

Advances in Service Quality Measurement: Insights from Higher Education

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ABSTRACT

This study aims to identify and analyse the dimensions of higher education service quality that have evolved globally within the context of higher education institutions. Research on service quality has progressed from the SERVQUAL framework to the emergence of alternative models that are adapted to the unique conditions of higher education. By examining service quality in this sector, valuable insights can be obtained regarding institutional performance and the level of student satisfaction. This study employs a systematic literature review of international publications sourced from reputable databases (Emerald, Wiley, Springer, Taylor & Francis, and Sage Publishing) to capture global trends in the conceptualization of service quality dimensions in higher education. The analysis reveals six major conceptual developments of measurement models, formulated under various acronyms, with the seven-dimension model appearing most frequently, particularly in the Emerald database. Most of these developments represent evaluations and adaptations of earlier frameworks. The findings highlight the need for further research to establish more authentic conceptual dimensions that reflect the distinctive characteristics of higher education while integrating a broader perspective from multiple service stakeholders.

Keywords : *service quality dimensions, higher education institution, servqual systematic literature review.*

INTRODUCTION

In the current era of global marketing, characterized by intense competition and rapidly changing consumer demands, a product and sales oriented marketing strategy is no longer regarded as sufficient. Modern organizations must adapt to evolving customer values, shifting their orientation from product and sales philosophies toward customer and market centered approaches. To remain competitive, institutions must not only optimize internal processes but also focus on the manner in which services are delivered.

In recent years, service quality in higher education has attracted increasing scholarly and managerial attention, making its assessment essential for enhancing institutional performance and student satisfaction. Developing strategies to improve competitiveness through high-quality services requires continuous innovation and differentiation from both private and public institutions. Within this context, marketing strategies in higher education often emphasize two critical stages: the recruitment of prospective students and the educational journey experienced during their enrollment. However, current service quality assessments tend to rely heavily on statistical indicators such as graduation rates or managerial perspectives focused on accreditation. Such approaches, while important, remain limited as they prioritize

academic outputs while neglecting the student experience as the central service recipient.

To address this gap, the SERVQUAL model, developed by Parasuraman et al., (1994), has been widely applied as a framework for assessing service quality across various industries, including higher education. SERVQUAL evaluates service quality through gap analysis between expectations and perceptions of performance, operationalized in 22 items representing five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Despite its popularity, SERVQUAL has been critiqued for conceptual and methodological limitations, particularly in capturing the nuances of higher education services. In response, alternative models have been proposed. The SERVPERF model (Cronin Jr & Taylor, 1994) emphasizes performance-only measures, addressing concerns over expectation-based assessments, while the Evaluated Performance (EP) model (Teas, 1993) measures discrepancies between perceived performance and ideal standards. Although these models advance the measurement of service quality, they remain insufficient in addressing the unique characteristics of higher education, where student satisfaction represents the core outcome.

Consequently, researchers have developed higher education-specific scales that extend beyond traditional SERVQUAL dimensions. For example, dimensions such as curriculum, facilities, instructional quality, social activities, counseling services, and assessment methods have been introduced in exploratory studies. In Indonesia, adaptations have included integrating TQM-based dimensions (Ardi et al., 2012; Sakthivel et al., 2005) and faith-based values in Islamic higher education (Asnawi & Setyaningsih, 2020). These developments highlight the necessity of context-sensitive approaches that reflect both global standards and local institutional realities.

At the theoretical level, perspectives on service quality also vary across regions. The European perspective emphasizes three dimensions: technical quality, functional quality, and corporate image (Grönroos, 1984), while the American perspective represented by SERVQUAL focuses on functional quality through its five well-known dimensions. Both approaches have contributed significantly to conceptualizing service quality in higher education, particularly in terms of providing measurable indicators that assist institutions in performance evaluation and benchmarking. For instance, Çerri, (2012) demonstrated that systematic measurement of service quality enables universities to identify strengths and weaknesses, establish improvement priorities, set quality benchmarks, and enhance competitiveness by aligning service performance with student needs.

Against this background, the development of valid and reliable conceptual frameworks for assessing higher education service quality remains an important agenda in global scholarship. To contribute to this discourse, the present study conducts a systematic literature review (SLR) of international publications to examine the conceptual evolution of service quality dimensions in higher education. By mapping these developments across diverse contexts, this study aims to provide a comprehensive foundation for future research and the formulation of more

authentic, contextually relevant measurement models.

Despite substantial progress in the development of service quality models, existing frameworks remain fragmented and often context-specific, making it difficult to establish a comprehensive understanding of higher education service quality at the global level. Most prior studies have either applied generic models such as SERVQUAL, SERVPERF, or EP whose suitability in higher education is debated or developed localized models without sufficient cross-comparison with global literature. This creates a gap in systematically mapping how service quality dimensions in higher education have evolved across different cultural, institutional, and regional contexts.

This study offers novelty by conducting a systematic literature review (SLR) that integrates and compares the conceptual developments of higher education service quality dimensions from international publications. Unlike previous studies that focus on single models or specific national contexts, this research synthesizes global perspectives and identifies the dominant trends, adaptations, and conceptual innovations that have emerged over time.

The contribution of this study is threefold. First, it provides a comprehensive mapping of service quality models in higher education, highlighting their conceptual foundations and practical applications. Second, it identifies opportunities for developing more authentic and contextually relevant dimensions that better reflect the unique characteristics of higher education institutions. Third, the findings serve as a valuable reference for scholars and practitioners by offering a foundation for future research and a benchmark for institutional performance improvement strategies.

Methodology

This study employs a two-step approach commonly adopted in systematic literature reviews (Klotz et al., 2019). The first step involved developing a comprehensive data search strategy. Journal articles published between 2009 and the present were identified from reputable international databases, namely Emerald, Wiley, Springer, Taylor & Francis, and Sage Publishing. The literature search was conducted using a predefined set of keywords (search string), which combined multiple terms to maximize coverage: “((new model) OR (new scale) OR (new dimension) OR (new measure)) AND ((quality of service) OR (service quality) OR (service performance) OR (perceived performance)) AND ((tertiary education) OR (higher education))”. The second step involved filtering the initial search results to ensure relevance. This was carried out by carefully reviewing article titles, abstracts, and keywords to exclude studies that did not directly address the development of conceptual models for higher education service quality. Only peer-reviewed journal articles that introduced or evaluated new conceptual dimensions typically operationalized through acronyms were retained for analysis. The focus of this review is therefore on identifying, synthesizing, and comparing the conceptual developments of service quality dimensions in higher education. Particular attention is given to models that have formulated unique measurement dimensions or factors,

often encapsulated in acronyms, as these reflect efforts to adapt service quality concepts to the distinct characteristics of higher education institutions.

Results and Discussion

From the second stage of the methodology, a total of six journal articles were identified that specifically presented the development of higher education service quality dimensions, as summarized in Table 1. These studies proposed conceptual models with distinct dimensions tailored to the higher education context. Furthermore, the development of service quality dimensions was found to be distributed across six countries Hungary, India, Pakistan, Indonesia, Mexico, and Turkey highlighting the global scope and contextual diversity of this research area, as presented in Table 2.

Table 1. Recapitulation of search and filtering results

Search	Databases	Search results	Relevant results
Journal article	Emerald	46	3
	Springer	37	2
	Francis and Taylor	36	1
	Wiley	13	0
Amount		132	6

To provide a concise overview of the development process for each conceptual dimension, a narrative summary is presented below. The distribution of these developments across country settings, databases, and journals is outlined in Table 2. The original terminology of the dimensions, as reported in the respective studies, is retained to preserve authenticity and minimize potential bias in interpretation.

As previously discussed, the HEdPERF model was developed to capture the determinants of service quality in the higher education sector (Abdullah, 2006). However, Yildiz & Kara, (2009) argued that HEdPERF lacks the specificity required to adequately reflect the characteristics of certain types of institutions, such as the School of Physical Education and Sports Sciences (PESS) in Turkey. To address this limitation, they proposed a new conceptual framework tailored to the unique context of such institutions. Drawing on 30 indicators identified from various sources and analyzed through factor analysis, Yildiz & Kara, (2009) introduced three new dimensions, which they termed PESPERF (Physical Education and Sports Performance): academic aspects, empathy, and access.

To construct a conceptual framework for measuring higher education service quality, Teeroovengadam et al., (2016) developed five core dimensions, collectively termed Higher Education Service Quality (HESQUAL). The dimensions were derived using a mixed-methods approach grounded in the pragmatic research philosophy of Morgan, (2007). In the first stage, attributes and indicators were identified through an extensive literature review combined with focus group discussions (FGDs) involving students and academics. In the second stage, a

quantitative approach was employed, beginning with pilot testing of the instrument on a small sample, followed by validation on a larger sample through factor analysis. This process resulted in the identification of five key dimensions: administrative quality, physical environment quality, core educational quality, support facilities quality, and transformative quality.

To formulate dimensions of higher education service quality within the Indian context, Senthilkumar & Arulraj, (2011) developed a model known as Service Quality Measurement in Higher Education in India (SQM-HEI). This framework was constructed through a comprehensive evaluation of prior models such as SERVQUAL, HEdPERF, and EduQUAL, with the aim of more accurately capturing higher education service quality from the student perspective. Using exploratory and confirmatory factor analysis on 30 instrument items, the study identified three primary dimensions: instructional methods, changes in the study environment, and enforcement of discipline as key determinants of service quality. Additionally, the model incorporated a sub-dimension student placement which functions as a mediating factor influencing the overall quality of higher education services in India.

The development of this measurement instrument is grounded in the distinction between two dimensions of service quality: technical quality and functional quality. Technical quality refers to the competencies delivered through learning or training activities and the efficiency with which these competencies are achieved, whereas functional quality concerns the manner in which competencies are developed, encompassing the learning environment, teaching quality, pedagogical methods, and the overall student learning experience (Grönroos, 1984). Building on this perspective, Kincsesné Vajda et al., (2015) designed an instrument to measure service quality in higher education, focusing specifically on functional service quality at the course level, such as seminars, training sessions, and lectures. The instrument was developed by adapting SERVQUAL items and validating them through factor analysis using data collected from 181 students in Hungary. The analysis yielded five functional service quality dimensions: cooperation, reliability of teaching methods, assurance and punctuality, empathy, and tangibles. This framework was subsequently termed COURSEQUAL.

Rodríguez-González & Segarra, (2016) developed a higher education service quality measurement instrument through a multi-stage process. The initial stage involved exploring service quality aspects derived from the EduQUAL, COURSEQUAL, and HEdPERF frameworks, which resulted in the identification of 77 potential instrument items. These items were then subjected to pilot testing in order to gather feedback and refine the instrument. Subsequent validity and reliability analyses, followed by exploratory factor analysis on data from 50 respondents, reduced the instrument to 21 items. A confirmatory factor analysis conducted on a larger sample of 204 students in Mexico further refined the scale, resulting in 18 valid items. From this systematic process, four key dimensions of higher education service quality were identified: academic aspects, non-academic aspects, reputation, and program issues.

This study further supports the development of a higher education service

quality measurement instrument in Pakistan, where an initial set of 46 items was identified through a multi-stage process. The first stage involved focus group discussions (FGDs) with four key higher education stakeholders: students, parents, faculty, and administrative staff. This was followed by expert validation, pilot testing, and iterative modifications to refine the instrument. Subsequently, both exploratory and confirmatory factor analyses were conducted, resulting in 37 valid items. These items were organized into six dimensions, collectively referred to as HiEduQual (Higher Education Service Quality): teacher quality, administrative services, knowledge services, activities, continuous improvement, and leadership quality (Latif et al., 2019).

Table 2. Conceptualization of dimensions of higher education service quality measurement

Literature/a author	Country	Conceptual model	Dimensions of service quality	Database s	Journal
Yildiz and Kara, (2009)	Turkey	The PESPERF	(a) <i>academic aspects</i> , (b) <i>empathy</i> , and (c) <i>access</i> .	Emerald	Quality Assurance in Education
Senthilkumar and Arulraj, (2011)	India	SQM-HEI	(a) <i>teaching methodology</i> , (b) <i>environmental change in study factor</i> , (c) <i>disciplinary action</i>	Emerald	Journal of Modelling in Management
Kincsesné Vajda <i>et al.</i> , (2015)	Hungary	COURSE QUAL	(a) <i>cooperation</i> , (b) <i>reliability of teaching method</i> , (c) <i>assurance and punctuality</i> , (d) <i>empathy</i> , and (e) <i>tangibles</i>	Springer	International Review on Public and Nonprofit Marketing
Teeroovengadum <i>et al.</i> , (2016)	India	HESQUAL	(a) <i>administrative quality</i> , (b) <i>physical environment quality</i> , (c) <i>core educational quality</i> , (d) <i>support facilities quality</i> , and (e) <i>transformative quality</i> .	Emerald	Quality Assurance in Education
Rodríguez-González and Segarra, (2016)	Mexico	TEdPERF	(a) <i>academic aspects</i> , (b) <i>non academic aspects</i> , (c) <i>reputations</i> , (d)	Springer	International Review on Public and Nonprofit

(Latif et al., Pakistan 2019)	HiEduQual	(a) <i>teacher quality</i> , (b) <i>administrative services</i> , (c) <i>knowledge services</i> , (d) <i>activities</i> , (e) <i>continuous improvement</i> , (f) <i>leadership quality</i> .	Taylor and Francis	Total Quality Management and Business Excellence
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Conclusion

Discussions on service quality in higher education have garnered increasing attention, as institutions face growing competition and operate under constrained resources. The emphasis on service quality highlights the necessity of continuous monitoring and a strong commitment to organizational improvement. Selecting a reliable instrument to measure service quality is therefore critical. While the SERVQUAL model, comprising the five dimensions proposed by Parasuraman et al., has been widely applied, it has undergone substantial development through the introduction of alternative models that are adapted to the specific context of the institution and the needs of different stakeholders. Each measurement approach presents distinct advantages and limitations, and debates regarding the most appropriate instrument remain ongoing. Moreover, the factors included within each dimension of service quality are influenced by the research approach and contextual setting.

The conceptual dimensions of higher education service quality developed across various academic contexts provide valuable guidance for university management in shaping operational practices and strategic priorities. By aligning institutional processes with stakeholder expectations, universities can better respond to the needs of their service users, particularly students as primary beneficiaries. The continued debate over the most effective means of measuring higher education service quality underscores the importance of ongoing conceptual development. Future research has the potential to generate authentic, contextually relevant dimensions that reflect the unique characteristics of higher education while incorporating broader perspectives from diverse service users.

Effective service quality is closely linked to high levels of student satisfaction, which remains the ultimate indicator of institutional performance. Selecting an appropriate framework to assess service quality requires careful consideration of multiple factors, including the target population, the conceptualization of service quality, influencing factors, measurement and feedback mechanisms, implementation systems, and the efficiency of service delivery. Regardless of the specific model employed, research on service quality in higher education offers

significant benefits for institutions, stakeholders, and the advancement of scholarly knowledge. From the synthesis of existing studies, five key elements emerge as critical to improving service quality: clarity of target market and consumer orientation, a well-defined understanding of service quality and its influencing factors, effective measurement and feedback systems, efficient implementation mechanisms, and the overall effectiveness of the customer service system.

Despite significant advances in higher education service quality research, existing frameworks remain fragmented and largely context-specific, limiting a comprehensive global understanding. Prior studies have primarily applied generic models such as SERVQUAL, SERVPERF, or EP, whose applicability to higher education is debated, or have developed localized models without sufficient integration of international perspectives.

This study addresses this gap by conducting a systematic literature review (SLR) of international publications, synthesizing conceptual developments of service quality dimensions across diverse cultural, institutional, and regional contexts. The review identifies dominant trends, adaptations, and innovations, providing a global perspective on how higher education service quality is conceptualized and operationalized.

The study contributes in three key ways. First, it offers a comprehensive mapping of service quality models, clarifying their conceptual foundations and practical applications. Second, it highlights opportunities for developing contextually relevant dimensions that reflect the unique characteristics of higher education institutions. Third, the findings serve as a benchmark for institutional performance improvement and as a foundation for future research, guiding scholars and practitioners in the measurement and enhancement of service quality in higher education.

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