CUSTOMER SATISFACTION VERSUS INFRASTRUCTURAL FACILITIES IN THE REALM OF HIGHER EDUCATION–A CASE STUDY OF SRI VENKATESWARA UNIVERSITY TIRUPATI

By

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ABSTRACT

This article analyses the levels of students' satisfaction and how institution provides infrastructure facilities in the field of higher education. Infrastructure is the fastest growing segment of the higher education scenario. Universities play a very vital role in a country in terms of their potential. It contributes to employment and growth. The basic objective of this paper is to look for students' satisfaction in Sri Venkateswara University. After a careful study of academic standards in higher education, an attempt is made to assess the student satisfaction in different categories of university colleges with regard to infrastructure facilities such as class room and lab facilities, amenities in the hostel, library, sports facilities etc., A framework was developed to examine the satisfaction issues surrounding university. The framework looks at the important interlinks among demographic characteristics, behavior characteristics, infrastructural facilities and overall customer satisfaction. Students first form expectations of service performance prior to purchasing or use. The customer then compares the perceived performance to prior expectations. Customer satisfaction is seen as the outcome of this comparison.

The study area for this study was Sri Venkateswara University, Andhra Pradesh. The sample respondents were administered questionnaires randomly. The results of the study show that: appropriate statistical analyses such as factor analysis, correlation analysis, multiple regressions, multivariate analysis of variance, and multivariate analysis of covariance were used to fulfill the respective objectives of the study. This study also tries to highlight the importance of students' satisfaction assurance of service providers and using quality equipments in education. This paper can be useful to the planners and marketers in formulating strategies to maintain or enhance their competitiveness when compared with other universities.

Keywords: Students Perception, Expectation, Satisfaction, Infrastructure Facilities and Higher Education.

INTRODUCTION

Education means bringing out the ideas of universal validity which are latent in every human being". –Socrates. "Education is the creation of a sound mind in a sound body".-Aristotle. The changes are being contemplated but without any definite disciplined approach and prescription and viable results in the shape of visible improvement in the higher education scenario because the institutions differ in their history, location, culture, organizational structure, student body, faculty, education process and content and ability to change. But quality is always the central issue linked to achievement. NAAC is taken as an agency to seek an overview and address the problems of higher education. Established on 16th September, 1994 under section 12 (ccc) of the UGC Act of 1956, National Assessment and Accreditation Council (NAAC) is entrusted with the task of performance, evaluation, assessment and accreditation of universities and colleges in the country, if they come into existence with the enactment of the National Accreditation Regulatory Authority for Higher Education Institutions Bill, 2010. So, the issue is as to what extent its efforts have been free from public criticism and scrutiny on its objectivity and reliability even though it has accredited 167 universities and around 4, 900 colleges (including

reaccreditations of 67 universities and 732 college) so far out of more than 559 universities and 31,324 colleges.

Today the key challenge before universities, particularly in the developing countries like India, is management of universities. The effective management of a university essentially depends on efficient administration of its staff, infrastructure, capital, technology, etc. India has one of the largest Higher Education systems in the world. English higher Education system in India began with the establishment of Hindu College in Calcutta in 1817. By 1855 there were 281 high schools and 28 colleges and to regulate them three universities at Bombay, Calcutta and Madras were established. The growth continued unimpeded and today it is estimated that about 559 universities and 31,324 colleges have been established; 1, 46, 25, 000 students have been enrolled and 6, 99 lakh academic staff have been working.

According to the 2011 census, the total literacy rate in India is 74.04 percent. The female literacy rate s 65.46 percent and male literacy rate is 82.14 percent. India will need 800 more universities and another 35,000 colleges, according to the Ministry of Human Resource Development (MHRD). According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), India has the lowest public expenditure on higher education per student in the world. The General Agreement on Trade in Services (GATS) is the first ever set of multilateral, legally enforceable rules governing international trade in services. It came into effect in 1995 and is being negotiated under the auspices of the World Trade Organization (WTO). GAATS considers education as one of the 12 tradable services.

Higher Education and Infrastructure

The critical role of an educational institution is to build and meet the learning needs of the 21st century, which allows students to prepare for careers, requires them to acquire new knowledge, learn new technologies, rapidly process information, take decision and communicate in a global and diverse society, incorporating various methodologies like activity-based learning, problem-based learning, and project based learning. Effective technology integration in day-to-day class-room practices will help them acquire skills needed for the 21st century society.

The new education policy 1992 in India speaks of education technologies and their effective use in colleges and universities. As a part of the tenth Five Year Plan (2002-2007), the central government of India decided that out of its total education budget of Rs. 438.25 billion (US$ 8. 74 billion), 9.5% or Rs. 41.765 billion, is to be spent on higher education. Under the Eleventh Five Year Plan allocation will be US$ 65.21 billion, taking the share of education in total planned expenditure from 7.7 percent to 20 percent, according to organizations, such as KPMG. The country's fast-growing education sector holds a potential to attract US$ 100 billion investment over the next five years driven by demand for skilled professionals and need for infrastructure development. As per a report released by research firm RNCOS, the annual student enrolments for higher education are expected to grow at a CAGR of nearly 8.7 percent during 2010-11 to 2012-2013 and will require huge investment for developing the infrastructure. To accomplish massive expansion and up-gradation of the education infrastructure of universities and institutes, government plans to mark up its expenditure on education from 10 percent to 19 percent.

Service Quality and Customer Satisfaction

The customer that we try to emphasis here is the student. Our discussion will focus on the student's satisfaction as students are considered as our consumer or customer who receives the service in university or higher education institutions which provide facilities such as the accommodation, computer lab facilities, library, sports etc,.

Rahman and Yasoa (2008) identified that the main factors that could affect the level of students' satisfaction were; students' perception of learning and teaching, support facilities for teaching and learning such as (libraries, computer and lab facilities), learning environment (room of lectures, laboratories, social space and university building), support facilities (health facilities, student accommodation, student service), and external aspects

of being a student (such as finance, transportation). With all these capabilities, an institution will be able to meet student expectations and compete successfully.

Hoffman and Bateson (2006) say that to achieve the twin objectives of satisfaction and service quality in the university sector, need to be evaluated on the basis of outside–inside perspectives, that is, either from the point of view of customers, or on the basis of"inside-outside" perspectives where by the point of view of service providers are taken into consideration. This was studied by Aldridge and Rowley in 1998. In the case of higher education institutions such as universities and colleges, many broaden their scope of evaluation to include students' total experience rather than limiting it only to the assessment of the quality of teaching and learning, as the interaction between students and the institutions does not stop nor is confined only to the classroom environment. However, a highly satisfied customer spreads positive views word-of-mouth and, in effect, becomes a walking; talking advertisement for an institution whose service has pleased him, thus reducing the cost of attracting new applicants.

Relationship between service quality and customer satisfaction has been clearly explained in the following diagram.

Review of Literature

Lacobucci et al. (1995) identified antecedent of service quality and customer satisfaction in the context of higher education. Service quality is influenced by price and expertise and customer satisfaction is affected by timeliness, service recovery and physical environment.

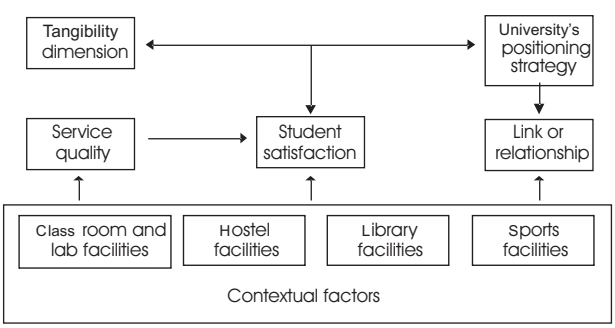

Figure1. Source author: A Conceptual Framework Explaining the Service Quality Links to Customer Satisfaction Paradigm in the University

Geoffrey Souter & McNeil (1996) reported that students were found to be quite satisfied with quality of academic units surveyed. Although there were gaps in higher education in terms of reliability, assurance, tangibility, empathy, responsiveness, knowledge and communication, in the area of the tangible (dress), students reported that their expectations had been exceeded. But in the field of administration, service quality is rather poor. Gaps were reported in all these five service quality dimensions.

Cheong-cheng and Ming-tam (1997) view the students as dominant customers for higher education service: higher education is first and foremost, about the enhancement and empowerment of students as participants in the learning process (Katilliute and Kazlauskiene, 2010). Therefore, as further observed by Mazzarol (1998), the participation of students in the learning process can be critical to higher education institutions' success. Students' views on all aspects of their higher education experiences are today widely sought after and regarded as essential to effective monitoring of quality in universities.

Mangold W G. Miller and F. Brockway G R. (1999) suggest that factors that are likely to stimulate Word Of Mouth (WOM) advertisement include a strongly felt need on the part of receiver, coincidental communication relating to a broader subject, or a high level of satisfaction or dissatisfaction on the part of the communicator. The service literature focuses on perceived quality, which results from the comparison of customer service expectation versus perception of actual performance.

Shevlin, Banyard, Davies and Griffith (2000), stated that the teacher who teaches with punctuality, accuracy, reasonability and logical approach in a student friendly manner is more likely to be popular. (Zeithaml, 2000). In Lebanon, Cloete and Bunting (2000), in China and Hong KOn, Abouchedid and Nasser (2002), in United Kingdom, Srikantham and Dalrymple (2003), Sigala, (2004), says satisfaction or dissatisfaction with a program or facilities is influenced by prior expectations regarding the level of quality.

Bejou (2005), Bennett (2003), Kanji and Tambi (1999), refer

to studies which say that students should be treated in the same way as other buyers of goods or "services" since they pay tuition fees to their respective institutions of higher education. Navarro et al. (2005) mentioned that students evaluate the quality of organization on the basis of tangibility, (faculty and infrastructure), reliability and responsiveness (methods of teaching) and management of the institution and these factors have direct influence on the level of students' satisfaction.

Douglas et al, (2006), refer to the teaching ability of faculty, flexible curriculum, university status and prestige, a degree that leads to occupational success, caring faculty, independence, growth and development. Sirat and Kaur, (2007), in their study of higher education say that if there is a market for higher education services, then students have to be treated as customers, and as fee payers, they can reasonably demand that their views be heard and acted upon and satisfaction guaranteed.

Tahar (2008) studied the perception on service quality of higher learning in two nations; the USA and New Zealand. Students define quality on the following ranking; ability to create career opportunities, issues of the program, cost/time, physical aspects, location and others. Meanwhile in the USA, they ranked academic reputation first. It was followed by cost/time, program issues, others, physical aspects and choice influences. Tahar (2008) generally says, students evaluate and judge the service quality to be satisfactory by comparing what they want or expect against what they are really getting.

A study by Magi and Julander (2009), showed a positive relationship between perceived service quality, customer satisfaction and attachment. Thus customer satisfaction results from service quality perceived as good and this makes customers loyal. Alves and Raposo (2010), the service quality in the field of education and higher learning particularly is not only essential and important, but it is also an important parameter of educational excellence. It has been found that positive perceptions of service quality has a significant effect on student satisfaction and thus, a satisfied student would attract more students through word-of-mouth communication. Ahmed and Nawaz (2010) mentioned that service quality is a key performance measure of educational excellence and is the main strategic variable for universities to create a strong perception in consumer's mind.

Objectives of the study

This study has three specific objectives in order to have a clear idea of the infrastructural facilities exiting in S.V.Univeristy, Tirupati. The first objective of the study is to identify the relationship between Infrastructural facilities and the overall satisfaction of students who are studying in S.V.University. The second objective of the study is to investigate the differences in the Infrastructural facilities that are related to students' demographic and behavior characteristics. The last objective of the study is to analyze the relationship between Infrastructural facilities and students' overall satisfaction. The demographic characteristics of students that are the focus in this study include age, gender, total household monthly incomes, and course of study. The behavior characteristics of students include whether or not the course chosen is a self supporting course, location of students' residents, future plan of students' and sources of information about the University.

Significance of the Study

This study will determine the students' satisfaction with regard to the facilities provided by the university. In the current globalized scenario the Indian higher education system is undergoing significant changes. As these changes are witnessed due to the changing demands of customers, it becomes important to explore and understand the changes which affect the buying pattern of customers. The scope of the study includes data from the respondents from Sri Venkateswara University Tirupati, in the state of Andhra Pradesh.

Research Methodology

This study is exploratory in nature. It uses a questionnaire to examine the levels of satisfaction in students regarding several factors about infrastructural facilities in the University of Colleges. Questionnaire was administered to students who were studying in the university. The close-ended questionnaire has two sections. Section A: This section contained demographics (gender, age group,

programs me of study, income of family, marital status ad academic year). Section B: This section contained 25 questions in which respondents are expected to state their level of satisfaction regarding infrastructure facilities of university. The level of satisfaction is weighted on a five-point Likert scale. The measurement of satisfaction was carried out with respect to infrastructural facilities of S.V University. The respondents have a chance to explain what they examine, what they require and what the university should do to improve facilities.

Data Collection and Analysis

The primary data was collected through a pre-tested structured questionnaire and secondary data was collected through Internet, Journals and business magazines. This survey was conducted from 2011 to 2012. A sample of 120 respondents was taken, out of which 35 were in Management, 20 belonged to Science, and the rest of 65 respondents were Arts. The selection of the sample is purely random; questionnaires were administered in almost all the major assembly points of the university where the students meet regularly. The areas include the hostels (Block D, Block C, Block E, and Ladies hostels).

Conceptual Framework

To study the customer satisfaction the model was developed as shown in Figure 2. Based on the model hypotheses are set up. The primary as well as secondary data were used in the present study.

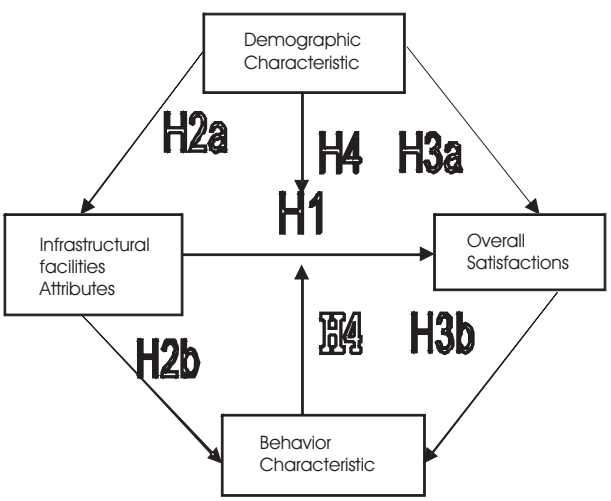

Figure 2. Model of Research Study

Hypotheses of Study

The study provides four hypotheses in order to analyze the relationship between Infrastructural facilities attributes and students' satisfaction, to understand the difference in derived factors in relation to their demographic and behavior characteristics, and to identify the differences in the overall satisfaction of students' in terms of their demographic and behavior characteristics.

H_1: There is no relationship between the selected infrastructural facility attributes and the overall satisfaction of Students.

H_{2a}: There is no difference between derived factors in relation to students' demographic characteristics, such as gender, age, and monthly household income.

H_{2b}: There is no difference between derived factors in relation to behavior characteristics of students such as future plans, residential location , marital status, course of study etc.,

H_{3a}: There is no difference in the overall satisfaction of student in terms of infrastructural facilities 'demographic characteristics, such as gender, age, occupation of the parent, total household monthly incomes.

H_{3b}: There is no difference in the overall satisfaction of students in terms of infrastructural facilities',behavior characteristics such as course of study, self supporting courses*, and future plan.

H_4: There is a relationship between the selected infrastructural facility attributes and the overall satisfaction of students for controlling selected demographic (gender) and behavior characteristics (course of study and self supporting courses).

* A self supporting courses is one for which the student bears the entire expenditure of studying the course himself.

Results

Discussion and Analysis

The demographic characteristics of the respondents are shown in Table 1. The gender distribution of the respondent groups was uneven, with 51.7 percent being male respondents and 48.3, percent female

respondents. The age group of the majority of the respondents was below 23 (71.7 percent). Nearly 38.3 percent belong to the 24 to 26 age group. The above 26 years age group constituted 8 percent of the total respondents.

The majority of the parents of the respondents are agriculturists (52.5 percent). Among the parents of the respondents 28.3 percent are business men and 11.7 percent are employed. The remaining 7.5 percent are professionals. With regard to respondents' family monthly income, 30 Percent earn less than Rs. 10,000 a month. Another 30 percent earn between Rs. 10,000 and 20,000. Approximately 25 percent of the respondents earn between Rs. 20,000 and 30,000. Nearly 9.2 percent of the respondents earn between Rs.30, 000 and 40,000 a month while only 5.8 percent earn more than Rs. 40,000 a month. Total respondents are 120. Among them 105 respondents (87.5 percent) are bachelors and only 15 respondents (12.5 percent) are married. Of the total respondents, 55 or 45.8 percent belong to joint family. Nearly 65 respondents or 54.2 percent belong to nuclear families. Of the total respondents 62 or 51.6 percent belong to families with only one earning member while 47 respondents or 39.2 percent, belong to families having two earning members. Nearly 11 respondents or 9.2 percent belong to families having three or more earning members. With regard to educational background of respondents, 65 respondents opted for arts groups, 20 for science groups and 35, for management groups. Nearly 75 respondents (62.5 percent) opted for self supporting courses while 45 respondents (37.5percent) were given free seats based on merit. The former have to pay a separate fee for joining the course but the latter do not have to pay any fee. Of the total respondents, 81 or 67.5 percent belong to rural areas and 39 respondents or 32.5 percent belong to urban areas. With regard to future plans of the respondents, 29 respondents (24.2 percent) stated that they plan to study further. The majority of the respondents, that is, 76 or 63.3 percent, stated that they plan to take up a job. Nine respondents (9) said that they planned to get married. Only 6 respondents belong to the "others" category.

S.No	Variables	Freq	Per cent
1	Gender		
A	Male	62	51.7
B	Female	58	48.3
2.	Age(in Yrs)		
A	Below 23 yrs	86	71.7
B	24-26 Yrs	33	38.3
C	Above 26 Yrs	1	0.8
3.	Occupation		
A	Professionals	9	7.5
B	Business	34	28.3
C	Employed	14	11.7
D	Agriculturist	63	52.5
4.	Monthly Income		
A	>Rs.10000	36	30.0
B	Rs 10000-20000	36	30.0
C	Rs. 20000 30000	30	25.0
D	Rs. 30000-40000	11	9.2
E	<Rs. 40000	7	5.8
5	Marital Status		
A	Single	105	87.5
B	Married	15	12.5
6.	Type of the family		
A	Joint Family	55	45.8
B	Nuclear Family	65	54.2
7	Size of the Family		
A	Up to 3 Members	27	22.5
B	3 to 5 Members	58	48.3
C	Above 5 Members	35	29.2
8	No.of earning members in the Family		
A	One	62	51.6
B	Two	47	39.2
C	Three & Above	11	9.2
9	Course of the study		
A	Arts	65	54.2
B	Science	20	16.7
C	Management	35	29.2
10	Course running Self supporting		
A	Yes	75	62.5
B	No	45	37.5
11	Residential Location		
A	Rural	81	67.5
B	Semi-Urban	23	19.2
C	Urban	16	13.3
12	Future plan		
A	To Study Further	29	24.2
B	To do Job	76	63.3
C	To Marry	9	7.5
D	Other	6	5.0

* Demographic and Behavioral Characteristics of the Sample Respondents (N= 120)

Table 1. Source: Primary Data

Expectation-Perception Analysis

The average level of expectation with various attributes of Students infrastructural facilities in the S.V.University and the average perception of these attributes were calculated for the overall sample. The placement of each attribute on an expectation-perception grid was accomplished by using the means of expectation and

perception as the coordinates. Two-dimensional grid is shown in Figure 3.

This expectation-perception grid positioned the grand means for perception ($\overline{X}$ =3.83, SD=0.25) and expectation ($\overline{X}$ =3.70, SD=0.26), which determined the placement of attributes of the axes of the grid. Each attribute on the grid could then be analyzed by locating the appropriate quadrant in which it fell.

Figure 3. is an expectation-perception grid, showing the overall ratings of Students' perceptions of S V University Tirupati, Andhra Pradesh. "Cultural and recreational facilities, Quality of books, Internet facilities, Cooks possess enough knowledge of cooking, Dining facilities are adequate, Quality equipment in the lab, High quality food and water are supplied, are located in the upper right-hand quadrant (high satisfaction, high expectation). Another side "Basic infrastructure in the class room, Provision of Xerox facilities, Sports equipments, Training to sportsmen and women , The method of issuing books is effective, , is located in the lower right-hand quadrant (low expectation, high perception,). "Regular class works, Audio – visual equipments, Competent lab assistant, are rated below average for both perception and expectation (lower left-hand quadrant).

S.No	Attributes	Expectation		Perception		Mean difference	
	Satisfying	Mean	S.D	Mean	S.D		t-value
1	Quality of books	3.96	0.81	3.82	0.92	0.14	2.340*
2	Internet facilities	4.09	0.89	3.96	0.83	0.13	2.112*
3	Cultural and recreational facilities	4.26	0.84	4.14	0.76	0.12	2.609*
4	Cooks possess enough knowledge of cooking	4.23	0.85	4.10	0.85	0.13	2.252*
5	Dining facilities are adequate	3.95	1.05	3.80	1.03	0.15	2.401*
6	Library staff is polite and helpful	3.77	0.91	3.63	0.83	0.14	2.067*
7	Training to sportsmen and women	3.85	0.95	3.65	0.97	0.20	-3.362*
8	High quality food and water are supplied	4.07	0.87	3.92	0.80	0.15	3.191*
9	Quality equipment in the lab	3.48	0.96	3.33	0.96	0.15	3.699*
	Indifferent						
10	Hostel staff is courteous and polite	3.34	0.95	3.22	1.08	0.12	-1.201
11	Health care facilities	4.13	0.91	4.02	0.76	0.11	-1.699
12	The method of issuing books is effective	3.71	0.87	3.65	0.91	0.07	-0.503
13	Sports officials take care of students'	3.53	0.95	3.49	1.03	0.03	1.398
14	Regular class works	3.68	0.92	3.59	0.99	0.09	-1.201
15	Problems of power- cuts and safety	3.65	1.05	3.62	0.91	0.03	-0.398
16	Competent lab assistant	3.34	0.95	3.22	1.08	0.12	-1.76
	Dissatisfying						
17	Basic infrastructure in the class room	3.74	0.97	3.86	0.78	-0.12	1.609
18	Audio – visual equipments	3.22	0.94	3.35	1.10	-0.13	3.162*
19	Provision of Xerox facilities	3.83	0.93	3.86	0.80	-0.03	0.466
20	Sports equipments	3.73	0.95	3.77	1.08	-0.04	1.07

* Results on Paired t-test between Expectations and Perception with Attributes (N= 120)

Table 2. Source: Primary Data

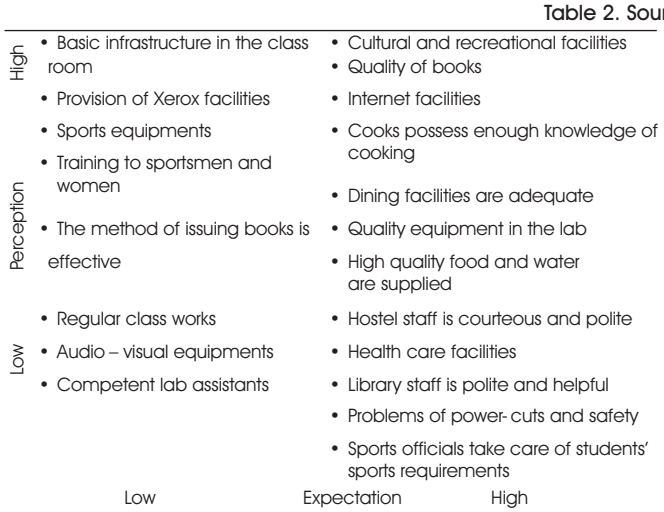

Figure 3. Perception – Expectation Grid

The respondents perception "Hostel staff is courteous and polite , Health care facilities, Library staff is polite and helpful, Problems of power- cuts and safety, Sports officials take care of students, sports requirements, higher than average on perception, but below average on expectations (higher left-hand quadrant).

Students Tangibility Overall level of Satisfaction with the Infrastructural Facilities

Table 3 shows the students' overall level of satisfaction with

the infrastructural facilities provided in S.V. University. The research findings indicate that 35.8 percent of the respondents agree, followed by 28.3 percent who strongly agree, 11.7 percent who are neutral in their opinions and 19.2 percent who disagree. The mean value of respondents overall perceived level of satisfaction was 3.63, which tended towards the high end of the satisfaction scale. This suggests that the S.V. University provides students with a satisfactory experience. These facilities were ranked according to the mean values assigned to each facility. Rank one (1) indicates the highest level of satisfaction with the facilities offered. The variable, "hostel amenities" was ranked first. This shows that students were more satisfied with hostel facilities than with others. The ranks given to other amenities similarly indicate the level of satisfaction they provide to the students. This ranking suggests that students are least satisfied with "teaching and administration" because its rank is five (5). This suggests that the higher the rank assigned to a variable, the lower the level of satisfaction provided by it.

Testing of Hypotheses

Hypothesis 1 was tested, using correlation analysis and multiple regression analysis. To get the Students infrastructural facility attribute scale ready for analysis, a factor analysis of the attributes was conducted. Four factors emerged from this procedure, which are explained in the following section. And these factors were then utilized multiple regression analysis as independent variables. Hypotheses 2a and 2b were tested through Multivariate Analysis of Variance (MANOVA) Hypotheses 3a and 3b by Analysis of Variance (ANOVA) and hypothesis 4 by Multivariate Analysis of Covariance (MANCOVA).

Factor Analysis: Underlying Dimensions of Students' Perceptions of Attributes

The principal components factor method was used to generate the initial solution. The eigen values suggested that a four- factor solution explained 39.465 percent of the overall variance after the rotation. The factors with eigen values greater than or equal to 1.0 and attributes with factor loadings greater than 0.1 were reported. From the results of the factor analysis the four factors identified are: Class room & Lab Facilities, Hostel facilities, Library and Sports Equipments.

The overall significance of the correlation matrix was 0.000, with a Bartlett test of sphericity value of 367.269. The statistical probability and the test indicated that there was a significant correlation between the variables, and the use of factor analysis was appropriate. The Kaiser-Meyer-Olkin overall measure of sampling adequacy was 0.652 which was meritorious (Hair, Anderson, and Black 1999).

From the varimax-rotated factor matrix, four factors with 18 variables were defined by the original 20 variables that loaded most heavily on them (loading $\geq$ 0.1). Two attributes were dropped due to the failure of loading on any factor at the level of 0.3 or less. These were "Internet facilities," & "Health care facilities." The communality of each variable ranged from 0.312 to 0.587.

To test the reliability and internal consistency of each factor, the Cronbach's alpha of each factor was determined. The results showed that the alpha coefficients ranged from 0.407 to 0.570 for the four factors. The results were considered more than reliable, since 0.50 is the minimum value for accepting the reliability test (Nunnally, 1967). The four factors underlying Students' perceptions of infrastructural facilities in S.V.University, Tirupati, were as follows.

Classroom & Lab facilities (Factor 1) contained 7 attributes and explained 17.454 percent of the variance in the data, with an eigen value of 3.491 and a reliability of 57.0 per cent. The attributes associated with this factor

Variable	SA	A	N	DA	SDA	Mean Scores	Mean	Ranks
Physical Facilities (classrooms andlab)	34	43	14	23	6	436	3.63 (1.223)	2
Hostel Amenities	32	44	23	12	9	438	3.65 (1.193)	1
Library	42	31	12	17	18	422	3.52 (1.467)	3
Sports Infrastructure	17	55	26	14	8	419	3.49 (1.085)	4
Teaching and Administration	18	43	27	16	16	391	3.26 (1.254)	5

Note: SA -Strongly Agree; A – Agree; N – Neither Agree nor Disagree; DA –Disagree; SDA – Strongly Disagree

Table 3. Student's Overall Level of Satisfaction with SV University Infrastructural Facilities (N=120)

dealt with the required service items, such as "Basic infrastructure in the class room," "Audio – visual equipments," Quality equipment in the lab," "Competent lab assistant," "Regular class works," "Problems of power-cuts and safety," and "internet facilities".

Note: Extraction Method – Principal Component Analysis

Rotation Method – Varimax with Kaiser Normalization

KMO (Kaiser-Meyer-Olkim Measure of Sampling Adequacy) = 0.652

Bartlett's Test of Sphericity: p = 0.000 (X^2 = 367.269, df = 190)

Attributes	Factor Loading Factor 1	Factor 2	Factor 3	Factor 4	Communality
Factor1:Classroom &Lab Facilities					
Basic infrastructure in the class room (17)	.582	-.011	.088	.170	0.375
Audio– visual equipments(18)	.555	-.125	.012	-.326	0.430
Quality equipment in the lab(9)	.511	.340	.091	-.071	0.391
Competent lab assistant(16)	.505	-.087	.191	.199	0.338
Regular class works(14)	.473	.089	.207	.191	0.312
Problems of power- cuts, safety(15)	.403	.336	-028	-.199	0.316
Internet facilities(2)	.329	.285	.140	.027	0.210
Factor 2: Hostel Facilities					
Hostel staff is courteous polite(10)	.042	.686	.053	-.090	0.483
Cooks possess enough knowledge of cooking(4)	-.031	.630	.051	.101	0.410
High quality food and water are supplied (8)	-.123	.474	.432	.237	0.483
Dining facilities are adequate(5)	.378	.467	.099	.039	0.372
Health care facilities(11)	.014	.409	.271	.018	0.241
Cultural and recreational facilities(3)	.309	.408	-.327	.301	0.459
Factor 3: Library Facilities					
Quality of books(1)	.074	.027	.756	.097	0.587
Provision of Xerox facilities(19)	.284	.094	.535	-.225	0.427
Library staff is polite and helpful(6)	.177	.068	.514	.268	0.372
The method of issuing books is effective(12)	.150	.217	.490	-.142	0.330
Factor 4: Sports Equipment					
officials take care of students' sports requirements (13)	-.082	.042	-.086	.721	0.535
Sports equipments(20)	.207	-.072	.209	.551	0.395
Training to sportsmen, women(7)	.345	.327	-.065	.442	0.426
Eigen Value	3.491	1.585	1.419	1.398	
Variance (%)	17.454	7.923	7.096	6.992	
Cumulative variance (%)	17.454	25.377	32.473	39.465	
Reliability Alpha (%) (0.350)	57.0	59.0	54.1	40.7	
Number of items (Total = 20)	7	6	4	3	

Table 4 Factor Analysis of Results of the Perception of Students Attributes in the S V University (N= 120)

Hotelling's T-Squared Test = 41.407, F = 1.850, df1 =19 df2 = 101, P =0.027*

Hostel Facilities (Factor 2) accounted for 7.923 per cent of the variance, with an eigen value of 1.585 and a reliability of 59.0 percent. As compared to the factor1 reliability is greater than factor 2 reliability. It shows that stronger views compared to other factors. This factor was loaded with 6 attributes such as "Hostel staff is courteous and polite," "Cooks possess enough knowledge of cooking," "High quality food and water are supplied," "Dining facilities are adequate," "health care facilities" and "Cultural and recreational facilities,"

Library Facilities (Factor 3) was loaded with 4 attributes. This factor accounted for 7.096 percent of the variance, with an eigen value of 1.419 and a reliability of 54.1 per cent. These four attributes are "Quality of books," "Provision of Xerox facilities," "Library staff is polite and helpful," "The method of issuing books is effective,"

Sports Equipment (Factor 4) contained 3 attributes. This factor explained 6.992 percent of the variance, with an eigen value of 1.398 and a reliability of 40.7. These attributes are "Sports officials take care of students' sports requirements," "Sports equipments," and "Training to sportsmen and women".

Hence it is concluded that the results showed above average levels based on this derived factor analysis we can analyzed further more tests like correlation and multiple regression.

Hypothesis 1

Correlation Analysis

A correlation coefficient measured the strength of a linear between two variables. In the study, a correlation coefficient measured the strength of a linear between the overall satisfaction of the respondents and four factors (class room & lab facilities, hostel facilities, Library and sports equipments). The correlation between overall satisfaction of Students and four factors was positive and was significant at the 0.05 level (2-tailed). For example, the correlation between overall satisfaction and class room & lab facilities (factor 1) was 0.177 (p=0.043); the correlation between overall satisfaction and hostel

facilities (factor 2) was 0.210 (p=0.021); the correlation between overall satisfaction and library factor (factor 3) was 0.102 (p=0.265), and the correlation between overall satisfaction and sports equipment (factor 4) was 0.0.019 (p=0.833). Therefore, the study indicated that the correlation between overall satisfaction and class room & lab facilities and hostel facilities was significant at 5 percent level and overall satisfaction and Library or sports equipment factors were not significant. These results revealed support for hypothesis 1 that there seems to be a moderate correlation between overall satisfaction and the selected Infrastructural facility attributes.

Multiple Regression Analysis

In order to further reveal support for hypothesis 1, the factors that influenced students' overall levels of satisfaction, the four orthogonal factors were used in a multiple regression analysis. The multiple regression procedure was employed because it provided the most accurate interpretation of the independent variables. The four independent variables were expressed in terms of the standardized factor scores (beta coefficients). The significant factors that remained in the regression equation were shown in order of importance based on the beta coefficients. The dependent variable, Students' overall level of satisfaction, was measured on a 5-point Likert-type scale and was used as a surrogate indicator of students' evaluation of the perception in the S.V. University.

The equation for students' overall level of satisfaction was expressed in the following equation

$$Y_C = \beta_0 + B_1 X_1 + B_2 X_2 + B_3 X_3 + B_4 X_4$$

Where, Y_C = Students' Overall level of Satisfaction with S.V. University Infrastructural Facilities

β_0 = Constant (coefficient of Intercept)

		Factor 1 (Class room& Lab Facilities	Factor 2 Hostel facilities	Factor3 Library facilities	Factor 4 Sports Equipments
Overall Satisfaction of students	Students Correlation	0.177*	0.210*	0.102 @	0.019 @
	Sig. (2-tailed)	0.043	0.021	0.265	0.833
	N	120	120	120	120

Correlation between Overall Satisfaction Students and Four Factors

X_1 = Class room & Lab Facilities

X_2 = Hostel facilities

X_3 = Library

X_4 = Sports Equipments

$B_1 \ldots B_4$ = Regression coefficient of Factor 1 to Factor 4.

Regression Results of students' Overall Satisfaction Level Based on the Dimensions (N=120)

Dependent variable, Students' overall satisfaction with S.V. University Infrastructural facilities and Independent variables are four factors. Table 5 showed the results of the regression analysis. To predict the goodness-of-fit of the regression model, the multiple correlation coefficient (R), coefficient of determination (R^2), and F ratio were examined.

First, the R of independent variables (four factors, X_1 to X_4) on the dependent variable (Students' overall level of satisfaction, or Yc) is 0.294, which showed that the Students had Average and high overall satisfaction levels with the two dimensions factors (classroom facilities & Hostel facilities).

Second, the R^2 is 0.386, suggesting that more than 30% of the variation of students' overall satisfaction was explained by the four factors. Last, the F ratio, which

Model	R		Adjusted	Std. Error of the Estimate
1	0.294	0.386	0.055	0.63773

Output of simultaneous multiple regression-Model Summary (a)

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	4.417	4	1.104	2.715	.033*
Residual	46.771	115	.407		
Total	51.188	119			

*significant at 5 percent level

Analysis of Variance (b)

Independent Variables	B	Std. Error	Beta	T	Sig.
(Constant)	3.510	0.058		60.292	0.000 **
Factor 1	0.116	0.058	0.177	1.985	0.030 *
Factor 2	0.138	0.058	0.210	2.356	0.020 *
Factor 3	0.067	0.058	102	1.150	0.253 @
Factor 4	0.013	0.058	019	0.218	0.828 @

** Significant at P <0.005
Dependent variable: Student's overall satisfaction
Independent variable: Four derived factors

Output of simultaneous Multiple Regression Coefficients

Table 5. Regression Results of Students' Overall Satisfaction Level Based on the Dimensions (N= 120)

explained whether the results of the regression model could have occurred by chance, had a value of 2.715 (p=0.033) and was considered significant at 5 per cent level. The regression model achieved a satisfactory level of goodness predicting the variance of students' overall satisfaction in relation to the four factors, as measured by the above –mentioned R, R^2, and F ratio. In other words, at least one of the four factors was important in contributing to students' overall level of satisfaction with the S.V. University infrastructural facilities.

In the regression analysis, the beta coefficients could be used to explain the relative importance of the four dimensions (independent variables) in contributing to the variance in students' overall satisfaction (dependent variable). As far as the relative importance of the four infrastructural facilities dimensions is concerned, Factor 2 (Hostel facilities, B_2=0.138, p=0.020) carried the heaviest weight for students' overall satisfaction, followed by Factor 1 (Classroom facilities, B_1= 0.116, p=0.030), Factor 3 (Library facilities, B_3=0.067, p=0.253@), and Factor 4 (Sports Equipment, B_4=0.013, p=0.828@). Factor 3 and Factor 4 are not significant. The results showed that a one-unit increase in satisfaction with the Hostel facilities factor would lead to a 0.138 unit increase in students' overall level of satisfaction with S.V. University Infrastructural facilities, other variables being held constant.

In conclusion, two factors underlying dimension are significant. Thus, the results of multiple regression analysis reject hypothesis 1, that there is no relationship between the selected infrastructural attributes and the overall satisfaction of students. So, there is a relationship, which is what you expected.

The Fitted model is Y = 3.510 + 0.116 * F1 + 0.138 * F2 + 0.067* F3 + 0.013 *F4, Where Y is the overall Satisfaction Score. From the Standardized regression coefficient it can be seen that the highest preferred factor to explain satisfaction is F2 followed by F1, F3 and F4 in that order. Further, all the regression coefficients are found to be statistically significant (p<0.005).

Hypothesis 2a and 2b

Multivariate Analysis of Variance (MANOVA)

Multivariate Analysis of Variance (MANOVA) was used to analyze hypotheses 2a and 2b. This study made use of MANOVA to determine whether there were differences among derived factors with respect to demographic and behavior characteristics. The results of the analysis are presented in Table 6.

In Students' characteristics, the results of MANOVA revealed that respondents' mean scores for the dimensions of students' perceptions showed variation by Parents monthly household incomes (Wilks' Lambda F = 2.413, P = 0.001). The results of ANOVA showed that all household incomes differed only on Factor 1, Class room infrastructural facilities (F = 2.613, P = 0.036). The group that income of Rs.20, 001 to Rs30, 000 provided the lowest mean score (M = -0.147). On the other hand, the group who earned less than Rs. 10,000 provided the highest mean score (M=0.177).

Moreover, in behavior characteristics of students, the results of MANOVA revealed that respondents' mean scores for the dimensions of tourists' perceptions differed by the length of stay (Wilks' Lambda F = 4.513, P=0.023). The results of ANOVA indicate that the course of study differed only on Factor 3, Library (F=2.621, P=0.002). The group studying Management provided the lowest mean score (M=-1.775). However, the group studying science course provided the highest mean score (M=0.185), suggesting that there may be a positive relationship between the reported satisfaction and course of study.

In Multivariate Analysis of Variance (MANOVA), the results indicated that there is a difference in derived factors in terms of only monthly household incomes among the demographic variables and in terms of Course of Study.

Hypothesis 3a and 3b

Demographic Differences in Overall Satisfaction

Table 7 illustrates two-tailed independent t-test and one-way ANOVA results of the mean difference of overall satisfaction by the demographic characteristics of the respondents. The results indicated that no significant difference in the overall satisfaction of the respondents was found by age, occupation of the parent and total household income. Significant difference in the overall

satisfaction of the respondents was found only by gender (t=-3.503, P<0.05). The results explained that female respondents were more satisfied with S.V. University infrastructural facilities than male respondents. Thus, hypothesis 3a could be rejected only for gender.

Behavior Differences in Overall Satisfaction

Two-tailed independent t-test and Analysis of Variance (ANOVA) were tested in order to identify the mean differences in overall satisfaction by the behavior characteristics of the respondents. The results are shown in Table 7.

Two-tailed Independent Samples t-test and One-way ANOVA Results of Mean Difference of Overall Satisfaction by Behavior Characteristics of the Student Respondents

The results indicated that no significant difference in overall satisfaction of the respondents was found in terms of the self supporting courses, future plan and the course of the study (one-way). However, the results illustrated that significant differences were found in self supporting courses (t= 1.905*, p<0.05) and Course of the study (F=2.822*). The study revealed that the respondents who had studied Self Supporting course were more satisfied than the respondents who had studied different courses like Science, Arts, and Management. Furthermore, the study explained that the respondents whose future plans are not significant. Thus, hypothesis 3b was rejected for self supporting courses and course of the study.

Monthly Income of the Parents (in Rs)	N	Factor 1	Factor 2	Factor 3	Factor 4
Below Rs.10000	36	0.177	0.194	0.121	0.217
Rs 10000 – Rs 20000	36	0.024	0.132	0.039	-0.012
Rs 20000- Rs 30000	30	-0.147	-0.143	-0.246	-0.271
Rs 30000- Rs 40000	11	0.230	-0.373	0.236	0.292
Above Rs 40000	7	0.045	0.475	-0.141	-0.351
Univariate (F)		2.613	2.244	2.621	2.585
(P)		0.036*	0.067@	0.242@	0.102@
Multivariate (F = 2.413)					
Wilks Lamda P = 0.001*					

*Significant at 5 per cent level.

Table 6 MANOVA and ANOVA on Students' Perceptions for Demographic Variables (N =120)

Course of Study	N	Factor 1	Factor 2	Factor 3	Factor 4
Arts	65	0.152	0.145	0.038	0.062
Science	20	-0.351	-0.402	0.185	-00.238
Management	35	-0.082	-0.390	-1.775	0.020
Univariate (F)		2.613	2.244	2.621	2.585
(P)		0.165	0.001*	0.002*	0.045*
Multivariate (F = 4.513)					
Wilks' Lamda P = 0.023*					

MANOVA and ANOVA on Students' Perceptions for behavior characteristics

Hypothesis 4

Multivariate Analysis of Covariance

In order to further understand the relationship between infrastructural facilities attributes and overall satisfaction with such attributes and how the relationship may show variation controlling for demographic and behavior variables, the study also used Multivariate Analysis of Covariance (MANCOVA) to see if the relationship would still exist while controlling for the significant variables, including gender, course of study, and the course of running self supporting the demographic and behavior characteristics in the study.

The results of MANCOVA revealed that only one of the control variables (self supporting courses) controlled the relationship between the overall satisfaction of student and derived factors (Wilks' Lambda, F=1.245, P=0.041). On the other hand, demographic variable gender (Wilks' Lambda, F=2.958, P=0.015) and finally course of study (Wilks' Lambda, F=0.985, P=0.672) did not control the

Variable	Frequency	Mean
Gender (t=-3.503*)		
Male	62	3.316
Female	58	3.717
Age (years) (F=0.445@)		
Below 23 Years	86	3.354
Bt 23 – 26 Years	33	3.418
Bt 26 – 29 Years	1	3.600
Occupation of the Parent (F=2.297)		
Professional	9	3.489
Business	34	3.457
Employed	14	3.157
Agriculturist	63	3.632
Total household Monthly income (F=2.043)		
Below Rs 10,000	36	3.600
Rs 10,001- 20,000	36	3.367
Rs. 20,001 - 30,000	30	3.707
Rs 30,001 - 40,000	11	3.181
40,001 or above	7	3.457

Table 7. Two-tailed Independent t-test and One-way ANOVA Results of the Mean Difference of Overall Satisfaction by Demographic Characteristics of the Respondents Variable (N = 120)

relationship between the derived factors and the overall satisfaction of student.

Conclusion

One hundred and Fifty surveys were conducted and 120 final surveys were utilized for the study. The demographic and behavior characteristics of the respondents were presented. In general, almost 80% of respondents tended to be below 23 years old. Most of the respondents had an Arts Group with a self supporting Course.

The main aim of this study was to analyze the levels of satisfaction in students' infrastructure experiences at the university. The research findings show that a total of 35.8 percent of respondents agree, 28.3 percent strongly agree, 11.7 percent are neutral in their opinions and 19.2 percent disagree. According to the results of this study there is general preference for expectation and perception as the coordinates. The study has also shown that students are largely satisfied with most of the attributes of tangibility. This has certainly opened avenues for more research to be carried out. The university students will slowly gain confidence as they have more capacity and time to look for literature that is relevant to their areas of research. Some of the suggestions are:

Suggestions

Based upon the results of this study, several recommendations can be made to increase students' satisfaction with the S.V. University. The results of the study revealed that even if four factors (Class room & Lab Facilities, Hostel facilities, Library and Sports Equipments) have a significant relationship with the overall satisfaction of students, Hostel facilities and Library facilities were more important factors that influenced overall students satisfaction than class room & lab facilities and sports equipment Factors. This finding can be useful to the planners and marketers of infrastructural facilities in formulating strategies to maintain or enhance their competitiveness when compared with other universities. In other words, they should focus more on maintaining or improving factors that contribute to the overall satisfaction of students. For example, the content of brochures and Web-sites about the S.V. University infrastructural facilities should reflect such features as courses, Facilities of hostels, Sports equipments, and books, reference books availability as part of the Library facilities, Lab equipments, buildings, and teaching aids as part of Class room Lecture. In addition, University development authorities and Deans of courses concerned should provide quality service to attract students through special events, self supporting, and sports factors such as ease of accessibility, information centers, and sports facilities like tennis, gyms etc. Thus, this study helps to identify the importance of infrastructural facilities or tangible factors as perceived by the students who are coming to study in the S.V. University.

Because this study revealed that there were differences in the overall satisfaction of students in terms of gender, age, and Course of the study, it is hoped that the results of the study will provide some insights into students' perception that may help university authorities to develop specific promotional strategies. For example, according to the S.V. University Infrastructural facilities and resources, students' vacation plans to work in laboratories and internet provisions in departments are typically made by women. The study revealed that female students were more satisfied than male students. Therefore, University authorities may keep this in mind as they develop special products and services for their courses. The study also

Variable	Frequency	Mean
Self Supporting Courses (t=1.905*)		
Yes	75	3.655
No	45	3.440
Future Plan (F=1.717)		
To Study Further	29	3.635
To do job	76	3.450
To Marry	9	3.822
Other	6	3.200
Course of the Study (F=2.822*)		
Arts	65	3.575
Science	20	3.490
Management	35	3.400

Variables	Factors 1	Factor 2	Factor 3	Factor 4	Wilks' Lambda
Gender	1.738(0.190)	0.001(0.973)	0.094(0.760)	3.303(0.002)*	2.958(0.015)*
Course of study	0.710(0.410)	2.156(0.004)*	0.555(0.458)	0.816(0.368)	0.637 (0.672)
Self supporting courses	0.043 (0.837)	0.687(0.409)	0.105 (0.746)	0.006(0.936)	1.245(0.041)*

Table 8. Multivariate Analysis of Covariance (N= 120)

revealed that about 55 % of respondents had opted for Arts group in S.V. University. The respondents who opted for Arts Group were more satisfied than those who opted for Science and Management groups. Thus, this finding can be useful to planners to improve and create key facilities to satisfy the students in S.V. University. Also, planners may develop the special services and products to help students join other courses as well.

Furthermore, the study classified high-satisfaction and high expectation attributes, high-satisfaction and low expectation attributes, low-satisfaction and high expectation attributes, and low-satisfaction and low-expectation attributes through expectation-satisfaction analysis. This classification will help marketers and planners to maintain or enhance their strengths and improve their weaknesses. For example, the study suggests that marketers should maintain high-satisfaction and high-expectation attributes (Cultural and recreational facilities , Quality of books, Internet facilities, Cooks possess enough knowledge of cooking , Dining facilities are adequate, Quality equipment in the lab, High quality food and water are supplied, Library staff is polite and helpful , etc). They also should focus more on low-satisfaction and high expectation attributes (Basic infrastructure in the class room , Provision of Xerox facilities, Sports equipments, Training to sportsmen and women, The method of issuing books is effective) to meet students' expectations. And, the study recommends that marketers should make presentations and interpretations of the S.V. University by using multimedia in order to improve low-expectation attributes (weaknesses).

To conclude, in order to create effective marketing strategies for products and services in the infrastructural facilities in S.V. University, a better understanding of students who are studying to the S.V. University is necessary.

Directions for Future Research

The study provided a general picture of the relationship between infrastructural facilities attributes and students' overall satisfaction with the S.V. University and analyzed variations in students' level of satisfaction by using demographic and behavior characteristics. However, the study did not mention the relationship between student satisfaction and intention to develop facilities. Future research should investigate the relationship between students' satisfaction and intention to develop required facilities, because collecting feedback from the student is an important issue for the university development and researchers. Future studies could be applied to other infrastructural facilities using a similar method so that a competitive analysis in different dimensional areas can be explored. Also, more refinement is needed in selecting attributes because some respondents felt there was some ambiguity in the questionnaire items.

References

[1]. Aldridge, S., and Rowley, J. (1998). "Measuring customer satisfa ction in higher education", *Quality assurance in education,* Vol. 6 No.4, pp. 197-204.

[2]. Abouchedid, K., Nasser, R. (2002). Assuring quality service in higher education: Registration and advising attitudes in a private university in Lebanon, *Qual Assur. Educ.*, 10(4):198-206.

[3]. Alves, H., and Raposo, M. (2010). "the influence of university image on students' behavior", *International Journal of Educational Management* . 24 (1): 73-85.

[4]. Ahmed, I., Nawaz, M.M., Ahmad, Z., Ahmad, Shaukat, M. Z., Usman, A., Wasim-ul-Rehman and Ahmed, N. (2010). "Does service quality affect students' performance? Evidence from institutes of higher learning" *African Journal of Business Management,* 4 (12). 2527-2533.

[5]. Bejou, D. (2005). "Treating students like customers". BZ (ed.) March-April: 44-47 www. Aacsb edu/publications/archives/Mar/Apr05/p44-47. pdf.

[6]. Bennett, R. (2003). Determinants of undergraduate students drop-out rates in a university business studies department. *J Further Higher Educ*., 27 (2): 123-129.

[7]. Cheong-Cheng, Y., Ming-Tam, W. (1997). Multi-models of quality in education, Qual, Assur, Education 15 (1): 23-31.

[8]. Cloete, N., Bunting, I. (2000). Higher education transformation: Assessing performance in South Africa.

Pretoria: Centre for Higher Education Transformation.

[9]. Douglas, J., Douglas, A., and Barnes, B. (2006). "Measuring student satisfaction at a UK university", *Quality Assurance in Education*, Vol. 14 No. 3, pp. 251-67.

[10]. Education India .com www. OIFC. In/Education

[11]. Financial report on higher education for the XI plan, government of India.com

[12]. Geoffrey Souter and Margaret Mc Neeil (1996). Measuring service quality in a tertiary institution, *Journal of Educational Administration* 34(1):72-82.

[13]. Hoffman K.D., Bateson J.E.G. (2006). Service marketing: concepts, strategies and cases, 3rd ed. Mason OH: Thomson south-western.

[14]. Kanji, G.K., Abdul Malek Bin A. Tambi, and Wallace, W. (1999). "A comparative study of quality practice in higher education institution in the US and Malaysia". Total Quality Management, 10 (3) 357-371.

[15]. Katiliute, E., Kazlauskiene, I. (2010). The model of studying quality dimensions from students' perceptions. *Econ. Manage*. J., 15 (1): 586-590.

[16]. Kanji, J.M., Tami M.A. (1999). Total quality management in UK higher education institutions Total Quasl. Manag., 10(1): 129-153.

[17]. Lacobucci D., and Otrom A., and Grayson K. (1995). Distinguishing service quality and customer satisfaction: The voice of the customer, *Journal of Consumer Psychology*, 277-303.

[18]. Ministry of Human Resource Development, Government of India annual report 20112012.

[19]. Mazarrol, T. (1998). Critical success factors for international education marketing. *J Educ. Manage* 12 (4): 163-175.

[20]. Mangold W. G., Miller F. Brockway G. R. (1999), Word-of-mouth communication in the service market place. *The Journal of Service Marketing* 13 (1):73-89.

[21]. Magi. A, Julander Cr. (2009). Perceived service quality and customer satisfaction in marketing higher education: theory and practice. New York: McGraw-Hill Education.

[22]. NAAC University News, Association of Indian Universities, Vol. 50 No. 07 February 13-19,2012. weekly *Journal of Higher Education*

[23]. Navarro, M. M., Iglesias, M.P., and Torres, P.R., (2005a). "A new management element of universities: satisfaction with the courses offered", *International Journal of Education Management,* 19 (6). 505-526.

[24]. Rahman, R.A., and Yasoa, M.r. (2008). "student satisfaction and service quality: any differences in demographic factors", *International Business Research*, 1 (4). 131:143.

[25]. Sigala, M. (2004), "An investigating the factors determining e-learning effectiveness in tourism and hospitality education", *Journal of Hospitality and Tourism Education*, Vol. 16 No. 2, pp. 11-21.

[26]. Srikantham, G. Dalymple, J. (2003). Developing alternative perspectives for quality in higher education. *Int, J. educ., Manage*. 17 (3): 126-136.

[27]. Sirat, M., Kaur, S. (2007). "Transforming higher education into a global commodity: Pressures for developing countries". Update on global higher education, *National Institute of Higher Education Research, Malaysia,* April, No, 4.

[28]. Shevlin, M., Banyard, P., Davies M., and Griffiths M. (2000). The validity of student evaluation of teaching in higher education: love me, love my lectures? Asseeement and evaluation in higher education, 25, 397-405.

[29]. Tahar, E.B.M. (2008). "Expectation and perception of postgraduate students for Service Quality in UTM", Thesis, Unpublished.

[30]. Zeithaml, V.A. (2000). "Service quality, profitability and the economic worth of customer: what we know and what we need to learn, *Journal of the Academy of Marketing Science*, 28 (1), 67-85.

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