

## Service Delivery at a Satellite Campus: A Durban University of Technology Case Study

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**ABSTRACT** The goal of this paper is to report on the SERVQUAL gap which causes unsuccessful service delivery at a satellite campus of a University of Technology in South Africa. Using a quantitative research design, the study adopts a SERVQUAL model adapted to a tertiary environment containing 5 dimensions of service quality (tangibles, responsiveness, empathy, assurance and reliability). A convenience sampling technique was applied, the data was collected from 99 respondents at the Durban University of Technology (DUT) and the results and discussion are presented. The findings reveal that, on average, customers had high expectations in assurance, responsiveness and reliability dimensions and their highest perceptions were found in the empathy dimension. This paper will benefit management of higher education institutions in identifying cost-effective ways of reducing service quality gaps with particular reference to satellite campuses.

### INTRODUCTION

Higher education institutions across the world have experienced the introduction of processes for quality assurance. The increasing competition among higher education institutions to attract highly qualified students towards achieving high academic profiles is forcing them to pay more attention to service quality issues. This makes it prudent to examine whether the quality process has produced the enhancement of core outputs. This study measures expectations and perceptions of students and staff to determine their satisfaction of service quality provided at Durban University of Technology in South Africa. The subject of service quality measurement in higher education has recently attracted the attention of many researchers, see (Min and Khoon 2014; Koni et al. 2013; Sultan and Wong 2012; Jain et al. 2011; Lee 2010; Abu Hasan et al. 2008; Pereda et al. 2007; Peng and Samah 2006; Petruzzellis et al. 2006). The institution's process and outcome affects students and staff judgment of service quality provided by the institution. The process involves how students and staff as major service customers are

treated during the service interaction and outcome is the actual result being experienced by the customers (Cuthbert 1996). Students and staff will on a daily basis interact with the institution and experience varying degrees of services. Students' perceptions of the higher education experience have become increasingly important as institutions of higher education have attempted to become more student-centric (Khodayari and Khodayari 2011; Mahadzirah and Wan 2003).

Now, this study adopting a quantitative paradigm, investigates the quality of service delivered by identifying the difference between customer expectations of service and perceived service at a satellite campus of the Durban University of Technology (DUT). It is equally important for DUT and other universities to identify whether the institution is meeting customer expectations in the higher education sector particularly to those campuses which are separated from the main campus. The uniqueness of this paper is its relation to universities of technology which is relatively new in South Africa as well as a multi-campus university structure.

### Literature Review

The concept of service can be defined as an intangible product that cannot be owned or stored, but it comes to an existence at the time and place it is delivered for consumption. Service quality is the extent to which a service meets or exceeds the expectations of customers (Jain

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et al. 2010; Zeithaml et al. 2006; Nitecki and Herson 2000; Cronin and Taylor 1992; Boltan and Drew 1991; Lewis and Mitchell 1990; Parasuraman 2004). The notion of difference is the degree and direction of discrepancy or gap between customer expectations and perceptions of a service (Parasuraman et al. 1985). The measurement of service quality has been illustrated along a continuum ranging from ideal quality to totally unacceptable quality with some point along the continuum representing satisfactory quality. The position of customer perceptions of service quality on the continuum depends on the nature of discrepancy between the expected service and the service perceived by the customer. On one hand, if expectations are greater than perceptions, the perceived service quality is less than being satisfactory and customer dissatisfaction is said to occur. On the other hand, if expectations are less than perceptions, perceived service quality is said to be satisfactory and will tend towards ideal quality with increased positive discrepancy between expected and perceived service quality.

Grönroos (2008) supports the notion that service quality as perceived by customers, stems from a comparison of what they feel that service organisations should offer (that is, from their expectations) with their perceptions of the performance of organisations providing the service. Customers' perceptions depend on their comparison of their prior quality and productivity depends not only on the performance of the service provider's personnel, but also on the performance of the customer. This gap between the customers expectation of the quality of the service and the perceived quality of the service received can be explained by the Gaps Model. The Model proposes that expectations of customers are a function of disconfirmation and that a customer makes comparison between his/her experience with pre-consumption expectations (before service consumption) and post-consumption experience (after service consumption). Based on this comparison, a state of satisfaction or dissatisfaction towards specific services is surmised.

### The Gaps Model

Zeithaml et al. (2006) say that customer expectations are standards or reference points that customers bring into the service experience,

where as customer perceptions are subjective assessments of actual service experiences. The Gap Model draws a comparison between the qualities of a service that a customer expects to receive with the actual level of perceived service performance. The distinction between disconfirmation paradigm, as it is called in the customer satisfaction literature and as a Gap Model in the service quality literature have been highlighted in (Iacobucci et al. 1995). The Gap Model identifies five gaps where there may be a shortfall between expectation of service levels and perception of actual service delivery (Koni et al. 2013).

Customer expectations need to be properly understood to be able to successfully manage them and service gaps should be identified from a customer perspective (Miremadi et al. 2011).

The five gaps of service quality are briefly enunciated as follows:

- (a) Gap 1 is the difference between the actual expectation of customers and what the service marketer perceived as expectation of customers.
- (b) Gap 2 is the difference between marketer perception of customer expectations and the translation of those perceptions into service quality specifications.
- (c) Gap 3 is the difference between the customer service quality specifications and the actual service delivered by the marketer.
- (d) Gap 4 is the difference between the actual service delivery and what is communicated to the customer.
- (e) Gap 5 is the difference between the customer perceived service and customer expected service.

The immediate focus of this study is to evaluate the Gap 5 service quality gap in a higher education context. The Gap 5 is the discrepancy between the actual customer expectations for service quality and the customer perceptions of the actual service delivery. This gap forms the basis of a customer oriented definition of service quality, but other gaps are contributors to the service quality gap that may be perceived by customers (Nitecki and Herson 2000).

Parasuraman et al. (1988) originally proposed ten dimensions of service quality with five basic gaps to be analyzed and these are: Tangibility, Reliability, Responsiveness, Competence, Courtesy, Credibility, Security, Access, Communica-

tion and Understanding the consumer. Their research was later refined leading to the development of the SERVQUAL scale which measures customers' perceptions of service quality. The original ten dimensions were later condensed into five dimensions and these are:

- *Tangibles*: Appearance of physical facilities, equipment, personnel, and communication materials
- *Reliability*: Ability to perform the promised service dependably and accurately
- *Responsiveness*: Willingness to help customers and provide prompt service
- *Assurance*: Knowledge and courtesy of employees and their ability to convey trust and confidence
- *Empathy*: Caring, individualized attention the firm provides its customers

#### RESEARCH METHODOLOGY

This study aims to measure students' and staff expectations and perceptions of service quality to determine their satisfaction in a higher education institution. The survey is the method of data collection and interpretation. The study used a sample of 99 respondents from a University in South Africa to obtain the score for each of the 26 expectation items.

#### Respondents

The sample taken at the satellite campus was made up predominantly by students as compared to staff and the respondent's profile is found in Table 1. A total of 99 questionnaires were collected of which 79 (79.8%) were constituted by students and 20 (20.2) questionnaires were from the staff. The distribution of age groups was that the 22-26 years were modally represented at 44.4% and this was followed by the 17-21 years (27.3%). There were more females (60.6%) than males (39.4%) that participated in the survey. The Black race group was overwhelmingly represented as 89% of the sample followed by White (4%), Asian (3%) and Coloureds (3%). We find that there were more 2<sup>nd</sup> year students (54.4%) than 3<sup>rd</sup> year students (45.6%) and there was an even split as academic and administrative staff were both represented at 50% each amongst the staff component of the sample. It must also be stated that only 20 staff participated in this survey.

**Table 1: Respondent's profile**

<i>Variable</i>	<i>Frequency (N)</i>	<i>Percentage (N %)</i>
<i>Age</i>		
17-21yrs	27	27.3
22-26yrs	44	44.4
27-31yrs	10	10.1
32-36yrs	2	2.0
> 37 yrs	16	16.2
<i>Gender</i>		
Male	39	39.4
Female	60	60.6
<i>Race</i>		
White	4	4.0
Black	89	89.9
Asian	3	3.0
Coloured	3	3.0
<i>Year of Study</i>		
2 <sup>nd</sup> year	43	54.4
3 <sup>rd</sup> year	36	45.6
<i>Type of Staff</i>		
Academic	10	50.0
Administration	10	50.0

#### Instrument and Measurement

The SERVQUAL survey comprised of two sections that is, customer service expectations of university services and customer service perceptions of the service received from the university. In the service expectations section, respondents were asked to indicate on a seven-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = mildly disagree, 4 = neutral, 5 = mildly agree, 6 = agree and 7 = strongly agree) the extent to which they believe an ideal university possesses the characteristics described in the statements. The perceptions section required respondents to indicate the extent to which the university possesses the characteristics described in the statements. The survey was divided into five dimensions:

**Dimension 1:** Physical and Academic Services – the physical facilities and the ability to perform the promised service reliably and accurately. These statements (1-10) encompass attributes of *Tangibles and Reliability* (Parasuraman 2004: 46).

**Dimension 2:** Commitment to Serve – the willingness to help the customer and provide prompt service. These statements (1-5) encompass the attributes of *Responsiveness* (Parasuraman 2004: 46).

**Dimension 3:** Human Factors – the provision of caring, individual attention to customers. These statements (1-4) encompass the attributes of *Empathy* (Parasuraman 2004: 46).

**Dimension 4:** Visual Aspects – the appearance of equipment, personnel and communication materials. These statements (1-4) encompass the attributes of *Tangibles* (Parasuraman 2004: 46).

**Dimension 5:** General Attitudes - the knowledge and courtesy of employees and their ability to convey trust and confidence. These statements (1-3) encompass the attributes of *Assurance* (Parasuraman 2004: 46).

### Data Analysis

The SERVQUAL survey was used to measure service quality and the assessment involved computing the difference between the ratings assigned to the expectations and perceptions statements, that is,  $SQ = P - E$  (Youseff et al. 1995). An average score was calculated for each response on the statements in both the expectation and perception section of the SERVQUAL survey based on the seven-point Likert scale. The statistical tests were administered on IBM SPSS version 20.0, as the statistics on SPSS are equipped to handle empirical data. The Mann-Whitney statistical test was used to draw comparisons and to identify any significant differences. This test is used extensively for comparing the differences between two independent

samples and in the case of this study it is staff versus students.

### Reliability

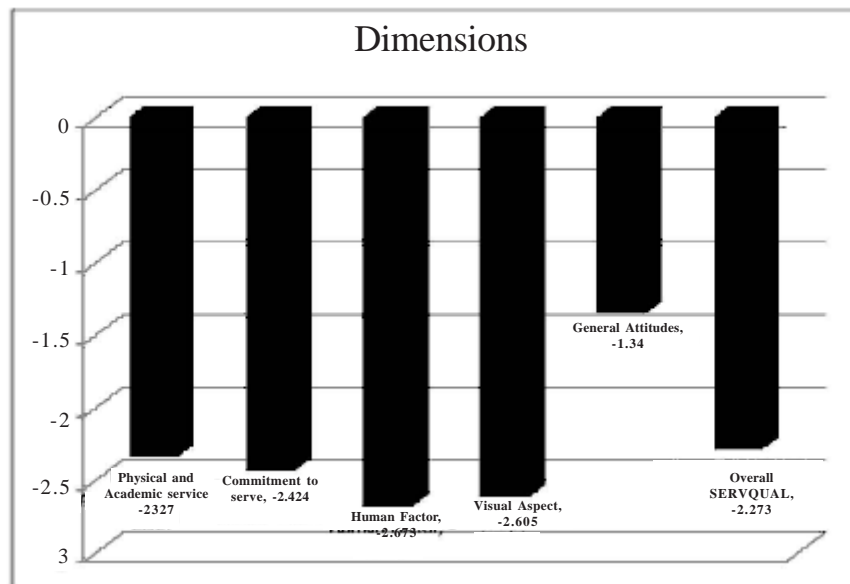
Cronbach's alpha was also calculated and shown in Tables 2 and 3 as part of the reliability test to assess how valid the results were and will we get similar results to generalize if we increased the sample size. A value of 0.7 or higher is a very good value that can lead us to say that we will get the same results if we carried out this

**Table 2: Overall Cronbach alpha**

Item	Questions	Cronbach Alpha
Overall	1-26, 1-26	0.9077
Expectations	1-26	0.8960
Perceptions	1-26	0.9584

**Table 3: Cronbach alpha of dimensions**

Dimensions	Expectations Cronbach Alpha	Perceptions Cronbach Alpha
Physical and academic service	0.878	0.899
Commitment to serve	0.804	0.918
Human factor	0.744	0.847
Visual aspect	0.813	0.808
General attitudes	0.842	0.810



**Fig. 1. SERVQUAL index**

**Table 4: Overall dimension score**

	Statement	Perceptions	Expectations	Difference/ Factor Score	Factor Score
		Mean	Mean		
<i>Dimension 1</i>	1	6.39	6.34	0.05	
	2	6.25	6.57	-0.32	
	3	2.62	6.45	-3.83	
	4	2.81	6.33	-3.52	
	5	4.22	6.33	-2.11	
	6	3.18	6.08	-2.9	
	7	4.38	6.16	-1.78	
	8	3.31	5.64	-2.33	
	9	2.92	6.07	-3.15	
	10	3.13	6.51	-3.38	-2.327
<i>Dimension 2</i>	1	3.22	6.23	-3.01	
	2	4.23	6.26	-2.03	
	3	3.38	6.04	-2.66	
	4	3.36	5.77	-2.41	
	5	3.65	5.66	-2.01	-2.424
<i>Dimension 3</i>	1	3.37	5.9	-2.53	
	2	3.17	6.83	-3.66	
	3	3.81	5.97	-2.16	
	4	3.59	5.93	-2.34	-2.6725
<i>Dimension 4</i>	1	3.96	6.08	-2.12	
	2	3.98	5.95	-1.97	
	3	2.74	6.05	-3.31	
	4	2.88	5.9	-3.02	-2.605
<i>Dimension 5</i>	1	4.58	6.27	-1.69	
	2	5.13	6.23	-1.1	
	3	4.99	6.22	-1.23	-1.34

survey with a larger sample of respondents. The Cronbach's alpha was calculated for the perceptions, expectations and then the combined questions (perceptions 1-26 and expectations 1-26).

The Alpha values seem indicate a good internal consistency amongst the questions.

## FINDINGS AND DISCUSSION

Table 4 and Figure 1 show the factor score for each of the five dimensions as well as the factor score for each statement from the five dimensions. The scores indicate that the expectations have all exceeded the perceptions by roughly 1 or 2 units. The largest differences are with respect to Responsiveness (-2.424), Visual Aspects (-2.672) and Tangibles (-2.605).

Graphically the SERVQUAL index is shown as:

The Gap analysis shows in Table 5 that there is a significant difference between the expectations and perceptions of the respondents. There are a noticeable large number of gaps which is evident across the dimensions of the SERVQUAL index indicative of a discrepancy between the expectations and perceptions of the respondents.

**Table 5: Overall SERVQUAL index**

Dimension	Score
Physical and academic service	-2.327
Commitment to serve	-2.424
Human factor	-2.673
Visual aspect	-2.605
General attitudes	-1.340
Overall SERVQUAL	-2.273

### Analysis of the Physical and Academic Gap

This was the second smallest gap of the five dimensions. The overall gap score was -2.327. The largest contributor to this difference between expectations and perceptions were the statements that; An excellent university provides students health care (-3.83) and An excellent university has a pleasant campus-environment (-3.52).

### Analysis of the Commitment to Serve Gap

This dimension was the third highest gap score. The overall gap score was -2.424. The statements that contributed extensively to this overall score were; An excellent university



shows interest in solving students' problems (-3.01) and Employees of an excellent university are ready to help (-2.66). This is indicative of the satellite campus showing a genuine interest in their commitment to serve their staff and students.

#### **Analysis of the Human Factor Gap**

This dimension had the largest overall gap score of -2.673. This is a serious issue and care must be taken to resolve these problems to enhance the service quality of this dimension. The highest statement gaps were at:

An excellent university applies discipline to everybody (-2.53)

Excellent universities provide accurate and timely information. (-3.66).

#### **Analysis of the Visual Aspect Gap**

This dimension had the second highest overall gap score of -2.605. The statements that contributed to this score were Employees at an excellent university are neat-appearing (-3.31) and Materials associated with the service (such as pamphlets or statements) of an excellent university will be visually appealing (-3.02).

#### **Analysis of the General Attitudes Gap**

This overall service gap score was the lowest of all the five dimensions at -1.34. The highest statement gap score was at -1.69 and this was the statement; Excellent universities have good admission-procedures to recruit qualified students.

#### **Comparison of Staff versus Students**

The Kolmogorov Smirnov test was used to ascertain whether the perceptions and expectations follow a Normal distribution or not. This would then permit the use of parametric or non-parametric tests on the data. The results reveal that non-parametric tests are permissible on the data since the p-values of the test are all less than 0.05. Hence we make use of the Mann Whitney U test to test for differences between the satellite campus' students and staff in their perceptions and expectations.

$H_0$ : there is no difference between the satellite campus staff and students with respect to their perceptions and expectations

$H_1$ : there is a difference between the satellite campus staff and students with respect to their perceptions and expectations

At the 5% significance level we will reject  $H_0$  for all the questions where p-values are less than 0.05 (shaded in the table) and we conclude that there is a difference between the satellite campus staff and students with respect to their perceptions and expectations for these questions only.

### **CONCLUSION**

This study has measured the expectations and perceptions of students and staff in order to gauge the service quality at a satellite campus of a higher education institution. All five dimensions, physical and academic services; commitment to serve; human factors; visual factors and general attitude revealed that both students and staff are dissatisfied with the service quality received at the DUT. The findings reveal that, on average, customers had high expectations in assurance, responsiveness and reliability dimensions and their highest perceptions were found in the empathy dimension. The study opens the door to conduct similar studies across other public and private universities which have satellite campuses and establish comparison of the results with this study. Additionally, the results of this study have started efforts to measure and compare student satisfaction regarding services provided at other universities in South Africa. Replication studies using large samples would be useful in order to corroborate this study's findings and to address the limitation of the study for a single case study.

### **RECOMMENDATIONS**

The recommendations outlined in this paper are in keeping with current literature on service quality and are aimed at reducing service quality gaps within a particular context of DUT's satellite campuses.

*Physical and Academic Services* - Improve health care facilities and the campus' physical environment in order to better their service quality to both staff and students.

*Commitment to Serve* - Management to institute more stringent measures to resolve service quality problems and also be swift by hav-

ing an acceptable turnaround time. A point worth emphasizing is that staff and students are the life blood of any educational institution and care must be taken to ensure staff and students are well served.

*Human Factor* - Two recommendations are provided here, firstly there should be quicker dissemination of information using technology. Secondly, a stronger stance on discipline is required to reduce lawlessness and there must be a constant awareness made to staff and students concerning the code of conduct that must be adhered to at the satellite campuses. This can be rectified by Management addressing current policies and attempting to amend or revamp these policies.

*Visual Aspect* - Staff must be encouraged to dress in a professional manner and the materials associated with service at the satellite campus must be re-looked at for improved designs, success stories and what is beneficial about being a part of the satellite campus.

*General Attitudes* - The satellite campus needs to look at new admission procedures such as online admissions to further enhance of their service quality if they are to stay competitive in the tertiary education sector. A culture of service excellence needs to be inculcated in the strategic plan of the university.

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## APPENDIX 1

	Mann-Whitney U	Z	Asymp. Sig. (2-tailed)
<i>Expectations</i>			
An excellent university has complete and modern laboratories	555.000	-3.056	.002
An excellent university has modern library with complete collection	541.000	-3.223	.001
An excellent university provides students health care	543.000	-3.057	.002
An excellent university has a pleasant campus-environment	566.500	-2.510	.012
An excellent university provides practical and applied-oriented courses	550.500	-2.638	.008
An excellent university performs the service right the first time	540.000	-2.669	.008
An excellent university provides their service at the time they promise to do so	605.500	-2.182	.029
Administrative services of an excellent university will provide error-free records	681.000	-1.245	.213
Employees of an excellent university will tell students exactly when services will be performed	558.500	-2.455	.014
An excellent university has qualified lecturers	734.500	-1.032	.302
An excellent university shows interest in solving students' problems	562.500	-2.544	.011
Employees of an excellent university provide quick and prompt service	555.500	-2.583	.010
Employees of an excellent university are ready to help	743.000	-.717	.474
Employees of an excellent university are never too busy to respond to requests	599.000	-2.001	.045
An excellent university gives individuals attention	659.500	-1.433	.152
An excellent university applies discipline to everybody	635.000	-1.737	.082
Excellent universities provide accurate and timely information	567.000	-2.438	.015
Excellent universities create harmonious relationships among staff and students	678.500	-1.287	.198
An excellent university develops democratic campus regulations	616.000	-1.868	.062
An excellent university has modern looking equipment	458.500	-3.455	.001
The physical facilities of an excellent university are visually appealing	526.000	-2.715	.007
Employees at an excellent university are neat-appearing	408.500	-3.810	.000
Materials associated with the service (such as pamphlets or statements) of an excellent university will be visually appealing	618.000	-1.829	.067
Excellent universities have good admission-procedure to recruit qualified students	646.500	-1.661	.097
Lecturers of excellent universities assess and evaluate student's achievement objectively	641.500	-1.804	.071
Employees of an excellent university treat students courteously	656.500	-1.557	.119
<i>Perceptions</i>			
DUT has complete and modern laboratories	366.500	-4.160	.000
DUT has modern library with complete collection	376.500	-3.948	.000
DUT provides students health care	657.000	-1.407	.160
DUT has a pleasant campus-environment	332.000	-4.250	.000
DUT provides practical and applied-oriented courses	560.500	-2.250	.024
DUT performs the service right the first time	357.000	-4.026	.000
DUT provides their service at the time they promise to do so	374.500	-3.975	.000
Administrative services at DUT provide error-free records	463.000	-3.104	.002
Employees of DUT tell students exactly when services will be performed	383.500	-3.796	.000
DUT has qualified lecturers	493.500	-2.837	.005
DUT shows interest in solving students' problems	310.500	-4.433	.000
Employees of DUT provide quick and prompt service	379.500	-3.825	.000
Employees of DUT are ready to help	369.000	-3.913	.000
Employees of DUT are never too busy to respond to requests	399.500	-3.662	.000
DUT gives individuals attention	339.500	-4.229	.000
DUT applies discipline to everybody	541.500	-2.407	.016
DUT provides accurate and timely information	515.000	-2.649	.008
DUT creates harmonious relationships among staff and students	560.500	-2.239	.025
DUT develops democratic campus regulations	637.000	-1.579	.114
DUT has modern looking equipment	419.000	-3.586	.000
The physical facilities of DUT are visually appealing	457.000	-3.183	.001
Employees at DUT are neat-appearing	729.000	-.782	.434
Materials associated with the service (such as pamphlets or statements) of DUT are visually appealing	506.500	-2.711	.007
DUT has good admission-procedure to recruit qualified students	650.500	-1.463	.144
Lecturers of DUT assess and evaluate student's achievement objectively	522.000	-2.574	.010
Employees of DUT treat students courteously	394.000	-3.697	.000