



Examining Service Quality in Ghanaian Higher Education: A Comparative Analysis of Private and Public Universities

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ABSTRACT

Little is known about how students perceive the quality of service provided by Ghanaian tertiary institutions and how this perception influences their enrolment choices. Using the Higher Education Quality (HiEdQUAL) model for service quality measurement, this study examined service quality across five key dimensions; teaching and course content, administrative services, academic facilities, campus infrastructure, and support services in Ghanaian private and public universities. A structured questionnaire based on HiEdQUAL model consisting of 27 items with five dimensions, measured on a five-point Likert-Scale was used to gather data. Out of the initial 2,266 sampled respondents surveyed from private and public universities, a total of 1,758 correctly completed questionnaires were returned. This gave a high response rate of 76.43%. The paired t-test results that examined the equality of means between students' perceptions of service quality at private and public universities across five dimensions, helped to determine the presence of statistically significant differences in some areas. The results suggested that public universities may be making better use of their resources or benefitting from their large numbers of enrollment and state financial support. Given that the quality of service provided by both private and public universities in Ghana falls short of students' expectations, the paper provides administrators with practical insights to improve service quality in Ghanaian universities and suggests the need for continuous quality improvement in institutions of higher learning in Ghana.

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INTRODUCTION

The importance of service quality in Higher Education Institutes (HEIs) has received increasing attention from both academics and practitioners in recent years. HEIs are an important cornerstone for national development and shape the intellectual capital and workforce of a nation.¹ For this reason, the quality of

¹ Anastasia Papanthymou and Maria Darra, "Quality Management in Higher Education: Review and Perspectives," *Higher Education Studies* 7, no. 3 (August 13, 2017): 132, <https://doi.org/10.5539/hes.v7n3p132>.

services provided by HEIs plays an important role in ensuring the efficiency, effectiveness and competitiveness of the educational environment.²

The quest for excellence in service delivery has emerged as a central theme in the changing educational landscape of higher education in Ghana. With increasing emphasis on quality assurance and student satisfaction, there is an urgent need to evaluate and enhance service quality in these institutions. As Ghana seeks to achieve its development goals and compete on the global stage, the role of universities in fostering academic excellence, innovation and socio-economic development cannot be overstated. The Ghanaian university education industry has witnessed significant growth and change in recent years, characterized by expanding enrolments, diversification of curricula and the adoption of new technologies.³ This growth is attributed to the burgeoning number of applicants from within Ghana and other countries across Africa seeking quality higher education opportunities.⁴

According to available data from the Ghana Tertiary Education Commission, as of January 2024, there are 16 public universities and over 106 private universities in Ghana.⁵ Based on data provided by the National Council for Tertiary Education, the surge in demand for higher education resulted in only 55% of eligible applicants being accepted into Ghanaian universities.⁶ Consequently, 45% of qualified applicants were left without admission, leading to a state of uncertainty for the unadmitted and potential unemployment due to the lack of skills and qualifications required by the job market. The surge in demand and over-subscription among applicants has led to the emergence of private universities to accommodate the increasing student population.⁷ The beginning and progressive increase of private institutions of higher education has supported the efforts of the government to meet the demand for access to higher education in Ghana and has led to competition among institutions of higher learning. The expansion of universities in recent times has given applicants options in private or public institutions. As a result, these institutions have to compete for students (customers). The competition to attract and increase student intake in both private and public institutions has seen many of these HEIs shifting from reactive to proactive strategies, as such, transforming their engagement from a peripheral, sporadic, and ad hoc activity to a more centrally governed, meticulously organised, and intentional component of institutional action.

A review of promotional literature and websites of these institutions shows a plethora of strategies that focus on improving the curriculum and the teaching/learning process by including regional and international best practices and resources. Other strategies of attraction include regional centers as a means to improve scholarship, support funds for cutting-edge research, and postgraduate studies, flexible teaching and program structures, physical infrastructure development, state-of-the-art libraries and excellent faculty members.⁸ These websites are awash with paid media links, strategic interlinking program pages and content, and valuable informative content.⁹ Collectively, the goal of private and public universities is to convey institutional values and cultures in ways that make them competitive to attract prospective students. These overall strategies have resulted in what is termed massification of higher education – that is the availability of higher education to everyone resulting in overwhelming numbers of students entering universities and a proliferation of higher education institutions to cater for these numbers.¹⁰ In addition to this progress, the sector also faces daunting challenges of evolving priorities, industry constraints and student expectations. In this dynamic environment, the concept of service quality

² Ivana Jošanov-Vrgović et al., “Analysis of Quality of Services in Higher Education Institutions,” 2020, 349–65, <https://doi.org/10.4018/978-1-7998-1196-1.ch020>.

³ Francis Atuahene and Anthony Owusu-Ansah, “A Descriptive Assessment of Higher Education Access, Participation, Equity, and Disparity in Ghana,” *SAGE Open* 3, no. 3 (July 1, 2013): 215824401349772, <https://doi.org/10.1177/2158244013497725>.

⁴ World Bank, *Education in Ghana: Improving Equity, Efficiency and Accountability of Education Service Delivery* (World Bank Publications - Reports 3012, 2010).

⁵ Ghana Tertiary Education Commission, “Accredited Institutions,” accessed July 29, 2024, <https://gtec.edu.gh/accredited-institutions>.

⁶ National Council for Tertiary Education, *Statistical Report on Tertiary Education for 2017/2018 Academic Year Planning, Research and Policy Development (PRPD) Department*, 2017, [https://gtec.edu.gh/download/file/Final Tertiary Report 2017to2018 \(1\).pdf](https://gtec.edu.gh/download/file/Final%20Tertiary%20Report%202017to2018%20(1).pdf).

⁷ Henry Fram Akplu, “Private Participation in Higher Education in Sub-Saharan Africa: Ghana’s Experience,” *International Higher Education*, no. 86 (May 25, 2016): 20–22, <https://doi.org/10.6017/ihe.2016.86.9369>.

⁸ Harris Andoh and Jamil Salmi, “The Internationalization Agenda of African Universities in the Next Decade,” *International Higher Education*, no. 99 (September 17, 2019): 21–23, <https://doi.org/10.6017/ihe.2019.99.11663>.

⁹ Ashesi University, “Educating Leaders in Africa,” accessed July 29, 2024, <https://www.ashesi.edu.gh/>.

¹⁰ Ceryn Evans et al., “A Liberal Higher Education for All? The Massification of Higher Education and Its Implications for Graduates’ Participation in Civil Society,” *Higher Education* 81, no. 3 (March 13, 2021): 521–35, <https://doi.org/10.1007/s10734-020-00554-x>.

is evident as an important lens through which the overall educational experience can be measured and improved.

Service quality, conceptualized within the context of tertiary institutions, encompasses a multifaceted array of factors. But more often, the quality of higher education is measured merely at the level of the institutions' programs, departments, institutions, and systems rather than from the student's perspective.¹¹ The fashion for measuring quality merely from the institution's perspective is short-sighted. As identified by Ostrom et al., the student is the principal customer of higher education, and so the judgment of quality should be made taking into consideration their opinions.¹² Also, in the face of the rising competition between private and public tertiary institutions, higher education institutions (HEI) are adopting innovative marketing strategies including advertising and branding to attract prospective students.¹³ These marketing activities in support of institutions' recruitment and retention efforts have the potential to raise the level of expectations of potential students. Therefore, students expect higher educational institutions to be student-customer-oriented. That is "recognizing that students are also customers and the need to provide an excellent customer experience across the student lifecycle."¹⁴ This leads to the notion that if students are customers, their level of satisfaction needs to be gauged and reviewed constantly for strategic planning.

Against this background, this study seeks to examine and analyze the dimensions of service quality in Ghanaian higher education institutions, with a particular focus on understanding students' perceptions, expectations and levels of satisfaction. While service quality has been extensively researched in sectors including banking, healthcare and hospitality, it has received limited attention within Ghanaian higher education.¹⁵ Consequently, this creates a notable gap in the literature on the determinants, drivers and implications of service quality in Ghanaian higher education institutions which requires empirical and scholarly investigation. Although few studies have assessed the perception of students on service quality in universities, none have attempted a comparative study between private and public institutions of higher learning.¹⁶ This study, therefore, fills this gap in the literature and assesses the general quality of service in HEIs in Ghana and compares service quality between selected private and public universities. Using a quantitative research design, this study aims to achieve the following objectives:

1. To compare the general level of service quality delivery of public and private universities in Ghana from their students' perspective. Thus, to assess students' perceptions and expectations regarding the quality of services provided by their respective institutions.
2. To ascertain the statistically significant differences between private and public universities in the services they provide from the perspective of students (if any).

¹¹ Asante Kofi Annor, "An Assessment of the Service Quality Delivery in Tertiary Education – A Case Study of Pentecost University College, Ghana" (KNUST, Institute of Distance Learning, 2012), <https://ir.knust.edu.gh/handle/123456789/4883>; Alex Usher, "Measuring Quality as If Quality Mattered," Higher Education Strategy Association, November 20, 2021, <https://higherstrategy.com/measuring-quality-as-if-quality-mattered/>.

¹² Amy L Ostrom, Mary Jo Bitner, and Kevin A Burkhard, "Leveraging Service Blueprinting to Rethink Higher Education: When Students Become 'Valued Customers,' Everybody Wins.," *Center for American Progress*, 2011, <https://api.semanticscholar.org/CorpusID:168875637>.

¹³ Chris Chapleo and Peter Reader, "Higher Education Brands and Data," in *Using Data to Improve Higher Education* (Rotterdam: SensePublishers, 2014), 81–91, https://doi.org/10.1007/978-94-6209-794-0_6.

¹⁴ Hanover Research, *Trends in Higher Education Marketing, Recruitment, and Technology*, 2014, <https://www.hanoverresearch.com/media/Trends-in-Higher-Education-Marketing-Recruitment-and-Technology-2.pdf>.

¹⁵ Peter Anabila et al., "Service Quality and Customer Loyalty in Ghana's Hotel Industry: The Mediation Effects of Satisfaction and Delight," *Journal of Quality Assurance in Hospitality & Tourism* 23, no. 3 (May 4, 2022): 748–70, <https://doi.org/10.1080/1528008X.2021.1913691>; Emmanuel Akanpaadgi, Esmond Naalu Kuuyelleh, and Mohammad Alqahtani, "An Assessment of Service Quality in the Hospitality Industry," *Nurture* 18, no. 2 (February 23, 2024): 349–59, <https://doi.org/10.55951/nurture.v18i2.622>.

¹⁶ Annor, "An Assessment of the Service Quality Delivery in Tertiary Education – A Case Study of Pentecost University College, Ghana"; Samuel Anwowie, Joseph Amoako, and Amma Adomaa Abrefa, "Assessment of Students' Satisfaction of Service Quality in Takoradi Polytechnic: The Students' Perspective.," *Journal of Education and Practice* 6 (2015): 148–55, <https://api.semanticscholar.org/CorpusID:167111138>; Francis Frimpong Fosu and Bright Kwame Owusu, "Understanding Ghanaian Students' Perception of Service Quality in Higher Education," *European Journal of Business and Management* 7 (2015): 96–105; P. Yidana et al., "Service Quality in Higher Education Based on Students' Perspectives," *British Journal of Education, Learning and Development Psychology* 6, no. 2 (May 7, 2023): 22–41, <https://doi.org/10.52589/BJELDP-9FYKUGFI>; P. Yidana et al., "A Model of Administrative Service Quality in Higher Education," *British Journal of Education, Learning and Development Psychology* 6, no. 3 (September 4, 2023): 52–75, <https://doi.org/10.52589/BJELDP-XX8LIQLC>.

3. To identify and delineate the rankings of the key dimensions of service quality relevant to students in both private and public universities and determine how they influenced the decisions of students to enroll in the universities they attend.

To achieve the set objectives this study employs the Higher Education Quality (HiEdQUAL) model to gather relevant data and measure university students' expectations and perceptions of the services they receive from their HEIs.

LITERATURE REVIEW

Service Quality in Higher Education

The concept of service quality began with Grönroos and Parasuraman's, model which highlights attributes that affect customer satisfaction, loyalty and business growth.¹⁷ Other studies and models later developed include the SERVQUAL model, the SERVPERF model, the HEDPERF model and the HiEdQUAL model for higher education.¹⁸

Researchers have attempted to explain the *quality of service*, resulting in diverse definitions because of the unpredictable nature of services and differences in services offered in various industries.¹⁹ However, most studies conclude that one basic requirement of service is to meet customer expectations. Parasuraman et al., explain that service quality is achieved when the services expected are the exact services received.²⁰ This means consumers will judge the quality of service by comparing the service delivered with the service they desire. Thus, customer perception or evaluation of a service is key in describing quality service.

In studies on higher education, service quality has been judged using the same parameters, that illustrate students' judgement of service quality using the expectancy-confirmation paradigm.²¹ This paradigm suggests that the confirmation or expectation held by the service recipient influences satisfaction resulting from service quality.²² Thus, quality is judged by a comparison between service expectations and perceptions; when perceptions fall below expectations, there is a disconfirmation of expectations and when perceptions meet or exceed expectations, there is confirmation of expectations. Therefore, like any other service, a student will similarly judge the quality of service (in this case, tertiary education) on the presuppositions and beliefs he/she holds and attributes to higher education against the actual services received.

The Student as the Primary Stakeholder of Tertiary Education Service Quality

An important question in this discussion is "Who determines service quality in higher education?" Several stakeholders of tertiary education including government, industry, donors and financial institutions, students and the local community all contribute to quality tertiary education or are beneficiaries of the services provided.²³ However, assessing service quality in HEIs from the point of view of these

¹⁷ Christian Grönroos, "An Applied Service Marketing Theory," *European Journal of Marketing* 16, no. 7 (1982): 30–41.

¹⁸ Ananthanarayanan Parasuraman, Valerie A Zeithaml, and Leonard L Berry, "Servqual: A Multiple-Item Scale for Measuring Consumer Perc," *Journal of Retailing* 64, no. 1 (1988): 12; J. Joseph Cronin and Steven A. Taylor, "Measuring Service Quality: A Reexamination and Extension," *Journal of Marketing* 56, no. 3 (July 28, 1992): 55–68, <https://doi.org/10.1177/002224299205600304>; Gülnur Eti İçli and N K Anil, "The HEDQUAL Scale: A New Measurement Scale of Service Quality for MBA Programs in Higher Education," *South African Journal of Business Management* 45, no. 3 (2014): 31–43; Subrahmanyam Annamdevula and Raja Shekhar Bellamkonda, "Development of HiEdQUAL for Measuring Servicequality in Indian Higher Education Sector," *International Journal of Innovation, Management and Technology* 3, no. 4 (2012): 412.

¹⁹ Anantharathan Parasuraman, Valerie A Zeithaml, and Leonard L Berry, "A Conceptual Model of Service Quality and Its Implications for Future Research," *Journal of Marketing* 49, no. 4 (1985): 41–50; Steven A. Taylor and Thomas L. Baker, "An Assessment of the Relationship between Service Quality and Customer Satisfaction in the Formation of Consumers' Purchase Intentions," *Journal of Retailing* 70, no. 2 (June 1994): 163–78, [https://doi.org/10.1016/0022-4359\(94\)90013-2](https://doi.org/10.1016/0022-4359(94)90013-2); Kafui Esi Asinyo, "Measuring Higher Education Service Quality (A Study Across Some Selected Universities In Ghana)" (University of Ghana, 2015).

²⁰ Grönroos, "An Applied Service Marketing Theory."

²¹ Adeel Athiyaman, "Linking Student Satisfaction and Service Quality Perceptions: The Case of University Education," *European Journal of Marketing* 31, no. 7 (1997): 528–40.

²² Richard L Oliver, "A Cognitive Model of the Antecedents and Consequences of Satisfaction Decisions," *Journal of Marketing Research* 17, no. 4 (1980): 460–69.

²³ Mohammad S Owlia and Elaine M Aspinwall, "TQM in Higher Education-a Review," *International Journal of Quality & Reliability Management* 14, no. 5 (1997): 527–43; Sabina Đonlagić and Samira Fazlić, "Quality Assessment in Higher Education Using the SERVQUALQ Model," *Management: Journal of Contemporary Management Issues* 20, no. 1 (2015): 39–57..

stakeholders will not be the same because of their diverse expectations.²⁴ Cheng and Tam point out that, the dimensions of quality differ per stakeholder, hence, models for measuring service quality in higher education would vary between one stakeholder and another.²⁵ Though highly debated, it is accepted by researchers that students are key stakeholders or customers of tertiary education.²⁶ This endorses the definition that service quality in higher education is a measurement of the extent to which the service delivered by tertiary institutions matches the expectations and needs of students, and how satisfied the students are with the service delivered.²⁷

While earlier research focused more on the quality of academic services, such as courses and teaching,²⁸ recent studies are shifting attention from only academic-related issues of quality to a more holistic assessment of the total service offering in the educational cycle.²⁹ Onditi et al, have argued that service quality in tertiary education must not only be viewed from the academic service perspective but from students' overall experience in an institution: a useful dimension of measuring students' satisfaction.³⁰ Therefore, service quality measurement should not only be an assessment of the academic service provision of tertiary institutions but must also include the provision of quality in the other different service areas of student interaction with the institutions-library facilities, recreational facilities, availability of financial aids, health services and so on. Hence, the selection of an appropriate assessment tool to investigate service quality in higher education is significant to the assessment process.

Service Quality Models

Discussions and critiques on the concept of service quality, birthed models that assess or measure the concept.³¹ The SERVQUAL model, the earliest model developed in 1985 by Parasuraman et al, measures service quality. SERVQUAL, adopted in various service quality studies, including the tertiary education industry is divided into five dimensions: tangibles, reliability, responsiveness, assurance and empathy, contains twenty-two items and measures both service expectations and perceptions of customers and determines service quality by finding the arithmetical difference between the two.³² Thus, when perceptions exceed expectations, service quality is positive and when expectations exceed perceptions, it is negative. However, Carman, Cronin and Taylor and Iwaarden and Wiele all criticized the validity of the five dimensions used in the model and its perception minus expectation approach, leading to the development of the SERVPERF model by Cronin and Taylor in 1992.³³ The SERVPERF model, a 'performance-only model,' considers the perceptions of clients or the service performance of an organisation in measuring service quality. Cronin and Taylor believed that a customer's experience of a service alone is enough to judge the quality of the service.³⁴ Both models were generic and were used across several service industries to assess their service quality.

²⁴ Michael E Porter and Mark B Fuller, "Coalitions and Global Strategy," *Competition in Global Industries* 1, no. 10 (1986): 315–43.

²⁵ Yin Cheong Cheng and Wai Ming Tam, "Multi-models of Quality in Education," *Quality Assurance in Education* 5, no. 1 (1997): 22–31.

²⁶ Frances M Hill, "Managing Service Quality in Higher Education: The Role of the Student as Primary Consumer," *Quality Assurance in Education* 3, no. 3 (1995): 10–21.

²⁷ Fosu and Owusu, "Understanding Ghanaian Students' Perception of Service Quality in Higher Education"; Asinyo, "Measuring Higher Education Service Quality (A Study Across Some Selected Universities In Ghana)."

²⁸ Athiyaman, "Linking Student Satisfaction and Service Quality Perceptions: The Case of University Education"; Brenda M Oldfield and Steve Baron, "Student Perceptions of Service Quality in a UK University Business and Management Faculty," *Quality Assurance in Education* 8, no. 2 (2000): 85–95.

²⁹ Evans Ojiambo Onditi and Thaddeus Wafula Wechuli, "Service Quality and Student Satisfaction in Higher Education Institutions: A Review of Literature," *International Journal of Scientific and Research Publications* 7, no. 7 (2017): 328–35; Lijun Li and Sin Yin Teh, "Measuring Higher Education Service Quality during COVID-19 Pandemic in China Using a SERVQUAL Method," *Studies of Applied Economics* 39, no. 10 (2021); Stephen Kwasi Anim and John Mensah, "Service Quality in Higher Education: A Comparative Study in Tertiary Institutions in Sub Saharan Africa," *Global Journal of Educational Studies* 1, no. 2 (2015): 24–44...

³⁰ Onditi and Wechuli, "Service Quality and Student Satisfaction in Higher Education Institutions: A Review of Literature."

³¹ Grönroos, "An Applied Service Marketing Theory."

³² Mauri Cesar Soares, Olívio Novaski, and Rosley Anholon, "SERVQUAL Model Applied to Higher Education Public Administrative Services," *Brazilian Journal of Operations & Production Management* 14, no. 3 (September 6, 2017): 338–49, <https://doi.org/10.14488/BJOPM.2017.v14.n3.a7>; Katia Saliba and Annmarie Gorenc Zoran, "Measuring Higher Education Services Using the SERVQUAL Model," *Journal of Universal Excellence* 4, no. 4 (2018): 160–79; Spiridon Rizos, Eleni Sfakianaki, and Andreas Kakouris, "Quality of Administrative Services in Higher Education.," *European Journal of Educational Management* 5, no. 2 (2022): 115–28.

³³ James M Carman, "Consumer Perceptions of Service Quality: An Assessment of T," *Journal of Retailing* 66, no. 1 (1990): 33; Cronin and Taylor, "Measuring Service Quality: A Reexamination and Extension."

³⁴ Cronin and Taylor, "Measuring Service Quality: A Reexamination and Extension."

The lack of an industry-specific model to assess service quality in higher education birthed the HEDPERF model (Higher Education Performance-Only) by Abdullah.³⁵ It addressed every aspect of a student's total experience in a tertiary institution as the existing models were limited by their five dimensions and did not allow for accurate measurement of service quality in higher education. The HEDPERF model used in assessing service quality in higher education included dimensions that addressed quality requirements in higher education.³⁶ The model contains forty-one items grouped under five dimensions which are: non-academic aspects, academic aspects, programme issues, reputation and access, and these dimensions are assessed using the 'performance-only' approach proposed by Cronin and Taylor.³⁷

The model of choice in this study, the HiEdQUAL model developed by Annamdevula and Bellamkonda in 2012, has twenty-seven items grouped under five dimensions and is specific to the higher education industry and its dimensions address various factors that influence higher education.³⁸ The dimensions are teaching and course content, administrative services, academic facilities, campus infrastructure and support services.

1. Teaching and course content related to issues of quality pertaining solely to the relationship between syllabus and actual learning.
2. Administrative services cover issues of students' dealings with the administrative arm of the institution.
3. Academic facilities speak to issues of appropriateness and sufficiency of facilities that aid academic work.
4. Campus infrastructure relates to issues on the serenity and availability of important infrastructure in and around campus.
5. Support services measure the provision of services such as health and counselling which may not necessarily be directly linked to academic work.

Prospective students of universities in Ghana are attracted by recommendations, prestige and advertisements which give them some expectations. In this study, we discuss service quality from both angles of expectation and perception, dwelling on a 'perception minus expectation' approach, hence our choice of the HiEdQUAL model.

Research Hypothesis

According to a study by Kimathi and Embeywa, massification and financial limitations are two systemic problems that both public and private universities may encounter.³⁹ These shared difficulties might result in service quality levels that are comparable regardless of ownership or funding arrangements. Additionally, studies show that students' opinions tend to hold steady over time suggesting that, regardless of the kind of institution, there can be a uniform expectation and assessment of service quality among students.⁴⁰

Quality of service is influenced by policy and resource allocation. For example, there may be convergence in the quality of services offered by private and public universities if they are operating under comparable national educational policies and resource allocation strategies thereby creating a level playing field. Considering the aforementioned the following theories were established:

1. There is no significant difference in the quality of teaching and course content between Ghanaian public and private universities.

³⁵ Firdaus Abdullah, "HEdPERF versus SERVPERF: The Quest for Ideal Measuring Instrument of Service Quality in Higher Education Sector," *Quality Assurance in Education* 13, no. 4 (2005): 305–28.

³⁶ Ana Brochado, "Comparing Alternative Instruments to Measure Service Quality in Higher Education," *Quality Assurance in Education* 17, no. 2 (2009): 174–90; Ola Ibrahim Ramzi et al., "Factors Influencing Service Quality Performance of a Saudi Higher Education Institution: Public Health Program Students' Perspectives," *Informatics in Medicine Unlocked* 28 (2022): 100841.

³⁷ Cronin and Taylor, "Measuring Service Quality: A Reexamination and Extension."

³⁸ Annamdevula and Bellamkonda, "Development of HiEdQUAL for Measuring Servicequality in Indian Higher Education Sector."

³⁹ Kaburu Joseph Kimathi and Embeywa E Henry, "An Evaluation of Quality of University Education in Kenya during This Massification Era," *JKUAT* 210, no. 38 (2014): 343.

⁴⁰ Salem Ahmed Abdulla Alafreet Alkuwaiti, Ahmad Nur Aizat Ahmad, and Najmaddin Abo Mosali, "Service Quality Factors Influencing the Use of Artificial Intelligent Security Technology in UAE," *International Journal of Sustainable Construction Engineering and Technology*, May 8, 2023, <https://doi.org/10.30880/ijscet.2023.14.02.008>.

2. There is no significant difference in the quality of administrative services between Ghanaian public and private universities.
3. There is no significant difference in the quality of academic facilities between Ghanaian public and private universities.
4. There is no significant difference in the quality of campus Infrastructure between Ghanaian public and private universities.
5. There is no statistically significant difference in the quality of support services between Ghanaian public and private universities.

METHODOLOGY

To meet this study's objectives, the study employed a quantitative approach and a theoretical model – HiEdQUAL was adopted with proposed hypotheses to find the relationships between the constructs. Secondly, a quantitative approach was useful as the researchers needed to make arithmetic comparisons between the perceptions and expectations of university students and results communicated in numerical form. This approach is justified by the methodological approach of similar studies.⁴¹

The study adopted the five-factor structure of the HiEdQUAL model developed by Annamdevula and Bellamkonda because it was appropriate for the research. The assessment of the major fit indices of the HiEdQUAL shows the dimensional structure of the five-factor model was satisfactory and good data fit for the study. The Cronbach's alpha for the HiEdQUAL was 0.905 which shows the strong reliability of the instrument. The internal consistency reliability of the HiEdQUAL components showed that the scale is appropriate for the current study.

Secondly, the HiEdQUAL model has been validated and tested in previous studies, demonstrating its reliability and validity across diverse institutional contexts. When an established model is leveraged with proven psychometric properties for an investigation, researchers can trust the credibility and rigor of the findings. Researchers can, therefore, have confidence in the accuracy and consistency of the data generated through the HiEdQUAL instrument.

Research Sample

A simple random sampling was used to select respondents from a list of public and private universities in Ghana. A list of private and public universities was obtained from the National Accreditation Board of Ghana (now Ghana Tertiary Education Commission - GTEC), out of which 3 public universities and 3 private universities were randomly selected and a proportional number of students were selected to answer the survey questions.

The populations of the various universities will be impossible to reach with the time and resources available. Therefore, the working sample size was derived using Taro Yamane's (1973) formula of sample size.⁴² The formula is represented as $(n = \frac{N}{1+Ne2})$. The breakdown of the sample drawn between the October - December 2021 Semester for each selected university is presented in the table below.

Table 1: Student Population as of December 2021 and Sample Size

Name of Institution	Population	Sample
All Nations University (ANU)	3,000	353
Garden City University College (GCUC)	5,500	373
Valley View University (VVU)	8,900	383
University of Professional Studies, Accra (UPSA)	16,000	390
Ghana Institute of Management and Public Administration (GIMPA)	10,000	385
Ghana Technology University College (GTUC)	8,500	382

⁴¹ Mathew Joseph and Beatriz Joseph, "Service Quality in Education: A Student Perspective," *Quality Assurance in Education* 5, no. 1 (1997): 15–21; Ronnie Telford and Ron Masson, "The Congruence of Quality Values in Higher Education," *Quality Assurance in Education* 13, no. 2 (2005): 107–19; Andreas Eggert and Wolfgang Ulaga, "Customer Perceived Value: A Substitute for Satisfaction in Business Markets?," *Journal of Business & Industrial Marketing* 17, no. 2/3 (2002): 107–18; Robert Hinson, Amidu Mohammed, and Roberta Mensah, "Determinants of Ghanaian Bank Service Quality in a Universal Banking Dispensation," *Banks and Bank System* 1, no. 2 (2006): 69–81.

⁴² Taro Yamane, *Statistics an Introductory Analysis*, 2nd ed. (New York: Harper and Row, 1967).

Total	51,900	2,266
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Source: Authors’ construct, 2024. (The formula is $n = N / [1 + N (e)^2]$, where n = sample size; N = total population; e = margin of error)

Thus, the calculated total sample size (n) using the Yamane formula was approximately 2,266 students.

Data Collection and Analysis

Data was gathered using the HiEdQUAL model, which is freely accessible and has been used in several studies with confirmed validity and reliability. A structured questionnaire based on this model consisting of 27 items has been developed to investigate the quality of educational services in universities and consists of 5 dimensions measured on a five-point Likert-Scale. The first part of the questionnaire covers the demographic characteristics of the students such as programme of study, nationality and years of study. The second part covers the five dimensions of the HiEdQUAL model namely *teaching and course content*, *administrative services*, *academic facilities*, *campus infrastructure* and *support services*. Questions on these dimensions were structured to measure students’ perceptions of various aspects of educational service quality scored on a five-point Likert Scale.

The data was coded, computed, and analysed using Statistical Package for Social Sciences (SPSS) version 26 (USA). The scores associated with each dimension and the overall perception scores were calculated. A descriptive analysis with frequencies and percentages was generated to describe students’ perceptions of service quality in private and public universities. Inferential statistics (paired t-test to compare the mean scores of expectations and perceptions and gap analysis of variance) were performed to establish differences in service quality scores between private and public universities in Ghana. A p-value of less than 0.05 was considered to be statistically significant. Out of the initial 2,266 respondents sampled, a total of 1,758 respondents (from private and public universities), correctly completed and returned their questionnaires. This gave a high response rate of 76.43%.

The researchers sought ethical clearance from the Humanities and Social Science Research Committee of the Kwame Nkrumah University of Science and Technology before carrying out the research. We submitted the research protocol which included study design, data collection methods and participant recruitment procedures to the Ethics Committee for review and approval.

PRESENTATION OF RESULTS AND DISCUSSIONS OF FINDINGS

Analysis of the Overall Service Quality of Public and Private Universities

The general aim of this research was to assess the level of service quality delivery of Ghanaian public and private universities from the perspective of their students. In evaluating the quality of services provided by higher education institutions, it is essential to understand the discrepancies between what students expect and what they perceive. This gap fundamentally shapes their overall satisfaction and their academic and social engagement within the university environment.

Table 2: Mean Scores of Service Quality Across Dimensions

Indicators	PUBLIC				PRIVATE			
	Expectation		Perception		Expectation		Perception	
	Mean	Std.	Mean	Std.	Mean	Std.	Mean	Std.
Teaching and Course Content	4.2005	0.8834	2.1806	0.8447	2.2685	0.8550	1.9940	0.9086
Administrative Service	4.1837	0.9398	2.4544	0.9723	4.2584	0.9015	2.3478	1.0765
Academic Facilities	4.2275	0.9653	2.4696	0.9968	4.3192	0.9589	2.4490	1.1251
Campus Infrastructure	4.1264	1.0409	2.6851	1.0410	4.2209	1.0273	2.5621	1.1251
Support Services	3.8735	1.1337	2.7929	1.1400	3.9967	1.1001	2.5891	1.1860
<i>Total Average</i>	4.1555	0.8818	2.4485	0.8383	4.2403	0.8388	2.3160	0.9270

Source: Authors’ construct, 2024

The differences in mean scores of expected and perceived service quality among students in private and public universities based on the analysis of the five dimensions’ are outlined in Table 2. On students’

perception of teaching and course content, the mean score for public universities was (M= 2.1806, SD= 0.8447) and private universities registered a mean score of (M= -1.9940, SD= 0.9086). For administrative services, the table shows a mean score of (M= 2.4544, SD= 0.9723) for public universities and private universities (M= 2.3478, SD= 1.0765). On student’s perception of academic facilities, public universities recorded (M= 2.4696, SD= 0.9968) mean score and private universities had (M= 2.4490, SD= 1.1251) mean score. Again, public universities were assigned a mean score of (M= 2.6851, SD= 1.0410) on student’s perception of campus infrastructure while private universities had (M= 2.5621, SD=1.1251). For the fifth dimension – support services, public universities had (M= 2.7929, SD= 1.1400) and private universities had (M2.5891, SD= 1.1860) mean scores.

The table also presents results on students’ expectations. As shown, both private and public universities recorded a mean score above 4 on all dimensions except for support service where public universities had a mean score of (M=3.8735, SD=1.1337) and (M=3.9967, SD=1.1001) for private universities and private universities also had a lower mean score of (M=2.2685, SD=0.8550) for teaching and course content.

Gap Analysis: Public vs Private Institutions

Using the HiEdQUAL model and the gap analysis formula $SQ = P - E$, the following scores were obtained. Table 3 below presents the SQ score for each item with the various dimensions for both public and private universities.

Table 3: Gap Analysis: Public vs Private Institutions

No.	Indicators	PUBLIC			PRIVATE		
		E	P	P-E	E	P	P-E
	SERVICE DIMENSIONS						
	Teaching and Course Content						
	MEAN	4.2005	2.1806	-2.0199	2.2685	1.9940	-2.2745
	Administrative Service						
	MEAN	4.1837	2.4544	-1.7293	4.2584	2.3478	-1.9106
	Academic Facilities						
	MEAN	4.2275	2.4696	-1.7579	4.3192	2.4490	-1.8701
	Campus Infrastructure						
	MEAN	4.1264	2.6851	-1.4413	4.2209	2.5621	-1.6588
	Support Services						
	OVERALL MEAN	3.8735	2.7929	-1.0806	3.9967	2.5891	-1.4076
	Total Average	4.1555	2.4485	-1.707	4.2403	2.3160	-1.9243

Source: Authors’ construct, 2024

The gap analysis score calculated as Perceptions minus Expectations (P-E) score provides insight into the gap between what students expect and what they perceive they receive. A negative Gap score shows that the actual service being offered is less than what was expected and the Gap is highlighted for improvement. Table 3 depicts the mean difference in the expected and perceived service quality between public and private universities across all five dimensions. The results indicate that consistently, public universities have smaller negative gaps compared with private universities. The results suggest that public universities are more aligned with students’ expectations across these service quality dimensions.

Teaching and course content shows the largest negative gaps (private universities: Gap = -2.2745, public universities: Gap = -2.0199) in both institutions, indicating a significant shortfall between student expectations and their perceptions of the quality of teaching and course content. The slightly smaller gap in public universities suggests they may be closer to meeting student expectations compared to private universities, though both are notably below expected levels. The next largest negative score is for academic facilities with (private universities: Gap = -1.8701) and public Gap=-1.7579). Administrative services which include registration processes, fee payments, and student support services, also show significant negative gaps. The lesser gap in public universities (-1.7293) might point to more streamlined

or efficient administrative processes or perhaps a more experienced administrative staff compared to private universities (-1.9106). However, the fact that both scores are still negative suggests a general dissatisfaction with administrative dealings, which can greatly affect the overall student experience. Campus infrastructure (private universities: Gap = -1.6588 and public universities: Gap = -1.4413) shows better scores compared to the other dimensions but still indicates underperformance relative to expectations. In addition, it was also found that students' perception of support service had the smallest negative gaps, particularly in public universities (private universities: Gap = -1.4076, public universities: Gap = -1.0806). This means public universities are closer to meeting students' expectations than private universities. Again, the small gap in public universities may be because of more established support systems for students.

Details of the gap analysis of the five dimensions with the various items under each dimension are presented in the table below.

Table 4: Statement Service Quality Scores for each Category of University

No	Service Quality Dimensions and Indicators	PUBLIC			PRIVATE		
		E	P	GAP P-E	E	P	GAP P-E
	Teaching and Course Content						
1.	Lecturers should be responsive & accessible to the students	4.12	2.28	-1.84	4.16	1.98	-2.18
2.	Lecturers should follow the curriculum strictly.	3.88	2.15	-1.73	3.92	1.99	-1.93
3.	Lecturers should follow good teaching practices.	4.26	2.13	-2.13	4.40	1.85	-2.55
4.	The syllabus should match the program studied.	4.29	2.13	-2.16	4.31	1.84	-2.47
5.	The course content should develop the student's knowledge.	4.29	2.13	-2.16	4.35	2.11	-2.24
6.	The university should inform students about schedules, ... exams promptly	4.29	2.14	-2.15	4.37	1.84	-2.53
7.	Lecturers should complete the syllabus on time.	4.22	2.27	-1.95	4.27	2.18	-2.09
8.	Departments should have sufficient academic staff.	4.26	2.22	-2.04	4.35	2.16	-2.19
	Average	4.20	2.18	-2.02	2.27	1.99	-2.28
	Administrative Service						
9.	The university administrative staff should provide services without delay.	4.17	2.63	-1.54	4.23	2.53	0.21
10.	The administrative staff should be courteous and willing to help students.	4.17	2.45	-1.72	4.32	2.35	0.18
11.	The administrative staff should provide error-free services.	4.09	2.53	-1.56	4.07	2.53	0.17
12.	The administration should maintain accurate retrieval records.	4.15	2.41	-1.74	4.22	2.31	0.14
13.	The administrative staff should be accessible during service hours.	4.22	2.33	-1.89	4.28	2.28	0.12
14.	The university should have safety and security measures.	4.30	2.37	-1.93	4.42	2.09	0.18
	Average	4.18	2.45	-1.73	4.26	2.35	-1.91
	Academic Facilities						
15.	The department should have adequate facilities.	4.21	2.50	-1.71	4.32	2.45	-1.87
16.	The lecture rooms should be equipped with teaching aids.	4.24	2.43	-1.81	4.35	2.45	-1.90

17	The department should have sufficient lecture rooms	4.26	2.39	-1.87	4.35	2.46	-1.89
18	The university should have adequate auditoriums, conference halls etc.	4.13	2.53	-1.60	4.22	2.59	-1.63
19	The university should have adequate academic resources.	4.28	2.39	-1.89	4.36	2.32	-2.04
20	The computer labs should have adequate equipment and internet facilities.	4.25	2.57	-1.68	4.36	2.42	-1.94
	Average	4.23	2.47	-1.76	4.32	2.45	-1.87
	Campus Infrastructure						
21	The university should have adequate hostel facilities.	4.01	3.11	-0.90	4.23	2.55	-1.68
22	The university should have adequate medical facilities (health care).	4.19	2.61	-1.58	4.23	2.62	-1.61
23	The university should have adequate amenities (canteen, bank, ATM, etc.).	4.07	2.66	-1.41	4.14	2.63	-1.51
24	The campus infrastructure should be well maintained.	4.24	2.35	-1.89	4.28	2.46	-1.82
	Average	4.13	2.69	-1.44	4.22	2.56	-1.66
	Support Services						
25	The university should have sufficient sports and recreation facilities.	3.65	3.06	-0.59	3.86	2.90	-0.96
26	The university/departments should provide internship services.	4.01	2.81	-1.2	4.10	2.45	-1.65
27	The university should provide counselling services.	3.96	2.51	-1.45	4.03	2.42	-1.61
	Average	3.87	2.79	-1.08	3.99	2.59	-1.41
	Total Average	4.16	2.45	-1.71	4.24	2.32	-1.92

Source: Authors' construct, 2024.

From the analysis, there is a general trend where private universities showed slightly higher gaps in perceived service quality compared to public universities in all the dimensions under consideration. While both private and public universities have negative values, the results suggest however that public universities are more aligned with students' expectations. For both private and public universities, these findings point to critical areas that need improvement. If these key dimensions receive the utmost attention, student satisfaction may increase and will likely impact their academic performance and institution rankings.

The thorough breakdown of perceived service quality also emphasises critical areas that require targeted intervention within institutions of higher learning to address unique difficulties that students are facing. This HiEdQUAL model-based result, therefore draws attention to service quality gaps in both private and public universities and that these universities can solidify and maintain high standards of excellence if they can concentrate their efforts on enhancing and improving teaching quality, administrative efficiency, and support services.

Analysis of Research Hypothesis

The hypotheses put forward in this research were tested using a paired sample t-test. This permitted us to determine any significant difference in the gap scores obtained between public and private universities. The significant value to determine if there was enough evidence to conclude there is a statistically significant difference between variables in the hypotheses was $p < 0.05$. If the p -value is below the p -value of 0.05, the null hypothesis is accepted and the alternative hypothesis is rejected.

Teaching and Course Content

1. Null Hypothesis (H0): *There is no significant difference in the quality of teaching and course content between Ghanaian public and private universities.*

Table 5: Teaching and Course Content

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Teaching Course Content Public - Uni Teaching Course Content Private- Uni	.17410	1.22364	.05434	.06733	.28087	3.204	506	.001

Source: Authors' construct, 2024.

This study sought to determine whether there was a difference between the teaching and course content of public and private Ghanaian higher education institutions. The mean difference of 0.17410 (95% CI 0.06733 to 0.28087) indicates that, on average, there is a slight difference in the quality of teaching and course content between the two groups. From the paired-samples t-test, there was a statistically significance difference in the score for public universities (M=2.1806, SD=.8834) and private universities (M=1.9940, SD=.9086) $t(506)=3.204$, $P=.001$. Given the fact that the p-value (.001) is far below the threshold (.005) defined a priori, the null hypothesis is rejected. The result suggests there is a significant difference in the quality of the teaching and course content between Ghanaian public and private universities. That is, the public universities, consistently provide perceived higher quality in teaching and course content compared to the private universities in the studies.

Administrative Services

2. Null Hypothesis (H0): *There is no significant difference in the quality of administrative services between Ghanaian public and private universities.*

The pair sample t-test suggests that there is no statistically significant difference in the score for private universities (M=2.3478, SD=1.076) and public universities (M=2.4544, SD=.9398) $t(506)=1.218$, $P=.224$.

Table 6: Administrative Services

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 2	Admin Service Public -Uni Admin Service Private- Uni	.07659	1.41615	.06289	-.04697	.20016	1.218	506	.224

Source: Authors' construct, 2024

While the mean score for public universities (2.4544) is slightly higher than private universities (2.3478), which suggests that, on average, students perceive the quality of administrative services to be slightly better in public universities compared to private universities, the p-value of .224 suggests that the statistical evidence is not enough to conclude that there is a significant difference in the quality of administrative services between Ghanaian public and private universities.

Academic Facilities and Campus Infrastructure

3. Null Hypothesis (H0): *There is no significant difference in the quality of academic facilities between Ghanaian public and private universities.*
4. Null Hypothesis (H0): *There is no significant difference in the quality of campus Infrastructure between Ghanaian public and private universities.*

Table 7: Academic Facilities and Campus Infrastructure

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 3	Academic Facilities Public -Uni Academic Facilities Private -Uni	-.03353	1.48454	.06593	-.16306	.09600	-.509	506	.611
Pair 4	Campus Infrast. Public - Uni Campus Infrast. Private - Uni	.10059	1.62483	.07216	-.04118	.24236	1.394	506	.164

Source: Authors' construct, 2024

Table 7 displays the results of the paired-sample t-test that was used to determine whether academic facilities and campus infrastructure differed significantly between public and private universities in Ghana. The results of the analyses show that there are no statistically significant differences between public and private universities in terms of how students perceived the quality of academic facilities and campus infrastructure. As a result, the null hypotheses for both dimensions were accepted, suggesting that the institutions' service quality levels in these dimensions were comparable or similar.

Support Services

5. Null Hypothesis (H0): *There is no statistically significant difference in the quality of support services between Ghanaian public and private universities.*

The data provide sufficient evidence to state that there is a significant difference in the quality of support services provided by private universities on the one hand and those provided by public universities on the other hand. From the result, public universities are perceived as providing superior support services.

Table 8: Support Services

Paired Samples Test									
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Support Services Public - Uni Support Services Private - Uni	.22222	1.65892	.07368	.07748	.36697	3.016	506	.003

Source: Authors' construct, 2024.

The paired sample t-test results of this analysis indicate that there is a statistically significant difference between the mean test scores of the private universities (M=2.5891, SD=1.1860) and the public universities (M=2.7929, SD=1.1400); $t(506)=3.016$, $P=.003$. Specifically, there is sufficient evidence to conclude that students in public universities perceive the quality of support services to be better compared to students in private universities.

The analysis revealed that public universities generally outperform private universities significantly in two crucial dimensions: Teaching and course content, and support services. These findings suggest that public universities may be leveraging their resources more effectively in these areas or possibly benefit from greater scale and funding. In contrast, the lack of significant differences in administrative services, academic facilities, and campus infrastructure suggests a parity in service provision across these dimensions, indicating that both private and public universities appear to be comparable based on student perceptions and satisfaction within these domains.

Students' Ranking of Service Quality Dimensions

The third objective of this study was to identify the aspects of service quality that were most important to service recipients (students) to help university administrators and lecturers realise the key areas to improve upon. Figure 1 presents the results of the ranking by students.

The data revealed that ranking analysis is a powerful tool, particularly in a quest to understand the nuanced priority people give to various aspects of service quality. In this study, participants were asked to rank five dimensions of service quality – teaching and course content, academic facilities, campus infrastructure, administrative services and support services – by distributing 100 points among them based on their perceived importance. The result from this ranking analysis [revealed the importance that students place on the various components of service quality dimensions in their academic institutions] not only offers insights but also revealed the hierarchy of importance that students give to the various components of service quality, in their academic institutions. The findings are presented in Figure 1.

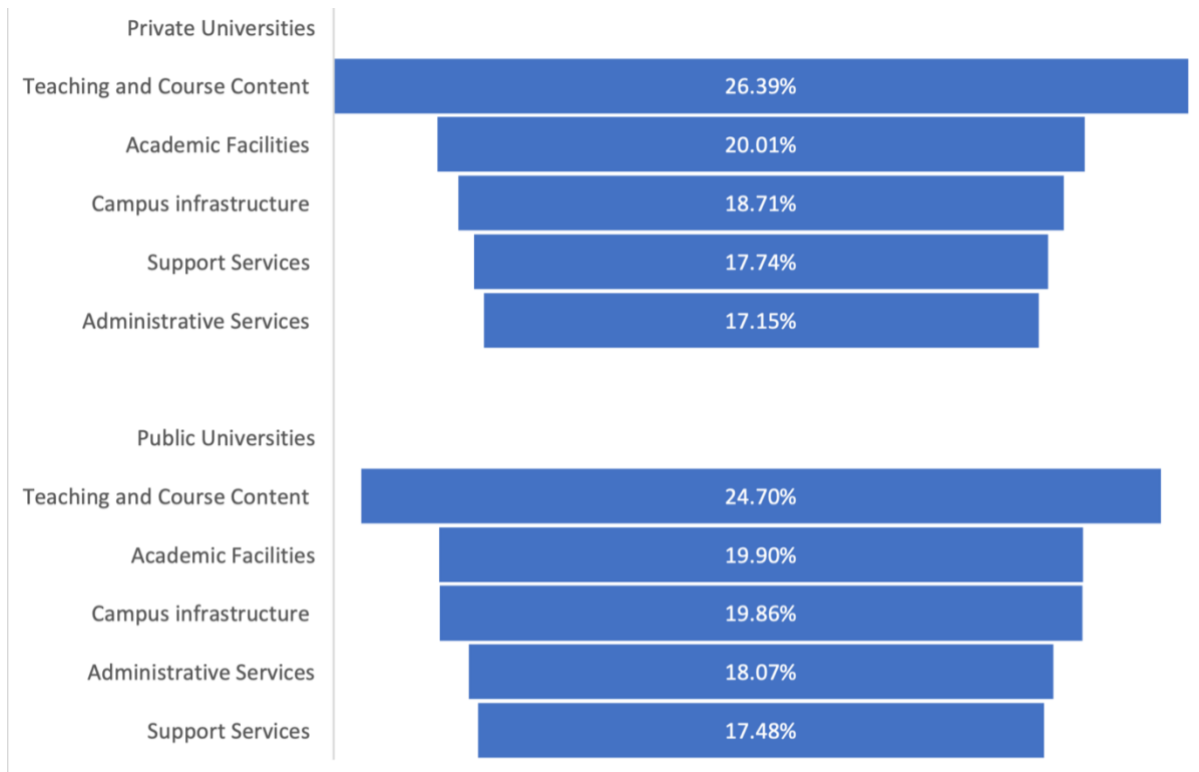


Figure 1. Students' Ranking of the Importance of Service Quality Dimensions
 Source: Authors' construct, 2024.

Students in public and private universities gave the most ratings to teaching and course content. This is a clear indication that universities in Ghana place more emphasis on the quality of instruction and course content. This also means that high-quality instruction and academic offerings are universal. Therefore, universities in this study should invest in faculty and curriculum development to improve the perceived quality of service in this area for students.

Similarly, students across both public and private universities rate campus infrastructure as important; emphasising the role and significance good infrastructure plays in meeting the service quality expectations of students. If universities prioritize the development and maintenance of their infrastructure, students experience and satisfaction shall be greatly improved. In private universities, support services were rated moderately important and administrative services least important although they are critical dimensions that support the running of academic institutions and by extension, academic work. Students of public universities also ranked administrative services as moderately important and support services less important although they play an important role in supporting students' academic and personal needs on campus.

Generally, students in private and public universities consider teaching and course content as important service quality dimensions; emphasising their important role in students' academic experiences. Similarly, academic facilities and campus infrastructure are highly valued by students, revealing the significance of how well-resourced universities and a conducive environment support students' learning. Although administrative and support services are important in running higher education institutions, students perceived them as less important in comparison to academic facilities and campus infrastructure.

Another way to examine the results is the extent to which these factors influence students' choice of universities they attend. Though slightly higher (26.39%) for public universities than private universities (24.70%), they both indicate that "Teaching and course content" is the most influential factor in deciding which university they attend. Although the importance is quite similar between public (20.01%) and private (19.90%), "Academic facilities" become the second most influential factor in determining the choice of the university students attend. The major contrast between these institutions is that for private universities, Administration service is the fourth most influential factor but ranks as the last influential factor for public universities and vice versa when it comes to support services.

These findings provide valuable insights into students' priority of service quality in private and public universities and also indicate the significant value students place on these dimensions in their choice of school for their academic pursuit. Understanding these priorities can inform strategic planning and resource allocation to meet students' needs better and enhance their overall educational experience for both students and prospective students. Private and public universities should, therefore, prioritize investments in teaching quality, academic facilities, and campus infrastructure while ensuring efficient administrative and support services to assist students' academic success and well-being.

Confirming or Refuting the Literature

The research results align with Parasuraman et al.'s expectancy-confirmation paradigm, as the gap analysis shows that service quality is judged by comparing student expectations and perceptions, with significant negative gaps identified in both public and private universities. This supports the literature's assertion that service quality is achieved when perceptions meet or exceed expectations. Furthermore, consistent with the literature, the findings affirm that students are primary stakeholders in higher education. Evaluating service quality from students' perspectives highlights their critical role in assessing educational services, with significant gaps underscoring the necessity for institutions to prioritize student satisfaction.

The study also confirms Onditi et al.'s viewpoint that service quality in higher education should encompass the entire student experience, not just academic services.⁴³ The inclusion of administrative services, campus infrastructure, and support services in the HiEdQUAL model aligns with this holistic approach. The findings that support services have the smallest negative gaps, particularly in public universities, further corroborate the literature. This comprehensive approach to service quality in higher education emphasizes the importance of considering all aspects of the student experience to improve overall satisfaction and service delivery.

RECOMMENDATIONS

Based on the findings and recommendations, it is recommended that universities in Ghana adopt a holistic approach that will take into consideration every service dimension if they must raise the standard of service quality. This means that pedagogical training, faculty development programs and integrating technology to improve teaching quality must all be funded. In the same vein, administrative processes must be streamlined, digital infrastructure must be bolstered, and staff training that is aimed at improving administrative efficiency must be provided. In addition, university authorities must provide funds to develop and maintain campus infrastructure and support services to create an environment that meets student expectations. Also, strengthening student support services like providing career guidance and counselling by introducing mechanisms for collecting regular feedback from students will facilitate continuous quality monitoring and improvement efforts of these universities.

For these recommendations to be successfully implemented, all stakeholders such as administrators, faculty, staff and students, must collaborate to drive positive change and enhance the overall educational experience in Ghanaian universities. Like other studies, this study had certain limitations as well. For example, the data used to establish the conclusions came from six Ghanaian universities that were recently established and most likely had limited resources for infrastructure and other facilities. Further studies can expand the scope to include more HEIs in Ghana or other African countries. It is also recommended that other studies should be conducted that will measure service quality in higher education from the perspective of other stakeholders, such as university administration, parents, the government, and employers or focus solely on international students to establish their perceptions of service quality in higher education in Ghana. This will inform policy as stakeholders strive to make higher education more attractive to all students in their quest to attract, keep, and serve their students.

CONCLUSION

This study has examined service quality across five key dimensions; teaching and course content, administrative services, academic facilities, campus infrastructure, and support services in Ghanaian private and public universities. From the data analysis, it is evident that private and public institutions in

⁴³ Onditi and Wechuli, "Service Quality and Student Satisfaction in Higher Education Institutions: A Review of Literature."

Ghana have significant difficulties meeting the expectations of their students across different service quality dimensions. Although public universities may exhibit slightly smaller differences in some areas of service delivery, the comparative study shows both private and public universities must improve service quality across all dimensions in order to improve the quality of education and the overall student experience. In this context, using gap analysis as a technique to assess the service quality of HEIs did not only highlight the deficiencies but also benchmarked service quality performance against student expectations. Public and private universities presented noticeable disparities between students' expectations and perceptions in the teaching and course content, administrative services, academic facilities, campus infrastructure, and support services dimensions. These suggest that Ghanaian universities need to bridge the gap and align their services more closely to meet students' expectations. As regards support service and teaching and course content, the analysis of hypotheses showed a clear distinction between public universities and private universities, suggesting a need for more tailored interventions in these dimensions. Campus infrastructure, academic facilities, and administrative services, on the other hand, showed no significant differences, indicating a shared need for improvement across these dimensions. These findings speak to the urgent need for both private and public universities in Ghana to prioritize improving service delivery qualities. If both private and public universities can address the identified gaps and disparities in the quality of service they offer, that will foster a conducive learning environment, enhance student satisfaction and strengthen the overall reputation of these institutions in Ghana.

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