

# **A contribution of identifying how the gap between travellers' perceptions and transit operators' planning affect travel choices**

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Transit assignment and service quality of the transit networks are closely interrelated to each other. Many theories and models have been developed to describe transit assignment. Dynamic transit assignment is related with real time conditions by predicting how passengers move through the network while taking into account the travel conditions changes over time.

To passengers often a number of lines are attractive, depending on quality of service indicators, for example which service arrives next at the bus stop (Schmöcker et al. 2010). Many researches tried to assess the impact of individual perceptions on the transport mode and/or route choices (i.e. Glerum et.al., 2011).

According to Spiess and Florian (1989), at each transfer point passengers may shape the “optimal” for them strategy taking into account minimum generalized travel cost, including route attractiveness, quality of service etc, based on their perception and/or knowledge. Quality of service, as perceived by travellers seems to affect significantly their travel behavior.

Personal travel needs and characteristics, past experiences, trip attributes and transportation system components, construct an interrelation chain of indicators with key role in the quality of service analysis. Additionally, based on information provision, at each transfer point passengers plan for their journey (Hamdouch and Lawphongpanich, 2008), aiming at minimizing travel time and maximizing utility (mode reliability, in-vehicle comfort, less transfers etc.). All these components are linked with the “optimal strategy” travelers shape and act as the key drivers to a transit choice. Operators, on the other hand, understanding passenger needs, play a crucial role affecting users' perceptions for a transport service, by providing the performed quality, through optimizing fleet scheduling based on the expected demand and/or in more advanced systems, on real time information about passenger flows. Usually travellers' and operators' perceptions and expectations differ significantly, resulting in a mismatch of requirement satisfaction.

Parasuraman et al, in 1985 introduced the GAP model, pointing out the existing gaps between users and operators in management studies. This model was broadly used since then in many business models and operations.

In this context, by examining the determinants of perceived and desired service quality the present paper aims at developing a framework of analysis of quality of service in a transit network, investigating at the same time how transit quality affects transit choices. The area where customers' perceived and desired service quality, and the operators' provided and optimum planning meet is assessed, aiming at improving system performance and passenger satisfaction.

The specific objectives are to:

- Identify the caliber of the aspects and indicators of Quality of Service
- Outline the perceived and expected Service Quality
- Assess the level of satisfaction for the respective indicators
- Assess travellers' choices as affected by quality of services provided by transport operators
- Examine how travellers choices affect transit assignment
- Examine transit assignment sensitivity to transit quality of service indicators
- Consider room for improvement

The work presented in this paper identifies transit users' mobility issues, regarding their needs and expectations of the transit level of service along with this impact on their travel behavior.

To address the objectives of the research an extended bibliography review has been conducted, examining the quality of service in different transit operations. Following this step, a list of indicators were selected and assessed by transit travellers of three major Greek cities: Athens, Thessaloniki and Volos.

An revealed and stated preferences survey was conducted which addressed the level of perceived, expected and desired quality of services of travellers, and investigated their stated preferences under the development of selected scenarios regarding the provided level of services. At the same time, a parallel survey was conducted to assess operators' beliefs and perceptions regarding the provided services and the level of understanding the perceived and desired quality of service gap between them and transit travellers.

The combined assessment of the two surveys point out the ground for innovations needed to facilitate efficient transit movements.

Research results, could be useful to operators' strategies, regarding the enhancement of the transit system whereas they enable testing and selection of a transit management strategy, regarding Quality of Service influence, which diverts transit demand from congested lines and modes to the most attractive alternatives.

The present paper is part of a doctoral dissertation thesis and is planned to be completed in the end of April 2013.

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