Time travel as a variable of exclusion, and the role of cycling in Bogotá.

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Abstract

Bogotá became worldly known for its public BRT transportation system based on buses called Transmilenio, which gave unprecedented good quality for transportation in the developing world. Bogota also is known in the region for its investment and promotion in cycling infrastructure (more than 370 km by 2013). These systems, however, depend on continuous technical improvements, and mainly, be backed by political leaders, for they share roads and funds with other modes. This is especially critical in societies with fast motorization, such as Colombia but is still low compared to other developing countries in America and Asia. In this paper we analyze time travel as an element of exclusion, mainly for those who live in the periphery of the city and how bicycle and public transport can or cannot help to reduce inequality. The aim is to shed a light on possible solutions to the challenges that the cities have today.

Introduction

The continued increase in car use leads to an increase in the consumption of space, mainly because there is the need of building more roads. Likewise, new suburban areas are being developed in Bogota, areas where high income households “find” a place "friendly, away from the noise, pollution and traffic". On the other hand, poor people localizes in areas where land price is low, places that in many cases are far away from the centre cities, road and public services networks are scarce, low quality houses are built,

impoverishing even more these people. This contribute to the distancing from shops, services, places of work and leisure equipment, causing an increase in the need for travel, representing more costs (time and money), going against what is considered ideal: sustainable development, where the need for traveling and travel distances become increasingly smaller. Improved supply and transport quality combined together with land planning policies and limiting car use are key issues for sustainable development.

Based on these considerations, this paper aims to characterize mobility practices of the population in the city of Bogotá, based on the Mobility Survey considering the household income from the society in general (for the case of Bogota).

Urban Mobility

Some limited researches made in Latin American are showing that the daily trips of people living in the periphery are being made in a nearby space improving the life of these people forcing them not to travel long distances to reach their working place (Dureau & Goueset, 2012) but this is still something that has to be proved with more studies. This work pretends to give a light towards this aspect. Therefore, the work will contemplate the last Mobility Survey made by the city, where some metropolitan municipalities were also included.

Daily mobility has a direct relation with poverty, the poorer the person is, bigger problems and difficulties will have for moving, due, amongst others, to bad quality and scarce supply of efficient and fast public transport, and by segregation of these residences to the city periphery, making daily trips much longer in distance. It exist a relation between poverty and daily mobility that comprises an emerging research subject. Many researchers have shown that social inequalities induce in daily mobility inequalities (Vasconcellos, 1996; Figueroa, 2005) in Duereau, Goüeset and Le Roux (2012).

Many of the poor people went outside the central city looking for a cheaper place to leave, mainly sited in the periphery, so the capacities of location and mobility became a fundamental factor of the social integration and a multiplier of inequalities of income (Garretón, 2012).

The distance from residences and working places and educational centres is a barrier for many workers and students. Many people don´t have the economic means to go from one side of the city to the other because this, in many cases, will represent extra costs. So, as said by the CEPAL (2012), some studies show that the insertion of the workers in the labour market living in resents neighbours, not only because of the remoteness between residence and working place, but also to the unfavourable nature of working conditions in relation to the working conditions in the wealthier neighbours, has been stigmatized.

Bogotá´s BRT (Bus Rapid Transit) Transmilenio is worldwide known. Is a public transport based on high capacity buses with a segregated corridor. Bogota has a population of 7.3 million inhabitants (DANE, 2010) and according to the Mobility Survey (SDM, 2011), 46% of daily trips are made walking, 30% in public transport (20% in traditional buses and 10% in Transmilenio), 10% in private cars and 4,5% in bicycles. Today, Transmilenio transports more than 1,7 million passengers per day.

Objective

The following work has as objective to make a first approach to identify how people living in the poor periphery of Bogota, Colombia move on workdays, and how their relation with daily trip time and place of residence can be an exclusion tool.

Methodology

The following work will be mainly developed on what the theory says about that those living in a segregated city, far from the centre, are those who have

more difficulties to move and to access the city (Dureau, 2012; Orfeuil, 2008; Miralles y Cebollada, 2009; Avellaneda, 2007, 2008), and will analyse some of the results concerning daily mobility from the Mobility Survey (2011) made by the city of Bogota, in order to corroborate or refuse this hypothesis.

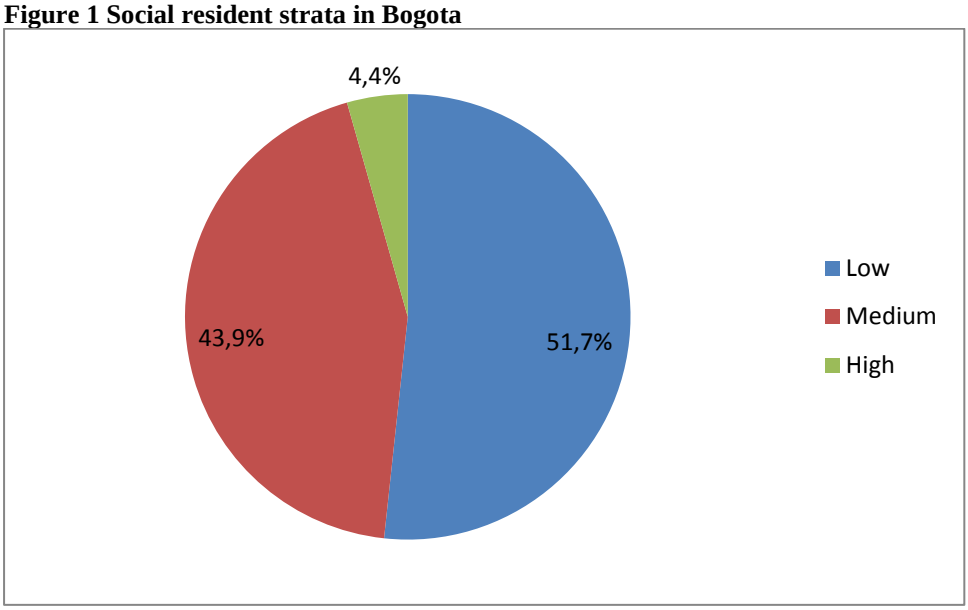
Some Results

It is important to identify the way that *Bogotanos* are moving in the city, depending on the socio-economic level of the household. The following study is based on the *Unidad de Planeamiento Zonal*[1] (UPZ) to situate inhabitants inside the city. But it is difficult to distinguish differences by economic strata since inside each UPZ we can find 6 different strata[2]. For purposes of this work, these economical division is grouped in three socio-economic levels: low (strata 1 and 2), medium (strata 3 and 4) and high (strata 5 and 6) as shown in the next figure.

[1] Son áreas urbanas más pequeñas que las localidades y más grandes que el barrio. La función de las UPZ es servir de unidades territoriales o sectores para planificar el desarrollo urbano en el nivel zonal. Son un instrumento de planificación para poder desarrollar una norma urbanística en el nivel de detalle que requiere Bogotá, debido a las grandes diferencias que existen entre unos sectores y otros. Son la escala intermedia de planificación entre los barrios y las localidades. En: http://www.sdp.gov.co/portal/page/portal/PortalSDP/OrdenamientoTerritorial/upzenprocesoderevision/QueEs

[2] De acuerdo a la definición del DANE, es una herramienta que permite cladificar los grupos de personas con características económicas y de vivienda similares. Va desde el estrato 1 (el más pobre) hasta el estrato 6 (el más rico).
http://www.sdp.gov.co/portal/page/portal/PortalSDP/Informaci%F3nTomaDecisiones/Estratificaci%F3n%20Socioecon%F3mica/QueEs

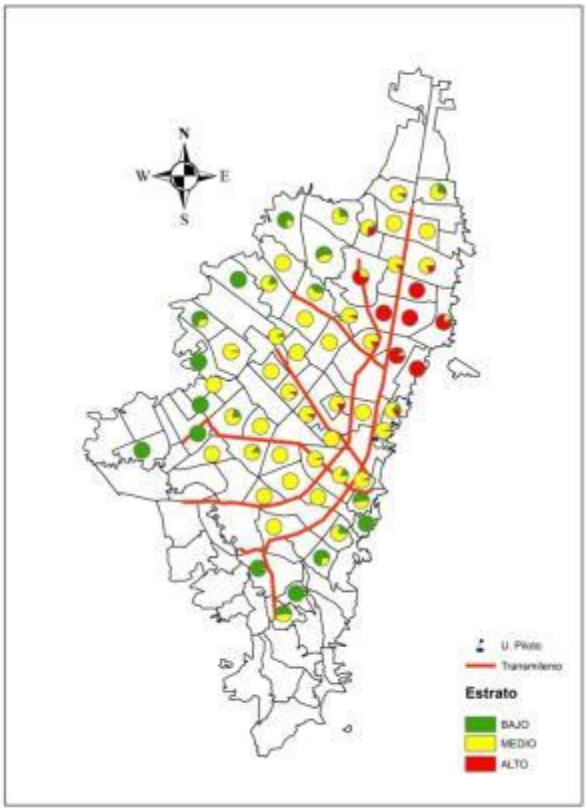
Figure 1 Social resident strata in Bogota



Source: Mobility Survey 2011

As shown in the above figure, more than have of the population are low income people (socio-economic strata 1 and 2). Only 4.4% of the population might be considered “rich” in the city.

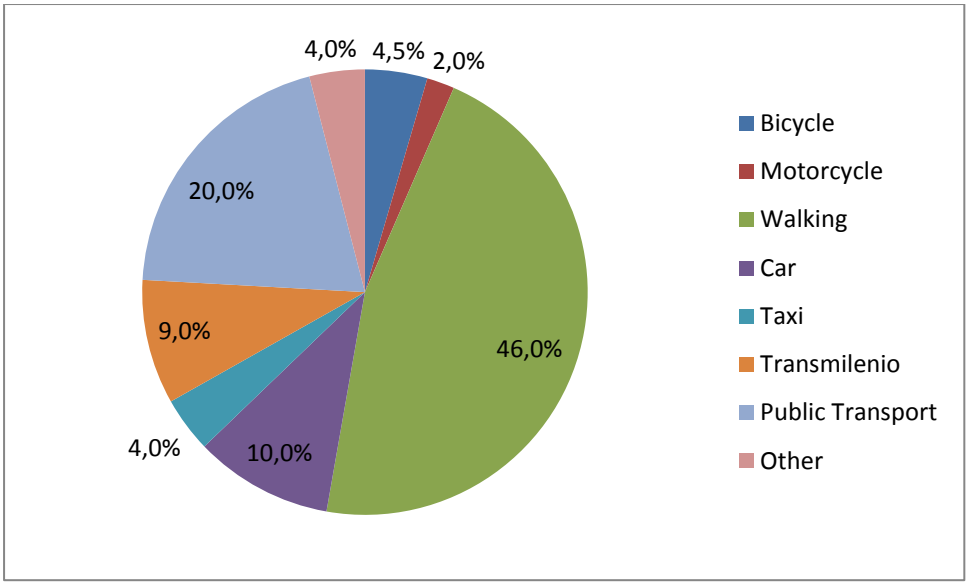
Figure 2 Some strata of the residents in Bogota by UPZ



Source: Ciudad de estadísticas 2011

We can see in the above figure that the western and south-west periphery is where most of the lower income households are located, and in the north-east of the city is where high income levels are sited.

Figure 3 Modal transport share in Bogota

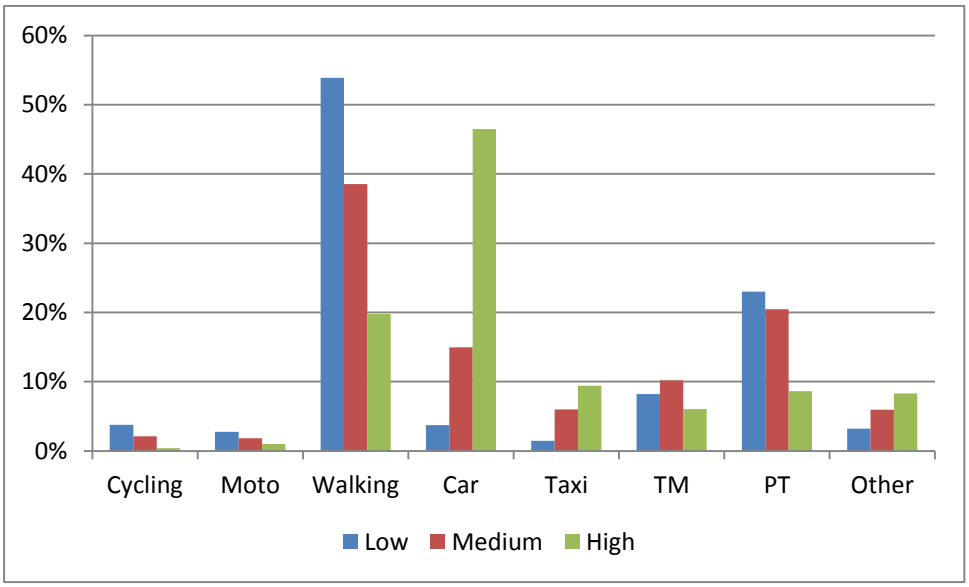


Source: Mobility Survey 2011

In the figure above, we can see that walking is the most common transport mean in the city followed by transport public 30% (included Transmilenio). Even though the past administrations promoted cycling as a utilitarian mean, it hasn´t yet reached the share everybody hopes. Despite this fact, cycling has been growing since 2000 reaching 4.5% in 2013 and more than 370 km of cycle network. This administration is now maintaining the existing infrastructure and connecting many of the parts that ware missing in order to have a real network. Perhaps, with this investment, accompanied with good promotion, we can have more people cycling in the city.

If we look by income level, the modal share changes drastically. In low income level, walking is the most important transport mean, representing almost 54% of the total share, while in the high income level, walking only represents around 20%. Conversely, the use of private car in high income level is around 47% of the total share while in low income level only 4% uses car as daily transport mean. Public Transport and Transmilenio (TM) are more common in the low and medium income level.

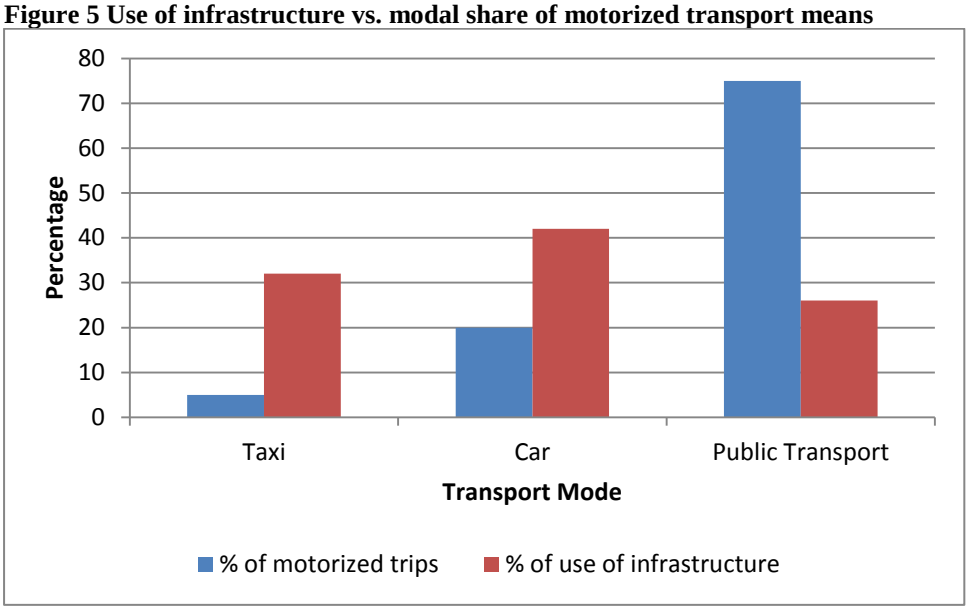
Figure 4 Transport share by income level in Bogota



Source: Mobility Survey 2011

According to data from the *Plan Maestro de Movilidad* (2006), in the motorized transport means, the use of car represents only 20% of the modal share and uses 42% of the infrastructure, while public transport represents 75% of the total share and only uses 26% of the infrastructure. Even though this data is from 2006, the tendency has not change too much. People are still thinking that the best way to solve congestion problems is by building more roads, and car bridges, but as we have seen, this would not be really equitable, they should think more in improving and expanding the public transport in the city, mainly for the poorest people as well as promoting non-motorised transport.

Figure 5 Use of infrastructure vs. modal share of motorized transport means



Source: Plan Maestro de Movilidad 2006

According to Cebollada (2006), there is a growth, especially in the youth, in the use of alternative transport means (bicycle and public transport) and “interpret the gradual process of access to its use in parallel to the process of joining the adult world" (Miralles and Cebollada, 2009. P: 202).

Moreover, there are many people who cannot have access to a public transport near their place of residence and in other cases they have to take more than one service to reach their destination, which entails extra costs (time and money) using significant value of their income to move, giving these people a new element of exclusion and segregation.

Families living in the periphery of the city are mainly those who find it difficult to get an efficient and economical transport since in these depressed areas, access to roads are in a high degree of deterioration and in many other cases they are not even suitable for vehicles. In addition, the long distances that many of the people in poverty must travel in most Latin American cities, due to the distance between their places of residence and the centres of economic activity, make a negligible percentage of such movement requiring more than one transport mean. (Avellaneda, 2007).

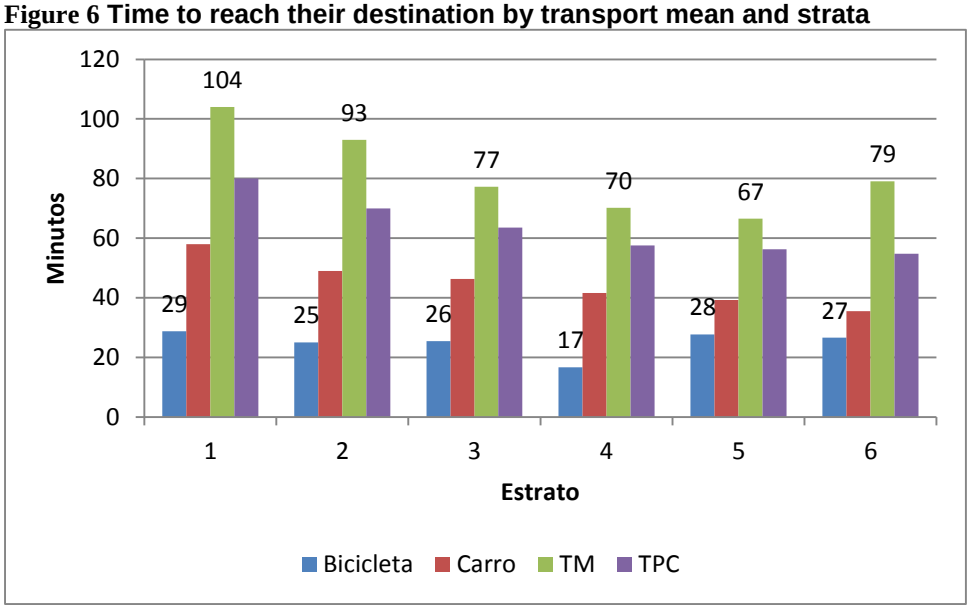
In Bogota, Massive Transport System –Transmilenio- having been planned in order to improve the quality and safety of the public transport system, allowed, in practice, reduce travel time and increase accessibility to all the inhabitants of the city, primarily to residents of lower economic resources,

The Transmilenio has not been equally beneficial to everyone. There are residential areas where travel and waiting times have increased, as well as traditional public transport routes that they previously used, have gone out of circulation or been moved to other roads, which means that these users have to find other transport means or even have had to use more than one transport, which incurs in a higher transport cost (Salas, 2008, P189).

In terms of public transport, Bogota does not have a system that is efficient and safe (excluding Transmilenio), "the public transport in the city is managed entirely by private companies that are looking for profit, which are classified depending on the nature of ownership, leasing or fleet management and that are authorized by the Secretary of Traffic and Transport (STT) ", now called Secretary of Mobility, and these routes cover almost the entire city, so it is of "easy access" to everyone.

The drivers are paid based on the number of passengers they pick up and not by the number of kilometres travelled, which leads to the existence of a war between the same drivers to collect as many passengers as they can, which is commonly known as the "penny war" creating more congestion on the streets, road safety and disorder.

Figure 6 Time to reach their destination by transport mean and strata



Source: Mobility Survey 2011

In the graph above you can see how people from the lower strata are those who take longer time in Transmilenio. And in general, strata 1 compared with the higher strata, take longer time whatever the transport means is. According to data of the 2011 Mobility Survey, the bicycle will be the most efficient transport mean, since those who use the bicycle, are taking less time to reach their destination regardless of the strata they belong. So, we can say that the bicycle is an equitative and egalitarian transport mean? We can also say that if a low income person that uses the bicycle for daily trips takes in average the same time of a high income person, both are at the same level.

It is important to mention the significance of daily trips of the population as well as the transport means they use and the land dynamics (Ciuffini, 1993 in Cebollada y Miralles, 2009; p: 197) and also to know daily trips of the population according to the group they belong to (young, immigrants women) because they trend to present mobility patterns associated with their social position (Cebollada, 2006, en Miralles y Cebollada, 2009, p: 197).

In Bogotá, Transmilenio having been planned in order to improve the quality and safety of the public transport system, allowed in practice reduce travel time and increase accessibility to all the inhabitants of the city, primarily to

residents of lower income areas, helping to ensure the right to the city expressed as the right of all citizens to enjoy the many and diverse opportunities that are in the urban area (Lefebvre, 1974). This is a sign of the importance of reflecting how mobility becomes an important tool against social exclusion (Chamber of Commerce of Bogotá, 2007).

According to Avellaneda (2007), the poverty situation also affects travel time. Since this variable depends largely on factors such as distance between the place of residence and the place where everyday activities are carried out, as well as the transport mean used.

Discussion

Is bicycle really an inclusive mode in the society in Bogota? As we observed from the Mobility Survey, (SDM, 2011), the bicycle is the mode that takes less time, but on the other side, only 4,5% use the bicycle as an everyday mode. Why can this be? In principle, one might say that is due to lack of real integration with other transport modes like public transport or with Transmilenio, because the vast majority of trips in the city are more than 5km, distance for which bicycle starts to become a not so efficient mode.

Discussion is open: can bicycle contribute to poverty reduction and social exclusion? And on the other hand, how to establish the main guidelines that should conduct a public transport policy designed to stimulate a larger bicycle use not only in the student population but in the population in general?

Conclusion

In the metropolitan areas of the Latin American cities, still remains a wide variety of transport means, in many cases not all citizens can access to such means because of circumstances such as income level, age, gender, etc. As mentioned by Wachs (Avellaneda, 2007), introducing a new source of inequality to the city.

It has been said that access might be a reason of exclusion inside the city, so, there are many things that the local and national government must to do in order to reduce this exclusion. Transmilenio has made a first step towards this, arriving to places where never before the public transport went, giving new opportunities for people living in these remote areas of the city to access jobs, education, leisure, amongst others, in other words, mobility problems can be, with frequency, aggravating poverty, and therefore, exclusion (Avellaneda, 2008).

It is hard to change habits and the image that many people have of the private car, but taking some actions at the national level, passing by provincial and district levels, it might be possible to generate conscience about the negative impacts that the indiscriminate use of private car generates and promoting more sustainable transport means such as bicycle and public transport.

It has been said that bicycle can reduce exclusion in the city, at least in time travel, but there is a question and is that people cycling short distances in the periphery to work might be non-qualified workers, with low income salaries. An on the other hand, compared to those cycling in the inner city and in high income neighbours, that might be, i.e. young successful brokers. So, even though they might take around the same time to reach their destination, the quality of work will not be the same, so they are still segregated and even though, as said by Dureau and Goüeset (et. al.), some informal neighbours sited in the periphery of the city, is not only a physical consolidation but also there is a diversification in its population and an improvement of the local offer of employment and services inside the neighbour.

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