Using asymmetric Inverted Normal loss function construct a comprehensive index for measurement of overall service quality

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Abstract

The service quality is an important link in the cycle of service provision, SERVQUAL developed by Parasuraman et al. was widely accepted in the domain of service quality measurement since 1988, but few of its claims remain undisputed. One of the drawbacks is the “average” approach to aggregate service quality measures arises, “variance” is never considered. Secondary, linear scale is adopted in different level of perceived service quality. Moreover, lack of a quantitative and overall measuring index. Historically, Taguchi loss function has been used to measure physical characteristics of a manufactured product, more recently, there have been other non-manufacturing applications, even was adopted to measure service quality in several studies. Taguchi loss function addressed two statistics of a group of products: the average and the variance, and considered the economic impact of reducing variance in products and process. However, Taguchi loss function is not adequate for portraying the real situation in the service sector. This study proposed a approach that using
asymmetric Inverted Normal Loss Function (INLF) to measure the gaps of SERVQUAL, then, via the Analytical Hierarchy Process (AHP) to construct a comprehensive index for measurement of overall service quality. Hopefully, this new approach would serve as a useful methodology and overcome these drawbacks

Keyword：SERVQUAL; Taguchi loss function; Service quality