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University service quality measurement model in Peru: Multifactorial validation

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ABSTRACT

The quality of university services plays a fundamental role in improving the student experience and shaping highly competent professionals. In this context, the study aimed to develop and validate a multidimensional model to comprehensively assess university service quality in Peru, a country facing unique educational challenges. Using a quantitative and cross-sectional design, data were collected from 1,170 students across 20 universities through the University Service Quality Scale (CEUS), specifically designed for this research. Exploratory and confirmatory factor analyses identified five key dimensions: Quality of Academic and Support Processes (QuAcSuPr), Curriculum (Cu), Teaching Quality (TeQu), Library Services (LiSe), and Educational Sustainability (EdSu). The results showed robust fit indices (IFI=0.988, CFI=0.988, TLI=0.984, RMSEA=0.040), confirming the model's validity and applicability. The model provides a practical framework for evaluating and improving university service quality in Peru, while also emphasizing the importance of integrating educational sustainability as a key dimension to prepare socially responsible graduates. Future studies could adapt the model to other contexts and explore its application in modalities such as online learning.

Keywords: university service, quality, confirmatory factor analysis, education, sustainability

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INTRODUCTION

Evaluating and improving service quality in higher education is essential for advancing academic standards and fostering holistic student development. Universities are expected to create environments that not only provide high-quality education but also support the personal, social, and professional growth of their students. In Peru, the last few decades have seen significant transformations in higher education, including shifts in educational offerings, the adoption of quality-focused policies, and responses to external challenges. These transformations are part of a global trend, where higher education institutions (HEIs) increasingly focus on enhancing service quality to remain competitive and relevant in an evolving educational landscape. The enactment of University Law N° 30220 in 2014 was a turning point for Peruvian higher education. This law emphasised the importance of accreditation and licensing, introducing a national framework for ensuring educational quality. Through the National System of Evaluation, Accreditation, and Certification of Educational Quality (SINEACE), the law required institutions to meet rigorous standards and emphasized the need to establish quality assurance systems that are sustainable and adaptable, enabling continuous improvement. The goal was to create a more accountable system where universities were responsible for consistently maintaining and enhancing the quality of their services (Rodríguez & Montoro, 2013). As part of this initiative, the National Superintendence of University Education (SUNEDU) was established to oversee the licensing

and accreditation of universities. By 2019, SUNEDU had granted licenses to 94 universities and graduate schools, including 46 public institutions, signalling considerable progress in ensuring a baseline of quality in the sector (Superintendencia Nacional de Educación Superior, 2020).

However, the rapid expansion of private universities, especially between 1995 and 2014, introduced new challenges regarding quality and relevance. The increase in the number of private institutions met growing demand but also led to inconsistencies in educational quality, as many new universities lacked the infrastructure, faculty, and resources needed to provide a high standard of education. This expansion raised concerns about the ability of HEIs to deliver relevant and effective services aligned with academic, professional, and societal needs. Moreover, as the higher education market became more competitive, there was a growing need for Peruvian universities to adopt comprehensive quality assurance systems that address the diverse expectations of students, faculty, and society.

Furthermore, the COVID-19 pandemic brought additional challenges to the higher education sector, necessitating an abrupt shift to remote learning. This shift exposed several vulnerabilities in the system, particularly related to infrastructure and digital readiness. For many students, connectivity issues, limited access to digital devices, and a lack of preparedness for virtual learning created significant barriers to academic success. These challenges resulted in increased dropout rates and interruptions in students' academic progress, posing a threat to educational continuity and equity (Rojas, 2020). In response, the Ministry of Education implemented oversight measures to support institutions in adapting to remote learning and maintaining quality under unprecedented circumstances. This situation underscored the need for a quality assessment model that accounts for the realities of digital and remote learning while recognising the varied needs of students.

In this evolving educational landscape, it is essential to have a model tailored to the unique characteristics of Peruvian universities, which differ in terms of resources, mission, and student demographics. Existing tools for assessing service quality in higher education often fall short of capturing the holistic view required in the Peruvian context. Most notably, they lack an emphasis on educational sustainability, a critical component for fostering professionals who are not only skilled but also capable of contributing to sustainable development. Educational sustainability refers to the ability of universities to provide an equitable learning environment while embedding principles of social responsibility, environmental stewardship, and adaptability to future challenges. By including sustainability as a core aspect of service quality, universities can ensure they are developing graduates equipped to address the social and environmental issues facing modern societies. Higher education service quality is a complex, multidimensional construct that has been explored through various theoretical and empirical lenses. For instance, Zineldin et al. (2011) introduced the "5Qs" model, identifying five core dimensions of service quality: object quality (educational outcomes in terms of skills and knowledge), process quality (how services are delivered), infrastructure quality (availability of resources), interaction quality (quality of social and communicative exchanges), and environment quality (the educational setting). This model highlights the diverse facets of service quality that contribute to the overall student experience and satisfaction. Similarly, Abbas (2020) developed the HEISQUAL approach, which views service quality as an integrated system encompassing both technical and operational aspects. Key elements include faculty qualifications, institutional infrastructure, and the development of student competencies, with a strong emphasis on evaluation from the student's perspective. These multidimensional frameworks illustrate the need for comprehensive quality models that address the full range of attributes impacting service quality in higher education, particularly in culturally unique and economically diverse contexts like Peru's.

Likewise, although there is progress in research on the quality of university service, important gaps persist in the literature that justify the creation of a measurement model for the Peruvian context. A particularly neglected aspect is educational sustainability, which is vital to promoting the formation of responsible citizens. The lack of measurement instruments limits the carrying out of systematic and comparable evaluations between universities, limiting the ability to generate substantial and sustainable improvements in the University System.

Building on these perspectives, this study aims to develop and validate a multifactorial model of university service quality specifically adapted to the Peruvian context. This model not only assesses traditional elements of service quality, such as curriculum design and faculty performance, but also incorporates support processes, library resources, and educational sustainability, components that are increasingly relevant to students and society. The primary objective is to establish a rigorous and comprehensive tool that enables Peruvian universities to systematically evaluate service quality, thereby fostering informed decision-making in institutional policies and practices. Such a tool will help universities identify strengths and areas for improvement, align their offerings with national and international standards, and enhance their overall contribution to society.

METHOD

This study employed a descriptive, quantitative approach to develop and validate a model for assessing university service quality in Peru. The research design centred on exploratory and confirmatory factor analyses (EFA and CFA) to identify and confirm the core dimensions and attributes that characterise service quality in Peruvian higher education institutions. The descriptive methodology enabled the systematic capture of student perceptions across multiple service dimensions, laying the groundwork for a model that could be applied across varied institutional contexts.

The study's final sample included 1,170 Peruvian university students, reflecting 92.3% of the initial 1,300 respondents. The sample was drawn from 21 universities, encompassing both public and private institutions, to ensure a diverse and representative cross-section of Peru's higher education landscape. Exclusion criteria applied to students in the early stages of their academic programmes (up to the seventh semester), as their limited exposure to university services might not accurately reflect the full spectrum of service quality, thus potentially skewing results.

After rigorous data cleaning to remove incomplete or atypical responses, the final sample maintained a balanced representation with 438 male (37%) and 732 female (63%) participants. Institutional representation included students from private (60%) and public (40%) universities, ensuring a varied perspective on service quality. To ensure the robustness and generalisability of the findings, the sample size exceeded the recommendation by Kline (2011) of 18 cases per estimated parameter (n = 65), reinforcing the validity of the proposed model. Participation was voluntary and anonymous, supporting both data integrity and reliability.

Data was collected using the University Service Quality Scale (CEUS), an instrument specifically developed for this study. The final CEUS instrument comprises 15 items measuring five core dimensions of service quality: Quality of Academic and Support Processes (QuAcSuPr), Curriculum (Cu), Teaching Quality (TeQu), Library Services (LiSe), and Educational Sustainability (EdSu) (Table 1).

The CEUS was developed following a systematic scale construction approach (Muniz, 2018). The process began with a pool of 70 items generated from a literature review. This pool was refined through expert judgment and pilot testing to ensure content validity and contextual relevance. Iterative refinement resulted in a final set of streamlined indicators that accurately represent the constructs of interest.

Data was collected online between February and July 2021 using a convenience sampling method. The data analysis followed a two-step statistical procedure. First, an Exploratory Factor Analysis (EFA) was conducted using SPSS 26 to identify the underlying factor structure. Subsequently, a Confirmatory Factor Analysis (CFA) was performed using AMOS to validate the measurement model. Model fit was assessed using standard indices: RMSEA, CFI, TLI, and IFI. The reliability and convergent validity of the constructs were evaluated using Composite Reliability (CR) and Average Variance Extracted (AVE).

Table 1. Conceptual model of university service quality with latent variables and indicators

Latent Variables	Conceptualisation	Indicators
Curriculum (Cu)	"An official document that plans and organises the contents and actions to be addressed in the educational process, aiming to meet social demands; it demonstrates the relevance of contents and activities to society's needs" (De La Cruz et al., 2022, p. 1503).	pe1: The curriculum develops research competencies required in the occupational market, pe2: The curriculum is suitable for the occupational market, pe3: The curriculum is adapted to social demand, pe4: The curriculum improves students' competencies, pe7: The curriculum contains elective, specific and specialized subjects appropriate to achieve vocational training.
Teaching Quality (TeQu)	"A creative process through which those who teach and those who learn interact with an object of knowledge, revealing its own logic of construction and mutually transforming each other" (Morán, 2004, p. 4).	do1: Teachers have appropriate academic profiles; do2: Teachers have relevant professional experience; do4: Teachers possess required communication skills; do5: Teaching methods support competence acquisition; do6: Adequate academic guidance.
Library Services (LiSe)	Library services focus on efficiently providing access to information through effective resource management and user training to meet informational needs (Merlo Vega, 2000).	sb1: Access to updated books and journals; sb4: Suitable reading and study spaces; sb5: Library hours accommodate students; sb6: Adequate librarian support.
Educational Sustainability (EdSu)	The institution's capacity to provide an accessible and equitable learning environment while fostering sustainable development through education, integrating sustainability principles in teaching, research, and management (García-Sanchis et al., 2015; Perez et al., 2009).	sed3: Socially responsible management of environmental resources; sed4: Social responsibility in academic management; sed5: Social responsibility in knowledge production; sed6: Human development through social responsibility.
Quality of Academic and Support Processes (QuAcSuPr)	Actions that support teaching and learning, including curriculum design, student admission and evaluation, faculty management, and administrative support, fostering a conducive learning environment (Cubaque Mendoza et al., 2014).	di2: University meets student needs; se3: University web service is precise, quick, and dynamic; cp2: High-quality face-to-face instruction; cp3: High-quality learning evaluation; cp4: High-quality online instruction.

FINDINGS AND DISCUSSION

Findings

Exploratory Factor Analysis (EFA)

The EFA performed in this study commenced with rigorous evaluation criteria to ensure data suitability for factor analysis. Sample adequacy was confirmed by the Kaiser-Meyer-Olkin (KMO) measure, yielding a value of 0.937, which indicates a highly acceptable sample adequacy for factor analysis procedures. Additionally, Bartlett's test of sphericity, yielding a Chi-square value of 3821.656 with 231 degrees of freedom (Sig. = 0.000), further confirmed the data's suitability. This significance level demonstrates that the correlations between variables were sufficiently large for EFA, supporting the appropriateness of the data for factorial analysis. Based on Kaiser's criterion, which suggests retaining factors with eigenvalues greater than 1, four factors were identified. Additionally, a fifth factor with an eigenvalue of 0.745 was included, justified by both its theoretical relevance and contribution to the cumulative explained variance. Altogether, these five factors accounted for 54.531%, 7.993%, 6.998%, 4.643%, and 3.387% of the total variance, respectively, collectively explaining a substantial proportion of the overall variance in

service quality perceptions. The EFA identified five key components representing distinct dimensions within university service quality: Quality of Academic and Support Processes (QuAcSuPr), Teaching Quality (TeQu), Library Services (LiSe), Curriculum (Cu), and Educational Sustainability (EdSu).

Table 2. Rotated components matrix for university service quality dimensions

ITEM	QuAcSuPr	TeQu	LiSe	Cu	EdSu
54. University's learning assessment process is high quality	0.843	0.242	0.092	0.197	0.173
55. Online learning process is high quality	0.819	0.162	0.114	0.224	0.258
53. In-person learning process is high quality	0.805	0.345	0.089	0.255	0.23
48. University's web service is precise, quick, and dynamic	0.75	0.193	0.366	0.114	0.153
41. University understands students' needs	0.621	0.271	0.249	0.216	0.38
11. Teachers have relevant professional experience	0.288	0.764	0.16	0.236	0.137
14. Teaching methods are adequate for competence acquisition	0.273	0.711	0.275	0.242	0.236
10. Teachers have the appropriate academic profile	0.298	0.689	0.318	0.236	0.166
13. Teachers possess required communication skills	0.269	0.643	0.282	0.262	0.152
15. Academic guidance provided by teachers is adequate	0.075	0.532	0.424	0.356	0.341
20. Library hours are suitable for students	0.179	0.234	0.839	0.148	0.113
19. Library has suitable spaces for reading and other academic activities	0.219	0.26	0.771	0.198	0.211
21. Library staff cooperation is adequate	0.076	0.164	0.735	0.171	0.348
16. Library has up-to-date books and journals	0.336	0.458	0.613	0.175	0.075
3. Curriculum aligns with social demands	0.249	0.186	0.103	0.792	0.01
2. Curriculum is suitable for the job market	0.185	0.308	0.174	0.769	0.078
1. Curriculum develops research skills needed in the job market	0.121	0.081	0.254	0.759	0.258
4. Curriculum enhances student competencies	0.22	0.319	0.106	0.735	0.213
31.University manages its involvement in sustainable human development responsibly	0.314	0.163	0.241	0.227	0.815
28. University manages environmental resources responsibly	0.423	0.241	0.298	0.061	0.697
29. University manages academic training with social responsibility	0.534	0.229	0.252	0.26	0.577
30. University manages knowledge production with social responsibility	0.457	0.39	0.251	0.247	0.562

Note: Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalisation; Rotation converged in 7 iterations.

The rotated component matrix, shown in Table 2, details the factor loadings for each item across these dimensions. Notably, items within the Quality of Academic and Support Processes dimension displayed high loadings, such as 0.843 for "University's learning assessment process is high quality" and 0.819 for "Online learning process is high quality," underscoring the importance of robust assessment and digital infrastructure. The Teaching Quality dimension showed strong associations with items like "Teachers have relevant professional experience" (loading of 0.764) and "Teaching methods are adequate for competence acquisition" (0.711), indicating that instructional expertise and effective pedagogy are critical to perceived service quality. The Library Services dimension, marked by items like "Library hours are suitable for students" (0.839) and "Library has up-to-date books and journals" (0.613), emphasizes the need for accessible and resourceful library services. The Curriculum dimension was similarly characterized by significant loadings on items such as "Curriculum aligns with social demands" (0.792) and "Curriculum develops research skills needed in the job market" (0.759), reflecting the necessity of a curriculum that meets both societal expectations and market requirements. Finally, Educational Sustainability emerged as a vital dimension, with loadings of 0.815 for

"University manages its involvement in sustainable human development responsibly" and 0.697 for "University manages environmental resources responsibly," underscoring the university's role in fostering sustainable practices and social responsibility.

Confirmatory Factor Analysis (CFA)

Following the EFA, multiple CFA were conducted to verify the fit of the factor solutions. Five key dimensions influencing service quality perception were identified: Quality of Academic and Support Processes (QuAcSuPr), Curriculum (Cu), Teaching Quality (TeQu), Library Services (LiSe), and Educational Sustainability (EdSu). The results confirm the proposed factor structure, providing a robust tool for evaluating higher education service quality in Peru. The conceptual model presented evaluates the quality of university service in Peru through five latent variables: curriculum (Cu), quality of teaching (TeQu), library services (LiSe), educational sustainability (EdSu) and quality of processes, academic and support (QuAcSuPr).

Each latent variable is represented by a set of indicators measured through factor loadings, which indicate the strength of the relationship between the indicator and the corresponding construct: Curriculum (Cu), evaluates the relevance of the study plan in the face of social demands and of the labor market through three indicators (pe2, pe3, pe4), all with factor loadings equal to 0.78; Teaching quality (TeQu) focuses on critical aspects such as the academic and professional profile of teachers, teaching methods and academic orientation based on four indicators (d1, d4, d5, d6) with factor loadings between 0.76 and 0.83; library services (LiSe), measures the quality of access to bibliographic resources, infrastructure and user service, its indicators (sb4, sb5, sb6) present factor loadings between 0.86 and 0.89, indicating a high level of relevance for the construct; educational sustainability (EdSu), addresses the integration of social responsibility and sustainable development in institutional management through three indicators (sed4, sed5, sed6) with factor loadings that range between 0.81 and 0.88; quality of academic and support processes (QuAcSuPr), analyzes the key processes that support teaching and learning, such as the quality of face-to-face and online instruction with two indicators (cp2, cp3) with factor loadings of 0.90 and 0.86, which shows a strong relationship with the construct. The model also reflects the correlations between the latent variables, which range from 0.57 to 0.77, indicating moderate to high relationships. These connections suggest a significant interaction between the constructs, especially between QuAcSuPr and LiSe ($r = 0.77$) and between TeQu and EdSu ($r = 0.72$).

Model fit evaluation

The model fit was assessed using IFI, CFI, TLI, NFI, and RMSEA indices, based on criteria from Hu and Bentler (1998) and Kline (2011). The incremental indices, IFI (0.988), CFI (0.988), TLI (0.984), and NFI (0.982), all exceed the 0.95 threshold, indicating a significantly better fit than a null model and explaining a substantial portion of the observed variance. The RMSEA value of 0.040 further supports a good model fit, being below the 0.05 threshold recommended by Hu and Bentler (1998) and Nikkhah et al. (2018). The results from the fit indices indicate an excellent incremental fit, with the RMSEA confirming acceptable model fit. These findings underscore the validity and robustness of the model for the context analyzed. Figure 1 illustrates the measurement model's structure, featuring five latent variables associated with multiple observed indicators, as identified through EFA and CFA.

Model parameter evaluation

CFA validated the proposed factor structure and the measurement quality of the latent constructs as shown in Table 3. Standardised factor loadings, representing the correlation between each item and its corresponding latent factor, were all above 0.70, indicating strong relationships between items and their constructs (Hair et al., 2010). This result suggests high reliability and convergence of items within each factor. CR values for each factor exceeded the 0.70 benchmark, confirming internal convergence among items within each factor (Fornell & Larcker, 1981). Additionally, the AVE for each factor surpassed the 0.60 threshold, supporting discriminant validity among the latent constructs.

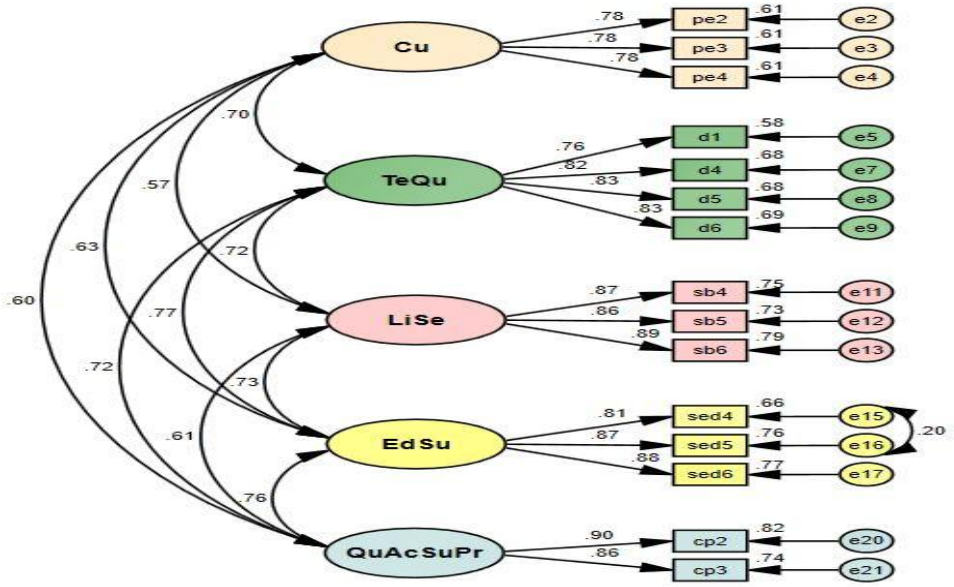

Figure 1. Path Diagram of the University Service Quality Measurement Model in Peru

Note. The covariance between e15 and e16 was included due to the complementary relationship between items sed4 (academic training) and sed5 (production of knowledge), which justifies the residual relationship. The inclusion of this covariance contributed to improving the overall fit of the model

Table 3. Factor loadings and AVE of latent variables

Latent Variables	Observed Variables	Factor Loadings	Variance (Squared Loadings)
Curriculum (Cu)	p2	0.784	0.615
	p3	0.781	0.610
	p4	0.784	0.615
	AVE - Cu	0.613	
Teaching Quality (TeQu)	d1	0.762	0.581
	d4	0.823	0.677
	d5	0.827	0.684
	d6	0.832	0.692
	AVE - TeQu	0.659	
Library Services (LiSe)	sb4	0.866	0.750
	sb5	0.857	0.734
	sb6	0.887	0.787
	AVE - LiSe	0.757	
Educational Sustainability (EdSu)	sed4	0.81	0.656
	sed5	0.875	0.766
	sed6	0.877	0.769
	AVE - EdSu	0.730	
Quality of Academic and Support Processes (QuAcSuPr)	cp2	0.905	0.819
	cp3	0.862	0.743
	AVE - QuAcPr	0.781	

Internal consistency of the validated model

Once the factorial structure of the model was validated through EFA and CFA, the internal consistency of the identified dimensions was assessed. The results showed a McDonald's Omega (Ω) of 0.932 and a Cronbach's Alpha (α) of 0.931 for the complete scale, indicating excellent internal consistency. These indices far exceed the 0.70 threshold recommended for reliable instruments (Kline, 2011) and demonstrate that the items in the model consistently measure the proposed dimensions. These findings reinforce the validity of the model and its capacity to evaluate university service quality accurately and reliably in the Peruvian context.

Discussion

The results of this study underscore the importance of a multifactorial approach to evaluating service quality in Peruvian universities. Through exploratory and confirmatory factor analyses, this validated model identifies five essential dimensions, Quality of Academic and Support Processes (QuAcSuPr), Curriculum (Cu), Teaching Quality (TeQu), Library Services (LiSe), and Educational Sustainability (EdSu). These dimensions provide a nuanced view of university service quality and represent a valuable tool for future research and institutional evaluations. This multifaceted model captures the complexity of service quality in higher education, aligning with diverse needs and expectations, as recommended by quality models like SERVQUAL (Sahin et al., 2023; Yusof et al., 2012).

Curriculum and Teaching Quality emerged as core components influencing educational service quality. A well-designed curriculum aligned with industry demands and societal needs enhances student satisfaction, loyalty, and academic performance (Chang et al., 2017). This finding aligns with Morán Oviedo's (2004) observation that the interaction between teachers and students, facilitated by a relevant curriculum, is fundamental for developing academic and professional competencies. Likewise, De La Cruz et al. (2022) and Yusof et al. (2011) highlight the need for curricula to equip students with market-relevant skills, ensuring that higher education institutions (HEIs) remain responsive to labour demands. Furthermore, teaching quality directly impacts the overall student experience, reinforcing the need for faculty who are both qualified and capable of engaging students effectively (Yusof et al., 2012). The inclusion of dimensions like reliability and assurance in the SERVQUAL model also reinforces the importance of teacher competence and instructional consistency in educational service quality (Sahin et al., 2023; Alam & Mezbah-ul-Islam, 2021). This integrated approach contributes to comprehensive curriculum development, improving educational outcomes and aligning institutional objectives with student expectations.

Library Services play a critical role in supporting academic quality by providing students with essential learning resources. The significance of library services aligns with research indicating that high-quality library support positively impacts student performance and satisfaction (Alam & Mezbah-ul-Islam, 2021; Hossain & Ahmed, 2013). The adapted SERVQUAL model has been instrumental in evaluating library quality, focusing on dimensions such as tangibility, reliability, and responsiveness, which help libraries identify areas for improvement and maintain service standards (Hossain & Ahmed, 2013). Specific tools like the Service Performance Control Matrix (SPCM) have been effective in helping academic libraries pinpoint critical areas for development, ensuring that they meet the evolving needs of students and faculty alike (Hossain & Ahmed, 2013). The role of libraries extends beyond providing physical resources, serving as hubs for digital information access, which is increasingly relevant in the context of remote learning and technological advancements in higher education (Razi-ur-Rahim, 2017).

Educational Sustainability emerged as an equally vital, though often underestimated, dimension in assessing university service quality. Educational sustainability encompasses the responsible management of institutional resources and infrastructure to support long-term educational objectives (Sahin et al., 2023). This study's focus on sustainability aligns with the work of García-Sanchis et al. (2015), who argue that universities should not only prioritise academic goals but also contribute to sustainable development, fostering socially responsible citizenship among students. By integrating sustainability into quality assessments, universities can ensure that they are cultivating professionals capable of addressing global social and environmental challenges. The use of the PESTE (political, economic, social, technological, and environmental) framework in assessing sustainability adds further depth, offering a holistic view of the factors influencing HEIs (Sahin et al., 2023). This comprehensive approach to educational sustainability supports institutional resilience, adaptability, and societal relevance, which are crucial for long-term success in a rapidly changing educational landscape.

Quality of Academic and Support Processes was identified as a critical dimension encompassing instructional, administrative, and infrastructural aspects essential for creating an effective educational environment. Academic and administrative support processes contribute

directly to student satisfaction and academic success, which are key components of perceived service quality (Chang et al., 2017). This aligns with the findings of Cubaque et al. (2014), who emphasise the importance of support processes in educational quality. Effective administrative support enhances the student experience by ensuring efficient resource management, timely responses to student needs, and the provision of essential learning facilities. Models that integrate academic and support services, such as the PESTE-SERVQUAL framework, offer valuable insights into how these elements contribute to overall satisfaction and institutional loyalty (Sahin et al., 2023). This study's validated model also benefits from high model fit indices (IFI = 0.988, CFI = 0.988, TLI = 0.984, NFI = 0.982, RMSEA = 0.040), confirming its robustness and alignment with established criteria (Hu & Bentler, 1998; Kline, 2011). Compared to previous studies, this model provides a more comprehensive and contextually relevant perspective, tailored to the Peruvian higher education sector and addressing the specific needs and expectations of its student population. The robustness of these fit indices supports the model's potential applicability across various educational contexts, enhancing its value as a reliable tool for assessing service quality in universities globally (Sahin et al., 2023; Abbas, 2020).

CONCLUSION

This study developed and validated a multidimensional model for assessing university service quality in the Peruvian context. The validated model identifies five essential dimensions: Quality of Academic and Support Processes (QuAcSuPr), Curriculum (Cu), Teaching Quality (TeQu), Library Services (LiSe), and Educational Sustainability (EdSu). Its inclusion of Educational Sustainability represents a significant contribution, highlighting the role of universities in preparing socially responsible graduates. The model serves not only as a robust diagnostic tool for institutions to identify improvement areas and allocate resources strategically but also as a mechanism for sector-wide benchmarking. Consequently, it enables data-driven decision-making to enhance student experience and institutional competitiveness. Future studies are encouraged to explore the model's applicability in other educational settings and modalities, as well as its long-term impact on student retention and success.

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