# Analysing Service Quality: The Case of Post-Graduate Chinese Students

Bradley R.Barnes

Volume 1 / No. 1

December 2006

ISSN nr. 1743-6796


LEEDS UNIVERSITY BUSINESS SCHOOL
WORKING PAPER SERIES

# Analysing Service Quality: The Case of Post-Graduate Chinese Students

**Bradley R. Barnes**
Department of Marketing
Leeds University Business School

*LUBS Working Paper Series*
*December 2006*

***Abstract***

*The competitive state of the Chinese higher education industry is set to intensify over the forthcoming years. Where previously, institutions may have been able to obtain high returns for relatively little effort, the future most certainly will be tougher. In response an 'action research' process is adopted initially using a modified SERVQUAL instrument to investigate expectations and perceptions of service quality among a sample of post-graduate Chinese students at a leading business and management school in the UK. Research into service quality in a higher educational context is somewhat scant, and where investigations have been undertaken, very little has been concluded among post-graduates - particularly among the significant number of Chinese post-graduate students. The research findings suggest that the instrument is suitable for use in a Chinese and post-graduate context, and the statements load on the five original SERVQUAL dimensions. In an attempt to raise service quality, several managerial recommendations are extracted, and some direction for future research is suggested.*

**Keywords:** SERVQUAL, action research, service quality, service marketing.

**Address for Correspondence:** Dr. Bradley R. Barnes, Leeds University Business School, University of Leeds, Western Campus, Leeds, LS2 9JT, United Kingdom.
Tel: + 44 113 343 7017. Facsimile: +44 113 343 1807. E-mail: brb@lubs.leeds.ac.uk

**Analysing Service Quality: The Case of Post-Graduate Chinese Students**

**Introduction:**

Over the last decade, both US and UK business and management schools have experienced an increasing number of post-graduate Chinese students, who are prepared to pack their cases and venture west, in hope of obtaining high quality education. Rapid economic growth in China, coupled with traditional Chinese values associated with education has not escaped the attention among university policy makers. As a result, for some educational institutions, the metaphor 'gravy train' probably springs to mind, as an abundance of high-fee paying students from China have provided huge revenue gains since the turn of the new century. Some academic institutions meanwhile have recognised the opportunities and taken the challenge to expand their international operations further, through either international joint ventures or foreign direct investment in China.

As more international players begin to establish a presence in China, local universities are also becoming smarter, and are acquiring resources to deliver such programmes either independently or via accreditation. These factors in addition to other environmental issues, such as S.A.R.S, the tightening of visa processing in the US and UK following the traumatic effects of the nine eleven disaster, and reduced economic growth in China - instigating the fear of not being employed once qualified, are all having an influence on the recruitment of Chinese students. As a consequence, the competitive state of the Chinese higher education industry is set to intensify over the forthcoming years. Where previously, institutions may have been able to obtain high returns for relatively little effort, the future most certainly will be tougher.

In response, this research investigation aims to analyse service quality among a sample of Chinese post-graduate students. Through undertaking the exercise, it is believed that a better understanding can be gathered of the quality that is expected among such students, as well as their perceptions of service. As a result, it will be possible to map student expectations against perceptions and identify service quality gaps. This will help to locate areas of performance where improvements are needed, or where resources could be better utilised elsewhere. The overall aim of the

investigation being to bridge service quality gaps, raise quality standards, and enhance the learning and teaching environment - as perceived among post-graduate Chinese students. In achieving this aim, it is likely that there will also be a greater willingness among such students to positively recommend.

The paper is organised as follows; firstly some of the literature relating to service quality in business and marketing is discussed. This will proceed with a more detailed overview of quality in the higher education sector and will span into more specific 'gap' based research, in-line with the context of the study. The gaps in the literature will then briefly be outlined prior to the research approach and methodology section. The findings are later presented, followed by the research conclusions, which will identify some implications, limitations and direction for future research.

***Measuring Service Quality:***

To achieve quality as perceived by the consumer, proactive organisational commitment is required. Berry (1995) suggests that service plays an important role in enhancing value, and can positively influence a firm's success. From a customer perspective, a provider's service can help to offset potential burdens, like having to pay a high price, or make a purchase from a retail establishment situated in an inconvenient location. As a result, understanding and measuring customer expectations and performance are therefore an essential component that can be used to enhance a company's service provision.

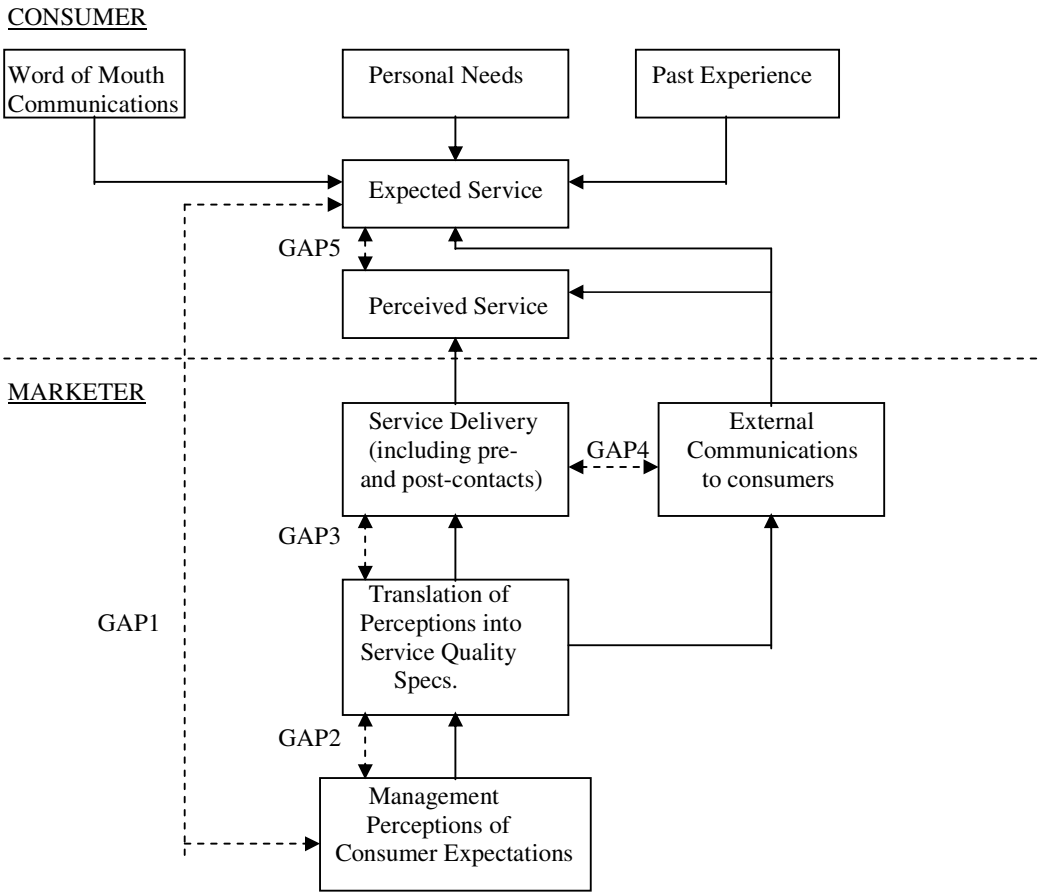
In analysing service from the consumer's perspective, research by Parasuraman et al., (1988) yielded a useful concept of ten potentially overlapping dimensions. The authors defined service quality as the gap between consumer expectations and perceptions. These original dimensions from the framework are illustrated in Figure I, and served as the initial structure of a service quality measurement instrument (SERVQUAL), which was later created by these academics.

**Figure I:** Service Dimensions

1. Tangibles: Appearance of physical facilities, equipment, personnel and communications materials.
2. Reliability: Ability to perform the promised service dependably and accurately.
3. Responsiveness: Willingness to help customers and provide prompt service.
4. Competence: Possession of the required skills and knowledge to perform the service.
5. Courtesy: Politeness, respect, consideration, and friendliness of contact personnel.
6. Credibility: Trustworthiness, believability, honesty of the service provider.
7. Security: Freedom from danger, risk or doubt.
8. Access: Approachability and ease of contact.
9. Communication: Keeping customers informed in language they can understand and listening to them.
10. Understanding the Customer: Making the effort to know customers and their needs.

The SERVQUAL instrument represents a multi-item scale that can be used for measuring expectations and perceptions of service quality - as perceived among consumers. In developing the research tool, extensive statistical analysis revealed significant correlations between certain dimensions depicted in the original concept. This led to the re-grouping of the original ten items into five subsequent dimensions i.e. tangibles, reliability, responsiveness, assurance and empathy (Parasuraman et al., 1988). Over the last fifteen years the framework has been used extensively within both practitioner and academic research for measuring service quality. The initial concept presented by Parasuraman et al., (1985) is illustrated in Figure II, and is deemed useful for emphasising the importance of the potential service gap between customer expectations and perceptions.

**Figure II:** The SERVQUAL Gaps Model




Source: Parasuraman et al., (1985).

The SERVQUAL instrument consists of twenty-two parallel related expectation (E) and perception (P) statements that represent the five service quality dimensions. In order to obtain views for the statements, customers are required to select a response using likert scales that range from strongly agree to strongly disagree. This then allows for the difference scores for each dimension to be calculated. The difference (P – E = Q) represents the measure of service quality (Q). Where Q is negative - a service gap exists. However, where Q is positive, customer expectations are being exceeded.

A further section of the instrument provides for the measurement of the relative importance associated with each dimension. After the mean for each dimension has

been calculated, the relative importance score can then be used to calculate a weighted average score for each dimension. The instrument was developed with the intention that it could be applied in a variety of service settings, and as a result, many researchers – including Babakus and Mangold (1992) have taken the broad framework and added or deleted items based on the context of their own research investigations.

***Service Quality in Education:***

During the last decade, quality initiatives have been the subject of an enormous amount of practitioner and academic discourse, and at various levels have found a gateway into higher education (Avdjieva and Wilson, 2002). In the US many academic institutions have implemented such policies in response to a reduction in student funding, complaints by employers and parents, as well as the pioneering success of such drives in many corporate businesses (Kanji and Tambi, 1999). However, since the early to mid 1990s a stream of work has explored aspects of service quality relating to the teaching and learning factors, and the environmental attributes influencing higher education (Harrop and Douglas, 1996; Narasimhan, 1997; and Shank et al., 1995), with the majority of such investigations using student evaluations to assess quality (Rowley, 1997; Aldridge and Rowley, 1998).

Ford et al., (1999) suggest that because of the high competitive intensity surrounding business related courses, institutions need to better understand the nature and quality of service offered. In analysing the attributes that contribute towards an excellent university, these researchers found that reputation, career opportunities, programme issues, physical aspects, and location in this order served as the most important factors, and help to serve as a basis where US and New Zealand universities can focus their efforts. However, they warn that blanket strategies may not be applicable globally, as different cultures could have different service quality needs.

This would appear somewhat true based on research undertaken within the higher education sector by Vidal et al., (2003). The researchers suggest that 'guidance services', in 'professional', 'academic' and 'personal' matters play an integral part of the education process in Spain. Adee (1997) also suggests that several 'university characteristics' may be useful in explaining the perceived quality among students,

these being an emphasis on competent teaching, the availability of staff for student consultation, library services, computer facilities, recreational activities, class sizes, level and difficulty of subject content, and student workload. Empirical findings from a sample of students studying in the UK revealed three factors that appear to be important in a business and management faculty (Oldfield and Baron, 2000). These were labelled 'requisite' - items which were deemed essential to enable students to fulfil their studies, 'acceptable' as those aspects students feel are desirable, and 'functional' - representing items of a practical or utilitarian value.

More recently, Lau (2003) advocates that many American institutions are experiencing a loss in students not returning to campus to complete under graduate programmes. As a result she provides a conceptual framework consisting of three factors based on learning, teaching and resources (Institutional Administrators, Faculty, and Students) which are considered to influence student involvement / learning, which in-turn leads to student retention, and graduation. Similarly, in earlier research, and based on the notion that in higher education production and consumption are often inseparable due to personal contact, Owlia and Aspinwall (1996) conceptually arranged thirty 'quality characteristics' into six dimensions named 'tangibles', 'competence', 'attitude', 'content', 'delivery', and 'reliability' as a framework for future tests in a SERVQUAL - type structure.

***Gap Analysis in Higher Education:***

Gap analysis is not new in a higher educational context, and a number of studies have been influenced by the work of Parasuraman et al., (1985). For example, Long et al., (1999) used 'gap analysis' to develop a number of questions in order to compare what students 'look for' (expect) and what they 'experience' on a course. Sander et al., (2000) meanwhile examined undergraduates' expectations and preferences in teaching, learning and assessment. LaBay and Comm (2003) also developed a number of measures to evaluate student expectations and perceptions, concerning their tutor, on a sample of undergraduate and distance learning students. Using a wide range of scales, Lampley (2001) formed a number of question statements relating to responsiveness / caring, records / paperwork, university services, accessibility / safety, knowledge / scheduling, facilities / equipment, and public relations to measure expectations and perceptions among doctoral students in six US universities.

Research by Hill (1995) suggests there may well be a 'mismatch' between students' expectations and their perceived quality. Using a framework that he developed to investigate a small sample of accounting undergraduates in the UK, he discovered that negative results (P-E) emerged in terms of academic service factors, including course content, teaching quality, teaching methods, personal contact with academic staff, feedback, and student involvement with curriculum. Meanwhile, other service factors such as careers, counselling / welfare, health and physical education all exceeded students' expectations.

A pioneering study in two private business schools in the US by Pariseau and McDaniel (1997) used the SERVQUAL framework to draw comparisons between faculty members and undergraduate students regarding their expectations and perceptions of professors. Despite not providing any construct validity or factor analysis tables to confirm the dimensions (see also Cuthbert, 1996), several dimensions proved to have a statistically significant relationship in contributing towards the overall quality provided by professors. Ham and Hayduk (2003) meanwhile delineate that the dimensions of SERVQUAL may be intrinsically linked to the overall quality of service as well as customer satisfaction.

Using a modified SERVQUAL scale O'Neill (2002) undertook a longitudinal study on a sample of undergraduate students in Western Australia. Although his findings demonstrated that the measurement items failed to load on the five prescribed SERVQUAL dimensions, he discovered that student perceptions of quality had deteriorated - suggesting service quality in higher education may be influenced by time. The work confirmed earlier research by the same author of a temporal nature that was initiated within the tourism and educational sectors (O'Neill and Palmer, 2001).

In brief, SERVQUAL is recognised as a tried and tested instrument that has been successfully applied in various different contexts (Buttle, 1996). Its strengths more than outweigh any deficiencies, and the results can be presented in a format useful for targeting specific service improvements (O'Neill and Palmer, 2001). Over recent years the higher education sector has become more quality conscious, which has been

fuelled by increasing competition, a reduction in state funding, and greater consumer demands (Ford et al., 1999; Kanji and Tambi, 1999). In response, a growing number of institutions and academics have grappled with such quality issues and have undertaken research with the aim of addressing some of the key concerns (Lau, 2003; Oldfield and Baron, 2000).

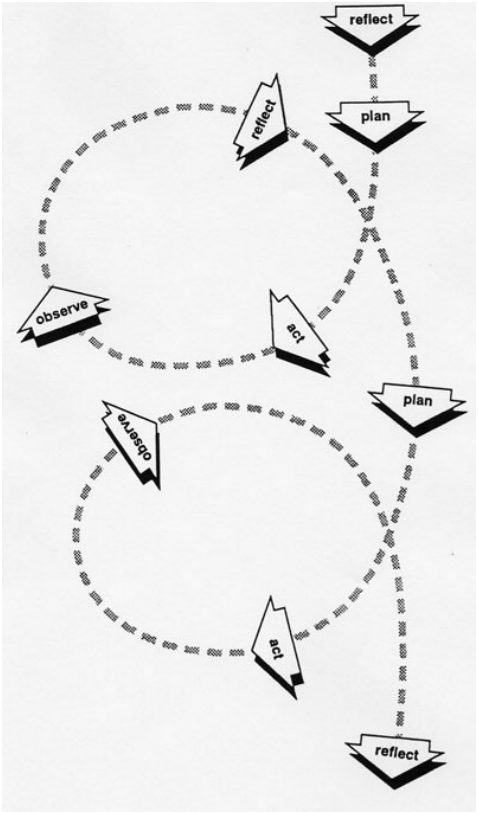
Despite these attempts, relatively few studies have analysed service quality specifically, and although 'gap analysis' has been investigated, only a few decided to adopt the SERVQUAL instrument, which appears strange bearing in mind its proven success in many industries. This leads one to conclude that service quality in higher education has been a somewhat under researched area, and where investigations have been undertaken, the SERVQUAL scale tends to have been largely ignored. In addition, given the exception of Lampley (2001) who undertook research with doctoral students, very little (if any) service quality research has been concluded among post-graduate students, and this is somewhat surprising bearing in mind their economic contribution, and specifically the significant number of post-graduate Chinese that have decided to study in the west since the millennium.

This research therefore aims to bridge this gap, by using a modified SERVQUAL instrument to investigate service quality among post-graduate Chinese students that are studying at a leading UK business and management institution. The findings will help to confirm the instrument's suitability in a post-graduate setting, and on international students of Chinese origin. The results will also be used to test the framework's strength of association with value, satisfaction and the willingness to recommend.

**Action Research Methodology:**

An action research approach was adopted for this line of investigation, where according to Carr and Kemmis (1986), a subject matter is initially taken where some form of strategic action susceptibly can lead to improvement; secondly, the project evolves through a series of spirals consisting of planning, acting, observing, and reflecting; thirdly the project involves those responsible in practice, and widening participation to include others affected. The process is probably best understood by observing Lewin's (1946) 'action research' spiral (see Figure III).

**Figure III:** Lewin's 'Action Research' Spiral




Kember and Kelly (1993) suggest that in making innovations in teaching and learning, very seldom does the act go perfect the first time around. Therefore once improvements have been instigated, the outcomes again need to be observed and reflected upon to see if they have achieved their desired goals. Hence the process of action research involves a number of phases: initial reflection, planning, action, observation, reflection etc. In short, McNiff et al., (1996) view action research as the mechanism to describe, interpret, and explain events (enquiry), while seeking to change them (action) for the better (purpose).

This line of exploration was undertaken for two reasons. Firstly, very little had been concluded regarding the perceptions of Chinese students, and thus a multi-faceted research approach seemed more apparent. Secondly, it was felt that such an approach provides the opportunity for 'triangulation'. This allows investigators to either obtain data from different types of respondents (respondent triangulation), and / or combine

research methods to obtain complimentary data (data triangulation) (c.f. Gill and Johnson, 1991; Yin, 1994). It was apparent that in order to succeed with the project, both respondent and data triangulation would be needed. The former for developing and testing the instrument, and the latter for obtaining a more rounded picture by combining 'hard' and 'soft' data, which may also be better suited to the intricate nature of Chinese respondents.

In the first stage of the action research project, there was a need to undertake desk-based preliminary research to obtain the relevant and pertinent literature relating to service quality in general, and more specifically within a higher educational context. Secondary data can often be useful in providing a focus and direction for the study to proceed (Malhotra, 1993). The twenty-two statements from the original SERVQUAL instrument were modified and used in the initial framework, and based on the higher educational literature, a number of items were added which generally related to a) the institution's facilities such as library, computer services (Hill, 1995), accommodation, sports facilities, catering, reprographics (Cuthbert, 1996; Aldridge and Rowley, 1998), location, campus layout (Ford et al., 1999); b) the provision for guidance in terms of careers (Hill, 1995; Ford et al., 1999), financial aid (Pariseau and McDaniel, 1997), as well as academic and personal facets (Vidal et al., 2003); and c) several performance related dimensions including value (Oldfield and Baron, 2000; Schmidt, 2002), satisfaction (Long et al., 1999) and the willingness to recommend (O'Neill and Palmer, 2001; Pariseau and McDaniel, 1997).

In depth personal interviews were then undertaken with the school's Quality Manager, Marketing & Communications Manager, and Director of Post-Graduate Programmes. Two focus group discussions were also performed at this stage. The first took place with four of the school's Programme Managers, who have responsibility for the daily operations and welfare of such students. The second was conducted with four post-graduate Chinese students. Such exploratory research methods can prove beneficial for generating ideas and obtaining further insights in order to build on the literature (Aaker et al., 1995; Churchill, 1996). After each interview and focus group, various modifications were made to the instrument based upon the recommendations offered. The framework was then later tested with a small sample of Chinese post-graduate marketing students. The entire procedure proved invaluable in helping to develop, test

and refine an instrument designed to measure service quality among Chinese post-graduate students, and thus provided a significant input into the overall research process.

The final instrument consisted of three constituent parts. The first section outlined nineteen statements that were modified from the original SERVQUAL instrument, and this part was used to measure students' expectations prior to coming to the UK. Two subsequent dimensions were added, and these were labelled 'guidance' (items referring to the guidance and support elements provided), and 'university' (items referring to the facilities that the university provides). Similar statements were later used in the second section to obtain the students' perceptions. This part also contained a series of questions relating to the performance measures that were earlier highlighted. In an attempt to avoid respondent confusion, seven item likert scales were used throughout, anchored by 1 - Strongly Disagree through to 7 – Strongly Agree.

The second stage of the process involved the administration of the survey. In congruence with the action research approach offered by Carr and Kemmis (1986) to widen participation and include others affected, the researcher collaborated with other teaching staff at the school, with the purpose of handing out the self administered survey at the beginning of a lecture. The questionnaire was administered and completed over a two-week period towards the latter half of the second semester. Although at this stage of the academic year students are ideally placed in terms of their experience to provide perceptions, the researcher realised that it was about to hit students at a time when they were extremely busy and worried about having to hand in assignments, and prepare for examinations etc.

In addition, those concerns from O'Neil's (2002) research regarding time, and its negative influence on perceptions were also considered, so the researcher was not over optimistic that perceptions of service quality would be high. To stimulate response, the Director of Post-Graduate Programmes at the school offered all respondents the opportunity to win a significant cash prize, and this proved to be a useful incentive for stimulating the Chinese students. In total 105 surveys were returned, and 102 were sufficiently completed. This represents a 69.39% response

rate, based on the total number of post-graduate Chinese students enrolled at the school, and this was judged to be highly successful for a self-administered survey.

The data was then carefully entered into SPSS, and data analysis was undertaken on the 102 respondents. Paired sample t-tests were performed on the individual items, to discover whether or not significant gaps emerged between the Chinese students' expectations and perceptions. The specific SERVQUAL gap items were then subjected to further tests including factor analysis - in an attempt to compare the results with the original five dimensions, and multiple regression analysis to test the framework's association against value, satisfaction and the willingness to recommend.

The resulting data provided a second stage to reflect on the situation, and consider new problems such as 'how' and 'why' the statistical patterns emerged as they did. In planning to grapple with this new task, an inductive approach was considered to be appropriate to investigate the nature of the problem in more depth and obtain some additional, and complementary qualitative insights (Zikmund, 2000). To perform this, the final action stage of the research process involved three follow-up focus group sessions (each consisting of the researcher and four Chinese post-graduate students), and two in-depth one-to-one student interviews. In summary, three action cycles were completed in this research process to explore service quality among Chinese post-graduate students. The initial exploratory research stage led to the development and refinement of the instrument, this led to the instrument being used to survey students, and the resulting findings were used to undertake qualitative research, and hence probe further and analyse the quantitative outcomes in more detail.

**Results:**

The mean scores from the sample are illustrated in Tables Ia and Ib. The wording for the expectation statements used in the first section of the instrument, were modified slightly for the perceptions section in the second part, so a descriptive summary is used.

**Table Ia:** Mean Scores (and standard deviations) for the SERVQUAL Expectations and Perceptions

| | P | sd | E | sd | P-E |
|---|---|---|---|---|---|
| **Responsiveness** | | | | | |
| 1. Prompt service | 4.91 | (1.09) | 5.89 | (0.97) | -0.98 |
| 2. Staff willing to help | 5.31 | (0.93) | 6.09 | (1.02) | -0.77 |
| 3. Prompt response to requests | 4.73 | (1.19) | 5.59 | (1.21) | -0.86 |
| **Assurance** | | | | | |
| 4. Instil confidence | 4.85 | (0.97) | 5.64 | (1.06) | -0.78 |
| 5. To be courteous | 5.09 | (1.05) | 5.70 | (1.11) | -0.61 |
| 6. Have knowledge | 5.36 | (1.05) | 6.17 | (0.82) | -0.80 |
| **Empathy** | | | | | |
| 7. Teach staff provide individual attention | 4.03 | (1.45) | 5.25 | (1.22) | -1.23 |
| 8. Support staff provide individual attention | (mean for 7 and 8) | | | | |
| 9. Understand needs | 3.92 | (1.44) | 5.31 | (1.28) | -1.39 |
| 10. Have best interests at heart | 4.25 | (1.31) | 5.26 | (1.34) | -1.02 |
| 11. School has convenient hours | 4.03 | (1.02) | 6.02 | (0.99) | -1.99 |
| 12. School office has convenient hours | (mean for 11 and 12) | | | | |
| **Tangibles** | | | | | |
| 13. Modern looking equipment | 5.34 | (1.07) | 5.71 | (1.24) | -0.36 |
| 14. Neat employees | 5.49 | (1.02) | 5.76 | (1.04) | -0.27 |
| 15. Materials visually appealing | 5.07 | (1.02) | 5.66 | (0.99) | -0.59 |
| **Reliability** | | | | | |
| 16. Deliver services on-time | 5.09 | (1.13) | 6.01 | (1.05) | -0.92 |
| 17. Help to solve problems | 4.66 | (1.16) | 5.91 | (1.05) | -1.25 |
| 18. Perform right the first time | 4.74 | (1.08) | 5.75 | (1.00) | -1.01 |
| 19. Inform of events and services | 5.03 | (1.31) | 5.91 | (0.99) | -0.88 |
| **SERVQUAL TOTALS** | **89.96** | | **108.9** | | **-18.94** |
| **SERVQUAL AVERAGE** | **4.73** | | **5.73** | | **-1** |

**Table Ib:** Mean Scores (and standard deviations) for the University and Guidance Dimensions

| | P | sd | E | sd | P-E |
|---|---|---|---|---|---|
| **University** | | | | | |
| 20. Reasonable accommodation / housing | 4.69 | (1.22) | 5.76 | (1.20) | -1.08 |
| 21. Adequate sports / recreation | 4.25 | (1.40) | 5.61 | (1.21) | -1.36 |
| 22. Campus suitably located | 5.50 | (1.00) | 5.83 | (1.08) | -0.33 |
| 23. Suitable campus layout | 5.20 | (1.09) | 5.62 | (1.12) | -0.42 |
| 24. Suitable library facilities | 5.62 | (1.06) | 6.36 | (0.94) | -0.75 |
| 25. Adequate books | 4.91 | (1.45) | 6.37 | (1.00) | -1.46 |
| 26. Adequate healthcare provision | 4.59 | (1.30) | 5.64 | (1.04) | -1.05 |
| 27. Adequate financial services | 3.87 | (1.38) | 5.37 | (1.33) | -1.50 |
| 28. Suitable class sizes | 4.24 | (1.69) | 5.92 | (1.24) | -1.69 |
| 29. Appropriate level / difficulty of study | 4.95 | (1.08) | 5.79 | (1.15) | -0.84 |
| 30. Appropriate Master's programme work load | 4.90 | (1.21) | 5.68 | (1.34) | -0.77 |
| 31. Treated as a client | 4.48 | (1.36) | 4.97 | (1.44) | -0.49 |
| 32. Comfortable lecture theatres | 4.44 | (1.60) | 5.99 | (1.02) | -1.55 |
| 33. Adequate computing facilities | 5.32 | (1.05) | 6.08 | (1.04) | -0.75 |
| 34. Adequate study areas | 4.46 | (1.56) | 5.96 | (1.13) | -1.50 |
| 35. Adequate media support | 4.49 | (1.49) | 5.94 | (1.14) | -1.45 |
| 36. Suitable refreshment areas | 4.09 | (1.59) | 5.30 | (1.33) | -1.22 |
| 37. Reasonably priced refreshments | 3.45 | (1.65) | 5.40 | (1.39) | -1.95 |
| **Guidance** | | | | | |
| 38. Suitable career guidance | 4.68 | (1.15) | 5.78 | (1.15) | -1.11 |
| 39. Suitable academic guidance | 5.02 | (1.16) | 6.00 | (1.06) | -0.98 |
| 40. Guidance on personal matters | 4.17 | (1.41) | 5.03 | (1.32) | -0.86 |
| 41. Guidance on cultural issues | 4.26 | (1.34) | 5.64 | (1.14) | -1.37 |
| 42. Suitable induction | 4.41 | (1.31) | 5.43 | (1.09) | -1.02 |

For each statement the mean Expectation (E) and Perception (P) values, along with a service quality value from the formula are presented Q = P – E (Parasuraman et al., 1988). The three columns provide summary results for the institution, and the overall SERVQUAL results are illustrated in Table Ia, below the three columns. Where the P – E is negative, this refers to perceptions of the institution falling short against initial students' expectations, and the presence of service quality gaps. The findings suggest a short fall on all the items measured. The expectation and perception items were measured using a seven point scale, from 1 = strongly disagree, to 7 = strongly agree, with four serving as a mid point / neutral opinion on the scale. Mean scores greater than four identify a tendency for respondents to agree with a particular statement, whereas means of less than four indicate disagreement.

***Expectations (E)***

As can be seen in Tables Ia and Ib, just one single expectation item ('to be treated like a client') fell below five. However, with the inclusion of this item, it can be concluded that expectation (E) values among the Chinese post-graduate students per se were high (means ranging from 4.97 to 6.37). In attempting to understand why Chinese post-graduate students have such high expectations, the personal interviews and focus groups revealed the following:

- *I think it is because of the excellent reputation that the University has back home*
- *It's probably because we have no previous knowledge of a British University, and expect it to be 'super great'*
- *Because we think education in the UK should be better than in China.*

There was also a consensus from the focus group discussions that it was down to 'cost', and particularly the 'high relative course fees' in relation to other UK and Chinese institutions. Eight statement (2, 6, 11, 16, 24, 25, 33 and 39) illustrate mean scores of six or greater. This suggests that Chinese post-graduate students really have high expectations in terms of a need for staff to show a willingness to help, provide punctual service, provide academic guidance, and have appropriate knowledge to answer questions. The students also have a desire for the institute to provide convenient opening hours, suitable library facilities, adequate books and sufficient computing facilities.

***Perceptions (P)***

Overall just three perception items (9, 27 and 37) are below the mid-point 4 on the scale, suggesting there is some disagreement among students in terms of the institution understanding the needs of Chinese post-graduate students, providing adequate financial services, and the provision of reasonably priced refreshments. Meanwhile thirteen items (2, 5, 6, 13, 14, 15, 16, 19, 22, 23, 24, 33 and 39) exceeded five, suggesting that the sample had a tendency to agree that staff are willing to help, are courteous, knowledgeable, and provide suitable academic guidance; the faculty has modern looking equipment, neat employees, visually appealing materials, delivers

services on-time, keeps students informed of events; and the campus has a suitable layout and location, as well as library and computing facilities.

The remainder of the perception scores fell close to the mid-point, somewhere between four and five to be precise. When probed on the reason (during the subsequent personal interviews and focus group discussions), why many responses were close to neutral, a consensus was revealed that it could be a cultural issue, as quoted verbatim:

- *When given the chance Chinese prefer to be neutral, they don't like to be divided one way or the other*
- *Perhaps it's normal – Chinese people may never say too many good things, even if it really is good*

***Service Quality Gaps (P-E)***

The service quality gaps are demonstrated in the third column of Tables Ia and Ib. As each item has a negative value, students' perceptions of the service are falling short of their expectations. Paired sample t-tests were also undertaken on the perception and expectation mean items, in order to identify whether or not statistically significant service quality gaps were apparent. The results are presented in Table II.

**Table II:** Paired Sample T-Test Statistics

| | t value | p value |
|---|---|---|
| **Responsiveness** | | |
| 1. Prompt service | 6.93 | .000 |
| 2. Staff willing to help | 6.51 | .000 |
| 3. Prompt response to requests | 5.14 | .000 |
| **Assurance** | | |
| 4. Instil confidence | 6.35 | .000 |
| 5. To be courteous | 5.03 | .000 |
| 6. Have knowledge | 6.37 | .000 |
| **Empathy** | | |
| 7. Teach staff provide individual attention | 7.21 | .000 |
| 8. Support staff provide individual attention | (based on mean for 7 and 8) | |
| 9. Understand needs | 8.13 | .000 |
| 10. Have best interests at heart | 5.84 | .000 |
| 11. School has convenient hours | 10.84 | .000 |
| 12. School office has convenient hours | (based on mean for 11 and 12) | |
| **Tangibles** | | |
| 13. Modern looking equipment | 2.36 | .020 |
| 14. Neat employees | 2.20 | .030 |
| 15. Materials visually appealing | 4.47 | .000 |
| **Reliability** | | |
| 16. Deliver services on-time | 6.29 | .000 |
| 17. Help to solve problems | 8.64 | .000 |
| 18. Perform right the first time | 7.75 | .000 |
| 19. Inform of events and services | 5.64 | .000 |
| **University** | | |
| 20. Reasonable accommodation / housing | 6.82 | .000 |
| 21. Adequate sports / recreation | 7.69 | .000 |
| 22. Campus suitably located | 2.70 | .008 |
| 23. Suitable campus layout | 3.29 | .001 |
| 24. Suitable library facilities | 5.95 | .000 |
| 25. Adequate books | 8.69 | .000 |
| 26. Adequate healthcare provision | 6.59 | .000 |
| 27. Adequate financial services | 8.89 | .000 |
| 28. Suitable class sizes | 8.41 | .000 |
| 29. Appropriate level / difficulty of study | 5.25 | .000 |
| 30. Appropriate Master's programme work load | 4.36 | .000 |
| 31. Treated as a client | 2.78 | .006 |
| 32. Comfortable lecture theatres | 8.83 | .000 |
| 33. Adequate computing facilities | 5.41 | .000 |
| 34. Adequate study areas | 7.51 | .000 |
| 35. Adequate media support | 7.56 | .000 |
| 36. Suitable refreshment areas | 6.21 | .000 |
| 37. Reasonably priced refreshments | 9.59 | .000 |
| **Guidance** | | |
| 38. Suitable career guidance | 6.95 | .000 |
| 39. Suitable academic guidance | 6.80 | .000 |
| 40. Guidance on personal matters | 5.54 | .000 |
| 41. Guidance on cultural issues | 8.85 | .000 |
| 42. Suitable induction | 7.14 | .000 |

Findings from data presented in Table II demonstrate significant differences between post-graduate Chinese students' perceptions and expectations of service on all forty-two statements. Two of the paired items under the tangibles dimension - modern looking equipment and neat employees were found to be significant at $\alpha < .05$. It can be concluded here that there is a significant difference between the students' expectations and perceptions at the 95 per cent confidence level. However, for all the other statements, there is a statistical significance of $\alpha < .01$, which illustrates a statistically significant gap between the students' perceptions and expectations of service at the 99 per cent confidence level. These represent service quality gaps that the institution should take the appropriate measures on-board to bridge. The qualitative research proved useful in probing into the reasons why such service gaps emerged. Again the students thought that much of the problem came down to the 'high fees', however, 'British culture' and even the 'one child' policy in China were also mentioned:

- *May be because of the high fees, we just expect too much. Also because we are the 'single kid', at home we get exactly what we want, and expect the full package here to be so higher than in China*
- *The working hours are short here - we have shorter contact time than in China. We pay so much and expect so much.*
- *Because the British way of life is 'no compromise' – 'I am closed, I am closed – we're not open for you'.*

***Factor Analysis***

When running factor analysis on the SERVQUAL gap data presented in Table Ia, the statements loaded on the same five factors (Empathy, Reliability, Assurance, Tangibles and Responsiveness) as discovered in Parasuraman et al., (1988) – see Table III. Note that the University and Guidance dimensions were excluded from this analysis, as the data were used to investigate SERVQUAL's applicability within this particular educational context. The extraction method used to extract the components was based firstly on the eigenvalue being greater than one and secondly, the factors accounting for a minimum 60% of the variance. A rotation was used and the method adopted was the varimax with kaiser normalization, which is a tried and tested method that frequently yields simple structure (Norman and Streiner, 1997).

Despite items seven, ten, fifteen and nineteen (in Table III) having bipolar loadings, and in each case a marginally higher loading was apparent on a different factor, because these loading differences were small - it was decided to retain these items within their original SERVQUAL dimension (the entire component matrix is presented in Appendix A). The Cronbach alpha figures of 0.73, 0.83, 0.76, 0.78, and 0.57 suggest that the items represent reliable measures for each of the five dimensions and thus support the SERVQUAL instrument.

**Table III:** Rotated Factor Loading Matrix

| | Factor Loading | Cumulative % of variance (Eigen Value) | α |
|---|---|---|---|
| **Factor 1: Assurance** | | **17.13% (2.92)** | **0.73** |
| 1. Instil confidence | .693 | | |
| 2. To be courteous | .819 | | |
| 3. Have knowledge | .588 | | |
| **Factor 2: Empathy** | | **15.18% (2.58)** | **0.83** |
| 4. Teach staff provide individual attention* | .818* | | |
| 5. Support staff provide individual attention* | (*based on aggregate means) | | |
| 6. Understand needs | .804 | | |
| 7. Have best interests at heart | .467 | | |
| 8. School has convenient hours* | .651* | | |
| 9. School office has convenient hours* | (*based on aggregate means) | | |
| **Factor 3: Reliability** | | **14.21% (2.41)** | **0.76** |
| 10. Deliver services on-time | .419 | | |
| 11. Help to solve problems | .577 | | |
| 12. Perform right the first time | .705 | | |
| 13. Inform of events and services | .772 | | |
| **Factor 4: Responsiveness** | | **11.39% (1.94)** | **0.78** |
| 14. Prompt service | .617 | | |
| 15. Staff willing to help | .541 | | |
| 16. Prompt response to requests | .800 | | |
| **Factor 5: Tangibles** | | **10.29% (1.75)** | **0.57** |
| **17.** Modern looking equipment | .628 | | |
| 18. Neat employees | .856 | | |
| 19. Materials visually appealing | .381 | | |
| **TOTAL CUMULATIVE % OF VARIANCE** | | **68.2%** | |

***Regression Analysis***

The individual SERVQUAL items were thus anchored by factor analysis into the five factors, and the means for each variable recalibrated to obtain a mean score for each of the five factors for each respondent. This procedure is commonly used by researchers to operationalise factor analysis results for further analysis (Stevens, 1992), in this case, linear multiple regression. The five factors being the independent variables, and a) value for fees paid, b) satisfaction with the experience, and c) willingness to recommend – serving as the dependent variables. The data are presented in Tables IVa-c.

In order to verify that multicollinearity was not a problem, the SERVQUAL dimensions (Reliability, Assurance, Empathy, Responsiveness, and Tangibles) were regressed against one another, and variance inflation factor analysis and tolerance level analysis performed. In all cases, no significant multicollinearity exists between the dimensions (the correlation matrix is presented in Appendix B). The highest VIF score 2.044 and lowest tolerance .489 (Reliability vs Empathy) represent acceptable scores for tolerance >.10 and VIF <10 (Hair et al., 1988).

**Table IVa:** The Correlates of Student Value (in terms of fees paid)

| **Dimensions** | | **Beta** | **t** | **Sig** | | |
|---|---|---|---|---|---|---|
| Responsiveness | | .092 | .769 | .444 | | |
| Assurance | | .012 | .104 | .917 | | |
| Empathy | | .375 | 2.886 | .005 | | |
| Tangibles | | .039 | .391 | .696 | | |
| Reliability | | .069 | .565 | .573 | | |
| | | | | | | |
| **R Square** | **R Square (Adj)** | | | | | |
| .259 | .221 | | | | | |
| | | | | | | |
| **ANOVA** | | | | | | |
| **Model** | **Sum of Squares** | **df** | **Mean Square** | | **F** | **Sig** |
| Regression | 53.21 | 5 | 10.64 | | 6.72 | .000 |
| Residual | 152.05 | 96 | 1.58 | | | |
| Total | 205.26 | 101 | | | | |

**Table IVb:** The Correlates of Student Satisfaction with the Experience

| **Dimensions** | | **Beta** | **t** | **Sig** | | |
|---|---|---|---|---|---|---|
| Responsiveness | | .120 | .948 | .346 | | |
| Assurance | | .065 | .521 | .603 | | |
| Empathy | | .176 | 1.275 | .205 | | |
| Tangibles | | -.060 | -.564 | .574 | | |
| Reliability | | .152 | 1.175 | .243 | | |
| | | | | | | |
| **R Square** | **R Square (adj)** | | | | | |
| .164 | .120 | | | | | |
| | | | | | | |
| **ANOVA** | | | | | | |
| **Model** | **Sum of Squares** | **df** | **Mean Square** | | **F** | **Sig** |
| Regression | 20.85 | 5 | 4.17 | | 3.76 | .004 |
| Residual | 106.50 | 96 | 1.11 | | | |
| Total | 127.34 | 101 | | | | |

**Table IVc:** The Correlates of the Students' Willingness to Recommend

| **Dimensions** | | **Beta** | **t** | **Sig** | | |
|---|---|---|---|---|---|---|
| Responsiveness | | .092 | .696 | .488 | | |
| Assurance | | .067 | .517 | .606 | | |
| Empathy | | .059 | .413 | .681 | | |
| Tangibles | | -.036 | -.328 | .744 | | |
| Reliability | | .163 | 1.208 | .230 | | |
| | | | | | | |
| **R Square** | **R Square (adj)** | | | | | |
| .091 | .044 | | | | | |
| | | | | | | |
| **ANOVA** | | | | | | |
| **Model** | **Sum of Squares** | **df** | **Mean Square** | | **F** | **Sig** |
| Regression | 14.04 | 5 | 2.81 | | 1.928 | .097 |
| Residual | 139.80 | 96 | 1.46 | | | |
| Total | 153.84 | 101 | | | | |

Table IVa illustrates the correlates of student value in terms of the fees paid, with an R square of .259 (anova F 6.72, 5 df and p = .001 significance). The coefficients are also shown with the empathy factor showing a high positive beta of .375 (p .005 significance). None of the other factors showed a statistical significance in relation to student value. Table IVb shows the correlates of student satisfaction, with an R square of .164 (anova F 3.76, 5 df and p = .004 significance). None of the five factors demonstrated statistical significance for satisfaction.

Finally Table IVc presents the correlates for the students' willingness to recommend, with an R square of .091 (anova F 1.93, 5 df and p = .097 significance). Again at the

individual level, none of the factors showed statistical significance. The findings demonstrate that collectively the SERVQUAL factors serve as a statistically significant contributor in terms of value for fees, satisfaction, and a willingness to recommend. Later this was raised with the respondents during the qualitative follow up. The following resulting statements help to reveal why the SERVQUAL measures were perceived by them to be a useful indicator (empathy appearing to be critical among both Chinese male and female students):

- *When it comes to it, these items are perceived to be a value of satisfaction… we would particularly expect a caring approach, and I can see why the empathy factor is valued among Chinese students.*
- *They all represent aspects of the facility.*
- *Because I feel that the factors signify satisfaction in the programme, I therefore see a link between satisfaction and a willingness to recommend.*
- *Empathy is particularly important because of the foreign language… the University's reputation is also important in the willingness to recommend… Chinese people are linked very closely, we have several internet forums where British Universities are widely discussed and compared.*

**Recommendations, Discussions and Conclusion**

In general there is an argument here to suggest that the institution is performing adequately well in terms of the items measured. Just three perception scores from the forty-two being less than the mid–point of four provides some evidence of support. In addition, it can also be argued that a major reason for the gaps could be due to the students' lack of experience and knowledge of UK institutions and life in general. The comments raised from the focus group discussions and the personal interviews in the results section provides some evidence that students imagine the picture in the UK to be much better than in China, but in reality the difference may not be as apparent. Therefore, to some extent the gaps may be inevitable, and the issue of 'experience' comes into the equation, which has been previously raised as one of SERVQUAL's limitations (c.f. Buttle, 1996).

On the other hand, to improve service quality as perceived among post-graduate Chinese students, the institution could look at bridging the gaps. As each of the forty-two items tested statistically significant, the institution could adopt a corporate policy drive to improve quality across the board. However, a more focused approach may be to focus on those areas considered to be of most relative importance as perceived among the sample. From the data collected, it was discovered that the Reliability and University dimensions appeared to be the two most relatively important factors. Both had relative percentage scores a few percent higher than the Responsiveness, Tangibles, Empathy, Assurance, and Guidance dimensions.

Particularly, it may prove beneficial to use Table II as a guide, and select items with high t-values for priority attention. With reference to the reliability dimension, being more proactive and receptive to helping students overcome difficulties and problems could make a difference, as would well-executed student mentoring and pastoral schemes. Attention is needed to ensure that staff members are credited with sufficient time to undertake such duties. Performing the service right on the first occasion also calls for attentive listening by employees to make sure that such students are fully understood and the correct service / advice is provided and effectively communicated.

Specifically high t-values on the University dimension suggest that further investments could be focused on improving the recreational and sports facilities offered. The provision of textbooks also appears to be a problem, and it is therefore suggested that all post-graduate students be provided with the core readings. This provides a tangible offering to students that may also help to provide added value in terms of fees. It appears that finance is an issue among post-graduate Chinese students, and more financial advice perhaps from student support services i.e. the Student Union, as well as from the private sector, such as banks may be valued.

The findings suggest that post-graduate Chinese students were not impressed by certain lecture theatres, the lack of study areas, class sizes, and insufficient media support. Hence, certain lecture theatres need to be re-vamped, and there is a genuine need to create study rooms for post-graduates, reduce class sizes, and provide more technical support facilities. Students also claimed that refreshments were expensive,

and there was a strong desire for more budget-orientated offerings, which the institution could consider.

Further service enhancement is required in terms of offering more cultural guidance for preparing such students for UK life and education. The design of a pre-school programme in association with the Students' Union and international faculty members could help to address these issues. Developing this prior to, or as part of the induction process may help students to feel that the process is more suitable. Other initiatives could be aimed at addressing further areas where the t-values were large, such as understanding Chinese students' needs, and providing more individual attention. Further research could be undertaken with the aim of creating a better understanding among such students and identifying more convenient operating hours to cater for the students' requirements.

By and large the above represent just a few suggestions that could be considered in a bid to improve service quality. However, because of such a vast number of statistically significant service quality gaps, a decision could be taken to look at addressing several more of the issues. Some of these possibly represent relatively 'quick fixes', whereas others may need more long-term commitment, as they are likely to involve policy and the management of people and resources. Therefore as a practitioner diagnostic tool, the SERVQUAL type investigation has proven useful in highlighting areas where clear improvements can be made.

At an academic level, the paper also raises quite a few issues worthy of comment. It was interesting to discover that the five dimensions proposed by Parasuraman et al., (1988) held strong on the sample of Chinese post-graduate students. This would suggest that the instrument proved suitable in this Chinese cultural context, albeit, the students had experienced life in the UK. In addition, the findings demonstrate that SERVQUAL has again proven to be a useful tool for exploring service quality in higher education, and is applicable as a post-graduate research tool. The multiple regression analysis also provided some support that the technique may be fruitful for predicting satisfaction, value, and the willingness to recommend post-graduate education.

Despite the positives, the research does have several limitations. Undertaking research at one institution does not provide generalisable results, and as a consequence, readers should be cautious of the findings in applying them to their own faculties or institutions. Secondly, the timing the research was undertaken is questionable. Towards the end of semester two could be criticised on two counts. Firstly, it can be argued that obtaining expectation scores at this time may not be valid, and a better time to have collected such data would have been at the beginning of the programme, or even before the students came to the UK from China. Secondly, the perception scores may be low because of the argument associated with dissatisfaction over time (O'Neill, 2002).

However, in support of the methodology, it was felt that the students could adequately reflect on their expectations prior to their UK experience at the time the study was undertaken, and that sufficient time was needed to experience the programme in order to provide valid perceptions. The fact that the survey was administered at a very busy time for students, could have led to slightly lower perception values, and perhaps a slightly lower response rate than could have been expected.

As a result, further research needs to address some of these limitations, and the author advocates that more research should be undertaken amongst post-graduate and undergraduate Chinese students on a global basis – including in China itself. Such results should provide fruitful data that will enable further comparisons to be made, and stronger generalisations. Collecting more data (expectation and perception scores) at different time intervals, and providing more longitudinal analysis will also be of interest to educational practitioners, and is likely to make a significant academic contribution. Finally, it is hoped that this initial research in the area, will inspire more academics researching in the business and educational fields to adopt action research approaches, and triangulate their research methodologies. It is believed that by adopting such a multi-dimensional approach, richer findings can be processed and presented to the relevant academic and practitioner communities.

**References**


Aaker, D.A., Kumar, V. and Day, G.S. (1995), "Marketing Research: Fifth Edition", John Wiley & Sons, USA.

Adee, A. (1997), "Linking Student Satisfaction and Service Quality Perceptions: The Case of University Education", European Journal of Marketing, Vol. 37, No. 7, pp. 528-535.

Aldridge, S. and Rowley, J. (1998), "Measuring Customer Satisfaction in Higher Education", Quality Assurance in Education, Vol. 6, No. 4, pp. 197-205.

Avdjieva, M. and Wilson, M. (2002), "Exploring the Development of Quality in Higher Education", Managing Service Quality, Vol. 12, No. 6, pp. 372-383.

Babakus E. and Mangold W. G. (1992), "Adapting SERVQUAL Scale to Hospital Services: An Empirical Investigation," Health Services Research, Vol. 26, pp. 767-86.

Berry, L.L. (1995), "Relationship Marketing of Services - Growing Interest, Emerging Perspectives", Journal of the Academy of Marketing Science, Vol. 23, No. 4, pp. 236-45.

Buttle, F. (1996), "SERVQUAL: Review, Critique, Research Agenda", European Journal of Marketing, Vol. 30, No. 1, pp. 8-32.

Carr, W. and Kemmis, S. (1986), "Becoming Critical: Education, Knowledge, and Action Research", Lewes, Falmer.

Churchill, G.A. (1996), "Basic Marketing Research", The Dryden Press, UK.

Cuthbert, P. F. (1996), "Managing Service Quality in HE: Is SERVQUAL the Answer?", Managing Service Quality, Vol. 6, No. 3, pp. 31-35.

Ford, J. B., Joseph, M. and Joseph, B. (1999), "Importance-Performance Analysis as a Strategic Tool for Service Marketers: The Case of Service Quality Perceptions of Business Students in New Zealand and the USA", The Journal of Services Marketing, Vol. 13, No. 2, pp. 171-181.

Gill, J. and Johnson, P. (1991), "Research Methods for Managers", Paul Chapman Publishing, London, U.K.

Hair, J. F., Anderson, R. E. Tatham, T.L. and Black, W. C. (1998), "Multivariate Data Analysis 5ed", Upper Saddle River, N.J: Prentice Hall.

Ham, L. and Hayduk, S. (2003), "Gaining Competitive Advantages in Higher Education: Analyzing the Gap between Expectations and Perceptions of

Service Quality", International Journal of Value – Based Management, Vol. 16, No. 3, pp. 223-238.

Harrop, A. and Douglas, (1996), "Do Staff and Students see Eye to Eye?", New Academic, Vol. 5, pp. 8-9.

Hill, F. M. (1995), "Managing Service Quality in Higher Education: The Role of the Student as Primary Consumer", Quality Assurance in Education, Vol. 3, No. 3 pp. 10-20.

Kanji, G. K. and Tambi, A. M. B. A. (1999), "Total Quality Management in UK Higher Education Institutions", Total Quality Management, Vol. 10, No. 1, pp. 129-153.

Kember, D. and Kelly, M. (1993), "Improving Teaching through Action Research", Green Guide 14, HERDSA, Australia.

LaBay, D. G. and Comm, C. L. (2003), "A Case Study Using Gap Analysis to Assess Distance Learning versus Traditional Course Delivery", The International Journal of Education Management, Vol. 17, Nos 6&7, pp. 312-317.

Lampley, J. H. (2001), "Service Quality in Higher Education: Expectations versus Experiences of Doctoral Students", College and University, Vol. 77, No. 2, pp. 9-14.

Lau, L. K. (2003), "Institutional Factors Affecting Student Retention", Education, Vol. 124, No. 1, pp. 126-136.

Lewin, K. (1946), "Action Research and Minority Problems", Journal of Social Issues, Vol. 2, No. 4, pp. 34-46.

Long, P., Tricker, T., Rangecroft, M. and Gilroy, P. (1999), "Measuring the Satisfaction Gap: Education in the Market Place", Total Quality Management, Vol. 10, Nos 4&5, pp. 772-778.

Malhotra, N.K. (1993), "Marketing Research: An Applied Orientation", Prentice Hall, inc Englewood Cliffs, New Jersey, USA.

McNiff, J., Lomax, P. and Whitehead, J. (1996), "You and Your Action Research Project", Routledge, London, UK.

Narasimhan, K. (1997), "Improving Teaching and Learning: Perceptions minus Expectations Gap Analysis Approach", Training for Quality, Vol. 5, pp. 121-125.

Norman, G. R. and Streiner, D. L. (1997), "PDQ Statistics: Second Edition", Mosby-Year Book, Inc, Missouri, USA.

O'Neill, M. (2002), "The Influence of Time on Student Perceptions of Service Quality: The Need for Longitudinal Measures", Journal of Educational Administration, Vol. 41, No. 3, pp. 310-324.

O'Neill, M and Palmer, A. (2001), "Survey Timing and Consumer Perceptions of Service Quality: An Overview of Empirical Evidence", Managing Service Quality, Vol. 11, No. 3, pp. 182-190.

Oldfield, B. M. and Baron, S. (2000), "Student Perceptions of Service Quality in a UK University Business and Management Faculty", Quality Assurance in Education, Vol. 8, No. 2, pp. 85-94.

Owlia, M. S. and Aspinwall, E. M. (1996), "A Framework for the Dimensions of Quality in Higher Education", Quality Assurance in Education, Vol. 4, No. 2, pp. 12-19.

Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1985), "A Conceptual Model of Service Quality and Its Implications for Future Research", Journal of Marketing, Vol. 49, pp. 41-50.

Parasuraman, A., Zeithaml, V.A. and Berry, L.L (1988), "SERVQUAL: A Multiple Item Scale for Measuring Service Quality", Journal of Retailing, Vol. 64, No. 1, Spring, pp. 12-40.

Pariseau, S. E. and McDaniel, J. R. (1997), "Assessing Service Quality in Schools of Business", The International Journal of Quality and Reliability Management, Vol. 14, No. 3, pp. 204-215.

Rowley, J. (1997), "Beyond Service Quality Dimensions in Higher Education and Towards a Service Contract", Quality Assurance in Education, Vol. 5, No. 1, pp. 7-15.

Sander, P., Stevenson, K., King, M. and Coates, D. (2000), "University Students' Expectations of Teaching", Studies in Higher Education, Vol. 25, No. 2, pp. 309-323.

Schmidt, R. (2002), "A Student's Initial Perception of Value When Selecting a College: An Application of Value Added", Quality Assurance in Education, Vol. 10, No. 1, pp. 37-39.

Shank, M., Walker, M. and Hayes, T. J. (1995), "Understanding Professional Service Expectations: Do we Know What our Students Expect in a Quality Education?", Journal of Professional Services Marketing, Vol. 13, pp. 71-89.

Stevens, J. (1992), "Applied Multivariate Statistics for the Social Sciences", 2nd Edition, Lawrence Erlbaum Ass, Inc, Hillsdale, NJ, pp. 77-395.

Vidal, J., Diez, G. and Vieira, M. J. (2003), "Guidance Services in Spanish Universities", Tertiary Education and Management", Vol. 9, No. 4, pp. 267-280.

Yin, R.Y. (1994), "Case Study Research: Design and Methods", Second Edition, Sage, CA, USA.

Zikmund, W.G. (2000), "Exploring Marketing Research 7Ed", The Dryden Press, Orlando, USA.

**Appendix A:** Factor Matrix

**Rotated Component Matrix[a]**

| | Component | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Prompt Service | .494 | .160 | .181 | .617 | .197 |
| Staff willing to help | .559 | .171 | .188 | .541 | .205 |
| Prompt response | 8.756E-02 | .268 | .191 | .800 | -1.39E-02 |
| Instil Confidence | .693 | .296 | -1.58E-02 | .272 | -9.05E-02 |
| To be courteous | .819 | 9.590E-02 | .131 | 8.728E-02 | 1.994E-02 |
| Have knowledge | .588 | .223 | .369 | 2.849E-03 | .155 |
| Individual attention | .315 | .818 | 1.316E-02 | .144 | .134 |
| Convenient hours | .129 | .651 | .350 | .206 | 4.279E-02 |
| Understand needs | .243 | .804 | .176 | .229 | .149 |
| Have interests at heart | .588 | .467 | .292 | 5.501E-02 | .109 |
| Mod looking equipment | .292 | .163 | .230 | -.231 | .628 |
| Neat employees | -2.74E-02 | 1.712E-02 | -3.36E-02 | .148 | .856 |
| Mats visual appealing | .109 | .333 | .513 | 4.288E-02 | .381 |
| Deliver services on-time | -7.91E-02 | .199 | .419 | .312 | .539 |
| Help to solve problems | .420 | .343 | .577 | .122 | -2.74E-02 |
| Right the first time | .160 | .232 | .705 | .470 | 1.161E-02 |
| Inform of events services | .172 | 1.426E-02 | .772 | .111 | .143 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.

**Appendix B:** Correlation Matrix

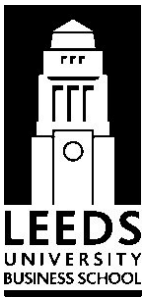
Spearman's Correlation (1 tail)

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. Responsiveness | 1 | | | | |
| 2. Assurance | .447** | 1 | | | |
| 3. Empathy | .593** | .564** | 1 | | |
| 4. Tangibles | .232** | .238** | .397** | 1 | |
| 5. Reliability | .563** | .408** | .620** | .429** | 1 |

N = 102

** Significant at the 0.01 level.

A high correlation of > .675 can indicate possible multicollinearity.




LEEDS UNIVERSITY BUSINESS SCHOOL

WORKING PAPER SERIES

Website: http://lubswww.leeds.ac.uk/researchProgs/index.php?id=72

**December 2006 ISSUE 3**

1. 'Analysing Service Quality: The Case of Post-Graduate Chinese Students'
2. 'Proposition Structure in Framed Decision Problems'