

WCTRS Joint SIG: H1-H2-G5 seminar on "Sustainable Transport Measures for Liveable Cities"

Friday, May 18, 2018, IIT Bombay

Seminar Report

The detailed agenda of the seminar is given in Annexure-1. Prof. Haixiao Pan and Prof. Keping Li could not attend the seminar due to last minute travel cancellation. Following is the summary of panel discussion that followed the invited presentations by eminent speakers on topics related to the theme of the seminar:-

Prof. Geetam Tiwari emphasized on the need for a strong overlap of bus system and overlap of pedestrian and bicycle system to solve the city wide congestion problem. She also said that financing has become a major issue in India and that private sectors are not willing to finance for metro systems. She added that bus system is destroyed in most of the cities and open bus systems have to be upgraded. Talking about the key challenges and knowledge gap she said that bicycle lanes are not essential in all stretches and instead, speed of vehicles can be controlled except in arterial roads where speed is 50kmph or above.

Prof. Ali pointed out the four groups of barriers in sustainable transport: policy related barriers, institutional barriers, resource barriers, citizen related barriers with suitable examples

- Policy related barriers e.g. Difficulty to convince to take land use transport integration into action, conflicting interest, difficulty to bring public and private sectors to be involved in public transport, difficulties in bringing out policies for NMT as return of investment is easy in metro and other public transport modes.
- Institutional barriers e.g. responsibility barriers- lack of understanding of responsibilities, giving the responsibilities to the correct officials; Enforcement regulations, regulatory frameworks; Asset management-lack of information and data, intra-agency and inter-agency co-ordination
- Resource barriers- Finance, technical, human resource and energy
- Citizen related barriers- policy-political gaps, in some places traditions impede are against sustainable transport, some people do not like to come by a particular mode

Prof. Sergio started with a question 'Why the things that are set here are different from the things that have been done in practice?' He gave an example of a case in San Diego when the renovation of public transport system was thought in 2002. He said that 2000 million dollars was spent in urban roads from the soft loans provided and 200 million in public busses. Urban roads were presented as a compliment to the public transport system which showed evidently that what was set there was different from what has been done. He identified that the main issue there was financing and the resources assigned as they relied on Public Private Partnership, both bus operations and roads built. He added that when the plan was put forward the minister of finance said no subsidies and they had to rely on private

willingness to pay. He then referred Prof. Hayashi's comment on cost benefit analysis. He said that it should be based on social values (things that can be measured) but not with private values because Marginal utility of income is much smaller for rich people. He added that if we convince the decision makers that the cost benefit analysis have to be changed, we can make the different political views converge.

Prof Shinya focused on the key challenges in the future. He said that the definition of public transport would change with the advent of Autonomous vehicles and technology can change the definition of liveable cities and overcome the investment problem in some developing countries. He added that the development in transportation infrastructure needs a long time and only technology can upgrade the speed. He also talked about the importance of bringing interdisciplinary aspects and the importance of interdisciplinary research by collaborating with mechanical engineers and information technology engineers etc.

Annexure-1 Detailed Agenda

09:30 am - 09:40 am

Opening remarks by Ashish Verma, IISc Bangalore and



Introduction to SIG H1, H2, G6 by

Shinya Hanaoka (Chair SIG H1)



Keping Li (Chair SIG H2)



Ashish Verma (Co-chair SIG G6)



09:40 am - 10:05 am

Presentation on *Transport and Quality of Life* by **Hayashi Yoshitsugu**, Chubu University



Presentation on *Towards Better Accessibility and Mobility in Indian Cities* by *K V Krishna Rao*, Indian Institute of Technology, Bombay

Abstract

Rapid economic development and urbanisation is resulting in significant increase in adverse traffic, environmental and social impacts. In the absence of sustainable planning interventions, the modal share of NMT and public transport is diminishing in Indian cities due to increased private vehicle ownership, inadequate augmentation and upgrading of public transport services. Absence of NMT infrastructure in the built environment and unchecked urban sprawl. However, the national transport policy, smart cities project and other related schemes of government of India are trying to orient the cities towards achieving sustainable mobility. Transport policy and the smart cities project envisages better accessibility to all socioeconomic groups. In this talk, the above issues are highlighted with information from a few Indian cities. The talk concludes by highlighting the measures to be used to quantify the accessibility in equitable terms.

10:05 am - 10:30 am



Presentation on *Public Transport Usage Conditions in Ahmedabad, India* by *Shinya Hanaoka*, Tokyo Institute of Technology

Abstract

Ahmedabad, India has serious traffic congestion in the peak period. This is mainly due to use of private cars and motorcycles, which accounts for approximately 30% of modal share in Ahmedabad, while that of public transport, such as normal bus called AMTS and bus rapid transit called BRTS, was only 12% in 2015. This study explores to clarify the conditions why the owners of private cars and motorcycles do not use public transport and its feeders in Ahmedabad. We conducted household questionnaire survey from the owners of private cars and motorcycles living in the suburban areas of Ahmedabad, including their subjective impression towards public transport and its feeder services, in December 2017 and built the 'Technology Acceptance Model' as a psychological theory through the Structural Equation Model using collected samples.

10:30 am - 10:55 am



Presentation on *Estimation of Carbon dioxide and Other Emissions for Mumbai Metropolitan Region Under Different Transport Scenarios* by *Munish Chandel*, Indian Institute of Technology, Bombay

Abstract

The rapid urbanization followed by a combination of urban sprawl and economic boom have agglomerated the vehicle ownership in Indian cities over the last few decades. It has resulted in congestion and overdependence on fossil fuels for transport, which in turn has increased the pollution from the transport sector. Mumbai Metropolitan Region (MMR), one of the most populous metropolitan area in India, is also facing the same problem. We estimated carbon dioxide and other emissions from different plausible transport scenarios for MMR by 2050. In India, there is limited literature and studies are available on the emission factors of different types of on-road and transit vehicles. Therefore, the vehicle exhaust emission factors, for five pollutants, i.e., CO₂,

10:55 am - 11:25 am



PM2.5, NO_x, CO and HC, has also been estimated. We will present the emission factors and the overall estimation of the emissions under different scenarios for different transport policy.

Presentation on ***Sustainable Transport Measures for Liveable Bengaluru*** by **Ashish Verma**, Indian Institute of Science, Bangalore

Abstract

Mobility is a major concern in many Indian cities, due to inadequate transport infrastructure, increased usage of private vehicles, traffic congestion, pollution and lack of integration between land use and transport planning thus, undermining the cities' efforts to meet global standards of living. Recently, liveability has received more importance due to the degrading condition in the quality of life in metropolitan cities. Recently, the Government of India has also formulated 79 indicators in 15 categories in order to measure the liveability standards of 116 Indian cities focusing on four main aspects such as institutional, social, economic and physical that affects the quality of life.

11:25 am - 11:50 am

The aim of this work is to develop and evaluate sustainable transport measures that improves the liveability of Bengaluru Metropolitan Region (BMR) which includes Bengaluru urban district, Bengaluru rural district and Ramnagara. The quantitative evaluation of sustainable transport mitigation and adaptation measures aimed to improve the liveability of Bengaluru in terms of; reduced traffic congestion (VKT), reduced exhaust emissions (PM, CO, NO_x, HC etc.), reduced greenhouse gas emissions (CO₂), reduced carbon emission intensity w.r.t. GDP growth, increased consumer surplus of sustainable modes, and also improved resiliency of transportation system will be discussed in detail. The same was done by comparing the Business as Usual scenario and various sustainable transport scenarios, for the base year and the future years 2030 and 2050. It is expected that the findings of this paper will provide more scientific and evidence based decision support for framing right kind of sustainable transport planning and policy measures to make Bengaluru more liveable. Also, the basic principles and developed methodology from this study can be applied to other Indian cities as well to develop similar measures aimed at improving their liveability.

11:50 am - 12:30pm

Panel Discussion

Moderator:

Ashish Verma, IISc Bangalore

Agenda:

- International experiences on sustainable transport measures and their impact on liveability of cities.
- Implementation and institutional barriers towards realizing sustainable transport measures.
- Key challenges and knowledge gaps in understanding linkages between transport and liveability.



Panelists:

Geetam Tiwari, Indian Institute of Technology, Delhi, India



Haixiao Pan, Tongji University, China



Ali S. Huzayyin, Cairo University, Egypt



Shinya Hanaoka, Tokyo Institute of Technology, Japan



Sergio Rodolfo Jara Diaz, University of Chile, Chile

