

Mapping the Intellectual Structure of Service Quality Research in Higher Education: A Bibliometric Analysis (2001–2024)

T. THIRAVIYAM, DR. M.R. KARTHIKEYAN

Abstract: *This study conducts a bibliometric analysis of service quality research in higher education published between 2001 and 2024, aiming to map the field's intellectual structure, thematic evolution, and scholarly impact. Using a data set of 276 peer-reviewed journal articles retrieved from the Scopus database, the study applies performance analysis and science-mapping techniques through VOS viewer. The findings reveal a steady growth in publications, with a notable acceleration after 2018, reflecting the increasing strategic importance of service quality in higher education institutions. The intellectual landscape is shaped by a limited number of influential authors, journals, and institutions, particularly those associated with higher-education-specific measurement frameworks such as HEDPERF. Co-citation analysis highlights a clear progression from measurement-oriented studies toward outcome-focused and relational perspectives linking service quality with learner satisfaction and relational outcomes, and institutional performance. Keyword co-occurrence analysis identifies three dominant thematic clusters: student-centered service quality and satisfaction, institutional service quality measurement and outcomes, and relational and behavioural implications of service quality. Overall, the study consolidates fragmented research and provides insights relevant to scholars, policymakers, and practitioners in higher education.*

Keywords: Service quality; Higher education; Bibliometric analysis; Science mapping; Student; VOS viewer.

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Introduction

During the last twenty years, higher education institutions (HEIs) have experienced profound changes as a result of globalization, the expansion of mass higher education, digitalization, and intensified competition for students, financial resources, and prestige. Higher education is essential in influencing students' futures by equipping them with the information and skills required for professional advancement (Zhang et al., 2020). In this changing environment, students are increasingly regarded not merely as learners but as essential stakeholders whose expectations, attitudes, and experiences influence institutional success and sustainability. Consequently, service quality has become a pivotal notion in higher education research, indicating the degree to which universities and colleges fulfil or surpass stakeholder expectations in academic, administrative, and support services. Effective governance in higher education institutions requires the adoption of robust measures to safeguard the quality of academic programs, research outputs, and ancillary services. These processes can be achieved by systematic reviews of systems, assessments of service quality, and accreditations, while also taking sustainability into account (Sahin et al., 2024). Service quality must be assessed correctly and reliably to facilitate judgment and enhancement (Abbas, 2020).

Research on quality of services within HEIs reflects substantial methodological variation, with a clear dominance of quantitative research methods. The predominant study design entails cross-sectional surveys employing structured questionnaires derived from SERVQUAL or its adaptations (Amiriet al., 2024). The swift expansion and diversification of this literature have necessitated the application of bibliometric methods to delineate publication patterns, prominent authors, key journals, leading nations, and prevailing research fronts in service quality studies in higher education. Bartolo et al. (2024) examined 45 curated peer-reviewed publications to comprehend the practical implementation of service quality scales. Júnior et al. (2024) performed an integrative analysis examining 32 selected studies from 2019–2023 regarding the application of SERVQUAL during the pandemic.

Notwithstanding the extensive research and development in this field, a thorough synthesis of its philosophical framework is still lacking. Conventional narrative and systematic literature evaluations, albeit useful, frequently fail to identify large-scale patterns, topic development, and knowledge networks across a vast array of articles.

This study fills this void by systematically analyzing the development, theoretical underpinnings, and scholarly connections within service quality research in higher education over nearly twenty-five years. Drawing on publications indexed in prominent academic

data bases from 2001 to 2024, the study utilizes bibliometric and science-mapping methods—including performance analysis, co-citation analysis, and keyword co-occurrence—to identify the primary thematic clusters, theoretical foundations, and emerging research frontiers that define this field.

To achieve this, the primary research questions guiding this bibliometric analysis are

RQ1: Which authors, institutions, and countries have made the most substantial contributions to this field, and which journals serve as the main outlets for publishing this research?

RQ2: Which publications have received the highest number of citations, and how have these works contributed to the theoretical and empirical advancement of eco-friendly consumption research?

RQ3: What patterns define the intellectual structure of service quality research in higher education during the period from 2001 to 2024?

RQ4: What are the dominant research themes and conceptual clusters in service quality research in higher education, as identified through keyword co-occurrence analysis?

The results are anticipated to be beneficial for academics wanting to contextualize their research within the discipline, as well as for policymakers and practitioners striving to formulate assurance techniques that improve service quality and student experiences in higher education.

Methodology

This study draws upon bibliographic records extracted from the Scopus database, a widely recognized multidisciplinary source of peer-reviewed scholarly literature in the social sciences (Norris & Oppenheim, 2007). Publications spanning the period from 2001 to 2024 were systematically retrieved. To ensure transparency and methodological rigour, the document selection process was structured in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, encompassing the stages of identification, screening, eligibility assessment, and final inclusion (Liberatietal.,2009).The search strategy focused on journal articles indexed within the “title, abstract, and keywords” fields, while excluding conference proceedings, books, and book chapters to maintain consistency in publication type. The preliminary search yielded a total of 1,032 items.

During the screening stage, only journal articles classified under the subject areas of business, management, and accounting were retained for further analysis. Duplicate records were systematically removed, and studies lacking direct relevance to quality of services within HEIs were excluded. Following this refinement process, the final data set comprised 276 peer-reviewed articles, collectively contributing 1,283 unique author-supplied keywords.

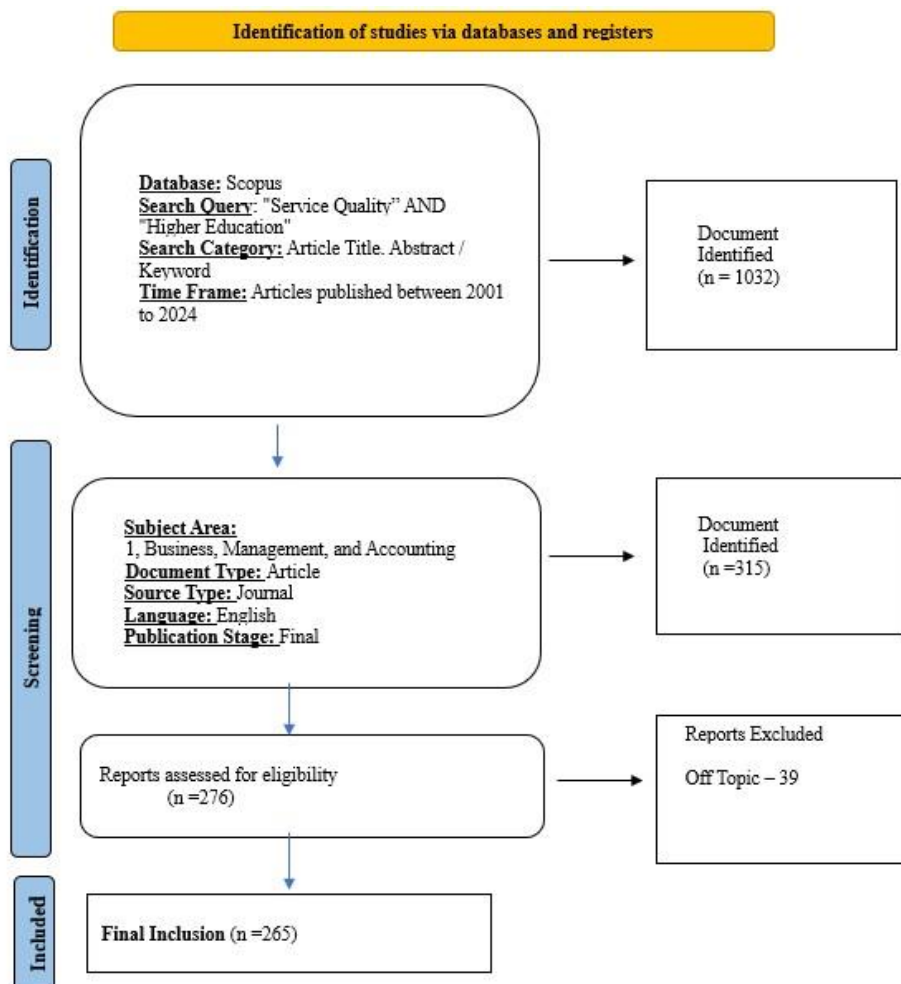


Figure1: PRISMA Flow Diagram
Source: author's elaboration

Bibliometric and science- mapping analyses were conducted using VOS viewer software, which facilitates visualization and network-based exploration of large bibliographic datasets. Owing to its intuitive interface and minimal technical requirements, the software enables effective configuration of bibliometric parameters without the need for programming expertise (Xu et al., 2021). In this study, bibliometric inquiry is operationalized through two complementary analytical dimensions: performance analysis, which evaluates research productivity and impact, and science-mapping techniques that examine the structural and relational characteristics of the literature (Aria & Cuccurullo, 2017; Donthu et al., 2021). Bibliometric analysis typically combines performance evaluation and scientific mapping to offer an in-depth understanding of a research field. Performance analysis was applied to quantify scholarly output and influence using indicators such as publication counts, citation frequencies, h-index values, and the relative prominence of contributing authors, journals, institutions, and countries (Donthu et al., 2021; Caputo et al., 2021).

In contrast, scientific mapping techniques were employed to visualize and interpret the intellectual structure of the field by examining interconnections among bibliographic entities, including publications, authors, and keywords (Donthu et al., 2021; Baker et al., 2021). Co-citation analysis reveals the intellectual structure of a research field, whereas keyword co-occurrence analysis identifies prevailing themes and conceptual clusters. The performance analysis presented in this study encompasses the entire count of publications, citations, and citations per publication. We present productivity and impact through the use of an h-index and a Q ranking. Apart from the descriptive analyses, the scientific cartography also encompasses co-citation and co-occurrence analyses.

Findings

3.1 Performance Analysis

Through the examination of publication and citation distributions, performance analysis facilitates a comprehensive understanding of how scholarly contributions evolve across different research actors and publication outlets within a given field.

3.1.1 Publication trend

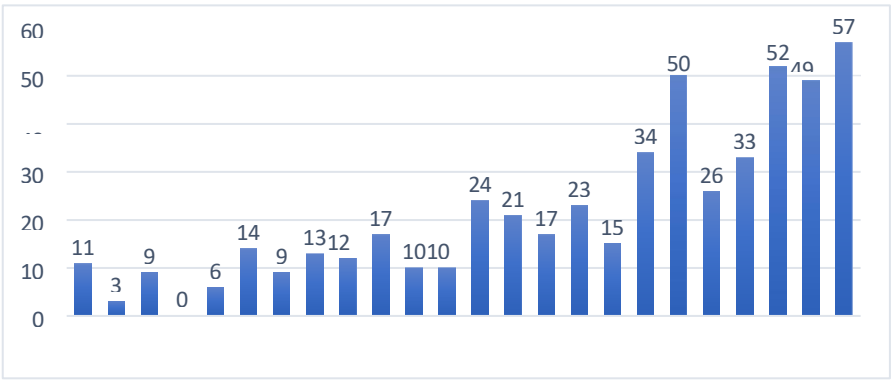


Figure 2: Publication trend

As depicted in Figure 2, scholarly output related to quality of services within HEIs demonstrates a clear upward trajectory between 2001 and 2024. The initial phase, spanning From 2001 to 2005, is characterized by a relatively small number of publications, reflecting the exploratory nature of early research in this domain. This period is followed by a phase of gradual expansion between 2006 and 2012, signaling the formative stage of systematic inquiry into service quality within higher education contexts. From 2013 onwards, publication activity shows a sustained rise, with a pronounced acceleration evident after 2018. This pattern reflects the maturation of the research field and highlights increasing scholarly attention toward student satisfaction, institutional effectiveness, and the strategic role of quality of services within HEIs. The heightened publication output observed in the most recent years, particularly in 2024, further emphasizes the growing recognition of service quality as a critical strategic concern in both higher education research and institutional practice.

3.1.2 Most influential authors, countries, and institutions

Table 1 presents the major contributors to service quality research in higher education, as measured by total publications (TP) and total citations (TC). Among authors, Abdullah, F. stands out as the most prominent academic, achieving the highest citation impact despite a restricted number of publications, signifying substantial foundational contributions. Other notable authors, such as Sultan, P., Wong, H.Y., and Clemes, M.D., have elevated citation counts, indicating their substantial intellectual impact in the discipline. At the national level, Malaysia, India, and the United States emerge as significant contributors, indicating robust research output and increasing academic focus on service quality across various higher education settings. Universiti Teknologi Mara (Malaysia) and various universities from the United Kingdom, Australia, and India are heavily represented, signifying the existence of active research hubs. The findings suggest that scholarly contributions to service quality research in higher education are concentrated among a relatively small group of influential authors and institutions. At the same time, there is clear evidence of expanding research participation from emerging economies, indicating a broadening geographical distribution of academic engagement.

Table1: Major authors, countries, and institutions

TC	Author	TP	TC	Country	TP	TC	Institution	TP
543	Abdullah, F.	2	1155	Malaysia	40	622	Universiti Teknologi Mara, Malaysia	4
372	Sultan, P	3	1039	United Kingdom	16	258	Alliance Manchester business school, United Kingdom	3
372	Wong, H.Y.	3	931	United States	28	236	Deak in business school, Australia	2
267	Daniel Clemes, M.D	3	909	India	34	227	CQ university Australia	2
253	Gruber, T	2	787	Australia	18	225	University of Birmingham, United Kingdom	1
253	Voss, R.	2	352	United Arab Emirates	9	225	Institute für bildungs management, Germany	1

225	Szmigin, I.	1	345	Greece	7	218	University of Exeter business school, United Kingdom	1
218	Forbes, J.	1	342	Pakistan	11	215	Central university of Karnataka, India	2
218	Ng, I.C. L.	1	327	Spain	11	215	University of Hyderabad, India	2
215	Annamdevula, S	2	304	New zealand	5	203	Lincoln university, New Zealand	2

3.1.3 Most influential journals

Table 2 presents the leading journals contributing to service quality research in higher education, assessed in terms of publication output and citation impact. The Journal of Marketing for Higher Education emerges as the most influential outlet, demonstrating the highest citation count a long side sustained publication activity across the study period. Several Q1-ranked journals, including Total Quality Management & Business Excellence, International Journal of Quality and Service Sciences, and The TQM Journal, also make substantial contributions, reflecting the interdisciplinary positioning of service quality research at the intersection of education management, marketing, and service science.

Additionally, journals such as the International Journal of Educational Management exhibit consistent publication trends over time, indicating the growing integration of service quality perspectives within the higher education management literature. Overall, the distribution of publications across Q1 and Q2 journals highlights the methodological robustness and scholarly maturity of the field, while the increasing number of recent contributions signals continued academic engagement.

Table 2: Most cited journals

Journal	H index	Quartile	TC	TP	2001 - 2005	2006 - 2010	2011 - 2015	2016 - 2020	2021 - 2024
Journal of Marketing for Higher Education	48	Q2	1033	19	1	7	3	5	3
Total Quality Management	100	Q1	910	16		3	5	8	

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And Business Excellence									
International Journal of Educational Management	69	Q2	632	15	2	1	4	4	4
International Journal of Quality and Service Sciences	43	Q1	437	11		1	4	3	3
TQM Journal	83	Q1	373	10		1	5	2	2
Journal of Modelling in Management	43	Q2	322	3			1	2	
Asia Pacific Journal of Marketing and Logistics	72	Q1	301	5		1	4		
Managing Service Quality	104	Q1	244	4	1	2	1		
Services Marketing Quarterly	37	Q3	140	7		2	2	2	1
International Journal of Quality and Reliability Management	102	Q2	102	3				3	

3.1.4 Most influential articles

Table 3 highlights the most influential publications shaping the discourse on quality of services within HEIs, as indicated by citation counts. The intellectual foundations of the field are strongly anchored in Abdullah’s seminal contributions (2006a, 2006b), which introduced and validated the HEdPERF framework as a context-specific alternative to generic service quality models. These studies continue to exert substantial influence, underscoring the importance of tailored measurement instruments within higher education research.

Subsequent highly cited works extend this foundation by emphasizing student expectations, satisfaction, and perceived service quality, sign a ling a shift toward student-centered evaluative approaches. More recent influential studies integrate service quality with constructs such as institutional image, trust, and behavioural intentions, reflecting the evolution of the field toward relational and strategic perspectives. Collectively, these highly cited articles illustrate a clear progression from measurement development to comprehensive models linking service equality with student experiences and institutional outcomes.

Table3: Most influential articles

Rank	Author(s)	Title	Cites
1	Abdulla h, (2006b)	“The development of HEDPERF: A new measuring instrument of service quality for the higher education sector”	292
2	Abdullah, (2006a)	“Measuring service quality in higher education: HEDPERF versus SERVPERF”	251
3	Vossetal.,(2007)	“Service quality in higher education: The role of student expectations”	225
4	Ng & Forbes, (2009)	“Education as service: The understanding of University experience through the service logic”	218
5	Clemeset al., (2008)	“University student satisfaction: An empirical analysis”	180
6	Wilkins &Steph ens Balakrishnan, (2013)	“Assessing student satisfaction in transnational higher education”	176
7	Duque, (2014)	“A frame work for analyzing higher education performance: students' satisfaction, perceived Learning outcomes, and dropout intentions”	168
8	Quinnet al., (2009)	“Service quality in higher education”	153
9	Quintalet al. (2012)	“Service quality in a higher education context: An Integrated model”	145
10	Sultan & Wong, (2019)	“How service quality affects university brand performance, university brand image and behavioural intention: the mediating effects of satisfaction and trust and moderating roles of gender and study mode”	136

Note: This table ranks the publications incited at least 100 times in Scopus on the search date

3.2 Scientific Mapping

Scientific mapping represents a core methodological approach within bibliometric analysis, enabling the visualization and interpretation of conceptual, social, and intellectual structures within a research field. By analyzing relationships among bibliographic elements—such as authors, keywords, institutions, and publications—scientific mapping facilitates a deeper understanding of how knowledge is organized and how research domains evolve over time.

In this study, scientific mapping techniques are employed to address the third and fourth research questions by elucidating the intellectual structure and dominant thematic patterns within service quality research in higher education.

3.2.1 Knowledge foundations

Co-citation analysis explores the frequency with which scholarly documents, authors, or journals are cited together, thereby offering insights into the underlying intellectual architecture of a research domain. Publications that are repeatedly co-cited are generally considered foundational, as they collectively shape the theoretical and methodological orientation of the field. This analytical approach is particularly useful for identifying influential theories, dominant models, and key contributors that have guided the evolution of service quality research in higher education.

The co-citation network derived from this study reveals a bifurcated yet interconnected intellectual structure within service quality research in higher education. Two prominent clusters emerge: a measurement-oriented red cluster and an outcome-focused green cluster. Although conceptually distinct, the strong linkages between these clusters reflect a gradual scholarly progression from the development of measurement instruments toward the examination of relational and behavioural outcomes associated with service quality.

The red cluster is primarily anchored in seminal works concerned with the conceptualization, development, and validation of service quality measurement tools tailored to the higher education context. Central to this cluster are the influential contributions of Abdullah (2005, 2006a, 2006b), which collectively establish HEDPERF as a discipline-specific alternative to more generic service quality frameworks such as SERVQUAL and SERVPERF. Abdullah (2005) critically evaluates the limitations of SERVQUAL and underscores the necessity for a higher-education-specific measurement approach. This proposition is empirically reinforced in Abdullah (2006a) through a comparative assessment of HEDPERF and SERVPERF, demonstrating the superior contextual relevance of the former. Subsequently, Abdullah (2006b) consolidates this measurement framework by formally conceptualizing HEDPERF as a multidimensional scale designed explicitly for higher education institutions.

Complementing these foundational studies, Brochado (2009) contributes to the refinement of the measurement discourse by systematically comparing alternative service quality instruments within higher education settings. This work enhances the methodological strength of the red cluster by validating HEDPERF alongside SERVQUAL and SERVPERF, thereby reinforcing

its applicability for future empirical research. Further extending the scope of this cluster, Angell et al. (2008) situate service quality measurement within postgraduate education, emphasizing the role of student expectations and perceived service encounters. Their findings broaden the applicability of measurement frameworks across different levels of higher education. Collectively, the red cluster represents the methodological core of service quality research in higher education, with a strong emphasis on scale development, instrument comparison, and measurement validity.

In contrast, the green cluster reflects a conceptual shift from measurement development toward outcome-oriented investigations. This cluster focuses on how perceptions of service quality influence student satisfaction, institutional image, and behavioural intentions. Athiyaman (1997) constitutes a pivotal early contribution within this cluster, establishing one of the first empirical links between perceived service quality and student satisfaction in higher education. This study works as a theoretical bridge, connecting measurement constructs to outcome variables.

Building on this foundation, Alves and Raposo (2010) expand the analytical scope by introducing institutional image as a mediating variable influencing student behaviour. Their work integrates service quality research with branding and reputation management perspectives, highlighting the role of service quality in fostering student loyalty and advocacy. More recent contributions, such as Ali et al. (2016), further advance this outcome-driven perspective by empirically examining the interrelationships among service quality, student satisfaction, institutional image, and loyalty. These studies represent a more mature phase of the literature, wherein service quality is conceptualized as a central antecedent within comprehensive relational models aimed at explaining student retention and long-term institutional success. Overall, the green cluster signifies the application and extension stage of service quality research in higher education, where established measurement instruments are leveraged to investigate psychological, attitudinal, and behavioural outcomes.

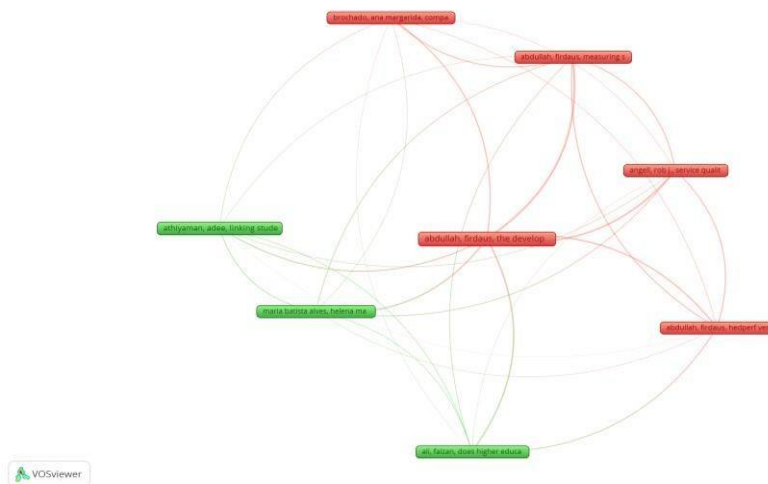


Figure 3: Co-citation analysis

3.2.2 Author key word Co-Occurrence analysis

Keyword co-occurrence analysis explores the frequency with which keywords appear together within scholarly publications, enabling the identification of dominant research themes and conceptual linkages. In this study, keyword co-occurrence mapping was conducted using VOS viewer to uncover prevailing the matic structures within service quality research in higher education from 2001 to 2024. The analysis reveals three principal thematic clusters, each representing a distinct yet inter connected research trajectory. The first cluster reflects a student-centric perspective, emphasizing student satisfaction, service experiences, and contextual challenges within higher education systems, particularly in emerging economies. Research within this cluster primarily focuses one valuating service quality through students’ perceptions of academic and administrative services. The second cluster centers on institutional service quality measurement and student outcomes, highlighting the widespread application of established frameworks such as SERVQUAL. This cluster underscores the methodological emphasis on assessing organizational service delivery systems and their influence on student satisfaction and loyalty. The third cluster captures the relational and behavioural outcomes of service quality, with a growing focus on trust, perceived quality, and long-term loyalty. Studies within this cluster conceptualize service quality as a relational construct that shapes enduring relationships between students and institutions, aligning with relationship marketing and experiential perspectives.

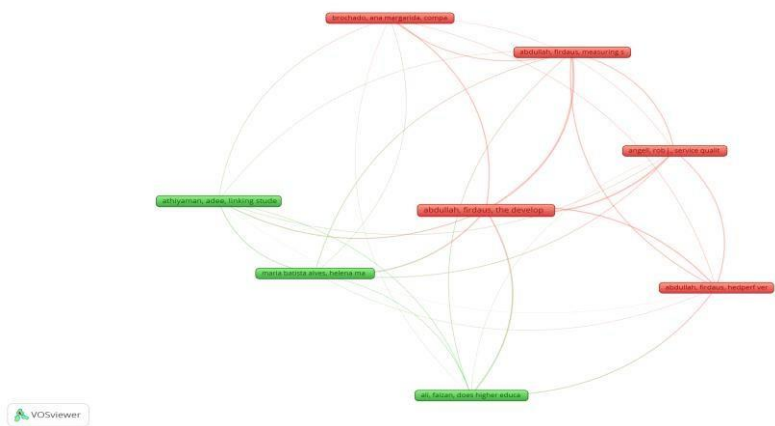


Figure 4: Keyword co-occurrence analysis

Table4: Author Keywords Clustering

Cluster No	Cluster Name	KeyWords
1	Student-Centric Service Quality and Satisfaction	Customer satisfaction, Customer services quality, Higher education, India, Students
2	Institutional Service Quality Measurement And Student Outcomes	Higher education institutions, Service quality, SERVQUAL, Student loyalty, Student satisfaction

3	Relational and Behavioral Outcomes of Service Quality	Loyalty, Perceived service quality, Satisfaction, Trust
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Together, the co-occurrence network demonstrates that’ service quality functions as the primary linking concept, connecting student perceptions, institutional practices, and relational outcomes. Although initial research concentrated on satisfaction-based evaluations, recent studies indicate shift towards loyalty, trust, and sustained engagement. The clustering pattern underscores an emerging intellectual framework, transitioning from a focus on service delivery assessment to relationship-centered and strategic viewpoints within higher education service quality research.

Discussion

This bibliometric analysis provides a comprehensive over view of the evolution and intellectual foundations of service quality research in higher education over the period 2001–2024. The findings reveal a steady expansion and diversification of the literature, reflecting the growing strategic relevance of quality of services within HEIs. The pronounced increase in publication activity after 2018 indicates both the maturation of the field and heightened scholarly interest in student-centered service delivery, institutional competitiveness, and experience management. The performance analysis demonstrates that a relatively small group of influential authors, journals, and institutions has shaped the development of this research domain. Foundational contributions, particularly those introducing context-specific measurement frameworks such as HEdPERF, continue to exert substantial influence. At the same time, the emergence of outcome-oriented and relational studies highlights a shift toward understanding how service quality contributes to student satisfaction, loyalty, and institutional performance.

Scientific mapping further illustrates this intellectual progression, revealing a transition from measurement-centric research to integrative models that link service quality with behavioural and relational outcomes. The thematic clusters identified through keyword analysis reinforce this evolution, indicating a movement from service assessment toward strategic relationship-building within higher education contexts.

Conclusion

This study delineates the thematic evolution and conceptual structure of service quality research in higher education through bibliometric and science-mapping techniques. By synthesizing publication trends, influential contributors, key journals, and conceptual networks, the analysis highlights a clear progression from early measurement-focused studies to integrative frameworks connecting service quality with learner satisfaction and relational outcomes.

The findings contribute to the literature by consolidating fragmented research, identifying seminal contributions, and revealing emerging thematic priorities within the field. From a

practical perspective, the study underscores the importance of service quality as a strategic driver of student experience and long-term institutional sustainability. Despite certain limitations, this analysis provides a robust foundation for future research, particularly in areas related to digital service quality, cross-cultural contexts, and evolving student expectations.

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Mapping the Intellectual Structure of Service Quality Research in Higher Education: A
Bibliometric Analysis (2001–2024)

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