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Integrated Mass Rapid Transit System for Smart City Project in Western India

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Abstract : This paper is an attempt to develop an Integrated Mass Rapid Transit System (MRTS) for a smart city project in Western India. Integrated transportation is one of the enablers of smart transportation for providing a seamless intercity as well as regional level transportation experience. The success of a smart city project at the city level for transportation is providing proper integration to different mass rapid transit modes by way of integrating information, physical, network of routes fares, etc. The methodology adopted for this study was primary data research through questionnaire survey. The respondents of the questionnaire survey have responded on the issues about their perceptions on the ways and means to improve public transport services in urban cities. The respondents were also required to identify the factors and attributes which might motivate more people to shift towards the public mode. Also, the respondents were questioned about the factors which they feel might restrain the integration of various modes of MRTS. Furthermore, this study also focuses on developing a utility equation for respondents with the help of multiple linear regression analysis and its probability to shift to public transport for certain factors listed in the questionnaire. It has been observed that for shifting to public transport, the most important factors that need to be considered were travel time saving and comfort rating. Also, an Integrated MRTS can be obtained by combining metro rail with BRTS, metro rail with monorail, monorail with BRTS and metro rail with Indian railways. Providing a common smart card to transport users for accessing all the different available modes would be a pragmatic solution towards integration of the available modes of MRTS.

Keywords : mass rapid transit systems, smart city, metro rail, bus rapid transit system, multiple linear regression, smart card, automated fare collection system
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