

Characterization of Potential Demand for ETC Usage along E03 Highway in terms of Socio-demographic Parameters of Non-ETC Users - a Case Study from Sri Lanka

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Abstract

During the planning stage of the Colombo – Katunayake Expressway (E03) it was presumed that gradual replacement of Manual Toll Collection (MTC) gates with Electronic Toll Collection (ETC) gates will be an effective strategy to maintain design throughputs via all tollbooths during the E03's design life. Accordingly, one MTC gate per plaza was converted to an ETC gate to start with, and toll collection using the ETC system commenced in July 2015. Since then an unexpected phenomenon occurred: i.e., despite four years having passed, only 4,355 users had so far taken ETC tags - just 17.8% of the total daily E03 throughput of 24,360 users. Poor throughputs via ETC gates resulted in long queues at manually operated gates (MTC).

Despite many attempts during the last four years, authority has so far been unable to have the expected throughputs via ETC gates. Today it has become common for MTC users to queue for toll payment - with wait time during rush hours exceeding travel time on the E03.

These circumstances warranted authorities to explore alternative means of addressing this issue. Accordingly, it was decided to carry out a socio-demographic survey of MTC users with the objective of identifying variables that would have influenced MTC users' decisions on the purchase of ETC tags. This study revealed that this decision is related to both socio-demographic variables and socio-economic variables as well as to the regulatory framework on issuance. Findings of this study will inform the formulation of an evidence-based toll policy in Sri Lanka.

Keywords: *Manual Toll, Electronic Toll, Queueing, Throughputs, Tolling policy*