

Building sustainable transport infrastructure for non-motorized transportation in urban centres

Project Summary

Sustainable and effective transportation is the key to effective mobility—getting to services, goods, and destinations in the most efficient, easy, safe, and sustainable way. In this sense, this paper considers transportation as primarily an issue of *access*—to services, to jobs, to goods and markets, and will propose ways of increasing access as a solution to the transportation challenges faced by urban cities within developing countries. Developing countries face unique transportation challenges due to the overpopulation of their urban centres mixed with the lack of institutional and financial capacity to develop and maintain the infrastructure necessary to meet the growing transport demands. This paper explores the challenges faced by urban centres in the developing world in building sustainably mobile cities.

Although economic growth is on the rise in many developing countries, it has been widely recognized that poor transportation infrastructure curtails economic growth potential in developing countries. Without proper infrastructure, consumer access to markets and jobs becomes costly and acts as a disincentive for production and spending. Adding to the inaccessibility is increasing urban sprawl resulting from poor planning and communication between civic designers and transport authorities. As long as authorities continue to develop more neighbourhoods without consideration for mixed-use land, thereby multiplying the need for greater transportation, the financial, social, environmental, and health costs of transport will continue to weigh heavily on the economic and development progress of the entire country.

The authors recognize the need for an integrated framework that considers the various realities and limitations of urban living in its solutions. They apply key theories of transportation—central place theory, least cost transportation theory—to propose solutions for different levels of urban development: newly burgeoning urban centres and metropolises. For the former, the paper proposes redefining land use within the already existing infrastructure, and focusing on altering inhabitant behaviour to seek out non-motorized travelling methods. For newly developing cities, the focus revolves around building institutional capacity and collaboration between various stakeholders to ensure the development of mixed land use, transit-oriented, urban planning which will lower the need for motorized transport and increase accessibility for all inhabitants.

In order for such proposals to work, however, urban planners must consider socioeconomic components to determine how much revenue is generated from a neighborhood through taxation and how a project develops. By integrating participatory models used by development practitioners into the planning, design, implementation, and monitoring and evaluation phases of infrastructure development, civil society can be engaged in designing infrastructure that responds to the responsibility of governments to offer accessible, sustainable, safe and efficient means for flows of capital.

This will also help develop the behavioural and attitudinal change necessary to decrease motorized transport and increase public or non-motorized transportation. The behavioural changes needed differ

depending on whether the urban centre is a new development or if it is already established and increasingly congested.

In a newly burgeoning city centre, focus needs to be given on developing institutional capacity and internal communication between relevant authorities to ensure the development of mixed-used land. Specifically, planners need to focus on developing infrastructure for non-motorized transport (for example, safe and secured bike lanes), which takes into account the economic, social, geographical, and climate conditions of the area. Programs to minimize cost burden on the public, such as bike-sharing businesses will contribute to incentivizing individuals to avoid purchasing and using motorized vehicles even as they continue to develop economically.

Established urban centres, on the other hand, are already deep in the trap of poor transport planning and infrastructure. Trying to redesign these cities based on established principles of urban planning and spatial analysis is not feasible due to the cost/benefit considerations re-development which requires significant logistical maneuvers not faced by emerging cities, such as relocating people and dismantling existing infrastructure. This paper therefore proposes using existing infrastructure to better fit the *access* patterns of those living in the cities by reducing the distance to their destinations and therefore reducing transportation. This involves providing incentives to businesses to establish themselves in an area that maximizes ease of access to their target consumers as well as using behavioural modeling concepts to change the established negative behaviours of the city dwellers, such as eradicating the customs that link motorized vehicle ownership with higher social status.

Taken together, these solutions will provide ease of access to activities, businesses, and other destinations that will succeed in reducing time in transit and relieving time for more productive activities; decrease transportation costs; improve safety; and decrease the emissions that have disastrous effects on the health of the people and the surrounding environment.

Biographies

Heba Awad is a Program Evaluator and Methodologist working at the Canada Revenue Agency. She is currently working to complete her Master's degree in International Development with a specialization in development projects and planning at Carleton University's Norman Paterson School of International Affairs. Her primary focus is on poverty reduction and extreme poverty eradication.

Jennifer Caruso is a first-year student in the English Common Law program in the Faculty of Law at the University of Ottawa. She completed her undergraduate degree at the University of Ottawa where she specialized in Canadian politics and graduated summa cum laude. Jennifer is interested in human rights, electoral laws, and Canadian constitutional law. She hopes to pursue a career representing individuals who have had their constitutionally-protected rights infringed upon.

Tresanna Hassanally is a Master's candidate at the Norman Paterson School of International Affairs, specializing in International Development Policy. She completed her undergraduate degree at Ryerson University in Toronto in Journalism and post-graduate certificate at Humber College, also in Toronto, in International Development. She currently works in international education at an international non-governmental organization focussed on professional and technical education. She is interested in human rights, specifically issues of freedom of expression, self representation, and governance.