

Measuring Service Quality in Universities in Iran: UNQUAL versus UNPERF

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Abstract

Purpose- The concerns of service quality may differ from one country to another and from one industry to another. It is therefore crucial to develop measures of service quality that are pertinent to the country and culture where the service is offered. This paper proposes developing a measure of service quality in the Iran and then testing this measure in university of Tehran as a oldest and largest scientific, educational and research center of the country which is called the "Mother University" and the "Symbol of higher education of the country".

For attain this purpose we attempt to answer two questions:

1. Is SERVPERF model better then SERVQUAL (gap) model or vise versus?
2. Is dimension of model suitable for universities of Iran or we must adapt these instrument? In other word do we need alternative method of measuring service quality in university of Iran?

The components of service quality were developed through a brainstorming and sorting exercise. Based on the results of this survey, the authors developed a 60-item (30-items evaluate student's perceptions and 30-items evaluate student's expectations) questionnaire comprising the four dimensions. then two model introduced UNQUAL and UNPERF. the first is based on disconfirmation definition of service quality(gap model) and other is based on measurement of performance. The questionnaire was distributed to students of University of Tehran. Factor analysis of the responses resulted in four dimensions. The reliability and predictive validity of these dimensions were confirmed. Finally data subjected to regression analysis.

Factor analysis resulted in four dimensions: Responsiveness, Empathy, Administrative, and Reliability and assurance elements. The empirical analysis indicated that UNPERF four-factor structure with 23 items resulted in more reliable estimations, greater criterion and construct validity, greater explained variance, and consequently a better fit.

This paper emphasizes the need to customize measures of service quality to different industries and countries. This is particularly important for Education services. This paper also provides guidelines for Universities managers in the Iran on which dimensions of service quality they should emphasize in order to retain their customers (students) and attract new ones. This paper has important research implications on the dimensions of service quality in Iran especially in universities.

Keywords: Service quality, Measurement, Iran, University of Tehran, UNQUAL, UNPERF

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Introduction

Quality is one of the competitive priorities which has migrated from the literature of manufacturing strategy to the service arena.

Service quality has since emerged as a pervasive strategic force and a key strategic issue on management's agenda [15]. It is no surprise that practitioners and academics alike are seen on accurately measuring service quality in order to better understand its essential antecedents and consequences, and ultimately, establish methods for improving quality to achieve competitive advantage and build customer loyalty [12]. The pressures driving successful organizations toward top quality services make the measurement of service quality and its subsequent management of utmost importance [97]. However, the problem inherent in the implementation of such a strategy has been compounded by the elusive nature of the service quality construct, rendering it extremely difficult to define and measure [22]. Although researchers have devoted a great deal of attention to service quality, there are still some unresolved issues that need to be addressed, and the most controversial one refers to the measurement instrument [84]. Indeed, Parasuraman et al. (1988) stated that SERVQUAL would need to be customized for each industry, however Cronin and Taylor (1992) and Carman (1990) assert that the degree of customization necessary is higher than Parasuraman et al. (1988) lead us to believe.

The above arguments suggest the need for an alternative method of measuring service quality. This appears to be particularly the case when we address university service quality and develops a measure of service quality in educational institutions.

Definition of service quality

Lewis and Booms (1983, p. 100) were perhaps the first to define service quality as a "... measure of how well the service level delivered matches the customer's expectations". Parasuraman et al. (1988, p. 16) defined perceived service quality as "global judgment, or attitude, relating to the superiority of the service".

in fact, The construct of quality as conceptualized in the services literature centres on perceived quality. Perceived quality is defined as the consumer's judgement about an entity's overall excellence or superiority. It differs from objective quality which involves an objective aspect or feature of a thing or event [41]. Perceived quality is a form of attitude, related to, but not the same as, satisfaction, and resulting from a comparison of expectations with perceptions of performance.

University Service quality dimensions

Viewing education as a service [32] can facilitate generalizing service quality dimensions for this sector. However, the specific characteristics of

any service industry necessitates finding its unique dimensions in addition to the common features with other services.

There is a general perspective that service quality is a multidimensional or multi- attribute construct [27]. however there is no general agreement as to the nature or content of the dimensions.

- Parasuraman et al. (1985) provided a list of ten determinants of service quality as a result of their focus group studies with service providers and customers: access, communication, competence, courtesy, credibility, reliability, responsiveness, security, understanding and tangibles. In a later article they added that: "although the relative importance of the categories would vary from one service industry to the next, we believe the determinants of service quality in most (if not all) consumer service industries are included in this list." They then used the five dimensions- tangibles, reliability, responsiveness, assurance and empathy- as the basis for their service quality measurement instrument, SERVQUAL [105].
- Gronroos (1982, 1990) noted that the quality of a service as perceived by customers has three dimensions: functional (or process) dimension, technical (or outcome) dimension, and image.

The importance and the utility value of each determinant of quality is dependent on the nature of the service. For example, in low contact and low variety standard services, such as refuse collection, or some mail deliveries, "customization" is not a significant determinant of the service quality. In the case of standard but high variety, high number of contacts of low duration services, such as retail, "access" is much more significant than "customization" or "responsiveness". so several studies about education service quality has been made.

- McElwee and Redman (1993) used SERVQUAL as a basis for an adapted model for higher education. In view of the framework structure of SERVQUAL, their main emphasis was placed on functional (interactive) aspects of quality.
- Hill (1995) also investigated the implications of service quality theory for higher education. Briefly addressing some quality dimensions, he focused mainly on the application of a perception-expectation model in this context. In another study, Anderson (1995) used SERVQUAL to evaluate the quality of an administrative section in a university (office of student services).
- Owlia and Aspinall (1996) proposed conceptual framework for quality dimensions in higher education

Service quality measurement

Service quality has been a frequently studied topic in the service marketing literature. Efforts to understand and identify service quality have

been undertaken in the last three decades. A topic of particular interest in service quality research is the issue of measurement. Following the introduction of the SERVQUAL instrument (Parasuraman et al., 1985), many scholars have attempted to replicate and refute its structure and conceptualization [22]. Much of the research to date has focused on measuring service quality using the SERVQUAL instrument. Subsequently, research on the instrument has been widely cited in the marketing literature and its use in industry has become quite widespread [18].

Parasuraman et al. (1985, 1988, 1991) operationalize service quality using a multi-item scale called SERVQUAL, a 22-item instrument that includes the five service dimensions of tangibles, reliability, responsiveness, assurance, and empathy. They assert that the SERVQUAL items represent core evaluation criteria that transcend specific companies and industries, providing a basic skeleton underlying service quality that can be supplemented with context-specific items when necessary. Many applications of SERVQUAL have been reported.

However, some argue that measuring service quality using SERVQUAL, which is based on performance-minus-expectations (or gaps), is inappropriate and suggest that SERVPERF, which is performance-only measurement, is a better method [27]. Some researchers have questioned its dimensionality [16] [68], and others have argued about its measurement of perception and expectation [18]. A detailed discussion of the literature on SERVQUAL can be found in Lloso et al. (1998). Criticisms include the use of difference scores, dimensionality, applicability and the lack of validity of the model, especially with respect to the dependence or independence of the five main variables [27]. However, the developers of SERVQUAL contend that the scale using the expectation/ performance gaps method is a much richer approach to measuring service quality (e.g. Parasuraman et al., 1985, 1988, 1994). They point out that service quality is a multidimensional rather than a unidimensional construct.

Research foundations

The most widely used methods applied to measure perceived quality can be characterised as primarily quantitative multi-attribute measurements. Within the attribute-based methods, a great number of variants exist and among these variants, the SERVQUAL (which compares the perceptions of the service received with expectations) instrument have attracted the greatest attention.

Most research studies do not support the five-factor structure of SERVQUAL posited by Parasuraman et al. (1988), and administering expectation items is also considered unnecessary [22] [76]. However SERVQUAL would need to be customized for each industry

Cronin and Taylor (1992) were particularly vociferous in their critiques,

thus developing their own performance-based measure, dubbed SERVPERF. Cronin and Taylor (1992) found that unweighted SERVPERF measure (performance-only) performs better than any other measure of service quality, and that it has greater predictive power (ability to provide an accurate service quality score) than SERVQUAL. They argue that current performance best reflects a customer's perception of service quality, and that expectations are not part of this concept.

A review of service quality literature brings forward diverse arguments in relation to the advantages and disadvantages in the use of these instruments.

Research methodology

Research objectives

On the basis of the conceptual and operational concerns associated with the generic measures of service quality, the present research attempts to compare and contrast empirically the UNPERF scale against UNQUAL scales. The primary goal is to assess the relative strengths and weaknesses of each instrument in order to determine which instrument had the superior measurement capability in terms of unidimensionality, reliability, validity and explained variance of service quality. The procedures that have been followed in development of UNQUAL are in line with the recommendations of Firdaus (2004) for the development of HedPERF. The various steps involved in this comparative study are shown by means of flow chart (Figure I).

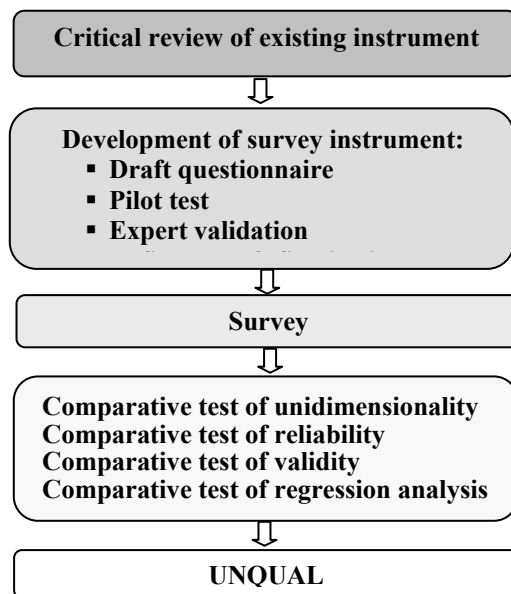


Figure I: Comparing UNPERF and UNQUAL

Research design

Data were collected by means of a structured questionnaire comprising four Sections namely A, B, C, and D (see Appendix). Section A contained seven questions pertaining to student respondent profile. While Section B required respondents to evaluate the expectation of their university. Section B consisted of 30 items extracted from the original instrument and modified to fit into the university of Tehran.

Section C, on the other hand, is composed of 30 items to evaluate the perception's of students of Tehran university. All the items in Sections B and C were presented as statements on the questionnaire, with the same rating scale used throughout, and measured on a seven-point, Likert-type scale that varied from 1 = strongly disagree to 7 = strongly agree. In addition to the main scale addressing individual items, respondents were asked in Section D to provide an overall rating of the service quality, word of mouth, future visits, confirmation with expectations and satisfaction level.

The draft questionnaire was eventually subjected to pilot testing with a total of 30 students and professors of Tehran University, and they were asked to comment on any perceived ambiguities, omissions or errors concerning the draft questionnaire. The feedback received was rather ambiguous thus only minor changes were made.

In the subsequent full-scale survey, data were collected from students of Tehran university (7 faculties include management, psychology and education, law & political science, foreign language, social science, economics, Literature and human science) for the period between December 2005 and April 2006. Data had been collected using the "personal-contact" approach. The final questionnaire together with a cover letter was then handed personally "contact persons", who in turn distributed it randomly to students within their respective faculties. A total of 400 questionnaires were distributed to seven faculties. Of these, 260 were returned. Hence, the sample size for the analysis is $n = 238$.

Results and discussion

The literature appears to offer considerable support for SERVQUAL and SERVPERF in comparison with other instruments. But a more comprehensive and industry- specific scale, which was uniquely designed for university specially in Iran has not developed. Thus, it would seem rational to develop a scale in Iran, and subsequently to determine which of these (evaluate performance or expectation- performance) two instruments had the superior measurement capability in terms of unidimensionality, reliability, validity, and explained variance of service quality. In developing the new scale, factor analysis was used to determine a new dimensional structure of service quality.

Factor analysis

One critical assumption underlying the appropriateness of factor analysis is to ensure that the data matrix has sufficient correlations to justify its application [46]. A first step is visual examination of the correlations, identifying those that are statistically significant.

Performance model

Visual inspection of the correlation matrix reveals that practically all correlations are significant at $p = 0.00$ with no correlations lower than 0.30, and this certainly provides an excellent basis for factor analysis. The next step involves assessing the overall significance of the correlation matrix with Bartlett's test of sphericity. The results were significant, $\chi^2(50; n = 238) = 3794.463$, ($p = 0.00$), a clear indication of suitability for factor analysis.

Another measure to quantify the degree of intercorrelations among the variables and the appropriateness of factor analysis is Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. Thus, KMO measure of sampling adequacy was computed, and the results indicated an index of 0.92, a "marvelous" sign of adequacy for factor analysis [56]. As for the adequacy of the sample size, there is a 7-1 ratio of observations to variables in this study, which falls within acceptable limits.

UNPERF proposed measure of service quality was a 30-item scale, consisting of 30 items generated from literature review and various qualitative research inputs namely focus groups, pilot test and expert validation. In developing new scale, all the 30 items were subjected to factor analysis.

Scree test was used to identify the optimum number of factors that can be extracted. The scree test provided four factors, which were subsequently rotated using a varimax procedure.

The communalities for each variable, which represent the amount of variance accounted for the factor solution for each variable were also assessed to ensure acceptable levels of explanation. The results showed that communalities in 13 variables (C7, C9, C11, C16, C20, C23, C30 from the questionnaire in Appendix) were below 0.50, "... too low for having sufficient explanation"[46]. Consequently, a new factor solution was derived with the nonloading variables eliminated and the results yielded four factors, which accounted for 68.06 per cent of the variation in the new factor solution. Table III shows the results of the factor analysis in terms of factor name, the variables loading on each factor and the variance explained by each factor.

Factor 1 Responsiveness elements. This factor represents the responsibilities of academics, and it highlights key attributes such as having good communication skill, allowing sufficient consultation, and being able to provide regular feedback to students.

Factor 2 empathy. This factor relates to the provision of individualised and personalised attention to students with clear understanding of their specific and growing needs while keeping their best interests at heart.

Factor 3 administrative elements. This factor contains variables that are essential to enable students fulfill their study obligations, and it relates to duties and responsibilities carried out by non- academic staff. In other words, it is concerned with the ability and willingness of administrative or support staff to provide services such as financial services, library services, cultural programs, health services.

Factor 4 reliability and assurance. This factor consists of items that put emphasis on the ability to provide the pledged service on time, accurately and dependably. It is also concerned with the ability to fulfill promises, and the willingness to solve problems in a sympathetic and reassuring manner.

The four- factor structure is certainly related to the determinants of service quality and support the existing literature. Nevertheless, it is important to note that the four factors identified did not conform exactly with either the five- factor structure of SERVQUAL or the five-factor structure of SERVPERF.

Table I: Result of factor analysis(factor loading)- UNPERF model

variables	Factor1	Factor2	Factor 3	Factor 4
C1	0.751			
C2	0.748			
C3	0.636			
C4	0.680			
C5		0.724		
C6			0.536	
C8		0.789		
C10		0.608		
C12				0.493
C13			0.779	
C14			0.716	
C15			0.677	
C17		0.483		
C18			0.635	
C19			0.723	
C21		0.827		
C22		0.808		
C24				0.684
C25				0.813
C26				0.810
C27				0.601
C28				0.493
C29			0.447	
Eigenvalues	10.68	1.96	1.75	1.26
Percentage of variance	20.55	20.15	14.08	13.26
Cumulative percentage of variance	20.55	40.71	54.79	68.06

Gap model

In this section we calculate gaps (expectation-performance) for 30 items, visual inspection of the correlation matrix reveals that practically all correlations are significant at $p = 0.00$ with no correlations lower than 0.30, and this certainly provides an excellent basis for factor analysis. The next step involves assessing the overall significance of the correlation matrix with Bartlett's test of sphericity. The results were significant, $\chi^2(50; n = 238) = 2905.502$, ($p = 0.00$), a clear indication of suitability for factor analysis.

Another measure to quantify the degree of intercorrelations among the variables and the appropriateness of factor analysis is Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. Thus, KMO measure of sampling adequacy was computed, and the results indicated an index of 0.904, a "marvelous" sign of adequacy for factor analysis (Kaiser, 1970). As for the adequacy of the sample size, there is a 7-1 ratio of observations to variables in this study, which falls within acceptable limits.

UNQUAL proposed measure of service quality was a 60-item scale, consisting of 30 items generated from literature review and various qualitative research inputs namely focus groups, pilot test and expert validation. In developing new scale, all the 60 items (30 performance's and 30 expectation's items) were subjected to factor analysis.

Scree test was used to identify the optimum number of factors that can be extracted. The scree test provided four factors, which were subsequently rotated using a varimax procedure.

The communalities for each variable, which represent the amount of variance accounted for the factor solution for each variable were also assessed to ensure acceptable levels of explanation. The results showed that communalities in 13 variables G1 (B1 and C1), G6 (B6 and C6), G9 (B9 and C9), G11(B11 and C11), G12 (B12 and C12), G15 (B15 and C15), G17 (B17 and C17), G23 (B23 and C23), G28 (B28 and C28), G29 (B29 and C29) and G30 (B30 and C30) from the questionnaire in Appendix were below 0.50, "... too low for having sufficient explanation" [46]. Consequently, a new factor solution was derived with the nonloading variables eliminated and the results yielded four factors, which accounted for 66.38 per cent of the variation in the new factor solution. (Table II) shows the results of the factor analysis in terms of factor name, the variables loading on each factor and the variance explained by each factor.

Table II. Result of factor analysis(factor loading)- UNQUAL model

variables	Factor1	Factor2	Factor 3	Factor 4
G2(B2-C2)	0.701			
G3(B3-C3)	0.871			
G4(B4-C4)	0.692			
G5(B5-C5)		0.747		
G7(B7-C7)			0.367	
G8(B8-C8)		0.822		
G10(B10-C10)		0.597		
G13(B13-C13)				0.322
G14(B14-C14)				0.296
G16(B16-C16)				0.510
G18(B18-C18)				0.415
G19(B19-C19)				0.673
G20(B20-C20)				0.808
G21(B21-C21)		0.463		
G22(B22-C22)		0.466		
G24(B24-C24)			0.753	
G25(B25-C25)			0.823	
G26(B26-C26)			0.754	
G27(B27-C27)			0.560	
Eigenvalues	9.2	1.62	1.37	1.07
Percentage of variance	20.77	16.99	14.63	13.98
Cumulative percentage of variance	20.77	37.76	52.39	66.38

Comparative test of unidimensionality

A highly mandatory condition for construct validity and reliability checking is the unidimensionality of the measure, which is referred to the existence of a single construct/trait underlying a set of measures [4]. In order to perform a comparative check of unidimensionality, a measurement model is specified for each construct (factor/dimension) of the two scales, and confirmatory factor analysis is run for all the constructs by means of structural equation modelling within LISREL framework [55].

Specifically, LISREL 8.3 for windows was used to analyse and compare the underlying factor model of the two scales where individual items in the model are examined to see how closely they represent the same construct. Table IV presents the measures of model fit for all the three scales. The overall fit of the model to the data was evaluated in various ways. Specifically, an exact fit of a model is indicated when the p for chi-square (χ^2) is above a certain value (usually set to p. 0.05) as well as indicated by other goodness-of-fit measures. While chi-square is sensitive to sample size and tends to be significant in large samples, a relative likelihood ratio between a chi-square and its degrees of freedom was used. According to Eisen et al. (1999), a relative likelihood ratio of five or less was considered an acceptable fit, a prerequisite attained by all the two scales. A number of

goodness-of-fit measures were proposed to eliminate or reduce the dependence on sample size. The purpose of assessing a model's overall fit is to determine the degree to which the model is consistent with the empirical data at hand. goodness- of- fit indices have values ranging between 0 and 1, with higher values indicating a better fit. Table V shows the indices for the two scales and all the values are close to on, indicating that there is evidence of unidimensionality for the scales.

Table III: Unidimensionality check

Measure of fit	UNQUAL	UNPERF
Chi-square at p = 0.05	572.87	1028.64
Degree of freedom	146	224
Relative likelihood ratio	3.9	4.50
GFI	0.80	0.73
AGFI	0.74	0.66
CFI	0.94	0.94
NNFI	0.93	0.93
IFI	0.94	0.94
NFI	0.93	0.93
RFI	0.91	0.92
RMSEA	0.11	0.123

The next measure to consider is the root mean square error of approximation (RMSEA), which is the measure of the discrepancy per degree of freedom. In other words, it shows "how well would the model, with unknown but optimally chosen parameter values, fit the population covariance matrix if it were available". The RMSEA is generally regarded as one of the most informative fit indices [31]. As illustrated in Table V, the RMSEA value for the UNQUAL was 0.11, an evidence of fair fit to the data. While the UNPERF and the scale showed a poor fit of 0.123. Therefore, it was concluded that the modified UNQUAL model fits fairly well and represents a reasonably close approximation in the population.

Comparative test of reliability

Unidimensionality alone is not sufficient to ensure the usefulness of a scale. The reliability of the composite score should be assessed after unidimensionality has been acceptably established. Reliability of a scale indicates the stability and consistency with which the instrument measures the concept. In this study coefficient alpha or Cronbach's alpha was computed for the service quality dimensions of all the two instruments.

Cronbach's alpha for UNQUAL dimensions ranged from 0.80 to 0.87. The results indicated that the reliability scores of the UNPERF range of 0.84 to 0.90, and slightly better than UNQUAL(Table IV).

Table IV: Reliability coefficient

UNQUAL Dimensions	Cronbach alpha(α)	UNPERF Dimensions	Cronbach alpha(α)
Responsiveness	0.80	Responsiveness	0.88
Empathy	0.84	Empathy	0.90
Administrative	0.83	Administrative	0.89
Reliability and assurance	0.87	Reliability and assurance	0.84

Comparative test of validity

While internal consistency estimates of reliability show higher values for the UNPERF scale, the next comparative test involves assessing the validity of the two instruments. Validity is the extent to which a measure or set of measures correctly represents the concept of study. For the purpose of this study, two validity tests (Criterion validity and Construct validity) were conducted.

The criterion variable used to compare the two scales was the respondents' global assessment of service quality and satisfaction (questions D1 and D 5). Whereas the variable used in the construct validity tests was the global preference, which was measured by the summation of the overall satisfaction and future visit intentions (questions D2, D3and D4).

The degree of criterion and construct validity was subsequently computed using the pairwise correlations between the global assessment of service quality, the global preference and each of UNQUAL and UNPERF measures.

The validity coefficients for the two scales are all significant at $p = 0.00$ level. The criterion and construct validity coefficients were 0.58 and 0.57 respectively for the UNQUAL scale, 0.27 and 0.34 respectively for UNPERF scale. The results indicated that the validity coefficients for the UNQUAL scale were greater than UNPERF scale. In other words, these findings demonstrated yet again the superiority of the UNQUAL in terms of criterion and construct validity.

Comparative regression analysis

The objectives of performing regression analysis in this study are twofold: (1) to assess the overall effect of the two instruments on service quality level (in other words, how well they predicted service quality); and (2) to determine the relative importance of the individual dimensions of the scales.

The effect size. The regression model considered the global assessment of service quality and satisfaction (questions D1, D2, D3, D4 and D 5) as a dependent variable and the service quality scores for the individual dimensions of UNQUAL and UNPERF as the independent variables. A multiple regression analysis was subsequently conducted to evaluate how well these scales predicted service quality level (Table IV).

The linear combination of the four-dimension UNPERF was significantly related to the service quality level, $R^2 = 0.358$, adjusted $R^2 = 0.347$, $F(5, 354) = 32.305$, $p = 0.00$. The sample multiple correlation coefficient was 0.58, indicating that approximately 34.7 per cent of the variance of the service quality level in the sample can be accounted for by the linear combination of the four dimensions of UNPERF scale.

Likewise, the four dimensions of UNPQUAL was also significantly related to the service quality level, $R^2 = 0.08$, adjusted $R^2 = 0.09$, $F(4, 354) = 7.4$, $p = 0.00$. However, the sample multiple correlation coefficient of 0.3 was much lower than UNPERF's, thus indicating that only 0.09 per cent of the variance of the service quality level can be accounted for by the linear combination of the four dimensions of UNQUAL scale. The findings from the regression analysis once again demonstrated that the UNPERF scale was better in explaining the variance of service quality level.

The relative influence. Table VII shows the results of the relative influence of the individual dimensions of the two scales. The dependent variable was the global assessment of service quality level. The resultant output of UNQUAL had an adjusted R^2 of 0.09 ($p = 0.00$) and yielded only one significant dimension (Reliability and assurance elements). It alone accounted for 0.07 per cent ($0.27^2 = 0.07$) of the variance of service quality level, while the other dimensions contribute an additional 0.02 per cent

Table V: Effect size and relative importance of the individual dimensions

Measuring scale	Standardized coefficient(β)	Significant(p)
UNQUAL($R^2 = 0.09$)		
Responsiveness	0.004	0.965
Empathy elements	-0.007	0.937
Administrative elements	-0.092	0.292
Reliability and assurance elements	-0.270	0.01
SERVPERF($R^2 = 0.347$)		
Responsiveness	0.139	0.068
Empathy elements	-0.002	0.981
Administrative elements	0.142	0.043
Reliability and assurance elements	0.394	0.001

(0.09- 0.07 per cent). This implied that the other dimensions did not contribute significantly towards explaining the variance in the overall rating.

UNPERF scale on the other hand had an adjusted R^2 of 0.34 ($p = 0.00$) and yielded two significant dimensions (factor 1 and factor 2), which explained almost all of the variance in the service quality level. The other dimensions did not contribute significantly towards explaining the variance

in the overall rating.

The empirical analysis indicated that UNPERF four-factor structure with 23 items resulted in more reliable estimations, greater criterion and construct validity, greater explained variance, and consequently a better fit. Besides the better quantitative results, the modified UNPERF scale also had the advantage of being more specific in areas that are important in evaluating service quality within the universities sector. Hence, service quality in universities can be considered as a four-factor structure with conceptually clear and distinct dimensions namely Responsiveness, Empathy elements, Administrative elements, and Reliability and assurance elements.

Conclusions and implications

The concern for excellence in educational services and the lack of empirical research on the cues that signal quality to students were the bases for this exploratory study on service quality. Although the SERVQUAL scale developed by Parasuraman et al. (1988, 1991) has been the focus of considerable attention in recent service quality research, the literature review revealed alternative conceptualizations of the service quality construct and acknowledged the need to identify the determinants of service quality in specific service organizations in order to develop quality improvement programmes better adapted to the expectations of their customers. Therefore, the primary goal was to test and compare the relative efficacy of the two conceptualisations of service quality (UNQUAL and UNPERF) in order to determine which instrument had the superior measurement capability in terms of unidimensionality, reliability, validity, and explained variance. The tests were conducted utilising sample students from University of Tehran, and the findings indicated that the two measuring scales did not perform equivalently in this particular setting.

The results led us to conclude that the measurement of service quality by means of the UNPERF method resulted in more reliable estimations, greater criterion and construct validity, greater explained variance, and consequently better fit than the other instruments namely UNQUAL. In short, the findings demonstrated an apparent superiority of the four-factor structure of UNPERF scale in this context.

Likewise, the regression analyses compared the two scales so as to determine how well they predicted service quality level. four-factor structure of UNPERF clearly outperformed the UNPERF in terms of explaining the variances in service quality level (Table VI).

In conclusion, the current study provides empirical support in favour of the idea that the UNPERF four-factor structure with 23 items may be the superior instrument in measuring service quality within the higher education context

Table VI. Comparison of the two scale

Criteria	UNQUAL	UNPERF
Cronbach alpha(α)	0.9543	0.9582
Criterion validity	0.58	0.27
Construct validity	0.57	0.34
Adjusted R ²	0.09	0.34
RMSEA	0.11	0.123

Implications to managers of educational institutions

As competition for students has escalated among universities, student retention has received increased attention. Since service quality and student satisfaction are important factors in retention, it is important that educational institutions measure service quality and use the tools of continuous improvement. In describing the TQM implementation at Oregon State University, Coate (1990) wrote that "quality is what our customers tell us it is, not what we say it is. Progress can only be determined and improved by measurement". For educational institutions, the UNPERF is an instrument to measure service quality.

Indeed, the current results also suggest that the Reliability and assurance elements (for example, ability to provide the pledged service on time, accurately and dependably, ability to fulfill promises, and the willingness to solve problems in a sympathetic and reassuring manner) is the most important determinant of service quality in universities. In other words, students perceived Reliability and assurance elements to be more important than other dimensions in determining the quality of service they received. universities should therefore concentrate their efforts on the dimension perceived to be important rather than focusing their energies on a number of different attributes, which they feel are important determinants of service quality. While the idea of providing adequate service on all dimensions may seem attractive to most service marketers and managers, failure to prioritise these attributes may result in inefficient allocation of resources.

Limitations and suggestions for future research

The current study allows us to understand how two measuring instruments of service quality compare to one another. To date, these scales have not been compared (specially in Iran) and contrasted empirically thus making this research a unique contribution to the services marketing literature. The present findings suggest that the modified UNPERF scale is better suited to university service settings. Since this study only examined the respective utilities of each instrument within a single industry, any suggestion that the UNPERF is generally superior would still be premature. So, Future studies should apply the measurement instrument in other industries, and with different types of universities in order to test whether the results obtained are general and consistent across different samples.

Indeed, Further research needs to be done to determine the parameters of the students' zone of tolerance. This is important because administrators need to know at what point students cease to be satisfied with the core service they are receiving. Owing to resource restrictions, in some instances it is not possible for institutions to provide everything that students want. Knowledge of the zone of tolerance allows institutions to allocate resources accordingly.

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