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STUDENTS' SATISFACTION OF CAMPUS SHUTTLING BUS SERVICES: A QUALBUS APPROACH

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Abstract
The general aim of this research was to ascertain the relationship between service quality and customer satisfaction. This was ascertained with the use of QUALBUS dimensions and how each influences student's satisfaction. The purpose and reasons for using campus shuttle were also elucidated. The research methodology was a cross sectional survey at the two designated bus stops for the University of Cape Coast's bus shuttling service at Old site (South campus) and Science (North campus) of 300 questionnaires through simple randomly sampling. The reliability of the study was tested by cronbach's alfa. Frequency, percentage, correlation and regression were used for the data analysis. The results of the study indicate that 55% of the respondents were male; 70.2% were aged between 20-24years; 67.3% used the shuttle every other day; 50.5% used the campus shuttle because of the lower transport fares; 83.7% used the campus shuttle for educational reasons. Furthermore the results revealed that only reliability variable has a significant relationship with student satisfaction because it has a p-value smaller than $\alpha = 0.05$. Attempts to improve on service quality to influence student satisfaction should be directed at assurance, tangibility, empathy and receptivity variables. The study could have looked all passengers' satisfaction coupled with an in-depth interview of the transport officers.
Keywords: Service quality, students' satisfaction, Campus shuttle bus, QUALBUS.

1. INTRODUCTION

An efficient transportation system has a significant impact on the quality of life, opportunity for recreation, education, social and businesses. Passengers have varying competing means of transportation. The most used means of transportation apart from walking is by public transport which includes taxi, minibus and paratransit in developing countries. The majority of public transportation in developed countries is usually funded by the state where both capital and operating costs are subsidized.

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Public transports in developing countries are partly funded by the states and there are a number of privately owned operators resulting in greater diversity in service provision (Agyeman, 2013). Its services are not scheduled, planned as it is in the developed countries.

Most government funded public transport services are bedeviled with a lot of challenges such as poor management, financial constraint and apathy towards state owned enterprises (see Abane, 2009; Baah-Mintah & Adams, 2012). For instance, in Ghana, most of the buses allocated to the MMT and ISTC are not operational. This does not only affect the profitability of such a venture.

The passengers are the most hit as they are left with no option than to make use of privately owned operators with high transport fares. Universities are not left out in the provision of transport services on campus to students and other passengers in order to cushion the efforts of the government and private operators. Many universities are now taking the lead to identify and develop strategies that help to sustain the quality of campus life (Toor & Havlick, 2004) in terms of students commuting.

While universities have the ability to implement policy that effects how students arrive and depart from campus, the university cannot overlook the growth management image it conveys to the public. By integrating alternative forms of transportation, the university can influence the current travel patterns of students and their future travel practices.

As universities continue to experience growth in student population, automobile usage will continue to rise. As a result, this rise has direct effects on vehicle congestion, parking shortages, and increased pollution (Juarez, 2011).

For a campus shuttle service to attract new riders and shift students from vehicles, services must meet their needs. This is accomplished through increased frequency and direct routes serving the campus (Bond & Steiner, 2006) and to increase students' access as well as engage students in local community activities (Brown et al., 2001). More so, as campus shuttle service is less expensive compared to the privately owned operators, students are expected to patronized it more than the relatively expensive ones. It is not surprising to see students queuing at the two terminals where the campus shuttle takes off. During this period, taxis drivers leave their conventional stations to pick students that might be in haste to their destinations.

Furthermore, these two bus terminals lack seat-outs and shelter for passengers. As students leave for lectures on weekdays, there are long queues in the morning from 8.00am-9.00 at Old site and dwindles as the day wears on. Similar queues build up at the new site around 15.00-16.00pm as most students might be returning to their hostels or halls of residence.

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Studies such as Aidoo et al (2011); Baah-Mintah & Adams (2012); Agyeman (2013); Poku- Boansi and Adarkwa (2013) and Kwabena et al (2013) have been conducted to assess quality of public transport service on selected routes and cities in Ghana. But none of these addresses campus shuttle service in Ghana. Some of these studies used modified SERVQUAL model and other ad hoc methods to assess quality of service.

None used the QUALBUS approached specifically designed to measure quality of bus service. It is against this background that the study seeks to ascertain students' satisfaction of campus bus shuttling services provided by the management of University of Cape Coast. Furthermore, the specific objectives are to elucidate the purpose and reason for using campus shuttle; to analyze the dimensions of QUALBUS scale influencing student's perception of service quality and analyze the relationship between QUALBUS dimensions and students' satisfaction of campus shuttle service.

The hypotheses for this study are as follow:

H1: There is a significant relationship between reliability and student satisfaction.

H2: There is a significant relationship between assurance and student satisfaction.

H3: There is a significant relationship between tangibility and student satisfaction.

H4: There is a significant relationship between empathy and student satisfaction.

H5: There is a significant relationship between receptivity and student satisfaction.

2. CONCEPTUAL AND THEORETICAL PERSPECTIVES

Service as a series of processes lead to an outcome meant to solve customer problems. The customer problems may be partly solved in the course of delivering the service or while the service is perceived. In order for this to take place there should be a medium for the service to be delivered and perceived. To Bosch (2009) these are organizations which meet the needs of society and are designated as "public services".

Shuttle bus service as "public service" uses small buses or vans for public mobility (Rohani et al., 2013). It is used for shorter trips. Rohani, et al (2013) posit that various cities in different countries such as Hong Kong, Buenos Aires, Calcutta (India), Manila (Filipina), Istanbul (Turkey) and Cairo use a mini bus operation service as city shuttle services.

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Campus shuttle service as a program is necessitated by a couple of important factors. One of such is off-campus housing based on student density (Juarez, 2011). Another reason is the location of halls of residence or hostels and lecture rooms as the case is for the University of Cape Coast.

The University of Pittsburgh transit program in USA allows students to move away from housing located near the university and into outlying areas that have better housing opportunities and lower rent (Brown et al., 2001).

TABLE 1 - QUALBUS ATTRIBUTES

QUALBUS DIMENSIONS	ATTRIBUTES
1. Reliability	1. The shuttle bus always arrives at the destination on time. 2. The bus never breaks down on the road. 3. Customers don't queue to buy a ticket 4. The shuttle buses have regular schedules. 5. Drivers are always polite.
2. Assurance	6. Customers feel safe in their transactions with staff while obtaining ticket 7. Drivers have in-depth occupational knowledge of their jobs. 8. The behavior of driver instills confidence in the passengers
3. Tangible	9. Drivers are neatly dressed and smart 10. Shuttle buses have adequate shed for customers obtaining tickets 11. Shuttle buses have spacious seats for passengers on board 12. Shuttle buses are well maintained and neat 13. Shuttle buses have ample legroom and footspace
4. Empathy	14. Campus Shuttle always look after the best interests of their customers 15. Campus Shuttle has operating hours convenient to all their customers. 16. It is easy to find and access the bus station/terminals/waiting points.
5. Receptivity	17. Drivers provide individualized attention to help customers. 18. Transport section always informs people of availability of services and changes in prices in advance. 19. Transport section can provide timely and efficient service. 20. Communication with customers is clear and helpful. 21. Drivers are always willing to help customers.

Source: Perez et al., (2007); Kian et al., (2012); Ojo et al., (forthcoming).

Juarez (2011) identifies four practical ideal models in the literature assessing university transit program best practices in the US. This includes the following key categories: (1) operations model, (2) funding model, (3) scope of service model, and (4) environmental responsiveness model. QUALBUS as the short term of Quality of Bus Services falls under the third category. It was developed by Perez et al (2007). The study adapted the SERVQUAL and SERVPERF scale to build up a new model QUALBUS which is suitable for assessment of the bus services (Kian et al., 2012). All the five dimensions of SERVQUAL were included in the QUALBUS model which is tangibility, reliability, receptivity, assurance and empathy. The model measures the perception of service quality like SERVPERF without

considering the expectation components of SERQUAL. In essence, the QUALBUS does not take into consideration the gap score between expectations and perceptions of service quality as espoused in SERVQUAL.

Customer satisfaction should be the ultimate goal of all firms because it is known to be one of the most important and serious issues towards success in today's competitive business environment, both theoretical and empirical research link it to a company's market shares, performance or organizational profitability and customer retention (Ooi, et al., 2011). There is a close relationship between service quality and customer satisfaction.

Researchers in general acknowledge that customer satisfaction is based on the level of service quality delivery (Khurshid et al., 2012; Islam et al., 2012) while Asubonteng et al (1996) on the other hand supports the notion that satisfaction leads to quality.

3. STUDY AREA AND RESEARCH METHODOLOGY

University of Cape Coast is one of the foremost public universities in Ghana set up to churn out educationists in the country. It is located in the erstwhile capital of Ghana, Cape Coast, Central Region. The university is divided into two connected by a road from south to north. More than 30% of the population of students stays in halls of residence located in the north and south campuses.

The university has programmes for undergraduate and post graduate in agriculture, arts, humanities, physical and social sciences. In this descriptive research, cross sectional survey was utilized by the administration of copies of pre-tested questionnaires students who patronized the campus shuttling bus service. The questionnaire was gathered through simple random sampling.

The researchers located at the bus stations accosted passengers while waiting for the bus. Each individual was chosen randomly and entirely by chance according to the tenet of simple random sample technique.

The administration of the questionnaires was carried out early November from 8am-6pm when lectures were at its peak in all departments. This is because there would be high commuting by students within the university environment necessitating the use of the Campus shuttle service.

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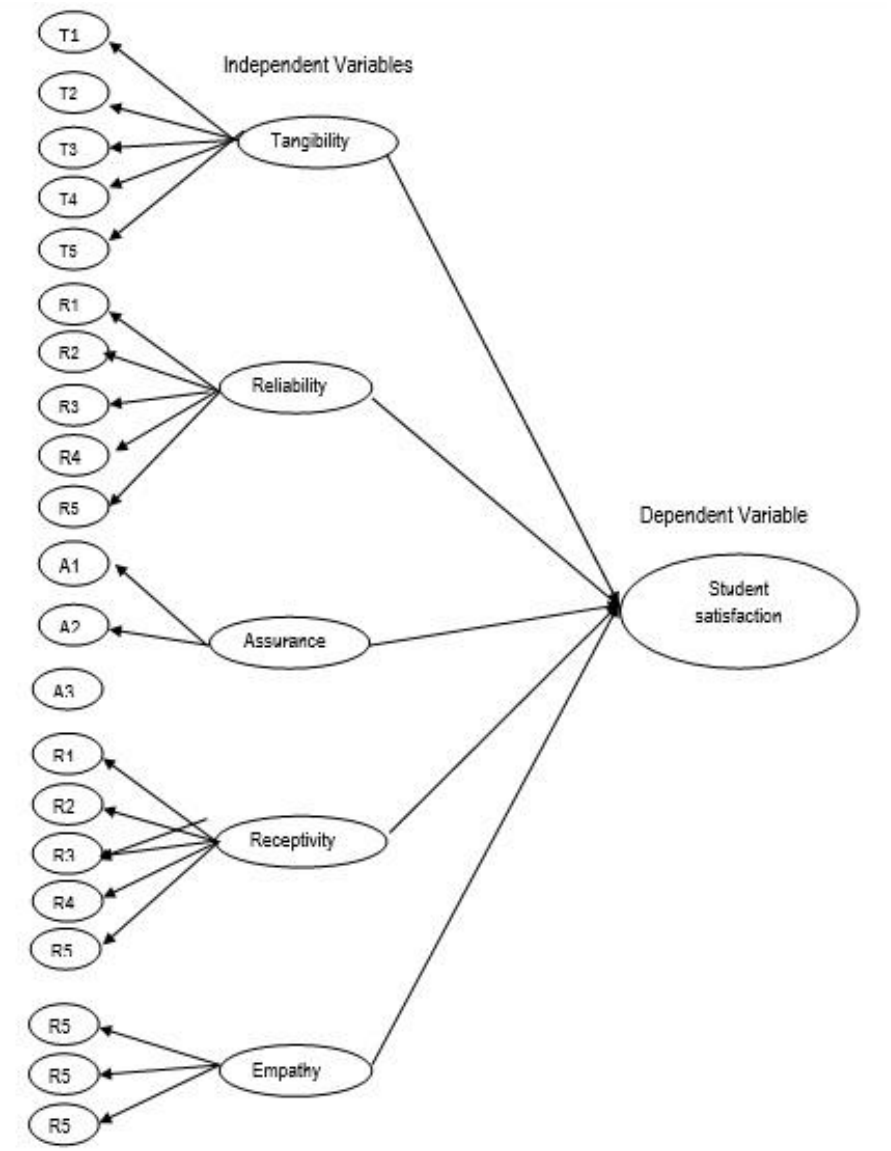

Source: Adapted from Perez et al., (2007); Kian, et al., (2012); Ojo et al., (forthcoming)

4. RESULTS AND DISCUSSIONS

It is revealed in Table 2 that majority of the respondents are male representing 55% and 45% are female. The highest percentage of the respondents representing 70.2% is aged between 20-24 years, 21.1% are aged between 15-19 years, 6.2% are between 24-29years and the rest are above 30 years. The highest percentage of respondents representing 67.3% use the campus shuttle every other day, 21.6% use it about twice a week, 16.7% are occasional users and 5.6% use it once a day or more than once a day. The highest percentage of respondents representing

50.5% use the campus shuttle because of the lower transport fares, 15.3% use it because of safety/security, 11% use it because of the location of stations/locations, 8.1% use it for scheduling, 7.9% because of comfortability of the seat and the ample legroom of the buses, 5.7% use it because of speed and 1.4% use it because of disability friendliness. The highest percentage of respondents representing 83.7% use the campus shuttle for educational reasons, 7.9% use it for recreational, 6.4% for religious activities and 2.4% use it for reasons apart from these three.

TABLE 2 - BACKGROUND CHARACTERISTICS AND TRAVEL BEHAVIOR

Background characteristics	Frequency	Percentage
Sex		
Male	159	55
Female	130	45
Age		
15-19	61	21.1
20-24	203	70.2
25-29	18	6.2
Above 30	7	2.4
Frequency of patronage		
More than once a day	9	5.6
Once a day	9	5.6
Once every other day	109	67.3
About twice a week	35	21.6
Once a week	-	-
Occasional user	27	16.7
Frequency of use*		
Disability friendly	6	1.4
Comfort/(seating and legroom)	33	7.9
Location of terminal/stations	46	11
Scheduling	34	8.1
Lower Transport Fares	211	50.5
Safety/security	64	15.3
Speed	24	5.7
Purpose of use*		
Educational	287	83.7
Recreational	27	7.9
Religious	22	6.4
Others	7	2.4

* multiple response

TABLE 3 - MEAN ANALYSIS RANKING

Dependent variable	Mean	Standard deviation
Customer satisfaction	**2.05**	**0.81**
Independent variables		
Reliability	2.01	0.53
Assurance	2.25	0.61
Tangibility	2.39	0.61
Empathy	2.34	0.62
Receptivity	2.32	0.63

Source: fieldwork, 2013.

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The table 3 shows that, the independent variable customer satisfaction has the mean of 0.81. The table also reveals that among the five independent variables, tangibility has the highest means of 2.39. The next one is empathy with the mean of 2.34 and followed closely by receptivity with the mean of 2.32. In the fourth place is assurance with the mean of 2.25 and the variable which has the lowest mean of 2.01 is reliability.

4. HYPOTHESES TESTING

H1: there is a significant relationship between reliability and satisfaction

As indicated in table 4, the significant p-value for reliability is p=0.000 as the significant level is at 5%. This reveals that the p-value for reliability is less than α = 0.05. It means that H0 is being rejected as at 5% significant level. This proves that reliability dimension does influence the student satisfaction and there is a significant relationship between reliability and customer satisfaction. In the other hand, the Beta value for this dimension is .269 and stated as the highest Beta value. It means that reliability is the most influential dimension as compare to the other four dimensions.

TABLE 4 - MULTIPLE LINEAR REGRESSION ANALYSIS

Independent variables	**Standard Coefficients (Beta)**	***t* – value**	**Sig. (*p* – value)**
Reliability	.269	4.211	.000
Assurance	.045	.698	.486
Tangibility	.141	1.740	.083
Empathy	.058	.755	.451
Receptivity	.011	.147	.884

Source: fieldwork, 2013.

H2: there is a significant relationship between assurance and students satisfaction

The table further indicates that the significant p – value of assurance is .486. This value is higher than α = 0.05 which results in H0 being accepted as at 5% significant level. This proves that assurance dimension does not influence student satisfaction. Therefore, there is no significant relationship between assurance and customer satisfaction.

H3: there is a significant relationship between tangibility and student Satisfaction

The significant p – value for tangibility as shown in the table 4 is p = 0.083 which is greater than α = 0.05. As at 5% significant level, H0 is being rejected which means that tangibility does not influence the customer satisfaction. Therefore, there is a no significant relationship between tangibility and student satisfaction. Besides that, empathy has the Beta value of 0.058 and t – value of .755.

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H4: there is a significant relationship between empathy and student Satisfaction

For empathy, α = 0.05 is greater than the significant p – value which is p = 0.451 and H0 is not being rejected as at 5% significant level. This also means that assurance does not influence student satisfaction. Therefore, there is no significant relationship between empathy and student satisfaction.

H5: there is a significant relationship between receptivity and student Satisfaction

Also in Table 4, the Beta value for empathy is 0.011 and t – value of .147 and significance which is p – value is 0.884. The p – value is p = 0.884 which is greater than α = 0.05. Thus, H0 is not rejected as at 5% significant level. Therefore, there is no significant relationship between empathy and customer satisfaction. In conclusion, among the five independent variables, the most influential variable to student satisfaction is "reliability" since its holds the highest Beta value which is .269. The remaining four independent variables have p-values greater than α = 0.05. The table below is the summary for the results of hypothesis testing.

TABLE 5 - SUMMARY OF HYPOTHESIS

No	Hypothesis	***P* – value**	Findings
1	There is a significant relationship between reliability and customer satisfaction.	.000	Accepted
2	There is a significant relationship between assurance and customer satisfaction.	.486	Rejected
3	There is a significant relationship between tangibility and customer satisfaction.	.083	Rejected
4	There is a significant relationship between empathy and customer satisfaction.	.451	Rejected
5	There is a significant relationship between receptivity and customer satisfaction.	.884	Rejected

Source: fieldwork, 2013.

5. CONCLUSIONS AND RECOMMENDATIONS

Majority of the respondents for the study are male and aged between 20-24 years. Most of the respondents use the campus shuttle every other day because of the lower transport fares for mainly educational reasons. Multiple linear regressions were used to test the five hypotheses for the study. The study adapted the QUALBUS dimensions-reliability, assurance, tangibility, empathy and receptivity in Perez et al (2007) and Kian et al (2012). The results show that only reliability has a significant relationship with student satisfaction of campus shuttle bus services with p=0.000 smaller than α = 0.05. The other four independent variables have p-values greater than α = 0.05 and do not have a significant relationship with student satisfaction.

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The original QUALBUS in Perez et al's (2007) study was used to ascertain the relationship between QUALBUS and behavioural purchase intensions. Kian et al (2012) on the other hand espoused it by focusing on the relationship of QUALBUS with customer satisfaction. This study lent on the study of Kian et al (2012) conducted in Malaysia on public transport focusing more specifically on domestic bus as a mode of transport. Similarly, this study applied the QUALBUS model comprising of five dimensions with 21 attributes in relation to student satisfaction of Campus Shuttle Bus service provided by the management of University of Cape Coast. Hence, The QUALBUS framework was built.

The students indicated that campus shuttle bus service is of poor quality. The results portray that the students are not satisfied with the services. On this note, the transport section should look at the attributes of assurance, tangibility, empathy and receptivity to improve perception of service quality. This will help them to maintain the number of customers and woo new ones. Satisfied students will make positive recommendations to other students. The dual campuses and the location of halls/hostels of residence and lecture halls make commuting essential as the best alternative to campus shuttle is taxi. These taxis can carry only 4 passengers which will increase the volume of traffic within the campus and cause a decline in the revenue generation capacity of the agency running the campus shuttle bus.

For future study, researchers may focus on the differences in the expectation and perception of service quality and its relationship with customer satisfaction by maintaining the dimensions of five dimensions in this study. Future studies may also focus on customer satisfaction in more details. More so, this study focused on campus shuttle bus service in the University of Cape Coast, researchers may replicate this model in other universities in Ghana offering campus shuttle services to their students. A wider application of the QUALBUS may be used to assess the relationship between perception of service quality and customer satisfaction of state funded and private operators of intra or intercity bus services in Ghana.

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