each neighborhood takes up to 15 minutes to get to school, regardless of transport. Quinta do Conde have a greater percentage of individuals who took more than 31 minutes to the school equipment (27%), presenting a higher value on individuals who take between 16 to 30 minutes (32%).

Since travel time is closely related to the mode of transport chosen by the families, we must take account of this duality.
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Graphic 4 – Travel modes and time spent on daily travel to workplaces and schools

It is easily understandable that there is a greater proportion of individuals moving pedestrian smaller the distance, in this case measured by travel time. This phenomenon is especially visible in Telheiras (84% of respondents travel to walking to work when the distance is less than 5 minutes). At Quinta do Conde, respondents who work for a very small distance from the place of residence are divided between going on foot (50%) and car (50%).

Already the choice of public transportation for the labor movement has different standards between the neighborhoods. In Telheiras one third of individuals who will take from 6 to 15 minutes choosing public transport, already in Quinta do Conde, the option of public transport has only expression in individuals who took more than 31 minutes in travel (57%).

Reflexions

The pillar of transport, together with the accessibility and mobility is one of the vectors of great importance for sustainable urban development but also for the welfare of families and communities are inserted yesterday. One example is the great importance that the patterns of daily travel between home and work or school owns the daily lives of families.

The pillar of transports in the concept of Sustainable Community presents its assumptions mostly from the perspective of equipment and infrastructure and less in terms of the behavior of households. We identify, early, some mismatches between the theoretical and territorial management and sector-wide neighborhood. Many of the sectors will not have adequate policies at local level, but have at the municipal level or even regional level, as transport and accessibility sector.

The aim of this paper was to exemplify how could we take into account the behavior of individuals living in a particular neighborhood, in this case analyzing the basic characteristics of local accessibility and the mobility of the respondents.

We describe some of the most important variables to take into account this duality accessibility-mobility. For accessibility, it is pointed out in the first, the location of
neighborhoods within the municipality and the region. All of this available in the context and surrounding neighborhood is one of the factors most relevant to the explanation for better or worse accessibility. The existence of a planned urban strategy from the beginning of the development of neighborhoods is a key factor to equip the area with in the basic conditions and to allow greater independence to other neighborhoods, avoiding unnecessary travels. A third factor is the density of population and housing that allow a more efficient management of public facilities and infrastructure, where public transport is included. Finally, the public transport network within the neighborhood or on your surroundings is also a key factor that often justifies the choices of mode of transport for individuals. About this aspect, not only the number of buses or bus stops matters but the frequency, comfort and variety of options that exist too.

About the mobility of individuals, we emphasize some variables that determine their behavior. First, the typology of the family is one of the factors that contributed most to the choice of transport modes, especially facts as the existence of dependent children. The professional group and the specificity of the profession, coupled with employment areas on a regional scale are also a factor of influence. Besides these factors, the actual availability of funds and material (possession of private transport) of the families can enhance or reduce the range of assumptions of everyday mobility.

Finally, it is noted that the choice of housing local, can sometimes be related to the ease of mobility of the respondents. This issue was raised by us through a question about the motivations of the choice of current housie.

The age and activity of the individual also influences the mobility options. Through the survey we found that, despite the individuals working age adults have a greater range of travel options, are the youngest that have characteristics of more sustainable mobility. If the school is one of the main equipment of the structure of the neighborhood, it makes sense that the movements for this are important in urban planning system. Despite the dislocation of children to be dependent on parents or other services until the age of some autonomy, we must seek sustainable solutions to this practice.

One example is the project "pedibus" present in Lisbon (since 2007) and other European cities, this project allows children between 6 and 12 years can make the journey to school in a pedestrian way, always accompanied by a adults belonging to the school community and other children who have the same final destination, saving time and resources to parents.

Then, what is the significance of the analysis to urban sustainability and to make local policies more sustainable?

The characterization of the current community and its needs, and analysis of the neighborhoods are fundamental to its development. Already noted that some issues are only valid for a municipal or regional scale, as the case of the transport system, mobility and accessibility. The scale of the neighborhood for this theme is too simplistic.

Furthermore, we must not forget that despite the concept of sustainable community being divided into several pillars, they have great and intricate relationships with each other.
In this project we identified the need to analyze the movements and school separately by age groups. Although the adults have more choices for their travel, the behavior of youngsters turned out to be more sustainable, with greater use of public transport and walking.

This analysis should then be made to municipalities, taking into account the territorial units such as neighborhoods and schools as structuring centers. It would be important to develop the theme of sustainable mobility, to develop more projects for children up to 12 years, as the existing "pedibus", believing that young people develop skills so for pedestrian movement on his behalf.

The mobility of adults, given the difficulty of reconciling the dynamics of communities and policies, would become necessary to examine the structure of mobility on a greater extent, possibly started from the labor market areas.

The transition from theoretical to operational strategies and then to the reality of communities still deserves much study. It is certain that if these assumptions are present early in the overall planning of the neighborhoods, is a step forward to have a more sustainable community. Otherwise, we must analyze the characteristics of existing neighborhoods and create a strategy almost as urban acupuncture, in order to make the neighborhood more sustainable, along with the slow change of behavior of residents.

**Bibliography**


Carris (no date). Last visit in April 2010 ([http://www.carris.pt](http://www.carris.pt))


Matos, Filipe (2009). What potential for an association of residents to urban governance - the case study Telheiras Residents Association. Seminar in Human Geography, thesis degree in Geography, Faculty of Letters, University of Lisbon


TST (no date). Last visit in April 2010 ([http://www.tsuldotejo.pt](http://www.tsuldotejo.pt))


Villaverde Cabral (Coord.) (2009), Project “Quality of life and governation of the city of Lisbon” (2009), ICS-UL