

Critical Factors for Successful Adoption of Land Value Capture Mechanisms - An Exploratory Study Applied to Indian Metro Rail Context

Authors : Anjula Negi, Sanjay Gupta

Abstract : Paradigms studied inform inadequacies of financial resources, be it to finance metro rails for construction or to meet operational revenues or to derive profits in the long term. Funding sustainability is far and wide for much-needed public transport modes, like urban rail or metro rails, to be successfully operated. India embarks upon a sustainable transport journey and has proposed metro rail systems countrywide. As an emerging economic leader, its fiscal constraints are paramount, and the land value capture (LVC) mechanism provides necessary support and innovation toward development. India's metro rail policy promotes multiple methods of financing, including private-sector investments and public-private-partnership. The critical question that remains to be addressed is what factors can make such mechanisms work. Globally, urban rail is a revolution noted by many researchers as future mobility. Researchers in this study deep dive by way of literature review and empirical assessments into factors that can lead to the adoption of LVC mechanisms. It is understood that the adoption of LVC methods is in the nascent stages in India. Research posits numerous challenges being faced by metro rail agencies in raising funding and for incremental value capture. A few issues pertaining to land-based financing, inter alia: are long-term financing, inter-institutional coordination, economic/ market suitability, dedicated metro funds, land ownership issues, piecemeal approach to real estate development, property development legal frameworks, etc. The question under probe is what are the parameters that can lead to success in the adoption of land value capture (LVC) as a financing mechanism. This research provides insights into key parameters crucial to the adoption of LVC in the context of Indian metro rails. Researchers have studied current forms of LVC mechanisms at various metro rails of the country. This study is significant as little research is available on the adoption of LVC, which is applicable to the Indian context. Transit agencies, State Government, Urban Local Bodies, Policy makers and think tanks, Academia, Developers, Funders, Researchers and Multi-lateral agencies may benefit from this research to take ahead LVC mechanisms in practice. The study deems it imperative to explore and understand key parameters that impact the adoption of LVC. Extensive literature review and ratification by experts working in the metro rails arena were undertaken to arrive at parameters for the study. Stakeholder consultations in the exploratory factor analysis (EFA) process were undertaken for principal component extraction. 43 seasoned and specialized experts participated in a semi-structured questionnaire to scale the maximum likelihood on each parameter, represented by various types of stakeholders. Empirical data was collected on chosen eighteen parameters, and significant correlation was extracted for output descriptives and inferential statistics. Study findings reveal these principal components as institutional governance framework, spatial planning features, legal frameworks, funding sustainability features and fiscal policy measures. In particular, funding sustainability features highlight sub-variables of beneficiaries to pay and use of multiple revenue options towards success in LVC adoption. Researchers recommend incorporation of these variables during early stage in design and project structuring for success in adoption of LVC. In turn leading to improvements in revenue sustainability of a public transport asset and help in undertaking informed transport policy decisions.

Keywords : Exploratory factor analysis, land value capture mechanism, financing metro rails, revenue sustainability, transport policy

Conference Title : ICTEP 2023 : International Conference on Transport Economics and Policy

Conference Location : Venice, Italy

Conference Dates : August 10-11, 2023