UNIVERSITY OF SURREY
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AN EXAMINATION OF THE IMPACT OF SERVICE QUALITY DIMENSIONS ON STUDENTS' SATISFACTION IN HIGHER EDUCATION IN THE UK

By

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A thesis submitted in fulfilment of the requirements for the award of PhD degree

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The aim of this research is to examine the impact of a set of service quality variables on students’ satisfaction with their experience in a higher educational institution in the UK. As a result of the increased number of international students that steadily seem to enrol into higher education institutions yearly, it is important to know more about this population (Lapidus and Brown, 1993). Therefore, the assessment of a service provided by a higher institution should be a major priority for any higher education institution and practitioners in the area.

In order to conduct this research, service quality models were analysed and finally the model proposed by Lehtinen and Lehtinen (1991) was used to test service quality in higher education. The dimensions proposed are physical quality, interactive quality, and corporative quality. In order to assess service quality, a large set of statements taken from the literature was presented to two different groups of participants in two sessions for a sorting process, using Q methodology. The validated items were then used to develop a questionnaire with the rest of the variables of the study which were overall satisfaction, a satisfaction scale for higher education context, intention to recommend, and value for money. The questionnaire was distributed exclusively to overseas students in a university in the UK.

Results show that the new scale was reliable. After running factor analysis, four factors appeared. Corporative quality has emerged as the main factor according to the sample who participated in this study, and the factor was named Recognition. This was followed by Interaction quality and physical quality. In relation to the satisfaction variables, it was found that there was hardly any significant relationship to report.

The usage of Q sort has proved to be an excellent methodology for the selection of items in the educational. In practical terms, this study offers administrators of higher education institution a set of relevant variables to be considered in the policies of marketing overseas students.
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A la memoria de mi papá,
mi mamá
y mamama
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Chapter 1

Introduction

1.1 Introduction

The aim of this research is, through empirical analysis, to examine the impact of a set of service quality variables on students' satisfaction with their experience in a higher educational institution in the UK. This chapter presents the rationale for conducting such an investigation based on academic and personal reasons. The general objectives of the study are discussed and it also provides a research overview of earlier research in the assessment of higher education. The last section of this chapter provides the outline of the structure of the following chapters included in this thesis.

1.2 Rationale for the conducting research

As a result of the increased number of international students that steadily seem to enrol into higher education institutions yearly, it is important to know more about this population (Lapidus and Brown, 1993). Therefore, the assessment of a service provided by a higher institution should be a major priority for any higher education institution and practitioners in the area. Given the importance of the international student population to the host universities, it is essential that institutions make efforts to fully understand the academic, service, and support requirements of this consumer market (Fashel, 1984).

This research is an attempt to complement and build upon previous studies by identifying the variables that may have more impact on students' satisfaction. The dimensions proposed are based on Lehtinen and Lehtinen's model (1991). It has been found that customers' perception of service quality depends on a number of background characteristics (Zeithaml et al., 1993). Demographic factors such as gender, age, nationality, years in school, may have the potential to affect students' evaluation of services (Tomkovick et al., 1996; Webster, 1989; Manese, 1988). These aspects have been included in this study in order to identify the profile of those overseas students who may have extreme opinions about the service.
Despite the recent increase in the number of studies on higher education, the focus has been primarily on undergraduate students. When postgraduate students have been included, they have mostly been from business schools (Chadwick and Ward, 1987). Master students from other programmes have been largely neglected as subjects of study.

As an overseas student, initially a master student, the experience abroad has had a great impact on my life. Those days during the master made me think in a way to help overseas students to have a better experience abroad. One way was identifying the kind of services we expect from the institution and the impact of their performance on our level of satisfaction. The literature provides different approaches to this issue. A psychological perspective has focused on the limitations and problems overseas students face when studying and living abroad (Furnham and Bochner, 1986). The social interaction and learning problems appear as main factors to be studied. Socialising in the new milieu has been reported as an important obstacle for success. Despite the importance of this approach, the feeling is that we, overseas students, may be pictured as ‘disable’ people unable to cope with this environment and the study challenge.

Problems aside, it should be mentioned in those studies that it is a great challenge for overseas students to leave their home country, family, and language; everything that is familiar to them to come to an ‘unknown zone’, some with more skills than others to face a challenge which is not exclusively academic.

The literature in service quality proposed, on the other hand, concentrates on the evaluation of the experience by assessing the attributes, policies and weaknesses of the educational system abroad. The aim is to know how the different institutions perform according to the students’ opinions. It is a way to get a feedback from students that may help the institution to rethink its policies and obtain a better share in the market. Here students may be asked about their experiences since the moment they first moment they considered to study abroad. This approach at least recognised the mental capacity of the students to evaluate and criticise the service provided. It cannot be denied, however, the emotional risk of the students and the strategies used to overcome these difficulties which have been extensively analysed by the
psychological approach. The necessity of friends has been one of the most important issues discussed.

As and effort to include the affective variable (e.g., developing friendships, interaction with locals), this study included those aspects in the Interactive dimension. The service quality was basically included in the Physical quality dimension. In order to have a wider perspective of the service, Corporative quality provided information of the student’ perception of the institution in terms of the practical benefits such as employment and degree recognition.

1.3 Research overview

1.3.1 Assessment in higher education

As a common practice, higher education institutions collect information about students’ opinion, although not all institutions have systematically incorporated a student evaluation policy in their system (Aldridge and Rowley, 1998). This is generally collected through module evaluation focusing on module delivery and content. Other kinds of research instruments may be implemented on a regular basis as an internal survey of the institution or by specific schools or departments. More recently there has been a wider acknowledgement that the totality of the student experience of an institution is a useful perspective to adopt in student satisfaction assessment. Teaching and learning measured at the end of the module are not the only aspects to be evaluated. Many higher education institutions perform some evaluation of the quality of some services (e.g., library). Nevertheless, surveys of the actual service experience provided by higher education institutions are relatively recent (Aldridge and Rowley, 1998).

Universities are often innovative and creative in delivering new courses in their quest to attract new students. They may also offer what is considered state-of-the art technology. However, they need to monitor closely the needs of students that are additional to curriculum programmes or external attractive elements and focus on the daily services required by students. Students’ services take many forms and, depending on how well they are designed, they may cover academic and non-academic needs. Students’ background (i.e., age, language skills) will determine, to a
great extent, the kind of support services required and the impact on the level of satisfaction of each individual student. Paying attention to these differences might make the learning process more efficient and productive (Zammuto et al., 1996).

1.3.2 Overseas students’ assessment

The elements that affect students’ satisfaction are dynamic and complex in nature. Enrolling into higher education represents a significant challenge in anyone’s life. However, it has been proved that international students, despite having similar problems to locals, have to overcome more obstacles (Burns, 1991). The experience abroad is not exclusively academic and therefore should be analysed from a broader perspective. Previous research has analysed the level of satisfaction of overseas students in different moments of their university life. Some have focused on the information provided by the institution to overseas students during the pre-selection phase (Mortimer, 1997; Kinnell, 1989; Joseph, 1998). These studies have already shown some of the most relevant variables that students take into consideration before applying for a degree in any university, locally or overseas. Researchers have also conducted a significant number of studies to evaluate the actual performance of the university attributes (Athiyaman, 1997; Rogers and Smith, 1993). Despite the use of some common attributes, the majority of the studies provide their own list of service attributes to be used to evaluate the level of service quality perceived by the students. In most cases, the list was generated from focus groups and the revision of the literature.

As an effort to evaluate service quality in a higher education context from a theoretical perspective, some researchers have used well-known models of service quality such as SERVQUAL, despite the limitations of the model (Gatfield, 2000; Wright and O’Neill, 2002). Cronin and Taylor (1992), on the other hand, have suggested that performance scores may measure quality satisfaction more accurately than the gap measurement between expectation and performance. Researchers in the education field (Clemes et al., 2001; Browne et al., 1998) have used performance-only to evaluate the quality perception of the service provided by tertiary institutions and the subsequent level of students’ satisfaction.
Therefore, it has not been identified in the literature a clear and consistent framework that determines which variables should be considered when evaluating the service quality of a higher education institution in order to evaluate the level of students' satisfaction regarding the service provided.

1.4 Objectives of the study

The current study has focused on students' satisfaction with the service provided by the university where they have enrolled into a master programme in the UK. The investigation further attempts to resolve whether the dimensions proposed are useful to measure service quality in a higher education setting and whether they discriminate among groups.

In more specific terms, the objectives of the study can be formulated as follows:

1. To assess the validity and reliability of the customer satisfaction scale based on the variables validated using Q methodology.
2. To determine which variables have more impact on students' satisfaction
3. To ascertain the relationship between service quality and demographic characteristics
4. To assess the level of satisfaction and the willingness to recommend the higher education institution to friends and family back home.
5. To determine the relationship between the perceived quality and the economic investment (value for money).

In order to reach these objectives a structured questionnaire survey was developed to collect the opinion of overseas students (primary data collection). The results were then analysed.

The current research aims to complement the existing research about the experience of overseas students who have enrolled onto a master's programme in the UK. They were asked to evaluate the performance of different dimensions that include the services provided, the interaction with academic and administrative staff as well as other students. They were also asked to evaluate their opinion about the university image and the future implications of their degree for employment.
1.5 Structure of the thesis

Having introduced the rationale of the study and the research objective, this section discusses the structure of the research. The outline of this thesis with its eight chapters is as follows:

Following the introductory chapter, chapter 2 looks at the development of the educational market of overseas students in higher education. Chapter 2 discusses the main policies of host countries towards overseas students.

Chapter 3 provides the theoretical underpinning aspects of service quality theories. These theories are based on different approaches that are reported and compared in this chapter.

Chapter 4 extends the literature review by focusing specifically on the theoretical model used to develop the dimensions to evaluate service quality in higher education.

Chapter 5 explains the rationale and procedure for using Q methodology in the development of the instrument used in this study in the main survey. It provides details of the two sessions where Q sorting was applied and their results.

Chapter 6 concentrates on the detailed procedure for the implementation of the main survey. It discusses the alternatives in developing the research instrument and explain how it was actually implemented in this study.

Chapter 7 explains the results of the main survey, from the descriptive statistics and comparison to factor analysis.

Chapter 8 discusses the findings with reference to previous studies in the area. Final conclusions and recommendations are presented in this chapter. The contributions both in theoretical and practical terms are identified. The limitations are acknowledged and further research it suggested.
Chapter 2

Internationalisation of higher education: overseas students

2.1 Introduction

The globalisation of knowledge has had direct influence on higher education. The developed countries with an educational tradition, such as the UK and the US, have taken advantage of their reputation to export 'knowledge' to those countries interested in the exchange. They compete with other traditional host countries such as France and Germany. New competitors have appeared in the market, Australia and New Zealand, who have also recently orientated their recruitment strategy towards overseas students to attract an appealing full fees market.

The attractiveness of overseas fees has generated intensive marketing campaigns to get more students enrolling into undergraduate and postgraduate courses. This is particularly the case in the UK, Australia and New Zealand where the full fee policy has been recently introduced. The USA, which has the biggest share in the market, has traditionally offered places to overseas students who pay as off-state residents. Therefore, the literature on overseas students is mainly based on these top host countries that have concentrated their attention on the overseas market.

In this chapter, we will start by providing a general overview of the historical evolution of the international education phenomenon as well as a definition of overseas students for the current research. This is followed by an explanation of the role of the host countries and how those countries have marketed overseas students, followed by the actual experience in the host country where students face learning and social problems. Finally, the literature review will allow us to formulate the research questions of this study.
2.2 Overseas students: a definition

The term ‘overseas students’ evokes a heterogeneous conglomeration of people from many countries, further differentiated by factors such as ethnicity, religion, culture and climate, apart from the regional area they come from. As students, they can also be segregated according to type and length of course, educational background, self-financing or sponsored (Ackers, 1997).

For the purpose of the current research, an overseas student will be considered a student coming from a country outside of the European Union who has to pay full fee for his or her education (Mortimer, 1997, p. 225). Therefore, there are two categories of markets: European Union (EU) and non-European Union (non-EU), or overseas students (Baimbridge, 1997).

It is worth mentioning that some studies classify students in two groups: Home and Overseas students, without using the full fee criteria. Home students are those from the UK exclusively; while overseas students are those coming from anywhere else, including any country form the European Union, apart from the UK (Allen and Higgins, 1994; Rogers and Smith, 1992). Although this division was used in some studies, for the purpose of this study, we will follow Mortimer' definition given above and therefore we will have two groups: home students, including locals and any one coming from a EU country, which entitles their citizens to have the same rights of local students to pay ‘home’ fee. The other group, overseas students consists of all students outside the EU and the UK, who are not entitled to pay home fees and pay full fee according to the university regulation.

However, it may happen that UK students as well as EU citizens may pay full-fee when a higher education institution has reached the limit of students entering under this condition and they are forced to pay full fees despite their citizenship.
Not with study in this situation, these students are not included here so are to enable the research to focus on those who have all have to pay full-fee.

2.3 The internationalisation of higher education: origins and development

The actual massive migration of international students is by no means a new phenomenon, although motives and destinations have changed. Schachner refers to medieval times to exemplify the movement of those searching for knowledge since the early times: ‘...they [students] poured in an increasing flood to the centres where they could literally sit at the feet of the great teachers and absorb wisdom...undeterred the students traversed the length and breadth of Europe’ (Schachner, 1962, p. 25).

Through history, students have been in 'eager search of knowledge'. Whether that knowledge was at home or far away, the search had forced them to follow famous mentors who had particular views that might offend authorities, forcing them to move to another destination, followed by their students (Kennedy, 1995). Students –pupils– have been travelling to remote areas to fulfil the goal of learning what has been considered to be the updated knowledge in different areas.

However, this search was an exclusive interest of an elite who had the motivation and the economic conditions to dedicate themselves to study in a period when surviving without working was extremely difficult. It was, therefore, limited to those with power and money to carry on such academic life, namely the aristocratic elite and the Church (Kennedy, 1995).

Nowadays, the access to knowledge is more homogeneous and the communication and technologies have improved the access to knowledge around the world. There are still limitations and countries play different roles according to their international position regarding knowledge, technology and reputation as educational hosts.
2.3.1 The host country

The top host counties have recognised the economic value of exporting education to developing countries through university degrees, training advice or language courses. By 1997, education exports from the UK were over £9 billion. Similarly, in Australia, education services earned at least $2.0 billion per annum in the late 1990s. It seems that the rapid development of this market at the international level is part of the process of the global economic integration (Bernell and Pearce, 2003).

Table 2.1 shows the five top host countries and the distribution of overseas students during a five-year period. The USA maintains its top position during that period and the number has increased steadily. Despite events such as September 11\textsuperscript{th}, the number of students enrolling in the period 2001-2002 shows a significant rise.

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Source: UNESCO Institute for statistics, 2004

The Asian expansion has also been predicted by Australian researchers in 1995 with figures reaching 1.78 million of international higher education students in the year 2000, and would rise to 2.75 million by 2010, with 58% from Asia. In an effort to develop export markets, Australia projected an increased 89,000 international students by the year 2000. Official figures report that there were 72,183 students in Australian universities in 1998, up 14.6 percent on a year earlier, in spite of a drop in demand from several countries in Asia. Her strong competitors, the US and the UK, show proportionate increases (Mayor, 1998).
Between 1980 and 1995, the number of overseas students worldwide grew from 0.93 to 1.5 million, with Asia (52%) and Europe (42%) as the principal sending regions. Elsewhere, the number has either declined (Africa) or stagnated (North and South America). Different factors have intervened in the increased number of international students such as the added value of a foreign degree from overseas when they return home. This was the particularly the case for students from Asia, whose presence was reduced after the Asian crisis in late 1997, despite the intense marketing campaigns conducted by the top host countries since the 1980s to capture overseas students to study abroad.

In relation to European students, the number has increased mainly determined by the mobility facilities introduced within members of the European Union (EU) since the mid-1980s. For example, students from EU countries studying in the UK increased just 7200 from in 1984-1985 to 65,332 in 1994-1995. Programmes such as ERASMUS and SOCRATES and other education initiatives have stimulated the mobility among European countries (Sporn, 1999; Volet and Renshaw, 1995). The internationalisation of professional licensing and certification has occurred in Europe in appliance with the requirements of the European Union, and continuing professional education is necessary in assuring uniform application of standards across the member nations (Lapiner, 1994).

Latin American students, on the contrary, have remained a relatively low number in the recent statistics of overseas students due mainly to economic and political factors affecting the support of students abroad. However, some enrol into their home tertiary education system which is relatively well-developed in some of the countries (Bennell and Pearce, 2003; Bartell, 2003). The tendency, however, is towards a steady number of students with no significant increase as forecast. Language, the depth of the economic crisis in the 1980's and relatively well-developed higher education have been the keys factors that have dampened the demand for overseas education and training. In Africa, the low demand has been basically the decline in donor support for higher education scholarships and the impact of the economic crisis in the continent as a whole (Bennell and Pearce, 2003).
In order to get information about the phenomenon and forecast demand, national and international agencies have sponsored studies on foreign students. Institutions such as the United Kingdom Council on Overseas Students Affairs (UKCOSA), the European Institute of Education, the National Association of Foreign Affairs (NAFSA) have been active in working in foreign affair issues (Allen and Higgins, 1994). However, a large bulk of the research literature has been conducted by individual researchers and mostly by doctoral students. Consequently, the sample used is limited in number, covering mostly only one institution or only a single department. This does not mean that the literature on foreign students is insignificant, either in quality or quantity. It is, however, necessary to expand the research base in order to comprehend the phenomenon but also to better serve the growing foreign student population and to formulate policies that are both enlightened and effective.

The significant value of research done in higher education shows that regular monitoring of the way in which overseas students perceive existing welfare support and facilities may be seen as essential in maintaining an awareness of the particular problems faced by overseas students and in ensuring that both academic and welfare needs can be met as far as possible. It is important to assure students that their responses were being taken seriously and that subsequent modifications have been implemented (Rogers and Smith, 1993).

There are a variety of issues that affect host countries and host institutions in terms of how they deal with foreign students (Williams, 1987). The top host countries, the US, the UK, Canada and Australia, have extensively discussed their policies and analysed the benefits of the presence of foreign students on their campuses. The presence of a significant number of overseas students has made them consider changes in their curriculum and in the kind of services their international 'customers' require. For many universities in major host countries, foreign students have become a major factor in institutional planning and development.
The host countries such as the US give economic assistance to international students through a scholarship programme. This will directly represent a benefit for the student themselves but at the same time create both emotional and intellectual ties with the host country.

2.3.2 Host countries policies

The major host countries have very different approaches to the direct cost of providing higher education to foreign students. Countries such as the UK and Australia have extensively debated the introduction of a full cost fee policy when analysing the economic implication of the cost of foreign students for the domestic taxpayers. As a result of this debate, Great Britain is the only country in the European Community than has higher full fees for foreign students. The introduction of this policy initially provoked in turn a significant decline in foreign student enrolments which have been steadily recovering in recent year. Different policies have been implemented by countries such as France and Belgium where no fee is charged to overseas students but a high language proficiency examination is required for admission (Throsby, 1991).

The US has a different approach to foreign fees. Private universities charge the same fee to all their students. The public one have a different policy depending on the place of residence of the candidate. Residents of the state where the university is located pay around 20% of the tuition fee and those out of State and international students pay a higher fee (Altbach, 1991)

2.3.3 Selection of a host institution /country

In relation to the decision to study abroad, it is important to identify the factors which influence individual choices, bearing in mind that it is the individual as well their families who are part of the decision-making process, especially in the Third World. In the selection stage, students require a lot of information and include a list of variables in their selection. The literature has identified factors influencing the selection of UK higher
education by overseas students. In the selection process, they search for quality and prestige and therefore they need to find a form to evaluate the institutions. The report presented by The Times Higher Educational Supplement covers an important set of useful performance indicators to know how the different institutions are assessed (Morrison et al., 1995).

The literature has identified some keys factors which influence individual choices:

(1) The perceived value of the foreign degree: many countries considered a degree obtained in a prestigious university in an industrialised nation as an advantage in the job market; sometimes the ‘snob appeal’ of foreign degrees determines the intrinsic benefits in the national market. Despite this attitude, the value of a foreign degree is declining in some countries.

(2) Better opportunities abroad: admission to local universities could be difficult because of the immense demand for higher education and only limited facilities. It may happen that students find it easier to get acceptance abroad.

(3) Cost: tuition fees and cost of living abroad are determined by the host country policies and the tertiary institution. It is an important variable that may cause serious problems when the student is unable to cope with financial requirements while being abroad.

(4) Immigration: While there is no clear documentation, it seems that a certain proportion of the foreign student population engages in foreign study with at least some desire not to return home. Actual political and economical situation in the home country may determine students to stay in the host country after finishing studies as the non-return rate shows. It may happen that unexpected changes while being abroad have impeded the return of overseas students. The ‘brain drain’ phenomenon has always been a possible risk for the sending country. Consequently, legal controls have been imposed on those funded by their government such as legal guarantors who may assume the economic and legal responsibility when the students do not return home as planned (Ryan and Twibell, 2000).
The Department of Trade and Industry believe that the foreign exchange earnings from educational products and services were at least £9 billion in 1997, up from about £7 billion in 1996. Overseas students (both long and short term) account for around half of all the earnings. The ELT (English language Teaching) market alone is reported to be worth £0.75 billion (Bennell and Pearce, 2003).

A study conducted by the Heist Research ‘Higher Education: the international experience’ (Allen and Higgins, 1994), which includes a large sample of 82 higher education institutions in the UK, provides demographic information about the overseas population in the UK by 1993. Undergraduate overseas students were asked to identify the most important factors when selecting a UK institution and results show that academic reputation, content of course and entry requirements were the most significant variables to consider when choosing a university abroad. At the same time, the report gives statistical information about a wide range of topics, such as kind of information received, arrival arrangements, university facilities, UK universities competitors, and the like.

The report points out that students felt disappointed and frustrated because the information was not accurate or arrived too late, affecting the preparation stage to start their study life abroad. Furthermore, results show a strong relationship between the feeling of preparation and the probability of recommending the course.

Similar results were previously found in a local study in Southampton University (Rogers and Smith, 1993) where students express the necessity of receiving useful information before arrival. The study’s aim was to assess the welfare provision provided by universities to cater for the special needs of overseas students. Researchers conducted a survey, including undergraduate and postgraduate students, at the University of Southampton in 1989 and then a follow-up survey in 1992, to evaluate progress. According to their perception, they were asked to rate the welfare support provided by the university. The variables cover a wide range of aspects starting with pre-arrival information in the prospectus sent and a special information package when arriving on
M. H. Pereda

Internationalisation of higher education

campus, apart from general meetings. They were also asked about the help service provided (e.g. counselling service, personal tutor, supervisor).

Results show that, in relation to the information received beforehand, most of the students thought that the institution should provide information on: (a) course content; (b) fees; (c) pre arrival booklet specifically for international students; (d) advice on visa, customs, work permit, insurance, immigration; (d) accommodation, cost and availability. Although providing information before arrival and greeting overseas students may be regarded as being of importance, welfare provision should be a constant concern for the university during their study life in the institution (Rogers and Smith, 1993).

While interpreting the results, it is worth noticing that some improvements have been identified between the two surveys (1989 and 1992). However, criticisms were still reported by students, for instance they mention lack of information about the cost of living and accommodation, restricted time given by supervisors, and insufficient information in the university prospectus. Although restricted in scope, the study shows how important it is for a higher education institution to monitor regularly the perception of their customers (students), especially when addressing overseas students.

Despite the wide circulation of the Heist findings (Allen and Higgins, 1994), Mortimer (1997) found no significant changes in the provision of information provided by the UK universities a few years later. The speed of response to applications or enquiries still seems to be low giving the impression that the student’s enquiry is irrelevant or that the institution is not well organised to give an immediate response. Although students have constantly mentioned the necessity about accommodation availability as a main concern (Rogers and Smith, 1992), the accommodation booklet seems to be low down as a priority for universities, and other areas (e.g., pre-arrival booklet, course and visa details) are still not being adequately covered (Mortimer, 1997). As a final comment, Mortimer suggests that universities must perceive overseas students as VIP ‘customers’ and consequently provide a personal customer service, which may give them the advantage over competitors when students have to make a final decision about where to enrol.
2.4 Higher Education: marketing overseas

The competitive market has forced higher educators to take a more active role as educational managers and therefore the assessment of students' perspective has become a crucial requirement if they want to remain competitive (Wright and O'Neill, 2002). The budgetary problems, on the other hand, have contributed to develop a special interest for overseas students, who pay out of state fee, which represents a substantial extra income for the universities and helps them to complete the student quota (Glisan, 1994). In countries such as the UK and Australia, this segment also provides a significant income as they pay full fees. In Australia, for instance, the government openly supports higher education institutions in marketing their courses abroad in order to find an extra source of financial support as the government cannot any longer satisfy the economic requirements of higher education institutions (Patterson et al., 1998; Wilkinson, 1993).

Despite the growth of the Higher Education sector in the UK, the financial constraints have forced higher education institutions to focus on overseas students for additional financial support. However, it appears that the institutions are not providing enough information to help candidates in the pre-consumption stage. The reasons for this seem to be supported by a lack of market orientation which is a contradictory approach in a competitive market (Port and Burke, 1989; Long and Tonks, 1995; Morrison et al, 1995; Williams, 1997; MacKinnon, 1998).

There is therefore an increasingly important need to examine and understand the decision making process undertaken by these students (Mortimer, 1997). Theories on decision making (Haward and Sheth, 1969; Nicosia, 1966) point out that once the need is identified, in this case going to the university, the first step is the active search for information. This constitutes a prerequisite to the identification and evaluation of the alternatives offered in the marketplace. In such a competitive market, overseas students search for the institution that provides the best deal with the right attributes, according to the student's needs. This may include performance indicators such as the ranking of specific department or university.
From the marketing perspective, Mortimer (1997) clearly states that overseas students have different requirements and concerns to home students and consequently a differentiated target marketing approach is necessary if these requirements are to be met. Consequently, higher education institutions need to be aware of the influential forces that affect students when they enter this complicated decision-making process and gain an understanding of these variables if they are to satisfy students’ needs effectively (Moogan et al., 1999).

During the first phase, communication with students in their home countries is vital for both the university and the prospective student. Brochures or any kind of media used to transmit information should be provided in advance to alleviate students’ anxieties. Some studies in USA and the UK (Allen and Higgins, 1994; Stewart and Felicetti, 1991) have reported some lack of relevant information which affects students in their decision making process about enrolling in a specific higher institution, such as course fees, availability of accommodation and cost of living.

In the pre enrolment phase, the search will be longer depending on the intrinsic level of perceived risk (Brehmer, 1987; Arrow, 1982; Taylor, 1974), which tends to be high because of the intangibility of the service and the intrinsic implications such as value for money and emotional stress. In a complex service such as Higher Education the implications of enrolling in a specific university are extremely important for the students themselves as well as their family. In the searching process to make the right decision, students consult university’s brochures and as well as needing advice from people such as friends, teachers and relatives who could provide suitable information from one of the possible alternatives (Allen and Higgins, 1994). The level of risk involved in the overseas student’s decision is increased by the intangibility of the service (Baterson, 1991). This leads to greater dependence on personal sources of information and word-of-mouth communication (Friedman and Smith, 1993).
2.4.1 Universities: Service providers

In the American context, research into higher education can be traced back to the late 1970s when the number of young people enrolling into higher education started to decline and at the same time the costs of providing such education were continuously rising. These circumstances would inevitably have a tremendous impact on the spread of higher education institutions and the subsequent incorporation of graduates into the productive market (Murphy, 1979). Therefore, emphasis was placed on the study of higher education in a systematic way, including the different variables and the requirements of the different stakeholders that intervene in higher education evaluation (e.g., students, the industry, academic staff). Higher institutions were also interested in attracting overseas students to enrol in higher education in the USA, which almost immediately replaced France and Germany in the higher education market as top providers of tertiary education.

Higher education institutions have being acting as providers of a service to different consumer publics (e.g., government agencies, local community), as classified by Kotler (Kotler, 1975; Kotler and Andreasen, 1991). Based on this notion, Murphy (1979) adapted Kotler’s classification and divided consumers into internal and external, as shown in Table 2.2. Within the internal consumers’ classification there are four major categories, namely, future, current, past, and dissatisfied. The table also shows the type of consumer research appropriate for each category.
The first category, future consumer (e.g., prospective students) has been extensively analysed in the literature of consumer research, as Murphy early recognised and predicted. A significant number of studies have focused on consumer decision-making process. The objective has been to analyse the factors that substantially influence the selection of a higher education institution (Mortimer, 1997; Kinnell, 1989). In early studies reported by Murphy (1979), some of the factors initially identified were financial factors (e.g., total university cost), business programme quality, size, and location.

The second of internal consumers are current consumers, who are currently enrolled in any higher education programme. The studies that have used this kind of subjects have focused on the attitude towards different aspects related to the university context, which range from academic issues (e.g., academic programmes, faculty) to the general facilities provided by the institution (e.g., facilities, food, social life). As Murphy suggested, these aspects could be analysed according to the major, the year of study, place of residence (e.g., campus, off campus). Murphy points out that this sector has been neglected by administrators and researchers. However, an increase number of studies were later conducted focusing on this target. The present study will use current students as subjects for the research.
As Murphy reported in the late 1970s, the third group, past consumers, has been consulted only in the context of fund raising. However, as he predicted, this group might provide valuable feedback for curricula or facility alteration and researchers have consulted them accordingly. For instance, longitudinal studies have analysed the perception of students in the last (Patterson et al, 1998; Gatfield, T., 2000). When using this kind of subject to assess their previous study experience, results might be treated carefully as the halo effect might eventually affect the recall of past events.

The last group, the dissatisfied group, refers to those who have dropped out of the educational system and have not finished their studies. This group has been considered as an important source of information about the performance of the educational system. Variables such as psychological factors have been studied to identify which factors have substantial influence on the decision to drop out (e.g., financial problems, workload) (Bennett, 2003). The definition of this group is restricted to those who have dropped out, however, it might be possible that regular students feel frustrated but carry on their studies in order to obtain the degree despite being dissatisfied with the study experience.

The external consumers have an important role to play in the development and approaches implemented by the higher education institutions. Kinnell (1989) includes in the categories the local community, competitors, and sponsors, domestic and international (e.g., parents, government agencies, charities). However, Kotler (1991) recognises that some academics have expressed their concerns about the intervention of the externals and have shown open resistance to marketing in the higher education context. This is the consequence of frequent misunderstanding of the goal of marketing and a negative image among public service orientated professionals, such as lectures and educational administrators.

In general consumer research, students have been used as subjects for research projects asking their opinion about products that are of little concern to them. In relation to their own experiences as students, it would seem that they would be motivated to discuss about these issues (Murphy, 1979). This has been later supported by Roberts and Higgins.
(1992, p. 8) as they reported the 'many students were delighted that someone was asking for their opinion and listening to their concern'.

2.5 Overseas students: the actual experience

After arrival, students face other kinds of problems. According to the literature, top ranking problems commonly cited included lack of English, inadequate financial resources, social adjustment, problems in daily living, and loneliness or homesickness (Kennedy, 1995; Wilkinson, 1993; Burns, 1991; Samuelowicz, 1987). Burns (1991) conducted a study including overseas and local students, both in the second semester, to investigate whether both groups perceive some aspects of their study life differently. Gender and country of origin were also included as variables in the study. The key variables included were: perceived competence at academic skills; competence in English; general worries -financial, romantic upsets-; stress symptoms; interest and awareness of academic staff; knowledge of location and use of university services; preparation for university studies; family pressure.

As expected, results show statistically significant differences between both groups in relation to English competence and academic skills. In study skills, however, both groups tend to face similar problems. Locals rate themselves 'less than competent' on many items particularly those relating to study and examination skills and time organisational matters. It is assumed quite naively that the problems are exclusively faced by overseas. It is worth noticing that these problems are not exclusively faced by overseas. The local counterparts also reported similar conflicts and they only differ in magnitude and importance in the case of overseas students (Burns, 1991). Consequently, both student groups rate low in relation to 'preparation for university studies'. Most overseas express worries about their financial situation (70%) and family pressure because their parents are generally paying for their studies. Failure for overseas students is a family disgrace which has to be faced by the whole family back home (Wehrly, 1988).
Apart from the common issues in the questionnaire, overseas students were asked to complete an extra section relating to coping with a new culture pattern: the study of English as a medium of instruction in their home country and academic matters. The study reveals that only 13% of the overseas students claimed that English was their first language, mostly students from Singapore; 80% used English as a medium of instruction. Despite the length of exposure, they still report inadequacy with language skills, which is severe for those with very limited previous exposure to English, particularly from Indonesia and mainland of China (Burns, 1991).

Consequently, language difficulties, time spent on studies and part-time jobs limit the social life of overseas students, particularly females. Some students also reported some reticence to interact in public due to conflicts or controls in their home countries (China, Singapore and Malaysia). Despite real pressure, what might happen is that being an alien exacerbates and magnifies overseas students’ perception of the new experience. These findings support previous studies on culture diversities (Wehrly, 1988), which show that the overall picture of overseas students is very complex. They face a daily challenge of functioning in an alien culture in which value systems may be extremely different. On the other hand, they are often hard workers despite the serious limited language and study skills for tertiary education requirements; emotionally worried because they are physically separated from family and friends at home. While feeling isolated in communities in which strangers who look and act differently from the majority are not especially welcome, it is no wonder that feelings of hopeless and depression constantly appear (Wehrly, 1988).

In terms of study shock, overseas students need to adapt to different study methods that demand active participation in class, using argumentation and criticisms, which were not part of their previous educative system. Being expected to synthesise and draw their own conclusions from what they read may be an entirely new assignment (Wehrly, 1988). Although social shock (socio-cultural-emotional difficulties) was mentioned as an important part of the experience, it was beyond Burns’ (1991) objectives. The survey
fails to show any particular difference among the ethnic groups in relation to the magnitude of each of the variables studied.

2.6 Overseas students' research: an overview

According to the literature review presented above, overseas students have become an important market to conquer and maintain. The important role of overseas students has been recognised by both higher education institutions and researchers. They provide tertiary institutions with a significant income since the introduction of the full fees, especially in the UK and Australia. The top host countries – USA, the UK and Australia – have developed different marketing strategies in order to get an important share of the overseas market who exists all over the world. Political and economic changes as well as perceived insecurity affect the mobility of people around the world, causing general travellers to modify their destination, as do overseas students.

The literature has included different areas, which starts with the initial stage of marketing to students to the actual teaching and learning experience in the host country. It reflects a general concern for the student welfare conditions. Although overseas students share some commonalties, there seems to be differences among subgroups of these students. They are thus by no means a homogeneous grouping (Harris, 1997; Manese et al., 1988). They have been surveyed, and grouped according to different criteria. A significant number of studies have used undergraduate overseas students exclusively (Gatfield, 2000; Ford et al., 1999; Joseph, 1998; Athiyaman, 1997; Bourke, 1997; Mortimer, 1997; Thompson and Thompson, 1996; Quintrell, 1994; Lapidus and Brown, 1993; Ryland and King, 1992; Burns, 1991).

Some studies have discriminated among categories when selecting their sample. Students have been selected for their level of study, including undergraduate and postgraduate together (Patterson et al, 1998; Rogers and Smith, 1993; Kinnell, 1989; Smuelowicz, 1987; Conant et al., 1985); only a few has concentrated exclusively on postgraduate students, master degree and research students (Ladd and Ruby, 1999; Felix, 1993).
The subjects of the studies have been also differentiated by year of study (Burns, 1991; Kinnel, 1989); gender (Manese et al., 1988); western and non-western (Lapidus et al., 1993); nationality (Gatfield, 2000; Patterson et al., 1998); area of study such as medicine (Bourke, 1997); business management (Ladd and Ruby, 1999; Ford et al., 1999; Joseph, 1998; Patterson et al., 1998; Thompson and Thompson, 1996; Ryland and King, 1992; Conant et al., 1985). These variables put in evidence that overseas students are definitely a heterogeneous group and may be carefully segregated for research purposes.

Local students have also participated as control groups (Burns, 1991; Conant et al., 1985). Information was collected from both academic and administrative staff (Thompson and Thompson, 1996; Kinnell, 1989; Samuelowicz, 1987).

Although research in the area, as reported in this literature review, proves to be extensive and relevant in understanding the educational phenomenon of overseas students around the world, some aspects, however, seem to be neglected (Manese et al., 1988; Lee et al., 1981). In the first place, it is necessary to know more about postgraduate students or researcher students. The characteristics of the programme add particular variables for this group of sojourners. Secondly, this subgroup of overseas students has its intrinsic characteristics that differentiate them from undergraduates and therefore they deserve a separate analysis. They have already been exposed to the academic life—at home or abroad—; they are older and some are mature students; with working experience in the area; some living independently; others with their own family. On the other hand the number of master students seems to be increasing faster maybe because the investment of time and money is lower than to enrol into undergraduate studies or PhD programmes.

Therefore, there is a need for further research on postgraduate students as a differentiated group which has its own characteristics. It would be important to know how these students, as a group, evaluate the performance of the different services provided by the institution. This has been extensively covered in the literature but with undergraduate students exclusively (Allen and Higgins, 1994).
At the same time, the available evidence suggests that social support is directly related to increased speed and quality of adaptation (Furnham, 1997). It would be interesting to investigate whether there is a correlation between the successful academic life and the social network.

2.7 Summary

The competitive market has forced higher educators to take a more active role as educational managers and therefore the assessment of students’ perspective has become a crucial requirement if they want to remain competitive (Wright and O’Neill, 2002). The budgetary problems, on the other hand, have contributed to develop a special interest for overseas students, who pay out of state fee, which represents a substantial extra income for the universities and helps them to complete the student quota (Glisan, 1994).

The attractiveness of overseas fees has generated intensive marketing campaigns to get more students enrolling into undergraduate and postgraduate courses. This is particularly the case in the UK, Australia and New Zealand where the full fee policy has been recently introduced. The USA, which has the biggest share in the market, has traditionally offered places to overseas students who pay as off-state residents.

Therefore, there is an increasingly important need to examine and understand the decision making process undertaken by these students (Mortimer, 1997). Research in this area has become extremely important to understand the students demands and place the institution in a competitive advantage.
Chapter 3
Customer satisfaction in the service sector

3.1 Introduction

Services are becoming a critical source of employment and wealth for many countries. The service sector has achieved a position in the industrial world with recognition from business executives. However, it has been sometimes neglected by customers who still consider that goods have higher value (Grönroos, 1990). Nowadays it is impossible to deny the growth of this industry and the benefits it implies. Therefore, the last decades have faced an increase in research in this area and the interest for higher standards and profitability.

There are more services available today to more people with different social and economic background. Modern technology has helped to spread the service to huge groups of customers at the same time (e.g., airline reservations, web pages). Service providers are developing strategies to offer an outstanding service because customer satisfaction and the quality of the service delivered have become the focus in the service industry. Their concerns about the future of service lead to the study of service quality and customer satisfaction.

Marketing research has found that customers have to be placed in the centre of the arena in order to identify elements of customer satisfaction prior to any management efforts to improve employee behaviour and the service delivery system. It was also suggested the need to keep in touch with customers to determine ever-changing service requirements of customers and the current level of service quality provided (Wisner and Corner, 1997).

In this chapter, we will start by defining service quality and customer satisfaction. Then, the theories related with service quality will be discussed and some models presented.
3.2 Definition of service

The complexity and variability of services makes difficult to elaborate a single definition that covers all the domains where service could be applied. Grönroos (1990) presents a list of possible definitions of the term service and he finally adapts Lehtien (1983), Kotler and Bloom’s (1984) definitions to elaborate the following concept of service:

A service is an activity or series of activities of more or less intangible nature that normally, but not necessarily, take place in interactions between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems. (p. 27).

This definition tries to cover from single services where a unique service is delivered as a professional interaction (e.g., a lawyer), to the plural and complex delivery systems such as the one offered in a hotel to a tourist guest (e.g., reservation, room service, restaurant and bars, recreation, excursion, shopping, laundry, taxi, telephone). In a service delivery system, there are some aspects that customers and staff could easily identify and evaluate because of their tangible nature. On the other hand, there are important but intangible service attributes that could hardly be assessed but are essential in the evaluation.

As a general approach, the business perspective offers a well accepted definition of quality as “the totality of features and characteristics of a product or service that bear on its ability to satisfy a stated or implied need” (Lockwood et al., 1996, p. 212). In a simplest way, quality could be described as the satisfaction of customer needs and expectations (Crosby, 1984). Therefore, service quality can be defined as “an overall judgement (attitude) about the relative superiority (inferiority) of the company’s services” (Bahia et al., 2000, p. 30). In simple terms, quality is the ability of a service or product to perform its specified task (Ennew at al, 1993, p. 59). This judgement is given by the customer in every encounter and, as he has become more quality conscious and more demanding, he is ready to ask for the kind of service he expects to receive.
The interest in service quality has increased since the last decades, as it has become a key factor in differentiating service product and building competitive advantage (Ennew et al., 1993). This has made researchers to elaborate models and scales to measure quality in order to offer the service the customer expects. As Grönroos (1990, p. 37) points it out “it should always be remembered that what counts is quality as it is perceived by the customers.” However, the intangible nature of services suggests that it may often be difficult to identify objective performance indicators and, consequently, researchers have focused on the development of reliable scales that may help services providers to collect customers’ opinions as an important feedback to improve their performance.

### 3.2.1 Characteristics of services

Although the two industries, service and products, have common objectives such as customer satisfaction, productivity and success, the service industry has intrinsic characteristics that drastically differentiate it from any other kind of industry. A service has the following characteristics: intangibility, perishability, heterogeneity, and simultaneity.

**Intangibility**

Services are actual performance rather than concrete measurable objects (Parasuraman et al., 1985) and therefore they are difficult to be measured from both the consumer and deliver point of view. The service product can not be evaluated before its consummation. The possible strategy would be that customers receive previous information about the characteristics of the service, when it is possible. In the tourism area, for example, brochures and videos serve to show the benefits of the service. In the case of a well managed branding accommodation, people could expect to receive certain quality level and facilities (Cooper et al., 1999). In relation to the food sector, any new contact between a customer and a waiter will be affected by variables such as the time to deliver the service or the friendliness of the waiter (Lockwood et al., 1996). As the human contact is implied in this kind of encounter, it becomes difficult to control the intangible
factor, which at the end could determine the impact on customer satisfaction rather than the tangible one (food taste and price).

In both cases, in the tourism and hospitality industry, the word-of-mouth transmission and brand name could guide customers towards the acceptance or rejection of a new service beforehand. Nevertheless, the intangible factor will be there.

Perishability

This second characteristic could dramatically affect the productivity of any service business. The service always have time constrains. A flight seat, a meal or a hotel room has to be “consumed” in a specific date because all these different services can not be stored for another occasion. If they are not used, they are simply gone and that represents lost for the company. That is why many firms give the main priority to ensuring that capacity is fully utilised, offering for example last minute discounts for a flight ticket.

Achieving a satisfactory balance between demand and supply is a titanic enterprise in the service sector. For example, raw ingredients in a restaurant have a limited time depending on the method of storage. Therefore, the length of the production cycle in the service industry is short and only few strategies could be followed to make the best of it. Apart from this short-time life, services suffer from the fluctuating demand because of the seasonability of some services, such as hotels and airlines (Cowell, 1991).

As many firms offer the same service, they try to increase their market share by marketing their product in such a way that gives them a competitive edge over another. The marketing strategy could be price reduction, personal contact, coupons, family plan, etc. It is worth mentioning that the range of options for pricing in the service sector could be greater than in products. The price of a package tour and specially a flight ticket could significantly differ from a customer to another, depending on the place and date the service was purchased (Hope and Mühlemann, 1997).
Inseparability or simultaneity

This characteristic refers to the condition that a service is often produced and consumed simultaneously and therefore it can hardly be delivered under fixed conditions. The participation of personal contact in the service interaction affects the service quality because consumers requirements are individual (Parasuraman et al, 1985).

In the food area, serving drinks to different kind of customers with special preferences or planning entertainment activities in a cruise could become a hard task for any staff and the service itself could be affected by the simple personal interaction between customer and staff (Cooper et al., 1999).

Heterogeneity

In a service encounter, the interaction of customers and staff puts the human factor in the first place. The service will depend on the variability of personal traits of those given the service, as well as the kind of customers receiving the service. There is a training and standard performance that have to be achieved by the staff. However, personal differences between employees and the changing day to day performance will be crucial for the delivered service and the consistent service received by customers (Lockwood et al., 1996). Even the most homogeneous set of customers will react differently to the same service. Therefore, a great effort is done to achieve standardisation of the service that will assure customers the quality of the service time after time.

3.3 Customer satisfaction

Understanding consumer satisfaction and the service encounter is now at the front position of marketing’s priorities, producing a considerable amount of academic articles (van Montfort et al., 2000). The purpose of researching on customer satisfaction is to identify customers’ opinion about goods or services. Surveys provide a formal instrument
of customer feedback to the company, which may identify existing and potential problems. At the same time, customers may feel that this kind of surveys shows them that the firm cares about their opinion.

The results of a customer satisfaction survey may be used to evaluate different aspect of the service and the product. For example, employees’ interaction with customers may be tested in the survey and a positive rating could lead to staff recognition and rewards. The quality of the service and the product could be increased as a result of the survey. Satisfaction data should lead to constructive action plans and improved resource-planning decisions, making cost and quality controls more effective. Managerial decisions could lead to analyse the areas that, if improved, would have the largest impact on satisfaction (Dubé et al., 1994).

Customer satisfaction has been the focus on research studies because of its importance to managing organisations. It is a major outcome of marketing activity and can result in post-purchase phenomena such as repeat purchase, customer loyalty and positive word-of-mouth (Lockwood et al., 1996; Kotler, 1994). Consequently, the aim of measuring customer satisfaction is to assess the quality of existing management practices and suggest changes for improvement. Increasing the satisfaction of customers may ensure a greater number of loyal clients and improve a company’ market share and profits (Gilbert and Horsnell, 1998).

Determining customer satisfaction is fundamental to effective delivery of services. Successfully being able to judge customers’ satisfaction levels and apply that knowledge potentially gives a hospitality manager and advantage over competitors via such benefits as product differentiation, increased customer retention, and positive word-of-mouth communication (Yüksel and Rimmington, 1998).
3.3.1 Definitions of customer satisfaction

In the definition of service given in the previous section, it was clearly stated that the presence of customers is essential for a successful service to take place. Customers have to feel that their initial need, before the service encounter occurs, has been satisfied afterwards.

Different theoretical backgrounds have been used to define customer satisfaction (Churchill and Surprenant, 1982; Smith, 1995; Oliver and Swan, 1989). They go from a cognitive perspective that supports the idea that satisfaction includes a cognitive dimension (Hunt, 1977) to an emotional reaction by the particular service encounter (Oliver, 1981). This difference, cognitive process or emotional state, has been one of the most frequently raised questions in the field. Research seems to integrate both perspective and explains customer satisfaction from an approach that will include “cognitive, affective and other undiscovered psychological and physiological dynamics” (Oh and Parks, 1997, p.37)

In an effort to conceptualise the construct customer satisfaction, Anderson et al. (1995) define it from two perspectives. The first one is based on a transaction-specific point of view where the customer constructs satisfaction after a specific service encounter took place (Hunt, 1977; Oliver, 1977; 1981; 1993). The second approach, cumulative customer satisfaction, is “an overall evaluation based on the total purchase and consumption experience with a good or service over time” (Anderson et al., 1995, p. 54). The information obtained using the second approach will be useful for the enterprise to identify the service pattern perceived by the customer in a time period.

Gilbert and Horsnell (1998) define customer satisfaction as the response to the quality of the service received. If a service encounter occurs only once or it occurs on regularly bases, a customer will be satisfied depending on the needs to be fulfilled in every encounter.
3.4 Theories of service quality

There is a growing body of literature on the search for a general scale and instrument for the measurement of service quality in all or a number of distinct groups of service contexts. Such a scale might identify a set of service quality dimensions. The most widely used and debate tool is the SERVQUAL instrument developed by Parasuraman et al (1988). The underpinning theory is that customers' evaluation of the quality is based on the comparison between their perceptions of what the organisation should offer (expectations) and their perceptions of the performance of the organisation providing the service. However, more recently SERVPERF (Cronin and Taylor, 1992) has been extensively used to overcome some of the limitations of the first one. The proponents of this second model believe that the service quality should be defined simply in terms of perception. The most relevant models are presented in the next section.

3.4.1 Grönroos' model

Grönroos (1990) suggested a service quality model, which consists of two principle components; technical quality and functional quality. Apart from these elements, the corporate image is a crucial issue in Gronroos' model. Figure 3.1 presents the model which integrates product and service quality perspective from the customer's viewpoint.
Figure 3.1 shows how complex is the quality perception process. There are different kinds of elements that determine whether the quality is considered good, bad, or neutral. This model conceives service quality as the combination of the delivery service activities and the service itself, and the firm image.
**Technical quality** refers to what customers receive as a result of their interaction with employees. Because this aspect is relatively easy to measure objectively, it forms an important basis for measuring service quality (Palmer, 1994). Good examples of this aspect may be guestrooms in hotels, meals in the restaurant and so on.

**Functional quality** is the process of delivering the technical quality. In other words, customers are influenced by how the technical quality is delivered to them through their interaction with employees. In the case of fast food restaurant, a customer is greeted by an employee at the tills, his order is taken and dispatched as soon as possible. All of these kinds of experience during the service encounter are examples of functional quality.

**The corporate image** is the way consumers perceive the firm and it becomes crucial in the customer interaction with the company, and may affect how customers perceive technical and functional quality.

The level of perceived service quality is not exclusively determined by the level of the technical and functional quality dimensions, but rather by the gap between the expected and experienced quality (Grönroos, 1990). As it is evident from Figure 3.3, image is related with all the elements that composed the model. Therefore, it is important for any service firm to deal correctly with the image they sell, even if external factors, such as previous performance of the firm.

### 3.4.2 The SERVQUAL model

In an effort to know more about how to deliver better service, substantial research has been conducted and measurement models have been developed. As an attempt to establish a common measurement referent, a group of researchers, Parasuraman, Zeithaml and Berry (1985; 1988; 1994), developed a measurement scale for service quality called SERVQUAL, which can evaluate perceived service quality as a function of the difference between expected and perceived service. The results of this comparison show the how ho satisfied or dissatisfied a customer may be with the service provided.
(Clemes et al., 2001). The disconfirmation model was theoretically based on the disconfirmation model developed by Oliver (1980).

The SERVQUAL instrument seeks to measure service quality by separately scoring two parallel sets of scaled items, encompassing five different dimensions of service quality: tangibles, reliability, responsiveness, assurance and empathy. Figure 3.2 shows the elements of this model and the 5 gaps. The SERVQUAL model measures satisfaction with service quality as a “gap” between customers’ expectations and perceptions.
As Figure 3.2 shows, in the service encounter there are two main participants, the customer and the marketer. This model upper part corresponds to the consumer perspective, and the lower part related to the service provider or marketer. Four gaps have been identified on the marketer side and are considered the independent variables in this model. The presence of these gaps impedes the delivery of service. Each of the four first gaps is composed by a set of factors and their presence or absence determines the size of the gap. According to the authors, this model of service quality may be used to identify why a service is not meeting customer expectations. The fifth gap is on the consumer side and acts as the dependent variable; therefore it is placed in the upper side of the figure.
As it is a basic condition for any organisation willing to be successful, to determine customers' expectations and perceptions regarding service, the instrument was conceived to be used as a long-term program by firms to maintain and improve service quality (Bojanic and Rosen, 1994). This information will allow them to identify their strengths and weaknesses and develop the necessary strategies to improve the service.

These authors recognise the difficulties that researchers have faced to define and model quality “because of the difficulties involved in delimiting and measuring the construct” (p. 41). They suggest that service quality occur when “a customer’s perception of a delivered serviced equated with prior expectations” (Hope and Mühlemann, 1997, p.101). As it is expected the match is not always perfect leaving space for a possible gap between both elements.

This instrument was conceived to assess customer perceptions of service quality in service and retailing organisations (Parasuraman et al., 1988). It intents to measure the gaps between the expected service and the actual service delivered. The gaps on the service provider’s side (gaps 1-4) could impede to delivery the service customers expected. The gaps are described next:

**Gap 1: Consumer expectation - Management perception**

Executives may not correctly understand what features highly contribute to satisfy customers’ expectations in a precise moment in a service encounter. Reasons for failure could be originated in the lack of marketing research conducted by the service firm in order to identify customers needs. At the same time, the contact between managers and customers seems to be minimum and the opportunity to get feed back from the direct service user is lost. This distance between managers and customers may also occur between top managers and the company personnel, who is the direct contact with the customer. This gap has proved to be pivotal in ensuring a perception of high service
quality. If the supplier does not understand the customer’s expectations of the service it is unlikely that they will be met (Gabbott and Hongg, 1998).

**Gap 2: Management perceptions of consumer expectation - Service quality specifications**

Manager's commitment to service quality is fundamental to reduce this gap. As other aspects seem to be more relevant such as reduce cost and short-term profit, managers focus their attention on them rather than on service quality and the degree of satisfaction given to customers. This behaviour exemplifies a product-based approach instead of a user-based approach.

Another aspect that companies should consider in order to reduce this gap is the presence of formal goals relating to service quality, which should guide providers to understand what management wants to deliver. Delivering a standardised service, even in highly customised encounters, will help any organisation to deliver a service according to the quality specifications expected by the consumer. Zeithaml et al., (1991) recognise the difficulties that managers and direct delivers face and they suggest “the organisation’s technology can serve to standardise and regularise employee behaviour” (p. 412). At the same time, the size of this gap could be determined by the extent to which managers perceive they can meet customer satisfaction. Constraints such as personnel capability or economical limitations could make managers understand that meeting customers’ expectations is not feasible.

**Gap 3: Service quality specifications - Service delivery**

The third gap is between service quality and specifications that are made of expectations and the service delivery, or the ability of the supplier to deliver the quality that is necessary. Therefore, services providers should work together with managers in order to achieve organisational goals (Gabbott and Hongg, 1998). Teamwork becomes a major strategy that helps employees to feel that they are an active piece in the organisation and
that their co-operation is fundamental. As human beings, employees have different skills and personalities and they could be placed in the wrong position in the organisation, especially when these employees occupy customer-contact jobs. Managers should be aware of the weaknesses and strengths of the employee and avoid role conflict or role ambiguity as possible. Apart from the human resource, the appropriate technology also affects the performance of a good service and enhances the service employee’s performance.

Gap 4: Service quality delivery – external communication to consumers

Media advertising and other forms of communication can affect consumer expectations. The perception of poor service quality could be the result of a promised service that cannot be actually given by the service provider, or conversely by not communicating all that has been achieved to the customer, thereby missing an opportunity to raise customers’ perceptions. Therefore, organisations should avoid discrepancies between service delivery and external communication. They should avoid over-promising a kind service because unsatisfied customers affect the size of this gap considerable. In order to avoid internal misunderstanding, horizontal communication between the different departments is crucial.

Gap 5: Expected service – Perceived service

This gap is between customers’ expectations of service and perception of the actual serviced delivered and it is the result of the presence of one or more of the previous gaps. When this gap occurs, managers should concentrate effort to close or narrow the other four gaps in order to avoid gap 5 (Ekinci and Riley, 1998).

According to Zeithaml et al. (1990), operationalising the concepts of service quality and customer satisfaction depends upon examining this central gap by establishing customer expectations, understanding how these expectations are used to assess customer perceptions of the service, and finally how this influences consumer behaviour. The
model predicts a consumer's evaluation of the service as long as their expectations are met or exceeded, regardless of whether their prior expectations were high or low and regardless whether actual or absolute performance was high or low (Gabbott and Hongg, 1998). However, it has been pointed out (Iacobucci et al., 1994) that the level of expectation plays a significant role in the evaluation of the service.

In an attempt to meet criticism of this comparison of expectation and experience, Oliver (1993) and Tse and Wilton (1988) adapted the model to include some absolute level of quality so that consumer experience is conceptualised as being judged relative to some standard or level. One of the problems the expectations-gap model fails to consider is that expectations are a dynamic concept. The model would predict that as better than expected performance became the norm it would become more difficult to meet the consumer's expectations. Nearly perfect service would fail to exceed expectations and under this circumstance customers would be dissatisfied with this high level service (Gabbott and Hongg, 1998).

3.4.3 The SERVQUAL dimensions

Parasuraman et al. (1985) conducted in-depth interviews and focus groups and the results led them to conclude that, "irrespective of the kind of service the criteria used by customers to assess perceived service quality will be very similar" (Lee and Hing, 1995, p.296). In the first version of the instrument, Parasuraman et al. (1985) identified ten components of service quality (SQ): reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding the consumer, and tangibles. In subsequent modifications of the instrument (Parasuraman et al., 1988; 1991; 1994), the components were reduced to 5 dimensions due to overlap between them, after applying factor analysis to the results of the first version of the questionnaire, which included the original ten dimensions. Table 3.1 shows the final five dimensions.
Table 3.1: SERVQUAL dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>The ability to perform the promised service dependably and accurately.</td>
</tr>
<tr>
<td>Assurance</td>
<td>The knowledge and courtesy of employees and their ability to convey trust and confidence</td>
</tr>
<tr>
<td>Tangibles</td>
<td>The appearance of physical facilities, equipment, personnel and communication material</td>
</tr>
<tr>
<td>Empathy</td>
<td>The provision of caring, individualised attention to customers.</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>The willingness to help customers and to provide prompt service.</td>
</tr>
</tbody>
</table>


The final dimensions are reliability, assurance, tangibles, empathy and responsiveness, distributed in 22 items, using 4 or 5 items for each dimension. The instrument was applied initially to four service categories: retail banking, credit card, long-distance telephone, and product repair and maintenance. The final version of the instrument was shown to have good reliability and validity and could be used in different service industries with some changes (Bojanic and Rosen, 1994). The instrument has to be applied in two different moments, before and after the service encounter, to measure first expectations and then perceptions.

This model conceptualised service quality as the degree and direction of discrepancy, a gap, between customer’s expectations and perceptions. The results obtained after the application of the instrument twice were then subtracted to measure the gap between performance and expectation \( Q = P - E \). Both measured were recorded on a seven-point Likert scale.

3.4.4 The SERVQUAL scale

Rather than develop an instrument to directly measure the perception of service quality that is the outcome of this cognitive evaluation process, the SERVQUAL instrument
separately measures the expected level (E) of service and perceived (P) service (van Dyke et al., 1997). Then service quality scores, which are the gap between these two scores, are calculated as the difference between these two measures. The bigger the positive gap score (P>E), the better the service quality, alternatively, the bigger the negative gap score (P<E) the poorer the service quality.

Item scores represent the weights given to specific statements and they may be summed to produce dimension/attribute scores or an overall quality score. In the procedure to administer this instrument, respondents are asked to fill in an instrument that contains 22 items for customer expectations about a service firm. They have to respond on a seven point Likert scale ranging from a “strongly disagree” to “strongly agree”. The perceptions instrument is then administered to measure perceptions using 22 items and the same scale.

3.4.5 Criticism of the SERVQUAL model

The SERVQUAL instrument has been widely used to measure service quality in different areas. Notwithstanding its popularity and widespread application, SERVQUAL has received a number of serious criticisms on both empirical and theoretical grounds (Gundersen, et al., 1996; Cronin and Taylor, 1992; Van Dyke et al., 1997). Butler (1996) argues that the criticisms of SERVQUAL can be categorised into those associated with theoretical issues and those associated with operational issues.

Various deficiencies and limitations were identified both in the conceptualisation of service quality, and the operationalisation of this construct (Smith, 1995). Therefore, the results of research based on this instrument led to misinterpretation (Cronin and Taylor, 1992; Teas, 1993). The most important criticisms are related to the following areas:

**Dimensionality**

The dimensions identified by the SERVQUAL model are considered generic across service contexts. However, researchers who have used the instrument claimed that there
is lack of stability from context to context (Buttle, 1996). Researchers have found different dimensions depending on the type of service industry in study. Some studies suggest that the five-factor solution is not stable across service industries (Becker et al., 1999; Barbakus and Boller, 1992; Brown et al., 1993; Cronin and Taylor, 1992).

Barbakus and Boller (1992) claim that the number of service quality dimensions in dependent on the particular service being offered (Buttle, 1996). In relation to this shortcoming of the model, Pasuraman et al. (1991) suggest, in a later version, that data collection and analysis procedures followed by researchers could have caused the anomalies. In all cases, clear dimensions appear emerge either as a composite set of items or as a multidimensional structure but different from the SERVQUAL model (Ekinci and Riley, 1998).

As a general suggestion for further researchers, van Dyke et al., (1997) recommend that users of the SERVQUAL instrument should be cautioned to assess the dimensionality implicit in their specific data set in order to determine whether the hypothesised five-factor structure that has been proposed (Parasuraman et al., 1988, 1991) is supported in their particular domain.

Another constraint of the dimensions is that some of them overlap and therefore there is lack of discrimination, indicating that they are not different constructs (Ekinci et al., 2000).

The wording

In the original 22 items in the 1988 SERVQUAL scale, 13 statements pairs were positive worded, and nine pairs were negatively worded. Parasuraman et al. (1988) use the negative items to avoid systematic responses. However, this strategy seems to confuse respondents (Wason and Johnson-Laird, 1972).
Barbakus and Boller (1992) found that all the negatively-worded items loaded heavily on one factor while all positively-worded items loaded on another. They conclude that the wording of the items create data quality problems that affect the dimensionality and validity of the instrument. Parasuraman et al. (1991) have reworded all the negative items positively. It was also criticised the use of the “should” in the expectations items and they were changed to “will” in the revised versions of SERVQUAL.

**Gap measurement**

The SERVQUAL model is based on the assumption that service quality is calculated as the difference between the expected level of service and the experienced level of service \( Q = E - P \). The difference between these two scores is calculated in order to assess the gap between them. However, it seems that difference scores do not provide any additional information beyond that already contained in the perceptions component of the SERVQUAL scale (Barbakus and Boller, 1992). At the same time, the implicit assumption that subtraction of two scores accurately portrays the cognitive process that takes place when evaluating a service encounter seems overly simplistic (van Dyke et al., 1997, p.197).

The problem associated with the use of difference scores suggests the need for an alternative. Research suggest to use the perceptions-only method of scoring because these scores seems superior to perception-minus-expectation difference scores in terms of reliability, convergent validity, and predictive validity (Carman, 1990; Babakus and Boller, 1992; Cronin and Taylor, 1992; Parasuraman et al., 1991, 1994; van Dyke et al., 1997; Durvasula et al. 1999). Perception only appears to provide “a reliable and valid scale for operationalizing the service quality construct” (Cronin, et al, 1994, p. 130).

Barbakus and Boller (1992) found that the difference scores between expectations and perceptions do not provide any additional information beyond that already included in the perceptions instrument. Therefore, a significant number of researchers agree that the scores obtained by measuring perception only are more reliable (Ekinci and Riley, 1998).
3.5 Summary

The service sector has achieved a position in the industrial world with recognition from business executives. Nowadays it is impossible to deny the growth of this industry and the benefits it implies. Therefore, the last decades have faced an increase in research in this area and the interest for higher standards and profitability.

At the same time, it has become necessary to explain the underpinning theories that support the service sector. Researchers and practitioners have both joined efforts to provide more theoretical and empirical information that may help to understand how the service sector works. This implies how customers react to services along the different stages of the service chain as the actual service experience is a very complex one. There are aspects to be considered such as what makes customers repeat a certain service or recommend it to others; how they become loyal to a sort of service delivery (e.g., news agent, doctor, and supermarket).

The models developed have been extensively used to validate their principles and tested their practicality in the different areas of the service sector. Despite the number of research done in different fields, there is still work to be done to understand the way people evaluate services.
4.1 Introduction

Interest in services, and especially in service quality, has increased during the 1980s. The interest in quality actually started earlier in the manufacturing of goods that has to face a close control before the final product goes to the marketplace (Teas, 1993). Recently, higher education has been associated with the service sector as it provides an educational service to a large public, in a direct or indirect way (e.g., students, parents, the local community and future employers). The most important customers, namely students and their parents, on the one hand, and the university providers, on the other hand, have progressively changed towards a customer service orientation (Patterson et al., 1998; Conant et al., 1985).

The literature on students' satisfaction has basically focused on the evaluation of a list of attributes reported by the students in previous conversations (e.g., focus groups or in depth interviews). This list is then used in surveys to evaluate the quality of these attributes according to the students' perception of their performance (Thompson and Thompson, 1996).

Most of the studies have identified the attributes after consulting students as a way to ensure the elements they associate with a higher education institution (Gatfield, 2000; Joseph, 1998; Bourke, 1997). It has been explicitly emphasised that the higher education evaluation should be approached from the students' perspective (Bourke, 1997). Higher education institutions are, however, organisations that run a business which in the short and long run has an impact on students, academics, the community, the industry and the country as a whole. In the case of education providers recruiting fee-paying students, Orr (2000) has identified the key activities that they can control and has grouped them into
five categories. These categories include similar attributes identified from the students’ perspective and may contribute to the development of the dimensions proposed in this model.

Despite the number of studies dedicated to evaluating the quality of the service provided and the level of satisfaction, it seems that what is missing is a model that allows practitioners and academics to have a common instrument to assess quality in higher education. As an attempt to develop a methodology to evaluate service quality and students’ satisfaction in higher education, the dimensions to assess service quality proposed by Lehtinen and Lehtinen (1991) will be used as a starting point to identify the possible dimensions to use in higher education.

4.2 Service quality dimensions: Lehtinen and Lehtinen’s model

The model proposed by Lehtinen and Lehtinen (1991) defined service quality as the ‘qualitative levels of a service on different dimensions of the service production process’ (p. 288). The proposed dimensions are:

1. Physical quality
2. Interactive quality
3. Corporative quality

Each of these dimensions is attached to the basic principles of the policies and missions of the organisation and can be analysed separately in their essential attributes. They used restaurants to illustrate the existence and explicitness of the dimensions proposed.

4.2.1. Physical quality

Physical quality is the dimension of quality originated in the physical elements of the service, which includes both the quality of the material and the facilities. This could be
M. H. Pereda  Dimensions to measure student satisfaction

associated with the dimension ‘Tangibles’, proposed by Parasuraman et al.’s (1985) model, or with Grönroos’s technical quality (1983). Physical elements include two aspects, physical product and physical support instruments needed in a service process. Physical elements are represented in Figure 1 below.

**Figure 4.1:** Physical elements in service production

![Diagram of physical elements](image)


Physical products can be defined as a good or goods consumed during the service production process. As they point out, the physical product in the service sector could be even non-existent due to the intrinsic conditions of a service, which make it impossible to measure it technically (e.g., metres, kilos). In the example at hand, they point out that it is impossible to measure a good restaurant service technically. On the other hand, the second element, as shown in Figure 1 above, Physical Support, represents the framework which enables or facilitates the production of the service and can be easily measured.

As seen in Figure 1, the Physical Support is made of two categories: the ‘Environment’ and the ‘Instruments’. The first includes the layout of the place where the service is offered and the interior décor. The category ‘Instruments’ refer to all equipment necessary to provide the right service, creating the best condition or a base for a more productive interactive service quality. Their physical conditions (e.g., brand, model) can easily be evaluated and have a great effect on the perception of the service quality as a whole. However, it is important to notice that very high quality physical elements do not
necessarily raise the standard of service if the interactive quality, for example, is not up to the same standard.

4.2.2. Interactive quality

This is the dimension of quality originating in interaction between the customer and interactive elements of the service organisation. They are the actual resources from the company side in contact with customers. Physical equipment may eventually replace a person in the delivery of a service, as it is the case of an automatic bank teller or a recording message on the phone to make a booking.

The personal interaction may be replaced partially by equipment, as Figure 2 shows, but still most of the interaction is between customers and the service provider in a face-to-face interaction. Customers may also interact among themselves and this personal contact may eventually affect the general perception of the quality of service delivery and their level of satisfaction.

Figure 4.2: Interactive elements in service production

![Interactive elements](image)

Interactive elements

Interactive persons

Interactive equipment


4.2.3 Corporative quality

Corporative quality is the dimension of quality developing during the history of the service organisation. It is symbolic in nature and it concerns how customers perceive the image of the company, which may affect current and future customers supporting the company. If its quality is strong enough, the corporative quality may persist, at least for a
while, despite any deterioration that may be actually taking place in the industry. Corporative quality needs time to develop and may be experienced by a customer before having any direct contact with the company by word-of-mouth communication. Figure 3 compares the nature of the three dimensions in relation to quality and time development.

**Figure 4.3: Development of quality dimensions**

![Diagram showing development of quality dimensions](image)


Corporative quality often develops more incrementally, continuously, and intangibly from the beginning than physical quality which can be suddenly improved after an upgrading process. It is important to point out, however, that the described dimensions are closely related and the particular change in one may eventually have an impact on the others.

### 4.3 Higher education institutions: educational providers today

The three dimensions identified by Lehtinen and Lehtinen (1991) depend highly on the policies adopted by each higher institution. They are the educational providers and the quality of the service varies according to the resources, personnel capability and the institution general commitment to delivering high standards in a very competitive market.
It has been extensively identified in the literature that overseas students differ from local students in many aspects, although they both face the same pressure and challenge associated with the academic demands of their higher education degree. They may differ as regards study methods (Thompson and Thompson, 1996); interaction in class (e.g., passive or active) (Ladd and Ruby, 1999); language proficiency (Burns, 1991). A significant aspect that dramatically separates them from locals is their administrative status: overseas students pay full fees. The literature has reported that graduate fee paying students have a significantly higher level of service expectations than low or non-fee-paying students (Fram and Camp, 1995).

As previously stated, overseas students demand certain service attributes from tertiary education institution. The investment of resources and the privation of their environment (e.g., family, friends, language, culture) differ dramatically from local students and may make them more demanding as consumers of such a service as higher education (Gatfield, 2000). Therefore, the strategies and policies implemented by the institution have a significant impact upon the recruitment of candidates and the actual enrolment and subsequent satisfaction of both parties.

In the service industry but exclusively focused on the educational sector, Orr (2000) has identified some of the organisational determinants of success in the provision of fee-paying graduate courses. According to Orr, educational providers have the control over some of these variables and have grouped them as follows:

4.3.1 Teaching practices, staff competencies and backgrounds, disciplines offered and student-academic relationship

The quality of the service is not exclusive for overseas students; it should be based on general educational practice principles (Allerton, 1996). In general, the education literature has identified as best practise the use of leading-edge technology, selection of teaching staff with a genuine competency in the area being taught (e.g., academic qualification, teaching experience, active researcher), and interest in pedagogy and
programmes that reflect the skills and knowledge participants will require in their careers (Samsom and Weiss, 1995; Macfarlane and Lomas, 1994).

To offer recognised degrees, the curriculum needs, in the first place, to be officially accredited in the institution's home country. However, this has to be endorsed by accredited organisations which are considered rigorous by international standards locally and internationally, such as international associations (Orr, 2000). The programmes must be both flexible and customer focused in order to provide a updated service for a public that is changeable and demanding. The graduate fee-paying education provider needs to maintain links with international education networks and local and international industry to ensure that the curriculum is always focused on contemporary needs.

4.3.2 Facilities, accommodation and other services

The literature has identified that the study facilities and the accommodation provided by the institution are of significant values to fee-paying graduate students. This was found, in part, to be owing to the substantial time and financial commitment made by overseas students in general to study abroad (Stewart, 1991). Consequently, the evaluation of the quality of the course might be highly affected by the quality of technology and learning support facilities provided, as well as general services (e.g. sport centre, library, refectories). In relation to accommodation facilities, the service provided and its own characteristics (e.g., en suite room, price, availability, and location) would have a very high level impact on the perception of the quality of the institution as a whole (Stewart, 1991).

As these services represent a real value for students, the information send to prospectus students should be as accurate as possible in order to avoid disappointments and negative evaluation after arrival (Rogers and Smith, 1993; Mortimer, 1997).
4.3.3 Institution image and reputation, marketing, agents and agencies utilised

In service quality literature, institutional image and reputation have been constantly referred as an important determinant characteristic when selecting a higher education institution (Gatfield, 2000). The reputation seems to be based on different aspects. It is generally assumed that it comes from the academic preparation of lecturers, who have achieved a successful research and academic career, obtaining, in some cases, international reputation and credibility. The updated programmes and easy employability of their students have similar significant value. According to Kahan (1997), the University of Texas, for instance, has developed a conjoint programme with the largest regional independent accounting firm, which has gained considerable credibility in the field, attracting local and overseas students. The subject material has proved to be a significant variable to evaluate the recognition of an institution, which in this case has been endorsed by the industry.

4.3.4 Management of local legislation, community and commercial support and participation

It is very important for the education provider to manage the regulatory conditions, while maintaining sufficient flexibility to enable them to meet the specific needs of the paying graduate students. The literature identified the fact that support from the local or professional community in which the education provider operates could provide significant assistance with cash-flow and capital expenditure (Shank et al, 1995; Dudley, 1995). Despite a general assumption, the income generated from graduate fee-paying students is not enough to provide a consistent level of service. In fact, it has been identified by the interviewees who contributed with Orr's study (2000) that the institution facilities were, in most cases, entirely constructed or acquired with assistance of cash that was not directly generated from their students, mainly from government sources.
4.3.5 Administrative coordination, administrative flexibility and financial management.

The literature indicates that a lack of flexibility in accommodating students’ needs, slow responses to reasonable requests and the administrative error rates typically of large education providers were not acceptable to graduate fee-paying participants (Anon, 1997; Dudley, 1995; Swope, 1994). This has been confirmed by Mortimer (1997) who conducted a study to identify whether the information requirements of undergraduate students were satisfied by the institution. The objective was to evaluate the speed of response to a letter from a potential applicant, which requested pre-arrival information about specific courses, entry requirements, fees, availability and cost of accommodation, number of overseas students on campus, and application procedure. Results show incomplete and inconsistent information from the different institutions included in the study.

The literature also pointed out that financial management in large educational institutions tended to be driven by political and regulatory requirements rather than customer service priorities. Regardless of the administrative concerns, fee-paying students are more demanding and require satisfactory service, asking for value for money, as customers currently do in other kind of services.

The sources consulted by Orr (2000) (e.g., articles from tertiary education and higher learning services) were compared with case studies prepared from interviews with fee-paying course directors and students. As a summary of his study, Figure 4 presents the proposed model which includes the key activities and institutional outcomes for graduate fee-paying education providers.
The model presented is based on the assumption that both internal and external activities of a graduate fee-paying education provider will influence its institutional outcomes. The contents on each category have been classified under headings identified in the literature, though not conclusive, and listed in order of importance. Those categories listed near the top were found to be more important from the students’ and institution’s perspective. The shaded arrows in Figure 4 show the level of contribution to institutional outcomes of the internally and externally-focused activities that the analysed literature indicated could be expected.

Despite the opinions of the participants in Orr’s study (2000) (e.g., institutions representatives and interviewed students), the most important institutional outcome seems to be related to the financial status, supported by the fees profit and economic support from the government. This suggests that these organisations are operating under strong
economic influences that are not consistent with the expressed objectives of their institutions or the expectations of their students. No surprising, the category 'Students perceptions/satisfaction' has been placed on the bottom of the Institutional Outcomes. At the same time, student's satisfaction seems to be highly affected by the administration variables (e.g., facilities, accommodation, etc.), as the shaded arrow show.

As previously presented, the five categories identified by Orr (2000) described the variables that any higher education institution might control in order to provide an educational successful service. These descriptors point out some of the important variables that determine the success of any institution. Students as active participants might also look for similar characteristics when selecting a higher institution. The first three categories are closely related to what students need from an institution and therefore they might be useful for the identification of the exclusive dimensions to evaluate service quality in higher education. However, the last two categories (Management of local legislation, community and commercial support and participation; Administrative coordination, administrative flexibility and financial management) are exclusively related to the institution itself as they refer to legal and administrative issues and they are beyond the scope of the present study. Therefore, the present study is not including those two categories in the development of the instrument to evaluate the service quality at the university and students' satisfaction of their actual experience.

4.4 Service quality dimensions in higher education

Higher education has progressively become a competitive market where providers have recognised the importance of assessing the service they provide and promoted forms to get feedback from customers in order to update the service accordingly (Mortimer, 1999; Kennedy, 1995; Wilkinson, 1993). Researchers and practitioners have tried to identify what are the attributes in the educational area that have more impact on the level of satisfaction of students. Students have been used as respondents in many surveys as they are the core stakeholders in the educational service, as they are the raison d'être of the educational system.
Despite the number of studies on student satisfaction and the evaluation of service quality provided by the higher education institution, there is still a lack of consistency in the methodological strategies used to assess the service (Leonard et al 2003). Qualitative and quantitative methodologies have been used with a variety of variables and dimensions. The list of variables used in studies to assess higher education covers different areas based on the interest of the researcher and the objective of the study itself. Most of the studies have based their studies on a list of variables reported by students in focus groups to evaluate the education service (Wright and O’Neill, 2002; Ford et al., 1999; Gatfield, 2000).

As a service, some researchers in education have used the most popular model to measure service quality in the service sector, namely SERVQUAL. Despite the criticisms and the subsequent modifications, the SERVQUAL model offers a set of structured dimensions that cover most of the aspects of a service encounter. This model claims to measure service quality in any type of service organisation on five dimensions: tangible, reliability, assurance, responsiveness, and empathy (Parasuraman et al., 1988).

In the higher education sector, some studies have adapted SERVQUAL to their own requirements as it is not totally applicable to the education sector. Wright and O’Neill (2002), for instance, used responsiveness, reliability, tangibles, and contact to assess an on-line library service. Gatfield (2000) adopted the SERVQUAL seven-point scale, although he did not use the dimensions proposed by the model but a different set more relevant to the educational context (e.g., academic instruction, campus life, guidance, recognition).

In relation to the analysis used, most of the studies in higher education have used factor analysis as an alternative procedure to develop dimensions (Gatfield, 2000; Joseph, 1998; Ford, et al, 1999; Athiyaman, 1997; Ryland and King, 1992). Despite the different methodologies implemented, research in higher education shows a profusion of dimensions, some of them haven been replicated; others appear unique and without further research.
Acknowledging the complexity of the student satisfaction concept, Pate (1993) has split the literature on student satisfaction into three perspectives: a psychological-wellness type of satisfaction, a job-type satisfaction and a consumer-type satisfaction. These perspectives also could be arranged along a time-dimension: the psychological-wellness type of satisfaction represents factors related to past experience and personal characteristics; the job-type satisfaction represents future aspirations and hopes; and the consumer type of satisfaction represents factors students experience in their daily life.

The literature in students' satisfaction has extensively covered the three perspectives identified by Pate (1993). A great deal has concentrated on the psychological-wellness, focusing on the pre-arrival variables that affect students' decision and also the information and support provided on arrival. The second one has been recognised as an important variable in marketing which has become more competitive and demanding. The second category, the job-type satisfaction, may correspond with what by Lehtinen and Lehtinen (1991) define as corporative quality, which has been less studied. The last category seems, consumer perspective, seems to include any aspects of the service provided, from learning facilities to social interaction.

The following matrix in Table 4.1 shows relevant studies conducted within the higher education context, mainly with overseas students (Mortimer, 1997; Felix, 1993; Burns, 1991; Kinnell, 1989). This table has grouped the variables found in many studies under the three dimensions proposed by Lehtinen and Lehtinen (1991) as an attempt to have a classification for the variables in the educational setting. The horizontal axis is taken from their model and it places the variable of service quality in education under three headings, physical quality, interactive quality and corporate quality. The dimensions were redefined to adapt their meaning to the education context in an effort to cover significant variables under each category. The vertical axis gives the frequency of occurrence of each dimension in the higher education studies. As expected, there was no perfect match between the proposed dimensions in the matrix and those used in the studies found in the literature. When this was the case, an extra analysis of the content of the studies was done in order to determine whether the dimensions might be allocated
under any of the headings or not. If that was impossible, the dimension was placed on the right column of the matrix, showing its exclusiveness to a single study, under the category ‘unique’.

Table 4.1: Higher education evaluation matrix*

<table>
<thead>
<tr>
<th>Studies Author / Year</th>
<th>Physical Quality</th>
<th>Interactive Quality</th>
<th>Corporative Quality</th>
<th>Unique</th>
</tr>
</thead>
<tbody>
<tr>
<td>1    Mavondo et al. (2004)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td>Traditions and values</td>
</tr>
<tr>
<td>2    Wiers-Jenssen (2003)</td>
<td>--</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>3    Wright and O’Neill (2002)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td>Restricted to online library</td>
</tr>
<tr>
<td>4    Elliot and Shin (2002)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>5    Wiers-Jenssen et al. (2002)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>6    Clemes (2001)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>7    Gatfield (2000)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>8    Oldfield and Baron (2000)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td>SERVQUAL</td>
</tr>
<tr>
<td>9    Gatfield et al. (1999)</td>
<td>x</td>
<td>--</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>10   Ford et al. (1999)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>Practical component</td>
</tr>
<tr>
<td>11   Patterson et al. (1998)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td>Culture shock</td>
</tr>
<tr>
<td>12   Joseph (1998)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>Ideal location</td>
</tr>
<tr>
<td>13   Aldridge and Rowley (1998)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td>Equal opportunities</td>
</tr>
<tr>
<td>14   Athiyaman (1997)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td>Level of difficulty</td>
</tr>
<tr>
<td>15   Bourke (1997)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>16   Tomkovich and Al-khatib (1996)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>17   Soutar and McNeil, 1996</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td>SERVQUAL</td>
</tr>
<tr>
<td>18   Rogers and Smith (1993)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>19   Hampton (1993)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td>Effort to pass courses</td>
</tr>
<tr>
<td>20   Lapidus and Brown (1993)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td>Interaction with locals</td>
</tr>
<tr>
<td>21   Ryland and King (1992)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>22   Stewart (1991)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td>Campus safety</td>
</tr>
<tr>
<td>23   Ortinau et al. (1989)</td>
<td>x</td>
<td>x</td>
<td>--</td>
<td>Language training</td>
</tr>
<tr>
<td>24   Poleyn (1986)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

Total frequency 23 22 8

*Physical Quality (general services, teaching and learning facilities, accommodation); Interactive Quality (academic instruction, guidance, interaction with staff and students); Corporative Quality (recognition, reputation, value for money)
In order for a dimension to exist, it has to be included in more than three studies (Yuksel and Riley, 2001). This procedure seems to be adequate to identify and validate the existence of a dimension in higher education. The revision of the literature confirms that the three dimensions do exist. Physical quality and Interactive quality reach the same frequency of 17, while Corporative quality was identified in eight articles. The low frequency of the last dimension may be due to what Lehtinen and Lehtinen (1991) call the maturity process of Corporative quality. This dimension takes longer to develop and therefore its relevance and position within the institution will take time to develop and to be shown to the prospective students. Table 4.1, however, does not show the deeper level of analysis proposed by Lehtinen and Lehtinen (1991) as this level of abstraction is more difficult in the higher education literature due to the heterogeneous condition of the studies and the intrinsic characteristics of the educational service. The proposed subdivisions, however, were possible in the hospitality industry (Ekinci and Riley, 2001).

The intangible element of a service has led to increasing interest in the tangible evidence which is a feature of the service processes (Bitner, 1990; Clarke and Schidt, 1995). The physical evidence associated with a service can be designed to create a level of satisfaction. Customers cannot see as service and can hardly define its quality but they can see and experience various tangible elements associated with the service. During their studies, students are constantly in usage of facilities and places such as the library, IT service, classrooms and buildings in general where they study and attend lectures everyday. After the daily contact with the different services, students have developed some attitudes towards the service (Wakefield and Blodgett, 1994).

As Table 4.1 shows physical quality was extensively used in the studies as its external conditions are easily perceived and described by respondents in the different methodologies implemented (e.g. focus groups, in-depth interviews and questionnaires). Physical quality refers basically to the layout of the institution itself, buildings and general facilities and equipment for teaching and learning. It also includes services for the well-being of the students such as accommodation, health, food and recreation. All the studies reported some sort of physical quality as a way to evaluate the education service.
Research has identified that the physical environment of the campus is an important dimension of education service quality (Hampton, 1993; Shark et al., 1995; Bell and Shieff, 1990). Aesthetic value was recognised to have impact on the perception of a good service (Wiers-Jensen et al., 2002). Technological facilities and teaching support have been also been recognised as clue determinant of satisfaction (Gatfield, 2000; Mavondo et al., 2004; Bitner, 1990).

Students are always ready to express disappointment in relation to physical service as they are more concrete and it is relatively easy for students to point out the malfunction of any physical element. For example, they may regard IT equipment to be old-fashioned and seriously complain about service quality and value for fees that they have to pay (Oldfield and Baron 2000).

The second dimension, interactive quality, shows similar frequency to physical quality. The service encounter is a daily experience for students and staff and therefore the importance of the interaction between these two groups. Research has identified the importance of the interaction with the academy and staff, as they provide the core service in an educational context (Elliot and Shin, 2002). On the other hand, students also have daily contact with their classmates and the literature reports extensive research regarding the necessity of a social network to 'survive' in an alien environment. (Furnham and Alibhai, 1985; Schram and Lauver, 1988; Searle and Ward, 1989; Keating et al., 2002).

It has been suggested that frontline employers (e.g., administrative and academic staff) can influence the degree of satisfaction that a customer experiences (Bitner et al., 1990; Berry et al., 1985; Bateson, 1979). The degree of 'person-to-person' interaction present in education is very high and it may be considered as a 'pure' service sector (Solomon et al, 1985). Interaction between customer and service organization lies at the heart of service delivery. People that deliver the service are, therefore, of key importance both to the customer they serve and the employer they represent. Their general attitude and willingness to help customers all play a part in determine how satisfy the customers are with the service encounter (Oldfield and Baron, 2000). In many ways, employees may be
the only way a service provider can differentiate itself (Palmer, 1994). In the higher education context the first contact with the institution for overseas students may be someone from the School they are applying for or someone from the Registry office. This contact may determine whether the prospective student may go ahead in the registration process.

The personnel structure in any higher education included mainly administrative and academic staff. Students are constantly in contact with them and the adequate communication and coordination between these two significant groups is essential to ensure appropriate quality of service for students. Therefore, in any attempt to deliver a quality service, managers may consider this interaction as it has a significant impact on students' satisfaction (Oldfield and Baron, 2000). In higher education the interaction between students and their influence on each other is a powerful determinant of overall satisfaction (Oldfield and Baron, 2000)

Research has identified that the inability to befriend the local students results in high levels of dissatisfaction (Tseng and Newton, 2002; Thompson and Thompson, 1996; Patterson et al, 1998; Rogers and Smith, 1993). However, other attempts to prove this relation have led to no significant results. In general terms, the existence of a positive relationship between satisfaction and social activities is still not conclusive (Thompson and Thompson, 1996). Therefore, it has been considered important to include these two scales in the dimension Interactive quality in order to expand the information about the impact of social life on satisfaction.

The third dimension, corporative quality, has less frequency as it mainly appears in articles with marketing orientation (Bourke, 1995; Wilkinson, 1993). Students, especially overseas students, are looking for an exchange value that offers them a significant benefit in terms of international recognition of the degree obtained at the university, some extra value for the investment of money and personal sacrifice away from home. Despite the limited presence of corporative quality in the literature reported in Table 1, its position is
becomes stronger and significant in the educational industry as applicants are competing for admission in well-recognised institutions.

4.5 Definitions of the dimensions

Based on the previous discussion of Lehtinen and Lehtinen’ (1991) model and the study conducted in higher education by Orr (2000) and the general revision of the literature, the following definitions can be used in the present research:

4.5.1 Physical Quality

The facilities to support learning as provision of books and journals at the library, teaching equipment in the classrooms, IT facilities on campus and in the students’ halls are included in this dimension. The general layout of the institution and its location are also part of the physical quality dimension. For the purpose of this study, these variables have been distributed in two scales: (1) Physical equipment and special services (teaching facilities, buildings in general); (2) Accommodation facilities.

Physical quality will be defined as the physical environment provided by the institution in order to facilitate the appropriate conditions for the development of academic and social activities, as well as to satisfy basic needs (e.g., food service, health service, recreation, and accommodation).

4.5.2 Interactive Quality

In the service sector, the face-to-face interaction may highly determine the perception of a quality service and the level of satisfaction. In the educational context, students are exposed to a daily interaction with the university staff - academic and administrative- as well as classmates. Therefore, this dimension includes two interaction scales, the first one includes the interaction with lecturers and administrative staff; the second one refers to the social interaction with students and the activities shared on campus.
Interactive quality will be defined as the degree of accessibility of staff reflected in their willingness to help students and the professional performance of their tasks as well as the social activities promoted within the student community.

4.5.3 Corporative Quality:

Higher education institutions are strongly competing to get students to enrol into their programmes and some have orientated their marketing efforts towards overseas students. Corporative quality will be defined as the evaluation of the performance of the institution according to external criteria applied by academia and industry in a domestic and international context.

4.6 Summary

Service quality has become an important issue for researchers and practitioners alike. Higher education institutions as providers of a fundamental service have progressively changed towards a more customer service policy. Recently, higher education has been associated with the service sector as it provides an educational service to a large public, in a direct or indirect way (e.g., students, parents, the local community and future employers) (Patterson et al., 1998; Conant et al., 1985). As a service provider, the quality of the institution has been evaluated from different angles. The literature on students’ satisfaction has basically focused on the evaluation of a list of attributes reported by the students in previous conversations (e.g., focus groups or in depth interviews). This list is then used in surveys to evaluate the quality of these attributes according to the students’ perception of their performance (Thompson and Thompson, 1996).

Lehtinen and Lehtinen’s (1991) model proposed three different areas to be study: physical, interactive and corporative quality. Research on higher education has focused on the different variables related to these three dimensions. Physical and Interactive quality have extensively appeared been reported in the educational sector as Table 4.1 has shown.
Chapter 5

Research Methodology I: Q Methodology

5.1. Introduction

The study of human interpretation of the world is a very subjective one. The opinions and attitudes towards simple or complex issues are built upon previous social and family believes and traditions. The social, religious and political backgrounds contribute to the development of the individual’s set of opinions. Whatever the process, the study of human behaviour has proved to be very complex in itself. Efforts have been made to systematically study the subjective way of perceiving reality. Scales have been developed in order to reveal and categorise the subjectivity involved in every human opinion (Fishbein, 1967).

Q methodology, a practical technique, was fundamentally developed to reveal the subjectivity involved in any situation. It was invented in 1953 by British physicist-psychologist William Stephenson (1953) and is most often associated with quantitative analysis due to its involvement with factor analysis. Statistical procedures aside, however, what Stepherson was interested in providing was a way to reveal the subjectivity involved in any situation. Subjectivity, in the lexicon of Q methodology, means nothing more than a person’s communication of his or her point of view (McKeown, 1984). The opinion about any issue makes people to refer back to his own internal frame of reference. What Q methodology provides is a systematic means to examine, a framework that gives structure and forms to subjective individual’s opinion (Brown, 1994). The information obtained by Q methodology captures the subjectivity implicit in any situation as the information provided is always self-referent as imposition of meaning by the observer is avoided (Stergiou et al., 2002).
Q methodology helps researchers to make more intelligible and rigorous the study of human subjectivity. It basically serves researchers to model respondent's viewpoints. A general procedure aims to accomplish this modelling by asking a respondent to systematically rank-ordering a purposively sampled set of stimuli, called a Q-sample. Once the classification of the statements is done, data analysis occurs with the intercorrelations of the N Q-sorts as variables and factor analysis of the N x N correlation matrix. Resulting factors represent point of view, and the association of each respondent with each point of view is indicated by the magnitude of his loading on that factor.

5.2 The Q-sorting procedure

Q methodology fundamentally implies a sorting procedure of a set of stimuli (e.g., cards, pictures, objects) that is presented to the respondents for rank-ordering in a Q-sort. Fundamentally, a person is asked to rank-order a set of stimuli according to an explicit rule (condition of instruction), usually from agree (+5) to disagree (-5), with scale scores provided to assist the participant in thinking about the task. The operation is inescapably subjective in the sense that the participant is sorting the cards from his or her own point of view (McKeown and Thomas, 1988). The statements to be sorted are based on a specific topic and are selected from different sources. The statements are then presented to the subject who is instructed to rank-order them according to a 'condition of instruction' (e.g., from 'most like myself' to 'most unlike myself'). In other words, the placement of individual statement items is determined solely by the subject's point of view. The resulting statement array is called a Q sort and is the means by which a person models his or her opinions and feelings on an issue (Stergiou et al, 2002).

5.2.1. Sample classification

Q sort items may be selected along theoretical lines and sampled according to a preconceived design but these designations do not impose upon the sorting operation by the subject. As participants rank the statements or general stimuli in relation to the others statements, it is their own decision that gives meaning to the whole ranking process.
Thus, subjectivity is provided by an individual’s own operational terms in the placement of an item and its position in the total configuration (Stergiou et al., 2002). Q-samples can be classified into ‘naturalistic’ and ‘ready-made’ regarding the procedure for collecting the statements. When they are originated from respondents’ oral or written communicated (e.g., focus group statements), they are considered to be a ‘naturalistic’ sample. Any other kind of input to collect the statements is considered a ‘ready-made’ sample.

a) Naturalistic Q-sample: The advantage of this first category is twofold: (1) They mirror the opinions of the persons performing the Q-sorts; and (2) they expedite both the Q-sorting process and the attributions of meaning since the items are based upon the respondents’ own communications. This sort of sample reduces the risk of missing the respondents’ meanings or confusing them with alternative meanings deriving from an external frame of reference. Naturalistic Q-samples can be devised in several views. Interviewing is one of them and it represents an extensive source of information through the face-to-face interaction and the possible meanings of verbal and non-verbal inputs. However, time and economic constrains restrict its use. Another possibility is to collect data from written narrative from participants after period of time. McKeown and Craig (1978) used a collection of written evaluation of overseas students about their educational experience in an American college. Statements for a Q-sample were taken about their comments on their educational, social, and cultural encounters and reactions.

b) Ready-made sample: They refer to sources external to the study used to collect information. The sources used could be previous interviews and standardised scales, borrowed from attitude and attribute scales or personality scales. For instance, Q-samples of a number of studies were drawn from Anderson’s (1968) compilation of 555 personality-descriptive traits (McKeown, 1988). Hybrid types could combine naturalistic and ready-made Q-samples. This kind tends to be the most common as it allows researchers to use the available data.
5.2.2 Design principles

There are some basic techniques for choosing items and two different types can be identified, named, structured and unstructured Q-samples. Unstructured sampling is based on the assumption that items are relevant to the topic at hand without undue effort to ensure coverage of all possible sub-issues. This kind of sample provides a reasonably accurate survey of positions taken or likely to be taken on a given issue. The disadvantage is that some issue components might be under- or over sampled and, consequently,

On the other hand, structured samples are composed more systematically. They promote theory testing by incorporating hypothetical considerations into the sample, selected under conditions designated and defined by the researcher. This application could be inductive or deductive. Inductive designs emerge from patterns that are observed as statements are collected. The empirical task might be to discover whether and to what extent a sample of participants display patterns of subjectivity consistent with the initial dimensions.

In inductive designs, on the contrary, the dimensions that guide the final assignments and selection of statements are suggested by the statements themselves and are not obvious prior to statement collection.

5.2.3 Conditions of instruction of the Q-sorting procedure

In order to conduct a Q-sorting process, participants must follow a condition of instruction for sorting Q-sample items that has to be established in advance by the researcher. In the process of Q sorting, the person operates with statements or other measurable stimuli by rank-ordering them under some experimental condition. The operation is subjective as it is me rather than someone else who is providing a measure of my point of view, and the factors which emerge are therefore categories of operant subjectivity (Stephenson, 1977).
When performing a Q-sorting, a subject should have enough space to spread the statements cards along with the distribution markers (i.e., positive and negative scores and the 0 position in the middle). They reproduce the Q-sort continuum and assist the participant while sorting the cards. Markers often contain an abridgement of the condition of instruction, for example, ‘most like my point of view’ on the +5 marker and ‘most unlike my point of view’ on the -5 marker. Positive scores are commonly placed, in descending order, to the right of 0, and the negative ones on the left. It could happen that the participant only piles up the cards without using the markers but giving a value to each or the piles in the continuum.

A general procedure of a Q-sort session is describes below:

1. The researcher should read the instructions to be followed during the Q-sort session.
2. Subjects are given a set of cards and asked to read through the statements before starting the session.
3. Subjects might sort the cards into three initial piles; those that he agrees (on the right), disagrees (on the left) and in the middle those about which he feels either neutral or uncertain.
4. Studying the items on the right, the participant selects four items that are more like his position and place them under the +5 marker. The order of the items is not important, as they will all receive the same score when the data are recorded.
5. A similar procedure takes place with the pile placed on the left side; the items that are more unlikely to reflect the participant’s opinion are placed under the -5 marker.
6. The remaining cards will be sorted out under the other distribution markers. On second thought the respondent might decide that an item better fits under a different category and therefore he is perfectly free to switch it to another category at any time during the session. The reason for having subjects work back and forth is to help them think anew the significance of each item in relation to the others and the markers.
7. Some items might be placed under the middle marker as the participant might not feel neither positive nor negative towards a specific statement.
8. Finally, statement scores for the completed Q-sort are recorded by writing the item numbers on a score sheet that reproduces the Q-sort distribution.
5.2.4 Statistical analysis

The data to be analysed is the result of the statements validated during the Q sort sessions. Statements are validated only if 60 percent of the sample have allocated it to the same category; otherwise they are rejected (Hinkin and Schriesheim, 1989). This high value reduces the risk of overlapping statements with other categories (Ekinci and Riley, 1999). This proves at the same time that the dimension exists as participants have allocated statements under a specific dimension, legitimating the dimension itself. A minimum of four statements per scale should be obtained in order to obtain the reliability of the scale. In other words, the existence of the dimension is confirmed.

Data analysis in Q methodology typically involves the sequential application of three sets of statistical procedures: correlations, factor analysis, and the computation of factor scoring. Factor analysis is fundamental to Q methodology since it comprises the statistical means by which subjects grouped themselves through the process of Q-sorting. The factoring process commences once a matrix of Q-sort is provided.

As there is no right answer, it is for this reason that Stephenson always utilized factor analysis rather than variance analysis in analysing data obtained from Q technique. Variance analysis relies on the \textit{a priori} meanings built into a sample of Q statements, therefore is tied to prestructured effects. Q factor analysis, on the other hand, more nearly retains the meanings which participants give to the statements by preserving the operations involved in ordering the statements, as it is the participants' actual operations in Q sorting that give rise to the factors. The factors that emerge are therefore categories of operant subjectivity.

In the process of Q sorting, the person operates with statements or other measurable stimuli by rank-ordering them under some experimental condition. The operation is subjective much as it is \textit{me} rather than someone else who is providing a measure of \textit{my} point of view, and the factors which emerge are therefore categories of \textit{operant subjectivity} (Stephenson, 1977).
Whereas it is true that statements for a Q sample are typically selected in terms of a factorial or other representation of a theory, the supposed a priori meaning of the statements does not necessarily enter into the Q sorter's considerations when evaluating them. Participants select statements according to their own subjectivity (Brown, 1986).

5.3 P-sample: respondents

Q methodology has given more emphasis to the characteristics and the procedure of the Q stimulus rather than the actual selection of participants of a Q sorting test. Nevertheless, their importance has not been underestimated. P-samples tend to be small person-samples and single case studies as Q methodology is a method of and for the single case (McKeown and Thomas, 1988).

The selection of participants does not require special effort to ensure complete representativeness across respondents' characteristics. In general terms, availability is one criterion for creating person-samples (McKeown and Thomas, 1988). The number of participants ranges from 20 to 100 people (Tractinsky and Jarvenpaa, 1995). It has also been suggested that P sets of 30 to 50 are generally adequate for most studies of public opinion since the observational perspective is the respondent's own view (Brown, 1986).

P-samples may also be very specific as participants may be chosen because of their special relevance to the theoretical considerations of a specific research. For example, a researcher may be interested in the witnesses of a historical event (e.g., September 11th). On the other hand, intensive person-samples, as an extension of basic Q-methodological principles, can use a much larger sample when the purpose is to explore the dynamics of intrapersonal subjectivity. In this case there are systematic means for selecting individuals for in-depth analysis based on factors analysis conducted with a first step Q sorting test, which discriminate between general candidates and the 'purest' (McKeown and Thomas, 1988, p. 40).
5.4 Conditions of Q methodology

Statements are validated only if 60 percent of the sample has allocated it to the same category, otherwise they are rejected (Hinkin and Schriesheim, 1989). This high value reduces the risk of overlapping statements with other categories (Ekinci and Riley, 1999). This proves at the same time that the dimension exists as participants have allocated statements under a specific dimension, legitimating the dimension itself. A minimum of four statements per scale should be obtained in order to obtain the reliability of the scale. Summarising:

1. A statement needs to be allocated under the same category by 60 % of the sample in order to be legitimated.
2. A minimum of four legitimated statements must describe the category in order to validate the existence of the dimension.

These two conditions are interdependent as proving that a dimension exists is through finding stimuli, which describe them (Ekinci and Riley, 2001). The selection of 60% as a cut off value to legitimate a statement has been previously used when using Q methodology (Ekinci and Riley, 2001; Hinkin and Schriesheim, 1989). The output of the Q sorting procedure is a set of validated statements, a manageable number of validated statements to be used in the main survey.

5.4.1 General concerns about Q methodology

Despite relevant results in studies using Q methodology, shortcomings have been reported in the literature. McKeown and Thomas (1988) argue that the problems attributed to Q-technique are more apparent than real when is put to actual use. The forced-free distinction, for instance, has been controversial. Although the Q-forced distribution means that a certain number of items is prescribed for each rank, respondents retain complete freedom in placing the items anywhere within the distribution on the score sheet. The subjects alone determine the meaning of the poles of the opinion
continuum when they place their responses. The use of forced distribution is merely a
device for encouraging subjects to consider the items more systematically than they
otherwise might.

Another criticism that has been mentioned is the typical sample sizes used in Q-studies,
which may affect the generalisability of findings. This is just a misunderstanding of the
purpose and techniques underpinning Q methodology. It was never meant to generalise to
populations (Dennis, 1986). On the other hand, the main strength of Q methodology is
its usefulness for theory and testing. It can be used to test assumptions or hypotheses
about people’s beliefs and opinions and identify patterns of behaviour (Stepherson, 1980).
Another advantage is the number of participants required, as it less expensive and time
consuming. Comments from participants suggest that the game-like nature of the Q
sorting process can be perceived as pleasant and entertaining, better accepted than a clip
board survey or a stressful interview (Davis et al, 1987).

5.5 The Q study

The rationale for using Q methodology was to create a bank of statements that represent
the dimensions suggested by Lehtinen and Lehtinen (1991) and to conduct experimental
tests to ascertain whether the stimuli, generated during the Q sorting tests, can be
matched against the conceptual definitions. The three dimensions should be exclusively
described and differentiated in order to ensure their existence. The initial set of
statements used in the preliminary constructions of bank of statements to be used in Q
sorting was generated from previous questionnaires in the area of higher education and
after discussion with the supervisors and researchers who have already used this
methodology. The three dimensions used in this study should be exclusively described
and differentiated as a way to test whether they are valid as evaluative constructs.

The three dimensions used in this study were physical quality, interactive quality and
corporative quality.
1. Physical quality

The literature includes under this heading the general services and studying facilities available in a higher education institution. Some studies also include general services for the student well-being such as counselling and career advice. Some studies also include the accommodation system as it is an important variable when coming from abroad. The categories of variables included in this study are presented in Figure 5.1.

Figure 5.1: Physical Quality

<table>
<thead>
<tr>
<th>1. General services</th>
<th>2. Accommodation</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Classroom facilities</td>
<td>a. Provision</td>
</tr>
<tr>
<td>b. Computers and printers</td>
<td>b. Price</td>
</tr>
<tr>
<td>c. Library</td>
<td>c. Internet provided</td>
</tr>
<tr>
<td>d. Catering services</td>
<td>d. Physical condition</td>
</tr>
<tr>
<td>e. Counselling</td>
<td></td>
</tr>
<tr>
<td>f. Sport facilities</td>
<td>3. General layout</td>
</tr>
<tr>
<td>g. International office</td>
<td>a. Cleanliness</td>
</tr>
<tr>
<td>h. Career advice</td>
<td>b. Security</td>
</tr>
<tr>
<td>i. Health service</td>
<td>c. Parking facilities</td>
</tr>
<tr>
<td></td>
<td>d. Location</td>
</tr>
</tbody>
</table>

2. Interactive quality

It has been proved the value of a good interaction with the staff, both academic and administrative because students require information and support from them for many of their duties they have to fulfil during their stay at the university. Teaching quality and accessibility of the personnel have proved to be fundamental for the student well-being. Students also interact on daily bases with classmates and may develop social networks as well as part of the social necessities. For many students, the process of studying not only represents the acquisition of certain skills and theoretical knowledge. It is also related to personal growth and social development and these factors could negatively influence their views on related aspects of their study situation (Barnett, 1992). Therefore, the university may organise and promote activities to facilitate the social integration among
students. Figure 5.2 shows the outline of two kinds of interactions included in this dimension for the current study.

**Figure 5.2: Interactive Quality**

<table>
<thead>
<tr>
<th>1. Interaction with academic and administrative staff</th>
<th>2. Interaction with students</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Responsiveness</td>
<td>a. Social activities</td>
</tr>
<tr>
<td>b. Qualified personnel</td>
<td>b. Ethnic communities</td>
</tr>
<tr>
<td>c. Accessibility</td>
<td>c. Social integration</td>
</tr>
<tr>
<td>d. Service provided as promised</td>
<td>d. Friendly atmosphere</td>
</tr>
</tbody>
</table>

Faculty members are particularly important as formal and informal socializing agents for students in the college experience. To varying degrees, faculty can aid in student academic achievement, college satisfaction, intellectual and personal development (Lamport, 1993). The ‘relative fit’ with faculty orientation has been shown to be associated with student’s satisfaction with their academic programme. Researchers have presented evidence suggesting that students who receive effective academic advising tend to feel positive about the institution as a whole (Patterson et al., 1998). It has been also be reported the likelihood of a student recommending the university to friends/relatives was heavily influenced by the extent of interaction between the students and university personnel (Browne et al., 1998).

3. Corporative Quality

Student satisfaction may also be associated with such future rewards as the change of being recruited by a high-status employer, or starting an interesting and well-paid job after graduation (Pate, 1993). In other words, positive or negative views regarding the future utility of the university degree may affect the level of satisfaction. Figure 5.3 shows the outline of variables included in this dimension for the current study.
Based on the above discussion these three dimensions seem to cover a wide range of variables of service quality that influence the experience of overseas students. Their performance may affect the level of satisfaction students report.

It has been reported that most unpublished dissertations in universities in the UK, of both levels, Master dissertations and PhD theses, have used similar methodology to collect data from overseas and local students (Leonard et al., 2003). The statements have been produced during focus groups or in-depth interviews with students or staff. Those procedures have been used as source of information for developing statements to be tested in the survey. None seem to have used Q methodology as a way to validate statements before the questionnaire.

### 5.5.1 The pilot test

An initial pilot test was conducted with 5 subjects in order to check the instructions and any wording problem with 107 statements to be used in the first Q sort session. This procedure may help to improve the quality of the items being considered for a Q-sample (Stephen, 1985). The statements were also presented to colleagues for corrections. The list of attributes to evaluate a service could be extremely large and it would be impractical to present extremely long lists to the respondents (DeMoranville and Biesnstock, 2003).

---

**Figure 5.3: Corporative Quality**

| 1. The University has networks with  
   a. Local employers  
   b. International employers  
| 2. International accreditation and updated academic programmes  
| 3. University recognition  
   a. Internationally  
   b. Student’s home country  
| 4. Applicability of the degree for future employment  

---

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Participants in the pilot test followed the same instructions prepared for the Q sorting study, as it was planned to check whether they were clear enough for the participants as well to determine the time of response. As part of the instructions sheet, the definitions of the three dimensions were also provided. The instructions of the Q procedure were based on the fundamental theory of Q methodology (McKeown and Thomas, 1988) and previous empirical studies that have used Q methodology (Ekinci and Riley, 2001), as well as those suggested by members of the Q methodology discussion group (http://www.qmethodology). The Q sorting instructions are presented below:

The instructions provided to the participants in both Q sorting tests are presented blow:

**Survey**

Your opinion as a university student is very important to evaluate the service provided by a higher institution. The Q sorting is a technique that helps to examine people’s opinion about any issue. You will be asked to express your opinion about three aspects related to the higher education context: **physical quality, interactive quality and corporative quality**. Remember that there is no wrong or right answer and that we are not evaluating you. The definitions and instructions are provided below.

**Instructions**

1. A deck of statements will be distributed corresponding to three definitions of service quality in the area of higher education. It includes a total of 104 statements numbered at random. All the statements **must be placed** under a category.
2. The statements correspond to the three definitions at hand: **physical quality, interactive quality and corporative quality**.
3. Read through the definitions and the statements. Begin by grouping the statements into three piles corresponding to each of the definitions provided.
4. Then place each set of cards according to the categories ‘**Most important**’ to ‘Least important’ and ‘**Not relevant**’.
5. The first category, ‘**Most important**’ represents the aspects that a higher education institution must provide according to you and the kind of service you expect to have during your stay abroad as a student. The second category, ‘**Least important**’, refers
to those aspects less important. The last category, ‘Not relevant’, offers you the opportunity to allocate statements that seem irrelevant to you, although they can be placed under a specific dimension.

6. A score sheet has also been provided. It contains the scale where you should record your responses by entering the number of the statement from the stimulus cards into matrices corresponding to the three definitions and the response categories ‘Most important’ to ‘Least important’ and ‘Not relevant’.

7. Reallocate the statements if necessary, and remember to place all the statements under a definition in the score sheet.

When participants completed the sorting procedure, the score sheet was checked to confirm that all the statements had been sorted, as this is an important condition in this methodology. Subjects were asked to make any comment about the procedure and any difficulty faced during the activity. As a general comment, participants agreed that the procedure to group all the statements into three piles under the three dimensions provided was a useful starting point for the activity. Despite the total number of statements (107), the average time required to sort the statements was approximately an hour. They reported no problem in understanding the three definitions. The main difficulty was to understand some statements or to place under a category. Comments were made about the unbalanced number of statements in the different dimensions.

As a result of this part of the methodology procedure, some modifications in wording and in the sequence of the instructions were made. Although the initial purpose was not to eliminate statements, as the number of participants was no enough, their comments influenced the process of rethinking some statements. And as result, some statements were included or replaced by new ones, reaching a new total of 104 statements to be used in the first Q sorting session.
5.5.2 The first Q sorting test: the sample

The procedure followed during the implementation of the methodology used in this research (Chapters 5 and 6) is described in the following flow chart. Two different stages for the Q sorting procedure were organised to validate the statements presented to the participants. The final set of statements was then included in the main survey with the other variables. Figure 5.4 describes the steps of the implementation of Q methodology in this study.
Figure 5.4: Methodology flow chart

**Development**

**Stage One**

**Objectives**

To establish the dimensions to evaluate higher education service quality

**Methodology**

Q sort technique

**Sample**

30 subjects selected at random

**Analysis**

Q sort statistical test

**Outcome**

Validated statements transferred to survey two

---

**Main research**

**Stage Two**

To explore and confirm the initial findings from Stage One

**Methodology**

Q sort technique

**Sample**

30 subjects selected at random

**Analysis**

Item analysis

**Outcome**

Modifications transferred to Survey Two

---

**Final Survey**

To explore and confirm the findings from the Q tests, To test all the study variables

**Sample**

308 Management overseas students

**Analysis**

Students satisfaction based on the quality perception of university service attributes Correlation with demographic variables

**Outcome**

Consolidation of Survey one and two, Final findings

---

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The focus of interest of this study is on overseas students who are defined as those students who pay full composition fees (which include fees for tuition, registration, examination and graduation) in a UK university. The classification for fees purposes includes two main categories: 'home' student and 'overseas' students. This classification is based on the current classification of students by the Education (Fees and Awards) Regulations 1997 (Statutory Instrument 1972) which came into effect on 1 September 1997.

As the study focuses on overseas students, the criteria for selecting participants for the Q session was that they were overseas students, enrolled in a post graduate programme (Master or PhD) in different departments at one university in the UK. Despite the target of the study, it was difficult to find a group of 30 overseas students willing to do the activity. At this stage, it was accepted to include some 'home' students for the study, six from the European community (20.0%) and two from the UK (6.6%). The inclusion of local students was suggested as a control group as the variables affecting students' satisfaction could be associated with the general study experience rather than the particular characteristics of overseas students (Leonard et al., 2003). The results of these students would be compared to the rest of the group in order to identify any possible relevant difference between local and international students. Despite the inclusion of European community members and locals, most of the participants were overseas PhD students (73.3%) from different departments in the same university in different year of their research degree.

Another condition for a candidate to be part of the sample was to be enrolled in the post graduate programme for at least a semester, as the experience in the university is a basic condition to evaluate the service. Eligible subjects at this time of the year were exclusively PhD students, as Master students were still in the first semester. The group of participants was composed of 18 males and 12 females from different nationalities, from six EU countries (UK, Italy, Greece, Spain Germany and Cyprus). The largest group of overseas students was from China (9 students), followed by South America (7 students),

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and one respondent from Thailand, Barbados, India, Syria, Lebanon and Kenya (Appendix 1, Table 1).

Nearly half of the subjects were allocated under the first age group (25 to 30 years old), which represents 46.6% of the sample (14 participants), and a slightly lower number of subjects were under the second category (12 participants were between 31 to 35 years old). The third category (36 to 40 years old) includes only 4 students. No subject was identified under the next two age groups (41 to 45 years old; 46-over). It seems that the general tendency especially in China is to start a PhD course just after a Master degree, which is around the age range of 25-30.

5.5.3 The procedure

The session took place on the University campus as it was a convenient location for the students. The number of statements for this session was 104, distributed as follows: (a) Physical quality: 34; (b) Interactive quality: 38; (c) Corporative quality: 32. Cards were numbered randomly from 1 to 104 and the number was allocated at front of each statement. Subjects were given a set of cards for the activity and a score sheet where they recorded their responses, entering the number of the statement under the category they considered appropriated.

When participants completed the sorting activity, they informed the investigator, who verified whether all the statements were allocated. The average time required for sorting all the cards was 1 hour. Most subjects claimed to have some difficulty on the sorting process as it was a long procedure. They especially commented about the difficulty in classifying the statements under a specific dimension. The different academic responsibilities of this group of participants made it extremely difficult to agree a place and a date for the Q session.
In relation to the categories “Most important”, ‘Least important’ and ‘Not-relevant’, subjects reported that once the dimension identified for each statement, it was a straight procedure to determine the level of importance they gave to the statement.

5.5.4 The findings

The result of the Q session was a set of 85 validated statements. Results suggest that these dimensions have adequate internal consistency as they were selected by more than 60% of the participants. The total number of qualifying statements was distributed as follows: 38 were placed under Physical quality, 29 belong to Interactive quality, 18 were placed under Corporative quality, representing 44.0%, 34.5% and 21.4% respectively (see Appendix 4, Table 4). Table 5.1 shows those statements that were allocated under each of the three dimensions by at least 80 percent of respondents. They highest frequency was identified under the category ‘most important’.
Table 5.1: The best five statements per dimension

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Frequency 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Most Important</td>
</tr>
<tr>
<td>Physical quality</td>
<td></td>
</tr>
<tr>
<td>Student’s accommodation is safe (item 17)</td>
<td>80.0</td>
</tr>
<tr>
<td>The common areas in the university accommodation are clean (item 83)</td>
<td>73.3</td>
</tr>
<tr>
<td>Rooms are provided with the internet connexion (item 7)</td>
<td>70.0</td>
</tr>
<tr>
<td>The campus computers are sufficient for the student population (item 14)</td>
<td>70.0</td>
</tr>
<tr>
<td>The students’ rooms are comfortable (item 68)</td>
<td>66.7</td>
</tr>
<tr>
<td>Interactive quality</td>
<td></td>
</tr>
<tr>
<td>Staff react politely to students queries (item 46)</td>
<td>90.0</td>
</tr>
<tr>
<td>Teaching performance is of high quality (item 16)</td>
<td>80.0</td>
</tr>
<tr>
<td>Lecturers stimulate critical analysis (item 78)</td>
<td>73.3</td>
</tr>
<tr>
<td>A personal tutor is allocated for individual advice (item 20)</td>
<td>70.0</td>
</tr>
<tr>
<td>Lecturers have adequate time for consultation (item 25)</td>
<td>70.0</td>
</tr>
<tr>
<td>Corporative quality</td>
<td></td>
</tr>
<tr>
<td>The university maintains links with local industry (item 66)</td>
<td>83.3</td>
</tr>
<tr>
<td>The university has contact with international employers (item 39)</td>
<td>76.7</td>
</tr>
<tr>
<td>A degree from this university has an excellent reputation at in my home country (item 80)</td>
<td>76.7</td>
</tr>
<tr>
<td>A degree from this university makes a significant difference in one’s CV (item 103)</td>
<td>76.7</td>
</tr>
<tr>
<td>The university maintains links with international industry (item 62)</td>
<td>76.7</td>
</tr>
</tbody>
</table>

Results from Table 5.1 shows the distributions of responses given by the participants in relation to the dimensions and how they evaluated the importance of each item using the three categories included in this study. The criterion used to rank the items presented in
Table 5.1 was the percentage obtained by each item in the category ‘Most important’, as this shows how the participants evaluate the variables included in sorting test. The last column, ‘Total percentage’, shows the frequency of responses given to each item in a dimension, which tends to be higher for all sample presented in Table 5.1. This means that these items apart from being very important for the respondents were clearly identified and allocated under a common category, reaching high frequency. The results of each dimension is analysed separately in the following session.

5.5.5 Analysis of results per dimension

5.5.5.1 Physical quality

The analysis of the results provides information about the total frequency of a statement under a dimension, and at the same time, how important it is for the respondents, which adds an extra value to the item itself. Physical quality was the dimension with the most common approved statements as only one statement (item 32: ‘The size of the class is small’) was rejected out of 34 that were included in this dimension in the Q sorting test. During the subjective process of sorting, items undergone transformation determined by the participants’ responses. In this dimension, one statement (item 58), which was initially thought to belong to this dimension, was allocated by the respondents under Interactive quality. At the same time, six items from the other dimensions were added to Physical quality, as result of the Q procedure; three were originally under Interactive quality (items 42, 90 and 75) and three from Corporative quality (items 10, 70 and 72). The new total for Physical quality is 38 items.

Results also show that most of the statements were considered important according to the participants who allocated them under the category ‘Most important’. The higher percentage of response under this category demonstrates that most of the statements were clearly allocated by most of the participants. Physical quality includes two main aspects: accommodation (13 items) and general university service (21 items). The first one refers to the accommodation provision and its different characteristics and conditions are listed below in Table 5.2.
Table 5.2: Accommodation characteristics

<table>
<thead>
<tr>
<th>Accommodation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Wide range of accommodation</td>
</tr>
<tr>
<td>2. Sufficient accommodation</td>
</tr>
<tr>
<td>3. Safety</td>
</tr>
<tr>
<td>4. Cleanliness</td>
</tr>
<tr>
<td>5. Internet connexion</td>
</tr>
<tr>
<td>6. Affordable price</td>
</tr>
<tr>
<td>7. Modern</td>
</tr>
<tr>
<td>8. Comfortable</td>
</tr>
<tr>
<td>9. Enough shared facilities</td>
</tr>
<tr>
<td>10. Fairly allocated</td>
</tr>
</tbody>
</table>

Results show that the main concern in relation to accommodation was safety (item 17: ‘Student’s accommodation is safe’), reaching 80% under the category ‘Most important’. This is followed by two more variables related to accommodation, cleanliness of the common areas in the university student halls (item 83) and Internet provision (item 7).

The importance given to accommodation by the respondents highlights the role that accommodation has for overseas students, as the room has become ‘home’ and presents more than a place to sleep. Most of the items related to accommodation obtained high rank but one which evaluates the modern appearance of the common areas in the students residential accommodations (item 63). The highest frequency of response of this item was under the category ‘Least important’, reaching 60 per cent; while under ‘most important’ the result was only 33.3 percent.

The second category under Physical quality was university services and general characteristics. Table 5.3 shows the categories included.

Table 5.3: University services and general characteristics

<table>
<thead>
<tr>
<th>University services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library</td>
</tr>
<tr>
<td>Computers</td>
</tr>
<tr>
<td>Restaurants</td>
</tr>
<tr>
<td>Sport centre</td>
</tr>
<tr>
<td>Health centre</td>
</tr>
<tr>
<td>Location</td>
</tr>
<tr>
<td>Aesthetic aspects</td>
</tr>
<tr>
<td>Parking</td>
</tr>
</tbody>
</table>
Among those services, the most important aspect was computer provision, which is a fundamental service in the study life. The number of computers and the conditions of the equipment apart from the availability were all evaluated high by respondents. The number of computers available reached 70% (item 14) and appears in the best five statements per dimension in Table 5.1. This is followed by those items referring to the external appearance of the institution associated with cleanliness (item 31 and 37), both reached 66.7 and 60.0 per cent respectively. The high evaluation of this aspect may be associated with the necessity of having a nice general atmosphere that motivates students to study and feel comfortable at the university. It has been suggested that order and cleanliness may provide emotional stability in an alien environment. The next group of statements refers to the provision of sport facilities on campus (items 65 and 34), with highest frequency allocated under 'Least important' rather than under 'Most important', 43.3 and 50.0 percent respectively. This may reinforce previous findings that suggest that the most important physical facilities are associated with technology, which has an impact on the learning and teaching performance.

5.5.5.2 Interactive quality

Interactive quality includes 38 statements, which were distributed into two categories: (1) interaction with academic and administrative staff (20 items) and social interaction with students (12 items). The first category refers to the evaluation and benefits obtained from the interaction with the personnel at the university. It includes variables that measure academic quality, such as knowledge, teaching methodologies, material, assessment and personal contact with students. It also includes the service provided by administrative staff to students. The most important variable in this dimension was 'Staff react politely to students' queries' (item 46), as 90 per cent of respondents placed it under the category 'Most important'. This is followed by teaching quality, reaching 80 per cent under the same category, followed by stimulation of critical analysis (73%) and some other lecturers' responsibilities such as time for consultation (70%) and their role as a personal tutor (70%).
Statements referring to the second category, although with a high frequency in the dimension, tend to be considered by the respondents as less important than those from the first category. They refer to the social interaction with students, local and overseas students and include the activities planned by the institution to motivate and facilitate this interaction (e.g., clubs, international parties). Literature has extensively shown that overseas students tend to develop a friendship network to have emotional support while being abroad (Guzman and Burke, 2003; van Oudenhove and van der Zee, 2002). However, the variables in the Q-sort sample received a different response by the participants, as Table 5.4 shows.

<table>
<thead>
<tr>
<th>Interactive quality</th>
<th>Most important</th>
<th>Least important</th>
<th>Not relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a chance for social integration (item 81)</td>
<td>36.7</td>
<td>33.3</td>
<td>10.0</td>
</tr>
<tr>
<td>It is easy to make friends on campus (item 59)</td>
<td>30.0</td>
<td>50.0</td>
<td>13.3</td>
</tr>
<tr>
<td>It is easy to interact with local students (item 76)</td>
<td>20.0</td>
<td>46.7</td>
<td>20.0</td>
</tr>
</tbody>
</table>

The distribution in Table 5.4 shows that, although the answers were mostly under the category ‘Least important’ (item 59 and 76), the number of responses in the other categories was still high, especially under the category ‘Not relevant’, which obtained a much higher degree of consensus than other variables of the same dimension. This may suggest that the social interaction with students was perceived as less important by these respondents, despite what previous studies about social life may suggest. Students may feel that they rather have a better interaction with staff (academic and administrative) to get information and overcome any difficulty relating to their academic life and eventual success.

Despite the general high frequency found in this dimension, Interactive quality is the dimension with the highest number of rejected items, as they did not meet the qualifying
criteria (60 % of the sample must have allocated it to the same dimension). Out of an initial total of 38 statements, 10 were discarded (8 from the first category and 2 from the second one). During the sorting process, validated statement suffered some changes in this dimension. In the final distribution, this dimension lost three statements (items 42, 75 and 90), which were transferred to Physical quality. At the same time, four items have been added to this dimension, three from Corporative quality (items 95, 97 and 87) and one from Physical quality (item 58), reaching a final representation of 29 items under this dimension.

A particular item (‘Lecturers are hard to contact individually’, item 8) was reported as being difficult to be classified under any of the categories in Interactive quality. As a result, it has been placed under all the three categories: ‘most important’ 46.7%, ‘least important’ 30.0% and ‘not relevant’ 23.3%, respectively. The last category has a higher frequency in relation to the general pattern of response which means that despite the clear allocation under Interactive quality the opinion of the students is not clear. Students’ comments in relation to this item suggest that the wording was confusing and should be reconsidered its wording for the second Q session.

5.5.5.3 Corporative quality

The third dimension, Corporative quality, consisted of 32 statement, grouped under two headings: value for money (19 items); and recognition from home and external institutions (13 items). The first category refers to the investment in physical and human resources, such as staff training and external visitors who may reinforce the quality of the institution itself. It also includes the links with the industry, local and international, which may benefit students in the future. The second category emphasises the international recognition of the institution due to its standards, ranking, accredited programmes and all the implicit benefices for students.

Results show that respondents recognise how important are the actual links of the institution with the industry, local and international. The reputation of the institution and
the eventual impact of their degree on their professional life seem to be a significant aspect according to the respondents. However, one of the variables reached 100% frequency in any of the categories as some answers were placed under the other two dimensions, Physical and Interactive quality. Despite this, all of the statements were basically allocated under the category ‘Most important’, as they have the highest frequency in this category. This may suggest that the variables were considered important despite no reaching a frequency of 100 per cent in this dimension. A close look at one of the statements shows a different pattern of response. Item 60 ('A degree from this university is well recognised by the tourism and hospitality industry', item 60) had the highest frequency under ‘Most important’ but the next frequency was under ‘Not relevant’ (30%). This may be the result of the subjects’ perception, as they were not tourism and hospitality students and therefore, this variable was irrelevant to them.

Despite the interest expressed for the variables under Corporative quality, this dimension lost nine items out of initial total of 32, which were rejected, as they did not reach the 60% requirement. At the same time, six of the validated statements of the new total (24 statements) were placed under another dimension which leads to a final number of 18 statements under Corporative quality.

As stated before, the purpose of this study was to validate the existence of the three proposed dimensions in the higher education through the selection of statements by the participants. Apart from those items that were rejected, the three dimensions suffered different changes as ten validated items were allocated under a different dimension by the respondents, as shown in Table 5.5. This proves that the validity of the researcher’s expectations or hypotheses are always tested against the Q-sorting behaviours of the subjects (McKeown and Thomas, 1988, p. 31).
<table>
<thead>
<tr>
<th>Statements</th>
<th>Previous Dimension</th>
<th>Final Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The library opening hour system is convenient (statement 42)</td>
<td>Inter 1</td>
<td>Phy 1</td>
</tr>
<tr>
<td>2. The Accommodation Office provides efficient service (statement 90)</td>
<td>Inter 1</td>
<td>Phy 1</td>
</tr>
<tr>
<td>3. The health centre offers adequate service (statement 75)</td>
<td>Inter 1</td>
<td>Phy 1</td>
</tr>
<tr>
<td>4. Staff show sufficient professionalism (statement 95)</td>
<td>Corp 1</td>
<td>Inter 1</td>
</tr>
<tr>
<td>5. Modules included in the curriculum are updated (statement 97)</td>
<td>Corp 1</td>
<td>Inter 1</td>
</tr>
<tr>
<td>6. The academic staff are highly qualified (statement 87)</td>
<td>Corp 1</td>
<td>Inter 1</td>
</tr>
<tr>
<td>7. There is evidence of great investment in physical facilities (statement 72)</td>
<td>Corp 1</td>
<td>Phy 1</td>
</tr>
<tr>
<td>8. The university layout reflects high investment (statement 70)</td>
<td>Corp 1</td>
<td>Phy 1</td>
</tr>
<tr>
<td>9. The location of the university facilitates mobility to the capital (statement 10)</td>
<td>Corp 1</td>
<td>Phy 1</td>
</tr>
<tr>
<td>10. The campus restaurants offer service at reasonable price (statement 58)</td>
<td>Phy 1</td>
<td>Inter 1</td>
</tr>
</tbody>
</table>

5.5.6 Position bias

During the pilot test, it was already identified certain difficulty in placing the statements under some of the dimensions used in this study, especially Interactive and Corporative quality. Modifications to the statements and definitions were made in order to ensure
clarity. In the analysis of the results of this first Q sorting test, an attempt was made to detect any kind of possible bias, especially position bias, as respondents may allocate most of the answers under one dimension in the score sheet (Cataldo et al, 1970). The responses of all the participants were analysed and none of them excluded any dimension from their responses. What we did observe if that 5 respondents distributed all their responses between the categories ‘Most important’ and ‘Least important’; none was placed under ‘Not relevant’. This could be a reasonable respondent’s attitude as participants were asked to express their judgements about the stimuli given; those respondents may think that all the statements were relevant to the area of study and from that assumption they only use two categories to determine the level of importance. Therefore, so far as it could be detected, their answers were the result of their own judgement and perceptions towards the stimuli in the Q-sorts rather than a position bias.

5.5.7 Final distribution of statements

With respect to the non-qualifying statements in the three dimensions, 19 statements did not meet the criteria (see Appendix 3, Table 2 and 9 for details) and therefore were rejected. Of these, 1 was from the Physical quality, 10 from Interactive quality and 9 from Corporative quality. Apart from the elimination of those statements which did not reach the fundamental requirement of achieving 60%. The final distribution of the statements used in the Q session are summarised in Table 5.6.
Table 5.6: Initial and final distribution of statement per dimension

<table>
<thead>
<tr>
<th>Distributions of statements in the three dimensions</th>
<th>Physical Quality</th>
<th>Interactive Quality</th>
<th>Corporative Quality</th>
<th>Initial Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category I: 21 (1 rejected)</td>
<td>Category I: 26</td>
<td>Category I: 20</td>
<td></td>
<td>104</td>
</tr>
<tr>
<td>Category II: 13</td>
<td>Category II: 12</td>
<td>Category II: 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Validated statements</td>
<td>Validated statements</td>
<td>Validated statements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>28</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New distribution of validated statements</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Quality</td>
<td>Interactive Quality</td>
<td>Corporative Quality</td>
<td>Total of statements for the second Q session</td>
<td></td>
</tr>
<tr>
<td>1 statement transferred to another dimension; 6 added from another dimension</td>
<td>3 statements transferred to another dimension; 4 added from another dimension</td>
<td>6 statements transferred to another dimension;</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>New total: 38</td>
<td>New total: 29</td>
<td>New total: 18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.5.8 Conclusions from the first Q test

The objective of the Q sorting session was to identify whether the 104 statements included in the session were validated by 60% of the respondents and whether the dimensions were supported by a minimum of four statements. The answers of the 30 participants of this first session resulted in 85 statements validated that could be used in the second Q session. It also validated the existence of the three dimensions as a minimum of 18 statements has been allocated under each dimension. However, there was no significant difference between the local students included in the sample and the rest of the participants, as the representation was very low. It was also observed that some statements from the same dimension were clustered together and this should be avoided.
in the next session. An effort will be made to have a better distribution and a higher participation of local students in the second session.

The initial distribution of 104 into the three categories, Physical quality, Interactive quality and Corporative quality was 34, 38 and 32 respectively. Out of the initial total, 20 statements were rejected representing the 19.2%. Despite the validation of 85 statements, ten of them (11.7%) were allocated under a different dimension rather than the initial one.

The new group of statements has resulted into an uneven distribution of statements among the three categories. Results show that Physical quality gets 38, 29 Interactive quality and Corporative quality only keeps 18, representing 44.0%, 34.5% and 21.4% respectively. The first two dimensions have statements that were easily allocated under the category without dispersion among the nine possible alternatives, some reaching 100% under the dimension. Although the number of statements validated is enough for each session, new statements will be introduced in Corporative quality in order to have a better balanced for the second Q sorting session.

The purpose of using the Q methodology is to reveal the subjectivity involved in any situation. In order to achieve that goal, a set of statements is presented to participants who might allocate them under certain categories provided by the researcher. In this research on students' satisfaction the set of statements was meant to evaluate the service provided by a higher education institution. The first session was run with PhD students in a UK university of different nationalities, UK students, some from other European countries and 'overseas' students. The result of the first session was a total of 85 validated statements out of the initial 104. The new distribution of validated statements under each of the dimensions of this study (Physical quality, Interactive quality and Corporative quality) resulted in an uneven distribution as Table A shows.
Table 5.7: Distribution of validated statements for the second Q session

<table>
<thead>
<tr>
<th>Physical Quality</th>
<th>Interactive Quality</th>
<th>Corporative Quality</th>
<th>Total of statements for the second Q session</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 statement transferred to another dimension; 6 added from another dimension</td>
<td>3 statements transferred to another dimension; 4 added from another dimension</td>
<td>6 statements transferred to another dimension;</td>
<td>New total: 38 New total: 29 New total: 18 85</td>
</tr>
</tbody>
</table>

As the Table 5.7 above shows, the distribution of the new statements among the three dimensions is uneven. In order to have a better balanced representation of each dimension, the best 20 items in Physical quality and Interactive quality that obtained a degree of consensus above 70% (items ≥ 0.70) were included for the second Q session. These statements have obtained remarkably high frequency scores, which show that subjects have clearly placed them under the same category. Therefore, this percentage was used as a cut off value to select the statements for the next session. However, retaining only common approved statements would engender the risk of neglecting services that might be of critical importance when evaluating student satisfaction in a educational context in the next stage of this research. For instance, the relevant role of library services (e.g., provisions of books and general services) as a determinant of student satisfaction when evaluating a tertiary institution has been pointed out (Mavondo et al., 2004; Wiers-Jenssen et al., 2002; Clemes et al., 2001; Athiyaman, 1997). Therefore, an item (item 21) related with this service was added to the Physical quality dimension, provided that it has met the qualifying criteria (items ≥ 0.70).

In relation to Interactive quality, there were two statements expressing the same meaning, one positive and the other negative (item 50 ‘It is very hard to develop friendship with students'; item 13 ‘It is easy to make friends on campus’). Although both frequencies were high in the first Q session, they are associated with the same idea and might be confusing for respondents. It was decided to keep the positive one, which got a frequency of 93.3%. In order to replace the deleted statement in Interactive quality dimension, the
statement selected 'Academic activities take place as scheduled' (76.7%) was added to reinforce the academic performance, which has been identified as an important area of concern by the subjects in the first Q session.

In Physical quality an item from session one was repeated (item 2 and 14) regarding the provision of computers. Only one was kept for the second session and the second one was substituted by one related with technology, from the same dimension (item 6 'The classrooms have updated teaching support equipment'), provided that it has met the qualifying criteria (items ≥ 0.70).

Regarding Corporative quality, the number of items validated was only 18 and three of them did not reach the cut off point of 70% (items 41, 89 and 92), performing poorly in the Q session. Therefore, five new statements were added to this dimension to reach a final total of 60 statements, 20 under each dimension for the second session.

5.6 The second Q sorting test: The sample

For this second session, the subjects were exclusively overseas students who are defined as *those students who pay full composition fees* (which include fees for tuition, registration, examination and graduation) in a UK university and are non-British nationality. Participants were enrolled in PhD (40%, 12 participants) and Master (60%, 18 participants) programmes in different departments at one university in the UK. Master students have been exposed to the educational system for a semester and therefore have some experience as students abroad; PhD students have already been enrolled in the programme for a year or more.

The group of participants was composed of 16 females and 14 males from different nationalities and the age group with the highest frequency was between 20 and 25 years old, representing 76.6% of the sample (see Appendix 1, Table 1).
5.6.1 The procedure

The session took place at the University campus, as it was a convenient location for the students. The number of statements for this session was 60, evenly distributed among the three dimensions. Cards were numbered randomly from 1 to 60 and the number was allocated at the front of each statement. Subjects were given a deck of stimulus cards for the activity and a placement board where they recorded their responses, entering the number of the statement under the dimension and category they considered appropriated (see Appendix 2).

As in the first session, when participants had completed the sorting activity, they informed the investigator, who verified whether all the statements were allocated. In this opportunity, most subjects reported that the classification process did not cause any problem and was not time consuming. This may be explained by the reduced number of statements (60 statements), which contrasts with the initial 104 used in the first session. Most of the statements have been already validated in the first session, reaching higher frequency, which may have helped the new respondents to identify and allocate them easily under the dimension.

5.6.2 The findings

The overall results of the Q sorting procedure are illustrated in Appendix 3, Table 2, which demonstrates the frequency of all the statements under the three dimensions and the three categories used (‘most important’, ‘least important’ and ‘not relevant’). Appendix 4 (Tables 4, 5 and 6) shows the results of each dimension and the total frequency obtained by each statement. The output of the second Q session is a set of 59 validated statements out of the initial total of 60, as only one item from Corporative quality was rejected. The first Q session had already eliminated unclear or unimportant items and those validated have reached a high frequency. This may explain the results of the second session where most of the items have obtained a high frequency and all but one were validated by the new group of respondents.
Statements under Physical quality were all validated and 15 items reached 100% of consensus among the group of participants and the minimum percentage of consensus was 96.6%. Although all the statements initially listed under this dimension were clearly identified by the new group of respondents, the distribution regarding their importance was uneven. Both items regarding the sport variables have reached a 100% response under this dimension (e.g., number of facilities and modern equipment). However, they seem to be considered less important as they were basically allocated under 'least important' category (63.3% and 53.3%, item 8 and 18 respectively). The cleanliness condition of the common area of the university and the students' accommodation were also placed under the dimension Physical quality but were perceived as less important than other variables (56%, item 26).

Despite the remarkably high frequency obtained, it is important to point out that some statements tend to be allocated all along the three categories used to evaluate the importance of the variables included in the Q sort session. This means that the level of importance associated with each of these statements show discrepancy among the respondents. The following examples show that although the highest percentage is given to 'most important', the other two received a significant number of responses, as shown in Table 5.8.

Table 5.8: Physical quality

<table>
<thead>
<tr>
<th>Statements</th>
<th>Most important</th>
<th>Least important</th>
<th>Not relevant</th>
<th>Total 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>24. Parking facilities are provided</td>
<td>56.7</td>
<td>33.3</td>
<td>10.0</td>
<td>100</td>
</tr>
<tr>
<td>37. The university has a wide range of residential accommodation</td>
<td>50.0</td>
<td>43.3</td>
<td>6.7</td>
<td>100</td>
</tr>
<tr>
<td>28. The university has sufficient residential accommodation</td>
<td>53.3</td>
<td>36.7</td>
<td>6.7</td>
<td>96.7</td>
</tr>
<tr>
<td>46. The common areas at the university accommodation are clean</td>
<td>43.3</td>
<td>16.7</td>
<td>36.7</td>
<td>96.7</td>
</tr>
</tbody>
</table>
In relation to Interactive quality the highest percentage goes to the teaching quality, based on the faculty capability and interaction with students. As Table 5.9 shows, these variables are considered very important by the respondents.

Table 5.9: Interactive quality

<table>
<thead>
<tr>
<th>Statements</th>
<th>Most important</th>
<th>Least important</th>
<th>Not relevant</th>
<th>Total 100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Lecturers have adequate time for consultation</td>
<td>80.0</td>
<td>20.0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>48. The university has staff who are knowledgeable in their field</td>
<td>83.3</td>
<td>16.7</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>1. There are clear and reasonable requirements for each module</td>
<td>70.0</td>
<td>26.7</td>
<td>3.3</td>
<td>100</td>
</tr>
<tr>
<td>45. A personal tutor is allocated for individual advice</td>
<td>53.3</td>
<td>46.7</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

The social aspect included in this dimension, although correctly allocated, is perceived as less important than the academic aspect.

Regarding the five new statements included in Corporative quality, three of them (items 35, 39 and 41) reached a significantly higher consensus above 80% (items \( \geq 0.80 \)). However, the distribution under the categories ‘least important’ and ‘not relevant’ tends to be higher than in the ‘category ‘most important’, as the following table shows. Only one item had a significantly higher frequency under ‘most important’ (item 41). One of these statements was rejected as it did not achieve the required 60% to be validated (item 60). Table 5.10 shows the results of the five statements.
Although four of the new items were validated only three have got a higher percentage above 80%. Most of the cases, however, the statements have been allocated under the categories ‘least important’ and ‘not relevant; in fact only one statement (item 41) has a significant percentage under ‘most important’ despite its total of 83.3% in Corporative quality. This may show that the statements are clearly identified under the category but have been considered less important by the respondents.

The results of both sessions show some differences that could be attributed to the kind of respondents that participated in this study. All participants in the first session were PhD students; in the second one 18 (60%) were enrolled in a Master programme. They may share common facilities and eventually have similar needs and expectations. The literature is not very extensive regarding PhD students but most of the empirical works where they are subjects of study have identified some particular characteristics that may differentiate them as a particular group (Felix, 1993; Kinnell, 1989). They tend to be older than master students and married with family. This may lead them to live off campus or have less use of the university accommodation trying to create a better environment for their families outside the university area.
This may partially explain why some statements regarding accommodation conditions (e.g., accommodation maintenance, comfortable rooms, sufficient shared facilities such as toilets and showers, accommodation allocated on a fair basis) have been perceived as less important by the first group of participants rather than the second one where the majority are Master students and mainly live in the accommodation facilities provided by the university. However, this interpretation cannot be conclusive as some other aspects, also related with accommodation, were considered more important by the PhD respondents in the first session (e.g., security and cleanliness condition of the accommodation provided).

The overall result of the statements under Corporative quality seems to be better than the previous session as three items reached 100% (items 14, 32 and 51). The other two dimensions have similar high frequencies in both sessions. However, the distribution of responses under the three categories—'most important, least important, not relevant'—is different. The responses in the second session tend to be concentrated under the category 'least important.'

As already stated the Q methodology applied in these two sessions is a preliminary approach in scale development rather than a complete process. The two Q sessions have served to identify whether the proposed dimensions existed and have provided us with a set of validated statements, reduced to a manageable number. The use of the Q methodology shows that particular attention has been paid to the item development stage before moving to the further analysis, which is the selection of statements that have met the qualifying criteria to be used in a questionnaire (Ekinci and Riley, 1999).

The second Q session has provided us with a total of 59 validated statements to be used in the questionnaire. Research in the area has used different numbers of items to be placed in the final questionnaire. Clemes et al. (2001) used 37 items to evaluate perceived quality in higher education. They used technical quality as an independent variable (tangible aspects, competence and physical environment) and functional quality dimension (attitude and behaviour, accessibility, reliability and personal interaction). A
similar study conducted by Browne, et al. (1998) used only 22 statements in an instrument highly based on SERVQUAL. Lapidus and Brown (1993) adopted a survey to assess the level of satisfaction with the university experience used by the California State University system, reaching a total of 23 items. Another standardised instrument, the Student Satisfaction Inventory distributed by USA Group Noel-Levitz, covers a full range of university variables as well as demographic characteristics, reaching a total of 116 items (Elliot and Shin, 2004). The variables included in most of these studies generally cover the aspects included in this study; however, less attention has been paid to the Corporative quality dimension.

Results suggest that the number of validated items through the two Q sessions can be used in the following step of this research. The pilot test will also be another step of instrument validation and some items may be affected in the process towards the final instrument.

5.7 Summary

The objective of the Q sorting session was to identify whether the 104 statements included in the session were validated by 60% of the respondents and whether the dimensions were supported by a minimum of four statements. The answers of the 30 participants of this first session resulted in 85 statements validated that could be used in the second Q session. It also validated the existence of the three dimensions as a minimum of 18 statements has been allocated under each dimension. However, there was no significant difference between the local students included in the sample and the rest of the participants, as the representation was very low. It was also observed that some statements from the same dimension were clustered together and this should be avoided in the next session. An effort will be made to have a better distribution and a higher participation of local students in the second session.

The initial distribution of 104 into the three categories, Physical quality, Interactive quality and Corporative quality was 34, 38 and 32 respectively. Out of the initial total, 20
statements were rejected representing the 19.2%. Despite the validation of 85 statements, ten of them (11.7%) were allocated under a different dimension rather than the initial one.

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Chapter 6

Research Methodology II: Main Survey

6.1 Introduction

The preceding chapter has described the procedure of the Q tests, which has provided a potential set of statements and dimensions for evaluating higher education attributes. The next stage in the research involved further exploration of these items to examine how well they confirmed the existence of the three dimensions to assess service quality and the impact on students' satisfaction.

The purpose of this chapter is to describe the development of the final questionnaire, which includes the dimensions about service quality (40 items) as well as the dependent variables to measure satisfaction and behavioural intentions. The instrument constitutes the main survey of this research. Methodological considerations for the construction, distribution and analysis of the data collected will be discussed. The different stages of the development of the questionnaire and its scales will be presented as well as the pilot test that was conducted.

6.2 Research objectives

The current study has focused on students' satisfaction with the service provided by the university where they have enrolled into a master programme. The investigation further attempts to resolve whether the dimensions proposed are useful to measure service quality in a higher education setting and whether they discriminate among groups.

In more specific terms, the objectives of the study can be formulated as follows:

1. To assess the validity and reliability of the customer satisfaction scale based on the variables validated using Q methodology.
2. To determine which variables have more impact on students’ satisfaction
3. To ascertain the relationship between service quality and demographic characteristics
4. To assess the level of satisfaction and the willingness to recommend the higher education institution to friends and family back home.
5. To determine the relationship between the perceived quality and the economic investment (value for money).

In order to reach these objectives a structured questionnaire survey was developed to collect the opinion of overseas students (primary data collection). The results were then analysed. The following section outlines the theories related to methodology issues and the methodology particularly used in this study.

6.3 Research design

Research design is the plan and structure of the investigation, which is based firstly on the objectives of the study and should be strictly organised and implemented as rigorous method to identify the research problem, data collection and further analysis, and therefore to draw valid conclusions (Sekaran, 2000). The following section examines the basic aspects of research design followed in this research.

6.3.1 Purpose of the study

The nature of the study depends on the stage to which knowledge about the research topic has advanced. As reported in previous chapter, there has been an increased interest in the study of students’ satisfaction in higher education. This interest has been reflected in the number of studies conducted in order to develop a model of variables to assess the service and identify those that have more impact on students’ satisfaction. However, there has not been a conclusive result about the important variables and the level of impact on students’ satisfaction, although some common traits have been found in previous studies. It is, therefore, crucial for this study to identify the variables that better describe students’
satisfaction in higher education and the relation among variables. According to Sekaran (2000), hypothesis testing offers an enhanced understanding of the relationships that exist among variables and could also establish cause and effect relationships that exist among variables (Sekaran, 2000).

6.3.2 Type of investigation

In the evaluation of higher education performance, students may base their judgement on different criteria and their own previous experience and personal characteristics may also have an impact on the level of satisfaction reported. There are multiple factors that influence one another and therefore the researcher might be asked to identify the crucial factors that are associated with the problem, rather than establish a cause and effect relationship. Therefore, a correlational study was conducted to discriminate among variables.

6.3.3. Unit of analysis

The unit of analysis refers to the level of aggregation of the data collected during the subsequent data analysis stage (Sekaran, 2000). In this case the research problem focuses on overseas students from different master programmes running simultaneously in a management school in a university in the UK. A stratified random sampling technique was implemented to collect information from the different programmes.

6.4 Measuring: scaling, validity and reliability

Measuring is central to the process of obtaining data and therefore forms of an integral part of research (Sekaran, 2000). Measurement is the assignment of numbers to objects, events or observations according to set of rules (Kelinger, 1992; Grimm, 1993). Besides, for Nunnally and Bernstein (1994), measurement consists of rules for assigning symbols to objects so as to firstly, represent quantities of attributes numerically (scaling) or to secondly, define whether the objects fall into the same categories with respect to a given
attribute (categorisation). In this study, a new scale was used to assess service quality in higher education. In relation to the dependent variables, some scales were borrowed and adapted from previous studies to measure satisfaction, behavioural intention to recommend and value for money.

6.4.1 Scaling

A scale is a toll or mechanism by which individuals are distinguished on how they differ from one another on the variables of interest to the study. Depending on the type of scale, it could only broadly categorise individuals on certain variables; or it could be a fine-tuned scale that would differentiate individuals on the variables with varying degrees of sophistication (Sekaran, 2000). There are four basic types of scales: nominal, ordinal, interval, and ratio.

6.4.1.1 Nominal scale

A nominal scale allows the researcher to assign subjects to certain categories or groups. Subjects of any study may be classified, for example, according to gender into mutually exclusive categories, such as male and female. This type of scale gives some basic, categorical information (Sekaran, 2000). The survey used in this questionnaire included some nominal scale in Sections A and C. For example, question 1 in Section A asks respondents to choose among three alternatives regarding the date when they finish their previous degree. Similarly, Section C includes some nominal questions (1, 3, 4, 6 and 7).

6.4.1.2 Ordinal scales

This scale provides more information than the nominal scale as it also rank-orders the categories in some meaningful way. The ordinal scale goes beyond differentiating the categories to providing information on how respondents distinguish among them by rank-ordering them. Basically, an ordinal scale is used to identify the relative position of an individual in relation to others. Besides its advantage, there is no indication of the
magnitude the differences identified in the scale (Sekaran, 2000). In this study no ordinal scales were used.

6.4.1.3 Interval scales

This scale combines the benefits of the previous one, as it allows the researcher to categorise groups and measure the distance between any two points in the scale. In other words, the interval scale not only groups individuals according to certain categories and taps the order of these groups, but it also measures the magnitude of the differences in the preferences among the individuals. This scale allows certain arithmetical operations on the data collected from the respondents. It provides a basis to compute the means and standard deviations of the responses on the variables (Sekaran, 2000).

This study uses interval scales for measuring the variables of service quality in a seven-point Likert scale, as well as the dependent variables. Likert scales are the most commonly used in survey research using questionnaires (Schmitt and Klimoski, 1991). Likert scales include several points along a continuum that define various amounts or levels of the measured attribute or variables (e.g., agreement, frequency, importance) (Hinkin et al, 1997). Similarly, in Section C an interval scale was used to measure the variable age.

6.4.1.4 Ratio scales

The ratio scale overcomes the deficiency of the arbitrary origin point of the interval scale as it has an absolute zero point which is a meaningful measurement point. Thus, the ratio scale not only measures the magnitude of the differences between points on the scale but also taps the proportion of differences. It is the most powerful of the four scales because it has an absolute (and not arbitrary) zero origin calibrated on it, which allows researchers to calculate the ratio of the weights of two individuals. The measure of central tendency of the ratio scale could be either the arithmetic or the geometric mean and the measure of dispersion could be either the standard deviation, or variance, or the coefficient of
variation. This study did not include any questions under this scale. The properties of the scales are summarised in Figure 6.1.

### Figure 6.1 Properties of the four scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Difference</th>
<th>Order</th>
<th>Distance</th>
<th>Unique origin</th>
<th>Measures of central tendency</th>
<th>Measures of dispersion</th>
<th>Some test of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>NO</td>
<td>Mode</td>
<td>--</td>
<td>$\chi^2$</td>
</tr>
<tr>
<td>Ordinal</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>Median</td>
<td>Semi-inter quartile range Standard deviation, variance, coefficient of variation</td>
<td>Rank-order correlations</td>
</tr>
<tr>
<td>Interval</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>Arithmetic mean</td>
<td>Standard deviation, or variance, or coefficient of variation</td>
<td>t, F</td>
</tr>
<tr>
<td>Ratio</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>Arithmetic or geometric mean</td>
<td></td>
<td>t, F</td>
</tr>
</tbody>
</table>

Source: Sekaran, 2000, p. 191.

Figure 6.1 shows how the power of the statistic increases as one moves away from the nominal scale (where subjects or items are grouped under some categories), to the ordinal scale (where categories are rank-ordered), to interval scale (where the magnitude of the difference is identified), to the ration scale (where the proportion of the differences are measured) (Sekaran, 2000).

### 6.4.2. Reliability and validity of the measures

In the previous section, the four types of measurement have been discussed together with their statistical treatment. It is now important to ensure that the instrument developed to measure a particular concept is indeed accurately measuring it. The scales developed could often be imperfect in measuring attitudinal variables. However, care should be taken in order to ensure that the important dimensions are not overlooked or irrelevant elements included (Sekaran, 2000). The use of better instruments will ensure more accurate results, which in turn will enhance the scientific quality of the research. Efforts have to be made to ensure that the instrument measures the variables they are supposed to,
and that they measure them accurately. In order to achieve this, test of the reliability and validity of the measures have to be conducted.

6.4.2.1 Reliability assessment

The reliability of a scale is essential as it proves consistency. The reliability of a measure indicates the extent to which the measure is without bias and hence offers consistent measurements across time and across the various items in the instrument (Sekaran, 2000). The internal consistency of the measures is indicative of the homogeneity of the items in the measure that tap the construct (Cohen at al, 2000).

Reliability can be measured using three tests:
(i) Test-retest: this test is related with the consistency of a measure through time. A questionnaire which is supposed to measure a concept is administered to certain subjects should be administered few months later to the same group. The correlation between the scores obtained at the two different times is then compared.
(ii) Internal consistency method is basically determined by the Cronbach’s alpha result. The items should have a strong relationship if they are measuring the same construct. Since the alpha measure provides an estimation of the proportion of the total variance, it can be used as a test of the reliability of the scale.
(iii) The split-half method measures reliability as the group of items is divided into two halves and then the two halves are intercorrelated. If the test is reliable the two halves should correlate fairly strongly.

6.4.2.2 Validity

Validity refers to the degree to which scales truly measure the constructs which they are intended to measure (Hair et al, 1998). The term validity denotes the scientific utility of a measuring instrument, stated in terms of how well it measures what it claims to measure (Nunnally and Bernstein 1994). There are several types of validity tests, which are used
to test the goodness of measures. They can be grouped under two main headings: (i) content; (ii) construct validity.

(i). Content validity ensures that the measures include an adequate and representative set of items that tap the concept. The more the scale represent the domain of the concept being measured, the greater the content validity. For the purpose of this research, content validation was carried out on the 40 items used to evaluate service quality in higher education. They were validated using Q methodology.

(ii). Construct validity is the most complex form of validity as it testifies how well the results obtained from the use of the measure fit the theories around which the test is designed (Sekaran, 2000). This is assessed through convergent and discriminant validity. Convergent validity is established when the scores obtained by two different instruments measuring the same concept are highly correlated. In practical terms, convergent validity is the ability of individual items of a scale measuring the same construct to correlate well to each other. On the other hand, discriminant validity is established when, based on theory, two variables are predicted to be uncorrelated, and the scores obtained by measuring them are indeed empirically found to be so.

According to Crocker and Algina (1986) and Sekaran (2000), the three widely used approaches in establishing validity are through (1) correlational analysis (for establishing concurrent and predictive validity or convergent and discriminant); (2) factor analysis, a multivariate technique which would confirm the dimensions of the concept that has been operationally defined, as well as indicate which items are most appropriate for each dimension (for establishing construct validity); and (3) the multitrait-multimethod matrix of correlations derived from measuring of concepts by different forms and different methods. These are more fully discussed in the data analysis section.

6.5 Data collection method: some methodological issues

Data can be collected in a variety of ways. The methods could be grouped in three main categories, namely interviews, questionnaires and observation. Some of these variables could be implemented in a face-to-face interaction, through the telephone, or using an
electronic media. The selection of an adequate methodology to collect data depends on the objectives of the study as well as the resources available, sometime associated exclusively with practical reasons such as time, money and easy access to the sources of data (Oppenheim, 1966).

Surveys are frequently associated with the use of self-completion questionnaires or standardised interviews (Bryman, 2001). Survey research is considered to be a branch of social scientific research which studies different numbers of a population by selecting and studying samples chosen from the populations 'to discover the relative incidence, distribution and interrelations of sociological and psychological variables (Kerlinger, 1992, p. 377). The social scientific nature of the survey research is revealed by the nature of its variables that can be classified as sociological facts and opinions and attitudes. Surveys collect social information about individuals such as gender, age, marital status, income, and so on. The second type of variables refers to opinion and attitudes that respondents have towards different issues that could be asked in a survey.

In the process of collecting the information, researchers are looking for an accurate picture about the issues covered in the survey. Despite their objectives, it is unlikely that survey researchers could possibly cover all the population in a survey for reasons of practicality. Therefore, a sample of the population has to be selected to best represent it. Carefully devised samples can often furnish the same information as a study of an entire population at much less cost and greater efficiency (Borg and Gall, 1996).

The process of collecting the data and determining what kind of sample should be appropriate depends on the research problem. Once it is set, the next step is to determine the population and decide how the sample is to be drawn and how many cases will be needed. The next step involves the construction of the questionnaire to be used and its distribution to gather a large scale of data from a representative sample population at a single point in time, in order to enable generalisations to be made about given factors or variables. Once the data have been collected the next procedure is to code and tabulate
the responses, after which statistical analysis is conducted and a complete analysis of the results can be carried out.

6.5.1 Surveys in higher education

In higher education research the usual method of collecting data is through self-administered questionnaires, though interviewing has also been reported in the literature (Patterson et al., 1998). As Sekaran (2000) clearly states ‘a questionnaire is a preformulated written set of questions to which respondents record their answers, usually within rather closely defined alternatives’ (p. 233). Questionnaires can be administered personally or mailed to the respondents, or electronically distributed. The intrinsic characteristics of a questionnaire or standardised interview are that the design itself highly structured and that the same instrument is administered to all the participants of the survey (Oppenheim, 1992).

A questionnaire can be administered or mailed to the respondents, or electronically administered. If administered in a confined institution, the researcher can easily distribute the instrument to the captive audience. The purpose is to gather large-scale data from a representative sample population at a single point of time in order to enable generalisations to be made about given variables. An intrinsic advantage of administering questionnaires to large numbers of individuals simultaneously is reducing time and cost (Sekaran, 2000). When personally distributed, it enhances the response rate as questionnaires could be immediately collected as soon as the respondents fill it in. When distributed to a large population simultaneously, for example in a classroom, the researcher can collect them before the respondents leave the room.

On the other hand, the self-completion questionnaire is the data collection technique most commonly used by social surveys (Oppenheim, 1992). The questionnaire is sent by post which allows the researcher to cover at the same a wide geographical area and administer it in a relatively short period of time, reducing costs of travelling to distribute it personally. In this case the respondent is not assisted by the researcher and therefore a
particular attention has to be paid to the instrument layout and instructions. The defining feature in this kind of survey is that the design itself is highly structured and that the same instrument is administered to all participants in the survey. As respondents are asked the same question, the response rate is high on reliability. Self-completion questionnaires encourage the pre-coding of answers.

Although this is not an intrinsic characteristic of a self-administered questionnaire, an extra effort is done to have an instrument that could be easily codified as it has provided the adequate alternatives to be selected and shows a logical flow in its design. This facilitates the process of entering data and the subsequent analysis of the results. Finally, as it collects information from respondents about the same characteristics and in a form that can be coded systematically, it is an ideal way of producing data that is suitable for quantitative data analysis.

However, it has been pointed out that the weakness of this procedure is the low rate response, therefore a 30% response rate is quite acceptable (Sekaran, 2000; May, 2001; Diaz, 205). In some cases in the educational field, the researcher may use liaisons in other institutions to facilitate the process and enhance the response rate. When possible the questionnaire should be sent and retuned in bulk through the help of liaison staff in other institutions. The person will distribute and collect the questionnaires in assort of personally administered survey.

Despite the advantages of a survey questionnaire, the main difficulty is to have an adequate instrument and have access to a representative audience willing to respond. In relation to the instrument itself, special attention must be given to every detail, starting from the selection of the questions in order to ensure accuracy and quality of response. The following sections explain the procedure followed in the development and distribution of the survey instrument from the sampling procedure to the development of the scales used in the questionnaire. Based on the above arguments and the literature in higher education research, a questionnaire was considered a suitable instrument for the
research and it was distributed under both modalities: personal and mail distribution in two different institutions in the UK.

6.6 Sample design process

The concept of sampling plays a fundamental role in the process of identifying, developing and understanding constructs that need to be investigated by researchers (Hair et al., 2000). Sampling could be defined as the process of selecting a sufficient number of elements from the population so that by studying the sample, and understanding the properties or characteristics of the sample, it is possible to generalise the properties or characteristics to the population element (Sekaran, 2000).

The right selection of a sample may be used as a legitimate basis for drawing inferences about the population from which they are drawn. In other words, within certain limitations, claims from the sample can be generalised to which they belong. (Riley et al., 2000). In this line, Hair et al. (2000) suggest a set of questions to be considered by the researcher before starting research, which are presented in Table 6.1.

Table 6.1: Critical factors in selecting the appropriate sampling design

<table>
<thead>
<tr>
<th>Selection of factors</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research objective</td>
<td>Do the research objectives call for the use of qualitative or quantitative research designs?</td>
</tr>
<tr>
<td>Degree of Accuracy</td>
<td>Does the research call for making predictions of inferences about the defined target population or only preliminary insights</td>
</tr>
<tr>
<td>Availability of resources</td>
<td>Are there tight budget constraints in terms of financial and physical resources?</td>
</tr>
<tr>
<td>Time frame</td>
<td>How quickly does the research have to be completed?</td>
</tr>
<tr>
<td>Advanced knowledge of target population</td>
<td>Are there complete lists of the defined target population elements? How easy or difficult is to generate the required sample frame of prospective respondents?</td>
</tr>
<tr>
<td>Scope of the research</td>
<td>Is the research going to be international, national, regional or local?</td>
</tr>
<tr>
<td>Perceived statistical needs</td>
<td>To what extent are accurate statistical projections required and/or testing of hypotheses differences in the data structures?</td>
</tr>
</tbody>
</table>

Source: Hair et al., 2000, p. 357
The sampling design presented in Figure 6.2 shows the six-step process that are closely interrelated and relevant to all aspects of the marketing research project, from problem definition to the presentation of the results. Sampling design decisions should be integrated with all other decisions in a research project (Malhotra and Birks, 2003).

**Figure 6.2: The sampling design process**

1. Define the target population
2. Determine the sampling frame
3. Select sampling techniques
4. Determine the sample size
5. Execute the sampling process
6. Validate the sample

Source: Malhotra and Birks, 2003, p. 358

**6.6.1 Target population**

Sampling design starts by defining the target population. This is the collection of elements that possess the information required by the researcher and about which inferences are to be made (Malhotra and Birks, 2003). For the purpose of the current study, the population is made of international students who pay full fee and are enrolled in a management programme at postgraduate level in a higher education institution in the UK.

**6.6.2 Sample frame**

The sampling frame is a representation of the elements of the target population. It consists of a list or set of directions for identifying the target population. Examples of a
sampling frame include telephone book and a directory of members in a company. However, the access to some may be restricted or such data may not exist (Malhotra and Birks, 2003). The sample frame is basically the desirable group from which the sample is selected (Jaeger, 1984) and it should be carefully selected in order to avoid bias (Schofield, 1996). Bias can be defined as the effect on the sample data that leads to the statistic value of the sample being further away from the true population value (Schofield, 1996). As a ways to reduce or avoid bias, it is essential to take external validity into account to achieve generalisability. External validity has been defined as the boundaries or domain for which the findings can be interpreted and applied. In other words, the objective is to generalise the findings of any study beyond the cases used and consequently it would increase the credibility of the study and its findings (Schofield, 1996). In this study the sample frame was overseas students in a UK university in the area of management. The sample for the final study was then selected from overseas students in the School of Management, University of Surrey, UK.

6.6.3 Sampling techniques

Sampling techniques may be broadly classified as non-probability and probability. Each of these two major designs has different sampling strategies and their selection depends on the extent of generalisability desired, the availability of time and other resources, and especially the purpose of the study (Sekaran, 2000).

6.6.3.1 Non-probability sampling

In this kind of sampling the main differentiation is that the elements of the population have no probabilities attached to their being chosen as sample subjects. Therefore, the findings cannot be generalised to the population. Researchers may use this sampling because they may not need to generalise their results and need to obtain preliminary information in a quick and inexpensive way (Malhotra and Birks, 2003). Some of the non-probability sampling plans are more dependable than others and could offer some important leads to potentially useful information with regard to the population. The
categories under non-probability sampling are convenience sampling, judgement sampling, and quota sampling.

a) Convenience sampling: This implies collecting information from members of the population who are conveniently available to provide it. It is frequently used during an exploratory phase of a research project and it is perhaps the best way of getting some basic information quickly and efficiently. Despite this advantage, it is the least reliable of all sampling design in terms of generalisability for final findings.

b) Purposive sampling: researchers may require some specific information which is confined to a specific type of people, either because they are the only ones who posses it, or conform to some criteria set by the researcher. This type of sampling falls into two categories:

(i) Judgement sampling: it involves the choice of subjects who are in the best opposition to provide the information required and this is generally restricted to a limited population that can supply the necessary information. It is then necessary to select subjects exclusively from that kind of group; any other attempt is useless for the purpose of the study. The generalisability may be limited because of the kind of sampling use. On the other hand, it is the only viable sampling method to get the information. As expected, special efforts are necessary to contact and gain access to the individuals who do have the requisite information.

(ii) Quota sampling: this type of purposive sampling ensures that certain groups are adequately represented in the study through the assignment of a quota. It could be considered as a form of proportionate stratified sampling, in which a predetermined proportion of people are sampled from different groups, but on a convenience basis. Therefore, the results cannot be generalized as happens under a proportionate sampling.

6.6.3.2 Probability sampling

Sampling units are selected by chance. Every potential sample need not have the same probability of selection, but it is possible to specify the probability of selecting any particular sample of a given size. This requires the specification of the sampling frame as
well as the target population. This type of sampling plan offers higher generalisability of findings than the non-probability group. It is divided into two basic probability sampling plans:

(i) Simple random sampling: in this category each element in the population has a known and equal probability of selection. This implies that every element is selected independently of every other element.

(ii) Restricted or complex probability sampling: the complex probability plan consists of five different sampling designs:

1. **Systematic sampling:** when the population frame is available, it is possible to select the sampling. The sample is chosen by selecting a random starting point and then picking every \( i \)th element in succession from the sampling frame. The sampling interval, \( i \), is determined by dividing the population size \( N \) by the sample size \( n \) and rounding to the nearest whole number. Unfortunately it has the built-in hazard of possible systematic bias.

2. **Stratified random sampling:** it is probably the most efficient, in the sense that, for the same number of sample subjects, it offers precise and detailed information about all the groups included. The population is first divided into meaningful segments and then the subjects are drawn in proportion to their original numbers of sampled.

3. **Cluster sampling:** it is probably the least expensive as well as the least dependable, but it is used when no list of the population elements is available. However, it is the least reliable and efficient among of probability sampling designs since subsets of clusters are more homogeneous than heterogeneous. The key distinction between cluster sampling and stratified sampling is that in cluster sampling only a sample of sub-populations (clusters) is chosen, whereas in stratified all the sub-populations (strata) are selected for further sampling.

4. **Area sampling:** it is a common form of cluster sampling. It is best suitable when the goal is confined to a particular area, in which the clusters consist of geographical areas, such as countries, geographical areas or neighbours.

Based on the objectives of the study it was necessary to select exclusively overseas students for the current research. The International Student Office provides in its wed
page a general distribution of the overseas students at the university who are considered ‘full-fee paying students’ at undergraduate and postgraduate level (http://www.surrey.ac.uk/international). The population frame was available through this office and this information was the starting point to determine the population frame of this study. The study’s purpose was also to focus on postgraduate students who have been neglected in many studies that have exclusively used undergraduate students in their sampling. Those that have included master students have basically concentrated on MBA students. Therefore, it was thought that the inclusion of students from both the business and service sector will expand the knowledge about overseas students so far. Therefore the population frame was overseas students enrolled in master programmes in the different programmes offered by the school of management.

A probability simple random sampling was selected to collect information from respondents in this study. However, the sampling was somehow ‘restricted’ because the respondents were selected exclusively from those who were ‘full fee paying students’, according to administrative purposes as, based on their country of origin and the agreements with the UK government and the European Union.

6.6.4 Sample size

Determining the appropriate sample size implies considerations and decisions to be taken. First of all, it is important to estimate how much time and money are available to collect required data (Hair et al., 2000). Another important aspect to be considered is the required number of sample for statistical purposes. For example Roscoe (1975) postulates that sample sizes larger than 30 and less than 500 are appropriate for most research. However, the same author argues that in multivariable research, the sample size should be several times as large as the number of variables in the study. Indeed, it appears that the number of variables to be assessed will dictate the sample size needed to obtain robust results (Hinkin et al, 1997). It has been previously identified that a possible item-to-response rations could be ranged from 1:4 (Rummel, 19970); 1:5 (Hair et al., 1998) to
1:10 (Schewab, 1980; Hair et al., 1998). These ratios lead the researcher to consider a ratio of 1:8 for this study based on the number of variables of the current study.

On the other hand, Comrey and Lee (1992) provide a guide sample size of 50 as very poor, 100 as poor, 200 as fair, 300 as good, 500 as very good and 1000 as excellent. For Tabachnick and Fidell (2001), the general rule of thumb is to have at least 300 cases for factor analysis. The argument exposed above seems to justify the selection of the sample of the current study. A sample size greater than 300 meets the argument exposed earlier about ratio and at the same time seems to be fair to what other researchers have suggested about a good sample of minimum of 300 to conduct appropriate factor analysis. Accordingly, the above arguments have led the author to conclude that a sample of 300 respondents fulfils the current research objectives.

The reasons presented above, item-to-response ratio of 1:8 and the recommended number of 300 as a ‘good’ number for sample size leads us to consider a sampling above 300 respondents as an appropriate number for the current research.

6.7 Planning of the questionnaire

Having identified the sampling strategy adopted for the purposes of this research, the discussion turns to the important topic of questionnaire planning. The questionnaire has to be carefully planned as it is difficult to have another chance to be redistributed due to time and money constraints. It is also unlikely to find respondents willing to participate in a second round.

This part of the chapter examines different styles or kinds of research instruments and analysis available and reports the process of distribution of the questionnaire. The number of styles is vast and this part illustrates the scope of what is available, including different approaches. These will enable the researcher to decide the most appropriate style of research for the purposes of the study as there are different research methodologies suitable for different research purposes and reflect different priorities about dimensions of the research process (Fenstermacher, 1994). The discussion will
then move from general to particular, moving from the decision on which kind of methodology to undertake to the decision on data collection instrument as well as the subsequent analysis.

6.7.1 Questionnaire development: the scales

The development of the questionnaire involved the refining and measuring of two concepts: service quality in higher education and student/customer satisfaction. In order to achieve that goal, the study has developed and adapted a set of scales. The first one in the questionnaire is the service quality scale based on the Q sort methodology, which represent the independent variables.

The dependent variables of the study are students' satisfaction, value for money and willingness to recommend. Attitude scales were also used to test these variables as respondents were asked to reveal their judgements about the set of dependent variables included in the study under a seven Likert scale. As stated before, this kind of scale consists of a number of statements that the respondents have to place their response in a continuum within the parameters of contrasting poles (Descombe, 2003). In the different scales used, the anchors were placed alternatively in order to avoid a bias response, as respondents tend to check off the first category that seems relevant on a paper survey. Therefore, some negative categories were placed first (to the left) to help cancel out the tendency to respond positively (Devlin et al., 1993).

6.7.1.2 Service quality scale

There are two broad types of scales used in customer satisfaction surveys, single and multi-item scales. Many researchers have used simple single-item scales (Andreasen and Best, 1977; Oliver, 1977). Although single-item scales are simple, they do have at least two faults. First, the single-item scale cannot provide information on components and cannot assess various dimensions separately; therefore it may not capture the complexity of customer satisfaction entirely. Secondly, it is very difficult to assess reliability with a
single-item measure, with the only reliability estimate being that of a test-retest format (Yi, 1990).

Recent customer satisfaction studies have tended to use multi-item measures of customer satisfaction (Bearden and Teel, 1983; Churchill and Surprenant, 1982). In this kind of format surveys respondents are not just asked to give an overall evaluation of their satisfaction with the service but are also asked to rate the key components of the service process (Danaher and Haddrell, 1996).

The literature in higher education has reported different scales to measure service quality. Following the well-know scale SERVQUAL, some studies have used this scale in the context of higher education. Results show that the gap between expectations and performance was very high. It has been argued that this scale is not suitable for a highly involved service like education because expectations would highly be reached by the performance (Tomkovick and Al-Khatib, 1996; Clemes et al., 2001; Browne et al., 1998; Wright and O’Neill, 2002).

SERVPERF has been used instead as it only includes the evaluation of service performance. Despite the results of this scale it does not cover important aspects reported in the literature which have a significant impact on students’ satisfaction (Tomkovick, and Al-Khatib, 1996; Clemes et al., 2001; Browne et al., 1998).

Therefore, this research attempts to develop a new scale to measure students’ perception towards the service provided by the university regarding three dimensions: physical quality, interactive quality and corporative quality. The 40 statements included were validated using Q methodology instead of focus group or in-depth interviews. It has been proved that this methodology is suitable for subjective evaluation of services.

The initial statements, a total of 107, were taken from previous studies in higher education and were shown to specialists in the area and the supervisors in order to ensure comprehension. They were kept short and simple to maximise the response rate and avoid
any difficulties in answering the questionnaire. Before their inclusion in the questionnaire developed for this study, all the statements were validated by two different groups of participants in two sessions where Q sorting was implemented. Using Q methodology, participants were asked to choose from those statements that better represented the dimensions under analysis and their responses were quantified to determine which of the statements have the highest frequency in order to reduce the number to a manageable and representative number to be used in the final questionnaire.

6.7.1.3 Student satisfaction scale

Students' satisfaction scale was meant to measure students' satisfaction with the institution. This scale was based on Bristow et al (2002), who developed an item scale to be used to assess students' satisfaction in higher education. After an analysis of previous scales found in the consumer satisfaction literature, these authors generated an initial pool of statements that were included in their scale called 'Student Satisfaction with college/university Scale'. The scale is based on the scale developed by Oliver (1993), which was limited to evaluate a course recently completed. The scales were composed of six items with category endpoints ranging from 1 (strongly disagree) to 6 (strongly agreed). Despite the high internal reliability (.92), this kind of scale limits itself to an end-of-term student evaluation of the course and the lecturer. Bristow et al., (2002) tried to give the scale a wider perspective to 'avoid a myopic view of measuring student satisfaction' (Bristow et al., 2002, p. 3). Accordingly they adapted the scale to the university context as a whole as they were reworded to more accurately fit the scope of a general tool to assess students' satisfaction with university.

They finally arrived at a five statements scale and it was tested with 79 undergraduate students in an American university. Based on Churchill’s outlines (1979), the initial stage of the investigation conducted by Bristow et al. (2002) was to examine the internal consistency of the five items included in the scale. The statistical analysis revealed a Cronbach’s alpha of .94, which showed that the items included in the scale adequately captured a single construct. Secondly the correlation of each scale item with the total
score was examined. Results showed all items achieved an item-total-correlation higher than .25, which was considered by Churchill as a cutting point to eliminate items from a scale. The following step in the assessment of the scale involves running factor analysis to identify whether the set of statements correspond to one factor as expected. Results confirmed Bristow et al's (2002) expectations. A common factor procedure with a Varimax rotation was run and a single factor was identified, which confirms the value of the scale.

As this scale appears to be reliable and was particularly used in higher education context, the current study adopted it. However, a seven-point Likert scale was used to be consistent with the rest of the dependent scales used in this research. The inclusion of this scale contributes to a wider assessment of the service and the general experience of students at the university. It can be compared against the service quality variables and the other dependent variables to identify the possible impact on students' satisfaction. The scales was originally written into a six-point Likert format with response categories ranging from (1) strongly disagree to (6) strongly agree, in a manner consistent with the work of Oliver (1993) on the original Satisfaction with Course scale. This scale was adapted to a seven-point Likert format to be consistent with the service quality scale and the other scales used as dependent variables in this study.

6.7.1.4 Overall students' satisfaction measurements

A single question was meant to assess the overall evaluation of the university experience presented in Section B2 of the questionnaire.

6.7.1.5 Behavioural intention scale

This scale was adapted from Zeelenberg and Pietiers' (2004) work. They developed a scale to measure behavioural intention to recommend the service provided. They used three items where they differentiate between family and friends and another statement for the general public to be encouraged to enrol into higher education. The statements were
presented using a seven-point Likert scale, ranging from (1) ‘extremely unlikely’ to (7) ‘extremely likely’.

Although based on Zeelenberg and Pietiers’ (2004) scale, the behavioural scale items to assess word-of-mouth communication (WOM) was adapted to the university context, as some differences exist between their study and the current study. First of all, the initial statements refer to a negative previous experience, which means that the service has been totally ‘accompli’. This is not the case with the students included in this study as that haven’t finished their studies yet, and recommending the institution seems to be better placed as a possible future behaviour. Therefore, the behavioural intention was formulated as a question. The initial scale included three items, which were addressed to different kinds of people: family, friends and general public. It was considered that family and friends could be included together, as other studies have done. Therefore, one item was formulated to include these groups and a second one to include only general people such as acquaintances. Both items were formulated as questions in a seven-point Likert scale, ranging from ‘extremely likely’ to ‘extremely unlikely’. The final statements were as follows:

- How likely is it that you would recommend this institution to your relatives/friends in your home country?
- How likely is it that you would encourage others to enrol in this university?

Despite the changes from the original scale, the pilot test confirmed that the modified scale had a high Cronbach’s alpha of .804, which means that the scale still is reliable with only two items.

6.7.1.6 Value for money measurement

The last variable was to assess students’ perception of the service provided and value for money. The question ranged from (1) ‘not at all’ to (7) ‘very much’ (Browne et al., 1998). Few studies have reported this variable to assess service quality in higher education. However, it has been extensively used in the service sector in general. Education may be
one of the important investments in a lifetime, economically and emotionally. The fee paid by overseas students is an economic investment that may have dramatic implications for the prospective students and their families. It is worth including this variable to identify the possible relationship with the other variables of the study.

6.7.2 Structure and layout

The questions to be included in a questionnaire should be simple, clear, interesting in order to gain respondent cooperation. The design and layout of the questionnaire is especially critical for mail and Internet surveys, as respondents have to fill in without any assistance. The question content will be determined by the information required by the objectives of the study (Sekaran, 2000).

6.7.2.1 Question types

The main consideration for the choice of response format is the data analysis method, which may specify a particular type of measurement, namely nominal, ordinal, interval or rational (Frazer and Lawley, 2000). Three main types of responses format could be used: open-ended, close-ended, and scale response.

- **Open-ended**: This first category is suitable when precise information is required and listing all the possibilities could be difficult and lengthy. The respondent is given freedom to decide the answer they want to provide. Depending on the questions, respondents need more effort and time to answer. The researcher also needs more time to recode the open answer as there is not a pre-established pattern for the possible answers. The answers are 'raw' material that needs to be organised and coded and analysed in a different way from the data that can be immediately entered in a statistical programme. The coding process has also proved to be unreliable because it can introduce the possibility of variability in the coding of answers. In the current study this kind of questions was used to collect information about the students' nationalities; otherwise it would be necessary to provide an endless list of alternatives to the respondents.
Close-ended questions: the second category can be categorised as either single (when one response is required), dichotomous (where two response items are provided), or multichotomous (where several alternatives are listed). In this case the alternatives are provided and the respondent is instructed to select an alternative or more. These questions with two or more alternatives are a practical way to collect information and time saving for the respondents, increasing response rate. In this study closed-ended questions were used to get demographic information such as gender (dichotomous); age; reasons for enrolling in the current institution; kind of accommodation; language proficiency; financial support; time of enrolment (multichotomous).

6.7.2.2 Questionnaire content

The content of the questionnaire can conveniently be divided into two components: objective and subjective. The distinction is based on the information that is meant to be collected from the respondents. Those questions that are collecting information about respondents' background can be called 'factual' questions. On the other hand when a subjective opinion is requested from the respondents, these questions are called 'attitudinal questions.'

Factual questions are used to cover issues such as gender and age and they do not require much in the way of judgement or personal attitudes on the part of respondents. Factual questions can be developed based on previous surveys and no more elaboration is required. They may cover areas where the chances of respondents misunderstandings, not understanding the question, or not possessing the knowledge necessary for giving a correct answer are much slighter that with attitude question (Moser and Kalton, 1971).

In this study factual questions were used with the purpose of obtaining personal information (demographic variables in sections A and C) about the respondents as well as their reasons for enrolling (section A). The variables included in the background section were based upon some of the most frequently studied background characteristics that have consistently appeared across a large body of relevant studies (Wiers-Jenssen et al.,
Their responses might be useful to identify any pattern between the respondents and their answers to the questionnaire and to group them according to their responses.

Following the above discussion, the factual questions were presented as closed questions, and the possible alternatives were listed to facilitate the response. The use of closed ended questions ensures the researcher that the results of the different groups taking part in the study could readily be compared. This format also reduces the time and the respondents may feel more motivated to answer the questions. The questions were kept short and simple to maximise the response rate and avoid any difficulties in answering the questionnaire. However, it was necessary to include open-ended questions, which were exclusively used to get data that may have many alternatives such as nationality of the participant and listing all the possibilities could be difficult and lengthy (question 5 in Section C). Open ended questions were also used to collect information about the name of their higher education institution and the degree they have been enrolled for (questions 2 and 3 in Section A).

Since demography has influenced for so long-and it continues to be useful- it is useful to get the information about students as they come from different backgrounds and previous experiences. It has been claimed that very little has been done in recent years on the influence of demographic variables on customer satisfaction (Evans et al., 1996). Demographic variables have been used to discriminate among market segments, giving details about the profile of the customer. They are the most frequently collected data for identifying the characteristics of consumers in the service and industrial sectors (Gladwell, 1990). The inclusion of demographic data serves to collect information about gender, age, occupation, marital status, nationality, income, educational level, as well as specific information required for each industrial sector. Most questionnaires used to assess service quality and customer satisfaction include a section dedicated to collecting information about customer demographic variables (Moutinho, 2000). Segmentation based on psychographic segments, when successful, produce clearly defined groupings of individuals with similar personalities, life-styles, and interest patterns.
Although the results are not conclusive or ready to be generalized to every industry, demographic variables have a tendency to influence satisfaction (T test could be used to check results). Peterson and Wilson’ (1992) also say that ‘although not subject to extensive study, there are indicators that several variables influence customer satisfaction ratings in addition to the stimulus object (product / service). Some studies have found that demographic variables may determine the level of customer satisfaction (Oyewole, 2001). Tomkovic and Al-Khatib (1996) used a large population of international students in 25 U.S business schools. Results suggest that men differed significantly from women in their assessment of perceived service quality.

As stated before, most of the questions were closed-ended and few were open-ended, as exemplified in Figure 6.3.

**Figure 6.3: Example of questions**

<table>
<thead>
<tr>
<th>Section A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How long ago did you finish it?</td>
</tr>
<tr>
<td>Last year</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Section C</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>2. Age</td>
</tr>
<tr>
<td>20-24</td>
</tr>
<tr>
<td>36-40</td>
</tr>
<tr>
<td>3. What is your nationality?</td>
</tr>
</tbody>
</table>

In section A of the questionnaire a set of options about the reasons for enrolling was included. Respondents were given open-ended alternative (a multichotomous type) where several alternatives were listed and they were asked to select all the possible alternatives that have affected their decision. As the list might be endless, an open question was also provided to capture any possible reason.
In relation to the reasons to enrol into the higher education institution the alternatives included in this study have been reported in the literature about higher education experience in a foreign country, which are either related to the sending or host country. The sending country might require some specific kind of knowledge to carry out national economic plans not available at home, so they send students to prepare in that area and then apply it back home. It could be also due to insufficient number of universities or entry restrictions for some minorities (e.g., political and religious reasons) (Bourke, 2000). The general economic and political instability of the sending country might force parents to send their children abroad, when the economic conditions are given to support them in a foreign country.

This reputation and quality has been recognised by national and international organisations. Therefore, many of these important companies are willing to recruit students who have obtained a degree in those institutions. On the other hand, students are conscious of the competitive and demanding conditions in the marketplace and make efforts to get the best education in order to qualify to enter into an important organisation and develop a successful career. Therefore, the reputation of the institution and the subsequent benefit to get a recognised degree which 'opens doors' has been reported as the main reason to enrol into higher education abroad, and in the UK in particular (Kinnell, 1989; Rogers and Smith, 1993; Lapidus and Brown, 1993; Heist, 1994; Baimbridge, M., 1997; Lowe and Cook, 2003). This reputation is recognised by both home country and international organisations. Higher education is very much a feature of each country, it influences and is influenced by the country's culture. There are certain countries which have a good reputation (US, UK, Australia, and Ireland) and as a result some students tend to believe that higher education offerings in those counties are high quality.

These reasons are followed by the use of English as the language of instruction, which has nowadays been recognised as a fundamental prerequisite when selecting a country to study, as most organisations use English and it is the language for up-to-date technology and communication. If English is not the mother tongue of the students, the institution
should provide language training support as well as study skills learning facilities, if necessary.

Based on this revision of the literature, a list of reasons was offered to the respondents. As the alternatives could be endless, an open question was included to give them the opportunity. The variables mentioned in this section have proved to be important reasons for selecting a higher institution and therefore they will have an important role in determining the level of satisfaction.

**Figure 6.4: Reasons for enrolling into higher education abroad**

<table>
<thead>
<tr>
<th>What were the main reasons for selecting your current university? (Check all that apply)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree not available at home</td>
</tr>
<tr>
<td>Level of fees</td>
</tr>
<tr>
<td>Sponsor’s decision</td>
</tr>
<tr>
<td>Better facilities overseas</td>
</tr>
<tr>
<td>Getting an offer of a place</td>
</tr>
<tr>
<td>Content of the course</td>
</tr>
<tr>
<td>Know somebody studying here</td>
</tr>
<tr>
<td>Others (Please specify)</td>
</tr>
</tbody>
</table>

**Attitudinal questions** requires respondents to reveal information about feelings, to express values, in a way that demands a judgement about things rather than the simple reporting of facts, as they do in the factual questions (Denscombe, 2000). They demand an extra effort in the development of the questions as they may include more difficult aspects than simple events. Their complexity means that they may be easily sensitive to bias wording, by response sets, and by contextual effects. As a way to minimise these
problems, the researcher may provide to the respondents a number of statements that represent a variety of options to better express their attitude towards an issue.

Attitude scales consist of a set of questions (6 to more than 24) that are answered on an attitude continuum within the parameters of contrasting poles (e.g., agree-disagree; favourable-unfavourable) (Opperman, 1992; Clark et al., 1998). The important issue about attitude scales is that they have been scaled and that they are the result of a selective process from an original larger number than the final version presented to respondents in a questionnaire. In the present study, the item generation was done using Q methodology (see previous chapter). Two different rounds were conducted to validate the statements and reduce the initial set of 107 items to 40 items that were used in the main survey questionnaire in section B.

There are different methods of constructing attitude scales (e.g., Gutmann, Osgood semantic differentiation, Likert scales). They have been constructed in order to satisfy different requirements based on the study objective and the kind of information required from respondents (Oppenheim, 1992). In this study the service quality scale was presented using one Likert scale. Likert scales have proved to be appropriate when the dimensions to be measured are subjective and the researcher is reasonably confident that they actually exist (Szivas, 1997; Stergiou, 2004). Likert-scale type consists of a series of declarative statements and subjects are asked to indicate whether they agree or disagree with each statement, on a scale including from five to seven options. These scales have been shown to create variance that is necessary for examining the relationships among items and create adequate internal consistency, measured using Cronbach’s Alpha and often reaching a coefficient of .85 (Oppenheim, 1992).

It has been reported in the literature that a seven-point Likert scale has been extensively used to measure service quality in higher education and in most cases the reliability coefficient shows high results. Therefore, for the purpose of the current study a seven-point Likert scale was used. The same scaling was also used to measure the dependent variables of the study.
6.7.3 Questionnaire Organisation

After determining the appropriate scale to measure the different concepts, the survey questionnaire was structured in three parts. Table 6.2 summarises the description and objectives behind each of the three sections of the questionnaire.

<table>
<thead>
<tr>
<th>Sections</th>
<th>Description</th>
<th>Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A</td>
<td>Questions to identify the respondents' current institution, degree and reasons for enrolling.</td>
<td>To identify the respondents as university students and their reasons for enrolling in their current institution</td>
</tr>
<tr>
<td>Section B1</td>
<td>This section contains the validated items from the Q sorting tests. It includes the three dimensions distributed in 40 items. These are the independent variables of the study.</td>
<td>It was sought to assess the validity of the scale developed using Q methodology and to confirm the three dimensions</td>
</tr>
<tr>
<td>Section B2</td>
<td>This section includes the dependent variables of the study, namely students' satisfaction, willingness to recommend and value for money.</td>
<td>To assess the respondents' global perception of the university service, global satisfaction, behavioural intention and value for money</td>
</tr>
<tr>
<td>Section C</td>
<td>This section includes personal information about respondents, such as age, gender, marital status, nationality, residence, language proficiency and funding</td>
<td>Information obtained from this section was used to identify any difference among the groups</td>
</tr>
</tbody>
</table>

Section A of the questionnaire aims to identify the respondents' current institution and their degree as well as the reasons for enrolling in a Master programme in their current higher education institution in the UK. This provides some parameters that may affect the way respondents respond to the rest of the questionnaire. Information was also required about their reasons for selecting their current institution.
Section B1 of the questionnaire was meant to measure the three dimensions of service quality. The dimensions were presented as a set of 40 validated items after using Q methodology. They were presented using a seven-point Likert scale, ranking from (1) ‘strongly disagree’ to (7) ‘strongly agree’. With attitude questions the respondents are asked to reveal information about feelings, to express values in a way that require a judgement about things rather than reporting facts (Denscombe, 2003). The advantage of the interval scale is that it allows researchers to measure the distance between any two points on the scale. Interval scales also gives the researcher the opportunity to add more questions as this format reduces the response time and participants may feel more motivated to answer the questions.

Section B2 includes the dependent variables of the study, overall satisfaction, intention to recommend and value for money. A seven-point scale was also used in this section of the questionnaire.

Section C of the questionnaire included some demographic information about the participant. The demographic variables included in the study were gender, age, marital status, language proficiency, nationality, type of residence, and funding sources. The variables were investigated for their potential effects on students’ evaluation of the service quality. T-tests were used to compare groups along the three service quality dimensions and the dependent variables. Alternatives were given to most of the questions in this section, expect an open-ended question used to ask the respondents to write down their nationality.

As suggested by Bristow et al. (2002) it would be reasonable for higher institutions to explore potential ethnic/cultural differences in the student satisfaction with the institution. Administrators of higher education institutions that are targeting international students may be well advised to consider and investigate the relationship between ethnicity/culture and student satisfaction.
6.8. Pre-testing

Pre-testing a questionnaire is an important stage to ensure that potential problems are identified and eliminated. It helps to assess the reliability of the various constructs, identify any errors, and ensure the clarity of instructions. A sound questionnaire design should focus on areas such as: wording; planning how the variables are going to be categorised, scale, and coded; and general appearance. Retesting also provides information about the data collection and the procedure to analyse the data (Groves et al., 2004). Respondents in the pre-test can also tell you the amount of time needed to complete the questionnaire. There is no specific number but around 20 to 30 people could be included in total. Such a sample size will allow some statistical analysis as well as check the properties of the data collected (Dillman, 1978).

It is recommended that three groups of people be used to pre-test the questionnaire: colleague researchers, potential users and a sample of potential respondents. Colleagues are chosen because they understand the study’s purpose and they have similar training as the researcher. Their function is to determine whether the questionnaire will be able to accomplish the survey objectives. Potential users of the data are people with a high degree of knowledge about the topic of interest. Their function is to check the accuracy and completeness of the question content. The last group, potential respondents, is used to test that the questionnaire functions properly. The sample should reflect the diversity of the population of interest (Sekaran, 2000).

In this our case, colleagues and research specialist were asked to evaluate the instrument and make comments about the layout and wording. Accordingly, some modifications were made to the instrument before distributing it to participants for the pilot. In order to control participant bias, a mixed group of undergraduate (11 students form the School of Management) and postgraduates (19 students from other schools) were selected as subjects for the pilot study. None of them were candidates for the main study because they did not belong to the target group – postgraduate students in the School of Management, as that is exclusively for postgraduate students. In relation to the
characteristics of the sample, most of the undergraduates were native English speakers, which was appropriate to check comprehension.

The postgraduate group was composed exclusively of overseas students. Most of them were in their second and third year of their studies so they have had experience of the university service could express an opinion (see Appendix 1 for a complete analysis of the demographic characteristics of the participants). The group was almost evenly distributed among gender (20.3% male and 23.2% female). In relation to age group a significant majority belong to the first age category, ranging from 20-24 years old (31.9%). In relation to nationality, the group was evenly split into two categories: British and non-British, fifteen respondents in each group. The non-British belong to different nationalities. In relation to specific funding resources, 30.4% of the respondents (21 subjects) were self funded, which corresponds with previous findings. The main reason for enrolling was the international acceptance of the degree (58.1%), followed by English language (38.7%), and reputation of the institution in their home country (32.3%).

Students were told about the purpose of the survey and were motivated to make any comments or questions about the instrument. It was an excellent opportunity to discuss with the different small groups of participants on their general reaction to the questionnaire (e.g., length, layout) and how they felt about completing the instrument. Some of them were pleased to know that students' evaluation is important for the researcher and the institution and were even willing to make comments about their own circumstances (e.g., local undergraduate students).

The data collected was entered and analysed using SPSS. The purpose of the pilot test was to determine the reliability of the instrument and any possible difficulty to follow instructions and comprehend the items. The first test done was with the service quality scale and the Cronbach's Alpha for the service quality scale was significantly high, as it reaches an alpha of .875, suggesting that the scale explains the construct of service quality in the educational context. The scale was later analysed according to the three different dimensions included in the study. Physical quality reached .861; followed by
Interactive quality with .812. The last scale, Corporative quality, obtained the minimum required of .669 to be accepted. This is shown in Table 6.3.

Table 6.3: Reliability analysis of the service quality scale per dimension (Pre-test)

<table>
<thead>
<tr>
<th>Physical quality (15 items)</th>
<th>Interactive Quality (11 items)</th>
<th>Corporative Quality (14 items)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Item-Total Correlation</td>
<td>Cronbach's Alpha if Item Deleted</td>
<td>Corrected Item-Total Correlation</td>
</tr>
<tr>
<td>.587</td>
<td>.848</td>
<td>.684</td>
</tr>
<tr>
<td>.659</td>
<td>.849</td>
<td>.575</td>
</tr>
<tr>
<td>.521</td>
<td>.851</td>
<td>.442</td>
</tr>
<tr>
<td>.580</td>
<td>.849</td>
<td>.593</td>
</tr>
<tr>
<td>.670</td>
<td>.843</td>
<td>.353</td>
</tr>
<tr>
<td>.612</td>
<td>.846</td>
<td>.175</td>
</tr>
<tr>
<td>.193</td>
<td>.870</td>
<td>.583</td>
</tr>
<tr>
<td>.499</td>
<td>.852</td>
<td>.255</td>
</tr>
<tr>
<td>.538</td>
<td>.850</td>
<td>.621</td>
</tr>
<tr>
<td>.701</td>
<td>.842</td>
<td>.617</td>
</tr>
<tr>
<td>.564</td>
<td>.849</td>
<td>.522</td>
</tr>
<tr>
<td>-.163</td>
<td>.886</td>
<td></td>
</tr>
<tr>
<td>.685</td>
<td>.841</td>
<td></td>
</tr>
<tr>
<td>.532</td>
<td>.851</td>
<td></td>
</tr>
<tr>
<td>.571</td>
<td>.849</td>
<td></td>
</tr>
</tbody>
</table>

Cronbach’ Alpha = .861 Cronbach’ Alpha = .812 Cronbach’ Alpha = .669

Overall Alpha coefficient = .875

Table 6.3 shows that three items (in bold) have a negative value under ‘Corrected Item-Total Correlation’ and total alpha increased if deleted. These items were not deleted but reworded as this was the pilot test and were kept for the final survey. Apart from these items some other modifications were done. For example an item from Physical quality (item 10) included computer and printer facilities at the same time but participants have pointed out that the service was not the same and they could not properly assess the service using this item. Therefore, it was split into two items, one referring to computer and the other one to printer facilities. The statement ‘Equity in student assessment’ was not clear and was changed to ‘Feedback from coursework/assignments is adequate’ (item 16), which is also related to the academic assessment.
The scales developed to assess the dependent variables were also analysed using Cronbach' Alpha analysis. The first one, satisfaction which included 5 items, obtained an alpha of .899; the next was the behavioural scale to recommend, reached an alpha of .811. These results show that with a small sample of 30 participants the scales have proved to be reliable and suggest that similar results would be obtained with a larger group of participants.

As an outcome of the pre-test stage, the alternative 'No Applicable' (N/A) was included in section B where the service attributes were evaluated because some students expressed that they have not used some of the university facilities included in the questionnaire and therefore were unable to evaluate the service (e.g., sports centre). This modification was introduced to the final version of the main survey.

6.8.1 Distribution of the questionnaire

The modifications from the pilot questionnaire were done and when the instrument was ready was ready, a total of 360 questionnaires were distributed in the second semester during three weeks of the Spring semester. As stated before, the face-to-face modality ensures a high response rate (Sekaran, 2000), which was the case in this study. Most of the questionnaires were distributed on spot with a high response rate of 94.4% (340 returned questionnaires) as few students failed to return the questionnaire.

Lecturers were contacted and asked for permission to spend few minutes of their class for the researcher to distribute the questionnaire and wait for the respondents to fill it in. In few cases, lecturers preferred to distribute the questionnaires themselves and then return the whole set to the researcher. In both modalities, this kind of survey distribution ensures higher response rate than the mail survey. A total of 360 questionnaires were distributed in the second semester during three weeks. As previously justified, a sampling above 300 respondents has been considered as an appropriate number for the current research.
It is necessary to point out that the administration of this survey is not related with the survey 'Student Module Evaluation', administered at the end of each semester to evaluate each module as part of the institution policy. The aim of the current study is broader as it aims to evaluate the general service and facilities provided by the school and the university as a whole.

In the process of selection of respondents, it was impossible to identify, a priori, who was an overseas student. This information was not available to the researcher beforehand. Thus the information was basically obtained by asking the students before filling in the questionnaire. When impossible because the number of students was too large or the questionnaires were distributed by the lecturers, the information about their nationality was not confirmed until the questionnaire was handed in and this question was checked, before entering the data of the whole questionnaire. Otherwise, when the respondent was identified as a non-overseas student, the questionnaire was discarded.

After collecting the data, a total of 15 questionnaires were discharged as they were answered by non-overseas students. Some of the accepted questionnaires were uncompleted (17 questionnaires) and were rejected as well. Despite the distribution strategy used, 20 questionnaires were not returned and the final number of usable questionnaires to be included in the final analysis was 308, representing 85.5% of the total number distributed.

Initially, it was expected to compare two higher education institutions which run similar programmes in the management sector. In order to achieve this objective, a set of 150 questionnaires was sent to the second university to be distributed by the contact among the students and then returned by the students using a self-addressed envelope provided by the researcher. Unfortunately, the timing was not convenient as the students were not attending more taught modules at the time when the questionnaire was sent for distribution. The response rate was extremely low reaching a total of 22 questionnaires (14.6%) and therefore could not be used in the study to make any comparison with the main survey distributed.
6.9 Forms of analysis

After the collection of the surveys, the next step was to code the raw data to a form suitable for analysis. The first stage was to code the data, in other words, assigning a number to each answer and using it consistently during the data entering process. Coding the questionnaire is crucial as it helps in entering the data effectively as well as conducting an accurate statistical analysis of the survey results. Coding is both an act of translation and an act of summarisation of the data collected. The coding of the instrument was determined after collecting the data for the pre-test. The selected coding was meant to be simple in entering the data to minimise errors and processing time.

As mentioned before, most of the items were closed-end questions with some bipolar ones such as gender (Male/ Female). In this case numerical values were easily allocated to the alternative, for example, male 1 and Female 2. On the other hand, some questions gave a set of alternatives and the coding procedure was different. For example in relation to reasons for enrolling in their current institution, students could select from 14 options, and in funding alternatives 8 options were provided. These alternatives were coded separately, as individual responses because respondents may select more than one alternative (e.g., reasons and funding sources).

The seven positions -Likert scale- used in the section about the evaluation of service attributes, which ranged from 1 (completely disagree) to 7 (completely agree), was given codes from one to seven, following the same sequence. The scales to measure satisfaction and behavioural intention also ranking from 1 to 7 were coded following this sequence. Data entry of each completed questionnaire was done using the SPSS software package and all entries were double-checked for typing mistakes.

6.9.1 Statistical tests for differences

As a fundamental part of any study, the investigator needs to compare how the sample reacts to the different variables and whether any difference is related to the characteristics
of the group (Lazersfeld and Roseberg, 1955). In order to fulfil this goal the first step was to describe all the variables of the study. After this analysis crosstabs were done against all the variables in order to identify the relationship using the Chi-square test. Based on the test results, the variables that result statistically significant were then presented using the boxplot graphs in order to identify the degree and direction of the relationship. An example of this procedure is presented with the variable Age and Recommend. Table 6.4 shows that the relationship is statistically different, where p value is .004.

| Table 6.4: Chi-Square Tests  
(Age vs. Recommend) |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Pearson Chi-Square</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
</tr>
<tr>
<td>N of Valid Cases</td>
</tr>
</tbody>
</table>

After the identification of the dependency between the variables, a boxplot was run to graphically visualize the relationship. Figure 6.5 presents an example of this procedure.

| Figure 6.5: Age vs. recommend (boxplot) |
The boxplot graph consists of a box with two sides (upper and lower quartile), and the media value that shows where the values are placed. The box may also have extreme values that are represented by the lines outside the boxes in both quartiles.

6.9.2 Scale analysis

A number of methods were employed for the process of examining the scale data. There included five statistics dealing with the relationship between the individual items of the scales and the items as a set. The following methods were used:

a) Scale mean of item deleted: This results shows how the mean changes when a specific item is removed. The number was computed by subtracting the average score for the item from the scale means.

b) Correct item-total correlation: this is the Pearson correlation coefficient between the scores on the individual item and the sum of the scores on the remaining items.

c) Square multiple correlations: each item was regressed upon the remaining items in the set making up a scale and the squared multiple correlation coefficient was computed in order to screen for variables with multicollinearity or singularity.

d) Cronbach's alpha: this is a method for estimating the reliability of a scale by examining its internal consistency. This is based on the principle that each part of the scale should be consistent with the other parts. As it would be expected with a procedure designed to estimate internal consistency, alpha is related to the average of all the inter-item correlations. The higher the correlations between the items, the greater the internal consistency. This makes sense if we assume that that all items are indicators of a common characteristic. In other words, the reliability of a scale is related to the homogeneity of the items with each other. A Cronbach alpha of .70 or higher is considered moderate in education and social sciences (Nunnally, 1967).

e) Alpha if item deleted: this lists what the overall alpha would be for a scale if the item in question is deleted. This was computed in order to measure the effect of individual items on the reliability of the scale.
6.9.3 Factor analysis: purpose and description

Factor analysis was carried out to empirically identify those factors that would link together survey items seen as related to one another by the respondents (Joseph, 1998). At the same time this procedure investigates whether the three dimensions of the study used in the questionnaire correspond to what students actually perceived when they evaluate the service. The general purpose of factor analysis techniques is to find a way to condensing the information obtained in a number of original variables into a small set of new, composite factors with a minimum loss of information (Hair et al., 1995). The final objective is to identify the fundamental constructs or dimensions to underlie the original variables. Factor analysis is a technique particularly suitable for analyzing the patterns of complex, multidimensional relationships in a data matrix. It can be used to examine the underlying patterns or relationship for a large number of variables and whether the information can be condensed or summarised to a smaller set of factors or components.

With factor analysis, it is possible to identify in the first place the separate dimensions of the structure and then determine the extent to which each variable is explained by each dimension. Once these dimensions and the explanation of each variable are determined, the data can be summarised which means that underlying dimensions can be reduced to a much smaller number of items than the individual variables. The next step is to reduce the data by calculating scores for each underlying dimension and substituting them for the original variables.

The first procedure is the calculation of inter-variable associations. These are usually, but not always, correlation coefficients. The table of all inter-variable correlation coefficients is known as the correlation matrix and it is the structure implied in a matrix that has been explored. Correlation coefficients tend to be less reliable when estimated from small samples, therefore, it is important that the sample size be large enough that correlations are reliable estimated.
Factor analysis can be used with pre-existing sets of variables or with the variables defined and selected by the researcher in a new research effort. In other words, the use of factor analysis can not be purely exploratory. There is a preconceived set of variables in the study is whether the dimensions are present or not.

6.9.3.1 Criteria for the number of factors to be extracted

The first step is to extract the largest and best combination of variables and then proceed to smaller, less understandable combination. The number of expected factors to extract could be based on two criteria: (1) latent root criteria; (2) a priori criterion. The first category, latent root criterion, has been extensively used because it can be applied to either components analysis or common factor analysis. Only the factors having latent roots or eigenvalues greater than 1 are considered significant, otherwise the factors are considered insignificant and are disregarded. The rationale for the latent root criteria is that any individual factor should account for the variance of at least a single variable if it is to be retained for interpretation. Using the eigenvalue for establishing a cut-off is probably most reliable when the number of variables is between 20 and 50.

When applying the second category, a priori criterion, the analyst already knows how many factors to extract before undertaking the factor analysis. The analyst simply inputs the data and requests a specific factor number to be extracted. This approach is useful if the analyst is testing a theory or hypothesis about a number of factors extracted. It can be also be justified in circumstances where the analyst is attempting to replicate another researcher's work and extract the same number of factors that was previously found.

1) Percentage of variance criterion

The percentage is an approach in which the cumulative percentage of the variance extracted by successive factors is the criterion. The rationale for this is to ensure practical significance for the derived factors. There is a suggested number to reach; however, studies in the natural sciences tend to reach at least .95 percent of the variance or until the
last factor accounts for only a small portion. In social science, on the other hand, a solution for 60 percent has been found to be a common percentage as the information in that field is often less precise.

2) Scree test criterion

The scree test is used to identify the number of factors that can be extracted before the amount of unique variance begins to dominate the common variance structure. The scree test is derived by plotting the latent roots against the number of factors in their order of extraction, and the shape of the resulting curve is used to evaluate the cutoff point. As a general rule, the scree test results in at least one and sometimes two or three more factors being considered significant than does the latent root criterion.

3) Heterogeneity of respondents

When calculating the factors for a heterogeneous group with at least one set of variables, the first factors will be the more homogeneous across the entire sample. In the same process, variables that are better discriminators between the subgroups of the sample will load on later factors. When the objective is to discriminate among the subgroups of a sample, the factor analyst should extract additional factors beyond those indicated by the first factors and examine the additional factors' ability to discriminate among groups. If they prove less beneficial in discrimination, the solution can be run again and these later factors eliminated.

As has shown in this section, the selection of the number of factors to be incorporated in the analysis should depend on the kind of criteria used. Selecting the number of factors is interrelated with an assessment of structure, which is revealed in the interpretation phase. Thus, several factor solutions with differing numbers of factors are examined before the structure is well defined. The selection of the wrong number of factors (either too many or too few) may have consequences in the interpretation of the data. If few factors have been used then the correct structure is not revealed and important dimensions may be
omitted. On the other hand, if too many factors are retained, the interpretation becomes harder when the results are rotated. Therefore, the factor analyst should always strive to have the most representative and parsimonious set of factors possible.

6.9.3.2 Interpreting the factors

After the selection of the number of factors, there are three steps involved in the derivation of a final factor solution. First, the initial unrotated factor matrix is computed to assist in obtaining a preliminary indication of the number of factors to extract. In computing the unrotated factor matrix, the analyst is simply in the best linear combination of variables. That means that the particular combination of original variables would account for the more of the variance in the data as a whole than any other linear combination of variables. Therefore, the first factor may be viewed as the single best summary of linear relationships exhibited in the data. The second factor is defined as the second-best linear combination of the variables, subject that it is orthogonal to the first factor. To be orthogonal to the first factor, the second one must be derived from the proportion of the variance remaining after the first factor has been extracted. Thus the second factor may be defined as the linear combination of variables that accounts for the most residual variance after the first factor has been removed from the data. Subsequent factors are defined similarly, until all the variance in the data is exhausted.

Unrotated factor solutions achieve the objective of data reduction. However, this may not offer the most adequate interpretation of the variable under examination. Therefore, it becomes necessary to factor loading each variable. The factor loading is the means of interpreting the role each variable plays in defining each factor, in other words, factor loadings are the correlation of each variable and the factor. Loadings indicate the degree of correspondence between the variables. Generally, rotation will be desirable because it simplifies the factor structure and it is usually difficult to see whether unrotated factors will be meaningful or not. Therefore, the second step employs a rotation method to achieve simpler and theoretically more meaningful factors solutions. In most cases
rotation of the factors improves the interpretation by reducing some ambiguities that often accompany initial rotated factor solutions.

The third step implies the need to specify the factor model owing to (1) the deletion of one variable or some; (2) the desire to employ a different rotational model for interpretation; (3) the need to extract a different number of factors; (4) the desire to change from one extraction method to another. Any modification will imply the return to the extraction stage.

As exposed above, it is important to rotate the factors. This procedure consists of the 'rotation' of the original reference axes of the factors until some other position has been reached. The ultimate effect of rotating the factor matrix is to redistribute the variance from earlier factors to later ones to achieve a simpler, theoretically more meaningful factor pattern. The simplest case of rotation is orthogonal rotation in which the axes are maintained at 90 degrees. This approach has been extensively used because practical reasons associated with the statistical packages include in most computer.

On the other hand, the oblique rotation method is less utilised because the analytical procedures are not as widespread as those related to the orthogonal rotation. It is, however, more flexible because the theoretically important underlying dimensions are not assumed to be uncorrelated with each other. This rotation represents the clustering of variables more accurately as each rotated factor axis is closer to the respective groups of variables. This accuracy is the result of the fact that each rotated factor axis is now closer to the respective group of variables. It also provides information about the extent to which the factors are actually correlated with each other.

As stated before, no particular rules have been developed to guide the analyst in selecting the kind of rotation technique to be used with the data. There is no compelling analytical reason to favour one rotation method, and the decision should be made on the basis of the particular needs of a given problem research. If the goal is to reduce the number of original variables, regardless of how meaningful the resulting factors maybe, the appropriate solution would be an orthogonal one. It is also useful when the researcher
wants to reduce a large number of variables to a smaller set of uncorrelated variables for subsequent use in regression or other predictive technique. However, an oblique rotation is appropriate when the ultimate goal is to obtain several theoretically meaningful factors or constructs.

Several different approaches are available for performing either orthogonal or oblique rotations. However, only a limited number of oblique rotations are available in most statistical packages. The decision will depend on the available package to the researcher. In relation orthogonal rotation methods, there are three major approaches are available: QUARTIMAX, VARIMAX, and EQUIMAX.

a) QUARTIMAX: the ultimate goal of this rotation is to simplify the rows of the matrix; that is, it focuses on rotating the initial factor so that a variable loads high on one factor and as low as possible on all other factors. This method has not proved very successful in processing simpler structures as it tends to produce a large general factor as the first factor on which most, if not all, of the variables have high loadings.

b) VARIMAX: this approach, on the other hand, aims to simplify the columns of the factor matrix. This method maximizes the sum of variances of required loadings of the factor matrix. With this approach, there tends to be high loadings (i.e., close to -1 or +1) and some loadings near 0 in each column of the matrix. The logic is that interpretation is easiest when the variable-factor correlations are close to either (a) +1 or -1, thus indicating a clear positive or negative association between the variable and the factor, or (b) close to 0, indicating a clear lack of association. Although the QUARTMAX solution is analytically simpler than the VARIMAX solution, VARIMAX seems to give a clearer separation of the factors.

c) EQUIMAX: this approach is a compromise between the QUARTIMAX and VARIMAX approaches. Rather than concentrating either on simplification of rows or columns as the other two approaches do, this one tries to accomplish some of each. However, this approach has not gained widespread acceptance and is used infrequently.
Once the factor analysis approach has been selected, it is important to decide which factors loadings are worth considering. As stated before, a factor loading represents the correlation between an original variable and its factor. There are three suggestions to help the interpretation of factor lading:

1) The first one is based on common practice by analysts. It has been agreed that factors greater than ± .30 are considered to meet the minimal level; loading of ± .40 are considered more important; and if the loadings are ± .50 or greater, they are considered practically significant. This means that the larger the absolute size of the factor loading, the more important the loading in interpreting the factor matrix.

2) A factor loading represents the correlation between an original variable and its factor. As factor loadings have substantially larger standard errors than typical correlations, factors loadings should be evaluated at considerably stricter levels. The analyst could consider significant factor loadings according to the sample size used. Figure 6.6 contains the sample sizes necessary for each factor loading value to be considered significant.

**Figure 6.6: Factor loading**

<table>
<thead>
<tr>
<th>Factor loading</th>
<th>Sample size needed for significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>.30</td>
<td>350</td>
</tr>
<tr>
<td>.35</td>
<td>250</td>
</tr>
<tr>
<td>.40</td>
<td>200</td>
</tr>
<tr>
<td>.45</td>
<td>150</td>
</tr>
<tr>
<td>.55</td>
<td>100</td>
</tr>
<tr>
<td>.60</td>
<td>85</td>
</tr>
<tr>
<td>.65</td>
<td>70</td>
</tr>
<tr>
<td>.70</td>
<td>60</td>
</tr>
<tr>
<td>.75</td>
<td>50</td>
</tr>
</tbody>
</table>

*Source: Hair et al., 2003 (p. 385)*

The sample used in this study was composed of 308 respondents, therefore the adequate factor loading was .35, which was suitable for this sample size.
3) The disadvantage of methods 1 and 2 is that the number of variables being analysed and the specific factor being examined are not considered. The fact that unique variance and error variance begin to appear in later factors means that some upward adjustment in the level of significance should be included. The number of variables being analysed is also important in deciding which loadings are significant. As the number of variables being analysed increases, the acceptable level for considering a loading factor decreases.

A number of issues must be considered when conducting a factor analysis study (Ford et al., 1986):

1) The choice of factor extraction model to be used;
2) The methods of rotation (e.g., VARIMAX)
3) The decision about the number of factors to retain (e.g., scree)
4) The interpretation of the factor solution.

High bivariate correlations are not a proof that the correlation matrix contains factors. There is a possibility that the correlations are between only two variables and do not reflect underlying processes that are simultaneously affecting several variables (Tabachnick and Fidell, 1996). Therefore, it is necessary to undertake further tests to determine if the researcher could proceed with the factor analysis of the 40 items or some of them have to be eliminated. Two tests to be conducted are: (i) The Kaise-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser, 1970; 1974) and (ii) Bartlett’s (1954) test of sphericity.

(i) The Kaise-Meyer-Olkin (KMO): This measure of sampling adequacy is an index for comparing the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. A KOM measure of .60 (minimum proposed by Kaiser, 1974) and above means that a factor analysis of the variables is a good idea, since correlations between pairs of variables can be explained by the other variables. A high value obtained here is a good indicator that the given set of data is adequate for factor analysis.
(ii) The Bartlett's test: this test can be used to test the hypothesis that the correlation matrix is an identity matrix. That means that all diagonal terms are 1 and all-off diagonal terms are 0. A high significant level of the test of sphericity is a very comfortable indication that the given set of data is adequate for factor analysis.

As stated before Varimax rotation has proved to be a technique extensively used in satisfaction research and it was considered convenient for the current study. The number of respondents was 308 and then .35 was considered the necessary factor loading to validate the factors. In order to test that the correlation matrix contains factors both tests, the Kaise-Meyer-Olkin (KMO) and Bartlett were conducted. The results pf those tests are discussed in the next chapter, Findings.

6.10 Summary

This chapter has suggested how a research plan should be done and justified the selection of particular criteria to conduct the current study. As exposed here many decisions have to be taken in order to achieve the objectives of the study using a suitable methodology that would provide coherent and valid results.

The scale developed for the service quality section (independent variables) was the result of the implementation of Q methodology which a initial larger number of statements, explained in details in the previous chapter. The other scales used to measure the dependent variables have been previously used and proved to be reliable and valid and this has been confirmed in the pilot test conducted before the main survey of this study. The analysis of the questionnaire has required statistical techniques, from cross tabulations to factor analysis. The next chapter presents the results of the main survey.
Chapter 7

Main Survey Findings

7.1. Introduction

This chapter presents the findings of the data collected during three weeks in March 2005 from postgraduate students during the second semester in a higher education institution in the UK. The presentation of the findings follows the questionnaire layout and it starts with the descriptive analysis of each section with all the variables used in the study. This plan of presentation is used to facilitate understanding of the intricate statistical procedures involved in the analysis of the questionnaire (Ekinci, 1999). The first section, Section A of the questionnaire, is a set of questions related to the previous experience as students and their reasons for enrolling into the current master programme. Section B includes the scale developed using Q methodology to measure service quality. This section also includes the scales to measure satisfaction, value for money, and intention to recommend the institution. Finally, Section C includes demographic variables such as gender, age group, marital status, nationality, residence, financial support.

After describing the data, a comparison procedure was conducted against all variables to identify their relationship using cross tabulations. The Chi-square value determines the statistical significance of the relationship. A boxplot was then run with those variables statistically significant. The demographic variables were compared against the dependent variables in order to identify those that could be statistically significant. Demographic variables were then compared against the three dimensions used in the study. Regression analysis was then run with the significant variables. The last section of this chapter includes factor analysis.
7.2 Descriptive analysis of the data

The first step before starting the analysis of the data is to enter the data coded correctly using SPSS, version 12.0.1. The data analysis begins with the analysis of the descriptive statistics of the questionnaire, following the layout of the questionnaire. The result of the different scales is presented using the most convenient graphs in order to present a clear picture of the results (e.g., pies, boxplots and histograms), followed by explanations of the main significant aspects. Regarding the demographic characteristics of the sample, the different aspects are presented using mainly graphs.

The descriptive phase of the analysis is followed by the correlation analysis of the different variables of the study. The last section of the findings attempts to explain the possible relationship between variables by analysing the three proposed dimensions and how they have been grouped under different factors using factor analysis.

7.2.1 Section A: General characteristics

In this section respondents were asked to provide information regarding the time elapsed between their previous studies and the enrolment into the current master programme. They also identified the institution where they were currently enrolled in and the master programme they were attending. A set of reasons for electing their institution was provided in this section of the questionnaire.

7.2.1.1 Time of enrolment

Respondents were grouped under three categories according to the date when they finished their previous studies and enrolled in the current master programme: (1) last year; (2) two years ago; (3) more than two years ago. Figure 7.1 shows the distribution of these three categories.
Figure 7.1: Time of enrolment
(n=308)

Figure 7.1 shows that a large proportion of respondents (118 respondents) have enrolled in the master programme more than two years after finishing their previous degree. The second group finished it the previous year (101 respondents). The last group are those who have finished their previous degree two years before enrolling in this master programme (89 respondents). Different factors may have an effect on the moment of enrolment for any of the three groups identified. Regarding those students who registered two or more years after graduation (the largest group, 38%), their late enrolment may be explained by the application requirements to enrol in higher education overseas. Language barriers may be the first constraint as some candidates may need to take special language courses in their home countries or in the UK before applying for a place, as previously reported (Allen and Higgins, 1994). Visas may be another time consuming requirement for overseas students before enrolling. They may have been also working in their home country to save money to afford the expenses of studying abroad. Unfortunately, the questionnaire did not provide more details to identify their own reasons related with their time of enrolment.

7.2.1.2 Current institution

The initial purpose of the study was to compare at least two similar higher education institutions in order to have a wider perspective of the kind of students enrolled in a management school postgraduate programme. A set of 150 questionnaires was sent to one of the institutions but only 22 respondents sent them back in the prepaid enveloped provided. The response rate was then extremely low to run any possible comparison between both institutions. Therefore, the current analysis was exclusively
based on a single institution. However, some tests were run with this sample but no significant difference was found to be reported. The demographic profile of the small group is mirrored by the large sample.

7.2.1.3 Master programme

Students were exclusively selected from any of the master programmes offered in the School of Management University of Surrey: MSc in Management, Marketing Management, International Hotel Management, Tourism Development, Tourism Management, Tourism Marketing, Financial Service Management, International Marketing Management, Food Management, Human Resources Management, International Business Management, Health Care Management, Retail, and the Master in Business Administration (MBA).

The question clearly asked to specify the area of study; in order words, the exact master programme (you are enrolled in a Master programme (MSc), could you please specify the area?). When entering the data, it was found that the number of respondents who identified themselves as students of the MSc in Management exceeded the actual number of current students provided by the administration of the school. Therefore, it was considered that some have used the word management referring to another option as the word management appears in many of the titles (e.g., Tourism Management, Human Resources Management, International Marketing Management, and Food Management). It was then impossible to differentiate the different master programmes and classify the sample accordingly.

7.2.1.4 Reasons for selecting the current institution

Respondents were asked to select from a list of fourteen reasons provided in the questionnaire those that had an impact on their decision to enrol into higher education in the institution at hand. There was no ranking of importance implicit in their choice. As they may select more than one reason, Figure 7.2 reports the number of students (n=308) that have selected the same reason. In other words, each alternative in presented graphically based on the frequency of their responses.
As figure 7.2 shows, the alternatives were labelled according to some relevant aspects taken from the statement used in the questionnaire. The first set of reasons seems to be associated with the international image of the institution. The first reason is the ‘international acceptance of the degree’ (184 respondents), followed by the usage of ‘English as a language of instruction’ (152 respondents) and the international reputation’ of the institution back home (103 respondents) and the ‘offer of better facilities overseas’ (91 respondents). In the same line of thought, the study conducted by UCAS (Allen and Higgins, 1994) found that the main reason why respondents decided to go to their current institution in the UK rather than anywhere else in the UK was ‘the academic reputation of the institution’ (p. 39). Similar results were reported earlier by Lapidus and Brown (1993). In their study the main reason for choosing a specific university was the institution reputation.

The highest frequency of reasons has been clearly allocated to this first set (international image of the university). A second set of reasons is related to the process of getting accepted as universities have their own regulations for selecting students. These items were ‘entry requirements’ (63 respondents) and ‘getting an unconditional offer of a place’ (62 respondents).
The next items in frequency are associated with emotional factors that influence their choice: ‘influence of friends and family’ (54 respondents), and the ‘presence of known students’ in that university (52 respondents). One last group of items seems to be associated with some external circumstances. The first one is the fact that the ‘degree is not available in their home country’ (52 respondents). The decision could also be determined by a ‘scholarship award’ to study in the institution given by the home country or by the UK university itself (42 respondents). The sponsor body, whoever it is, may have selected the institution or the degree to be followed by the sponsored student (19 respondents). The last two reasons with the lowest frequency scores are ‘levels of fees’ (13 respondents) and ‘difficulty to get into the university in their home country’ (11 respondents).

7.2.2 Section B1: The service quality scale

This section of the questionnaire includes 40 items to assess service quality in a higher institution. The statements are the result of a validated process using two Q sorting tests. Three different dimensions were used, organised randomly in the questionnaire. The dimensions were: physical quality (15 items), interactive quality (11 items) and corporative quality (14 items). The service quality scale composed of 40 items were ranked from (1) ‘strongly disagree’ to ‘strongly agree’ (7). The Cronbach’s alpha of the scale was .903, which shows an excellent internal consistency.

In order to describe the responses in each dimension, a boxplot was developed for each of the dimensions. A boxplot is a way of summarizing a set of data measured on an interval scale. It is often used in exploratory data analysis. It is a type of graph which is used to show the shape of the distribution, its central value, and variability. The picture produced consists of the most extreme values in the data set (maximum and minimum values included in the two extreme lines), the lower and upper quartiles (both sides of the box, and the median (centre line of the box) (Easton and John, 1997).

The boxplot has been useful to graphically provide an easy picture of the evaluation of the three dimensions based on the median values given by the respondents who
participated in this study (n=308). The analysis of each dimension of the scale is presented separately in the next section.

7.2.2.1 Physical quality scale

This dimension includes the general teaching and learning facilities as well as the accommodation service provided by the institution. In order to have a visual representation of the level of agreement, a boxplot was developed to show how the responses were distributed. Figure 7.3 shows the median value of the 15 questions included in this dimension distributed in the seven-point scale.

Figure 7.3: Physical Quality: Boxplot
(15 items)

The median values were used to develop this kind of graph. The box represents where most of the responses have been allocated and the median for each dataset is indicated by the black centre line, and the first and third quartiles are the edges of the red area, which is known as the inter-quartile range (IQR). The extreme values (within 1.5 times the inter-quartile range from the upper or lower quartile) are the ends of the lines extending from the IQR (Easton and John, 1997). In this dimension, for instance, the mean value for few items (items 2, 4, 10, 14, 19, 28, and 36) was 5 in a seven-point scale and their values were evenly distributed between the upper and lower quartile of the boxplot. With a similar median value, items 18, 30 and 34 have an uneven distribution of their values in the quartiles. In this group of items, question 18 (The gardens and open areas on campus are kept clean) has all its values in the upper
quartile. This means that the evaluation of this item is always above 5, which shows that the respondents recognise the quality of the external condition of the campus where they study. Their positive response confirms that respondents recognised that the institution cares for the hygienic and aesthetic conditions of the external décor and the level of maintenance.

On the other hand, items 30 (The communal areas in each student residence (e.g., toilets, showers and kitchen are adequate for the number of students) and 34 (The rooms in the student residential accommodation are comfortable) with a median of 5 have their values exclusively in the lower quartile. This means that the evaluation of both items tends to be lower despite the general median value. In item 30 the lower quartile is larger which means that the fluctuation to the lower quartile is higher, going from 5 to 3 in the scale.

Another set of items has the median in 4 (questions 5, 12, 24, 26, and 38). The values are evenly distributed between the lower and upper quartile except from item 38. This item (The university provides adequate parking areas for students) has all its values in the lower quartile of the box. This shows the negative tendency of the responses to this question.

The analysis of the boxplot has provided a general picture of the results of this dimension in the questionnaire as the median ranks the answers in exact values of the seven-point scale. This information could be expanded using the data provided by the analysis of the mean and standard deviation values, which show nuances in the evaluation of the service. Table 7.1 provides this information per item with the mean and standard deviation.
The results in Table 7.1 confirm that the highest score has been allocated to the external appearance of university (item 18). The second highest score has been allocated to the Internet facility in the students’ rooms (item 28). This is not surprising as this is an essential tool for students in their daily academic activities as well as a way to communicating to their family and friends back home. This is followed by two variables related to technology, the high-tech equipment found in the classrooms (item 2) and modern computers (item 4). In general, students, but particularly international students may expect a modern campus with this kind of technology. Chinese students who are one of the largest international groups in the UK are already exposed to high technology back home and expect similar or better conditions in the Western world.

Another important issue with a high mean value is the safety condition of the accommodation provided by the University (item 36). This is an issue of great concern for people in general but extremely important for international students and their families as they are away from home. As the accommodation provided by the University seems to be perceived as a safe place, the other aspect to be considered is whether the University provided enough accommodation for the students (item 19). The mean score for this variable is 4.66 which means that the requirements of the students to live in a university accommodation have been highly satisfied by the
institution. In the demographic analysis (Section C of the questionnaire), it has been identified that 67% of students live 'in campus accommodation' and 17% live in 'off campus accommodation' under the University administration, which means that 84% total sample can accurately evaluate this variable as they actually live there. Another set of variables related to accommodation is the condition of the rooms (item 34) and the common areas shared by the students in the different residences (item 30). Results show that students rate the first one higher (4.55) than the second one (4.29). That means that the room itself seems adequate for students' needs but not the common areas.

In general, it seems that the institution is providing an adequate service to international students regarding accommodation. This is a serious issue as normally overseas students have no friends or relatives nearby to live with. As foreigners, international students may be ignorant of the legal requirements for renting a place and how to deal with a landlord. This could be very stressful and may force students to consider another institution to apply for a place. The University seems to understand the needs required by students regarding accommodation and respondents in this study seem to be pleased with the service.

The service or availability of printer facilities seem to be deficient if compared with the new computers provided, as results show a lower means for printers (4.43), which contrasts with the high mean (5.06) obtained by computers. Apart from accommodation and teaching and learning facilities previously discussed, there were other services included under the dimension physical quality. The provision of books and journals (item 14) seems to be efficient as the mean obtained was 4.57. The non-academic services included in the survey were related to the sports centre with two statements as part of the extra curricula facilities for the students (items 5 and 12). Both received similar mean scores (4.20 and 4.17, respectively), which shows that the evaluation of the service is not extremely positive.

The lowest rating is associated with the accommodation price (3.94). It seems clear from this response rate that despite the other positive qualities (e.g., comfort, amount of accommodation provided and safety atmosphere), the relation value-price is still deficient regarding the accommodation service.
Another general service receiving less positive evaluation was the parking facility provided for students, which received the lowest mean score in this dimension (3.70). Based on informal conversations with some participants during the pilot test, it was reported that this service caused serious problems to those who had a car. It is a general concern that affects both students and university personnel alike.

Despite these limitations, it seems that physical facilities contribute to the learning and teaching process with high-tech equipment as they have been highly evaluated by the respondents. The variables regarding the accommodation facilities (apart from the price) suggest that the institution is making good efforts to satisfy that kind of requirement for international students. This result supports previous studies where physical facilities have been reported as essential services that highly affect the assessment of the institution and the level of students’ satisfaction. (Joseph, 1998; Athiyaman, 1997; Bennett, 2003).

7.2.2.2 Interactive Quality

The second dimension includes the interaction with administrative staff and academic personnel as well as the social interaction with other students. Figure 7.4 shows the evaluation of the items used in this dimension in a boxplot graph.

Figure 7.4: Interactive Quality: Boxplot
(11 items)
Some of the items in this dimension have reached a median score of 5 (questions 1, 7, 9, 13, 27, 29, and 40). Responses to most of these items have been evenly distributed between the upper and the lower quartiles which show that respondents have a general positive opinion which ranges from 6 to 4 in the seven-point scale. However, answers to items 1 (There are clear and reasonable requirements for each module) and 40 (Lecturers stimulate critical analysis) are exclusively in the lower quartile. That means that despite the high mean no response has been allocated above 5 in the scale but in the lower quartile. This shows a tendency towards the negative half of the scale despite the median in 5.

The rest of the items in this dimension have reached a median of 4 in the seven-point scale (6, 8, 16, and 21). Questions 16 (Feedback from coursework is adequate) and 21 (It is easy to interact with local students) have an even distribution of responses between the lower and the upper quartiles. These two questions ranked from 5 to 3, which means that there were negative and positive answers to these questions. Details about these questions are given when analysing the mean values in the next section. The other two questions (item 6, It is easy to get involved in campus social organisations and item 8, Lecturers have adequate time for consultation), only have values in the upper quartile. Details about these items are presented below when discussing the median values.

Table 7.2 shows the items included in the Interactive quality dimension and their mean and standard deviation values. The questions are presented according to the highest mean score.
Table 7.2: Interactive Quality: Mean and Standard Deviation (11 items)

<table>
<thead>
<tr>
<th>No.</th>
<th>Interactive Quality</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>My course is intellectually challenging</td>
<td>5.02</td>
<td>1.04</td>
</tr>
<tr>
<td>29</td>
<td>Staff react politely to students' queries</td>
<td>4.71</td>
<td>1.19</td>
</tr>
<tr>
<td>9</td>
<td>It is easy to make friends on campus</td>
<td>4.70</td>
<td>1.23</td>
</tr>
<tr>
<td>13</td>
<td>The administrative staff are helpful</td>
<td>4.60</td>
<td>1.32</td>
</tr>
<tr>
<td>40</td>
<td>Lecturers stimulate critical analysis</td>
<td>4.56</td>
<td>1.19</td>
</tr>
<tr>
<td>1</td>
<td>There are clear and reasonable requirements for each module</td>
<td>4.55</td>
<td>1.10</td>
</tr>
<tr>
<td>27</td>
<td>Lecturers can be easily contacted individually</td>
<td>4.48</td>
<td>1.19</td>
</tr>
<tr>
<td>6</td>
<td>It is easy to get involved in campus social organisations</td>
<td>4.35</td>
<td>1.28</td>
</tr>
<tr>
<td>8</td>
<td>Lecturers have adequate time for consultation</td>
<td>4.28</td>
<td>1.22</td>
</tr>
<tr>
<td>16</td>
<td>Feedback from coursework is adequate</td>
<td>4.23</td>
<td>1.12</td>
</tr>
<tr>
<td>21</td>
<td>It is easy to interact with local students</td>
<td>3.62</td>
<td>1.50</td>
</tr>
</tbody>
</table>

As Table 7.2 shows, a set of items reflects that the intellectual activity that takes place receives a positive evaluation from respondents. The highest mean has been obtained for the item *My course is intellectually challenging* (5.02), followed by *Lecturers stimulate critical analysis* (4.56) and *There are clear and reasonable requirements for each module* with a mean of 4.55.

In relation to the interaction and support from the administrative staff (questions 29 and 13), respondents seem to be satisfied with the level of support with means of 4.71 and 4.60, respectively. It has been pointed out that students who basically stay at the university for a year for a Master's programme require support constantly, as they have to cope with a large variety of information and regulations in a short period of time (Chadwick and Ward, 1987). On the other hand, academic staff seem less helpful as the means of some items suggest: item 27, *Lecturers can be easily contacted individually*, 4.48; item 8 *Lecturers have adequate time for consultation*, 4.28. This may be probably a consequence of the academic and research commitments of the academic staff as well as the number of students per section. The evaluation of lecturers' performance is worse when an academic response is requested from students regarding their work (item 16, *Feedback from coursework is adequate*, 4.23).

Regarding students' social life, responses are generally positive as in the statements *It is easy to make friends on campus* (4.70). It seems then that they have the chance to socialise with other students and develop friendships in daily activities but not time to get involved in campus social organisations (4.35). The result of this last item was lower than what the boxplot in Figure 4 suggests. The interaction with local students
Main survey findings

(item 21) seems to be more difficult, only 3.62, the lowest mean in this dimension. The mean confirms what the boxplot has shown in relation to the low rate of this question. Unfortunately, the survey does not provide details about the possible reasons for such behaviour. It might be associated with the low number of local students that yearly enrol in the management master programme that may eventually interact as classmates with international students.

The lack of interaction with local students has been previously reported as a variable that may affect the level of satisfaction of overseas students as they expect to befriend local students (Ackers, 1997; Conant et al., 1985). This eventual interaction could contribute to enriching the experience overseas as international students may be curious about the local culture and practice the local language, in this case English.

7.2.2.3 Corporative quality

The third dimension, Corporative quality, refers to the international and local recognition of the higher education institution as well as the future employment prospects for the students based on the degree of higher education provided by the institution. Figure 7.5 shows the results of this dimension.

Figure 7.5: Corporative Quality: Boxplot
(14 items)
As Figure 7.5 shows, a median of 5 has been reached by half of the items in this dimension (3, 11, 22, 23, 31, 33, and 37). However, only three items have values above the median which mean that the level of agreement is high as there are values above 5 in these questions. They also have an even distribution in both quartiles. These questions are: 3 (The university takes the lead in research), 31 (The ranking of my school is high), and 33 (A degree from this university is well recognised internationally). The others with a 5 point median only have values in the lower quartile. In other words, the range of answers is basically between 5 and 4 in the scale, with a tendency to the lower end of the scale.

The other half has a median of 4 in the scale. Only one question, item 25 (The university has been extensively recommended by my friends in my home country) has an even distribution in both quartiles. Some questions have their values exclusively in the upper quartile, which indicates that no answer is lower than 4, and this may also suggest that the answers tend to be more positive as they are exclusively between the median values 4 and 5. These questions were: 15 (The university has contacts with international employers), 17 (Graduates from this university achieve considerable success in finding excellent employment), 20 (A degree from this university has an excellent reputation in my home country).

On the other hand, there are two questions with a median of 4 that have all the answers in the lower quartile, questions 32 with values between 4 to 3 (Lecturers in my home country recommended this university to me) and 39 with values between 4 to 2 (There are excellent links between my home country and this institution). These two questions scores are the lowest in this dimension and suggest that the students have not been influenced by academics at home to select the current institution. This could be confirmed with the information provided by the mean and the standard deviation, presented in Table 7.3.
Table 7.3: Corporate Quality: Mean and Standard Deviation (14 items)

<table>
<thead>
<tr>
<th>No.</th>
<th>Corporative Quality</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>The university takes the lead in research</td>
<td>4.85</td>
<td>1.04</td>
</tr>
<tr>
<td>22</td>
<td>A degree from this university improves my employment prospects</td>
<td>4.85</td>
<td>1.02</td>
</tr>
<tr>
<td>11</td>
<td>The university maintains links with international education networks</td>
<td>4.70</td>
<td>1.16</td>
</tr>
<tr>
<td>33</td>
<td>A degree from this university is well recognised internationally</td>
<td>4.69</td>
<td>1.14</td>
</tr>
<tr>
<td>37</td>
<td>The university is well recognised for the academic programmes</td>
<td>4.66</td>
<td>1.20</td>
</tr>
<tr>
<td>23</td>
<td>The university offers a high quality of teaching performance</td>
<td>4.57</td>
<td>1.17</td>
</tr>
<tr>
<td>31</td>
<td>The ranking of my school is high</td>
<td>4.57</td>
<td>1.32</td>
</tr>
<tr>
<td>17</td>
<td>Graduates from this university achieve considerable success in finding excellent employment</td>
<td>4.45</td>
<td>1.20</td>
</tr>
<tr>
<td>20</td>
<td>A degree from this university has an excellent reputation in my home country</td>
<td>4.32</td>
<td>1.38</td>
</tr>
<tr>
<td>35</td>
<td>The university maintains excellent links with the local industry</td>
<td>4.23</td>
<td>1.33</td>
</tr>
<tr>
<td>15</td>
<td>The university has contacts with international employers</td>
<td>4.18</td>
<td>1.29</td>
</tr>
<tr>
<td>25</td>
<td>The university has been extensively recommended by my friends in my home country</td>
<td>3.92</td>
<td>1.37</td>
</tr>
<tr>
<td>32</td>
<td>Lecturers in my home country recommended this university to me</td>
<td>3.84</td>
<td>1.48</td>
</tr>
<tr>
<td>39</td>
<td>There are excellent links between my home country and this institution</td>
<td>3.45</td>
<td>1.30</td>
</tr>
</tbody>
</table>

According to Table 7.3 results show a general high mean. In the first place, locally and internationally speaking, the university seems to have a well-developed network that is recognised as important by the respondents based on their agreement to the following statements: The university maintains links with international education networks (4.70); The university maintains excellent links with the local industry (4.23); The university has contacts with international employers (4.18). More specifically, the importance and recognition of the university is considered to have significant implications for their future employment, as the following set of items confirms with high mean scores: A degree from this university improves my employment prospects (4.85); A degree from this university is well recognised (4.69); The university is well recognised for the academic programmes (4.66); Graduates from this university achieve considerable success in finding excellent employment (4.45); A degree from this university has an excellent reputation in my home country (4.32).

The recognition of the degree by prospective employers seems to be the result of the quality of the education received. For example, teaching at the university is perceived to have high standards as the students give a high rank to this variable: The university
M. H. Pereda

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offers a high quality of teaching performance (4.57); The ranking of my school is high (4.57).

Despite the positive evaluation for most of the statements in this dimension, those regarding previous recommendations of the institution from different entities seem to be less positive for this institution. There are current exchange programmes with some overseas universities and contacts between staff abroad and the UK higher institutions. However, it does not seem the case with the group of respondents that participated in this study. It seems that they hardly received any worth-of-mouth communication as the mean rate in the three items related to this issue confirms: The university has been extensively recommended by my friends in my home country (3.92); Lecturers in my home country recommended this university to me (3.84); There are excellent links between my home country and this institution (3.45).

7.2.3 Section B2

This section includes the dependent variables measured using different scales: student satisfaction scale, overall service quality, overall satisfaction, behavioural intention to recommend, and value for money. All variables were tapped on a seven-point Likert scale.

7.2.3.1 Students' satisfaction scale

The five item scale developed by Bristow et al. (2002) to assess student satisfaction was used in this study. The statistical analysis revealed a Cronbach's alpha of .88, which showed that the items included in the scale adequately captured a single construct. The five variables of this scale included in Section B2 and the individual means are presented below:
Main survey findings

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attending this university has worked out as well as I thought it would (Q 3)</td>
<td>4.41</td>
</tr>
<tr>
<td>2. I have truly enjoyed attending this university (Q 4)</td>
<td>4.57</td>
</tr>
<tr>
<td>3. Being a student at this university has been a good experience (Q 5)</td>
<td>4.83</td>
</tr>
<tr>
<td>4. I am satisfied with my decision to attend this university (Q 7)</td>
<td>4.46</td>
</tr>
<tr>
<td>5. I am happy that I decided to enrol at this university (Q 9)</td>
<td>4.40</td>
</tr>
</tbody>
</table>

These statements were used to elaborate a boxplot to graphically represent the results of this scale. These results are presented in Figure 7.6.

**Figure 7.6: Satisfaction scale: Boxplot (5 items)**

Results of the boxplot show that the median of the five items is 5, with values mainly between 5 and 4. This may indicate a general positive evaluation of the different aspects of the scale. Items 3 and 9, related to the decision of enrolling into the university, received the lowest mean values in the scale, 4.41 and 4.40, respectively. This is followed by a slightly higher mean regarding their level of satisfaction with the decision that reaches a mean of 4.46. Respondents also show better feelings in relation to the experience of attending the university (items 4 and 5). However, only question 5 (*Being a student at this university has been a good experience*) has some values allocated in the upper quartile which means that respondents evaluate this item more positively than the others with the highest mean of 4.83. In general, there is a positive evaluation of the different aspects of the scale but not extremely high as the results of the scale may first suggest.
7.2.3.2 Overall satisfaction

Overall satisfaction was also tested with a single question, ranging from (1) extremely dissatisfied to (7) extremely satisfied.

1. Overall, how do you feel about your experience in this university?

Figure 7.7: Overall Satisfaction

Figure 7.7 shows that most of the responses were placed between 4 and 5 in the seven-point scale, as they are almost evenly distributed between these two values, slightly higher under 5. The next value in frequency is 6 which suggest that the general tendency of most of the respondents is towards the higher half of the scale. This suggests that overall respondents seem satisfied when evaluating the general experience at the university.

7.2.3.3 Intention to recommend

This scale was based on Zeelenberg and Pietiers’ (2004) work. It was made of two statements, ranging from (1) ‘extremely unlikely’ to (7) ‘extremely likely’.

1. How likely is it that you would recommend this institution to your relatives/friends in your home country?

2. How likely is it that you would encourage others to enrol in this university?
Results of Cronbach's alpha show that the reliability of the scale was .90. Figure 7.8 shows that the pattern of response for both items is exactly the same. The median value in both cases is 4 and values are evenly distributed between the upper and lower quartiles, from 5 to 3. Results seem to be even as they are exactly placed in the centre of the scale and the boxplot in Figure 7.8 confirms this tendency. These variables were considered as one in further analysis done in this chapter.

**Figure 7.8: Intention to recommend: Boxplot (2 items)**

This range of response in a seven-point scale shows that respondents do not have extreme opinions regarding this issue. This may indicate that there is not a strong intention to recommend the institution but a possibility.

### 7.2.3.4 Value for money

This scale was based on Baimbridge’s (1997) work. It consisted of only one statement, ranging from (1) ‘not at all’ to (7) ‘very much’.

1. Overall, do you feel that you have got value for money?
Figure 7.9: Value for Money

Figure 7.9 shows that most of the answers are under 4 in the seven-point scale used. The next in frequency is 5. This suggests that the feeling about receiving a fair service is worth the economic investment. However, there are also an important percentage of answers under the lower part of the scale (2, 3 and 1), rather than the upper extreme (6 and 7). Despite the number of answers under the high values 4 and 5, the variable value for money seems to receive a much negative response than the rest of the variables discussed in Section B2. This indicates that the balance between service and value for money is an issue of concern and might be considered by the institution for further analysis.

This is also an issue that could be further analysed to have a complete picture of the economic investment and its consequences for this population. This is not the scope of the current study. This questionnaire, however, provides information only about the financial source without asking the ways to pay back that support whether it is required or not.
7.2.4 Section C: Demographic characteristics

The demographic structure is explored according to a set of variables which were reported in the literature in students’ satisfaction and seem to contribute to the identification of differences between groups. The variables included in this study were: gender, age group, marital status, time of enrolment, English proficiency, residence, nationality, financial support, and reasons for selecting the university.

7.2.4.1 Gender

It has been reported (Bennett, 2003) that women in most countries are more willing to continue higher education than men; this has been confirmed in this sample. Examination of the demographic characteristics of respondents revealed significant differences in terms of their gender. Figure 7.10 displays the distribution of the sample according to gender.

As Figure 7.10 shows the number of female respondents (193 subjects) almost double male respondents (115 subjects). This confirms previous findings using data collected in the UK context in higher education in areas of study such as tourism (Stergiou, 2004). Though Stergiou has exclusively focused on students registered on courses related with tourism, all these courses are run in schools of management. In some cultures, some professions have been traditionally associated with a specific gender (e.g., medicine with male and teaching with women). An association may exist between the content of courses and the profile of a graduate from a management school and his/her gender. Further research needs to done to confirm this tendency.
7.2.4.2 Age group

The questionnaire categorised age into six distinct groups: 20-24; 25-30; 31-35; 36-40; 40-45; over 45. The classification used here has been used in similar studies with this kind of sample. It has been reported that students start post graduate degrees shortly after they finish their first degree (Ford et al., 1999) and therefore they tend to be young, mostly under 30.

Figure 7.11: Age distribution
(n=308)

Figure 7.11 shows that more than half of the respondents belong to the first category 20-24 (53.2%, 164 respondents). This category is closely followed by the second age group, 25-30, representing 43.2%, 133 subjects. The last two categories (31-35 and 36-40) obtained a low representation, 2.3% and 1.3%, representing 7 and 4 subjects, respectively. No respondent was identified under the last two categories, 41-45 and over 45. This age distribution previous studies have reported in masters programmes in the UK.

7.2.4.3 Marital status

This section looks at the marital status of the respondents. The categories were (1) single; (2) married; (3) divorced; (4) widow. Although four categories were included,
no one was found in the last two. Results confirm that that master students tend to be young and mostly single, as Figure 7.12 shows.

**Figure 7.12: Marital status**

(n=308)

According to Figure 7.12, single respondents (228 respondents) far outweighed married respondents (80 respondents). This is in line with the general tendency of the overseas student’s profile coming to study in the UK (Allen and Higgins, 1994).

### 7.2.4.4 English proficiency

The participants of the survey were all ‘overseas students’, previously defined as those that do not hold British nationality or belong to a European Union country and pay full-fees. Three categories were included in the questionnaire: English as first language, English as second language and English as foreign language.

**Figure 7.13: English proficiency**

(n=308)
Figure 7.13 shows that the majority of the respondents use English as a foreign language (69%, 213 respondents). A small proportion of respondents use English as first (21%, 64 respondents) and a smaller group do as a second language (10%, 31 subjects). Language proficiency has been found to be an obstacle in the study experience and may affect students’ general performance and affect their level of satisfaction (Allen and Higgins, 1994).

7.2.4.5 Nationality

The respondents belong to a variety of countries, reaching a total of 25 different nationalities. All the students approached to fill in the questionnaire were exclusively those considered as ‘overseas students’ by the university Registry Office. This means that they pay full fee and come from countries outside the UK and the EU. Chinese students overwhelmed any other country in the sample. There are 159 Chinese students, representing 52% of the sample. A variety of factors have influenced the number of Chinese students in the UK such as the strategic recruitment of overseas students by UK higher institutions and the recent Chinese policy to open their borders for their young population to study abroad. These factors have determined the increased number of Asian students, particularly Chinese students around the world.

This is followed by a group of Asian countries (Far East): Thailand (25), Taiwan (16), Malaysia (16), Korea (13), and Hong Kong (7). In the same geographical area there are other countries with a lower representation of respondents in the sample, such as Singapore (6), Japan (4), and Indonesia (2). Figure 7.14 represents this geographical area as a complete pie graph where only these countries were included.
The rest of the countries did not reach a significant representation and therefore there was not enough information to elaborate a specific graph with those countries. Some African countries are present in the sample: Nigeria (10), Kenya (3), South Africa (4), Ghana (3), Libya (2) and Zimbabwe (2). In the same area, the island of Mauritius has 2 respondents. There are also students from the Middle East: Lebanon (6), Iran (3), Pakistan (4), India (11), and Jordan (4).

In the American continent, a small group of countries has students in the sample: Trinidad and Tobago (2), Brazil (2), Peru (1) and Chile (1). It is evident from these findings that China was the largest group in the sample and this may affect possible comparisons among groups.

7.2.4.6 Residence

Students were given four options to identify where they were currently living during their studies: on campus residential, off campus residential, private accommodation or living with relatives or friends that live in the UK. The results of this classification are presented in Figure 7.15 below.
Results presented in Figure 7.15 show that the provision of 'on campus' accommodation seems to cover a great deal of the demand by students as more than fifty percent live in that kind of accommodation (67%, 211 respondents). Living on campus is very convenient as it requires less time to move around and attend the different activities, academic and social that takes place at the university.

The second option in accommodation is also administered by the university but off-campus; it includes 17% of the sample (51 respondents). This category is followed by 'private accommodation' (14%, 41 respondents) and a few respondents are living with family/friends (2%, 5 respondents).

### 7.2.4.7 Financial support

Regarding the financial support for living expenses and composition fees, eight options were presented to the respondents. Respondents were asked to select those that apply to their own circumstances as they may have more than one source of income. These options basically represent three sources of financial support: personal support (yourself or your family); home institutions (your employer in your home country, scholarship from your own government and scholarship from your home university) and UK institutions (scholarship from UK university, scholarship from UK government, and a charity or trust in the UK). An open question was also added but no answer was obtained under this alternative. Their answers were grouped under the three categories mentioned before and are graphically represent in Figure 7.16.

**Figure 7.16: Financial support**

*(n=308)*
Figure 7.16 clearly shows that the main source of financial support is the individual and their family, reaching a total of 82% (253 respondents). This confirms previous findings reported about overseas students coming to the UK (Allen and Higgins, 1994). When home financial supports such as ‘employer, scholarship from home university and home government’ are grouped they reached a total of 12% of the economic support given to the respondents, representing 36 respondents. On the other hand, UK institutions support (‘scholarship from UK universities or government, and UK Charity/Trust’) represents only 6% of the financial support of overseas students (19 respondents).

7.3 Reliability of the service quality scale

The purpose of this section of the analysis is to assess the reliability of the service quality scale. Although reliability may be measured in a number of ways, the most commonly used is internal consistency reliability using Cronbach’s Alpha (Peter, 1979). If the internal consistency of the scale is to be established, then the items should have a strong relationship with the total score of the scale. The scale is treated as a unidimensional instrument measuring service quality in higher education. Table 7.4 sets out the correlation and \textit{alpha if item deleted} for each item and the total scale reliability score.

The Cronbach’s Alpha coefficient was used to assess the reliability of the internal consistency of the scales. This tests that individual items or indicators measuring the same construct are highly intercorrelated (Churchill, 1979). A large coefficient alpha of 0.70 for exploratory measures provides an indication of strong item covariance or homogeneity and suggests that the sampling domain has been adequately captured (Nunally and Bernstein, 1994). If the internal consistency of the scale is to be established, then items should have a strong relationship with the total score of the scale. In other words, the scale is treated as a unidimensional instrument measuring service equality in higher education. Table 7.4 sets out the corrected \textit{item-total correlation} and \textit{alpha if item deleted} for each item, and the total scale reliability. It also indicates the reliability score for each of the subscales (physical quality, interactive and corporative quality).
As can be seen from the correlation scores in Table 7.4, most of the items display moderately high correlations to total scores (.34 to .57; all p<.01). These items seem to have an important contribution to the measurement of service quality in higher education.

Table 7.4: Reliability analysis of the service quality scale

<table>
<thead>
<tr>
<th>No.</th>
<th>Dimension</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
<th>No.</th>
<th>Dimension</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Physical Quality</td>
<td></td>
<td>Alpha per dimension = .825</td>
<td></td>
<td>Interactive Quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>.502</td>
<td>.899</td>
<td>13</td>
<td></td>
<td>.457</td>
<td>.900</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>.437</td>
<td>.901</td>
<td>16</td>
<td></td>
<td>.417</td>
<td>.901</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>.452</td>
<td>.900</td>
<td>21</td>
<td></td>
<td>.362</td>
<td>.902</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>.474</td>
<td>.900</td>
<td>27</td>
<td></td>
<td>.571</td>
<td>.899</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>.464</td>
<td>.900</td>
<td>29</td>
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<td>.900</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>.403</td>
<td>.899</td>
<td>40</td>
<td></td>
<td>.467</td>
<td>.900</td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>.369</td>
<td>.901</td>
<td>3</td>
<td>Corporate Quality</td>
<td></td>
<td></td>
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<tr>
<td>19</td>
<td></td>
<td>.403</td>
<td>.901</td>
<td>11</td>
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<td>.443</td>
<td>.900</td>
<td>17</td>
<td></td>
<td>.527</td>
<td>.899</td>
</tr>
<tr>
<td>28</td>
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<td>.345</td>
<td>.903</td>
<td>20</td>
<td></td>
<td>.445</td>
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<td>30</td>
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<td>.468</td>
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<td>22</td>
<td></td>
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</tr>
<tr>
<td>34</td>
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<td>.404</td>
<td>.901</td>
<td>23</td>
<td></td>
<td>.524</td>
<td>.900</td>
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<td>36</td>
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<td>.305</td>
<td>.902</td>
<td>25</td>
<td></td>
<td>.498</td>
<td>.900</td>
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<td>38</td>
<td></td>
<td>.141</td>
<td>.905</td>
<td>31</td>
<td></td>
<td>.299</td>
<td>.902</td>
</tr>
<tr>
<td></td>
<td>Interactive quality</td>
<td></td>
<td>Alpha per dimension = .812</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>.410</td>
<td>.901</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6</td>
<td></td>
<td>.421</td>
<td>.901</td>
<td>35</td>
<td></td>
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<td>7</td>
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<td>.413</td>
<td>.901</td>
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</tr>
<tr>
<td>8</td>
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<td>.901</td>
<td>39</td>
<td></td>
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<td>9</td>
<td></td>
<td>.500</td>
<td>.900</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Scale Reliability: Cronbach’s Alpha = .903
As can be seen from Table 7.4, the total reliability based on the internal consistency method was a large coefficient alpha of .903, suggesting that the scale explains the construct of service quality in the context of higher education by more than 90% and produces less than 10% error (Churchill, 1979).

Despite the high alpha obtained by the whole scale ($\alpha = .903$ for the 40 items described in Table 7.4), the reliability test suggested that the scale could be improved in the present study by removing five items from the scale. These items were number 24, 25, 32, 38 and 39, which did not reach a level of $r = +.30$, which is the suggested cut-off value for rejecting items from the pool (Clark et al., 1998). Two of them, item 24 (*The university offers accommodation at affordable prices*) and 38 (*The university provides adequate parking areas for students*), both from physical quality, have an impact on the total alpha score that could otherwise be higher (.906 or .905, respectively). The other three items were from corporative quality but they did not improve alpha. Consequently these items were removed from the scale.

As the service scale contains subscales, the same reliability procedure was implemented to test the internal consistency of each dimension. To assess whether the items of three subscales actually measured the dimensions intended, the subscales were subjected to an item analysis to detect and eliminate inconsistent scales and items that apparently failed to capture their intended construct (Chadwick and Ward, 1987). For the purpose of this analysis, coefficient alpha were computed for each scale to assess their internal consistency. The resulted Alpha coefficients were higher than the minimum required ($\alpha > .70$) for the three scales: Physical quality’s alpha was .825, .812 for Interactive quality and .824 for Corporative quality.

Overall, the correlation analysis seems to provide preliminary support for the homogeneity of the proposed scales with most of the items showing moderately high correlations with the total score of the scale to which they were assigned. Based on the previous criteria, the five items were eliminated for further analysis from the initial scale and a new set of 35 items were then retained for the factor analysis.
7.4 Comparative analysis of the study variables

After the descriptive analysis of all the variables included in the study, the variables were compared in order to identify the possible relationships between them. The SPSS programme 12.0.1 version was used in order to run tests of dependency to identify those variables that were statistically dependent, using chi-square. This test shows the relationship among variables and clearly indicates whether the relationship is significant or not (see Appendixes). When a significant relationship was found, a boxplot was developed to identify which are the dependent variables and the degree of relationship. In this section the significant variables are exclusively presented and general comments are made regarding the other variables. This section starts with the analysis of the dependent variables compared with the demographic variables. Secondly, the analysis was conducted between the independent variables in Section B1 (40 items).

7.4.1 Demographic variables and dependent variables

The demographic variables used in this study included in Section C were: age, gender marital status, English proficiency, nationality, residence, financial support, and date of previous degree (from section A). The dependent variables included in section B2 of the questionnaire were: overall satisfaction with service attributes, overall satisfaction, intention to recommend, satisfaction, and value for money. Results for each dependent variable with the independent ones are presented separately in the next section.

7.4.1.1 Overall satisfaction

Results only show two demographic variables that are statistically significant: financial support (0.000) and nationality (0.005). In order to identify the differences of these two variables and overall satisfaction with service attributes, a boxplot was constructed for each variable. The distribution of each category was as follows: 253 subjects with family support, 36 subjects with home institutions support and 19 with UK financial support. Figure 7.17 shows the three sources of financial support in a boxplot graph.
The boxplot in Figure 7.17 shows that the median for all the groups is 5. However, those students with financial support from UK institutions are slightly more satisfied than the rest. This may be expected as these overseas students have been awarded a scholarship from a foreign country to study.

Although there was a statistical difference regarding the variable *nationality*, 25 different nationalities were identified with an overwhelming representation of students coming from China (159 respondents). The variability in the sample does not permit the results to be conclusive regarding their opinion about their satisfaction with the services attributes based exclusively on their nationality. In some cases the number of members per nationality was too low to run a correct boxplot graph and have a clear picture of those groups that may be more satisfied. However, Figure 7.18 is an attempt to represent this variable.
As shown in Figure 7.18, the fluctuation among groups is extremely large and the SPSS programme could hardly provide a better description of the relationship between these variables. The number of respondents per country has to be considered before making any interpretation of this graph which also makes harder any conclusive comment.

7.4.1.2 Satisfaction

When this variable was compared against the general characteristics of the respondents, only financial support was considered statistically significant in this study (0.000). This is represented in a boxplot graph in Figure 7.19. Some variables seem to have an impact on satisfaction such as age and marital status. However, none of them reached a significant result and therefore they are not reported here.

Those who were economically supported by family have a median of 4 in the seven-point scale and all the values in the upper quartile. However, the fluctuation of responses is only between the median and 5 only a point above which shows that this
group is the less satisfied. This could be related to the economic and emotional investment they have paid to enrol in a master degree in a foreign country. For the second group, those sponsored by a home institution, the highest median and values are evenly distributed in both quartiles. Whatever the financial support (e.g., scholarship, grant) received from their home country, they are satisfied with the experience on being abroad and show the highest level of satisfaction. The group sponsored by UK institutions has a median of 4 and values only in the upper quartile. Despite the median of 4 there are higher values reaching two points above the median. That suggests this group seems more satisfied although the median is lower than the second group.

7.4.1.3 Intention to recommend

When this variable was compared against the independent variables, it was found that only the variable age was statistically significant, with a p-value of 0.004. Figure 20 shows the boxplot for this variable and intention to recommend.

Figure 7.20: Age groups

Figure 7.20 shows that the first age group (20-24) obtained a median value of 5 in the seven-point scale, although their answers are exclusively in the lower quartile. It is worth noticing that this is the largest group in the sample (164 subjects). The second age group (134 subjects) also has its values between 5 and 4 but the median is 4 and
the answers are in the upper quartile. So, these two groups seem to have a similar response to this variable. In both cases responses are kept between two values in the scale which suggests that these respondents are coherent as a group because their responses did not spread along the seven-point scale. These two groups together represent 96% of the sample. Therefore, the response of these two groups is very reliable statistically speaking as their opinion may be extrapolated to the population.

The last two groups with significantly fewer subjects offer a different picture. The third group with 7 subjects shows a great dispersion regarding their opinions that fluctuates from high values near 7 to very low ones in 2, with a median in 3 in the seven-point scale. Despite the high values, the low median suggests that they are not coherent as an age group and that they may not intend to recommend the institution to others. The last group with only four subjects has the median in 4 with few values in the upper quartile and more in the lower one, which confirms that the demographic variable age has a significant impact on this variable. The younger groups seem to be more willing to recommend the institutions to others rather than the older groups. However, this finding cannot lead to any conclusion about age groups because of the reduced number of students in the last two age groups.

7.4.1.4 Value for money

Results show that only two variables are statistically significant: gender (0.003) and marital status (0.005). Figure 11 shows the boxplot representing the comparison between gender and value for money.

**Figure 7.21:** Gender
As shown in Figure 7.21, both genders have the same median of 4 point in the seven-point scale. However, the male group (115 subjects) has values from 5 to 2, which shows a tendency towards the lower quartile in their responses. Male are not strongly consistent in their evaluation of this variable because there is a high fluctuation in their responses. On the other hand, females (193 subjects) have concentrated their responses in the lower quartile but only between 4 and 3, only one point of variability. This shows less variability among the group itself regarding the variable value for money. Despite the differences between these groups it is evident that the general evaluation of this variable tends towards the negative side of the scale. Therefore, the relation value for money seems to be negative.

Regarding the marital status variable, the boxplot represented in Figure 7.22 shows that both groups have the same median (4) but different distribution of their responses.

Despite this apparent similarity based exclusively on the median result, the boxplot shows that married students’ responses go from 5 to 2 and they are mostly in the lower quartile. There was a total of 80 married students in the sample. The great dispersion in their answers may be associated with their personal circumstances. In some cases the student/spouse is the only source of economic support and therefore has to take care of the spouse and children. In other cases, the spouse (not student) may contribute to the family budget having a part time or even a full time job while the student is doing his/studies. These circumstances may have an impact on the
general economic perception of the economic investment and the associated benefit from the future degree.

On the other hand the single group (228 subjects) with the same median seems more coherent as its values are evenly distributed in both quartiles, with values between 5 and 4 in the seven-point scale. Their circumstances may be different from the married group as most of them have been economically supported by their families as findings about source of financial support have suggested.

7.4.2 Demographic variables and service quality dimensions

This section compares all the independent variables (40 items) used to assess the service quality against the demographics variables. The three dimensions included in this study, physical quality, interactive quality and corporative quality, are analysed individually in this section.

7.4.2.1 Physical Quality:

a) Age: Regarding age, there are two variables that were statistically significant: item 12 The sport centre offers modern equipment (0.000), and item 38 The university provides adequate parking areas for students (0.000). Results are displayed in Figures 7.23 and 7.24 below.

\begin{figure}[h]
\centering
\includegraphics[width=0.4\textwidth]{figure723.png}
\caption{Figure 7.23: item 12}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=0.4\textwidth]{figure724.png}
\caption{Figure 7.24: item 38}
\end{figure}
Figure 7.23 shows that the first two groups have a median of 4 points in the scale and the same distribution of answers in both quartiles. The subjects of these groups share the same evaluation regarding the equipment provided at the sports centre and their opinion should be considered as important because they represent 96% of the sample. The third age group has a significantly higher evaluation of this variable as most of its values are in the upper quartile and the median is higher (5 point in the scale). The last age group, however, rated much lower this variable, with all the answers in the lower quartile. The number of subjects in the last two age groups only represents 6.6% of the total sample and their opinion may not be generalised to the population.

Figure 7.24 presents the results from item 38. The median of the first two groups is 4, with values exclusively in the lower quartile, which suggests a rather negative opinion of this issue. The older groups have more fluctuation in their responses and they go to the extreme negative end of the scale, with the median in 1 (31-35) and 2 (36-40). These groups seem more critical regarding this issue as they might have a car and face the daily problem of parking on campus.

b) Gender: there is only one item to report here, item 19 The university has sufficient residential accommodation (0.003). Figure 7.25 shows that male’s results are evenly distributed in both quartiles with higher values starting in 6. Despite the same median, female ranked lower this variable as their values are all in the lower quartile. This result may suggest that women are more demanding as they may ask for single sex residences or ensuite rooms. Therefore, they may face more problems in finding adequate accommodation.
c) English proficiency: two items here are statistically different: item 19 *The university has sufficient residential accommodation* (0.002), and item 36 *Student’s accommodation is safe* (0.000). They are represented in boxplots in Figures 7.26 and 7.27, respectively.

![Figure 7.26: item 19](image)

![Figure 7.27: item 36](image)

Figure 7.26 shows that the three groups’ median is the same. However, speakers of English as first and second language have values evenly distributed, above and under the median that go from 6 to 4 in the box. That means that they highly agree with the statement. On the other hand, those subjects that identified themselves as speakers of English as a foreign language (69% of the subjects) have the same media but with values exclusively in the lower quartile, which means that they tend to disagree with this statement.

Figure 7.27 shows a similar picture where speakers of English as a foreign language have a median in 5 and their answers in the lower quartile exclusively. On the other hand, first and second language speakers have a better evaluation. Speakers of English as a first language agree almost completely with this variable, with a median of 6 in the seven-point scale. Language proficiency seems to be associated with the feeling of safety. However, the association is not clear. Psychological factors or cultural
behaviour may have a role to play here but this interpretation is not supported by facts in this study.

d) Financial support:

Regarding this variable, two items are statistically different: item 19 *The university has sufficient residential accommodation* (0.001), and item 26 *The campus computers are sufficient for the student population* (0.001). They are described in Figure 7.8 and 7.29.

Figure 7.28 shows that those subjects with family or home institutions support agreed more with the statement than those with UK support. Answers of this last group go from 5 to 2, and they are mostly in the lower quartile, which confirms their disagreement. This same pattern was found in item 26, displayed in Figure 7.29. Family and home institutions support have the same pattern of distribution in upper and lower quartile with a median of 4 in the seven-point scale. However, those with UK support have more variability in their responses in the lower quartile. In both cases, students supported by UK institutions disagree more regarding the statements discussed in this section. There was not information about any possible restriction or special treatment for those sponsored by the institution to use the facilities (e.g., computers, accommodation) that could have had an impact on their opinions regarding this issue.
The other variables (marital status, kind of accommodation, date of previous degree and nationality) had no significant difference to be reported here.

7.4.2.2 Interactive quality:

a) Age: Only item 40 *Lecturers stimulate critical analysis* (0.000) has a significant relationship with age. This is described in Figure 7.30.

![Figure 7.30: item 40](image)

As shown in Figure 7.30, the median is 5 for three groups but differences were identified among them. The first two groups answered in similar way, with the same distribution of responses in the lower quartile, although the second one also has values in the upper quartile, which means they are more positive regarding this issue. The third age group (31 to 35) agreed less with this statement, with values from 5 to 1. The last group has a very low median of 3, with most answers in the lower quartile and all the answers placed on the median. Age seems to be associated with the way students perceived many of the variables where younger people tend to be more positive than older groups.

b) English proficiency: two items were statistically significant: item 6 *It is easy to get involved in campus social organisations* (0.001) and 21 *It is easy to interact with local students* (0.000). These items are described in Figure 7.31 and 7.32, respectively.
In both figures, speakers of English as a foreign language show lower results than the other two groups. In Figure 7.31, their median is 4 with answers from 5 to 3, one point lower than the other two groups who have all their answers above 4. This shows that language proficiency seems to have an impact on the social interaction.

In Figure 7.32, a median of 5 has been obtained by those that speak English as a first language; the last two groups have obtained a median of 4 points in the scale, but speakers of English as a foreign language have values only in the lower quartile, which means that they disagree more with the statement. These two items show that language proficiency seems to be an important element for social interaction and a significant variable when comparing levels of proficiency against different variables.

d) Date of previous degree: there was only one item under this category to report here: item 21 It is easy to interact with local students (0.000), represented in Figure 7.33.
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As Figure 7.33 shows, the first two groups have exactly the same structure (median in 4 and same values distribution in both quartiles). The median of the last option (university enrolment after more than two years) is 3 and all its values are in the upper quartile. This may suggest that students who have been outside the educational system may feel intimidated or alienated in the student community, especially with local students.

The rest of the variables (gender, nationality, kind of accommodation, marital status, date of previous degree, and source of financial support) were not statistically significant to be reported here.

7.4.2.3 Corporative Quality:

a) Age: two items were statistically significant: item 23 The university offers a high quality of teaching performance (0.000), item 37 The university is well recognised for the academic programmes (0.000). They are described in Figure 7.34 and 7.35, respectively.
Figure 7.34 shows that the first two age groups have rated this item similarly, the median on 5 and the values in the lower quartile. It is important to keep in mind that these two groups together represent 96% of the sample and therefore their responses are important to identify the general tendency. Despite the same median, the third group seems more positive as most of the values are in the upper quartile. In other words, older subjects seem to be more concerned regarding the teaching performance.

Figure 7.35 shows a more heterogeneous picture. However, the first two age groups have again the same median of 5 and the answers in the lower quartile. The third age group (31-35) with the same median has a larger fluctuation in their answers. Values go from 6 in the upper quartile to 3 in the lower quartile, which suggests a less coherent group according to their views. The last group has an extremely low median of 3 with values just a little above the mean which shows a very negative perception of this variable.

b) English proficiency: there were four significant items in this variable: item 3 The university takes the lead in research (0.003); item 23 The university offers a high quality of teaching performance (0.000); item 31 The ranking of my school is high (0.001); item 33 A degree from this university is well recognised internationally (0.000). They are described in the following figures.
Figure 7.36 shows that the three groups have the same median; the first two groups have the same response pattern with values distributed evenly in the upper and lower quartile. They both seem to highly agree with this statement. Speakers of English as a foreign language, on the other hand, have all its answers in the lower quartile, which indicates less agreement although they have the same median.

Figure 7.37 shows that the median is again 5 for the three group but the distributions of theirs answers is different. For native language speakers, the answers are evenly distributed between the upper and lower quartile. The second language speakers seem even more positive as their responses are entirely in the upper quartile. Speakers of English as a foreign language evaluate this statement slightly higher than item 3 in this dimension, although they seem to have a general lower evaluation of this dimension so far. The next two items are displayed in Figure 7.38 and Figure 7.39 below.
The statements represented in Figures 7.38 and 7.39 show a similar pattern to the previous statements described above (items 3 and 23). The mean is always 5 in a seven-point scale for the three groups and the variation is in the distribution of their responses in the quartiles. Despite some differences, it seems that there is a very similar response from first and second language speakers. They react to the statements more as a single group rather than two; together they represent 30% of the sample.

On the other hand, speakers of English as a foreign language tend to evaluate these statements lower which suggest that they are more critical regarding academic performance and reputation of the institution. The analysis of these four items confirms the initial assumption that this group is more critical and disagree more. Their opinion is relevant as they represent 70% of the sample.

c) Sources of financial support: only item 23 was statistically significant. The university offers a high quality of teaching performance (0.000), and is explained in Figure 7.40.
Figure 7.40 shows that all groups have the same median (5). However, those supported by home institutions have values distributed above and under the median which means that they agree more with the statement. The other two groups have values exclusively in the lower quartile. This suggests that they agree less with the statement.

d) Date of previous degree: three items were statistically significant: item 15 The university has contacts with international employers (0.005), item 32 Lecturers in my home country recommended this university to me (0.002), and item 35 The university maintains excellent links with the local industry (0.000). They are described in Figures 7.41, 7.42, and 7.43, respectively.
Figure 7.41 shows that the first group has a median of 5 and its values are evenly distributed in both quartiles. The second group has also the same median but all its values in the upper quartile which suggests that they have a more positive evaluation of this item. The last group (more than 2 years) has, however, the highest median but no values in the upper quartile. Despite the heterogeneous pattern, it seems that the last group, which is the largest in the sample (118 subjects), agrees more with the statement.

Figure 7.42 illustrates the response pattern of item 32. The first and second group has a median of 5 and the answers distributed evenly in both quartiles between 5 and 3. The last group shows, on the contrary, a low median of 3, although the responses are evenly distributed between both quartiles. That means that the institution has not been extensively promoted by lecturers at home which seems the case in the two first groups as they have higher values. This may be associated to the fact that the last group has been outside the educational system longer and may have not easy contact with current lecturers in their home countries.

The last significant question in this dimension, corporative quality, was item 35 which is displayed in Figure 7.43.
Figure 7.43 shows that the highest median was obtained by the first group (last year) (5 in the seven-point scale), and all the answers are in the lower quartile. Although they are in the lower quartile, the values are all between 5 and 4, which is quite positive as an answer. This is followed by a median of 4 obtained by the last two groups (2 years ago, more than two years), but with a different distribution. The group ‘2 years ago’ has all the values in the upper quartile, which indicates that general response is towards the positive end of the scale, similar to the first group. The last one is the only one with an equal distribution of their values in both quartiles, fluctuating from 5 to 3, the lowest response to this question. This may suggest that these respondents do not clearly see the links between the university and the industry.

The other variables (gender, marital statutes, kind of accommodation, and nationality) did not show any statistical significance to be reported here.

7.5 Summary

The comparative analysis of dependent variables and the demographic characteristics of the sample result in a few significant findings. Some general comments should be made about the comparative analysis presented in section 7.4. Firstly, Intention to recommend was only statistically significant when compared with age. The older
groups express less intention to recommend than the young ones. Despite this result, the percentage of the last two age groups is very low and any conclusion should be taken carefully. Value for money was found to be statistically significant with two demographic variables: gender and marital status. Married respondents disagree more in relation to the economic investment (value for money) than the single group which is the largest in the sample. Male respondents, on the other hand, have a larger fluctuation of responses, ranging from 5 to 1 in the seven-point scale. This shows that they also disagree more with the actual outcome of the service and the economic investment.

Surprisingly, financial support expressed in three categories (personal and family support; home institution sponsors; UK institution sponsors) has shown to be a significant variable regarding overall satisfaction and satisfaction. In the first case, those sponsored by UK institutions were overall more satisfied. On the other hand, those sponsored by home institution have higher level of satisfaction.

The second set of tests was conducted between demographic variables and the study dimensions. Physical quality was shown to be significant with age, gender, English proficiency and financial support. Interactive quality was significant with age, English proficiency, and date of previous degree. Corporative quality was significant against age, English proficiency, financial support and date of previous degree. When age was the variable, the older groups in all cases show less agreement with the statements from the service quality scale. Regarding gender, female respondents disagree more regarding the significant statements from physical quality (sufficient accommodation).

The variable English proficiency has proved to be a significant one. It seems that those who speak English as a foreign language have more difficulties in social contact (get involved into social groups, interacting with local students); perception of the institution (ranking, degree recognised internationally, high quality teaching); even perception of the accommodation condition (insufficiency and unsafe).

The variable Date of previous studies shows statistic significance for those who have graduated more than 2 years before enrolling into the current master programme. This
group rated lower the social interaction with local students and also fell to recognise academic links with the local industry or with international employers.

Regarding financial support, those sponsored by UK institutions show in all cases more disagreement in relation to high quality of teaching and the number of facilities provided (accommodation and computers).

7.6 The regression model

As stated in the previous section (Section 7.5), the comparative analysis of dependent variables and the demographic characteristics of the sample result in a few significant findings. Based on the variables considered statistically significant (age, gender, English proficiency, financial support, and date of previous degree).

The extent to which service quality dimensions explained overall satisfaction was determined using regression analysis. The regression model was then constructed based on these significant variables. Results from the three dimensions of service quality were entered to create a new variable, named Quality. The results of the 308 respondents were added up for the three dimensions for a minimum value of 1 and a maximum value of 21 (adding up the three scales with values from 1 to 7). That means that, for example, a student that could have 15 as a total result of Quality (the three dimensions), his level of agreement with the service scale would be 71%. The procedure consisted of dividing 15 (his result) by 21 (total of three dimensions), resulting 71.4%.

Regression analysis was undertaken using the variable Quality as the dependent variable and the significant variables mentioned before as explanatory variables (age, gender, English proficiency, financial support, and date of previous degree). Results show that the adjusted $R^2$ was 93.9% of the variability of the variable Quality. This is presented in Table 7.5 below.
### Table 7.5: Model summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square(a)</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.972(b)</td>
<td>.937</td>
<td>.939</td>
<td>1.12364</td>
</tr>
</tbody>
</table>

*a For regression through the origin (the no-intercept model), R Square measures the proportion of the variability in the dependent variable about the origin explained by regression. This CANNOT be compared to R Square for models which include an intercept.

*b Predictors: date of previous degree, financial support, English proficiency, Age, Gender

#### 7.7 Factor analysis

In order to analyse the service quality scale an exploratory factor analysis with principle component extraction and Varimax rotation was applied. It has been suggested that unrotated solutions are not sufficient to do the analysis and in most cases rotation will improve interpretation by reducing some of the ambiguities accompanying preliminary analysis (Hair et al., 1998).

The theory about the type of rotation to be adequate for specific data is not conclusive and there is no specific guidance about choosing between orthogonal or oblique rotation techniques (Hair et al., 1998). The orthogonal method, however, was selected in this analysis as the purpose was to identify theoretically meaningful constructs rather than reducing the items into a manageable set of factors. The literature has also shown that Varimax rotation has been extensively used in similar studies (see Chadwick and Ward, 1987; Perrucci and Hu, 1995). According to Hair et al. (1998) and Tabachnick and Fidell (1996), the cut-off criteria for the significance of factor loadings were set at .30 for a sample larger than 300. Factor analysis is extremely sensitive to the sizes of correlations, therefore, the inter-item correlation matrix needed to be checked before selecting the items for the factor analysis (Kim and Mueller, 1978). This procedure was previously accomplished with the whole service quality scale previously shown in Table 7.4. As a result, five items were eliminated out of the initial 40 item service quality scale.

After the reliability test, the 35 retained items for the service quality scale were subjected to Principal Component Analysis (PCA) using SPSS Version 12.0.1 for Windows to identify the underlying dimensions that overseas students use to evaluate the service quality in higher education. Although initially based on previous studies, this scale offers a different combination of variables that may result in unknown
results. Therefore, factor analysis was required to ascertain the dimensionality of the service quality scale. This step helps to check dimensionality, define dimensions, purify the scale, and establish its construct validity.

The first step was to check the suitability of the scale to run factor analysis. In order to do this, some previous tests were run. The first aspect to be considered was the result of the correlation matrix. An initial correlation matrix shows that there are many coefficients of .30 and above (see Appendix B), required for running factor analysis. A matrix that is factorable should include several sizeable correlations. The expected size depends to some extent on sample size, but if no correlation exceed .30, use of factor analysis is questionable (Tabachnick and Fidell, 1996).

However, high bivariate correlations do not intrinsically mean that the correlation matrix contains factors. It could happen that some variables are related and do not reflect underlying processes that are simultaneously affecting several variables (Tabachnick and Fidell, 1996). For this reason, it was necessary to undertake further tests to determine if it was feasible to proceed with the factor analysis of the 35 variables of the service quality scale. The second step was to check the value of the Kaiser-Meyer-Olkin Measurement of sampling (KMO) (Keiser, 1970, 1974). The KMO measure of sampling adequacy is an index for comparing the magnitudes of the observed correlation coefficients to the magnitudes of the partial correlation coefficients. A KMO measure of .60 is the minimum accepted in order to run factor analysis to the data since correlations between pairs of variables can be explained by the other variables. This procedure is displayed in Table 7.6.

<table>
<thead>
<tr>
<th>Table 7.6: KMO and Bartlett's Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaiser-Meyer-Olkin Measure of Sampling Adequacy</td>
</tr>
<tr>
<td>Bartlett's Test of Sphericity</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

Results of Table 7.6 show that the current study reaches a value of .84, which exceeds the minimum requirement proposed by Kaiser. The third step was to use Bartlett’s test of sphericity (Bartlett, 1954). In this test all diagonal terms are 1 and all off-diagonal
terms are 0. The current study obtained a value of 1901.962 for the test of sphericity. Since the value is large and the associated significance level of .000 is small, it is unlikely that the population correlation matrix is an identity.

If the hypothesis that the population correlation matrix is an identity cannot be rejected because the observed significance level is large, one should consider the use of factor analysis. The KMO value obtained and the highly significant level of the test of sphericity, are both very comfortable indications that the given set of data are adequate for factor analysis.

7.7.1 Multicollinearity and Singularity

As in all multivariate techniques, multicollinearity and singularity are problems with factor analysis. Multicollinearity means that variables are very highly correlated, reaching .90 or above and singularity means that variables are perfectly correlated, equal to one. The problem when this happens is that singularity prohibits and multicollinearity renders unstable the determination of the unique contribution to a factor of the variables that are highly correlated (Tabachnick and Fidell, 1996). When analysing the reliability of the scale, Square Multiple Correlation (SMC) provides the information about how high is the correlations among variables. Multicollinearity among variables did not appear to be a significant problem since only few correlations in the new matrix, which was elaborated after deleting five items (35 by 35 matrix) exceeded .60 with none exceeding .70. This new correlation was done after the elimination of five items out of the initial total of 40. This confirms that multicollinearity and singularity are not a threat in this data set.

7.8 Principal factor extraction

An initial Principal Component Analysis (PCA) of the scale items produced an initial solution of eight components with an Eigenvalue exceeding 1, based on Kaiser’s criterion. However, there were many items overloaded or with low loading. As recommended, factor analysis was run until identifying a clean pattern. The subsequent factor analysis which was run until a clean pattern of four factors was
identified. This led to a final set of four factors with eigenvalues higher than 1 which explain a total of 57.389 per cent of the variance. This is presented in Table 7.7.

**Table 7.7: Eigenvalues and proportions of variance**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Eigenvalue</th>
<th>% of variance</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td>6.156</td>
<td>34.199</td>
<td>16.282</td>
</tr>
<tr>
<td>Factor 2</td>
<td>1.527</td>
<td>8.481</td>
<td>31.429</td>
</tr>
<tr>
<td>Factor 3</td>
<td>1.375</td>
<td>7.640</td>
<td>45.189</td>
</tr>
<tr>
<td>Factor 4</td>
<td>1.272</td>
<td>7.069</td>
<td>57.389</td>
</tr>
</tbody>
</table>

For further investigation of the number of factors to be extracted, Cattell’s scree plot was checked. There is quite a clear break between the first factor and the rest, but followed by another break after the four factors. Based on both Kaiser’s criterion and the scree test shown in Figure 7.44, it was decided to retain the four components for the rotated factor solution.

**Figure 7.44: Eigenvalues Scree Plot**
Varimax rotation was used for the rotation solution. The aim of running Principal Component Analysis (PCA) is to check the scale dimensionality and identify the items that best represent the four dimensions to be summated for further analysis. Therefore, items with ambiguous loadings (closely loaded on more than one component) were dropped one by one. After repeating reiteratively the factor analysis procedure, a clear structure of four factors was identified, with all the components showing a number of strong loadings and all variables loading substantially on only one component.

As another test of adequacy of the number of factors, communality values were inspected. If communality values equal or exceed 1, the number of factors extracted is wrong (Tabachnick and Fidell, 1996). Communality values for the 18 items in the four factors did not reach values of 1.00 or above. The highest two reached over .70 (item 5, .797 and item 12, .701). This is further confirmation that the selection of four factors is suitable for the data at hand. A factor analysis, using principal components method with Varimax rotation, identified four service quality factors, composed of 18 items. The resulting Varimax rotated factor loading matrices are shown in Table 7.8 under the corresponding dimension. Items were ordered by size of loadings in which each variable contributes to the factor.
Table 7.8: Service quality scale: Factor loading structure

<table>
<thead>
<tr>
<th>Factors</th>
<th>Factors</th>
<th>Factors</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Factor 1: Recognition**
- The ranking of the school is high (Corporative Quality, item 31) .772
- A degree from this university is well recognised internationally (Corporative Quality, item 33) .702
- The University takes the lead in research (Corporative Quality, item 3) .659
- A degree from this university has an excellent reputation in my home country (Corporative Quality, item 20) .652
- My course is intellectually challenging (Interactive Quality, item 7) .609

**Factor 2: Quality of instruction and interaction with faculty**
- Lecturers have adequate time for consultation (Interactive Quality, item 8) .765
- Lecturers can be easily contacted individually (Interactive Quality, item 27) .758
- There are clear and reasonable requirements for each module (Interactive Quality, item 1) .663
- Lecturers stimulate critical analysis (Interactive Quality, item 40) .611
- Feedback from coursework is adequate (Interactive Quality, item 16) .454

**Factor 3: Sufficiency of resources**
- The campus computers are sufficient for the students population (Physical Quality, item 26) .724
- Adequate printer facilities are available (Physical Quality, item 10) .689
- The common areas in the university accommodation are adequate for the number of students (Physical Quality, item 30) .657
- The university has sufficient residential accommodation (Physical Quality, item 19) .642

**Factor 4: Quality of facilities**
- The University has plenty of sport facilities (Physical Quality, item 5) .863
- The sport centre has modern equipment (Physical Quality, item 12) .802
- The classrooms have up-to-date teaching support equipment (Physical Quality, item 4) .526
- The gardens and open areas on campus are kept clean (Physical Quality, item 18) .483

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Explained variance by factor (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.156</td>
<td>34.199</td>
</tr>
<tr>
<td>1.527</td>
<td>8.481</td>
</tr>
<tr>
<td>1.375</td>
<td>7.640</td>
</tr>
<tr>
<td>1.272</td>
<td>7.069</td>
</tr>
</tbody>
</table>


Table 7.8 presents the four factors identified after running factor analysis. In all cases, variables loaded heavily on their specific factor (.30 or more). The four factors extracted explained a total of 57.389 of the variance. This accords well with the results reported by Ryland and King (1992) in a similar study in the USA, whose
factors accounted for 51% of the variance. In the same line, Gatfield et al. (1999) reported in their study conducted in Australia that the combined factor solution accounted for 52.33% of the variance.

A structure of four components or factors was identified, with Component 1 (Recognition) contributing the highest percentage of the explained variance (34.199 percent), followed by Component 2 (Quality of instruction and interaction with faculty) with 8.481, and Components 3 (Sufficiency of resources) and 4 (Quality of facilities), contributing 7.640 and 7.069, respectively.

The initial assumption of three dimensions in the context of higher education was not confirmed with these results. However, the emerging pattern does not completely differ from the initial dimensions: physical quality, interactive and corporative quality.

From the above table it can be seen that with the use of a .45 cut and K-W criterion, there are four factors and that the pattern of the loadings is quite clear. A simple structure is clearly present, with several variables correlating highly with each factor and only one factor correlating highly with each variable. The importance of the factor was evaluated by the sizes of eigenvalues and the proportion of variance accounted for by the factor rotation because these establish both the strength and clarity of the factor. Without doubt, Factor 1 is the most important as it accounts for the largest proportion of the total variance with eigenvalues higher than 3.00 (6.156) and explains 34.199% of the total variance of the four factors, which was 57.389. It includes items basically from Corporative quality (3, 20, 31, and 33) and only one from Interactive quality (item 7). It can be seen from Table 17 that items loaded on the first component clearly represent the notion of how the university positions itself as a demanding and competitive body. It represents a positive challenge for the students that enrol in the school and at the same time, its competitive position in the market is confirmed by the high ranking and the international recognition. The content of the items loaded on this factor allow the researcher to name this factor "Recognition".

The rest of the factors have not reached eigenvalues of .3.00, and the percentage of variance is very low in all cases as all together only explain 23% of the common
Main survey findings

variance. Factor 2 accounted for 8.48% of the common factor variance. The items in this factor all come from Interactive quality and they portray a lecturer in their intrinsic role as a teacher: the intellectual person willing to guide, teach and motivate students. It emphasises this role rather than the sometimes over estimated role of researcher. The variables included in this factor also provide evidence of the responsibilities of the lecturer towards the students: clear instructions, accurate and punctual feedback from course work or any examinations and private consultation. This justifies the name given to this factor, 'Quality of instruction and interaction with faculty'. These characteristics are highlighted by the respondents and factor analysis has clearly confirmed the importance of these variables when evaluating the educational service in higher education.

Factor 3 includes four items from physical quality. Although they only explain 7.64% of the common variance, all the items have high loadings, ranging from .642 to .724. But not only are the loadings surprisingly high, they have obvious meaning. They all refer to adequate provision of services for the amount of students at the university. These items compare the ratio between services and number of users regarding two important areas of concern for any student: the number of computers and printers - basic tools in the study life -, and the amount of accommodation provided by the university and the common areas and facilities shared by students in the accommodations. This may be associated with the perception of the number of students that daily interact on campus using all the common facilities, therefore, this factor was named 'Sufficiency of resources'.

The last factor, although composed of four items from physical quality, does not show a clear pattern. As judged from the kind of items that are loaded on this factor, it may refer to the general condition of services or facilities. Two of the items refer to the facilities provided by the sport centre (The University has plenty of sport facilities and The sport centre has modern equipment). Despite the disappointing performance in terms of eigenvalue (1.272) and accounted percentage of variance (7.6%), both items have the highest loadings in this factor analysis (.86 and .80, respectively). The third item refers to the classroom facilities, emphasising the modernity of the equipment, with a loading value of .526. The last item loaded on this factor (.483) refers to the
hygienic and somehow aesthetical condition of the university. Some common characteristics allow the researcher to name this factor 'Quality of facilities'.

Factor analysis has then identified four factors that have a different pattern of the expected one. The new distribution of the variables into these four factors was based on the students' perception of the service. Apart from the analysis previously presented, it is important to observe how the different factors correlate. As stated before, Factor 1 explains most of the variance. All the other factors have a high correlation with this one, ranging from .48 to .57.

Table 7.9: Service Quality: Factors correlations

<table>
<thead>
<tr>
<th></th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 2</td>
<td>.57</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factor 3</td>
<td>.47</td>
<td>.49</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Factor 4</td>
<td>.48</td>
<td>.40</td>
<td>.36</td>
<td>1</td>
</tr>
</tbody>
</table>

The correlation of all the factors is statistically significant at 0.01 (2-tailed). As indicated in Table 7.9, all the factors have a high correlation with Factor 1, ranging from .48 to .57. This high correlation may reinforce the importance of Factor 1 in the scale of service quality. It may also mean that the rest of the factors contribute some how to the strength of Factor 1 as the service is integrated by the accumulation of different services.

Despite coming form the same dimension (physical quality), the items loaded in Factor 3 and 4 show a medium correlation (r = .36) which confirms that they belong to two different factors although referring to physical attributes of the university facilities.

7.9 Reliability of the new scale after factor analysis

After running factor analysis a final four factor result emerged, and the items were allocated under a specific dimension. It is necessary to check the reliability of the new
four scales. A first sign of internal consistency was tested based on the corrected *item-total correlation* values. These figures indicate the degree to which each item correlates with the total score. Low values (<.3) here indicate that the item is measuring something different from the scale as a whole. Table 7.10 shows the results of this procedure.

Table 7.10: Reliability of the scale after Factor Analysis

<table>
<thead>
<tr>
<th>Factor 1: Recognition</th>
<th>Cronbach's alpha</th>
<th>Corrected Item-Total Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ranking of the school is high</td>
<td>.80</td>
<td></td>
</tr>
<tr>
<td>A degree from this university is well recognised internationally</td>
<td></td>
<td>.658</td>
</tr>
<tr>
<td>The University takes the lead in research</td>
<td></td>
<td>.706</td>
</tr>
<tr>
<td>A degree from this university has an excellent reputation in my home country</td>
<td></td>
<td>.565</td>
</tr>
<tr>
<td>My course is intellectually challenging</td>
<td></td>
<td>.563</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.491</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 2: Quality of instruction and interaction with faculty</th>
<th>.76</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturers have adequate time for consultation</td>
<td></td>
</tr>
<tr>
<td>Lecturers can be easily contacted individually</td>
<td>.546</td>
</tr>
<tr>
<td>There are clear and reasonable requirements for each module</td>
<td></td>
</tr>
<tr>
<td>Lecturers stimulate critical analysis</td>
<td>.584</td>
</tr>
<tr>
<td>Feedback from coursework is adequate</td>
<td>.545</td>
</tr>
<tr>
<td></td>
<td>.359</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 3: Sufficiency of resources</th>
<th>.73</th>
</tr>
</thead>
<tbody>
<tr>
<td>The campus computers are sufficient for the students population</td>
<td></td>
</tr>
<tr>
<td>Adequate printer facilities are available</td>
<td>.567</td>
</tr>
<tr>
<td>The common areas in the university accommodation</td>
<td></td>
</tr>
<tr>
<td>are sufficient for the number of students</td>
<td>.486</td>
</tr>
<tr>
<td>The university has sufficient residential accommodation</td>
<td>.518</td>
</tr>
<tr>
<td></td>
<td>.500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factor 4: Quality of facilities</th>
<th>.72</th>
</tr>
</thead>
<tbody>
<tr>
<td>The University has plenty of sport facilities</td>
<td></td>
</tr>
<tr>
<td>The sport centre has modern equipment</td>
<td>.590</td>
</tr>
<tr>
<td>The classrooms have up-to-date teaching support equipment</td>
<td></td>
</tr>
<tr>
<td>The gardens and open areas on campus are kept clean</td>
<td>.601</td>
</tr>
<tr>
<td></td>
<td>.437</td>
</tr>
</tbody>
</table>

As Table 7.10 shows, the recommended minimum requirement of .3 was achieved by all the variables in Inter-Item correlation. The second test for reliability was running
Cronbach alpha. Results also show that all the new scales have achieved an alpha higher than .70, ranging from 72 to 80. From the findings of *Cronbach alpha if item deleted*, the items in the four scales were found to be reliable (see Appendixes C to F). In Factor 2, however, the item ‘Feedback from coursework is adequate’ has the lowest value in Item-total correlation (.359). Because this evidence suggests that this item has a weak relationship with the nominated construct, the *alpha if item deleted* was checked to see if elimination of this item would improve the overall Alpha. Results show that the elimination of this item would slightly improve the reliability coefficient of the scale, from 76 to 77. On the Basis of this evidence the decision was reached to retain this item. Hinkin (1995) points to the appropriateness of this decision, arguing that elimination of items should take place only to obtain an acceptable reliability coefficient.

7.10 Summary

This chapter has presented the analysis of the data starting with the descriptive characteristics of the sample used in study. The profile of the participants seems similar to those found in the literature related to studies in the UK using overseas students. The sample was basically made of students who were single (74%), young (53% between 20-24) and female (63%). Regarding their time of enrolment, 38% has enrolled to the master programme after more than two years after finishing their previous degree, followed by a second group that has done it two years after their first degree (34%). English is for more than fifty percent a foreign language (69%), basically learnt for academic purposes. The main source of financial support reported by the respondents is their family and themselves (82%)

In relation to their country of origin, a total of 26 different nationalities were identified. The main market comes from Asia and the great majority are from China (52%), followed by members of other Asian countries (28%). There is also some representation from Middle East countries (9%), Africa (8%), and South America (3%).

Further analysis of the demographic characteristics of the sample with parametric tests has shown that the variable ‘time of enrolment’ has discriminated between satisfied
and unsatisfied students. Results show that the least satisfied group is the More than two years group which represents the largest group of respondents in this study (38%). This category has discriminated especially between the two larger groups, Last year (101 respondents) and More than two years (118 respondents).

The variables in the service quality scale were compared with the demographics variables in order to identify whether any demographic variable has an impact on the way students evaluate the service attributes as well as their level of satisfaction. Results from the different tests with the 40 items from the service quality scale and the dependent variables show that some variables are statistically significant.

The initial dimensions included in the service quality scale were Physical Quality, Interactive Quality and Corporative Quality. After running factor analysis four factors were identified. In all cases, variables loaded heavily on their specific factor (.30 or more). The new pattern, however, does not completely differ from the initial dimensions. Factor 1, which includes items basically from Corporative quality, obtained the highest percentage of the explained variance (34.199 percent), and was named Recognition. This is followed by Factor 2 (Quality of instruction and interaction with faculty), Factor 3 (Sufficiency of resources), and 4 (Quality of facilities).

The importance of the factor was evaluated by the sizes of eigenvalues and the proportion of variance accounted for by the factor rotation, because these establish both the strength and clarity of the factor. Without doubt, Factor 1 is the most important as it accounts for the largest proportion of the total variance with eigenvalues higher than 3.00 (6.156) and explains 34.199% of the total variance of the four factors, which was 57.389.
8.1 Introduction

This study has focused on students’ satisfaction with the service provided by the university where they have enrolled into a master programme. The investigation further attempts to resolve whether the dimensions proposed are useful to measure service quality in a higher education setting and whether they discriminate among groups (e.g., nationality, gender, age).

The previous chapter presented in detail the survey findings in the form of descriptive statistics and comparative statistical procedures from correlation to factor analysis. This chapter discusses the main findings of the study and relates them back to the literature. It presents the overall contributions of the research, both in theoretical and practical terms. It also reports the limitations and suggests further research.

8.2 Findings of the study

The objective of the current study was to examine the impact of a set of service quality variables on students’ satisfaction with their experience in a higher educational institution in the UK. The investigation further attempts to resolve whether the dimensions proposed are useful to measure service quality in a higher education setting and whether they discriminate among group characteristics. Following these objectives, the following section first analyses the service quality scale to assess service quality in higher used in the study with reference to previous studies. Then, the demographic characteristics are compared against the dimensions. Finally, the results of the dependent variables are discussed.
8.2.1 Service quality dimensions

One of the objectives of the study was to validate the scale developed to assess service quality in higher education. Three dimensions were proposed based on Lehtinen and Lehtinen’s (1991) work. The scale consisted of three dimensions: physical quality, interactive and corporative quality. Factor analysis shows a different distribution of items among dimensions as the output shows the existence of four distinctive factors which accounts for more of fifty percent of the explained variance. The process undergone by factor analysis shows a factor structure of the service evaluation attributes of tertiary educational institutions which underpins the initial pattern and assumption of three dimensions. The main factor, Factor 1 was named Recognition as the items loaded under this factor refer basically to the international image of the institution and the employment benefits of a degree from the institution. This factor has appeared in previous studies in different position of importance. Academic reputation, with the variable reputable degree, was the second factor in Ford et al. (1999) and in Ford (1998). The first study was carried out in New Zealand universities and replicated later with different students and a contrasting sample from US universities. In both cases, results place recognition as second factor based on the students’ responses.

On the other hand, the factor recognition has been identified as the last factor in Gatfield et al.’s (1999) study. This factor includes similar variables to the current study (recognition by potential employer, government recognition -home country-, and potential industry association). Despite the similarity in content, the response of the participants from both studies is different from the current study results.

In the current study, this factor consisted of five items of which four come from corporative quality and one from interactive quality. That means that those items from corporative quality refer to the external position held by the university according to the students’ opinion. They include external aspects that are recognised somewhere else such as university ranking and international reputation. This dimension has been sometimes
neglected although it plays a relevant role in this study (Ryland and King, 1992; and Lapidus and Brown, 1993).

The external recognition of the institution places the institution in a high position according to the students who participated in this research. They seem proud of being selected and eventually obtain a degree in such a prestigious institution as it represents a significant academic challenge (Ford, 1998; Ford et al, 1999).

This result, however, did not reveal the general structure found in previous studies. Recognition has been identified as one of the factors in previous studies. It has been shown to be the least important factor in previous study (Garfield et al., 1999; Tomkovik and Al-khatib, 1996). In most of the studies, academic instruction has been identified as the principal factor that explained most of the variance (Gatfield, 2000; Elliot and Shin, 2002). This factor includes aspects such as course content, quality of teaching, fairness of grading, and intellectual stimulation of the course. This was also confirmed by Patterson et al’s (1998) findings. In their study this dimension called learning dimension included other aspects such as study facilities (e.g., computers, library).

The findings from the present study may reflect the history of this particular School as a world leader in its specialist area. Hence its reputation becomes an important variable to influence students. It may also result from the attempts by the School to reach and keep higher standards that determine the ranking position as well as the research reputation. Students may find out information in the web and compare with other similar institutions before selecting their current university in the UK. One reason for this may be the external recognition of the strength of the programmes provided by the School.

Regarding the second factor Quality of instruction and interaction with faculty, it consisted of items related to the interaction with staff and their availability for consultation. This factor includes five items originally from interactive quality. They refer to the lecturers’ availability for individual consultation (3 items). The other aspects
are related to course content and feedback from coursework. With similar name and content, this factor was found to be the first in the study conducted by Ford (1999).

The item in this second factor considered important to influence students’ service perceptions was the interaction with staff. This finding suggests that a school’s faculty and their ability to interact comfortably with foreign students can have positive effects on students’ perceptions. This supports previous studies that have found that the interaction with staff have an impact on the way overseas students perceived the institution (Rogers and Smith, 1993; Clemes, 2001; Ryland and King, 1992). The time staff dedicate to students may be more valuable than they may expect. Students not only expect knowledgeable and qualified faculty but also frequently need teachers or mentors who will help them with the often troublesome transition to a new school, a new country, and a new culture.

The importance given to this factor in this study suggests that students consider that in large classes, which is generally the case in most universities everywhere, the personal contact with the academic staff for consultation has become extremely important. The institution should be conscious of this fact and give faculty the time to see students individually. This is important as it could determine the students’ evaluation of their experience. The importance of this factor was already recognised. Ryland and King’s (1992) factor analysis placed this factor as second. This was part of the factor called Instruction. It was previously placed in the same factor in the study conducted by Lapidus and Brown (1993).

The availability of staff, not only for the academic purpose but for personal issues has extensively been recognised as an important aspect in the service provided (Oldfield, and Baron, 2000, 1998; Soutar and McNeil, 1996; Ortinau et al., 1989). Students may feel intimidated to use professional counselling services provided by the university (Patterson et al., 1998; Furnham, 1997). When they eventually need advice, they may ask their lecturers for guidance. This is not their function and may feel unable to fulfil that role.
However, that will be highly recognised by students as the results of this research confirm.

Course content and feedback were the other aspects included in this factor. Once again students expect reassurance from their lecturers. Comments about their performance may help them to know whether they are able to cope with the requirements. If necessary, they may ask for extra help to overcome their limitations (e.g., language skills). One classmate during my master reported that after failing an exam in the first semester, a lecturer told her that she might be dyslexic. Tests carried out at the university confirmed the lecturer's hunch. She finally understood the origin of some of her academic problems and was taught how to cope with her unknown condition so far. After this event, she was included under the special needs scheme for dyslexic students and this had a positive impact on her further test performances.

Factors three and four in this study refer more to the physical facilities provided by the institution and they were named Sufficiency of resources and Quality of facilities, respectively. The items loaded in factor four refer to two important variables in a student life away from home: computers and accommodation. Factor analysis has clustered these variables under the same factor. The availability of computers has been previously found as a very important facility provided by the university (Lapidus and Brown, 1993; Gatfield et al., 1999). Regarding accommodation, variables such as availability, price and distance from the university have been previously reported. Some of these aspects were included in the questionnaire but factor analysis only kept availability and space of common areas in the students' residences.

The last factor, Quality of facilities, includes a set of different variables such as sport facilities, cleanliness of open areas, and modern teaching facilities. These variables have also been included to a certain extent in previous studies (Ryland and King, 1992; Joseph, 1998). However, the aesthetic aspect of the institution has been hardly included as an a variable when studying service quality in higher education institutions.
8.2.2 Demographic variables and the dimensions

An objective of the study was to identify the profile of the student who has a better evaluation of the dimensions and a higher level of satisfaction. There were six age categories included in the questionnaire but respondents belonged exclusively to the first four groups. Results show that most students belong to the first two groups (96%) and a low percentage to the last two (4%).

Despite a ten years gap between the first and the third group, the older group constantly show a lower evaluation of the service provided by the university. They seem to be more demanding in their evaluation of the perceived service in the three dimensions included in this research. This may be explained by the intervention of other variables such as forms of funding and more experience (e.g. working experience, courses in other institutions).

This finding confirms that age may be a factor that discriminates between groups. When comparing graduate and undergraduate students in a sample with no large age gap, it was found (Tomkovic and Al-Khatib, 1996) that undergraduate students had a more favourable perception of service quality than did graduate students. Although the difference was in their level of study, the authors suggest that one reason for that behaviour could be that graduate students, because of their age and experience, are better able to assess service quality than undergraduates and consequently be more demanding in their evaluation.

Research in education has identified few aspects related to female behaviour. They have expressed their disappointment, for example, over their inability to befriend the local students (Patterson et al., 1998). In the current study, it was found that they were more demanding in some of the aspects included in physical quality. The general condition of the accommodation and the availability of adequate rooms for them have been an issue in this study. This confirms previous findings as female foreign students seem less impressed with the physical facilities and therefore more demanding in their judgement.
Patterson at al (1998) suggest that such behaviour may be associated with a general belief that in some cultures women have limited career opportunities which may negatively affect their perceptions of an institution service quality. Nevertheless, this association needs to be confirmed empirically.

When the sample was described, it was reported that 69% of students identified themselves as speakers of English as a foreign language. Most of the students have learned the language before enrolling into their master programmes. Some have come first to learn the language or improve their skills. Whatever the case, they need to show a proficiency level through a standardised language test such as TOEFL. Although standardised tests may assess language skills, they may not be prepared for academic writing or skills such as note taking during lectures. Those tests tend to be grammatical and the oral skill is hardly evaluated there. It is interesting to notice that their language skill has a significant impact on the three dimensions. Interaction with people (e.g., staff and students) was specifically reported under Interactive quality and a possible connection was expected to be found exclusively there. However, it seems that language skills 'coloured' their perception of the service. This result confirms what has been reported elsewhere (Ryland and King, 1992). Language skills have also been associated with culture awareness. It is not clear from our results whether cultural distance may be an intervening variable in students' communication skills and language may not be the only variable to consider.

8.2.3 Dependent variables

In relation to the satisfaction variables, the initial objective was to find out if there was a relation between the way respondents evaluate the service quality scale and their level of satisfaction and whether the demographic variables may have an impact on satisfaction. When running correlation analysis, it was found that it was hardly any significant relationship to report. Results are not conclusive regarding how satisfied students are. It seems that students have played 'safe' and placed their responses in the middle of the scale. No extremes results to lead to significant differences. Findings from previous
studies have shown that international students were significantly more dissatisfied when compared with local students (American students in the study reported by Ryland and King, 1992). In their study, Asian students were more pessimistic about their experiences in business school than non-Asian students.

This also confirmed Lapidus and Brown’s (1993) findings. Students in their sample were not completely satisfied. They explained these results as a consequence of students’ higher expectation. However, expectations were not included in the current study to avoid such a possible conclusion. A second argument supported by these researchers was based on the actual inferior level of services provided by the educational institution in which case administrators, faculty and staff at the institution can do much to improve the overall satisfaction on their international students (Lapidus and Brown, 1993).

In the current study, the number of students per nationality made it impossible to reach to those conclusions. The possible nuances among overseas students based on their nationality or ethnic origin were not enough to discriminate among groups. Based on the dependent variables included in the study, overall satisfaction was only significant when compared with the different financial support. There were three sources of financial support considered in the study (family and yourself; home institutions; UK institution). Despite the same median value obtained by the three groups, the last one, those sponsored by UK institutions, was statistically significant. This group is more satisfied than those supported by family and home institution. The first two groups have the same distribution exclusively in the lower quartile which means their level of satisfaction tends to the negative side. This finding could not be compared with previous studies because the classification of finding sources was not clearly mentioned previously. Nevertheless, a report shows that most overseas students come to the UK economically supported by their families (Allen and Higgins, 1994).

Similar results were found with the overall satisfaction. This variable only was statistically difference with financial support. Once again financial support was the only
variable that was statistically significant. Those sponsored by family and home institutions were less satisfied.

The last dependent variable of the study was value for money. The relation was found regarding. Older groups in the sample are more conscious of this issue than younger ones. Although this relation was statistically significant, the number of old subjects was too low to run into conclusions. The composition fee and daily expenses have been included in previous studies. Findings show that students tend to be conscious of the service they receive for the money they pay for tuition fees apart from general daily expenses (Oldfield and Baron, 2000). Research has generally proved that the economic investment in higher education is an issue to be considered when applying to study abroad.

In this study females were more critical regarding the dichotomy relation price-value. It is worth mention that they are the largest group in this sample (63%), which means that their opinion should be seriously taken into consideration. However, previous studies have found that men are the ones who re concerned about budgetary issue (Patterson et al., 1998).

Another significant relationship was found between value for money and marital status. Married students are supposed to have responsibilities towards their families and this implies economical expenses apart from the exclusive educational ones. The literature reports that married students have been found to have a better social life with similar couples (Bourke, 1997) but it does not stop them form being economical unstable, especially young couples with kids.

8.3 Summary: key findings

In its own effort, the current research aims to complement the existing research about the experience of overseas students who have enrolled onto a master’s programme in the UK. They were asked to evaluate the performance of different dimensions that include the services provided, the interaction with academic and administrative staff as well as other
students. They were also asked to evaluate their opinion about the university image and the future implications of their degree for employment.

The current study has focused on students’ satisfaction with the service provided by the university where they have enrolled into a master programme in the UK. The investigation aims to resolve whether the dimensions proposed are useful to measure service quality in a higher education setting and whether they discriminate among groups. In more specific terms, study aims to determine which variables have more impact on students’ satisfaction and the relationship between service quality and demographic characteristics. It also aims to assess the level of satisfaction and the willingness to recommend the higher education institution to friends and family back home and determine the relationship between the perceived quality and the economic investment.

The discussion of the findings in the previous section (8.2) confirmed that the three dimensions proposed by Lehtinen and Lehtinen (1991) can be used to assess service quality in the educational sector. Nevertheless results from factor analysis have shown that the importance of these dimensions had a different pattern in this study. The Corporative dimension has emerged as the main factor according to the sample who participated in this study. Similar studies in higher education have found different results (Gatfield et al., 1999). Physical facilities and interaction with staff have shown supremacy upon external recognition, represented here by the attributes included in the corporative dimension.

8.4 Contributions and recommendations

The use of Q methodology has been a successful outcome in this study. It has proved that this methodology extensively used in the service sector has an important role to play in the educational sector. The initial stage of the Q sorting procedure has provided the participants with the possibility to grade the variables based on their experience as students. The final set of statements is mostly the result of the two sorting tests
conducting in this study. It has proved to be an excellent way to validate statements in the educational setting.

In practical terms, this study offers administrators of higher education institution a set of relevant variables to be considered in the policies of marketing overseas students. The policy of the institution itself is a determinant factor to create changes. Whatever the policy, those that daily interact with students have a determinant role in the implementations of such policies. The first e-mail or telephone contact may determine the decision to apply for a place in a specific institution. Staff should be aware of the language problems of foreign students without patronising them. The language barrier does not mean that they are incapable of performing correctly once the problem is sorted out.

From the physical attributes reported as important, administrators should be conscious that the increase of the number of student implies the expansions of services. The most crucial ones seem to be the availability of accommodation and computers.

From a personal perspective, the motivation of this research was to identify the variables that overseas students may consider important to be included in a university questionnaire (Q sorting methodology). The identification of those attributes and the data collection about the way they perceive service attributes of a tertiary institution (main survey of the study), and the impact on their level of satisfaction was thought to be a way to expand the information in this area of knowledge and make easier the experience of overseas students in the university context in the near future.

There are a number of policy implications for these findings that point to actions that might be undertaken by different units of the university. The opportunity to strengthen language skills for international students should be given a high priority by universities. Admission to graduate study is based on meeting a minimum standard on the TOEFL exam, and in most cases this is followed after admission by a test of written English. In addition to these instrumental and appointment-specific exams, there should be available
a variety of programmes for English as a second language for foreign students. These programmes should be offered by the university on regular basis and academic departments should encourage their international students to enrol.

Universities can continuously update information about changing perceptions and expectations of students. This kind of follow up study should enable administrators to identify key drivers of students' satisfaction and help them set priorities for improvement efforts. These priorities seemingly would help universities determine where to allocate resources effectively and how to make concerted efforts with respect to educational attributes considered important by students. (Elliot and Shin, 2002).

8.5 Limitations in current research

The research described in the previous chapters has been an effort to achieve the study's goals. Despite the effort and time dedicated to the study, research entitles intrinsic constraints that should be pointed out. Considering these issues is a chance to rethink the whole process and put things in perspective and tackle them differently.

Some aspects have been identified as shortcomings of this work and should be pointed out in order to acknowledge them. In interpreting the results of the current research, the following limitations needed to be taken into consideration.

8.5.1 Timing

The first limitation was timing of the data collection. The data collection was carried out during the first three weeks of March 2005. Postgraduate students were contacted during the second semester in a higher education institution. Students in the main university were about to start the exam period for the core modules of the second semester; some students were revising for the exam and therefore did not accept to participate in the survey. The other institution which was thought would be able to provide a similar number of responses has a different schedule in their terms. By the time the
questionnaires arrived there to be distributed, the masters’ students had already finished all the regular courses and were not easily contactable to fill in the questionnaire. Despite the effort of the liaison in that institution the response rate was too low to make any possible comparison between the different populations and contribute to the expansion of the surveyed sample. This could have been controlled somehow with the inclusion of other institutions with the same timetable.

It is worth mentioning here that at initial stages of this research, some universities with similar programmes were contacted through emails to know whether they would be willing to participate in the current research. However, those that replied seemed suspicious about the purpose of the study and preferred to avoid any participation. This confirms that research students may require direct support from their institution as they should act as official body when this kind of help is required. The request for academic help and participation may be more convincing when the issue is treated as an official matter between higher education institutions rather than from an individual researcher.

8.5.2 Data collection method

The method of collecting data for this study was through a self-administered questionnaire. Although the literature in higher education has extensively used questionnaires as a way for collecting data, this kind of survey may be complemented by interviews with current students. This may be a way to combine qualitative and quantitative methodologies and have a broader view of the students’ perception about the university attributes and the impact on their level of satisfaction. Focus groups to collect information about the students’ opinions regarding the institution attributes to be included in the questionnaire may be convenient. This has been implemented in some studies in higher education (Ford et al, 1999; Clemes, 2000).

The use of Q methodology in the first step of the elaboration of the final instrument was thought to provide some feedback about the students’ opinion. Although the participants in the Q sorting already had a set of statements they were free to select those more
important to them. This was a basic step in the sorting of statements. Therefore, more work is warranted with focus groups with all the different kind of participants (nationalities, schools) to ensure that the proper attributes are being included in the questionnaires that are developed.

Whatever the form of data collection (focus groups and questionnaires), the information tends to be collected in a fixed moment of time. What may seem to be the most convenient procedure could be a longitudinal study that may collect information from students at least in two different moments of their study life as master students. These two moments should be at the end of the first and second semesters. By that time they may have a more realistic picture of what have been the important variables affecting them. However, the intrinsic difficulties of longitudinal studies may be the reasons for their limited usage in this kind of research.

8.5.3 The study sample

Although it was initially thought to consider nationality of one of the important variables for possible comparisons, the distribution of the nationalities in the sample made the objective impossible. The overwhelming number of Chinese students reduced the possibility to have a more balanced sample. The inclusion of more institutions in a further study may provide a better balance between nationalities and provide insight into the problems associated with nationality.

Although the focus of the study was overseas students, it would be interesting to compare the sample with local students. It has been recognised that overseas students may have different needs and perceptions of the attributes offered by any higher education institution. A broader comparative perspective may provide significant information about the intrinsic characteristics of each group. The local participants may act as control group in further studies. Nevertheless, the availability of local students in postgraduate programmes seems to be difficulty as the actual number in some areas is limited.
8.6 Future research directions

Further research directions could address the various limitations identified in this research presented in the previous section. At this point, it is sufficient to say that an attempt has been made to understand students' satisfaction through empirical analysis despite the limitations of the current study. The research has found support for some factors identified in previous studies that affect the evaluation of the service provided by a higher education institution and the level of satisfaction. It would be interesting to conduct some additional research to cover more than one institution. Research with a larger sample might prove enlightening as to what makes students feel satisfied and what are the university attributes that have more impact on the intention to recommend. Moreover, future research could possibly compare overseas students with local students to determine whether the differences found are associated with nationality or they are common to all master students regardless the country of origin. This undoubtedly means that more effort and further research are required to improve the measurement of student/customer satisfaction. Further research is needed in areas such as related variables that might contaminate satisfaction ratings and the ideal time to assess student/customer satisfaction. The debate will obviously continue regarding intrapersonal characteristics, methodological considerations and other practical issues related to measuring student/customer satisfaction.

8.7 Concluding remarks

Tertiary education institutions are finding themselves in a highly competitive environment where they must fight for portions of a shrinking pool of funds and traditionally well-prepared students. In this environment it is critical to constantly improve the quality of educational programmes and to strive for high standards in course content and pedagogy in order to develop and keep an international image that meets the needs of overseas students. According to this study, students do focus on the reputation of the institution which is based on the quality of the academic staff, the empathy of the administrative staff and the general facilities provided for teaching and learning.
Efforts however, should not be restricted exclusively to the academic context and teaching and learning facilities. Universities may want to place more emphasis on providing a more personalised service despite the mass education system implemented because of the competitive market. The total service encounter should be considered and the interaction between students and the service personnel in higher education (staff and faculty) should be important aspects to be considered by university managers.

The findings detailed in previous chapters have contributed to furthering the understanding of students' opinions about the higher education institution in the UK. Given the increased number of overseas students moving around and the open marketing policy proposed and supported by the British Council and higher education institutions in the UK, it is likely that the interest to assess the actual performance through students' surveys will remain on the agenda for many years to come. A failure to address the important aspects highlighted in this study and related issues may diminish the perceived value of UK management education and reduce its competitiveness in the global market.

Foreign students involved in an educational service exchange are very similar to consumers involved in any number of service exchanges (e.g., air travel, health care). Many of the marketing strategies developed by commercial service organisations can be instituted by tertiary institutions administrators for the enhancement of the quality of the educational service being offered.

From my personal point of view, the experience of doing this research is immeasurable. The literature has shown me the importance of the topic and the increased interest regarding overseas students and the daily experience during these years has confirmed how complex this experience is. The findings have confirmed some of the differences reported in the literature (e.g., language proficiency). Regardless the cultural and religious differences, the common language (English) is a fundamental skill for the academic and social life. It allows us to communicate with local and foreigners and performs the academic duties.
Since we enrolled in tertiary education abroad we all have a common goal: to obtain a university degree. However, the experience has shown me that apart from the academic goal, we have something in common that may affect the way we perceived any service performance while being abroad: we are all overseas students. This makes us some how a solid group despite the differences.

Despite the efforts of higher educational institutions, the daily experience as a student seems to confirm the coexistence of two parallel groups of students: international and local students. From the academic perspective, institutions cannot run parallel courses for locals and overseas students. This will be against ethic principles as much as practicality. However, the social integration has been very deficient. Student unions, for example, organise social events basically for local students in mind. A parallel international office does the same for the international students.

Are the efforts a waste of time for both sides?, how can a higher institution keep marketing overseas students without increasing this gap?. May local students protest in the future?. These are just some questions to be answered in a few years time.
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Appendices

Appendix 1: Statements for the first Q sorting test

a) Statements for the first Q session

1. The courses are operated in English
2. The number of computers is sufficient for the students
3. The library offers seminar rooms for group work
4. The contact hours ratio is sufficient for the complexity of the module
5. The International Office gives students information about legal issues
6. There are societies suitable for international students
7. Rooms are provided with the Internet connexion
8. Lecturers are hard to contact individually
9. The university maintains links with international education networks
10. The location of the university facilitates mobility to the capital
11. The library offers a wide range of books and periodicals in tourism and hospitality
12. The university offers first class learning resources
13. The classrooms have updated teaching support equipment
14. The campus computers are sufficient for the student population
15. The library has a sufficient provision of books
16. Teaching performance is of high quality
17. Student’s accommodation is safe
18. Special events are dedicated to international students
19. The campus restaurants have a wide range of menus
20. A personal tutor is allocated for individual advice
21. The course is intellectually challenging
22. The accommodation brochure accurately describes the provisions
23. The location of the university is very convenient
24. The university is well recognised due to the updated curriculum and technology
25. Lecturers have adequate time for consultation
26. The university provides leading-edge technology
27. The layout of the university is modern and appealing
28. The ratio of staff to students allows personal interaction
29. Parking facilities are provided
30. The information provided before arrival about the facilities is accurate
31. The gardens and open areas on campus are kept clean
32. The size of the class is small
33. There are computer and printer facilities available 24 hours
34. The university has plenty of sport facilities
35. The university has a wide range of accommodation
36. Each ethnic group interacts exclusively with its members
37. The university is clean
38. Career fairs are held at the university to advice students
39. The university has contact with international employers
40. The university has modern computers with the latest programmes
41. The university offers value for money
42. The library opening hour system is convenient
43. Excellent accommodations at affordable prices
44. Assignments are adequate for the course objectives
45. The university has sufficient accommodation
46. Staff react politely to students queries

47. The buildings are clearly identified to find your way around

48. The Student Union provides support to settle down

49. Academic activities take place as scheduled

50. Students’ workload does not exclude social life.

51. The shared facilities in accommodation courts (e.g. toilets, showers, and kitchen) are sufficient for the number of students per court

52. Academic staff have a genuine competence in the field

53. The academic standard is sufficiently challenging

54. It is very hard to develop friendship with students

55. Counselling service is provided

56. Social activities are frequently organised by the Student Union

57. It is easy to find someone willing to help you

58. The campus restaurants offer service at reasonable price

59. It is easy to make friends on campus

60. A degree from this university is well recognised by the tourism and hospitality industry

61. The ranking of the university is high

62. The university maintains links with international industry

63. The common areas (e.g., toilets, showers, and kitchen) are modern

64. IT technical assistance is provided

65. The sport centre offers modern equipment

66. The university maintains links with local industry

67. The administrative staff are friendly and helpful

68. The students’ rooms are comfortable

69. Guidance for placement is provided
70. The university layout reflects high investment
71. The physical condition of the student residence is appealing
72. There is evidence of great investment in physical facilities
73. The university takes the lead in research
74. Constant maintenance is provided to the students' rooms and common areas
75. The health centre offers adequate service
76. It is easy to interact with local students
77. The university is subscribed to the most relevant journals
78. Lecturers stimulate critical analysis
79. The university provides rooms for hosting conferences, business seminars and meetings.
80. A degree from this university has an excellent reputation at home
81. There is a chance for social integration
82. A degree from this university improves employment prospects
83. The common areas in the university accommodation (e.g., toilets, showers, and kitchen) are clean
84. The course content is relevant to your degree
85. There are always some students to socialise with
86. Excellent information is provided about career opportunities
87. The academic staff are highly qualified
88. The university strict selection process ensures the quality of the service provided
89. The individual academics have international reputation
90. The Accommodation Office provides efficient service
91. Visiting lecturers are well known in their field
92. The quality standard of teaching contributes to the recognition of the university
93. Composition fee represents value for money
94. The university promotes an integrate climate of international atmosphere among students

95. Staff show sufficient professionalism

96. Graduates from this university achieve considerable success in finding excellent employment

97. Modules included in the curriculum are updated

98. Academic programmes are relevant to the industry

99. The curriculum is officially accredited by international organisations

100. On arrival, the university staff and current students help students to settle down

101. The university ranking is a valuable competitive advantage

102. There is a wide range of sport clubs to join

103. A degree from this university makes a significant difference in one’s CV

104. The accommodation provided is allocated on a fair basis
Appendix 2: Items for the questionnaire per dimension

<table>
<thead>
<tr>
<th>Item number</th>
<th>Physical Quality (15 items)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>The university has modern computers with the latest programmes</td>
</tr>
<tr>
<td>4</td>
<td>The classrooms have up-to-date teaching support equipment</td>
</tr>
<tr>
<td>5</td>
<td>The university has plenty of sport facilities</td>
</tr>
<tr>
<td>10</td>
<td>Adequate printer facilities are available</td>
</tr>
<tr>
<td>12</td>
<td>The sport centre has modern equipment</td>
</tr>
<tr>
<td>14</td>
<td>The library offers a wide range of books and journals</td>
</tr>
<tr>
<td>18</td>
<td>The gardens and open areas on campus are kept clean</td>
</tr>
<tr>
<td>19</td>
<td>The university has sufficient accommodation</td>
</tr>
<tr>
<td>24</td>
<td>The university offers accommodation at affordable prices</td>
</tr>
<tr>
<td>26</td>
<td>The campus computers are sufficient for the student population</td>
</tr>
<tr>
<td>28</td>
<td>Rooms provided with adequate Internet connection</td>
</tr>
<tr>
<td>30</td>
<td>The common areas in the university accommodation are adequate for the number of students</td>
</tr>
<tr>
<td>34</td>
<td>The rooms in the student residential accommodation are comfortable</td>
</tr>
<tr>
<td>36</td>
<td>Student’s accommodation is safe</td>
</tr>
<tr>
<td>38</td>
<td>The university provides adequate parking areas for students</td>
</tr>
<tr>
<td>Item number</td>
<td>Interactive quality (11 items)</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>There are clear and reasonable requirements</td>
</tr>
<tr>
<td>6</td>
<td>It is easy to get involved in campus social organisations</td>
</tr>
<tr>
<td>7</td>
<td>My course is intellectually challenging</td>
</tr>
<tr>
<td>8</td>
<td>Lecturers have adequate time for consultation</td>
</tr>
<tr>
<td>9</td>
<td>It is easy to make friends on campus</td>
</tr>
<tr>
<td>13</td>
<td>The administrative staff is helpful</td>
</tr>
<tr>
<td>16</td>
<td>Feedback from coursework is adequate</td>
</tr>
<tr>
<td>21</td>
<td>It is easy to interact with local students</td>
</tr>
<tr>
<td>27</td>
<td>Lecturers can be easily contacted individually</td>
</tr>
<tr>
<td>29</td>
<td>Staff reacts politely to students' requests</td>
</tr>
<tr>
<td>40</td>
<td>Lecturers stimulate critical analysis</td>
</tr>
<tr>
<td>Item number</td>
<td>Corporative quality (14 items)</td>
</tr>
<tr>
<td>------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>The university takes the lead in research</td>
</tr>
<tr>
<td>11</td>
<td>The university maintains links with educational networks</td>
</tr>
<tr>
<td>15</td>
<td>The university has contact with international employers</td>
</tr>
<tr>
<td>17</td>
<td>Graduates from this university achieve considerable success in finding excellent employment</td>
</tr>
<tr>
<td>20</td>
<td>A degree from this university has excellent reputation at home</td>
</tr>
<tr>
<td>22</td>
<td>A degree from this university improves my employment prospects</td>
</tr>
<tr>
<td>23</td>
<td>The university offers a high quality of teaching performance</td>
</tr>
<tr>
<td>25</td>
<td>The university has been extensively recommended to me by my friends in my home country</td>
</tr>
<tr>
<td>31</td>
<td>The ranking of my school is high</td>
</tr>
<tr>
<td>32</td>
<td>Lectures in my home country recommended this university to me</td>
</tr>
<tr>
<td>33</td>
<td>A degree from this university is well recognised internationally</td>
</tr>
<tr>
<td>35</td>
<td>The university maintains excellent links with the local industry</td>
</tr>
<tr>
<td>37</td>
<td>The university is well recognised for the academic programmes</td>
</tr>
<tr>
<td>39</td>
<td>There are academic links between my home country and this university</td>
</tr>
</tbody>
</table>
Appendix 3: Questionnaire

MEASURING STUDENT SATISFACTION IN HIGHER EDUCATION

SECTION A: ABOUT YOUR STUDY EXPERIENCE

In this section of the questionnaire, we are interested in gathering some basic information about your previous experience as a student.

1. How long ago did you finish your previous degree?
   - Last year
   - Two years ago
   - More than two years

2. Which institution are you now studying at?

3. You are enrolled in a Master programme (MSc), could you please specify the area?

4. What were the main reasons for selecting your current university? (Check all that apply)

   Degree not available at home
   Degree accepted internationally

   Level of fees
   English language spoken

   Sponsor’s decision
   Influence of friends/family

   Better facilities overseas
   Scholarship award

   Getting an offer of a place
   Difficulty to get into university at home

   Content of the course
   Entry requirement

   Know somebody studying here
   Reputation of this university back home

   Others (Please specify)
## SECTION B: ABOUT THE UNIVERSITY ATTRIBUTES

**B1. Direction:** The following set of statements is related to your feelings about the performance of the educational service received in your university in the UK. Please indicate the level of agreement with each statement by circling one of the numbers. Circling 7 means that you strongly agree with the statement, and circling 1 means that you strongly disagree. Circle N/A when it is not applicable. (Please rate all statements).

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There are clear and reasonable requirements for each module</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>2. The university has modern computers with the latest programmes</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>3. The university takes the lead in research</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>4. The classrooms have up-to-date teaching support equipment</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>5. The university has plenty of sports facilities</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>6. It is easy to get involved in campus social organisations</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>7. My course is intellectually challenging</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>8. Lecturers have adequate time for consultation</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>9. It is easy to make friends on campus</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>10. Adequate printer facilities are available</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>11. The university maintains links with international education networks</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>12. The sports centre offers modern equipment</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>13. The administrative staff are helpful</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>14. The library offers a wide range of books and periodicals in my area of studies</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>15. The university has contacts with international employers</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>16. Feedback from coursework/assignments is adequate</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>17. Graduates from this university achieve considerable success in finding excellent employment</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>18. The gardens and open areas on campus are kept clean</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>19. The university has sufficient residential accommodation</td>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
20. A degree from this university has an excellent reputation in my home country

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

21. It is easy to interact with local students

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

22. A degree from this university improves my employment prospects

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

23. The university offers a high quality of teaching performance

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

24. The university offers accommodation at affordable prices

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

25. The university has been extensively recommended to me by my friends in my home country

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

26. The campus computers are sufficient for the student population

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

27. Lecturers can be easily contacted individually

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

28. Students’ rooms are provided with adequate Internet connection

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

29. Staff react politely to students’ queries

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

30. The communal areas in each student residence (toilets, showers and kitchen) are adequate for the number of students

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

31. The ranking of my school is high

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

32. Lecturers in my home country recommended this university to me

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

33. A degree from this university is well recognised

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

34. The rooms in the student residential accommodation are comfortable

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

35. The university maintains excellent links with local industry

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

36. Student’s accommodation is safe

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

37. The university is well recognised for the academic programmes

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

38. The university provides adequate parking areas for students

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

39. There are academic excellent links between my home country and this institution

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>

40. Lecturers stimulate critical analysis

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
Section B2: Please describe your overall feeling about your experience as a student in a higher education institution by circling the appropriate number on the scale.

1. Overall, how do you feel about your experience in this university?

<table>
<thead>
<tr>
<th>Extremely dissatisfied</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely satisfied</th>
</tr>
</thead>
</table>

2. Attending this university has worked out as well as I thought it would.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

3. I have truly enjoyed attending this university.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>

4. Being a student at this university has been a good experience.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>

5. How likely is it that you would recommend this institution to your relatives/friends in your home country?

<table>
<thead>
<tr>
<th>Extremely likely</th>
<th>7</th>
<th>6</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Extremely unlikely</th>
</tr>
</thead>
</table>

6. I am satisfied with my decision to attend this university.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

7. How likely is it that you would encourage others to enrol in this university?

<table>
<thead>
<tr>
<th>Extremely unlikely</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Extremely likely</th>
</tr>
</thead>
</table>

8. I am happy that I decided to enrol at this university.

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Strongly agree</th>
</tr>
</thead>
</table>

9. Overall, do you feel that you have got value for money?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Very much</th>
</tr>
</thead>
</table>
SECTION C: ABOUT YOURSELF

In the last section of this questionnaire, we would like you to provide us with some personal information. You can remain certain that this information will remain confidential. Please tick (✓) where appropriate.

1. Gender

   Male ☐    Female ☐

2. Age

   20-24 ☐    25-30 ☐    31-35 ☐
   36-40 ☐    41-45 ☐    Over 45 ☐

3. Marital status

   Single ☐    Married ☐

4. What is your proficiency in English?

   Speak English as a first language  ☐
   Speak English as a foreign language  ☐
   Speak English as a second language used in your home country  ☐

5. What is your nationality? ________________________________

6. Where do you currently live?

   on campus University accommodation ☐    off campus University accommodation ☐
   with relatives/friends that live in the UK ☐    private accommodation ☐

7. We would like to know about any financial support you may receive. Please can you tell us who is paying your fees and living expenses? (Check only the ONE that better apply to you)

   yourself or your family ☐    scholarship from UK university ☐
   your employer ☐    scholarship from your own government ☐
   scholarship from UK government ☐    scholarship from your home university ☐
   a charity or trust ☐    others (Please specify) ____________________

This is the end of the questionnaire
Thank you for your time and cooperation.
Appendix 4: Profile of respondents of the main survey

<table>
<thead>
<tr>
<th>Response category</th>
<th>Subjects (N=308)</th>
<th>Percentage (100%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>115</td>
<td>37.3</td>
</tr>
<tr>
<td>Female</td>
<td>193</td>
<td>62.7</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-24</td>
<td>164</td>
<td>53.2</td>
</tr>
<tr>
<td>25-30</td>
<td>133</td>
<td>43.2</td>
</tr>
<tr>
<td>31-35</td>
<td>7</td>
<td>2.3</td>
</tr>
<tr>
<td>36-40</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>228</td>
<td>74.0</td>
</tr>
<tr>
<td>Married</td>
<td>80</td>
<td>26.0</td>
</tr>
<tr>
<td><strong>Language proficiency</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speak English as first language</td>
<td>64</td>
<td>21.1</td>
</tr>
<tr>
<td>Speak English as a foreign language</td>
<td>213</td>
<td>69.2</td>
</tr>
<tr>
<td>Speak English as second language</td>
<td>31</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Previous studies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last year</td>
<td>98</td>
<td>35.6</td>
</tr>
<tr>
<td>Two years ago</td>
<td>82</td>
<td>28.1</td>
</tr>
<tr>
<td>More than two years</td>
<td>110</td>
<td>37.7</td>
</tr>
<tr>
<td><strong>Residence</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On campus accommodation</td>
<td>211</td>
<td>68.5</td>
</tr>
<tr>
<td>Off campus accommodation</td>
<td>51</td>
<td>16.6</td>
</tr>
<tr>
<td>With relatives/family</td>
<td>5</td>
<td>1.6</td>
</tr>
<tr>
<td>Private accommodation</td>
<td>41</td>
<td>13.3</td>
</tr>
<tr>
<td><strong>Financial support</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yourself or family</td>
<td>254</td>
<td>82.5</td>
</tr>
<tr>
<td>Your employer</td>
<td>22</td>
<td>7.1</td>
</tr>
<tr>
<td>Scholarship from UK university</td>
<td>12</td>
<td>3.9</td>
</tr>
<tr>
<td>Scholarship from UK government</td>
<td>9</td>
<td>2.9</td>
</tr>
<tr>
<td>Scholarship from your own university</td>
<td>11</td>
<td>3.6</td>
</tr>
<tr>
<td>Scholarship from your home government</td>
<td>25</td>
<td>8.1</td>
</tr>
<tr>
<td>Charity/Trust</td>
<td>5</td>
<td>1.6</td>
</tr>
<tr>
<td>Others</td>
<td>9</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>Reasons for selecting the university</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree accepted internationally</td>
<td>184</td>
<td>59.7</td>
</tr>
<tr>
<td>English language spoken</td>
<td>152</td>
<td>49.4</td>
</tr>
<tr>
<td>Content of the course</td>
<td>142</td>
<td>46.1</td>
</tr>
<tr>
<td>Reputation of this university back home</td>
<td>103</td>
<td>33.4</td>
</tr>
<tr>
<td>Better facilities overseas</td>
<td>91</td>
<td>29.5</td>
</tr>
<tr>
<td>Entry requirement</td>
<td>63</td>
<td>20.5</td>
</tr>
<tr>
<td>Getting an offer of a place</td>
<td>62</td>
<td>20.1</td>
</tr>
<tr>
<td>Influence of friends/family</td>
<td>54</td>
<td>17.8</td>
</tr>
<tr>
<td>Information</td>
<td>Count</td>
<td>Percentage</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-------</td>
<td>------------</td>
</tr>
<tr>
<td>Know somebody studying here</td>
<td>52</td>
<td>17.2</td>
</tr>
<tr>
<td>Degree not available at home</td>
<td>52</td>
<td>16.4</td>
</tr>
<tr>
<td>Scholarships award</td>
<td>42</td>
<td>13.6</td>
</tr>
<tr>
<td>Sponsor’s decision</td>
<td>19</td>
<td>6.2</td>
</tr>
<tr>
<td>Levels of fees</td>
<td>13</td>
<td>4.2</td>
</tr>
<tr>
<td>Difficulty to get into university at home</td>
<td>11</td>
<td>3.6</td>
</tr>
</tbody>
</table>

**Nationality**

<table>
<thead>
<tr>
<th>Country</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>159</td>
<td>51.6</td>
</tr>
<tr>
<td>Thailand</td>
<td>25</td>
<td>8.1</td>
</tr>
<tr>
<td>Kenya</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>Iran</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td>Japan</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2</td>
<td>.6</td>
</tr>
<tr>
<td>Singapore</td>
<td>7</td>
<td>2.3</td>
</tr>
<tr>
<td>Taiwan</td>
<td>16</td>
<td>5.2</td>
</tr>
<tr>
<td>Nigeria</td>
<td>10</td>
<td>3.2</td>
</tr>
<tr>
<td>India</td>
<td>11</td>
<td>3.6</td>
</tr>
<tr>
<td>Jordan</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td>Lebanon</td>
<td>6</td>
<td>1.9</td>
</tr>
<tr>
<td>Chile</td>
<td>1</td>
<td>.3</td>
</tr>
<tr>
<td>Brazil</td>
<td>2</td>
<td>.6</td>
</tr>
<tr>
<td>Trinidad</td>
<td>2</td>
<td>.6</td>
</tr>
<tr>
<td>South Africa</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>7</td>
<td>2.3</td>
</tr>
<tr>
<td>Korea</td>
<td>14</td>
<td>4.5</td>
</tr>
<tr>
<td>Malaysia</td>
<td>16</td>
<td>5.2</td>
</tr>
<tr>
<td>Ghana</td>
<td>3</td>
<td>1.0</td>
</tr>
<tr>
<td>Syria</td>
<td>2</td>
<td>.6</td>
</tr>
<tr>
<td>Pakistan</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>2</td>
<td>.6</td>
</tr>
</tbody>
</table>
## Appendix 5: School of Management: Distribution of students

<table>
<thead>
<tr>
<th>Courses</th>
<th>Full time students</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 MSc in Management</td>
<td>96</td>
<td>50</td>
</tr>
<tr>
<td>2 MSc in Marketing Management</td>
<td>59</td>
<td>31</td>
</tr>
<tr>
<td>3 MSc in International Hotel Management</td>
<td>64</td>
<td>34</td>
</tr>
<tr>
<td>4 MSc in Tourism Development</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>5 MSc in Tourism Management</td>
<td>49</td>
<td>26</td>
</tr>
<tr>
<td>6 MSc in Tourism Marketing</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>7 MSc in Financial Service Management</td>
<td>62</td>
<td>33</td>
</tr>
<tr>
<td>8 MSc in International Marketing Management</td>
<td>59</td>
<td>31</td>
</tr>
<tr>
<td>9 MSc in Food Management</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>9 MSc in Human Resources Management</td>
<td>34</td>
<td>18</td>
</tr>
<tr>
<td>10 MSc in International Business Management</td>
<td>89</td>
<td>47</td>
</tr>
<tr>
<td>11 MSc in Health Care Management</td>
<td>17</td>
<td>9</td>
</tr>
<tr>
<td>12 MSc in Retail Management</td>
<td>31</td>
<td>17</td>
</tr>
<tr>
<td>13 Master in Business Administration - MBA</td>
<td>23</td>
<td>12</td>
</tr>
</tbody>
</table>

### Total of full-time students

| 629 | 330 |
Appendix 6: Findings

6.1. Parametric tests

The demographic information presented in the previous section has given a general picture of the sample used in this study. A further analysis using t tests and ANOVA allows us to identify possible differences based on the demographic characteristics and the study variables. As stated before, the study included independent variables related to service quality in higher education (40 variables) and dependent variables (satisfaction, recommend, expectation and value for money). All these variables were used in the comparative analysis with the demographic characteristics of the sample. However, the results reported in this section are restricted to those results that are statistically significant as the analysis may be extensive when all the study variables are included.

6.2 Gender

The analysis aims to determine whether students grouped under gender perceive service quality dimensions (40 items) differently as well as the dependent variables of the study. A set of t tests were run to identify the possible difference in means between the two groups, men and female. The sample was made of 193 females (63, 6%), and 115 males (37, 3 %). An independent sample t-test was conducted to compare the scores of the service quality variables and the dependent variables for males and females. The mean scores show some differences between both groups regarding some of the service quality variables. This was then confirmed with Levene’s test, which shows significant differences in three of the service quality variables. The results of the three significant variables are shown in Table appendix 6.1.
Table appendix 6.1: T-test comparing the perception of service quality variables of men and women

<table>
<thead>
<tr>
<th></th>
<th>t-value (assuming equal variances)</th>
<th>df</th>
<th>Significance level (2-tailed)</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library</td>
<td>1.971</td>
<td>306</td>
<td>.050</td>
<td>.001 to .729</td>
</tr>
<tr>
<td>Employment prospects</td>
<td>2.162</td>
<td>306</td>
<td>.031</td>
<td>.027 to .574</td>
</tr>
<tr>
<td>Lecturers easily contactable</td>
<td>2.803</td>
<td>306</td>
<td>.005</td>
<td>.128 to .733</td>
</tr>
</tbody>
</table>

The results in Table appendix 6.1 indicates that there is a significant difference at the p<.05 level in three variables from the service equality section (library, employment prospects, and lecturers easily contactable) by men and women. The alternative hypothesis (H1) has been accepted regarding the three variables identified above. There is no significant difference with the rest of the service quality variables. Regarding the dependent variables, no difference was found between these two groups, which means that the level of satisfaction does not seem to be associated with the gender of the respondent.

6.3 Age

In the sample, four age groups were identified (20-24; 25-34; 35-44; 45-54). According to Levene's test for equity of variances, the variances of the four groups were similar. In addition, the distribution tended towards normality. Therefore, the one-way ANOVA was used in order to test the mean difference between the groups. Table Appendix 6.2 shows some differences in means were identified after running one way ANOVA, which were confirmed as significant after the results were analysed.
Table appendix 6.2: The assessment of students’ perceptual differences of service quality attributes: one-way ANOVA

\[ H_0 = \text{There is no difference between the four age groups in their evaluation of service quality} \]
\[ H_1 = \text{There is a difference between the four age groups in their evaluation of service quality} \]

<table>
<thead>
<tr>
<th>Classroom equipment</th>
<th>Sum of squares</th>
<th>Df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>10.321</td>
<td>3</td>
<td>3.440</td>
<td>2.969</td>
<td>.032</td>
</tr>
<tr>
<td>Within groups</td>
<td>352.312</td>
<td>304</td>
<td>1.159</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>362.633</td>
<td>307</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sport facilities</td>
<td>21.765</td>
<td>3</td>
<td>7.255</td>
<td>3.670</td>
<td>.013</td>
</tr>
<tr>
<td>Between groups</td>
<td>600.972</td>
<td>304</td>
<td>1.977</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>622.737</td>
<td>307</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library</td>
<td>23.803</td>
<td>3</td>
<td>7.934</td>
<td>3.257</td>
<td>.022</td>
</tr>
<tr>
<td>Between groups</td>
<td>740.560</td>
<td>304</td>
<td>2.436</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>764.364</td>
<td>307</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic programmes</td>
<td>14.690</td>
<td>3</td>
<td>4.897</td>
<td>3.217</td>
<td>.023</td>
</tr>
<tr>
<td>Between groups</td>
<td>459.650</td>
<td>302</td>
<td>1.522</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>474.340</td>
<td>305</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lectures stimulate criticism</td>
<td>19.933</td>
<td>3</td>
<td>6.644</td>
<td>4.406</td>
<td>.005</td>
</tr>
<tr>
<td>Between groups</td>
<td>455.427</td>
<td>302</td>
<td>1.508</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>475.359</td>
<td>305</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean condition of gardens</td>
<td>13.125</td>
<td>3</td>
<td>4.375</td>
<td>3.020</td>
<td>.030</td>
</tr>
<tr>
<td>Between groups</td>
<td>440.417</td>
<td>304</td>
<td>1.449</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within groups</td>
<td>453.542</td>
<td>307</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As Table appendix 6.2 shows the values under Sig. are all less than .05, then there is a significant difference among the means scores on the dependent variables (age group) and the independent variables of service quality. The post hoc test was used to identify exactly where the differences among the groups occur. There were differences between age groups 1 (20-24) and 4 (45-54) regarding classroom equipment (Sig.050 and .037); academic programmes (Sig.050); lectures stimulate criticism (Sig.030). Despite the statistical difference between these two age groups, the number of respondents under age group 4 (45-54) is too low, only 4 respondents, to make any conclusion regarding age differences. On the other hand, age groups 3 (35-44) and 4 which represent almost the whole sample (164 and 133, respectively), show statistical differences regarding two variables of the service quality scale: sport facilities (Sig.042) and library (Sig.019). Finally, groups 3 and 4 differ only in the perception of the maintenance of gardens (Sig.016).
The same analysis was conducted between age and satisfaction and no significant difference was found in any of the age groups. It can be concluded that despite some differences among groups, age does not seem to be a significant determinant when evaluating service quality and level of satisfaction.

6.4 Marital status

The sample was composed of mainly single students (N=228) with a small proportion of married students (N=80). An independent sample t-test was conducted to compare the scores of the service quality variables and the dependent variables for single and married students. The analysis of the means of both groups indicates some differences between them regarding the service quality variable. This difference is significant in some cases as seen in Table appendix 6.3.

Table appendix 6.3: T-test comparing the perception of service quality variables of single and married respondents

<table>
<thead>
<tr>
<th></th>
<th>t-value</th>
<th>df</th>
<th>Significance level (2-tailed)</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Social activities</td>
<td>2.389</td>
<td>306</td>
<td>.017</td>
<td>.072</td>
</tr>
<tr>
<td>Easy to make friends</td>
<td>2.544</td>
<td>306</td>
<td>.011</td>
<td>.098</td>
</tr>
<tr>
<td>Course challenging</td>
<td>2.953</td>
<td>306</td>
<td>.003</td>
<td>.153</td>
</tr>
<tr>
<td>Employment improvement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic programme</td>
<td>2.240</td>
<td>306</td>
<td>.026</td>
<td>.044</td>
</tr>
</tbody>
</table>

Table appendix 6.3 shows that there is a significant difference at the p<.05 level regarding the evaluation of some of the service quality variables between these two groups. The means of the two groups are statistically significant, so the alternative hypothesis (H1) has been accepted.

Regarding the level of satisfaction, these two groups show different means values and single students rate all the variables higher. Two of the variables in the satisfaction scale were statically different, as Table appendix 6.4 shows.
Table appendix 6.4: T-test comparing level of satisfaction for single and married respondents

<table>
<thead>
<tr>
<th></th>
<th>t-value (assuming equal variances)</th>
<th>df</th>
<th>Significance level (2-tailed)</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good experience</td>
<td>2.114</td>
<td>306</td>
<td>.035</td>
<td>.023 to .627</td>
</tr>
<tr>
<td>Truly enjoyed</td>
<td>3.034</td>
<td>306</td>
<td>.003</td>
<td>.172 to .807</td>
</tr>
</tbody>
</table>

Although the difference exclusively appears in two of the five items, single students seem to be more satisfied than married students. The reasons for this evaluation could be associated with the particular characteristics of a married student. This means that married students are responsible for the wellbeing of their family and this may affect their evaluation of the whole experience. The data collected, however, did not provide more information related to married students and their family conditions (i.e., spouse living together or back home, number of children) that could have an impact on their level of satisfaction.

6.5 Time of enrolment

Respondents were grouped under three categories based on the time period between their previous graduation date and their enrolment in the master programme: last year, two years ago, more than two years. Some differences were found among the three groups. When comparing Last year students with Two years ago some differences were found regarding the service quality attributes, but not difference with the level of satisfaction. Table appendix 6.5 shows the differences regarding the evaluation of the service quality variables between the Last year and Two years ago groups.
Table appendix 6.5: T-test comparing the perception of service quality variables of ‘Last year’ and ‘Two years ago’ graduates

Ho = There is no difference between ‘Last year enrolment’ and ‘Two years ago enrolment’ regarding their evaluation of service quality variables
H1 = There is a difference between ‘Last year enrolment’ and ‘Two years ago enrolment’ regarding their evaluation of service quality variables

<table>
<thead>
<tr>
<th>Service Variable</th>
<th>t-value</th>
<th>df</th>
<th>Sig (2-tailed)</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modern computers</td>
<td>-2.463</td>
<td>179</td>
<td>.015</td>
<td>-.776 to -.086</td>
</tr>
<tr>
<td>Adequate printer facilities are available</td>
<td>-3.615</td>
<td>179</td>
<td>.000</td>
<td>-1.230 to -.361</td>
</tr>
<tr>
<td>A degree from improves my employment prospects</td>
<td>-2.490</td>
<td>179</td>
<td>.014</td>
<td>-.731 to -.085</td>
</tr>
<tr>
<td>Lecturers at home recommended this university</td>
<td>2.217</td>
<td>143</td>
<td>.028</td>
<td>.057 to 1.000</td>
</tr>
<tr>
<td>This degree improves my employment prospects</td>
<td>-2.490</td>
<td>179</td>
<td>.014</td>
<td>-.731 to -.085</td>
</tr>
</tbody>
</table>

The difference in means show that the Two years ago students tend to evaluate higher some of the service variables than are Last year students as described in Table 5. Despite these differences in the evaluation of service quality these groups did not show difference in their level of satisfaction.

Another t test was conducted between the first group (Last year) and the last group (More than two years) to identify if the time period may have any impact on the way respondents evaluate the different variables of the study. The means difference in the service quality variables show some statistic differences between these two groups. Those who belong to the Last year group evaluate higher the service quality variables than those who enrolled the university after more than two years after their previous degree. This result confirms previous studies that reported that those who return to the education system may be more demanding in their evaluation rather than those newly graduated (Bennett, 2003). This attitude is confirmed when comparing the level of satisfaction of both groups. As Table appendix 6.6 shows there is significant difference regarding their evaluation of the five specific variables used to measure satisfaction in higher education and the general variable to evaluate the service attributes.
**Table appendix 6.6: T-test comparing the level of satisfaction between ‘Last year’ and ‘More than two years’ graduates**

<table>
<thead>
<tr>
<th></th>
<th>F</th>
<th>Sig.</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction with service attributes</td>
<td>.200</td>
<td>.655</td>
<td>1.990</td>
<td>206</td>
<td>.048</td>
<td>.321</td>
</tr>
<tr>
<td>Expectations</td>
<td>1.704</td>
<td>.193</td>
<td>2.757</td>
<td>205</td>
<td>.006</td>
<td>.506</td>
</tr>
<tr>
<td>Feeling about decision</td>
<td>.039</td>
<td>.844</td>
<td>3.785</td>
<td>206</td>
<td>.000</td>
<td>.627</td>
</tr>
<tr>
<td>truly enjoyed</td>
<td>.121</td>
<td>.728</td>
<td>2.603</td>
<td>206</td>
<td>.010</td>
<td>.459</td>
</tr>
<tr>
<td>good experience</td>
<td>.426</td>
<td>.515</td>
<td>2.517</td>
<td>206</td>
<td>.013</td>
<td>.435</td>
</tr>
<tr>
<td>decision to attend</td>
<td>.312</td>
<td>.577</td>
<td>2.717</td>
<td>206</td>
<td>.007</td>
<td>.479</td>
</tr>
</tbody>
</table>

As Table appendix 6.6 shows, the least satisfied is the More than two years group. It is interesting to point out that this is the largest group of respondents in this study (38%). When isolated under this category (Time of enrolment), results show that those students who enrolled in the master programme after more than two years of their previous studies tend to be unsatisfied with the experience. Their general evaluation of the service attributes also shows that they are not satisfied with the service attributes they evaluated. The category Time of enrolment has discriminated especially between the two largest groups, Last year (101 respondents) and More than two years (118 respondents), where the second one is statistically dissatisfied.

### 6.6 Language proficiency

Respondents were grouped under three categories: English as a first language (21%), English as a second language (10%) and English as a foreign language (69%). Those who belong to the first two groups have a higher mean in their responses of most of the service variables evaluated than those who have English as a foreign language. This means that those in the first two groups seem to agree more with the service provided. Similarly the members of these two groups seem to have a better and easy social life during their stay at the university than those who have English as a foreign
language. Not surprising, as language has been recognised as an obstacle for communication as well as academic performance in the context of higher education with foreign students (Bennell and Pearce, 2003). As the first two groups (first and second language English speakers) seem to have similar attitude to the service and a good social life, due to some extent, to their language proficiency, they were grouped together and then compared with those who have English as a foreign language. This last group has basically studied English for academic purposes and they may lack the fluency and spontaneity necessary for the social interaction on daily basis.

Table appendix 6.7 shows the variables that are statistically significant (p<.05) between those with English as a first or second language and those with English as a foreign language regarding their social life.

**Table appendix 6.7:** T-test assessment of students' perceptual differences of social interaction according to language proficiency (first and second language vs. second language speakers).

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>---</td>
<td>------</td>
</tr>
<tr>
<td>Easy to get involved in campus social organizations</td>
<td>1.322</td>
</tr>
<tr>
<td>Easy to make friends on campus</td>
<td>.012</td>
</tr>
<tr>
<td>Easy to interact with local students</td>
<td>11.705</td>
</tr>
</tbody>
</table>

*The mean difference is significant at the .05 level.

The results of the social variables included in this study confirm what the literature in higher education has reported regarding language barriers. Language proficiency, in this case English, has proved to be an obstacle in the social interaction. On the other hand, the unknown social codes might also play a fundamental part in the difficulty to interact with others, foreigners or local students alike.

The differences between these two groups were also compared in relation to satisfaction. Although there is not statistic difference in all the variables, students identified as users of English as a foreign language ranked all the satisfaction...
variables lower than those that speak English as a first or second language. There were two variables in the satisfaction scale that were statistically different as Table appendix 6.8 shows.

**Table appendix 6.8**: T-test comparing the level of satisfaction between speakers of English as a first/second language and English as a second language.

<table>
<thead>
<tr>
<th>Ho = There is no difference regarding their level of satisfaction between speakers of English as a first/second language and speakers of English as a second language.</th>
<th>H1 = There is a difference regarding their level of satisfaction between speakers of English as a first/second language and speakers of English as a second language.</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>worked as thought</td>
<td>1.397</td>
</tr>
<tr>
<td>truly enjoyed</td>
<td>1.587</td>
</tr>
</tbody>
</table>

Results show that the level of satisfaction differs based on the language proficiency. This raises the question whether language proficiency mediates the relationship between service quality and satisfaction.

### 6.7 Residence

Respondents mostly live on campus residences (211, representing 68%) and a small group off campus residences (51, representing 17%). The remainder live in private accommodation (13%) or with relatives/family (1.6%). The comparative analysis of the means among the groups shows that those living in university accommodation, on or off campus seem to be in Table appendix 6.9.
Table appendix 6.9: The assessment of students’ perceptual differences of service quality attributes by residence: one-way ANOVA

<table>
<thead>
<tr>
<th>Service Quality Attribute</th>
<th>Between Groups</th>
<th>Within Groups</th>
<th>Total</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to get involved in campus organisations</td>
<td>22.460</td>
<td>520.745</td>
<td>543.205</td>
<td>3</td>
<td>1.713</td>
<td></td>
<td>4.371</td>
<td>.005</td>
</tr>
<tr>
<td>Links with educational networks</td>
<td>12.450</td>
<td>414.484</td>
<td>426.934</td>
<td>3</td>
<td>1.382</td>
<td></td>
<td>3.044</td>
<td>.031</td>
</tr>
<tr>
<td>Sport centre has modern equipment</td>
<td>20.330</td>
<td>512.676</td>
<td>533.007</td>
<td>3</td>
<td>1.698</td>
<td></td>
<td>3.992</td>
<td>.008</td>
</tr>
<tr>
<td>Administrative staff is helpful</td>
<td>17.842</td>
<td>554.184</td>
<td>572.026</td>
<td>3</td>
<td>1.835</td>
<td></td>
<td>3.241</td>
<td>.022</td>
</tr>
<tr>
<td>Adequate feedback</td>
<td>25.496</td>
<td>523.634</td>
<td>549.130</td>
<td>3</td>
<td>1.722</td>
<td></td>
<td>4.934</td>
<td>.002</td>
</tr>
<tr>
<td>A degree has excellent reputation at home</td>
<td>21.663</td>
<td>620.097</td>
<td>641.760</td>
<td>3</td>
<td>2.067</td>
<td></td>
<td>3.494</td>
<td>.016</td>
</tr>
<tr>
<td>Easy to interact with local</td>
<td>21.372</td>
<td>655.910</td>
<td>677.282</td>
<td>3</td>
<td>2.158</td>
<td></td>
<td>3.302</td>
<td>.021</td>
</tr>
<tr>
<td>High quality of teaching</td>
<td>25.864</td>
<td>495.838</td>
<td>521.701</td>
<td>3</td>
<td>1.631</td>
<td></td>
<td>5.286</td>
<td>.001</td>
</tr>
<tr>
<td>Recommended by friends At home</td>
<td>17.142</td>
<td>536.730</td>
<td>553.871</td>
<td>3</td>
<td>1.945</td>
<td></td>
<td>2.938</td>
<td>.034</td>
</tr>
<tr>
<td>Lecturers recommended This university back home</td>
<td>30.312</td>
<td>531.721</td>
<td>562.033</td>
<td>3</td>
<td>2.234</td>
<td></td>
<td>4.523</td>
<td>.004</td>
</tr>
</tbody>
</table>

Despite the reduce number of students living off campus (51), they seem to evaluate the service higher than those on campus which represent the majority of students living in university residences (211). In relation to the dependent variables, those living off campus are statistically more satisfied than those on campus. After running a t-test comparing both groups, the scale Summated Satisfaction, with equal variances assumed, shows a significant result of .010 (2-tailed).
6.8 Financial support

There are basically three sources of financial support: personal and family support, home institutions and UK institutions. The main source of financial support is the individual and his family (82%), followed by home country institutions (12%) and UK institutions (6%). Based on this differentiation, the sample is statistically regarding some service attributes as Table appendix 6.10 shows.

**Table appendix 6.10**: The assessment of students’ perceptual differences of service quality attributes by financial support: one-way ANOVA

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate printer facilities are available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>18.162</td>
<td>2</td>
<td>9.081</td>
<td>4.069</td>
<td>.018</td>
</tr>
<tr>
<td>Within Groups</td>
<td>680.631</td>
<td>305</td>
<td>2.232</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>698.792</td>
<td>307</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates get excellent employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>12.311</td>
<td>2</td>
<td>6.155</td>
<td>3.451</td>
<td>.033</td>
</tr>
<tr>
<td>Within Groups</td>
<td>536.923</td>
<td>301</td>
<td>1.784</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>549.234</td>
<td>303</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Easy to interact with local students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>23.484</td>
<td>2</td>
<td>11.742</td>
<td>5.478</td>
<td>.005</td>
</tr>
<tr>
<td>Within Groups</td>
<td>653.799</td>
<td>305</td>
<td>2.144</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>677.282</td>
<td>307</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The university has sufficient accommodation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>15.887</td>
<td>2</td>
<td>7.944</td>
<td>3.747</td>
<td>.025</td>
</tr>
<tr>
<td>Within Groups</td>
<td>644.399</td>
<td>304</td>
<td>2.120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>660.287</td>
<td>306</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A degree from this university has excellent reputation at home</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>16.795</td>
<td>2</td>
<td>8.398</td>
<td>4.045</td>
<td>.018</td>
</tr>
<tr>
<td>Within Groups</td>
<td>624.965</td>
<td>301</td>
<td>2.076</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>641.760</td>
<td>303</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A degree from this university is well recognized</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>13.210</td>
<td>2</td>
<td>6.605</td>
<td>3.577</td>
<td>.029</td>
</tr>
<tr>
<td>Within Groups</td>
<td>563.216</td>
<td>305</td>
<td>1.847</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>576.425</td>
<td>307</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The variables are basically associated with the international recognition of the degree as well as basic facilities such as accommodation and printers. Regarding satisfaction, the variable ‘happy with the decision’ from the satisfaction scale is the only one statistically significant (p=.028).
Appendix 7: Reliability Analysis: Factor 1 Recognition

Table appendix 7.1: Cronbach’s Alpha

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>Cronbach's Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.807</td>
<td>.808</td>
<td>5</td>
</tr>
</tbody>
</table>

Table appendix 7.2: Mean and Standard Deviation

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ranking of my school is high</td>
<td>4.57</td>
<td>1.517</td>
</tr>
<tr>
<td>A degree from this university is well recognised internationally</td>
<td>4.65</td>
<td>1.347</td>
</tr>
<tr>
<td>The university takes the lead in research</td>
<td>4.86</td>
<td>1.118</td>
</tr>
<tr>
<td>A degree from this university has an excellent reputation in my home country</td>
<td>4.30</td>
<td>1.434</td>
</tr>
<tr>
<td>Course intellectually challenging</td>
<td>4.91</td>
<td>1.219</td>
</tr>
</tbody>
</table>

Table appendix 8.3: Inter-Item Correlation Matrix

<table>
<thead>
<tr>
<th>School high ranking</th>
<th>A degree from this university is well recognised</th>
<th>University takes the lead in research</th>
<th>A degree from this university has excellent reputation at home</th>
<th>Course intellectually challenging</th>
</tr>
</thead>
<tbody>
<tr>
<td>School high ranking</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A degree from this university is well recognised</td>
<td>.597</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>University takes the lead in research</td>
<td>.448</td>
<td>.493</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>A degree from this university has excellent reputation at home</td>
<td>.517</td>
<td>.576</td>
<td>.362</td>
<td>1.000</td>
</tr>
<tr>
<td>Course intellectually challenging</td>
<td>.418</td>
<td>.429</td>
<td>.465</td>
<td>.266</td>
</tr>
</tbody>
</table>

The covariance matrix is calculated and used in the analysis.
### Table appendix 7.4: Item-Total Statistics Matrix

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>School high ranking</td>
<td>18.72</td>
<td>15.077</td>
<td>.658</td>
<td>.442</td>
<td>.749</td>
</tr>
<tr>
<td>A degree from this university is well recognised</td>
<td>18.64</td>
<td>15.763</td>
<td>.706</td>
<td>.508</td>
<td>.733</td>
</tr>
<tr>
<td>University takes the lead in research</td>
<td>18.43</td>
<td>18.453</td>
<td>.565</td>
<td>.342</td>
<td>.780</td>
</tr>
<tr>
<td>A degree from this university has excellent reputation at home</td>
<td>18.99</td>
<td>16.512</td>
<td>.563</td>
<td>.382</td>
<td>.780</td>
</tr>
<tr>
<td>Course intellectually challenging</td>
<td>18.38</td>
<td>18.491</td>
<td>.491</td>
<td>.291</td>
<td>.798</td>
</tr>
</tbody>
</table>


**Appendix 8:** Reliability Analysis: Factor 2 - *Quality of instruction and interaction with faculty*

**Table appendix 8.1:** Cronbach’s Alpha

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Cronbach’s Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.755 (.771)</td>
<td>.759</td>
<td>5</td>
</tr>
</tbody>
</table>

**Table appendix 8.1:** Mean and Standard Deviation

<table>
<thead>
<tr>
<th>Statements</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturers have adequate time for consultation</td>
<td>4.31</td>
<td>1.258</td>
</tr>
<tr>
<td>Lecturers can be easily contacted individually</td>
<td>4.52</td>
<td>1.305</td>
</tr>
<tr>
<td>There are clear and reasonable requirements</td>
<td>4.53</td>
<td>1.109</td>
</tr>
<tr>
<td>Lecturers stimulate critical analysis</td>
<td>4.62</td>
<td>1.193</td>
</tr>
<tr>
<td>Feedback from coursework is adequate</td>
<td>4.16</td>
<td>1.320</td>
</tr>
</tbody>
</table>

**Table appendix 8.3:** Inter-Item Correlation Matrix

<table>
<thead>
<tr>
<th>Lecturers have adequate time for consultation</th>
<th>Lecturers can be easily contacted individually</th>
<th>Clear and reasonable requirements</th>
<th>Lecturers stimulate critical analysis</th>
<th>Feedback from coursework is adequate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturers have adequate time for consultation</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecturers can be easily contacted individually</td>
<td>.509</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear and reasonable requirements</td>
<td>.452</td>
<td>.443</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Lecturers stimulate critical analysis</td>
<td>.404</td>
<td>.450</td>
<td>.498</td>
<td>1.000</td>
</tr>
<tr>
<td>Feedback from coursework is adequate</td>
<td>.235</td>
<td>.321</td>
<td>.300</td>
<td>.253</td>
</tr>
</tbody>
</table>

The covariance matrix is calculated and used in the analysis.

---

264
**Table appendix 8.4: Item-Total Statistics Matrix**

<table>
<thead>
<tr>
<th>Description</th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecturers have adequate time for consultation</td>
<td>17.83</td>
<td>12.881</td>
<td>.546</td>
<td>.335</td>
<td>.702</td>
</tr>
<tr>
<td>Lecturers can be easily contacted individually</td>
<td>17.62</td>
<td>12.224</td>
<td>.599</td>
<td>.372</td>
<td>.681</td>
</tr>
<tr>
<td>Clear and reasonable requirements</td>
<td>17.61</td>
<td>13.418</td>
<td>.584</td>
<td>.358</td>
<td>.692</td>
</tr>
<tr>
<td>Lecturers stimulate critical analysis</td>
<td>17.52</td>
<td>13.237</td>
<td>.545</td>
<td>.328</td>
<td>.703</td>
</tr>
<tr>
<td>Feedback from coursework is adequate</td>
<td>17.98</td>
<td>14.090</td>
<td>.359</td>
<td>.138</td>
<td>.771</td>
</tr>
</tbody>
</table>
### Appendix 9: Reliability Analysis: Factor 3 - Sufficient resources

#### Table appendix 9.1: Cronbach’s Alpha

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Cronbach’s Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.728</td>
<td>.728</td>
<td>4</td>
</tr>
</tbody>
</table>

#### Table appendix 9.2: Mean and Standard Deviation

<table>
<thead>
<tr>
<th>Campus computers sufficient for students population</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate printer facilities are available</td>
<td>4.16</td>
<td>1.486</td>
</tr>
<tr>
<td>The common areas in the university accommodation are adequate for the number of students</td>
<td>4.31</td>
<td>1.547</td>
</tr>
<tr>
<td>The university has sufficient accommodation</td>
<td>4.59</td>
<td>1.445</td>
</tr>
</tbody>
</table>

#### Table appendix 9.3: Inter-Item Correlation Matrix

<table>
<thead>
<tr>
<th>Campus computers sufficient for students population</th>
<th>Adequate printer facilities are available</th>
<th>The common areas in the university accommodation are clean</th>
<th>The university has sufficient accommodation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate printer facilities are available</td>
<td>.442</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>The common areas in the university accommodation are clean</td>
<td>.419</td>
<td>.375</td>
<td>1.000</td>
</tr>
<tr>
<td>The university has sufficient accommodation</td>
<td>.436</td>
<td>.324</td>
<td>.410</td>
</tr>
</tbody>
</table>

The covariance matrix is calculated and used in the analysis.
**Table appendix 9.4**: Item-Total Statistics Matrix

<table>
<thead>
<tr>
<th></th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus computers</td>
<td>13.38</td>
<td>11.804</td>
<td>.567</td>
<td>.324</td>
<td>.637</td>
</tr>
<tr>
<td>sufficient for students</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>population</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adequate printer</td>
<td>13.06</td>
<td>12.323</td>
<td>.486</td>
<td>.247</td>
<td>.686</td>
</tr>
<tr>
<td>facilities are available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The common areas in the</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>university</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>accommodation</td>
<td>13.23</td>
<td>11.886</td>
<td>.518</td>
<td>.269</td>
<td>.667</td>
</tr>
<tr>
<td>are clean</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The university</td>
<td>12.95</td>
<td>12.588</td>
<td>.500</td>
<td>.261</td>
<td>.677</td>
</tr>
<tr>
<td>has sufficient</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>accommodation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix 10: Reliability Analysis: Factor 4 - *Quality of Facilities*

**Table appendix 10.1: Cronbach’s Alpha**

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>Cronbach’s Alpha Based on Standardized Items</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.717</td>
<td>.715</td>
<td>4</td>
</tr>
</tbody>
</table>

**Table appendix 10.2: Mean and Standard Deviation**

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>University has plenty of sport facilities</td>
<td>4.29</td>
<td>1.358</td>
</tr>
<tr>
<td>Sport centre has modern equipment</td>
<td>4.23</td>
<td>1.258</td>
</tr>
<tr>
<td>Classrooms have modern equipment</td>
<td>5.10</td>
<td>1.063</td>
</tr>
<tr>
<td>Gardens and open areas are clean</td>
<td>5.22</td>
<td>1.226</td>
</tr>
</tbody>
</table>

**Table appendix 10.3: Inter-Item Correlation Matrix**

<table>
<thead>
<tr>
<th></th>
<th>University has plenty of sport facilities</th>
<th>Sport centre has modern equipment</th>
<th>Classrooms have modern equipment</th>
<th>Gardens and open areas are clean</th>
</tr>
</thead>
<tbody>
<tr>
<td>University has plenty of sport facilities</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sport centre has modern equipment</td>
<td>.679</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classrooms have modern equipment</td>
<td>.366</td>
<td>.278</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>Gardens and open areas are clean</td>
<td>.262</td>
<td>.342</td>
<td>.388</td>
<td>1.000</td>
</tr>
</tbody>
</table>

The covariance matrix is calculated and used in the analysis.
Table appendix 10.4: Item-Total Statistics Matrix

<table>
<thead>
<tr>
<th></th>
<th>Scale Mean if Item Deleted</th>
<th>Scale Variance if Item Deleted</th>
<th>Corrected Item-Total Correlation</th>
<th>Squared Multiple Correlation</th>
<th>Cronbach's Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>University has plenty of sport facilities</td>
<td>14.55</td>
<td>7.026</td>
<td>.590</td>
<td>.495</td>
<td>.600</td>
</tr>
<tr>
<td>Sport centre has modern equipment</td>
<td>14.62</td>
<td>7.413</td>
<td>.601</td>
<td>.490</td>
<td>.595</td>
</tr>
<tr>
<td>Classrooms have modern equipment</td>
<td>13.74</td>
<td>9.176</td>
<td>.437</td>
<td>.226</td>
<td>.694</td>
</tr>
<tr>
<td>Gardens and open areas are clean</td>
<td>13.62</td>
<td>8.674</td>
<td>.407</td>
<td>.211</td>
<td>.712</td>
</tr>
</tbody>
</table>