
Potential Research Topic:

Constructing an order and paradigm in transportation planning with a focus on mobility of people

Research stream (suggestive): Transportation planning with a focus on active mobility

Research Brief:

Historically the field of transportation planning has been about mobility of motorized vehicles. In the 1950s-60s, it was believed that the motor car was an important element in the future of transport as economic growth spurred on car ownership figures. The role of the transport planner was to match motorway and rural road capacity against the demands of economic growth. Urban areas would need to be redesigned for motor vehicles or impose traffic containment and demand management to mitigate congestion and environmental impacts.

The current travel demand models and all projects in cities across the world have Volume-capacity ratios as the main metrics which only measures flow of vehicles on carriageway, with lane occupancy being the focus of efficiency. Every vehicle using the available road capacity is converted into a car equivalent proving that the transport engineering computations existing today from the time it was invented in the US has been skewed towards a motor vehicle rather than mobility of people. Cities across the world, in the of the recent COVID-19 pandemic are moving towards providing a conducive environment for walking and cycling not only to mitigate climate change externalities but also to build healthier and happier cities for its citizens. There is a need to redefine “traffic” to keep the focus on people. It is also important to redefine traffic flows and road volume-capacity metrics to include efficiency of ‘movement of people’ within the entire right of way and provide equal emphasis on public transport and non-motorised transport in the calculations.

With the formulation of sustainable development goals to mitigate climate change in the 20th century by countries across the world, and transportation being one of the major contributors causing climate change, the transport planning framework needs to be recrafted. The principles, terminologies and standards developed for transport planning which are heavily leaning towards the supply side for the motor vehicles (volume-capacity ratios, passenger car units) need to be balanced to realize the new, sustainable, and green future. The research may bring out a new framework for transportation planning where “mobility of people over mobility of vehicles” is not just another sentence in a policy/book.

Possible Research Outcomes:

1. Analysing and quantifying the drawbacks of the current vehicle focussed planning paradigm to achieve UN SDG's.
2. Developing a metric in lieu of v/c ratio to redefine traffic and transport planning approaches to realize equity on streets.