

Massification and quality of service in open access faculties in Morocco: An application of the SERVQUAL model to the FSJES of Fez

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Abstract

Against a backdrop of increased competition, higher education institutions, whether private or public, are compelled to implement new strategies aimed at improving the quality of the services they offer whilst meeting market demands; hence the need to carry out a diagnostic assessment of their services. This study aims to assess the quality of service as perceived by students at the Faculty of Legal, Economics and Social Sciences at Sidi Mohamed Ben Abdellah University in Fez (FSJES-FEZ), using a rigorous quantitative cross-sectional approach based on the SERVQUAL instrument, applied to a sample of 306 students enrolled in Master's programmes for the 2025–2026 academic year. The results revealed negative gaps across the five dimensions of service quality, with Tangibility recording the most critical deficit (–3.12) and Assurance the lowest score (–1.88), for an overall average gap of (–2.53). Whilst a notable paradox emerges, the Assurance dimension, deemed the most important by 29.2% of the students surveyed, paradoxically shows the smallest deficit, whereas Tangibility show the most critical deficit, this study proposes the use of Mitchell et al.'s stakeholder framework (1997) to interpret the hierarchy of the deficits observed, as well as to draw on the theory of the adaptation of aspirations, which opens up new perspectives on how students adjust their expectations in a context of structural massification. Furthermore, the results call for targeted institutional responses concerning physical infrastructure, the digitisation of administrative procedures, and the strengthening of the human dimension of the teaching relationship.

Keywords: SERVQUAL, quality of service, higher education, massification, FSJES Fez, expectations, perceptions, stakeholders.

Classification JEL: I23, L1, I23

Paper type: Empirical Research

1. Introduction

Higher education undoubtedly plays a key role in economic development. This role has become all the more important in the current context of the growing importance of the knowledge economy, in which higher education fulfils three essential functions, namely the creation, dissemination, and transfer of knowledge. To achieve this, higher education institutions (HEIs) are urged to have at their disposal the material and human resources with all the necessary technical, managerial, and professional skills. These HEIs should therefore prioritise strengthening their research and innovation activities and consolidate their links with players in the economic sector in order to boost business competitiveness. Indeed, numerous studies have simultaneously confirmed that a successful higher education system makes a remarkable contribution to economic development. This contribution is particularly significant in the context of economies in transition, as in the case of Morocco.

Nevertheless, there are three main reasons why more attention should be paid to the quality of higher education in Morocco. First, the integration into the European area and the Bologna declaration recommend setting up a quality assurance process in HEIs by imposing standardised evaluation mechanisms. Second, the rise in international competitiveness, under the motto of world ranking of universities in terms of quality, creates pressure to attract students and researchers. Third, the multiplication of private higher education establishments in a context of institutional diversification makes competition a challenge of the first order. To meet the challenge of quality, HEIs need to deploy quality assurance systems and rely on instruments for continuous improvement.

For the past two decades, Moroccan higher education has been going through a phase of profound transformation. Under the impetus of successive reforms, and more recently of the ESRI 2030 PACT, higher education institutions (HEIs) are called upon to combine increasing enrolment, improving teaching quality, integrating graduates into the workforce, and enhancing their reputation in a context of internationalisation. The Faculty of Legal, Economic and Social Sciences of Fez (FSJES Fez), attached to the University of Sidi Mohamed Ben Abdellah, is an eloquent illustration of the tensions generated by this injunction. With more than 28,000 students enrolled in bachelor's degrees, 1,503 in master's degrees, and 1,269 in doctorates by 2025-2026, the institution is facing a major challenge in terms of service quality.

The SERVQUAL instrument, developed by Parasuraman et al. (1988, 1990), provides a proven methodological framework for assessing this quality of service. The model for measuring user satisfaction, which is based on analysing the gap between their expectations and their perceptions of the service they actually receive, has been the subject of much research in the field of higher education. Studies have been conducted in Thailand (Yousapronpaiboon, 2014), South Africa (Green, 2014), Russia (Galeeva, 2016), and Bosnia and Herzegovina (Đonlagić Fazlić &, 2015).

Whilst this research demonstrates the cross-cultural robustness of the SERVQUAL model in higher education, it remains largely rooted in European and Asian contexts, whereas the African and MENA contexts remain, to date, insufficiently documented. Nevertheless, the few studies published in this geographical area are beginning to reveal converging trends. However, in Morocco, Goumairi et al. (2020) applied the model to a public engineering school and identified Tangibility as the dimension with the greatest shortfall, a finding that reflects the infrastructural constraints faced by institutions with high student numbers. For his part, Nyagope (2023), in the South African context, demonstrates that massification generates direct and measurable effects on the quality of education, notably through the deterioration of teaching conditions in overcrowded classrooms. Indeed, these studies, among others, confirm that the tension between mass access and quality of service constitutes a structural problem shared by all developing university systems, justifying the value of an empirical study rooted in the Moroccan context.

In the context of the present study, it turns out that the application of this theory in the Moroccan context, and more specifically in open-access faculties facing massification, remains little explored.

Alongside addressing the empirical gap, this article aims to make three distinct theoretical contributions. Firstly, it represents one of the few empirical applications of the SERVQUAL model in an open-access higher education institution facing severe structural massification in a developing country, thereby filling a geographical and contextual gap in a literature dominated by European and Asian studies. Secondly, it draws on the stakeholder framework of Mitchell et al. (1997) to reposition the student as a central actor endowed with power, legitimacy and urgency, a theoretical framework rarely utilised in SERVQUAL studies applied to higher education, and finally, it highlights an original Importance-Gap paradox whereby the dimension deemed most important by students paradoxically exhibits the smallest gap, which opens up new theoretical perspectives on the mechanisms by which aspirations adapt in a context of massification. Additionally, it provides insight into potential future developments in this field. However, this article aims to fill this gap by applying the SERVQUAL model to Master's students at FSJES Fez. The choice of targeting Master's students is justified by their evaluative maturity, their accumulated experience within the institution, and their ability to formulate critical judgements based on an in-depth experience of institutional services. In this context, the central research question guiding this study is as follows:

To what extent does the quality of service perceived by Master's students at the FSJES in Fez meet their expectations, and which dimensions of the SERVQUAL model reveal the most critical shortcomings in the context of structural massification?

This question is broken down into three operational objectives:

1. To assess the quality of service perceived by Master's students according to the five SERVQUAL dimensions;
2. To identify the most deficient dimensions by measuring the gaps between expectations and perceptions;
3. Formulate recommendations for improving service quality at FSJES Fez.

The following development is divided into seven sections. Section 2 situates our study within its theoretical and empirical context. Section 3 explains our methodological choices. Section 4 presents the results. Section 5 discusses these results. Section 6 contains the conclusions. Section 7 highlights the limitations of the research and suggests future directions.

2. Conceptual framework and literature review

2.1 The concept of service quality

Service quality is a concept that has given rise to considerable debate due to the complexity of both defining and measuring it (Wisniewski, 2001). One of the most common definitions is based on the ability to meet customer needs and expectations (Lewis & Mitchell, 1990; Parasuraman et al., 1988). Similarly, services have characteristics that make their evaluation complex, among them intangibility, heterogeneity, inseparability, and perishability. Grönroos (1984) distinguishes between functional quality (how the service is provided) and technical quality (what the service actually achieves).

In higher education, Harvey & Green (1993) propose five registers of quality, namely excellence, compliance with standards, fitness for purpose, value for money, and transformation. Hence, the transformative dimension of quality seemed the most relevant for HEIs, understood as a process of intellectual and personal development of the student.

Service quality is thus understood as the gap between users' expectations and their perception of the service received. When expectations exceed actual performance, perceived quality is evaluated negatively (Lewis & Mitchell, 1990; Parasuraman et al., 1988). Similarly, Martínez-

Argüelles & Batalla-Busquets (2016) argue that, in quality assurance, the focus should not be solely on the academic aspect, but rather on the student experience as a whole, identifying four key dimensions: teaching services, administrative services, additional or complementary services, and the user interface. Each of these dimensions has a significant impact on students' satisfaction and loyalty towards their institution. whereas Sultan and Yin Wong (2013) emphasise the technological interface and administrative efficiency.

2.2 The student as stakeholder: power, legitimacy, and urgency

Higher education institutions need to map all the stakeholders in their ecosystem. The success of any institution depends on its ability to identify its stakeholders and manage their needs and interests (Đonlagić & Fazlić, 2015). Students emerge as a central stakeholder (Marshall, 2018). Similarly, Jongbloed et al. (2008) posit that the student stands out as the pre-eminent element within the university.

Mitchell et al. (1997) structure their analysis around three dimensions. The first is power (ability to influence organisational decisions), the second is legitimacy (fit with societal norms), and the third is urgency (time sensitivity and priority of demands). The more a stakeholder possesses these attributes, the higher its salience. Students have all three: power of evaluation, institutional legitimacy (Chua, 2004), and urgency linked to the irreversible nature of the training period.

J. Kay et al. (2010) distinguish four forms of student involvement, ranging from evaluator and participant to partner, co-creator, and agent of change. Leisyte & Westerheijden (2014) advocate student involvement in quality management and internal quality assurance in HEIs.

2.3 Application of SERVQUAL in higher education between expectations and perceptions

The SERVQUAL model is designed to assess service quality by analysing the gaps between customer expectations and actual perceptions. This gap logic is based on five successive dimensions: the positioning gap, which represents the difference between customers' actual expectations and management's perception of these expectations; the specification gap, corresponding to the gap between management's perception of expectations and the quality specifications defined by the organisation; the service or delivery gap, designating the gap between the established quality specifications and the actual delivery of the service by employees; the communication gap, reflecting the difference between the service actually delivered and the external communication made of it; finally, the perception gap, which forms the core of the empirical SERVQUAL model and is defined as the gap between customers' expectations and their perception of the service actually received (Parasuraman et al., 1990). This logic translates into the function:

$$\text{Quality of service (Q)} = \text{Perception (P)} - \text{Expectations (A)}$$

The instrument comprises 21 items divided into five dimensions:

- **Reliability** refers to the ability to deliver the promised service consistently and accurately.
- **Responsiveness** refers to the willingness to help users and to provide a fast service.
- **Assurance** covers the skills and courtesy of staff, as well as their ability to inspire confidence.
- **Empathy** concerns the individual attention given to users.
- **Tangibility** relates to the appearance of physical facilities, equipment, staff and communication media.

However, the 21 items, each of which is measured by responses to two statements (expectations and perceptions), the first reflects students' expectations of the service provided by a given HEI, and the second demonstrates the perception of the service actually provided by the HEI (P).

The gap for each element is calculated by subtracting the perception score from the expectation score ($P - E$). The results of the calculation are as follows:

- A **positive** variance (Q) means that expectations are met or exceeded and that service quality is deemed satisfactory, i.e., performance is better than expected.
- A **negative** variance (Q) means that expectations are not met and that quality is judged to be unsatisfactory, i.e., performance is worse than expected.

Nevertheless, the concept of "Expectations" has been widely discussed in many research studies on consumer behaviour, in the sense that everyone has particular requirements influenced by their own norms, desires, values, and needs in a more or less individual dimension. With this in mind, Sultan and Yin Wong (2013) emphasise that expectations are not merely vague wishes, but are based on the credibility of the information received and a comparison with the student's past performance.

Furthermore, the perception of quality is highly complex in that its exposure is relatively limited to a purely individual experience influenced by its environment. In this sense, good perceived quality is achieved when the quality experienced corresponds to the customer's 'expectation', i.e., the desired quality. If 'expectations' are unrealistic, perceived quality is low, even if perceived quality is good when measured objectively.

Whereas, Robbins & Judge (2010) argue in their book *Organizational Behavior* that perception can be understood as a process by which individuals organise and interpret their sensory impressions in interaction with their environment. See that a person may have a perception that is relatively different from objective reality.

It is also understood that, as "perception" is a dynamic process, understanding and measuring it among users is complex, given the subjective dimension inherent in each individual.

In this context, perception can be seen as a dynamic and eminently subjective process (Boulding et al., 1993). Assessing it is a major methodological challenge for the researcher, as it varies with each user's personal interpretation, shaped by prior experience and expectations (Bolton & Drew, 1991), as well as each individual's specific needs.

As for the international literature on this subject, we can highlight several authors who have favoured the SEVQUAL model for measuring service quality in higher education institutions; the main differences between their studies lie in the nature and geographical location of the institutions studied, the size and socio-demographic composition of the sample, and, in particular, the contrasts in the results obtained.

A study conducted by Yousapronpaiboon (2014) in Thailand at a university in Bangkok used the SERVQUAL model as a research tool on a sample of 350 undergraduate students. The results revealed the students' dissatisfaction with the quality of service at their institution, with an overall average gap of (-2.56). Meanwhile, the tangible elements presented the greatest challenge, with a gap of (-2.88). In light of these results, the author recommends investing in the modernisation of equipment and improving the visual appeal of the physical facilities and communication materials (Yousapronpaiboon, 2014).

In a similar vein, Đonlagić and Fazlić (2015) conducted a study at the Faculty of Economics, University of Tuzla, in Bosnia and Herzegovina, within the context of a transition economy where service quality is perceived as a competitive advantage in the face of the proliferation of private institutions. Administered to a sample of 73 students, the SERVQUAL questionnaire revealed an overall gap of (-2.49). The most pronounced shortfall was in empathy (-2.684), followed by responsiveness, indicating that staff behaviour towards students is the main point of friction in the service relationship.

Furthermore, Green (2014) conducted a study at the Durban University of Technology (DUT) in South Africa, involving a sample of 280 respondents comprising students as well as academic and administrative staff. The results highlighted negative scores across all dimensions of the adapted SERVQUAL questionnaire. The most significant shortfall relates to physical and

academic services (-2.21), particularly with regard to the modernity of libraries and laboratories.

In the Moroccan context, empirical studies applying the SERVQUAL model in higher education remain rare; amongst these, the work by Goumairi et al. (2020) is the most cited article and is considered the most relevant contextual reference to be used as a basis for the present study. The authors administered a SERVQUAL questionnaire to a random sample of 53 students at a public engineering school; this investigation revealed an overall negative quality gap of (-1.80), reflecting general dissatisfaction with the services provided, with the largest gap relating to tangible elements (-2.03), particularly the physical facilities and laboratory equipment. In light of these results, the authors recommended urgent action by decision-makers on the physical dimension to strive for academic excellence (Goumairi et al., 2020)

2.4 Critical perspectives and justification of the choice

Although it is described as the most widely used model in this field (Asim & Kumar, 2018; Goumairi et al., 2020b), the SERVQUAL model has been the subject of substantial criticism that warrants examination to justify its use. Cronin & Taylor (1994) questioned the very relevance of measuring expectations and proposed the SERVPERF instrument, based exclusively on perceptions of performance, as respondents tend to express ‘ideal’ rather than realistic expectations, which can skew the results (Bayraktaroglu & Atrek, 2010; Rolo et al., 2023). Babakus & Boller (1992), for their part, reached a similar conclusion, arguing that the expectations section provides no additional information beyond that already revealed by perceptions. Furthermore, the HEDPERF instrument (Abdullah, 2006) focuses on the academic and non-academic aspects of the educational service, whilst HESQUAL (Teeroovengadum et al., 2016) offers a hierarchical structure tailored to the specific characteristics of the sector.

Despite this criticism, the choice of SERVQUAL remains appropriate for this study. The simultaneous measurement of expectations and perceptions offers superior diagnostic value for managerial action, insofar as it allows for the identification of both areas of deficiency and the scale of the effort required to reach the expected level, information that SERVPERF, which is limited to perceptions alone, does not provide. This diagnostic dimension is of particular importance to decision-makers and managers in the higher education sector, who need concrete benchmarks to prioritise their interventions and allocate often limited resources (Donlagić & Fazlić, 2015; Goumairi et al., 2020b; Soares et al., 2017).

Furthermore, in a context of massification where student expectations are a central issue, the gap between expectations and perceptions is precisely the focus of the research and not merely a methodological artefact. Moreover, measuring only perceived performance would amount to ignoring students’ expectations, even though these expectations determine their satisfaction, their engagement and, ultimately, their institutional loyalty.

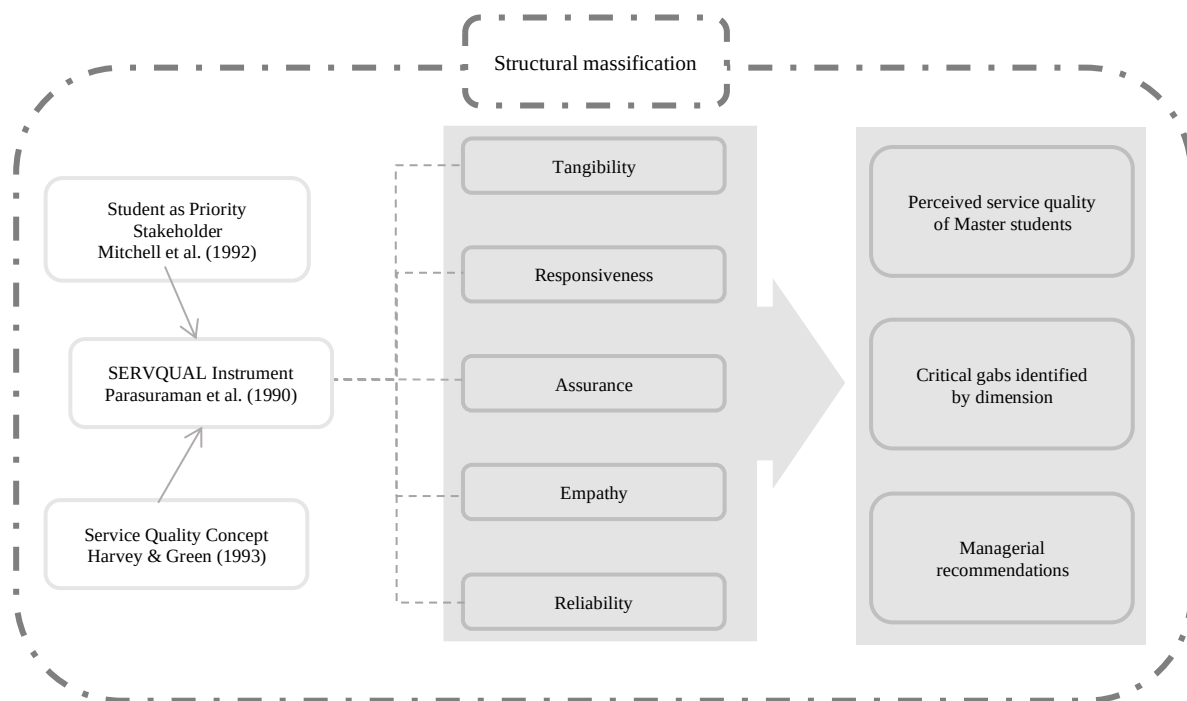
2.5 Summary of the conceptual framework

Figure 1 illustrates the conceptual framework of our research, which articulates the theoretical foundations of this study around three strands that converge on a central analytical framework. Mitchell et al.’s (1997) stakeholder theory, structured around the attributes of power, legitimacy and urgency, provides the analytical framework through which Master’s students are repositioned as a priority stakeholder group representing a population whose expectations require a targeted institutional response. It is precisely to capture the gap between these expectations and actual perceptions of the service that Parasuraman et al.’s (1990) SERVQUAL instrument is employed, operationalised through its five dimensions, namely tangibility, responsiveness, assurance, empathy and reliability. However, these first two contributions build on the concept of service quality as defined by Harvey and Green (1993), for whom quality in

higher education is understood first and foremost as a process of intellectual and personal transformation for the student.

In this sense, the entire framework is situated within a context of structural massification of Moroccan higher education, represented by the dotted outer frame. Furthermore, the application of this framework yields three research findings: an assessment of the quality of service as perceived by Master's students; the identification of critical gaps by dimension; and managerial recommendations for decision-makers at the FSJES in Fez.

Figure 1: Conceptual model



Source: Authors' own elaboration.

3. Methodology

3.1 Field of study: FSJES Fez

The FSJES in Fez, attached to Sidi Mohamed Ben Abdellah University, is one of the largest faculties in the Fez-Meknes region, both in terms of infrastructure and student numbers. By 2025-2026, it will have 31,280 students, which there are 28,416 on bachelor's degrees, 1,503 on master's degrees, and 1,269 doctoral degrees. The institution's capacity will be 11,416 places in 2024-2025, compared with 10,064 in 2023-2024, representing a saturation rate of 274% in relation to the 31,280 students enrolled, which is a particularly worrying indicator. As for teaching staff, the faculty has 205 professors, i.e., a ratio of 1 teacher per 152 students (MESRSI, 2025), and the administrative staff totals 64, i.e., a ratio of 1 staff member per 488 students, well above international standards (MESRSI, 2025).

Under these conditions, the university library, designed for a much smaller number of students, is unable to absorb the large number of students, as its physical capacity is insufficient and the documentary collection suffers from a chronic lack of updating.

FSJES Fez is undergoing an intensive phase of renovation and expansion. According to LesEco.ma, a budget of more than 140 million dirhams has been earmarked in 2018 for the redevelopment of the Agdal Campus, including six new lecture theatres with a total of 3,200 additional seats, 38 new classrooms, a library, and a broadband fibre optic connection (12 million dirhams).

Table 1: Structural indicators for FSJES Fez (2024-2025)

Indicator	Value	Ratio / Rate
Total number of students	31 280	-
of which undergraduate	28 416	90,8%
of which the Master's	1 503	4,8%
of which Doctorate	1 269	4,1%
Capacity (2024-2025)	11,416 places	Capacity utilisation rate: 274
Teaching staff	205 teachers	1 teacher / 152 students
Administrative staff	64 administrative staff	1 employee / 488 students

Source: University Statistics – Public Higher Education 2024–2025-MESRSI

The Masters are organised within the framework of the ESRI 2030 PACT and cover 23 specialities divided into four branches, Private Law (7), Management (6), Public Law (5), and Economics and Organisational Management (5). Admission is by competitive examination.

3.2 Measurement tool

Our methodological approach is based on an adaptation of the SERVQUAL questionnaire to the Moroccan higher education context. This tool comprises three distinct sections. The first explores student expectations by means of 21 Items. The second section assesses perceptions of the service actually delivered, using the same indicators. Then, a third section uses differentiated weighting, with participants allocating 100 points between the five conceptual dimensions according to their perceived importance. The Likert scale was the most appropriate methodological choice for our cross-sectional study. By allowing a fine gradation of responses, it improves both the accuracy of data collection and its external validity, thus guaranteeing a better match between the results and the realities in the field.

Our starting point was the original English-language questionnaire by Parasuraman et al. (1990), which we translated into French and then adapted to the Moroccan university context. At this stage, the translation and adaptation process drew on the methodological guidelines set out by Beaton et al. (2000) for the cross-cultural adaptation of self-assessment instruments. The 21 original items were first translated into French by the authors, then back-translated into English by an independent bilingual proofreader to identify discrepancies in meaning; any differences between the original and back-translated versions were discussed and resolved by consensus, with particular attention paid to items relating to physical infrastructure and administrative services, the connotations of which may vary depending on the institutional context. Finally, this adapted version was then pre-tested with 30 students, which confirmed the clarity and relevance of the items.

3.3 Target population and sampling

Our study targets only master's students (M1 and M2) at the FSJES in Fez, i.e., 1503 students in total. There are three main reasons for this choice. Firstly, Master's students have between 3 and 5 years' experience in higher education, which enables them to assess service quality more finely. Secondly, their recruitment by competitive examination guarantees a certain homogeneity in the sample and encourages more elaborate responses. Finally, they represent the end product of the training programme, and their satisfaction directly influences the reputation of the establishment.

The sample size was determined using Cochran's formula with correction for finite population:

$$n_{ajusté} = \frac{n}{1 + \frac{(n-1)}{N}}$$

n = sample size for infinite population, calculated with $Z = 1.96$ and $e = 0.05$

N = total population size (1,503)

$n_{adjusted}$ = corrected sample size

$$n_{ajusté} = \frac{384}{1 + \frac{(n384 - 1)}{1503}} = \frac{384}{1,255}$$

$$n_{ajusté} \approx 306$$

The sample includes 306 respondents, which corresponds to a confidence level of 95% with a margin of error of 5%. We used proportional stratified random sampling based on two criteria, namely level of education and field of specialisation.

3.4 Data collection

Data collection took place at the faculty between February and March 2026. Master's students were asked directly on campus to complete the questionnaire using Google Forms. The questionnaire was distributed by scanning a QR code or by sending links via WhatsApp and email. Furthermore, to broaden the reach of the survey beyond on-campus interactions, the questionnaire link was also shared within informal Master's student Facebook and WhatsApp groups.

Overall, this presence on the ground enabled participation to be optimised, with a response rate of 81.1% (306 usable responses out of 377 solicitations).

3.5 Analysis methods

After collecting the data, we proceeded to process it with SPSS using a multi-stage analytical approach. First, we verified the internal consistency of the questionnaire using Cronbach's Alpha coefficients, which ranged from 0.77 to 0.89. Second, we calculated the means and standard deviations of the various items for both expectations and perceptions. Third, we measured the gaps between perceptions and expectations (P - E) for each item and each dimension, enabling us to identify the most deficient areas of service quality. The overall average gap was then computed to provide a synthetic indicator of the perceived quality of service at FSJES Fez. And finally, a principal component analysis (PCA) with Varimax rotation was carried out on the deviation scores in order to confirm the five-factor structure of the adapted SERVQUAL instrument.

4. Results

4.1 Profile of the sample

Table 2 presents the socio-demographic characteristics of the 306 respondents. This sample includes a majority of women (56.2%), a proportion in line with the distribution observed in Moroccan establishments, referring to the latest statistics communicated by the supervisory ministry.

Table 2 Socio-demographic characteristics of the sample (N = 306)

Variable	Characteristics	N	Proportion
Sex	Male	134	43,8%
	Female	172	56,2%
Age	23-25 years old	187	61,1%
	26-29 years old	89	29,1%
	30 and over	30	9,8%
Level of study	Master 1 (M1)	162	52,9%
	Master 2 (M2)	144	47,1%
Department	Law (private and public)	159	52,0%
	Economics, Business & Management	147	48,0%

Source: Survey data

The 23-25 age group dominates with 61.1%, reflecting the typical profile of Master's students. The distribution between M1 and M2 respects the quotas set at the time of sampling, guaranteeing the representativeness of the sample. In terms of fields of study, Law (private and public) accounted for 52% of respondents, while Economics, Management, and Organisational Management represented 48%.

4.2 Reliability of the instrument

Cronbach's Alpha was used to test the internal reliability of the variables composing each dimension of service quality. For this purpose, Tavakol and Dennick (2011) reported that an alpha coefficient of 0.70 or more is considered acceptable, reflecting good internal consistency. However, in our research, a Cronbach's Alpha coefficient varying between 0.77 and 0.83 was obtained for the dimensions related to expectations for an overall value of 0.89. As for perceptions, this coefficient ranged from 0.81 to 0.89 and reached 0.92 overall, which implies the reliability of the instrument used.

Table 3: Cronbach's Alpha coefficients by dimension

Dimension	Alpha (Expectations)	Alpha (Perceptions)	Interpretation
Reliability	0,82	0,85	Good
Responsiveness	0,83	0,88	Good
Assurance	0,82	0,84	Good
Empathy	0,77	0,81	Acceptable
Tangibility	0,82	0,89	Good
Overall scale	0,89	0,92	Excellent

Source: Survey data from SPSS

In addition to internal consistency, the structural validity of the adapted instrument was verified by a principal component analysis (PCA) conducted on the 21 gap scores (P-E), using *Varimax* rotation and *Kaiser* normalisation. However, this approach, adopted in particular by Shekarchizadeh et al. (2011) and Nadiri et al. (2009), has the advantage of directly validating the dimensional structure of quality deficits rather than that of isolated perceptions; the relevance of the factor analysis approach is confirmed by a KMO index of 0.909, considered satisfactory, and by a highly significant Bartlett's sphericity test ($\chi^2 = 3412.839$; $df = 210$; $p < 0.001$), indicating a correlation structure conducive to factor analysis (Rasli, 2006).

Furthermore, the analysis identified five principal components with eigenvalues greater than 1, which together account for 68.46% of the total variance, a figure that exceeds the 60% threshold commonly used in the literature. Nevertheless, following Varimax rotation, the 21 items cluster coherently across the five expected components, with dominant factor loadings corresponding to their theoretical dimensions, which confirms the construct validity of the SERVQUAL instrument adapted to the context of the FSJES in Fez and reinforces the relevance of the five original dimensions proposed by Parasuraman et al. (1990).

Table 4: Factor analysis quality indices (KMO, Bartlett's test of sphericity, and variance explained)

Indicator	Value
KMO	0,909
χ^2	3412,839
df	210
Percentage of variance explained	68,46 %

Source: Survey data from SPSS

Table 5: Component matrix following Varimax rotation (factor loadings, N = 306)

Items	C1 Tangi.	C2 Reliab.	C3 Insur.	C4 Empa.	C5 React.
Modern equipment	0,865				
Attractive facilities	0,884				
Classrooms adapted to headcount	0,769				
Teaching aids and libraries	0,817				
Adapted opening hours	0,422				
Courses on schedule		0,751			
Genuine interest in problems		0,824			
Programmes met		0,789			
Services on time		0,704			
Service information		0,591			
Confidence in staff			0,760		
Safety in interactions			0,826		
Study programs and labor market requirements			0,782		
Scientific skills			0,636		
Individual attention				0,726	
Caring attitude				0,802	
Interest for students				0,586	
Understanding of needs				0,780	
Quick service for students					0,814
Staff are willing to help.					0,867
Rapid response to requests					0,836

Source: Survey data from SPSS

4.3 Descriptive statistics and tests for the significance of differences

Table 6 presents the descriptive statistics by dimension and by item, as well as the item-total correlations and the mean gap scores (P-E). The results show that the expectations of FSJES-Fez Master's students are systematically high, with averages between 6.35 and 6.82 on a 7-point scale. Perceptions, on the other hand, varied between 3.63 and 4.68, resulting in negative deviations on all 21 items and all five dimensions.

The Tangibility dimension shows the greatest deficit, with an average gap of (-3.12). Detailed examination of the items reveals a mixed situation. The item relating to classrooms adapted to the number of students (T3) shows a gap of (-2.90), which merits clarification, since Master's students do not generally suffer from the same constraints of overcrowding as their Bachelor's counterparts. The classrooms dedicated to Master's courses have sufficient capacity for the number of students enrolled in the Master's programme (1,503). The gap observed is more a reflection of high expectations in terms of the comfort and modernity of the spaces than of actual saturation. Item T4, relating to the availability and updating of teaching materials, shows a gap of (-2.92). This result reflects a well-documented reality in the field: the FSJES Fez library has neither the physical capacity nor the documentary holdings necessary to meet the needs of 31,280 students, with the result that the works available are largely obsolete, unsuited to current teaching standards, and insufficient in number of copies. However, for a Master's student whose work is based on recent reading and up-to-date references, this shortcoming is a direct hindrance to the quality of learning.

Responsiveness came second with a gap of (-2.88). Students point the finger at the slowness of administrative procedures, requesting a gap of -3.21 for speed of service, queues, and excessive delays in obtaining official documents. Consequently, these difficulties have a clear structural cause, with 64 administrative staff for 31,280 students, or 1 staff member for every 489 students (MESRSI, 2025). In this context, slowness is not a problem of will but a direct consequence of administrative understaffing in the face of massification.

Table 6: Comparison of expectations (E), perceptions (P), and average gaps (P-E)

Dimensions and Items	Expectations (E)			Perceptions (P)			(P-E) Average gap
	Mean	SD	Corr. item-total	Mean	SD	Item-total corr.	
Reliability	6,70	0,50	-	4,36	1,45	-	-2,34
Courses on schedule	6,84	0,42	0,62	4,47	1,93	0,67	-2,38
Genuine interest in problems	6,69	0,65	0,67	4,28	1,95	0,73	-2,41
Programmes met	6,77	0,49	0,63	4,41	1,79	0,72	-2,36
Services on time	6,51	0,91	0,69	4,12	1,77	0,63	-2,39
Service information	6,67	0,72	0,59	4,51	1,67	0,58	-2,16
Responsiveness	6,82	0,39	-	3,94	1,82	-	-2,88
Quick service for students	6,90	0,31	0,72	3,69	2,04	0,73	-3,21
Staff are willing to help	6,77	0,51	0,72	4,05	1,97	0,80	-2,73
Rapid response to requests	6,78	0,51	0,72	4,07	2,05	0,79	-2,71
Assurance	6,56	0,72	-	4,68	1,49	-	-1,88
Confidence in staff	6,42	1,05	0,70	4,47	1,94	0,72	-1,96
Safety in interactions	6,40	1,05	0,70	4,58	1,84	0,71	-1,83
Study programs and labor market requirements	6,52	0,93	0,76	4,49	1,89	0,67	-2,03
Scientific skills	6,89	0,37	0,67	5,18	1,60	0,57	-1,70
Empathy	6,35	0,83	-	3,95	1,44	-	-2,40
Individual attention	6,23	1,22	0,55	3,87	1,92	0,56	-2,36
Caring attitude	6,43	0,99	0,62	3,94	1,83	0,73	-2,49
Interest for students	6,35	1,10	0,53	3,87	1,78	0,57	-2,48
Understanding of needs	6,39	1,01	0,58	4,12	1,66	0,67	-2,26
Tangibility	6,77	0,42	-	3,65	1,58	-	-3,12
Modern equipment	6,92	0,28	0,72	3,12	1,93	0,79	-3,80
Attractive facilities	6,82	0,42	0,79	2,82	1,82	0,85	-4,01
Classrooms adapted to headcount	6,87	0,35	0,71	3,98	2,10	0,75	-2,90
Teaching aids and libraries	6,66	0,70	0,65	3,74	1,82	0,83	-2,92
Adapted opening hours	6,56	0,80	0,62	4,60	1,74	0,51	-1,96
Overall quality of service	6,64	0,42	$\alpha = 0,89$	4,11	1,17	$\alpha = 0,92$	-2,53

Source: Survey data from SPSS

Empathy (Gap = -2.40) and Reliability (Gap = -2.34) occupy intermediate positions, which can be interpreted as a lack of individual attention and a certain distance in relations, both with teaching and administrative staff. This finding can be explained by the massification that is also affecting Master's level students, albeit to a lesser extent.

Table 7: Relative importance of dimensions (N = 306)

Rank	Service quality dimension	Proportion
1	Assurance (teaching skills)	29,2%
2	Reliability (meeting commitments)	24,5%
3	Tangibility (physical infrastructure)	18,8%
4	Responsiveness (speed of service)	16,2%
5	Empathy (individual attention)	11,3%
Sum		100%

Source: Survey data

Assurance has the smallest gap (-1.88), which is the relative strength of the study. The item relating to the scientific skills of academic staff (A4) obtained the best perception score (5.18 out of 7). The students thus recognise the quality of the teaching staff, despite the sometimes difficult material conditions. However, the importance of these results becomes clear when we see that the 'Assurance' aspect is considered to be of primary importance among those who received 29.2% (Table 7) of the total points during the dimension weighting exercise (section

C of the questionnaire). This finding is largely corroborated by several other studies (Akdere et al., 2020; Nadiri et al., 2009), which means that the measurement of quality in higher education, from the students' point of view, is mainly influenced by the scientific qualifications, courtesy and ability of lecturers to inspire confidence.

In short, the study shows that the overall average gap is (-2.53), indicating that the perceived quality of service at FSJES-Fez does not meet the expectations of Master's students.

In order to verify the statistical significance of the observed differences, a t-test for paired samples was carried out for each dimension as well as for the overall difference, by testing the null hypothesis H_0 : difference = 0. Indeed, the results obtained reveal that all the differences are highly significant ($p < 0.001$), which confirms that the differences between expectations and perceptions are not due to sampling chance but reflect structural shortcomings in service quality.

Furthermore, the magnitude of these discrepancies, as measured by Cohen's d , is classified as very large for four of the five dimensions (Tangibility: $d = 1.95$; Responsiveness: $d = 1.54$; Reliability: $d = 1.51$; Empathy: $d = 1.44$) and as large for the Assurance dimension ($d = 1.18$). In this regard, the overall discrepancy reaches a Cohen's d of 2.06, an exceptionally high level which reflects the depth of the perceived quality deficit at the FSJES in Fez. Indeed, these results reinforce the statistical robustness of the descriptive findings and provide a solid foundation for the interpretations set out in the following section.

Table 8 Significance tests of dimensional gaps ; Paired-samples t-tests (N = 306)

Dimensions	Mean gap	SD	95% CI	t	p	d
Reliability	-2,338	1,547	[-2,512 ; -2,164]	-26,428	0,000	1,51
Responsiveness	-2,880	1,865	[-3,090 ; -2,670]	-27,008		1,54
Assurance	-1,880	1,600	[-2,060 ; -1,700]	-20,557		1,18
Empathy	-2,399	1,664	[-2,586 ; -2,212]	-25,221		1,44
Tangibility	-3,118	1,596	[-3,297 ; -2,938]	-34,164		1,95
Global	-2,525	1,224	[-2,663 ; -2,388]	-36,101	0,000	2,06

Note. H_0 : gap = 0. All tests are significant at $p < .001$. Cohen's d is calculated as the ratio of the mean gap to its standard deviation; interpretation thresholds: small (.20), medium (.50), large (.80). CI: confidence interval.

Source: Survey data from SPSS

5. Discussion

The main objective of this study was to provide a conceptual and operational framework, allowing us to better identify the expectations and perceptions of Master's students regarding the quality of service at FSJES-FEZ. In this context, we used the SERVQUAL model as an investigative tool with five dimensions: reliability, responsiveness, assurance, empathy, and tangible aspects. However, the reliability test, measured by Cronbach's Alpha coefficients, ranged between 0.77 and 0.89, which is similar to the results of many previous studies.

The results confirm the robustness of the SERVQUAL model as a tool for diagnosing quality of service in higher education, while revealing specific features specific to the Moroccan context.

The first finding is that all the gaps are negative. This result is consistent with the observations of Đonlagić & Fazlić (2015) in Bosnia-Herzegovina, Green (2014) in South Africa, and Goumairi et al. (2020) in Morocco. The systematically negative nature of gaps seems to be a cross-cultural constant in SERVQUAL studies applied to higher education. In the majority of similar scientific studies, students have high expectations of their institution, expectations that the realities on the ground struggle to meet.

The second finding is that the severity of the Tangibility gap (-3.12) far exceeds the values observed elsewhere. Yousapronpaiboon (2014) reported (-2.88) in Thailand, and Đonlagić & Fazlić (2015) reported (-2.47) in Bosnia and Herzegovina. The Moroccan specificity is partly explained by the general conditions of reception at the FSJES Fez, confronted with a total

population of 31,280 students for a capacity of 11,416 places. However, it is important to point out that this lack of tangibility does not affect all levels of study uniformly. Master's students, who number 1,503, have relatively adequate classrooms for their numbers. The critical gap observed is due more to insufficient documentary resources and library infrastructures that are inadequate for the entire student population, a shortcoming that particularly penalises Master's students, whose research work relies on up-to-date resources. These results can be reinterpreted in the light of Mitchell et al.'s (1997) stakeholder framework, which is based on three attributes: power, legitimacy, and urgency (subsection 2.2). The two most critical gaps in our study correspond directly to these attributes. The responsiveness deficit (-2.88) illustrates the attribute of urgency in the sense that a Master's student's study period is short and irreversible, making administrative delays particularly detrimental. Meanwhile, the Tangibility deficit (-3.12) relates to the attribute of legitimacy; having access to adequate infrastructure and documentary resources is a reasonable expectation for any student. Finally, by expressing their perceptions through this survey, students are exercising their power of evaluation. By bringing together these three attributes of salience, Master's students are asserting themselves as a priority stakeholder group whose expectations call for a rapid and targeted institutional response.

Furthermore, our findings are also consistent with the limited research carried out in the Moroccan context, including the study by Goumairi et al. (2020), at a public engineering school, where tangibility was identified as the dimension with the greatest shortfall, with a gap of (-2.03); this finding is largely confirmed by our study (-3.12). Similarly, Chakor and Amrani (2022), who studied the satisfaction of international students at private medical faculties in Morocco, also found that tangible elements within the institution under study represent the most significant factor influencing student satisfaction.

Third observation: The Importance-Gap paradox. The dimension deemed most important by students (assurance, 29.2% of points) is paradoxically the one with the lowest deficit (-1.88). Conversely, Tangibility, ranked third in importance (18.8%), has the most critical gap. This paradox can be interpreted in the light of the theory of aspiration adaptation (Michalos, 1985), according to which individuals gradually adjust their expectations to the level of service they realistically consider achievable in a given context. Indeed, faced with long-standing and visible material constraints, students incorporate these limitations into their frame of reference and focus their demands on the aspect they consider essential and non-negotiable, namely the quality of teaching.

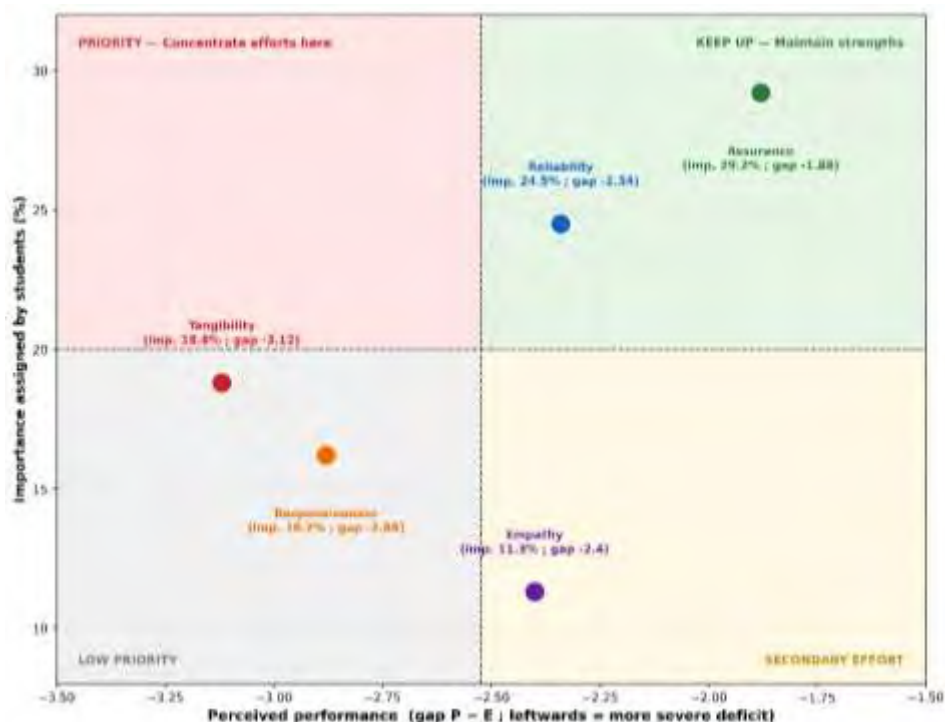
The fourth finding is that the recognition of the scientific competence of the teaching staff (perception of 5.18/7) is a strategic asset for FSJES Fez. Despite the challenges identified, the teaching staff manages to maintain a recognised level of teaching quality. This dimension can serve as a pivotal point for rebuilding the confidence of students in the other dimensions, provided that concrete actions accompany this fundamental work.

A fifth observation is worth highlighting, even if it does not appear directly in the aggregated dimensional gaps. The university library has two simultaneous problems: an outdated physical reception capacity and a largely obsolete document collection. This double deficit affects both Tangibility (lack of adequate material resources) and Reliability (inability to provide the teaching aids promised in the programmes). For Masters students, whose research work depends on recent bibliographic resources, this situation represents a concrete obstacle to the quality of their training. Ultimately, it illustrates a broader reality that massification is not limited to packed lecture theatres and administrative queues. It is also eating away at the intellectual resources available to students.

Furthermore, the five findings developed above can be translated into action priorities using an Importance-Performance Analysis (IPA) proposed by Martilla and James (1977), which cross-references the importance students assign to each dimension with the magnitude of the measured gaps. As for the second finding, tangibility emerges as the absolute priority,

accumulating the most critical gap (-3.12) and a significant importance (18.8%); this justifies immediate investment in physical infrastructure and documentary resources, consistent with the dual shortfall in the library highlighted in the fifth finding. Regarding responsiveness, the gap (-2.88) refers to the urgency attribute mentioned in the second finding, calling for a more advanced digitalization of administrative procedures to compensate for understaffing. Regarding reliability, which carries high importance (24.5%) but a moderate gap (-2.34), sustained attention is warranted to strengthen the consistency of promised services. Conversely, and in accordance with the paradox highlighted in the third finding, assurance is part of a maintenance rather than a remediation strategy, judged the most important (29.2%) while representing the smallest gap (-1.88), and constitutes, as the fourth finding points out, the strategic asset on which the institution can rely. However, this prioritization, based on data rather than general considerations, provides FSJES-Fez decision-makers with an operational roadmap for the allocation of constrained resources (Figure 1).

Figure 2 Matrice Importance-Performance (IPA) des dimensions SERVQUAL



Source: Elaborated by the author

6. Conclusion

This study utilised the SERVQUAL model to assess the perceived service quality among Master's students at the FSJES in Fez, where the results reveal significant negative gaps across the five dimensions comprising the questionnaire ($p < .001$), with an average overall gap of (-2.53), reflecting a structural dissatisfaction with the service. In this context, Tangibility recorded the most critical shortfall (-3.12), whilst Assurance showed the smallest shortfall (-1.88), creating an Importance-Shortfall paradox which constitutes one of the major analytical contributions of this research.

Thus, to confirm the structural validity of the instrument used, we also carried out a principal component analysis on the gap scores ($KMO = .909$; variance explained = 68.46%), and the significance of all the gaps was established using t -tests for paired samples.

From a theoretical perspective, this research contributes to the literature on service quality in higher education in three complementary ways. It documents, for the first time in a Moroccan open-access faculty, the structural validity of the SERVQUAL model through a principal

component analysis conducted on the gap scores, confirming the cross-cultural robustness of the instrument in a context characterised by a relatively high level of massification. We thus draw on Mitchell et al.'s stakeholder framework (1997) to interpret the hierarchy of the observed shortfalls, linking the attributes of power, legitimacy, and urgency to the most critical gaps, a theoretical perspective that remains largely unexplored in the field of SERVQUAL as applied to higher education. Finally, this study highlights an Importance-Gap paradox which, when interpreted through the theory of aspiration adjustment (Michalos, 1985), opens up new perspectives on the mechanisms by which students adjust their expectations in a context of massification.

Limitations and avenues for future research

This study has several limitations that need to be explained. Firstly, the data collected was limited to a single institution (FSJES-Fez), which restricts the generalisation of the results to all Moroccan FSJES. A multi-site study comparing several faculties (public FSJES, public schools, PPP institutions) would provide a better picture of the effect of institutional status on perceived quality.

Nevertheless, the survey only captures the views of Master's students. Other stakeholders could provide complementary perspectives: undergraduates, who are more directly affected by the effects of massification; administrative staff, who experience operational constraints from the inside; lecturers, whose perception of their own work may differ from that of students; and employers, who ultimately evaluate the product of training. Incorporating these multiple perspectives would strengthen the external validity of the findings.

Furthermore, as discussed in section (2.4), the SERVQUAL model is subject to theoretical and operational criticisms. Although our methodological choice has been justified a priori, alternative instruments specifically designed for higher education, such as HEdPERF or HESQUAL, could offer complementary perspectives in future research.

As for the data collection phase, we identified a number of methodological biases that are worth highlighting. Data collection took place largely in person on campus, via QR codes and direct links, which may have encouraged social desirability bias, as students may have been inclined to tone down their criticism of an institution on which they are still administratively dependent. To mitigate this bias, towards the end of the data collection period, the questionnaire was primarily distributed online amongst student groups at the FSJES in Fez, thereby preserving the anonymity of respondents. This transition signals a methodological approach that we intend to explore further in our future research by opting for a fully online data collection process from the outset. Furthermore, the simultaneous measurement of the five dimensions within a single questionnaire exposes the instrument to a possible halo effect, whereby a general impression, whether positive or negative, of the service provided by the FSJES in Fez could uniformly influence responses across all dimensions, regardless of their specific evaluation. Although this bias is primarily linked to the very structure of the SERVQUAL model, we plan, in future research, to explore methodological solutions to mitigate its impact.

Over and above the methodological limitations, this study provides food for thought about the strategic management of Moroccan FSJESs. If enrolment continues to increase at the current rate, as indicated by the growing number of new students each year, the SERVQUAL gaps are bound to widen. The results presented in this article thus constitute an empirical basis for initiating an institutional dialogue on the trade-offs to be made between quantity and quality in a university system faced with contradictory injunctions.

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