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## The evaluation of tertiary institution service quality using HiEdQUAL and fuzzy TOPSIS

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### Abstract

One of the most important decisions that affect the future of young students is a decision as regards a Tertiary Institution of choice. In making such a decision, a number of factors are required which include service quality. Service quality consists of different attributes and many of them are intangible and difficult to measure, which means that using the conventional measurement approach is insufficient. This study presents an effective approach for evaluating and comparing service qualities of four Higher Institutions. Fuzzy set theory is adopted as a research template to resolve the ambiguity of service quality concepts and capture intra-uncertainties, which are associated with human judgments in decision making. In this study Extended HiEdQUAL educational service quality model was adopted to evaluate the respondents' judgments of service quality, Multi Attribute Decision Making method: TOPSIS is applied for the comparison among the tertiary Institutions. The importance weight of performance criteria are determined with Fuzzy Analytical Hierarchy Process (FAHP). All the algorithms were implemented using Java programming language. This study was able to present the importance of each service quality factor, quantitatively reveal each institution's weak and strong points, and rank the institutions according to the multiple criteria service quality measure.

**Keywords:** Institutions, Fuzzy MCDM, Quality of Services, Ranking, Decision Making