Transportation and the Urban Poor

Transportation infrastructure improvements can alter the spatial distribution of the urban poor. The relationship between transportation and population density changes as incomes rise, and one of the main negative externalities is displacement of the poor. This paper explores the relationship between motorization and the growth of cities and the related impact of transportation infrastructure development on displacement of the urban poor.

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Objective

Urban transport can play a pivotal role in poverty reduction, given its symbiotic relationship with the urban economy—indirectly, through economic growth, and directly, through its impact on the needs of the poor. However, there is a fundamental paradox in the urban transportation–poverty reduction nexus: increasing urban affluence seems to reduce rather than increase the accessibility, mobility, and quality of travel for the poor.[1] The relationship between poverty and urban transport is poorly understood. Transportation infrastructure can alter the spatial distribution of the urban poor. The relationship between transportation and population density changes as incomes rise, and one of the main negative externalities is displacement of the poor. This paper explores transport growth dynamics in urban areas that have high population densities and high poverty levels. The main focus is on the relationship between motorization and the growth of cities and the related impact of transportation infrastructure development on displacement of the urban poor.

Accessibility and Urban Poverty

Urban poverty is a multidimensional phenomenon. "The urban poor live with many deprivations including limited access to employment opportunities and income, inadequate and insecure housing and services, violent and unhealthy environments, few social protection mechanisms and limited access to health and education services."[2]

The most visible indicator of poverty in many cities, especially in the developing world, is the presence of slums and squatter communities. As cities expand spatially, poor people are compelled to live in inner-city slums or on the urban periphery. The spatial configuration of urban areas often shows concentrations of the urban poor in inner-city areas where old and dilapidated housing can be rented cheaply, or on the urban periphery as a result of government resettlement programs or spontaneous settlements set up by squatters forced out of or evicted from inner-city locations. In both inner-city and peripheral areas, the urban poor tend to have inadequate access to urban infrastructure and services.

In general, "urban poverty manifests itself through the spatial segregation of the poorest areas characterized by inadequate public services and deficient infrastructure, where the provision of mass transportation is inappropriate in terms of price as well as availability."[3] These limitations constrain income and employment opportunities for the urban poor[4] because of lack of mobility and access. The urban poor are forced to restrict their travel to essential trips related to work, education, and shopping.

"Accessibility describes an individual's ability to reach desired goods, services, activities, and destinations. Mobility refers to the ability of an individual to move about and reflects the availability of clean, safe, and affordable transportation."[5] Accessibility is the ultimate aim of mobility; however, more mobility does not equal greater accessibility. "From an accessibility standpoint, improved mobility by any mode is considered desirable only to the extent that it furthers accessibility."[6] For this reason it is important to recognize the association between mobility and accessibility. Lack of access to affordable motorized transportation limits mobility, especially in big cities, and this lack of mobility constrains access to employment and education opportunities. Travel by the poorest segments of the urban population is often confined to walking or at most bicycling, as the weather and topography permit. Anecdotal evidence from Brazilian megacities in the 1990s reveals that low-wage urban workers in the city center could visit their families in the distant suburbs only once a week

because of the absence of affordable transportation—public spaces such as parks, highway underpasses, and train stations became their sleeping quarters during the working days. Studies of relocated migrants show that they tend to spend a significant amount of an already meager income on transportation as they commute between suburban relocation sites and their jobs in the city.[7]

Accessibility also has implications for economic growth. A wider range of movement creates economies of scale and provides access to more diverse markets. These differences are evident in the development and growth of various cities. Mexico City, a megacity of 22 million, spread incrementally as its edges moved further out. Spatially, its field of movement is very restricted, and it cannot take advantage of the benefits that large cities have for accessing large volume markets. Shanghai, in contrast, has a sophisticated rapid rail system that provides increased movement through high levels of accessibility to public transport—which in turn has allowed access to diverse markets.

The question of accessibility and mobility resurfaces when the urban poor are resettled to make way for road or public transport infrastructure. High-cost transport equates to geographical, social, and economic isolation, which is a hindrance to the poor. In urban areas, poor neighborhoods often suffer from the lack of affordable access to public transit.

Car Ownership and Population Density of Cities

Sperling and Gordon estimate that the world's motor vehicle population, which currently stands at 1 billion vehicles, is likely to double in the next 20 years.[8] The number of motorized vehicles around the world is expected to increase by 3 percent annually. The slowest rate of car growth is expected in Europe, at less than 1 percent per year. In the United States, the rate will be 1 to 2 percent. In China and India, however, growth rates of more than 7 or 8 percent per year are expected.[9]

Motor vehicle ownership and use increase with income, especially in developing countries, with the demand elasticity approaching 2.0 or more in the early phases of motorization. Motor vehicles

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are central to the urban transport debate because an increase in motorization is associated with urban congestion, environmental degradation and build-up of greenhouse gases, low-density development (commonly known as urban sprawl), and reduced transit use.

Some analysts contend that urban development densities must increase to reduce auto dependence and promote public transit use.[10] Transport costs, however, rise as cities grow, partially because vehicle ownership tends to increase at a faster pace than road infrastructure can be developed to accommodate the growth in traffic.[11] With few exceptions, rapid growth in demand for motorized transport has overwhelmed the transport capacity of cities, especially in the developing world. Piecemeal transport development to rectify traffic bottlenecks on road networks is often implemented at the expense of the poor. Car ownership decreases public transport ridership, eliminating the financial viability of the transit systems and leading to diminished quality and quantity of services. Traffic congestion reduces the productivity of urban agglomerations everywhere, but the consequences in developing-country megacities are significantly more severe. Not only is the level of congestion higher in developing-country megacities—such as Delhi, Mumbai, and Karachi in South Asia; Beijing, Bangkok, and Manila in East Asia; Tehran and Cairo in the Middle East; Mexico City and São Paulo in Latin America; and the emerging megacities of sub-Saharan Africa—but many of these same megacities produce a

major part of their nation's gross domestic products. Therefore, reducing urban congestion is central to sustaining economic growth in these settings.

Transition to the Motorized City

Modal choice is primarily income based. Nowhere is this income base more evident than in China and India, where income growth and increasing urbanization is fueling the growth in motorization. However, the development of transportation infrastructure has not kept up with the pace of motorization, even in industrialized countries. The congestion levels in most large cities of the world are severe enough to harm economic and social activity.[12] It is estimated that every 1,000 inhabitants added to a city's population generate 350 extra daily trips and that every square kilometer of urbanized space induces an additional 500 trips.[13] The rate of motorization, particularly in developing countries, generally exceeds the rate of increase in population, yet the bulk of the urban poor in the developing world do not have the means to afford private motorized transport and rely on public transit for motorized trips.[14] In most poor countries, private motorized vehicle trips are restricted to the wealthiest 20 percent of the population.[15]

Impacts of Motorization on the Urban Poor

"Motorization, urban sprawl, and declining modal share of public transport constitute a vicious cycle and, as a result, mobility and accessibility are declining rapidly, particularly in big cities of the developing world."[16] Public transport is heavily subsidized in most cities because of its positive externalities, one being that it ensures access and mobility for poor people. Therefore, cities face pressure to keep fares very low, although in doing so they sacrifice transit quality and comfort. This compels middle-class riders to buy cars in the more affluent countries and two-wheeled modes of transport in poorer countries, with public transit losing market share. In some South Asian and sub-Saharan African countries, conventional public bus transport has been entirely replaced by more ubiquitous but less affordable paratransit, such as motorcycle taxis, rickshaws, jeepneys, and jitneys.

Although the urban poor usually cannot afford the fares for public transport, the public transport subsidies supposedly designed for their welfare divert essential public spending on education, health, affordable housing, and social welfare, which further damage the lives and opportunities available to them.

Transport Infrastructure and Displacement

Eviction and resettlement can result directly from the implementation of urban transport infrastructure projects. Livelihoods deteriorate when infrastructure projects force communities to be relocated to less-accessible areas. Examples abound of forced displacement of poor urban communities to make way for modern transport infrastructure, especially under repressive military regimes. In the 1980s, 150,000 families were evicted from central districts of Santiago, Chile, and resettled to distant locations with little infrastructure, increasing the distance between rich and poor, breaking social ties, and making travel to the city center very difficult.[17]

Transportation infrastructure in the name of urban renewal and economic development programs marginalizes the urban poor, and city improvements are made at the expense of the most vulnerable citizens of society. The connection between economic opportunity and urban accessibility is easy to see. Displacement destroys neighborhoods and informal economies. Displacement also forces people to the urban periphery, to areas that are generally infertile or unproductive (and therefore are cheaper), and that lack access to basic services and opportunities for sustained livelihoods. Urban growth dynamics are complicated; by encouraging the development of new infrastructure, especially roads, areas become more accessible and the movement of people and goods increases. However, growth generally comes at the expense of the urban poor, who have little to contribute to the formal economy because of a continued lack of access to resources and opportunities.

Pro-Poor Urban Transport Options

There are examples of successful pro-poor urban transportation initiatives in the developing world. Singapore coordinated land use planning and transportation investments so that businesses and homes were closer to public transportation networks. It also discouraged car ownership by placing high registration fees on vehicle purchases. Shanghai also coordinated land use and transit planning and provided infrastructure for bicycles and pedestrians to promote the use of nonmotorized alternatives.[18] Hong Kong created escalators that connected different socioeconomic areas and encouraged development along the corridors. Caracas implemented a cable car system running through the urban slums to promote movement and accessibility to goods and services; the system also prevents isolation of people as the slums have expanded and moved further up the mountain. The rapid bus corridor developed in Curitiba, Brazil (see box inset), is the outcome of sustained pro-poor and pro-environment urban transport policies that have been consistently implemented over three-and-a-half decades. This famous urban transport paradigm has now being replicated throughout Latin America. Mexico City, Santiago, and Bogotá have discouraged car ownership in a variety of ways, such as restricting daily car travel into the city according to license plate number. Other cities, such as Lima, Peru, have invested in a network of bike lanes and expanded sidewalks to encourage alternatives to motorized travel.

The challenges that face megacities are different. Rapid bus transit is cheaper than heavy rail; however, heavy rail has a larger capacity. With the introduction of rail systems, the population demographics using public transport have changed, as seen in São Paulo, Mexico City, and Delhi.

Conclusions

Equitable management of the spatial dimensions of cities and urban growth can change the dynamics of income disparity in cities. "Transport services are a key component of the larger urban services bundle. The delivery of safe, clean, and affordable transport service to all segments of society is becoming increasingly critical to reduce poverty and ensure service delivery to the poor."[21]

Transport access complements the availability of other basic services, such as health care and education. As affluence increases, the level of accessibility and quality of public transportation tend to diminish, and are directly related to increases of volumes of private vehicles on the road. Lack of access and restricted mobility limit the effectiveness of direct service delivery to the poor, and the urban poor are often resettled to make way for road or public transport infrastructure. Unaffordable transport causes geographical, social, and economic isolation. In urban areas, poor neighborhoods often suffer from the lack of affordable access to public transit. Transport subsidies are widely used as a direct intervention to help the poor, especially in urban areas, but, they "are difficult to effectively target and vulnerable to misuse and capture by the wealthier parts of the population, and often not financially sustainable."[22]

Each city is unique and must design urban transport services that fit its specific needs. The pro-poor urban transport innovations described in this paper explicitly acknowledge the accessibility needs of the poor. However, when the imperatives of

Curitiba's Pro-Poor Bus Rapid Transit

Curitiba created an efficient rapid bus transit system in the 1970s, as well as a pedestrian-only zone in the city center now imitated in São Paolo, Guadalajara, Santiago, Monterrey, Guatemala City, and Bogotá. The city developed express buses running along special corridors with orbital services integrated through high-speed transfer stations at key points throughout the city. Curitibanos Public Transportation Integrated Network maintains 2,100 buses transporting 2.04 million passengers every day.[19] The design encouraged high-density redevelopment along the corridors, and guided this densification into locations that could cope with the increased trip making. This policy has been pursued since 1975, and in the 1990s, Curitiba followed São Paulo's lead and linked the densification along the bus corridors with its social housing program.[20]

economic growth precede the need to create spatially balanced and socially equitable cities, policy decisions are made that marginalize the urban poor, further exacerbating their desperate state. If urban transport issues are not confronted as cities grow, pockets of wealth will dominate the urban structure and services and opportunities will become more inaccessible to the poor. Ultimately, cities will pay a heavy price to rectify the social and equity problems that result from a lack of accessibility for the urban poor. Clean, safe, and affordable urban transport is the key to poverty reduction and sustainable urban economic growth. ∎

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