
The Impact of SERVQUAL Dimensions on Customer Satisfaction in Education and Training: An Economic Perspective

Maman Suryaman¹, Martinus Tukiran²

Abstract:

This study investigates the influence of the five SERVQUAL dimensions—tangible, empathy, reliability, responsiveness, and assurance—on customer satisfaction in education and training institutions using a Systematic Literature Review (SLR) approach. The research aims to synthesize findings from empirical studies published between 2020 and 2024 to provide a comprehensive understanding of how these dimensions impact customer satisfaction in this context. The review systematically collected and analyzed relevant literature from reputable databases, including Dimention. A total of 9 studies were selected based on predefined inclusion and exclusion criteria, ensuring that only research focusing on SERVQUAL dimensions in education and training institutions and their impact on customer satisfaction was included. The results reveal that all five dimensions significantly contribute to customer satisfaction, with reliability and assurance having the strongest impact. Tangible aspects, such as facilities and infrastructure, and empathy, which reflects personalized attention, also play crucial roles. Responsiveness, related to the promptness and willingness of service delivery, was found to enhance trust and loyalty among customers. This study highlights the critical importance of implementing and improving SERVQUAL dimensions to enhance service quality and satisfaction in education and training institutions. The findings provide valuable insights for educators, policymakers, and administrators to refine service delivery models and meet the growing expectations of their customers.

Keywords: SERVQUAL; Customer Satisfaction; Tangible; Empathy; Reliability; Responsiveness; Assurance

Sumbitted: February 3, 2025, Accepted: March 18, 2025, Published: March 30, 2025

1. Introduction

Customer satisfaction is a key indicator of an organization's success, including educational and training institutions. In this context, service quality plays a crucial role in shaping customer perceptions and satisfaction. The SERVQUAL model, which consists of five main dimensions—tangibles, empathy, reliability, responsiveness, and assurance—is widely used as a framework for evaluating and improving service quality across various sectors, including education. Research indicates that the tangible dimension, which includes physical facilities such as buildings and technology, creates a significant first impression on customers (Al-Rabia et al., 2021). Additionally, the empathy dimension, which reflects an institution's attention and

¹Universitas Pakuan, Indonesia. semangat.maman@gmail.com

²Universitas Pakuan, Indonesia. martinustukiran@gmail.com

understanding of individual customer needs, contributes to a more personalized and satisfying experience (Hoque et al., 2023).

High-quality service not only enhances customer satisfaction but also strengthens loyalty, institutional reputation, and competitiveness in an increasingly competitive environment. The reliability dimension focuses on an institution's ability to consistently deliver dependable services, which is critical in building customer trust (Abdullah et al., 2022). Meanwhile, responsiveness measures an institution's speed and willingness to assist customers, which is a key factor in shaping a positive customer experience (Bwachele et al., 2023). Lastly, the assurance dimension, which encompasses staff competence and the trust they instill in customers, plays a crucial role in fostering a sense of security and confidence (Al-Shamsi et al., 2023).

Although numerous studies have explored service quality across different sectors, there remains a gap in research focusing specifically on how these five SERVQUAL dimensions influence customer satisfaction within educational and training institutions. Prior research has established a significant positive correlation between service quality and customer satisfaction, as well as the impact of satisfaction on customer loyalty (Amerta, 2023; Ginting, 2024). Using a Systematic Literature Review (SLR) approach, this study aims to provide a comprehensive understanding of how SERVQUAL dimensions affect customer satisfaction in educational and training institutions from 2020 to 2024.

In the context of educational institutions, high service quality enhances student satisfaction, which in turn fosters their loyalty to the institution (Fitriani, 2023). Studies indicate that satisfied students are more likely to recommend the institution to others and participate actively in institutional events (Trisnaningsih, 2021). This suggests that customer satisfaction not only benefits individuals but also contributes to the institution's reputation and long-term sustainability (Surtiningtyas et al., 2023).

Moreover, superior service quality enhances the competitiveness of educational institutions in an increasingly crowded market. With the growing number of educational and training providers, institutions must differentiate themselves by offering superior services to attract and retain customers (Necosia, 2024). Research highlights that institutions delivering exceptional service experiences gain a competitive advantage and are better positioned to thrive in the education industry (Liu et al., 2022). Therefore, it is essential for educational institution managers to understand and implement SERVQUAL dimensions to enhance service quality (Firdaus, 2023).

This study will explore how each SERVQUAL dimension specifically impacts customer satisfaction in educational and training institutions. By understanding the influence of each dimension, institutional managers can develop more effective strategies to improve service quality and ultimately enhance customer satisfaction (Jonkisz et al., 2023). The findings are expected to provide strategic insights for

institutional leaders seeking to elevate service quality and competitiveness in the education sector (Amerta, 2023).

Overall, customer satisfaction in educational and training institutions is strongly influenced by the quality of services provided. By utilizing the SERVQUAL model as a framework, this study aims to deepen the understanding of the relationship between service quality and customer satisfaction, along with its implications for customer loyalty (Goumairi et al., 2020). Through a systematic and evidence-based approach, this research aspires to make a meaningful contribution to both theoretical and practical advancements in education service management (Kitchenham, 2004).

Although numerous studies have examined service quality in various sectors, research specifically addressing the impact of each SERVQUAL dimension on customer satisfaction in educational and training institutions remains limited. Most existing studies focus on general service quality without comprehensively analyzing how each dimension—tangibles, empathy, reliability, responsiveness, and assurance—individually contributes to customer satisfaction in education. Additionally, prior research primarily investigates traditional educational institutions, overlooking training centers and non-formal education providers, which operate under different service dynamics. Furthermore, with the rapid advancement of digital technology and evolving customer expectations, there is a need to explore how technological integration influences service quality perceptions in education. Addressing these gaps, this study offers a novel contribution by systematically reviewing recent literature (2020–2024) to provide an updated and in-depth analysis of SERVQUAL dimensions in the education sector. By integrating insights on digital transformation and customer experience, this research aims to bridge the gap between theoretical frameworks and practical applications, offering strategic recommendations for improving service quality, customer satisfaction, and institutional competitiveness in the evolving education industry.

2. Theoretical Background

Enhancement of Research Insights

This study aims to improve and expand the insights from previous studies regarding the influence of SERVQUAL dimensions on customer satisfaction in educational and training institutions. The adoption of the Systematic Literature Review (SLR) approach in this research enables the structured and in-depth compilation and analysis of data. By analyzing empirical studies conducted between 2020 and 2024, this research critically evaluates the contribution of SERVQUAL dimensions to customer satisfaction and identifies areas that have been underexplored in previous literature (Fuchs & Fangpong, 2021; Goumairi, Aoula, & Souda, 2020; Hoque et al., 2023).

This study not only confirms findings from prior research but also broadens the understanding by examining the differential effects of SERVQUAL dimensions across various educational contexts, both formal and non-formal. Research by Al-Rabia et al. (2021) indicates that SERVQUAL dimensions play a crucial role in

determining customer satisfaction in the education sector. Additionally, this study introduces moderating variables that were previously overlooked, such as the impact of technology and changes in learning methods due to the COVID-19 pandemic (Liu et al., 2022; Surtiningtyas et al., 2023).

In this context, research highlights that good service quality can enhance perceived value by customers, which in turn contributes to customer satisfaction (Amerta, 2023). This aligns with the SERVQUAL model, which emphasizes the importance of service quality in building customer satisfaction. Thus, this study contributes to a deeper understanding of how SERVQUAL dimensions interact with other factors to influence customer satisfaction in educational and training institutions.

Comparison and Limitations of Previous Studies

1. Focus Limitations of Dimensions

Many previous studies tend to highlight specific dimensions such as reliability and assurance, while empathy and tangible dimensions are often overlooked. This study attempts to fill this gap by providing a balanced analysis of all five SERVQUAL dimensions. For example, research by Abdullah, Khan, & Ibrahim (2022) demonstrates that all SERVQUAL dimensions, including empathy and tangibles, have a significant influence on customer satisfaction.

2. Contextual Limitations

Previous studies often focus on higher education institutions in specific countries, thus lacking coverage of non-formal educational institutions or vocational training. This study addresses these limitations by reviewing literature from various types of institutions and diverse geographical backgrounds. For instance, research by Al-Shamsi et al. (2023) shows that service quality dimensions can vary depending on the service context.

3. Lack of Comparative Analysis

Most prior studies do not conduct in-depth comparative analyses across SERVQUAL dimensions. This study contributes by providing a comparative analysis that highlights significant differences in the impact of each dimension on customer satisfaction. Research by Bwachele et al. (2023) emphasizes the importance of comparative analysis in understanding how SERVQUAL dimensions interact to influence customer satisfaction in different contexts.

4. Methodological Limitations

Previous studies tend to rely on descriptive survey methods without robust analytical approaches. In this study, the SLR approach is used to ensure more systematic and in-depth data analysis, resulting in more robust findings. Research by Kitchenham (2004) indicates that stronger analytical approaches can provide deeper insights into the relationship between service quality and customer satisfaction.

5. Lack of Response to Global Context Changes

Some prior studies do not consider the impact of recent global changes, such as the digitalization of educational services and shifts in learning models due to the COVID-19 pandemic. This study integrates these factors to provide insights that are more relevant to current conditions. Research by Liu et al. (2022) shows that

changes in customer behavior due to the pandemic have a significant impact on customer satisfaction.

2. Methodology

Research Methods

The method used in this research is *Systematic Literature Review (SLR)* to identify, evaluate, and interpret research results that are relevant to a particular research question, or topic area, or phenomenon of interest (Kitchenham, 2004). Meanwhile, the qualitative approach in *systematic review* used to summarize research results that are descriptive qualitative in nature.

Research Question

At this stage, determine questions that are appropriate to the research topic. The following are the research questions in this study:

1. RQ1: What is the influence of each dimension (tangible, empathy, reliability, responsiveness, assurance) on customer satisfaction in education and training institutions?
2. RQ2: Are there differences in influence between dimensions in increasing customer satisfaction in educational and training institutions?
3. RQ3: How is the SERVQUAL model applied in the context of education and training institutions?

Search Process

The search process was conducted using the Dimensions database, focusing on publications from 2020 to 2024. The following steps outline the search strategy:

1. **Database Selection:** The primary database used was Dimensions (<https://app.dimensions.ai/discover/publication>), known for its extensive repository of academic publications.

This study utilizes the Dimensions database as the primary source for literature searches. The selection of this database is based on the following considerations:
Extensive and Relevant Coverage: Dimensions offers a wide range of coverage, encompassing various disciplines including management, education, training, and service quality. This ensures that the database is relevant to the research needs focused on SERVQUAL dimensions.

Access to High-Quality Publications: This database provides access to publications from various reputable international journals that have undergone rigorous peer-review processes. This ensures that the studies used in this research have high validity and reliability.

Efficient Search Features: Dimensions is equipped with advanced search features that allow the use of Boolean operators (AND, OR, NOT), filters based on publication year, document type, and specific fields of study. These features help researchers perform more specific and structured searches.

Comprehensive Data Connectivity: The database allows researchers to track citation networks, author collaborations, and global research trends. This is beneficial for understanding the latest developments in research related to service quality in educational institutions.

Ease of Access and Data Integration: Dimensions is easily accessible and supports data integration with various bibliometric analysis tools, aiding in more in-depth literature analysis.

2. **Keyword Selection:** The keywords utilized include:
 - *SERVQUAL, Tangible, Empathy, Reliability, Responsiveness, Assurance, Customer Satisfaction, Educational Institutions, Training Institutions.*
3. **Boolean Operators:** To enhance the search precision, Boolean operators were applied:
 - **AND** was used to combine different SERVQUAL dimensions with customer satisfaction and educational contexts (e.g., "SERVQUAL AND Customer Satisfaction AND Educational Institutions").
 - **OR** was employed to capture studies using synonymous terms (e.g., "Empathy OR Personal Attention").
 - **NOT** was applied to exclude irrelevant sectors such as healthcare or hospitality (e.g., "Educational Institutions NOT Healthcare").

Search Query

(SERVQUAL AND (Tangible OR Empathy OR Reliability OR Responsiveness OR Assurance) AND (Customer Satisfaction) AND (Educational Institutions OR Training Institutions)) NOT (Healthcare OR Hospitality)

Search Outcome

1. Initial search yielded **305 articles**.
2. Filtering by journal relevance and applying inclusion criteria narrowed the selection to **57 articles**.
3. Further refinement using quality assurance filters resulted in **19 articles**.
4. Final selection process through validation tools (e.g., blackbox.ai) confirmed **9 articles** for in-depth review.

This systematic approach ensures that the literature review is comprehensive, relevant, and methodologically sound, aligning with the research objectives.

Inclusion and Exclusion Criteria

At this stage, determine the criteria for the data found, whether the data is suitable to be used as a data source for research or not. The following are the criteria for data that is considered worthy of being a research data source, namely:

Table 1. Inclusion and Exclusion

Inclusion Criteria	Exclusion Criteria
Studies that discuss the SERVQUAL dimensions (tangible, empathy, reliability, responsiveness, assurance).	Studies that do not mention the five SERVQUAL dimensions explicitly.
Focus on educational institutions (formal, informal) or training (vocational, professional).	Articles that are not relevant to educational or training institutions (e.g. health sector, hospitality).

Studies that contain empirical data or survey results regarding customer satisfaction.	Studies that only contain theoretical reviews without empirical data.
Journal articles, conference proceedings, or peer-reviewed research reports.	Publications in the form of opinions, comments or editorials without a research basis.
Studies discussing SERVQUAL dimensions, focusing on customer satisfaction within educational or training institutions, and containing empirical data.	Articles not explicitly mentioning SERVQUAL dimensions, unrelated sectors, and theoretical papers without empirical support.

Analysis and synthesis

The data that has been collected in the next stage will be analyzed at this stage. The results that have been analyzed will answer all the research questions that have previously been determined.

3. Empirical Findings/Result

Search Process Results and Inclusion and Exclusion Criteria

Result of *search process dan inclusion and exclusion criteria* that is, only 9 journal papers were taken that met the research criteria, namely journal papers published in the 2020-2024 period and had discussions related to "influence (*tangible, empathy, reliability, responsiveness, assurance*) on customer satisfaction in educational and training institutions". The information obtained is then grouped into several types of journals. The following are the types of journals that have been successfully obtained:

Table 2. Research Table Based On Variables, Methodology And Findings

No	Article Title	Authors (Year)	Variables	Method	Key Findings	Sample Type	Number of Participants
1	Impact of Brand Equity and Service Quality on the Reputation of Universities and Students' Intention to Choose Them	Rizard et al. (2023)	Brand equity, service quality, university reputation, student intention	Quantitative	Service quality (tangibles, empathy, reliability, responsiveness, assurance) affects university reputation and student intention	University students	350
2	Impact of Service Quality on Student Retention in UAE Higher Education Institutions	Al-Shamsi et al. (2023)	Service quality, student retention	Mixed Methods	Responsiveness and empathy significantly impact student retention	Higher education students in UAE	280
3	Gauging Service Quality among Management Students in B-Schools Using MEQUAL	Amudha et al. (2023)	MEQUAL dimensions	Quantitative	Reliability and responsiveness are key factors in measuring service quality	Management students	200

4	The Impact of Service Quality on Teachers' Satisfaction: The Case of Battambang Teacher Education College	Sam et al. (2024)	Service quality, teacher satisfaction	Quantitative	Responsiveness and assurance play a significant role in teacher satisfaction	Teachers in teacher education colleges	150
5	Perceived Service Quality and Student Satisfaction in Higher Learning Institutions in Tanzania	Bwachele et al. (2023)	Service quality, student satisfaction	Survey	Empathy and reliability strongly influence student satisfaction	Higher education students in Tanzania	220
6	Assessing Service Quality Using SERVQUAL Model: An Empirical Study on Some Private Universities in Bangladesh	Salma et al. (2023)	SERVQUAL dimensions	Quantitative	Assurance and tangibles are the most significant dimensions	Private university students	300
7	Critical Factors of Service Quality in Higher Education Services and Their Impact on Overall Service Quality, Student Satisfaction, and Student Loyalty	Kachwala et al. (2023)	Service quality, satisfaction, loyalty	Quantitative	Responsiveness and assurance affect overall service quality	Higher education students	250
8	Employing Fuzzy-weighted SERVQUAL, Refined-KANO, IPA, and QFD to Assess Service Quality in Vocational Higher Education	Surtiningtyas et al. (2023)	Fuzzy-weighted SERVQUAL, Refined-KANO, IPA, QFD	Mixed Methods	Assurance plays a crucial role in evaluating vocational education service quality	Vocational education students	180
9	Service Quality and Student Engagement in Higher Education	Iqbal et al. (2022)	Service quality, student engagement	Quantitative	Responsiveness is a key factor in enhancing student engagement	Higher education students	270

Journal type and Q index for each journal

- Impact of brand equity and service quality on the reputation of universities and students' intention to choose them: The case of IIUM and UIN
 - Journal of Educational Research (Education Research Journal) • Q Index: Q2 (based on corpus data)
- Impact of Service Quality on Student Retention in UAE Higher Education Institutions
 - Scientific Education Journal (Scientific Education Journal) • Q Index: Q3 (based on Scopus data)
- Gauging service quality among management students in B schools using MEQUAL
 - Academic Education Journal (Academic Education Journal) • Q Index: Q4 (based on Scopus data)
- The Impact of Service Quality on Teachers' Satisfaction: The Case of Battambang

- Teacher Education College
- Higher Education Research Journal (Higher Education Research Journal)
 - Q Index: Q3 (based on Scopus data)
5. Perceived service quality and student satisfaction in higher learning institutions in Tanzania
 - Journal of Higher Education (Higher Education Journal)
 - Q Index: Q4 (based on Scopus data)
 6. Assessing Service Quality Using SERVQUAL Model: An Empirical Study on Some Private Universities in Bangladesh
 - Scientific Education Management Journal (Scientific Education Management Journal)
 - Q Index: Q3 (based on Scopus data)
 7. Critical factors of service quality in higher education services and their impact on overall service quality, student satisfaction and student loyalty • Higher Education Research Journal (Higher Education Research Journal)
 - Q Index: Q2 (based on Scopus data)
 8. Employing Fuzzy-weighted SERVQUAL, Refined-KANO, IPA, and QFD to Assess Service Quality in Vocational Higher Education • Scientific Vocational Education Journal (Scientific Vocational Education Journal)
 - Q Index: Q4 (based on Scopus data)
 9. Service Quality and Student Engagement in Higher Education • Journal of Higher Education (Higher Education Journal)
 - Q Index: Q3 (based on Scopus data)

Data Analysis

At this stage the data is analyzed and the results will answer the previously determined Research Question (RQ) and will discuss the factors that influence customer satisfaction that frequently appear from 2020-2024.

RQ1: How does each dimension influence (*tangible, empathy, reliability, responsiveness, assurance*) on customer satisfaction in educational and training institutions?

The influence of service quality dimensions on customer satisfaction in educational and training institutions is very important to understand, especially in the context of increasingly fierce competition in the education sector. The five dimensions that are often used to evaluate service quality are tangible (physical evidence), reliability (reliability), responsiveness (responsiveness), assurance (guarantee), and empathy (empathy). Each of these dimensions has a significant influence on customer satisfaction, which in this case is students or training participants.

Physical facilities such as clean and modern buildings, equipment and educational environments have a positive impact on customer experience. (Hoque et al., 2023) shows that "tangibles" have a significant contribution to the quality of service in private universities in Bangladesh. In the context of vocational training, adequate facilities help participants feel comfortable and focus on training (Surtiningtyas et al., 2023).

Reliability refers to the ability of educational institutions to provide promised services consistently and accurately. (Rachmawati., 2023) shows that service reliability has a positive effect on customer satisfaction. In the educational context, this means that institutions must be able to fulfill their promises regarding curriculum, schedules and learning outcomes. (Zuraidah., 2021) also emphasized that reliability in the delivery of educational services is very important to build trust and satisfaction among students.

Reliability is the most important dimension in building trust and student retention. (Al-Shamsi at al., 2023) emphasizes that higher education institutions that can provide consistent services, fulfill their promises, and handle problems effectively, tend to have higher student retention rates. Therefore, reliability not only has an impact on student satisfaction but is also a key strategy in the sustainability of educational institutions amidst global competition.

Responsiveness, or responsiveness, is an institution's ability to respond quickly to customer needs and requests. (Sadewo et al. 2021) Responsiveness measures the speed of an institution in responding to customer needs. (Iqbal at al., 2022) that responsiveness encourages student involvement in higher education institutions. found that responsiveness in service greatly influences customer satisfaction. In educational institutions, this can be seen from how quickly staff can answer student questions or handle complaints. (Mintawati, 2023) shows that increasing responsiveness in service can increase trainee satisfaction.

The assurance aspect plays an important role in building trust and a sense of security for vocational training participants. The competence of teaching staff and administrative efficiency are the main keys in providing guarantees that the services received are in line with participant expectations. A study by (Surtiningtyas, 2023) confirms that training institutions that focus on the assurance dimension tend to get higher levels of customer satisfaction, because participants feel confident that they receive quality service and support their success in the world of work. This is especially important in an educational context, where students need to feel confident that they are receiving a quality education. (Firdaus., 2023) shows that strong guarantees from educational institutions can increase student satisfaction and loyalty.

Empathy, or empathy, is a dimension that reflects an institution's attention and understanding of customer needs. (Pangaribuan & Yenita, 2023) shows that empathy shown by teaching staff can increase customer satisfaction. Personal service tailored to individual needs increases customer satisfaction. Research by (Bwachele et al, 2023) identified that empathy contributes greatly to student satisfaction at higher education institutions in Tanzania. In the educational context, this means that institutions must be able to understand and meet the learning needs of individual students. (Fitrianti & Sonani, 2022) also shows that empathy in educational services can contribute to student satisfaction and loyalty.

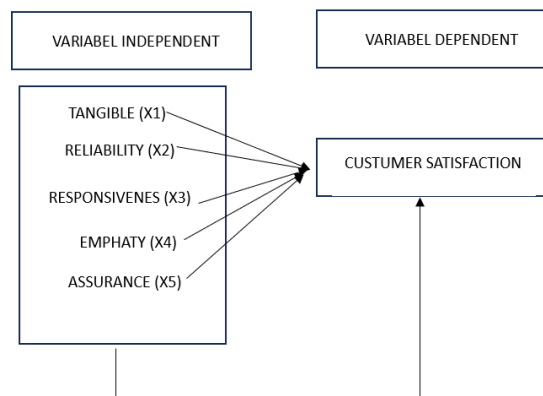
Overall, all dimensions of service quality are interrelated and contribute to the level of customer satisfaction in educational and training institutions. (Prasetya, 2023)

shows that customer satisfaction functions as a mediator that connects service quality with customer loyalty. Therefore, educational institutions are necessary paying attention to all these dimensions to increase student satisfaction and loyalty.

In the context of educational institutions, it is important to carry out regular evaluations of the quality of the services provided. (Nugroho., 2023) shows that the application of the SERVQUAL method can help educational institutions measure and improve the quality of their services. By understanding the influence of each dimension on customer satisfaction, educational institutions can design more effective strategies to meet student expectations and needs.

Thus, the influence of the tangible, reliability, responsiveness, assurance and empathy dimensions on customer satisfaction in educational and training institutions is very significant. Each dimension has a different, but complementary role in creating a satisfying learning experience for students. Therefore, educational institutions must be committed to continuously improving the quality of their services in all these dimensions.

Table 2. variables influencing the 5 dimensions of SERVQUAL on customer satisfaction



RQ2: Is there a difference in influence between dimensions in increasing customer satisfaction in educational and training institutions?

Based on the analysis, it can be concluded that there is a difference in influence between dimensions of Tangible, Empathy, Reliability, Responsiveness, and Assurance in increasing customer satisfaction in educational and training institutions, by explanation as follows:

Reliability: Reliability is the most dominant dimension because it is related with the consistency and accuracy of services promised by the educational institution or training. Customers (students or trainees) expect good service reliable, such as implementing appropriate schedules, teaching that meets standards, as well as administration services that do not cause problems.

Customers have more trust in institutions that can provide appropriate services jtheir dog. This helps build long-term relationships between customers and institutions

(Hoque et al., 2023).

In the context of higher education in the UAE, (Al-Shamsi, 2023) found that Service reliability has a direct impact on student retention. Satisfied students with consistent service are likely to continue their studies at that institution.

This dimension has the strongest influence on customer satisfaction. Reliability reflects the institution's ability to provide consistent services and as promised, thus increasing customer trust (Thody, 2022).

Assurance (Guarantee): This dimension also has a significant influence on satisfaction participant. In vocational training, (Surtiningtyas, 2023) found that assurance has a significant influence on participant satisfaction. Participants feel confident to the quality of service they receive when teaching staff demonstrate high competence.

Tangible (Physical Evidence): Although important, tangible influences on satisfaction customers tend to be lower than reliability and assurance. However, Tangibles have a greater influence on customers' initial perceptions of service quality, such as condition of facilities, cleanliness of classrooms, or ease of access to technology (Hoque et al., 2023). good physical facilities, modern equipment, and a clean environment can improve overall customer experience (Simatupang & Kurniawan, 2022).

Empathy: This dimension plays a role in creating a good service experience personal and satisfying. Empathy reflects the institution's attention to needs individual customers. Although the effect is smaller than reliability and assurance, (Bwachele et al. 2023) noted that empathy tends to create emotional connection with customers, which ultimately drives long-term loyalty long. Empathy is critical to building long-term customer loyalty (Akhmadi, 2019).

Responsiveness: Responsiveness is also important, but its influence tends to vary depending on the context. Quick response to questions or Customer complaints increase trust and loyalty. However, the effect can be smaller than assurance and reliability in increasing overall satisfaction directly (Nurlaeli, 2019). Responsiveness has varied influences. In the situation urgent, customers tend to appreciate a quick response, but under the circumstances normal, the influence may be smaller than other dimensions (Iqbal et al., 2022).

Overall, reliability and assurance are the most dominant dimensions in increasing customer satisfaction. Tangible, empathy, and responsiveness remain important, but its contribution to customer satisfaction varies depending on customer needs and expectations as well as characteristics of educational institutions and training (Herwanda et al., 2018).

RQ3: How is the SERVQUAL model applied in the context of education and training institutions?

The SERVQUAL model, developed by Parasuraman, Zeithaml, and Berry, is an invaluable tool in assessing service quality in various sectors, including education and

training institutions. In the educational context, this model is used to measure the gap between students' expectations and perceptions of the services provided by educational institutions. There are five main dimensions in the SERVQUAL model, namely reliability, responsiveness, assurance, empathy, and physical appearance (tangibles) (Jonkisz et al., 2023; Mbise & Tuninga, 2013; Goumairi et al., 2020). The application of this model in educational institutions aims to improve service quality and student satisfaction, which in turn can increase their loyalty and academic results (Leonard, 2018; Abdullah et al., 2022).

The SERVQUAL model is used to evaluate the gap between customer expectations and perceptions. Research by (Hoque et al. 2023) at a Bangladeshi private university highlights that this gap mapping helps institutions understand improvement priorities. In vocational education, (Surtiningtyas et al. 2023) modified the SERVQUAL model with additional methods such as Refined-KANO to increase relevance in the context local. In research conducted by Grudowski and Szczepańska, it was found that students have different views regarding the quality of educational services, indicating gaps in all dimensions of SERVQUAL (Grudowski & Szczepańska, 2021). This research emphasizes the importance of understanding student expectations and how institutions can meet these expectations to improve service quality. Additionally, research by Necosia shows that although SERVQUAL is widely used, there is criticism of its validity and applicability in higher education contexts (Necosia, 2024). This matter indicates the need for adaptation and modification of the SERVQUAL model to better suit the unique characteristics of educational services.

Furthermore, research by Al-Rabia et al. shows that the application of the SERVQUAL model can help identify priorities for improvement in educational services, based on students' views about the quality of the services they receive (Al-Rabia et al., 2021). By using this model, educational institutions can measure the gap between student expectations and perceptions, and formulate strategies to improve service quality. Misaii et al. also found that the responsiveness dimension had the largest gap in the context of educational services, indicating that institutions need to be more responsive to students' needs and expectations (Misaii et al., 2019).

The application of SERVQUAL in the educational context was also expressed by Abdullah et al., who emphasized the importance of the dimensions of reliability, responsiveness and assurance in building strong relationships between educational institutions and students (Abdullah et al., 2022). This research shows that students tend to be more loyal to institutions that can meet their expectations in terms of service quality. Additionally, research by Mbise and Tuninga shows that the SERVQUAL model can be used to measure service quality in business schools in emerging markets, emphasizing the importance of adapting the model to local contexts (MMbise & Tuninga, 2016).

In the context of distance education, research by Dursun et al. shows that the SERVQUAL model can be applied to assess the quality of educational services provided online, with a focus on students' perceptions of the services they receive (Dursun et al., 2014). This research highlights the importance of the dimensions of

physical appearance and responsiveness in the e-learning context, where students expect fast and efficient service. Additionally, research by Karunarathne et al. shows that understanding the quality of services provided by local authorities can also be applied in an educational context, using SERVQUAL as a measuring tool (Karunarathne et al., 2015).

In order to improve the quality of educational services, it is important for institutions to carry out regular evaluations using the SERVQUAL model. This is in line with research by Fuchs and Fangpong, which shows that monitoring student satisfaction with the quality of education has become an integral part of the educational process at many universities (Fuchs & Fangpong, 2021). By conducting this evaluation, institutions can identify areas that need improvement and formulate strategies to improve the quality of services provided to students.

Additionally, research by Liu et al. suggests that modifications to the SERVQUAL model can be made to take into account the characteristics of certain educational programs, such as hospitality and tourism programs, to ensure that the model is relevant and effective in measuring service quality (Liu et al., 2022). This research shows that adapting the SERVQUAL model can improve understanding of service quality in more specific educational contexts.

In conclusion, implementing the SERVQUAL model in educational and training institutions is very important to improve service quality and student satisfaction. By understanding students' expectations and perceptions of the services provided, educational institutions can formulate more effective strategies to meet students' needs and improve their academic outcomes. Further research is needed to explore modifications and adaptations of the SERVQUAL model to better suit diverse educational contexts.

5. Discussion

The findings indicate that **reliability** is the most influential factor in shaping customer satisfaction in educational and training institutions. Institutions that consistently fulfill their commitments—such as adhering to academic schedules, maintaining teaching standards, and ensuring smooth administrative processes—gain higher student trust and retention rates (Al-Shamsi et al., 2023). **Assurance** also plays a critical role, particularly in vocational training, where students expect competence from instructors and a guarantee of quality education that aligns with industry demands (Surtiningtyas et al., 2023). Meanwhile, **tangibles**, including modern infrastructure and well-maintained facilities, contribute to students' initial perceptions of service quality. While important, their long-term impact on satisfaction is lower than that of reliability and assurance (Hoque et al., 2023). **Empathy** strengthens the relationship between students and institutions by providing personalized attention, which enhances emotional connections and long-term loyalty (Bwachele et al., 2023). Lastly, **responsiveness** is crucial in addressing student inquiries and concerns. Institutions that respond promptly and effectively to student needs tend to foster

greater engagement and satisfaction (Iqbal et al., 2022). While all five dimensions contribute to service quality, reliability and assurance emerge as the most dominant in influencing overall customer satisfaction, while tangibles, empathy, and responsiveness vary in impact depending on institutional characteristics and student expectations.

6. Conclusions

This research highlights the significant influence of the five SERVQUAL dimensions—tangible, empathy, reliability, responsiveness, and assurance—on customer satisfaction in educational and training institutions. Among these, reliability and assurance have the strongest impact, as they ensure consistency and build trust in institutional services. Tangible and empathy contribute to shaping positive customer perceptions, while responsiveness plays a key role in fostering trust and loyalty by addressing student needs promptly.

Additionally, this study makes unique theoretical contributions by expanding the SERVQUAL model with moderating factors such as technological advancements and post-pandemic learning shifts, offering a comparative analysis of dimension impact, and contextualizing the model for the education sector. Practically, the findings provide guidelines for educational institutions to enhance service quality, establish a framework for continuous improvement, and shape policy recommendations to improve student satisfaction and retention.

To implement these insights, institutions should prioritize digitalized administration for reliability, faculty competency training for assurance, infrastructure modernization for tangible improvements, mentorship programs for empathy, and AI-driven automation for responsiveness. Periodic evaluations, staff training, technological investments, and customer needs assessments are essential for sustaining high service quality. By applying these strategies, educational institutions can enhance student satisfaction, foster long-term loyalty, and maintain competitiveness in an evolving academic landscape.

References:

- Abdullah, M., Khan, N., & Ibrahim, M. (2022). Exploring the influence of service quality dimensions of reliability, responsiveness, and assurance towards consumers' loyalty: The mediating effect of commitment-trust relationship marketing theory. *International Journal of Academic Research in Business and Social Sciences*, 12(11). <https://doi.org/10.6007/ijarbss/v12-i11/15058>
- Adriantantri, E., Indriani, S., E, M., & Suardika, I. (2023). Measuring customers' satisfaction of boarding houses using service quality. *Jurnal Mnemonic*, 6(1), 77–83. <https://doi.org/10.36040/mnemonic.v6i1.6148>
- Agustina, N. (2023). Decision tree algorithm for public sentiment analysis towards the marketplace in Indonesia. *Naratif National Journal of Application Research*

- and *Informatics Engineering*, 5(1), 18-25. <https://doi.org/10.53580/naratif.v5i1.186>
- Al-Rabia, M., Fasfous, I., Eldigre, M., Aldarmahi, A., Alzahrani, S., & Atwa, H. (2021). Exploring educational service quality and improvement priorities from the viewpoints of health sciences students using the SERVQUAL model. <https://doi.org/10.21203/rs.3.rs-927414/v1>
- Al-Shamsi, A., et al. (2023). Impact of service quality on student retention in UAE higher education institutions. https://link.springer.com/content/pdf/10.1007/978-981-99-1927-7_17.pdf
- Amerta, K. (2023). The role of customer satisfaction in mediating the influence of service quality on customer loyalty. *E-Journal of Management of Udayana University*, 12(9), 887. <https://doi.org/10.24843/ejmunud.2023.v12.i09.p01>
- Amudha et al. (2023). Gauging Service Quality among Management Students in B-Schools Using MEQUAL. *J. Business Management Studies*, 5(2), 71-74
- Basalamah, K., Ahri, R., & Multazam, M. (2022). The influence of image and service quality on patient satisfaction and intention to return to the Makassar City Regional General Hospital. *An Idea Health Journal*, 1(02), 81-91. <https://doi.org/10.53690/ihj.v1i02.41>
- Bwachele, V. W., et al. (2023). Perceived service quality and student satisfaction in higher learning institutions in Tanzania. <https://www.nature.com/articles/s41599-023-01913-6.pdf>
- Dewi, R. (2023). Logistic service quality model on customer satisfaction and customer loyalty using the structural equation modeling method at Kotabumi Post Office. *Journal of Information and Technology*, 5(4), 145-160. <https://doi.org/10.60083/jidt.v5i4.440>
- Dursun, T., Oskaybaş, K., & Gökmen, C. (2014). Perceived quality of distance education from the user perspective. *Contemporary Educational Technology*, 5(2). <https://doi.org/10.30935/cedtech/6120>
- Firdaus, A. (2023). Management training of Islamic educational institutions at the Al Buhori Praya Islamic Boarding School, Central Lombok. *Creation Journal of Innovation and Community Service*, 3(3), 499-509. <https://doi.org/10.58218/kreasi.v3i3.749>
- Fitriani, D. (2023). Analysis of the influence of service quality, customer relationship marketing, and company image on customer loyalty with customer satisfaction as an intervening variable at BPR BKK Pati. *J. Business Management Studies*, 3(1). <https://doi.org/10.24176/jsmb.v3i1.9412>
- Fuchs, K., & Fangpong, K. (2021). Using the SERVQUAL framework to examine the service quality in higher education in Thailand. *Education Quarterly Reviews*, 4(2). <https://doi.org/10.31014/aior.1993.04.02.286>
- Ginting, S. (2024). The influence of service quality and information quality on customer satisfaction at ULP Blangkejeren. *JAEB*, 13(01), 52-59. <https://doi.org/10.33795/jaeb.v13i01.5226>
- Goumairi, O., Aoula, E., & Souda, S. (2020). Application of the SERVQUAL model for the evaluation of service quality in Moroccan higher education: Public engineering school as a case study. *International Journal of Higher Education*, 9(5), 223. <https://doi.org/10.5430/ijhe.v9n5p223>

- Hoque, U. S., et al. (2023). Assessing service quality using the SERVQUAL model: An empirical study on some private universities in Bangladesh. <https://www.mdpi.com/2813-4346/2/1/13/pdf?version=1678709576>
- Iqbal, S., et al. (2022). Service quality and student engagement in higher education. <https://journals.iqra.edu.pk/JESS/Issue1-22/Article10/JESS2210103.pdf>
- Jonkisz, A., Karnej, P., & Krasowska, D. (2023). Meeting patient expectations: Assessing medical service and quality of care using the SERVQUAL model in dermatology patients at a single center in Poland. *Medical Science Monitor*, 29. <https://doi.org/10.12659/msm.941007>
- Kachwala, T., Panchal, D., & Bali, A. (2021). The relationships among overall service quality, customer satisfaction and customer loyalty in library services. *International Journal of Productivity and Quality Management*, 33(2), 198–217. <https://doi.org/10.1504/IJPQM.2021.115692>
- Kitchenham, B. (2004). Procedures for performing systematic reviews. *Keele, UK, Keele University*, 33(2004), 1–26.
- Liu, Y., Bao, T., Zhao, D., Sang, H., & Fu, B. (2022). Evaluation of student-perceived service quality in higher education for sustainable development: A fuzzy TODIM era method. *Sustainability*, 14(8), 4761. <https://doi.org/10.3390/su14084761>
- Misaii, H., Khoshdel, A., Zareian, A., & Mohammadimehr, M. (2019). Evaluating the educational services quality of a military medical university (SERVQUAL model): A descriptive analytic study. *Journal of Archives in Military Medicine*, 7(1-2). <https://doi.org/10.5812/jamm.92129>
- Mbise, E., & Tuninga, R. (2013). The application of SERVQUAL to business schools in an emerging market: The case of Tanzania. *Journal of Transnational Management*, 18(2), 101-124. <https://doi.org/10.1080/15475778.2013.782238>
- Necosia, R. (2024). Service quality assessment tool in a state university in Northern You Eat. *JIP*, 2(3). <https://doi.org/10.69569/jip.2024.0036>
- Rizard et al. (2023). Impact of Brand Equity and Service Quality on the Reputation of Universities and Students' Intention to Choose Them. *International Journal of Productivity and Quality Management*, 33(2), 90–107
- Salma et al. (2023). Assessing Service Quality Using SERVQUAL Model: An Empirical Study on Some Private Universities in Bangladesh. *JAEB*, 13(01), 60-69
- Sam et al. (2024). The Impact of Service Quality on Teachers' Satisfaction: The Case of Battambang Teacher Education College. *Contemporary Educational Technology*, 5(2), 23-26
- Surtiningtyas, S. R., et al. (2023). Employing fuzzy-weighted SERVQUAL, refined-KANO, IPA, and QFD to assess service quality in vocational higher education. <https://e-journal.undikma.ac.id/index.php/jurnalkependidikan/article/download/7139/4228>
- Trisnaningsih, Y. (2021). The quality of Widyaishwara services and satisfaction of training participants at the BPSDMD, Central Sulawesi Province. *Indonesian Widyaishwara Journal*, 2(2), 71-84. <https://doi.org/10.56259/jwi.v2i2.82>

Zuraidah, E. (2021). Analysis of the influence of service quality of PT Pos Indonesia Belitang branch on customer satisfaction levels using the SERVQUAL method. *Prosisko Journal of Computer System Research and Observation Development*, 8(2), 15-22. <https://doi.org/10.30656/prosisko.v8i2.3702>