Constructing a Survey Questionnaire to Collect Data on Service Quality of Business Academics

Kee-Luen Wong
Universiti Tunku Abdul Rahman
FBF, Jalan Universiti, Bandar Barat, 31900 Kampar, Perak, Malaysia
E-mail: wongkl@utar.edu.my

Seng-Fook Ong
Universiti Tunku Abdul Rahman, FAM, Lot PT 21144, Jalan Sungai Long
Bandar Sungai Long, Cheras 43000 Kajang, Selangor, Malaysia
E-mail: ongsf@utar.edu.my

Thiam-Yong Kuek
Corresponding Author, Universiti Tunku Abdul Rahman
FBF, Jalan Universiti, Bandar Barat, 31900 Kampar, Perak, Malaysia
E-mail: kuekty@utar.edu.my

Abstract

This paper describes the construction process of a survey questionnaire that will be used to collect data on the service quality of lecturers of a private university. If well-planned, the questionnaire technique is cost efficient and a good way to reach the target respondents within a short period of time. For the questionnaire to be a good measuring instrument, efforts were taken to ensure that three criteria were considered and reflected in the final version of the questionnaire. They are sensitivity, reliability, and validity. The sensitivity of the questionnaire was achieved by adopting the five-point Likert scale. The test-retest reliability tests results showed the questionnaire had good stability. Equivalent-form reliability was established by comparing the Alpha coefficients of the questionnaire to those of researches adopting the SERVQUAL questionnaire. The split-half technique yielded good results that showed acceptable internal consistency. The questionnaire had adequate coverage and was deemed to have content validity. Criterion validity was established when the results showed strong correlation (r=0.87) with Sahney's et al. (2003) questionnaire. Construct validity was deemed to be established when the six service quality factors proved to explain 79.5% of students' satisfaction. It can be concluded that the questionnaire has sensitivity, reliability, and validity.

Keywords: Survey Questionnaire, Service Quality, Business Academics, Malaysia

1. Introduction

This paper is about constructing a survey questionnaire that will be used to collect data on the quality of lecturers of a private university. Primarily designing a questionnaire for use in a survey involves coming up with the necessary and relevant questions to be answered by the target respondents. A questionnaire is a data collection tool or instrument and is vital to the creditability of the research

project. Therefore, designing and constructing a good, valid and reliable questionnaire is a rigorous process. The issues of validity, reliability and sensitivity of the questionnaire have to be explored, reflected upon, tested and proven before full use.

1.1. Research Approaches for Educational Research

Coopers and Schindler (2006) define research as "a systematic inquiry that provides information to guide decision-making" (p.4). Bassey (1999) defines research as "systematic, critical and self-critical enquiry which aims to contribute towards the advancement of knowledge and wisdom" (p.38). Johnson (1994) insists that the outcomes of research should moves "beyond generally available knowledge, providing a basis for analysis and elucidatory comment on the topic of enquiry" (p.3). Whilst different research scholars have different requirements for the outcomes of researches, all would agree that investigations and enquiries have to be conducted in a systematic manner.

In order to conduct research in a systematic manner, enquiries have to be undertaken in a step-by-step and orderly way. The emphasis is that the research procedures should be documented and the procedures may be repeated and re-assessed by other researchers. In addition, the planning and the execution of the research stages should be well thought of. The methodology, process and the possible outcomes of the research project should be considered in detail in terms of relevance and appropriateness. In other words, a systematic research "will involve an explanation of the methods used to collect the data, will argue why the results obtained are meaningful, and will explain any limitations that are associated with them" (Saunders, Lewis and Thornhill, 2003, p. 3). In addition, being systematic will depend whether the research is taken from the positivist or the interpretative paradigm.

Generally, most researches can be classified into positivist or the interpretative paradigm or philosophy. If a research reflects the principles of positivism, then the researcher is "working with an observable social reality and the end product of such research can be law-like generalizations similar to those produced by the physical and natural scientists" (Remenyi et al., 1998, p.32). Positivism takes the stance that there is a reality out there waiting to be discovered and this reality could be measured and assessed objectively. The findings and conclusions of such studies would result in some principles and laws that could be used to understand and explain similar happenings and events.

The interpretative paradigm however insists that social forces are dynamic and their interactions between one another are too complex to be captured in absolute measurements. To separate and examine the forces individually would incur damage to the interacting mechanisms of these influences. Thus, the phenomenon has to be studied with the objective of capturing the meanings of the influences within the context of the circumstances and people. This is why planning for and systematically executing interpretative studies is relatively more difficult than positivist studies. Some research studies with interpretative paradigm ended up with collecting the irrelevant data and aborted.

There appears to be a link between the research paradigm and the research approach and methodology. Positivist paradigm is closely associated to the deductive approach and quantitative methodologies. Interpretative paradigm leans more toward inductive reasoning and qualitative approach. Quantitative studies are accused of trying to identify, measure and ultimately control the variables and therefore stifle the working mechanisms in the natural state (Meyerson, 1991). In such circumstances, the underlying truths and meanings would never be known. Despite of such criticisms, quantitative studies are preferred as they have better chances of success and the probability of replication higher. Thus it is easier to conduct quantitative studies in a systematic manner that fulfill the requirements of being rigorous enough.

1.2. Usage of Questionnaire in Quantitative Studies

The questionnaire is the most frequently used data collection tool or instrument for quantitative studies especially surveys. Each respondent is required to answer the same set of questions that are pre-set in a

particular order. Thus it is an efficient way of collecting data from a large sample. It also enables data to be analysed easily and in a structured manner. The questionnaire technique is flexible and could be used in structured interviews, telephone interviews or could be self-administered where the interviewer is not present. If well-planned, the questionnaire technique is also cost efficient and a good way to reach the target respondents within a short period of time. As all the respondents answer the same set of questions, the responses collected could be considered objective.

However, the questionnaire technique should be used with caution. It should not be used in exploratory studies where the researchers do not know the exact issues. This means that it would only benefit when the researchers have prior knowledge of the exact data that need to be collected to answer the research questions. Further, it is quite difficult to produce a good questionnaire. A good questionnaire should not only comprise questions that cover comprehensively the issues related to the research topic but ensure that data collected are relevant, reliable and valid. Thus great care has to be taken when designing the questions or items that would be interpreted the same way by all the respondents.

1.3. Techniques for Designing Questionnaires

Basically, a good questionnaire should satisfy two criteria – relevancy and accuracy (Zikmund, 2003). A questionnaire is relevant when no unnecessary information is collected and sufficient data are collected to answer the research questions. A questionnaire is accurate when the responses are reliable as well as valid. To have accurate responses depends a lot on whether the questionnaire is able to facilitate recall and motivate cooperation from the respondents. In addition, the designer is required to make decisions on a few questions such as: What should be asked? How should the questions be phrased? How should the sequence of the questioning be? What is the most appropriate layout? (Zikmund 2003, p. 330).

Cooper and Schindler (2006) contend that a questionnaire should comprise three types of questions: administrative, classification and target questions. Administrative questions are there to identify the interviewer, the respondent, the interview location and conditions where the questionnaires are administered. These type of questions are not necessary for the present study as the respondents prefer to be anonymous. Classification questions collect information on the demographics such as age, race, income, etc. of the respondents. American researchers always advise that this type of questions be placed at the end of the questionnaire due to the sensitive nature of the questions. However, most Malaysians do not mind answering the questions at the beginning of interview and would in fact be preferred to be asked first so that the respondents could be screened. The target questions are the most important questions because the resulting responses should provide answers to the research questions.

Saunders et al. (2003) suggest three ways to design target questions – adopt questions used in other established questionnaires, adapt questions used in other questionnaires, and design new questions. They advise that adopting or adapting questions from other questionnaires would allow reliability to be assessed but warn that each question should be examine carefully before use as some questions are poorly worded. Adopting and adapting questions also ensure high probability that the terms used in the questions are familiar, easy to understand and respond to. This would help to improve the validity of the questionnaire (Saunders et al., 2003).

2. Designing the Questionnaire

Taking the cues from the above discussions, the questionnaire design process could be expedited by searching questionnaires or inventories and target questions that were used by other researchers to collect data on educational quality.

There are many studies on assessing quality in education. Cuthbert (1996a) searched for a questionnaire instrument to measure student learning environment. He examined the Classroom Environment Scale (CES), My Class Inventory (MCI), and the Individualized Classroom Environment

Questionnaire (ICEQ) used by Watkins (1988), the College Student Experiences Questionnaire (CSEQ) by Pike (1993), the Course Perception Questionnaire (CPQ) developed by Ramsden (1991), the Student Evaluation of Education Quality Questionnaire (SEEQ) used by Marsh and Bailey (1993). After analyzing the six instruments, he concluded that "although these questionnaires all measure the student experience, there is considerable diversity in the range of constructs used" (p. 12). He commented that the instruments covered only the teaching side of the student experiences and student experience is complex. Unsatisfied with the available instruments, Cuthbert (1996a) went on to examine the conceptual model of service quality proposed by Parasuraman et al. (1988). He concluded that "the advantage of this model (Parasuraman's SERVQUAL model) overt hose from the student learning literature is that it appeared to encompass the whole student experience rather than just the experience of teaching" (p. 13).

Kwan and Ng (1998) undertook to identify quality indicators in higher education as seen by the Hong Kong and China's students. They adopted Hampton's questionnaire which has 51 items classified into seven factors, namely, course content, concern for students, facilities, assessment, medium of instruction, social activities, and people. Galloway (1998) attempted to measure service quality delivered by the administrative office of a UK university and adopted the 20-item SERVQUAL questionnaire. Sahney, Banwet and Karunes (2003) developed their own 15-item instrument to collect data from the industry on the quality delivered by educational institutions. Parisean and McDaniel (1997) studied the determinants of service quality in business schools. They adopted the SERVQUAL questionnaire as their measuring instrument.

Soutar and McNeil (1996) attempted to identify service quality of the academics and the administration from the students' perspectives. They argued that the SERVQUAL questionnaire could be applied in tertiary education with some changes to suit the context of their study. They suggested that it would be more meaningful to include two more factors into the original five-factor SERVQUAL questionnaire. Thus their questionnaire became a 26-item seven-factor instrument. The factors were Reliability, Responsiveness, Assurance, Empathy, Tangible, Knowledge, and Communication.

From the review above, it is quite obvious that the SERVQUAL questionnaire is a likely candidate to be adapted for the present study. The main objective of the study is to identify the determinants of service quality of the lecturing staff from the students' perspectives. The original SERVQUAL questionnaire comprises 20 items with four items for each factor or dimension, namely Reliability, Responsiveness, Assurance, Empathy and Tangibles. The definitions of the five service quality dimensions and the adapted items are listed below:

Reliability – ability to perform the promised service dependably and accurately
- My lecturers provide their services at the time they promise to do.
- My lecturers tell me exactly when services will be performed.
- My lecturers perform service right the first time.
- When my lecturers promise to do something by a certain time, they do so.

Responsiveness – willingness to help and provide prompt service
- My lecturers are never too busy to respond to my requests.
- When I have a problem, my lecturers show a sincere interest in solving it.
- My lecturers give me prompt service.
- My lecturers are always willing to help me.

Assurance – knowledge and courtesy of employees and their ability to inspire confidence
- My lecturers are consistently courteous with me.
- My lecturers instill confidence in me.
- My lecturers conduct themselves professionally.
- My lecturers have the knowledge to answer my questions.

Empathy – caring, individualized attention the firm provides its customers
- My lecturers give me personal attention.
- My lecturers give me individual attention.

- My lecturers have my best interests at heart.
- My lecturers understand my specific needs.

As it concerns the quality of lecturers, the Tangible factor may not be relevant. Therefore, four items concerning tangibles were removed from the SERVQUAL questionnaire. So the resultant questionnaire will have 16 items or target questions from the original SERVQUAL questionnaire. Six items (three items each for Knowledge and Communication) were added making the research questionnaire into a 22-item questionnaire. The items for Knowledge and Communication are listed below:

Knowledge
- My lecturers have good knowledge about the teaching areas.
- My lecturers are involved in research.
- My lecturers are able to provide real world examples in their lectures.

Communication
- My lecturers communicate well with me.
- My lecturers communicate well in class.
- My lecturers are able to provide feedback about my progress.

2.1. Questionnaire Layout

The questionnaire comprised both classification questions as well as target questions. As the respondents normally preferred to remain anonymous, identification questions were not necessary and were omitted. The questions were divided into two sections, Section A and Section B. Section A comprised the 22 target questions and Section B included the four classification questions such as age, gender, overall CGPA, and year of study. The questionnaire was formatted into a two-page questionnaire. This was to keep the questionnaire short and simple and easy to answer so that the response rate could be enhanced.

3. Sensitivity

For a questionnaire to be a good measuring instrument, three criteria should be considered and reflected in the final version of the questionnaire. They are sensitivity, reliability and validity. Sensitivity refers to "an instrument's ability to accurately measure variability in stimuli or responses" (Zikmund, 2003, p. 304). Thus, a dichotomous question that has only "Yes" and "No" as answers would not be able to capture the variability in the response. There may be other in-between answers apart from a "Yes" and a "No" response. The Likert scale is popular for measuring the respondents' attitudes and perceptions and is simple to administer and analyse. With the scale, respondents indicate how strongly they agree or disagree with a target statement or question. The scale normally ranges from strongly agree, agree, uncertain, disagree to strongly disagree. In this way, the variability of the responses may be captured more accurately and the questionnaire become more sensitive to responses.

The Likert scale could be a three-point or a nine-point scale depending on the objectives of the study. Both Pariseau and McDaniel (1997) and Soutar and McNiel (1996) adopted seven-point scales. It is however sensitive enough to adopt five-point scales in this study. This is because Malaysian students are generally more conservative and are quite reluctant to express their attitudes and feelings on critical issues. A more-detailed scale would put them into a "decision-making" dilemma and would jeopardized their honesty in their responses. Further, care should be taken not to make the range of the scale too small as certain respondents may not have the discriminate judgments to differentiate between closely related scales.

4. Reliability

Reliability of a questionnaire refers to the ability of the questionnaire to collect data that produce consistent results. Cooper and Schindler (2006) state that "reliability is a necessary contributor to validity but not a sufficient condition for validity" (p. 321). Apparently, reliability is a pre-condition of validity. Although reliability may not be as valuable as validity in research, it is easier to assess and calculate. As a first step to assure reliability of a questionnaire, most respondents should give almost the same answers to the target statements.

4.1. Types of Reliability

There are three dimensions of reliability: stability, equivalence and internal reliability (Cooper and Schindler, 2006). A questionnaire that is reliable has to be stable over time and conditions. In test-retest method, the questionnaire is administered to the same respondents at two different times and conditions. If the results obtained from these two surveys are consistent and similar, then the questionnaire is deemed stable and reliable. Reliability could also be obtained using the equivalence-form method. The questionnaire could be pilot-tested and the results compare with a study adopting the same inventory. In this study, the SERVQUAL questionnaire was adapted for use. The results of another research adopting the SERVQUAL questionnaire could be used to establish reliability. Finally, internal reliability could be established using the split-half method. This could be assessed by splitting the target questions into two equivalent halves and the reliability coefficients compared. If the coefficients appear similar, then internal reliability of the questionnaire is established. This paper attempts to discuss the reliability of the questionnaire from the three perspectives of stability, equivalence, and internal reliability. But before that, the target statements of the questionnaire have to undergo factor analysis to enlighten the reliability discussions.

4.2. Factor Analysis

The 22 statements were put through factor analysis by the SPSS Version 12. The analysis managed to extract six factors. This means that the student respondents view service quality of the lecturers on six areas. The study assumed that service quality of the lecturers has six factors or dimensions, namely Assurance, Response, Empathy, Reliability, Knowledge, and Communication. The analysis confirmed a six-factor model of service quality of the lecturers. The results are in contrary to Galloway's (1998) research. Galloway (1998) adopted the SERVQUAL instrument and conducted a survey on the service quality of the administrative office of a UK university from the perspectives of the students and the academic staff. He concluded that principle component analysis of his data suggested that there was no strong underlying set of variables and that a single factor model would be most appropriate for service quality. In addition, he commented that there was evidence of a weak four-factor model but the model did not resemblance to the SERVQUAL Model.

The six factors extracted from the items of this study almost resemble the SERVQUAL dimensions. The items for the two additional factors could also be extracted with the assistance of prior assumptions. Factor analysis confirmed the six dimensions of service quality, namely Assurance (4 items), Response (4 items), Empathy (4 items), Reliability (4 items), Communication (3 items), and Knowledge (3 items)

4.3. Test-Retest Reliability

Test-retest method is one way of assessing whether the questionnaire is stable over different times and conditions. The questionnaire is pilot-tested and re-tested with the same group of respondents at two different times. However, the design process of the questionnaire of this study did not allow the questionnaire to be tested as such. Thus, in order to achieve test-retest reliability the responses from the students were separated randomly into two groups. SPSS Version 12 was instructed to selected 20 random cases from the 41 sample cases. The 20 random cases were analysed for the reliability

coefficients using SPSS Version 12. These coefficients are also known as Cronbach Alpha or Alpha coefficients. The results were tabulated in Table 1.

Table 1:

Dimensions	Sample (41 cases)	20 Cases
Assurance	0.7047	0.7796
Responsiveness	0.5659	0.6163
Empathy	0.8415	0.9153
Reliability	0.8059	0.8117
Communication	0.7353	0.8331
Knowledge	0.6757	0.6202

The results show that, in general, the measuring instrument was reliable and stable. The Alpha coefficients for the randomly selected cases were all slightly improved except for Knowledge. Assurance improved from 0.7047 to 0.7796 and Responsiveness improved from 0.5659 to 0.6163. The reliability coefficient for Empathy was improved from a high 0.8415 to a higher 0.9153. Reliability also improved slightly from 0.8059 to 0.8117. Communication improved significantly from 0.7353 to 0.8331. However, Knowledge decreased from 0.6757 to 0.6202. From the results of the reliability analysis, it could be concluded that the items measuring service quality could withstand the test-retest method and they were reliable and stable measures of service quality of lecturers.

4.4. Equivalent-form Reliability

Another perspective of reliability is to consider how much variations are introduced due to different interviewers or different samples. In this study there was no interviewer involved. So to establish reliability, the reliability coefficients of other surveys adopting the SERVQUAL questionnaire are compared to the reliability coefficients of this present study. Pariseau and McDaniel (1997) did not report their Alpha coefficients in their findings. Soutar and McNeil (1996) reported their Alpha coefficients in their findings. Cuthbert (1996b) also reported relatively low Alpha coefficients and advised that the SERVQUAL model of service quality required amendments. The respective Alpha coefficients were tabulated in Table 2 below:

Table 2:

Dimension	Alpha (PZB, 1988)	Alpha (This Study, 2005)	Alpha (Soutar & McNeil, 1996)	Alpha (Cuthbert, 1996b)
Tangibles	0.72	N/A	N/A	0.52
Assurance	0.81	0.71	0.74	0.01
Responsiveness	0.82	0.57	0.44	0.51
Empathy	0.86	0.84	0.44	0.31
Reliability	0.83	0.81	0.65	0.35
Communication	N/A	0.74	0.56	N/A
Knowledge	N/A	0.68	0.55	N/A

* PZB – Parasuraman, Zeithaml, and Berry are the authors of the SERVQUAL Model.

Parasuraman et al. (1988) developed the SERVQUAL Model and validated it in tests of four different service settings, namely banking, credit-card processing, repair and maintenance, and long-distance telephone service. The results show that the customers of these service require reliability, responsiveness, assurance, empathy, and tangibles. Cuthbert (1996b) used the SERVQUAL questionnaire and found that the alpha coefficients for the five dimensions were lower than 0.6 showing unreliability of the items. Soutar and McNeil (1996) also used an adaptive version of the SERVUAL questionnaire and found except for those for Responsiveness and Empathy, the Alpha coefficients for the other dimensions were satisfactory and deemed reliable.

Comparing the Alpha coefficients for the various studies allows the establishment equivalent-form reliability for the questionnaire. In this study, the Alpha coefficients obtained are generally higher than those for Cuthbert (1996b) and Soutar and McNeil (1996). The lowest Alpha coefficient was for Responsiveness and was at 0.57 that was very near to 0.6 – the acceptable level. This shows that the items used to collect data on service quality are reliable and equivalent-form reliability is established.

4.5. Internal Consistency

Still another approach to consider in reliability is the internal consistency or homogeneity of the items that make up the questionnaire. This could be done using the split-half technique. In this study, there are four items to measure a dimension of service quality. The split-half technique required splitting the four items into two 2-item halves. Data were analysed and the Alpha coefficients obtained for the two halves compared. Internal consistency could be established in such manner. In the case of Communication and Knowledge where there were only 3 items, Alpha coefficients were obtained for Item 1 + Item 2 and Item 2 + Item 3 and the coefficients subsequently compared. The results of the procedures were tabulated in Table 3.

Table 3:

Dimension	Alpha (1st Half)	Alpha (2nd Half)
Assurance	0.65	0.77
Responsiveness	0.53	0.46
Empathy	0.92	0.65
Reliability	0.64	0.62
Communication	0.69	0.61
Knowledge	0.53	0.53

It was noted from Table 3 that the items or statements of the questionnaire were generally consistent internally. Except for Empathy where the difference in Alpha coefficients between the 1st Half and the 2nd Half was 0.27, the rest of the differences in Alpha coefficients were less than 0.20 and generally supported internal consistency of the questionnaire. Assurance was 0.12 (0.77-0.65), Responsiveness 0.07 (0.53-0.46), Reliability 0.02 (0.64-0.62), and Communication 0.08 (0.69-0.61). Knowledge had the same Alpha coefficients for both the 1st Half items (0.53) and the 2nd Half items (0.53). Thus, it could be concluded that the internal reliability of the questionnaire was satisfactory and acceptable.

5. Validity

There are two types of validity – external and internal validity. External validity refers to whether the results of the study could be generalized to other people, situations or times. Thus evaluation of external validity concerns the whole research design. Not only will the research measuring instrument be considered, the research method and approach will also be assessed to establish external validity. External validity will be affected by whether the study is a qualitative research or a quantitative one or whether it is a survey or a case study method. As data collection of qualitative studies is accused of being subjective, it is more difficult to establish external validity.

The discussions on the internal validity of the questionnaire for this study are limited to "the ability of a research instrument to measure what it is purported to measure" (Cooper and Schindler, 2006, p. 318). It is widely accepted that there are three forms of internal validity – content validity, criterion-related validity, and construct validity and these are inter-related.

5.1. Content Validity

Content validity refers to the extent that the measuring instrument has adequate coverage of the concept. In this study, the question is whether the questionnaire has enough items to collect data on service quality of lecturers. Is it comprehensive enough to measure service quality of lecturers in terms of Assurance, Responsiveness, Empathy, Reliability, Communication, and Knowledge? If the answer is positive, then the questionnaire has good content validity.

To evaluate adequate coverage, one must set the standard on what constitutes adequate coverage. There are two ways to determine content validity. First, the questionnaire designer must have read sufficiently and comprehensively so that the topic can be defined both theoretically and operationally. Second, adequate coverage may be evaluated by reading from other studies that deliberate on the same topic. Both ways involve judgment. In this study, the questions were adopted and adapted from studies on service quality of higher education. Specifically, the operational definition of service quality was taken from Parasuraman et al. (1988) study that has been rigorously discussed. The specific 22 statements were adapted from two studies on service quality of higher education, namely Soutar and McNeil (1996) and Pariseau and McDaniel (1997). In actual fact, 16 statements were taken from Pariseau and McDaniel (1997) to measure Assurance, Responsiveness, Empathy, and Reliability while 6 statements were taken from Soutar and McNeil (1996) to measure Communication and Knowledge. The four items measuring Tangibles were left out as it would be subjective to rank lecturers on their appearance and features. As the statements were taken from two published studies on higher education, the concept of service quality would have been adequately covered. It could be concluded that the questionnaire has good content validity.

5.2. Criterion-Related Validity

Criterion validity of a questionnaire or measure is "the ability of some measures to correlate with other measures of the same construct" (Zikmund, 2003, p.302). In this study, if the measure of service quality by the SERVQUAL dimensions correlates with another measure of educational quality, then criterion validity would be established. To do this, the average scores obtained for the dimensions of service quality for this study were correlated to the scores of relevant factors of educational quality of Sahney's et al. study.

The six dimensions of service quality of this study are Assurance, Responsiveness, Empathy, Reliability, Communication, and Knowledge. Sahney, Banwet, and Karunes (2003) have measured educational quality in four factors, namely, Tangibles, Attitude, Delivery and Competence. Except for Tangibles, Attitude could be matched with Assurance and Empathy, Delivery with Responsiveness and Reliability, Competence with Knowledge and Communication. The paired factors and the mean scores were shown in Table 4. The paired factors were then correlated respectively and the SPSS output results were tabulated in Table 5.

Table 4:

Dimensions (This Study, 2005)	Factors (Sahney et al. , 2003)	Mean Score (This Study, 2005)	Mean Score (Sahney et al., 2003)
N/A	Tangibles	N/A	3.49
Assurance & Empathy	Attitude	3.22	3.70
Responsiveness & Reliability	Delivery	3.46	3.82
Knowledge & Competence	Competence	3.41	3.74

Table 5:

	This Study, 2005	Sahney et al, 2003
This Study Pearson's Coefficient	1	0.87
Sig. (2-tailed)	-	0.328
N	3	3

The Pearson's correlation coefficient between the dimensions of this study and the factors of Sahney's et al. study is 0.870. This showed that the dimensions of this study and those of Sahney's et al. study is highly correlated and the relationship between the two studies is strong. It may be concluded that the criterion validity of the questionnaire for this study is established and deemed good.

5.3. Construct Validity

Construct validity is defined as "the ability of a measure to confirm a network of related hypothesis generated from a theory based on the concepts" (Zikmund, 2003, p. 303). Therefore, to evaluate construct validity, both the theory of service quality and the measuring questionnaire should be reviewed. In other words, the theory that service quality of lecturers comprises the constructs of Assurance, Responsiveness, Empathy, Reliability, Communication, and Knowledge requires assessment and evaluation. If another study of service quality is available, then the results of both studies may be compared accordingly to indicate construct validity. In this regard, Soutar and McNeil's (1996) study will be a good comparative study. This is because the theory and constructs of both studies are based on the SERVQUAL model.

But what results should be compared? If the mean scores of the factors of two studies are correlated, the correlation may not result in the confirmation of construct validity. If the correlation is high, it would mean that the respondents of both studies have perceived service quality in the same way. And if the correlation is low, then it may be taken that the two sets of students do not place the same importance to the same factors. A way to establish construct validity may be to explore the regression analyses of the two studies. Soutar and McNeil (1996) reported the adjusted R squared to be 0.37. This means that the seven dimensions of service quality could be used to explain 37% of the variations in students' satisfaction. There are other factors of service quality at large that were not considered. A regression analysis was conducted with the present study. The dimensions of service quality (independent variables) were regressed on students' satisfaction (dependent variable). The adjusted R square was 0.795. This means that the six dimensions of service quality of this study could explain 79.5% of the variations in students' satisfaction. In other words, Assurance, Responsiveness, Empathy, Reliability, Communication, and Knowledge accounted for 79.5% of the satisfaction of the students. This also demonstrated construct validity of the theory and concepts used for this study. In addition, the construct validity of this study is higher than that of Soutar and McNeil (1996).

6. Conclusion

Much of the discussions in this paper concern the validity and reliability of the questionnaire. This is because the credibility of the research findings depends a great deal on the validity and reliability of the measuring questionnaire. A questionnaire has to be reliable in order to be valid. Reliability is a pre-condition of validity. However, a reliable questionnaire may not have validity. Yet a valid questionnaire must be reliable. Therefore, it is important that the questionnaire has to be valid as well as reliable. In the course of the paper, only internal validity was examined because external validity is not relevant for questionnaire design. External validity concerns the entire research process such as the approach adopted, the methods used, the target respondents selected and is beyond the scope of this paper.

Designing an entirely new reliable and valid questionnaire is a tedious process. Apart from reviewing the literature carefully and comprehensively, the concepts and the theoretical framework have to cover most of the issues to be studied. The concepts would then have to be examined in detail and discussions of the ideas with the relevant constituents such as customers and experts in the field so as to narrow down the issues to be investigated. The target questions should be focused and limited to these relevant issues. The questionnaire has to be pilot-tested for errors and clarity before the final version could be test-retest for reliability and internal validity evaluated. That is why Saunders et al. (2003) advise adopting and adapting individual questions from established questionnaires.

During the entire design process, the reliability and validity of the measuring instrument was constantly monitored. Still, Robson (2002) asserts that there are four threats to reliability and six threats to validity. The four threats to reliability are participant error, participant bias, interviewer error, and interviewer bias. These threats may be reduced by briefing the field workers before administrating the questionnaire. The six threats to validity are history, testing, instrumentation, mortality, maturation, and ambiguity about the causal direction. Some of these threats are relevant issues that need to be addressed and well thought of before embarking on the study.

References

[1]   Bassey, M., 1999. *Case Study in Educational Settings,* Buckingham: Open University Press.
[2]   Cooper, D.R. and Schindler, P.S., 2006. *Business Research Methods,* 9th Edition, NY: McGraw-Hill.
[3]   Cuthbert, P.F., 1996a. "Managing service quality in HE: is SERVQUAL the answer? Part 1", *Managing Service Quality,* Vol. 6 No. 2, pp. 11-16.
[4]   Cuthbert, P.F., 1996b. "Managing service quality in HE: is SERVQUAL the answer? Part 2", *Managing Service Quality,* Vol. 6 No. 3, pp. 31-35.
[5]   Johnson, D., 1994. *Research Methods in Educational Management,* London: Pitman Publishing.
[6]   Kwan, Y.K. and Ng, W.K., 1999. "Quality indicators in higher education – comparing Hong Kong and China's students", *Managerial Auditing Journal,* Vol. 14 No. 1/2, pp. 20-27.
[7]   Galloway, L., 1998. "Quality perceptions of internal and external customers: case study in educational administration", *The TQM Magazine,* Vol. 10 No. 1, pp. 20-26.
[8]   Hattie, J. and Watkins, D., 1988. "Preferred classroom environment and approach to learning", *British Journal of Educational Psychology,* Vol. 58, pp. 345-9.
[9]   Marsh, H.W. and Bailey, M., 1993. "Multidimensional students' evaluation of teaching effectiveness", *Journal of Higher Education,* Vol. 64 No. 1, pp. 1-18.
[10]   Meyerson, D.E., 1991. "Acknowledging and Uncovering Ambiguities in Cultures", in Frost et al., (1991), (Eds), *Reframing Organizational Culture,* Newbury Park: Sage Publications.
[11]   Parasuraman, A., Zeithaml, V.A., and Berry, L.L., 1988. "SERVQUAL: a multiple-item scale for measuring consumer perceptions of service quality", *Journal of Retailing,* Vol. 64 No. 1, pp. 12-40.
[12]   Parasuraman, A., Berry, L.L., and Zeithaml, V.A., 2001. "More on Improving Service Quality Measurement" *Journal of Retailing*, Vol. 69 No. 1, pp. 140-147.
[13]   Parisean, S.E. and McDaniel, J.R. 1997. "Assessing service quality in schools of business", *International Journal of Quality & Reliability Management,* Vol. 14 No. 3, pp. 204-218.
[14]   Pike, G.R., 1993. "The relationship between perceived learning and satisfaction with college" *Research in Higher education,* Vol. 34 No. 1, pp. 23-40.
[15]   Ramsden, P., 1991. "A performance indicator of teaching quality in higher education: the course experience questionnaire", *Studies in Higher Education,* Vol.16 No. 2, pp. 129-50.
[16]   Remenyi, D., Williams, B., Money, A. and Swartz, E., 1998. *Doing Research in Business and Management: An Introduction to Process and Method,* London: Sage Publications.
[17]   Sahney, S., Banwet, D.K., and Karunes, S., 2003. "Enhancing quality in education: application of quality function deployment – an industry perspective", *Work Study,* Vol. 52 No. 6, pp. 297-309.
[18]   Saunders, M., Lewis, P., and Thornhill, A., 2003. *Research Methods for Business Students,* 3rd Edition, Harlow: Pearson Education.
[19]   Soutar, G. and McNeil, M., 1996. 'Measuring service quality in a tertiary institution', *Journal of Educational Administration,* Vol. 34 No. 1, pp. 72-82.
[20]   Zikmund, W. G., 2003. *Business Research Methods,* 7th Edition, Ohio: South-Western.

Appendix
Research Questionnaire
Research Brief

The main objective of this survey is to determine the service quality of UTAR's lecturing staff from the perspectives of the students.

This is a self-administrative questionnaire. There is no time limit to complete although it probably takes 10-15 minutes. The information collected is "private and confidential" and will not be used for assessment. No part will be revealed without consent.

Section A

This section of the questionnaire is designed to determine the service quality of the lecturing staff of UTAR. The accuracy of the results depends on how honest you can be. There is no right or wrong answer.

The following statements should be answered with respect to your feelings about the teaching and lecturing staff. Please circle the number corresponding to your level of agreement with each of the statements below.

1 – Strongly Disagree 2 – Disagree   3 – Neutral   4 – Agree   5 – Strongly Agree

Assurance

1	My lecturers are consistently courteous with me.	1	2	3	4	5
2	My lecturers instill confidence in me.	1	2	3	4	5
3	My lecturers conduct themselves professionally.	1	2	3	4	5
4	My lecturers have the knowledge to answer my questions.	1	2	3	4	5

Responsiveness

5	My lecturers are never too busy to respond to my requests.	1	2	3	4	5
6	When I have a problem, my lecturers show a sincere interest in solving it.	1	2	3	4	5
7	My lecturers give me prompt service.	1	2	3	4	5
8	My lecturers are always willing to help me.	1	2	3	4	5

Empathy

9	My lecturers give me personal attention.	1	2	3	4	5
10	My lecturers give me individual attention.	1	2	3	4	5
11	My lecturers have my best interests at heart.	1	2	3	4	5
12	My lecturers understand my specific needs	1	2	3	4	5

Reliability

13	My lecturers provide their services at the time they promise to do so.	1	2	3	4	5
14	My lecturers tell me exactly when services will be performed.	1	2	3	4	5
15	My lecturers perform service right the first time.	1	2	3	4	5
16	When my lecturers promise to do something by a certain time, they do so.	1	2	3	4	5

Communication

17	My lecturers communicate well with me.	1	2	3	4	5
18	My lecturers communicate well in class.	1	2	3	4	5
19	My lecturers are able to provide feedback about my progress.	1	2	3	4	5

Knowledge

20	My lecturers have good knowledge about the teaching areas	1	2	3	4	5
21	My lecturers are involved in research.	1	2	3	4	5
22	My lecturers are able to provide real world examples in their lectures.	1	2	3	4	5

Section B
Personal information

23	Age _____			
24	Sex	1. Male	2. Female	
25	Overall CGPA _____			
26	Year of Study	1. Y1	2. Y2	3.Y3