

PERSONAL MOBILITY AND SELF-ORGANIZED TRANSPORT SYSTEMS: A SOLUTION TO SURVIVE?

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Abstract

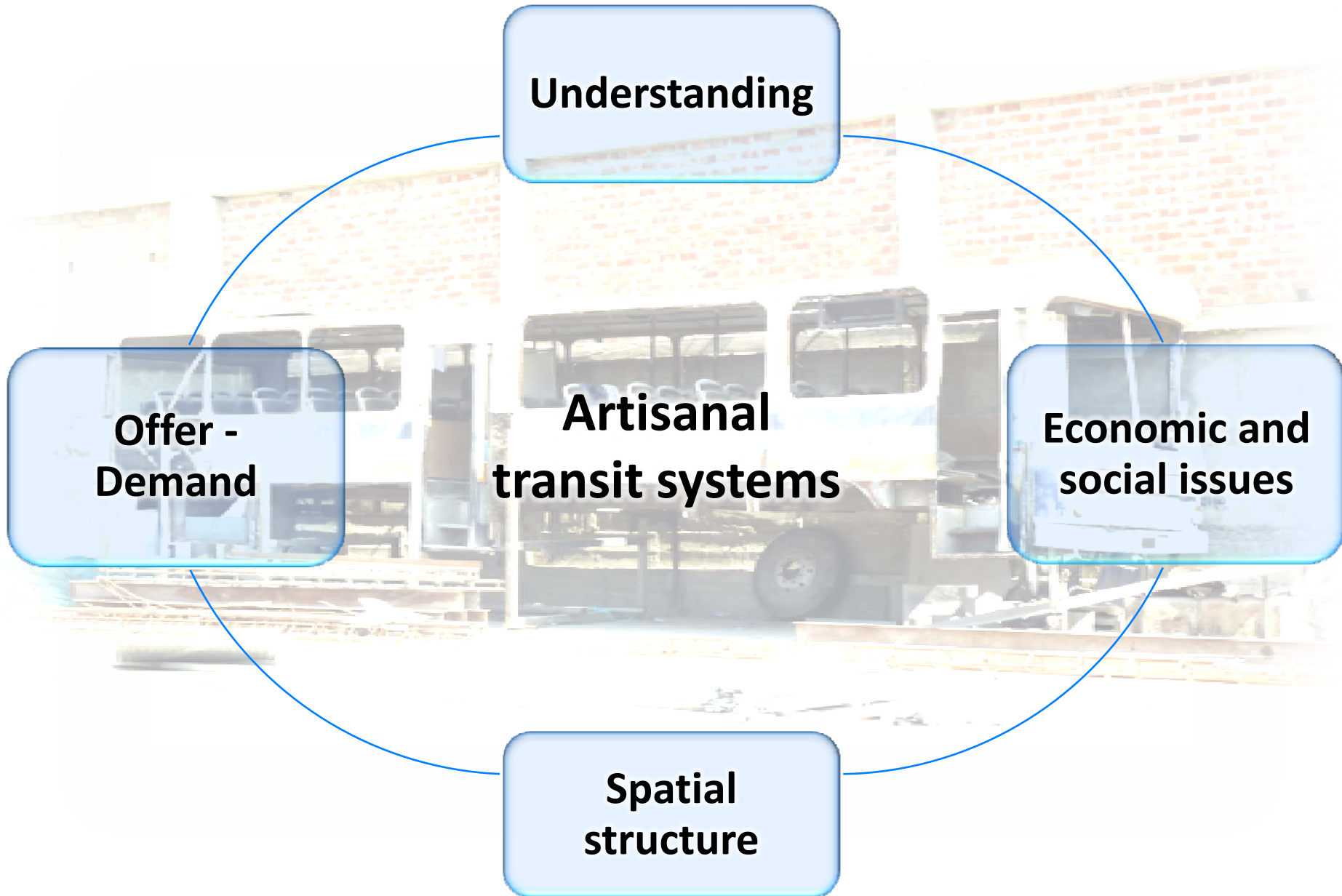
Transport systems in major cities of southern countries usually evoke apparently archaic services with anarchic organization. These stereotypes result from a lack of understanding of these systems. Today, several metropolises of southern countries have transport services without any centralized management. Alternative solutions have appeared which are based on individual initiatives.

Owing to the weak standard of living in developing countries, individual cars owners are rare. A lot of megapolis exceeds one million people without public transportation system. Furthermore, in many cases bicycle is not used. However, despite a considerable technological delay, some megacities succeed to constitute an effective urban transport network, although it is informal.

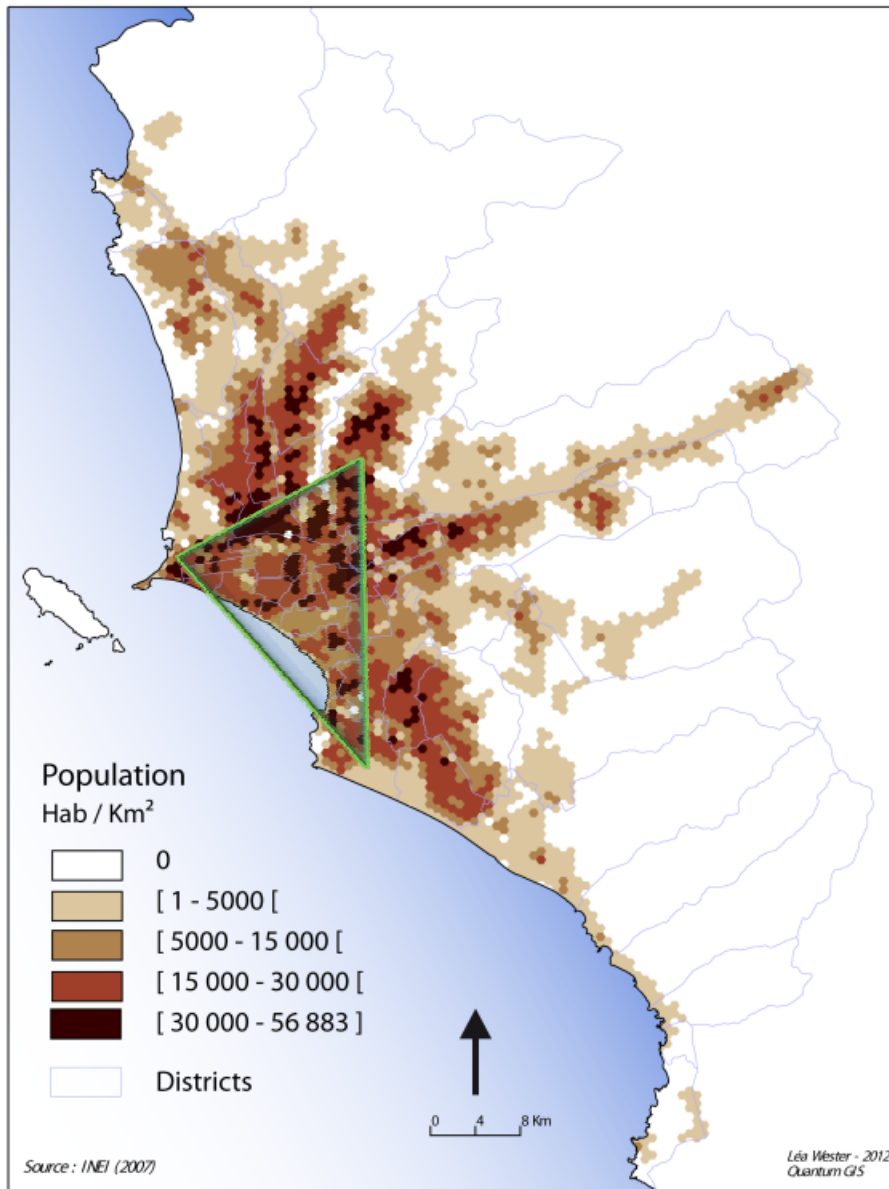
We offer an analysis of these systems in order to understand their spatial, social and economical structures. We focus on spatial dynamics and temporal fluctuations, treating specifically the case of Lima. We based on survey data sensed on the field with partnership of IRD in the course of 2012.

The system of urban transportation is based on short-term profitability of the different providers operating in a market. The economical sector concerned is defined as artisanal and governed by liberal principles. For service operators, profit maximization rests on the capacity to adapt to direct demand. Therefore, competitive and complementarity relations develop. It pushes the operators to open new routes to reach unexploited markets with the aim of earn better wages. This mode of operation allows for an extended coverage of the urban area.

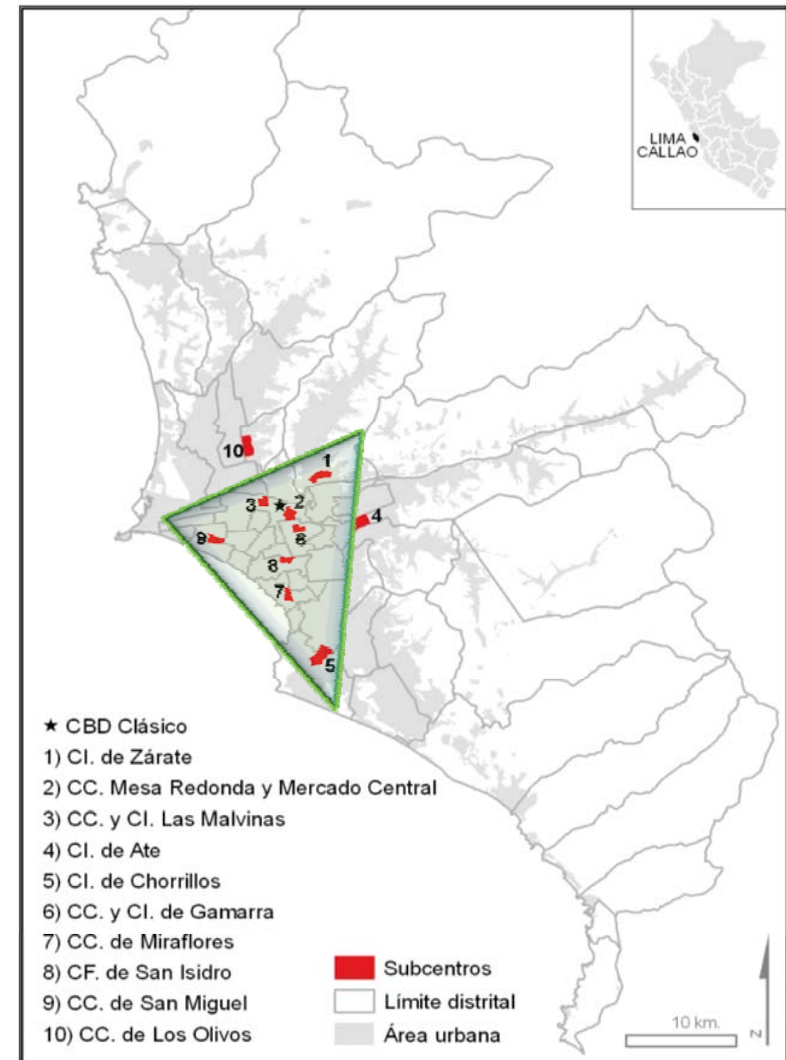
However, the auto-constructed suburbs seem left behind. We defined spatial disparities in terms of quality of service to gauge the efficiency of such a way of functioning. Our results highlight strong socio-spatial disparities. Populations at both extremes of the income scale have more restricted access to urban transportation compared to middle strata.



Population density in Lima



Economic centers in Lima



Source : Gonzales de Olarte E., Del Solar Rizo Patrón V., Del Pozo Segura JM. (2011) « Lima metropolitana después de las reformas neoliberales : transformaciones económicas y urbanas » in De Mattos C., Ludeña W. (2011) *Lima_Santiago. Restructuración y cambio metropolitano*. Ed. Facultad de arquitectura de Chile y Facultad de arquitectura y urbanismo del Perú, Santiago de Chile, pp. 391-401.

In a context where public authorities give up with transit system management, alternative ways of management appear :



*Queue of buses
looking for
passengers
Lima 2012*



*Speed chase
Lima 2012*



*Bus stopped at green light,
waiting for passengers
Lima 2012*

A self-organized system

Group :
a priori not determinable phenomenon

Macro
Level

Emergence

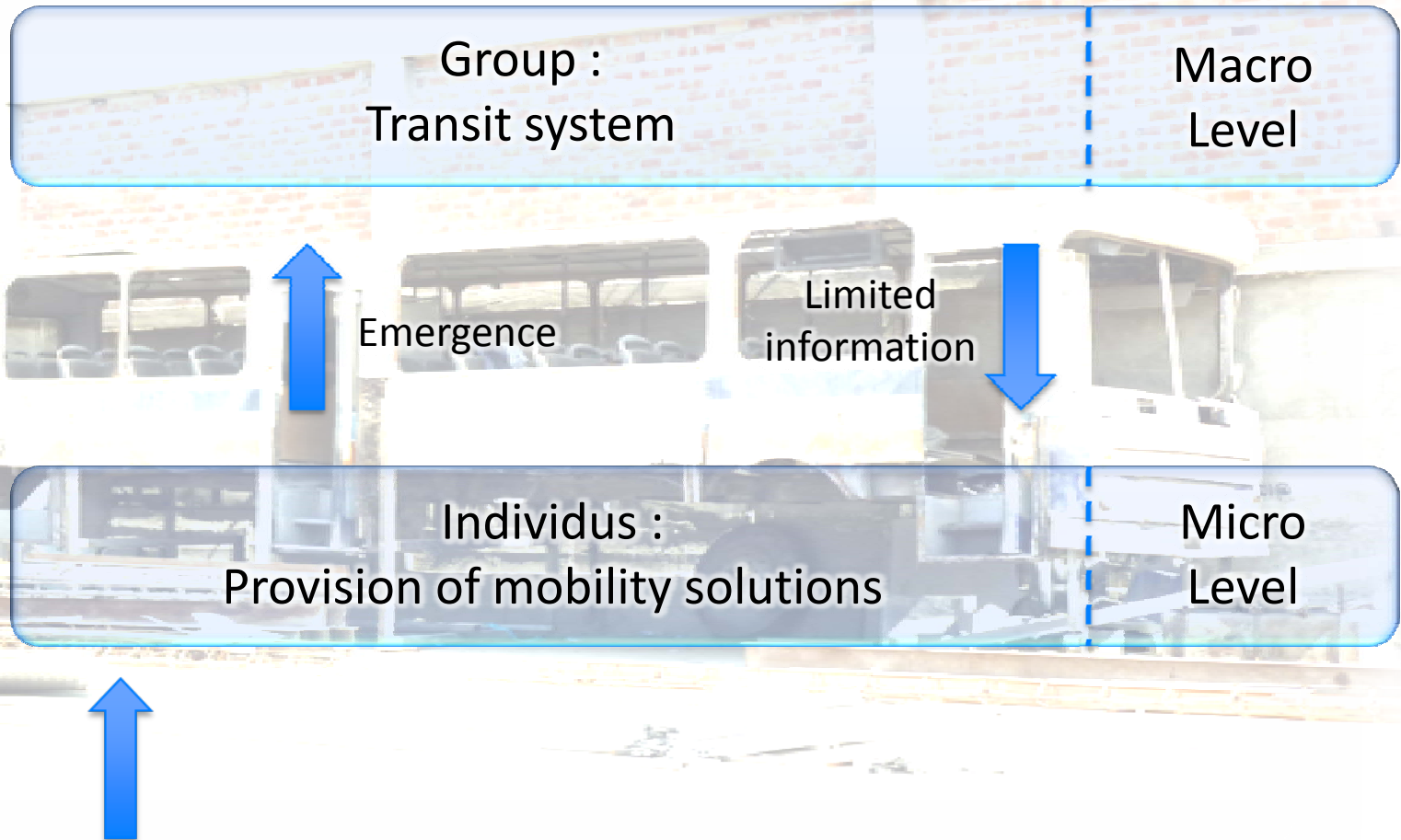
Limited
information

Individus :
Actions and interactions

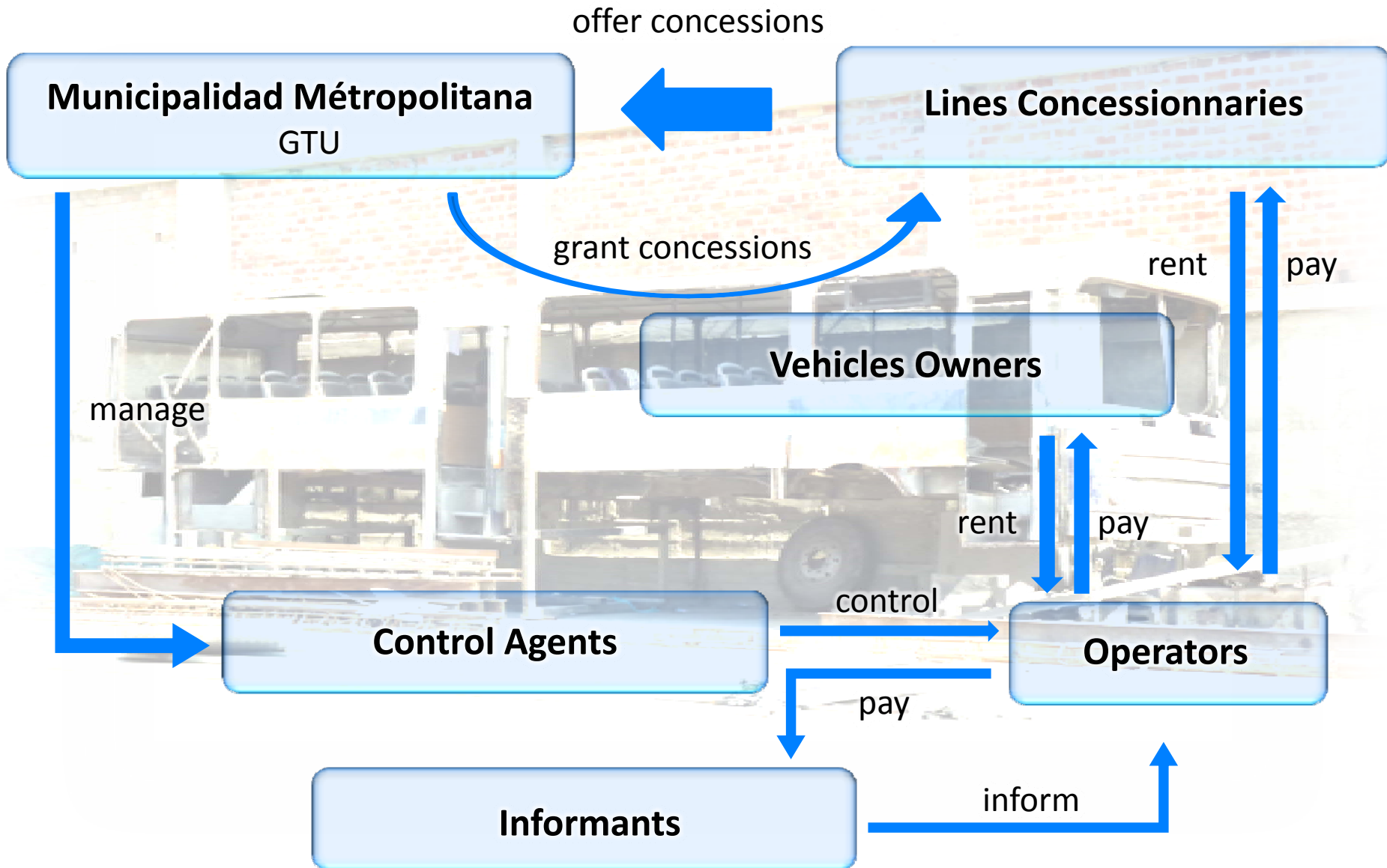
Micro
Level

Contraints and needs

Self-organization : a management solution for collective transports



Absence or inefficiency of public transports



Minimal recurring expenses

Running rights + Vehicles rental = 100 S./

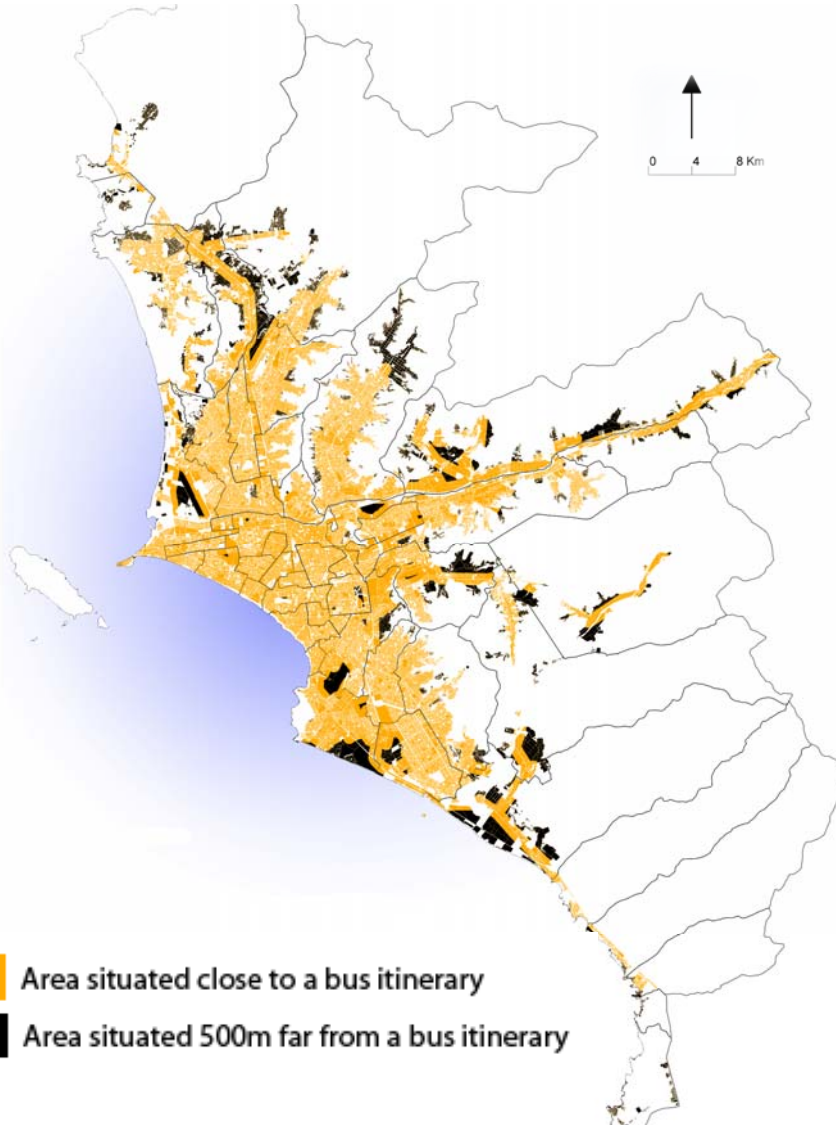
Operators resources

Bus capacity : 15 passengers
Ticket price : 1 S./

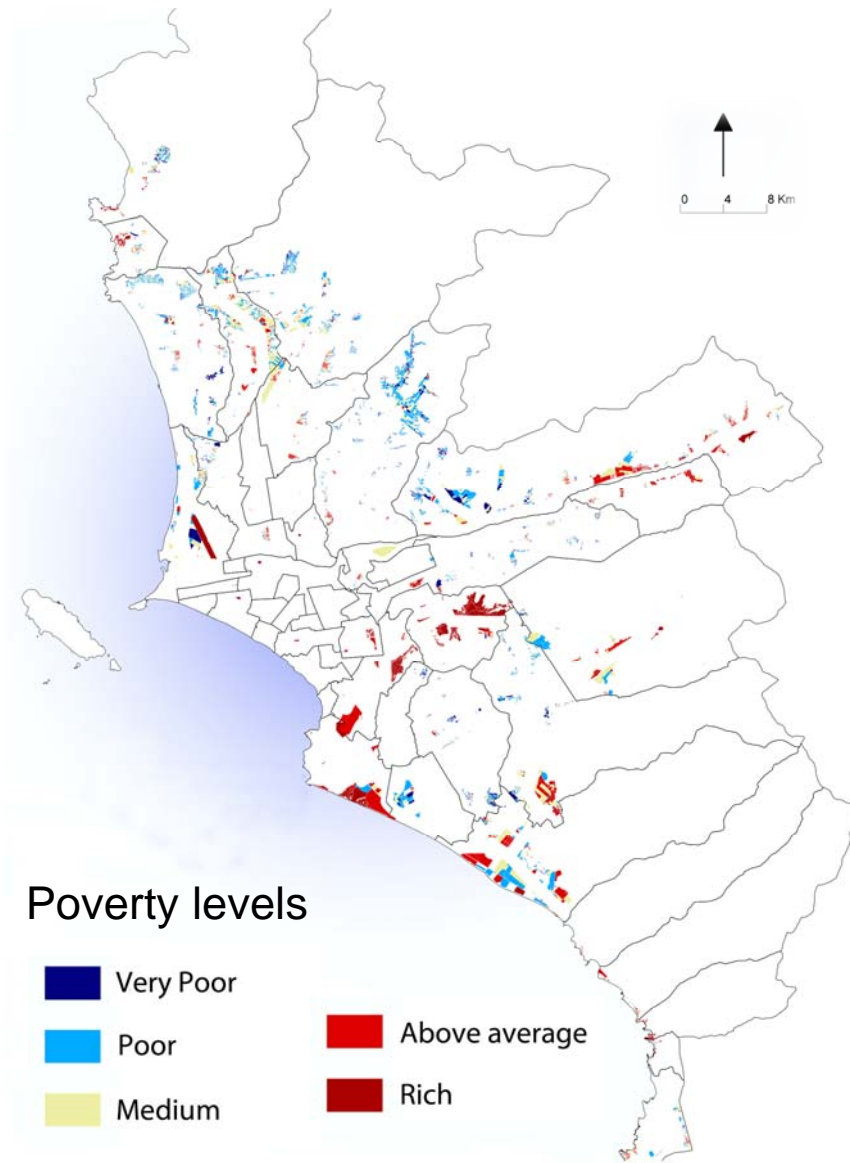


Operators need to board more than 100 persons every day

AREAS SITUATED 500M FAR FROM A BUS ITINERARY



POVERTY AND ACCESSIBILITY



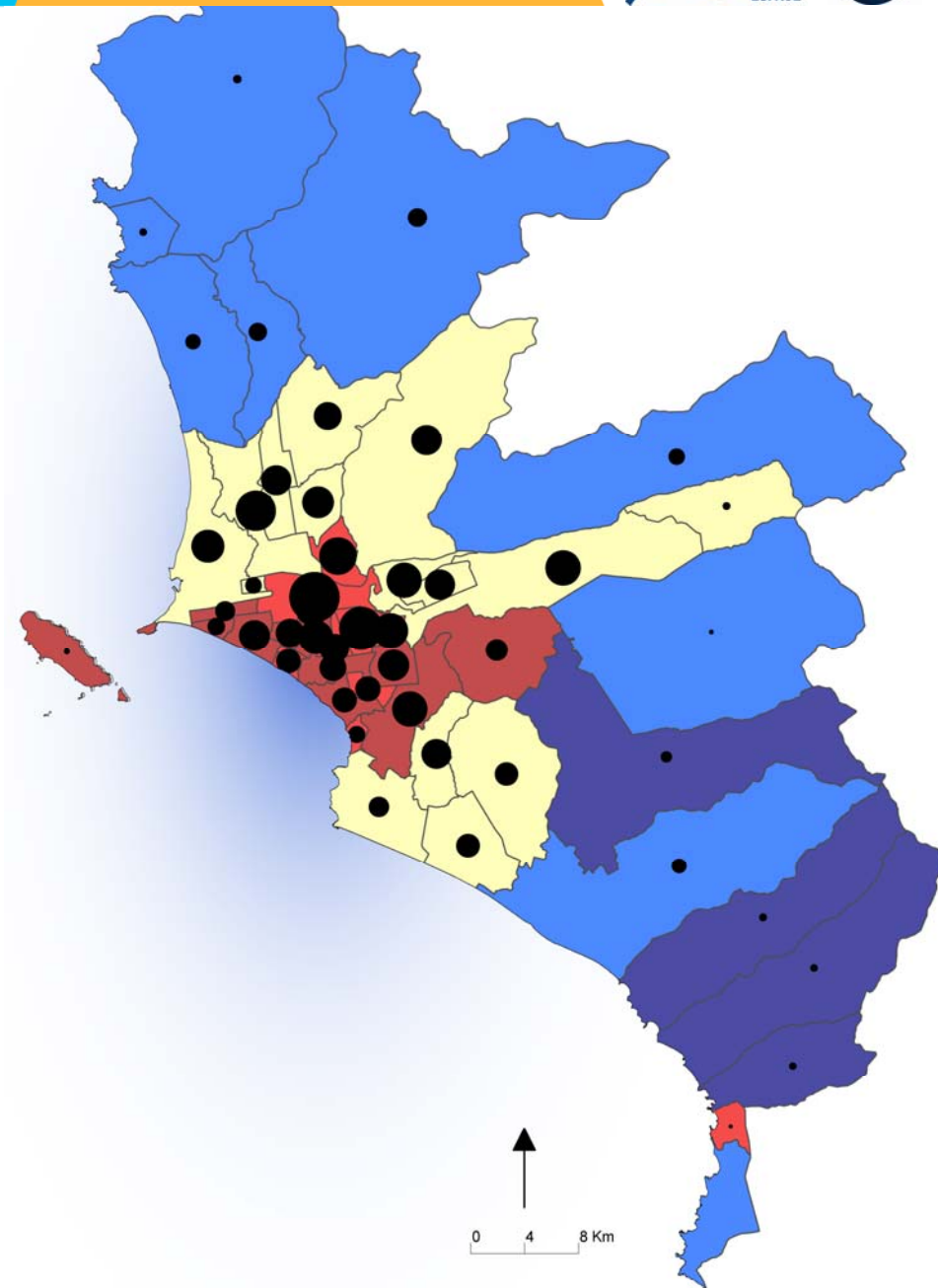
POVERTY AND FREQUENCIES OF BUSES

Fréquences

Buses / Hour (7h-9h)



Poverty levels



Source : INEI (2007), Protransporte (2009)
Léa Wester - Camille Michel - 2014

Self-organized collective transport system

An emergency solution

Spatial structure

Large service cover
Polarization on the city center

Offer

Market law
Rentabilty

Demand

Disparties of service
Exclusion of the poorest

Thank you for your attention



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