

METHODOLOGY TO ASSESS BUS TRANSIT SERVICE QUALITY BASED ON USER PERCEPTION

Abstract

Assessment of level of service for bus transit has received increased attention in recent years. Researchers have addressed transit service quality assessment using three major approaches, i.e, the 'Level of Service' approach, the measurement of the gap between customers' perceived service level and desired service level and the weighted perception approach that identifies the relative importance of individual service quality indicators for transit users. The concept of 'Level of Service' has been widely used by researchers, both in developed and developing countries, to benchmark public transport service levels for different service attributes. However, these benchmarks have been established based on expert opinion and not user perception, which is a prerequisite for service quality assessment. This research proposes a method using the Law of Successive Interval Scaling to develop Level of Service scales across five levels (LOS A to LOS E), based on the perception of users. While the standard practice is to provide service level within LOS C/D ranges, these are often quite wide with significant financial implications for the service provider. In addition, transit users in developing countries have varied socioeconomic and demographic profiles with varied travel needs and expectations. Thus, the service delivery levels should incorporate the minimum acceptable service levels of different user groups and of the potential users. In this research, a method has been developed to determine the transit service delivery levels using the concept of users' and potential users' minimum acceptable service and desired service level, the lower threshold of LOS C, and the service level that provides the maximum marginal utility for transit service providers obtained against a unit change in service level. Finally, based on the availability of resources, service providers need to prioritize certain service areas for immediate improvement. Accordingly, a method has been proposed using the importance-satisfaction analysis to identify the critical service areas in an existing transit system that needs immediate improvement. This research provides an overall methodology that can be used by transit planners/service providers to determine the appropriate level of service for an existing transit system or for designing a new one, which incorporates the perception of experts, users, potential users and transit service providers at different stages of the research.

Keywords: Level of Service Benchmarking, Developing Country, User Perception, Law of Successive Interval Scaling, Zone of Tolerance, User Satisfaction Level, Marginal Utility, Importance-Satisfaction Analysis