A Qualitative Framework for Vehicle Demand Prediction Model
for Indian Road Transport

Ram Santran, Rhythm Singh

Department of Hydro and Renewable Energy

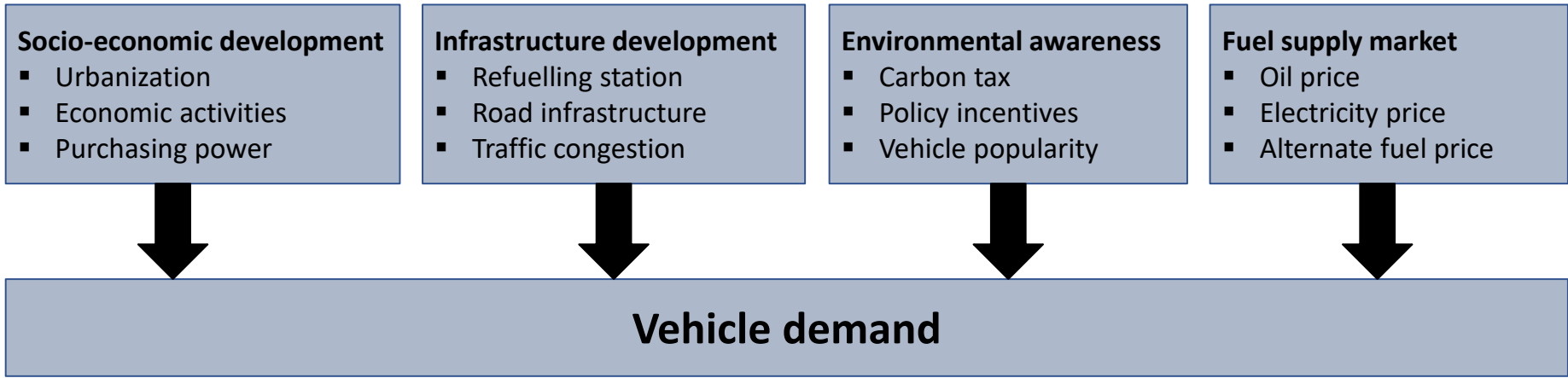Indian Institute of Technology Roorkee, Roorkee, India-247667
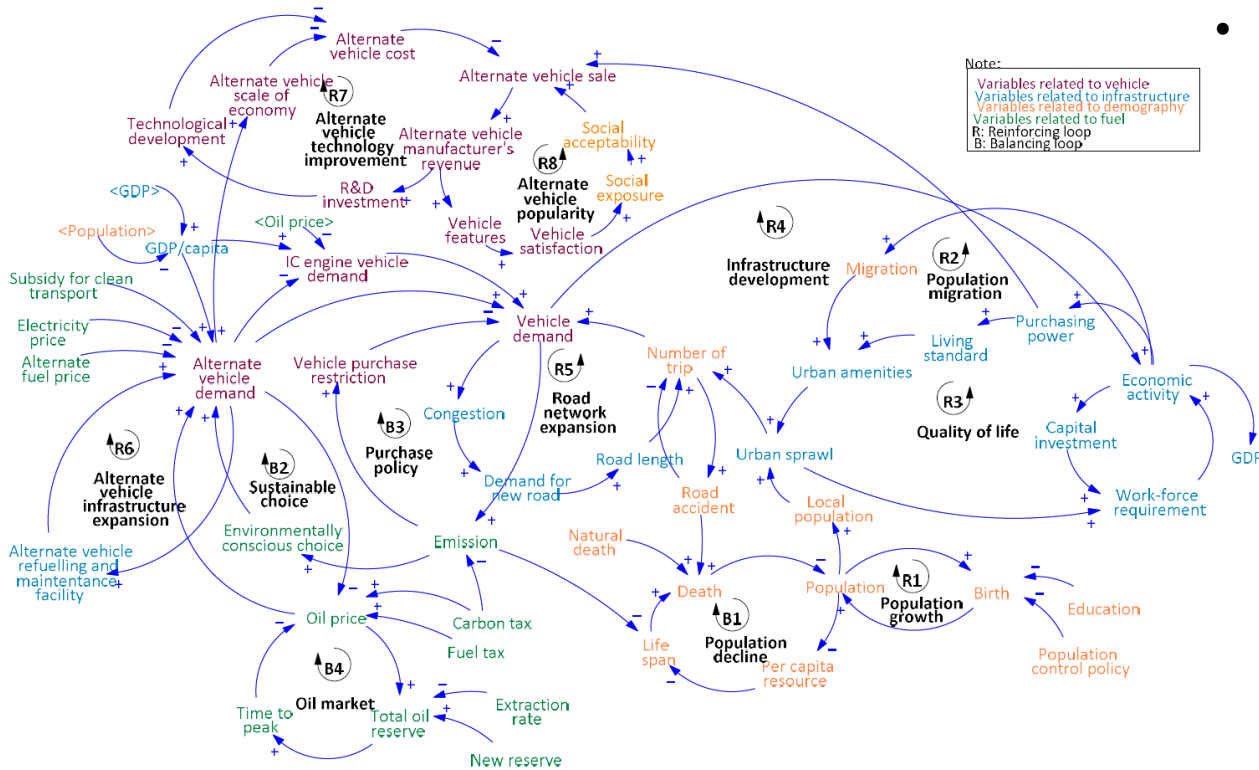
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Problem Statement

- Socio-economic Statistics
  - Increase in GDP per capita by 3-fold since 2005
  - Demand for personal vehicle

- Transport Statistics
  - Over 26 million vehicle sold in 2019
  - Oil consumption at 3.6% CAGR between 2000-2021
  - 13.5% CO_2 emissions of transport

Approach or Dynamic Hypothesis

Socio-economic development	Infrastructure development	Environmental awareness	Fuel supply market
▪ Urbanization ▪ Economic activities ▪ Purchasing power	▪ Refuelling station ▪ Road infrastructure ▪ Traffic congestion	▪ Carbon tax ▪ Policy incentives ▪ Vehicle popularity	▪ Oil price ▪ Electricity price ▪ Alternate fuel price

Vehicle demand

- Identified variables related to each domain
- Develop causal relationship between the variables
- Expand the CLD to incorporate each domain

1:30-2:30

Results

- Areas covered
  - Quality of life
  - Road network expansion
  - Technological development
  - Fuel market

- Key variables
  - Economic activity
  - Urban sprawl
  - Alternate vehicle demand
  - Total vehicle demand

2:30-5:00