Service Quality Attributes Affecting Passengers' Satisfaction with HIGER City Bus

By

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Abstract

Service quality and customer satisfaction are the growing concerns for business organizations throughout the world, and customer satisfaction studies have been proven to be essential tools in trying to optimize services provided to users. For transit agencies, as in other service industries, increase in customer satisfaction translates into retained markets, increased use of the system, newly attracted customers, and a more positive public image. To accomplish these ends, public transport needs reliable and efficient methods of identifying the determinants of service quality from the customers' perspective.

The study is an attempt to identify the factors determining quality in city bus transit, by using a modified SERVPERF approach, and examines passengers' overall satisfaction with HIGER city bus services. Therefore, a model depicting overall service quality was developed and tested empirically among the bus passengers. Factor and reliability (Cronbach Alpha coefficients) analyses were carried out to determine the validity and unidimensionality of the construct. Furthermore, associations between the passengers' satisfaction and service quality attributes were explored, and found to be statistically significant. While the dimension of 'reliability and complaint handling' emerged as the largest contributor in estimating overall service quality, overall satisfaction was contributed significantly by overall service quality.

Keywords: Service Quality, SERVPERF, Customer Satisfaction, HIGER Bus Service, Ethiopia.

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Introduction

The survival of any business in today's competitive world is highly dependent on its performance, which is further determined by the quality of services as delivered to the customers by the organization. On the other hand, effective customer service helps to develop satisfied customers those may build and maintain long lasting firm-customer relationships, while counting on profits on mutual understanding basis. Therefore, service quality and customer satisfaction become major issues for various service providers across all the sectors, including public transport, and considerable research has been conducted on both.

Notably, quality and satisfaction concepts have been linked to behavioral intentions related to customer purchase and loyalty, willingness to spread positive word of mouth, and complaint behavior (Olsen 2002; Kang, Nobuyuki, and Herbert 2004; Söderlund and Öhman 2005). Dunkel and Taylor (2003) treated customer satisfaction and service quality together as a function of customer's perceptions, expectations, and preferences. Thus, the customer perceives the level of service quality as being a function of the magnitude and direction of the gap between expected service and perceived service. Moreover, Norman (1984) and Shaw (1978) identified the unique importance of quality to service firms and demonstrated its positive relationship with profits, increased market share, return on investment, customer satisfaction, and future purchase intentions.

Therefore, in transit services too, an increase in customer satisfaction translates into retained markets, attracting the new customers, and developing favorable public image (TRB 1999). To accomplish these ends, public transport needs reliable and efficient methods for identifying determinants of service quality. Alternatively, while a number of scholars have posited that the objective of improving service quality is to minimize the gap that may exist between customers' desires and their actual experiences (Bolton and Drew 1991; Carman 1990; Karlftis Golias and Papadimitriou 2001), Todd (2008) reported that improved transit service quality:

- benefits existing transit passengers (who would use transit even without improvements);
- benefits new transit passengers (who would only use transit if service is improved);
- benefits society by reducing traffic problems (congestion, roadway and parking costs, consumer costs, accidents, energy consumption, and pollution);
- provides scale economies (increasing ridership can create a positive feedback cycle to improved service, increased public support, more transit-oriented land use, and further ridership increases); and
- benefits transit agencies by increasing fare revenue.

Additionally, an efficient and effective transportation system promotes urban development by providing adequate access and mobility. However, mobility in the developing world is often characterized by travel demand that far exceeds supply (Darido 2003). Addis Ababa, the capital city of Ethiopia, is not an exception to this reality, as the bus transport in the city is plagued by many problems. Fundamentally, the public transport in the city consists of conventional bus services provided by publicly owned Anbessa City Bus Enterprise (ACBE), minibuses and medium buses (HIGER) operated by the private sector, conventional taxis, and charter buses exclusively for the employees of large organizations.

The majority of bus users are expected to be those who have no access to alternative modes of transport, and, thus, captive to it. Furthermore, access to city bus transport in the city is reduced by long walking distance and long waiting times, largely due to inadequate service and route coverage, increasing population, poor road infrastructure, and financial constraints. Convenience thus, is severely compromised. Moreover, transit conditions lack comfort mainly because of loading conditions, and often hinder people from boarding at the desired time as crowding imposes relatively severe discomfort, particularly during peak hours.

As reported by Button (1993) an improvement in the city transportation system helps developing countries to be more efficient and productive; therefore, an appropriate assessment of the current service provisions is required from passengers'

perspectives. Furthermore, by identifying the key dimensions that offer value and influence customer satisfaction, alternative bus service strategies can be devised to attract more passengers to the service. In turn, this would alleviate the present congestion and related problems faced by the city.

Therefore, the study is designed to explore the factors determining city bus service quality. It examines the empirical relationship between service quality attributes/dimensions and passenger satisfaction in the context of HIGER city bus services. The specific objectives of the study are as follows:

i. To identify the key factors determining service quality in the context of city bus transportation.

ii. To assess the reliability of service quality measures in the context of city bus transit.

iii. To evaluate overall service quality and satisfaction as perceived by the users of HIGER city bus service.

iv. To explore the association between service quality attributes and overall customer satisfaction.

Review of Related Literature

Services may be provided by private or public agencies. The two economic units that are required for a service to be produced are the consumer and the producer (Hill 1987). While the consumer can not retain the actual service after it is produced, the effects of service can be retained. Services have a number of characteristics that make them so different from products. Some of the most commonly accepted characteristics are: intangibility, heterogeneity, perishability, simultaneity of production and consumption and ownership (Palmer 1995; Parasuraman Zeithaml, and Berry 1985). Moreover, these characteristics enhance the importance of certain marketing strategies that are unique to services marketing, such as service customization, managing evidence, making the service tangible and synchronizing supply and demand patterns.

On the other hand, the rapid growth of service sectors all over the world, and the deregulation of many service industries have led researchers from an interest in quality issue to the importance of acquiring more understanding about service quality. However, many researchers defined service quality in

different ways. While Bitner, Booms, and Mohr (1994) define service quality as "the consumer's overall impression of the relative inferiority/superiority of the organization and its services," Cronin and Taylor (1992) view service quality as a form of attitude representing a long-run overall evaluation. Furthermore, Parasuraman, Zeithaml, and Berry (1985) defined service quality as "a function of the differences between expectation and performance along the quality dimensions." This has appeared to be consistent with Palmer's (1995) definition stating "service quality is a comparison of expectations with performance; it is a measure of how well the service level delivered matches customer expectations on a consistent basis."

Additionally, customers have expectations about the service that they receive from an organization, and it is widely accepted that the 'key' to good service quality lies in providing performance that meets or exceeds customers' expectations of the service. However, expectations are based on the following factors:

- The requirements for a particular product or service (Customers' wants and needs).

- A company's communication activities and image, which influence the expectations and the perception at the same time.

- Experiences with a service that the customer has had in the past.

Quality of service in public transport is defined as "the overall measure of perceived performance of transit service from the passenger's point of view" (May 2000). It reflects the transit-user perspective and is normally portrayed by a quantitative measurement or prediction of how a transit route, facility, or system is operating under specified demand, supply, and control conditions; and qualitative measurement such as accessibility, comfort, area coverage, and reliability (TRB 1999). Quattro (2004) considered that the quality of service for public transport industry contained two categories: users and non-users. Under the first category, quality consists of speed, reliability, comfort, convenience, safety, special services and innovations, while for the non-users, quality parameters include system efficiency, pollution and demand.

Added further, customer satisfaction is "the collective outcome of the customer's perception, evaluation, and psychological reaction to the consumption experience with a product or service" (Palmer 1995). Thus, there exists a general agreement that satisfaction is a person's feelings or pleasure or disappointment resulting from comparing a product's or service's perceived performance or outcome in relation to his/her expectation (Kotler 2003).

Additionally, the two main intangible assets of any venture, customer loyalty and corporate image, are to be obtained from real reward of customer satisfaction. If organizations want customer satisfaction, they must be willing to invest in it (Denton 1989). At the very least, businesses must monitor customer preferences and desires to help ensure customer satisfaction, as in many cases just the effort of monitoring seems to improve customers' satisfaction.

On the part of associating service quality and satisfaction, Parasuraman, Zeithaml, and Berry (1985) suggest that it may be the perception of service quality that leads to customer satisfaction i.e., if the customer perceives the service to be of high quality, he/she will be satisfied with it. Conversely, some others believe that if the customer is satisfied with the service, he/she perceives it to be of high quality, i.e., satisfaction is an antecedent of service quality (Bolton and Drew 1991). As a result, literature associated with services strongly emphasize the importance of service quality perceptions and the relationship between customer satisfaction and service quality. However, little empirical researches are available that demonstrate the importance of service quality dimensions in determining customer satisfaction (Levesque and McDougall 1996).

Gronroos (1984) argued that customers, while evaluating the quality of a service, compare the service they expect with perceptions of the services they actually receive. It has been argued that the quality of service is not a uni-dimensional construct, rather it incorporates various dimensions that relate to both core and augmented service offerings. Researchers such as Cronin and Taylor (1992), and Taylor and Baker (1994) argue that both the service quality and customer satisfaction are separate constructs, and present the following analysis:

- The dimensions underlying quality judgments are rather specific, whereas satisfaction can result from any dimension;

- Expectations of quality are based on ideas or perceptions of excellence, while a number of non-quality issues can help in forming satisfaction judgments;

- Quality perceptions do not require experience with the service or provider, but satisfaction judgments do;

- Quality is believed to have fewer conceptual antecedents than does satisfaction.

Furthermore, to measure both the constructs, while expectations of the customer were found to be as a direct contributor to determine the level of satisfaction, SERVQUAL, as proposed by Parasuraman, Zeithaml, and Berry (1988) and SERVPERF (Cronin and Taylor 1992) are mostly applied to measure service quality in various sectors (Newman 2001; Cui Lewis, and Park 2003). While the foundation for the SERVQUAL scale, is disconfirmation paradigm (maintains that satisfaction is related to the size and direction of disconfirmation of a person's experience vis-à-vis his/her initial expectations), SERVPERF questioned the conceptual basis of SERVQUAL and found it confusing with service satisfaction, and opined that expectation component of SERVQUAL be discarded. Therefore, while SERVQUAL consists of 44 items (22 expectations and 22 perception-based items) through which gap scores are being computed for five service quality dimensions, i.e., tangibles, reliability, responsiveness, assurance, and empathy, SERVPERF is a performance only (based on customer's perceptions of service delivery) measure to service quality.

However, there has been an extensive debate whether the approach of perception minus expectations (gap analysis) would be appropriate to use in determining service quality or assessing perception alone (performance based) would be sufficient. Some concerns about the SERVQUAL instrument were raised by Cronin and Taylor (1992), Bolton and Drew (1991), Teas (1993) and Babakus and Boller (1992). While SERVQUAL generally shows good stability, its five dimensions are not always generic (Carman 1990). The author argues that the collection of expectation data should be facilitated before the actual usage of the service by the customer, however, this is not much considered by the developers of SERVQUAL. Additionally,

Cronin and Taylor (1992) add that there are serious conceptual and operational drawbacks associated with the SERVQUAL model. They argued that the gap theory of SERVQUAL is supported by little empirical and theoretical evidence, which leads to the development of 'performance-based' service quality measurement (SERVPERF).

Churchill Tom, and Peter (1993) argue that because the SERVQUAL 'scores' are based on differences/gaps (perception-minus-expectation), problems of reliability, discriminant validity, and variance restrictions exist. Their findings showed that the scale failed to achieve discriminant validity from its elements, and the distribution of the SERVQUAL scores were reported as non-normal.

As, there have been other studies that failed to imitate SERVQUAL's standard dimensions and validity (Carman 1990; Babakus and Boller 1992), consideration of the 22 performance based items may adequately define the domain of service quality as being proposed by the developers of SERVPERF. Cronin and Taylor (1992) reported that the un-weighted performance-based SERVPERF scale is a better approach of measuring service quality than SERVQUAL. Also, they claimed that the scale's reliability ranged between .884 and .964, depending on industry type, and exhibited both convergent and discriminant validity. Further, they contended that the SERVPERF scale consistently outperformed the SERVQUAL scale in terms of reliability and validity, and this claim is very well supported by other researchers (Babakus and Boiler 1992; Babakus and Mangold 1992; Oliver 1993; Mehta et al., 2000; Paul 2003; Hong and Jun 2006; Peterson, Gregory, and Munch 2005; Bauman et al., 2007) adopted SERVPERF for their studies in various service sectors. However, the SERVPERF scale is yet to be empirically tested in as many industries as did the SERVQUAL.

Research Methodology

The study was conducted by securing the cooperation from the passengers and staff of HIGER city bus transport service. The target population of the study was the passengers of HIGER in the city of Addis Ababa, Ethiopia. In order to administer the

research, the city was divided into three areas based on the location of the major terminals/stops (namely, Legehar, Megenagna, and Mercato). The entire area covered by each bus terminal is considered as strata, and from these, 20 routes were randomly selected. Furthermore, systematic random sampling technique (every 5th passenger) was applied to select the respondents from selected routes.

In this way, a total of 320 respondents were contacted personally by the researcher while travelling on identified routes from 8:00 AM to 5:00 PM (Monday to Saturday), for about four weeks. Structured questionnaire (developed on the approach of SERVPERF and modified to city bus transport service with 33 items) was used to obtain relevant data from the respondents. The survey questions measured each attribute on a 7-point Likert-type scale (ascribing quantitative value to qualitative data for statistical analysis and interpretation) ranging from 1-'strongly disagree' to 7-'strongly agree' (with the mid points as moderately disagree, disagree, neutral, agree, and moderately agree). Additionally, the questionnaire maintained items to measure overall service quality and customer satisfaction together with a section on demographic profile. The questionnaire was originally developed in English and translated into the local language (Amharic) in consideration of a better understanding by respondents.

However, before adopting the instrument for the final study, a pilot study was carried out with 40 randomly selected passengers of HIGER bus service. This is to ensure that the service quality dimensions, as designed for the study, were valid in the context of city bus transport, and to correct the wordings of statements (if any) for better understanding by the respondents. Based on this, minor adjustments were made in the layout of questions, difficult to understand questions, and filling-up instructions. Finally, 304 returned questionnaires were found to be completely filled and retained for further analysis, while the remaining (16) were collected back as partially filled due to the termination of the journey of respondents in the middle and rejected for use in the final analysis.

Consequently, 31 questions were found as feasible and maintained in the final instrument (Table 1) under the dimensions of tangibility, reliability, complaint handling, responsiveness, trust, assurance, traveling convenience, facility,

and rationality. However, the system grouped them under six while exposed to factor analysis. Additionally, to check the internal consistency of the measures of determined dimensions, Cronbach coefficients (alphas) were computed.

Table 1. Modified SERVPERF dimensions/items

Dimension	Code	Items
Reliability & Compliant Handling	RLC1	• Service provider/staff are trained and responsible to passengers.
	RLC2	• Service provider/staff shows a sincere interest in solving passenger's problem.
	RLC3	• Timely follows up the route-plan/schedule.
	RLC4	• Buses are trusted and dependable.
	RLC5	• Service provider maintains procedures such as complaint boxes and help desks to receive/handle complaints.
	RLC6	• Complaint handling procedure at service provider is time effective.
	RLC7	• Service provider maintains short & straight procedure of complaint handling.
Responsiveness	RES1	• Service provider maintains easy ticketing and seat allotment.
	RES2	• Bus stops maintain supportive facilities in good condition for effective service delivery.

Table 1. *Cont'd.*

Dimension	Code	Items
Responsiveness	RES3	• Availability of bus schedule/route maps/numbers at bus stops.
	RES4	• Sufficient bus-stops/stands in different geographic areas and on various routes/lines.
	RES5	• Bus stops have proper shelter and place/benches for waiting passengers.
Traveling Convenience	TRC1	• Service providers have operating hours convenient to passengers.
	TRC2	• Frequency of service on various lines/routes within the city.
	TRC3	• Buses are clean and provided with curtain/screens to protect passengers from direct sunlight.
Tangibility	TAN1	• Up-to-date/ modern buses/facilities.
	TAN2	• Buses are in good condition (visually appealing).
	TAN3	• Staff (driver & cashier) are well dressed and appear neat.
	TAN4	• Bus maintains sufficient seats for passengers using the service.
	TAN5	• Bus interiors are attractive and free from dust/bad smells.
	TAN6	• Bus provides comfortable seating.
Trust & Assurance	TRA1	• Security measures against crimes (pick-pocketing, etc.) on buses.

Table 1. *Cont'd.*

Dimension	Code	Items
Trust & Assurance	TRA2	• Staff members are helpful and courteous in protecting passenger's interests.
	TRA3	• The skills of bus staff members instill confidence in passengers.
	TRA4	• Buses are not overcrowded to make the journey safe/pleasurable.
	TRA5	• Information availability by the service provider on schedule/routes through phone, mail, website, etc.
	TRA6	• Bus reserves few seats for senior citizens, the handicapped, ladies and soldiers.
Facility & Rationality	FAR1	• Leg space in the bus is sufficient for a comfortable journey.
	FAR2	• City bus transport is affordable (cheap).
	FAR3	• Environmental friendliness of buses (not polluting the environment).
	AR4	• Availability of entertainment facilities (FM radio, etc.) to make the journey pleasant.

Data Analysis and Findings

Descriptive statistics were applied to summarize mean scores of various dimensions predicting service quality, and demographic profile of the respondents. Factor analysis was carried out to assess the unidimensionality and validity of the constructs for the subsequent analyses. Additionally, multivariate analysis was performed to determine the contribution of each SERVPERF dimension in estimating overall service quality and satisfaction.

Scale Validity and Reliability

The principal components method of extraction (based on eigenvalue >1) with oblique rotation was employed, considering all the dimensions are conceptually linked (Hair et al. 1998), to perform factor analysis. All the scale items were found to be loaded into 6 factors (representing 62.39% of cumulated variance explained), with a factor loading of 0.50 and above, and perceived to be as service quality dimensions in city bus transit (Table 2). However, some of the conceived dimensions were reported to be overlapped to a certain degree with each other. This further facilitated to keep the internal consistency as high as possible. This is similar to what is being reported by Cronin and Taylor (1992).

Table 2. Exploratory factor analysis (Loadings)

Items	Reliability & Compliant Handling (RLC)	Responsiveness (RES)	Traveling Convenience (TRC)	Tangibility (TAN)	Trust & Assurance (TRA)	Facility & Rationality (FAR)
RLC1	**0.648**					
RLC2	**0.594**					
RLC3	**0.652**		0.573			
RLC4	**0.612**					
RLC5	**0.640**					
RLC6	**0.736**					
RLC7	**0.687**					
RES1		**0.808**				
RES2		**0.720**				
RES3		**0.725**				
RES4		**0.740**				
RES5		**0.701**				
TRC1			**0.667**			
TRC2			**0.812**			
TRC3			**0.583**			

Table 2. *Cont'd*

Items	Reliability & Compliant Handling (RLC)	Responsiveness (RES)	Traveling Convenience (TRC)	Tangibility (TAN)	Trust & Assurance (TRA)	Facility & Rationality (FAR)
TAN1				**0.620**		
TAN2				**0.644**		
TAN3	0.555			**0.661**		
TAN4				**0.631**		
TAN5				**0.677**		
TAN6				**0.714**		
TRA1					**0.693**	
TRA2					**0.639**	
TRA3			0.552		**0.618**	0.552
TRA4					**0.667**	
TRA5					**0.692**	
TRA6					**0.726**	
FAR1				0.575		**0.685**
FAR2						**0.534**
FAR3						**0.534**
FAR4						**0.817**

As suggested by Anderson and Gerbing (1988), scale reliability, dimensionality, and validity were computed to determine the adequacy of using the SERVPERF approach to assess customer perception of HIGER bus transport services.

Therefore, to review the internal consistency of the modified scale items, Cronbach coefficients (alpha) were computed and found to be 0.900 (Table 3), another indication of acceptability of the items. Moreover, all the service quality dimensions demonstrated internal consistencies between 0.670 for 'facility and rationality' and 0.809 for 'reliability and complaint handling'. This indicates that all the six dimensions maintain reasonable reliability. Furthermore, the statistics of "alpha if item deleted" is the Cronbach coefficient for the rest of the scale, after the corresponding item is excluded from the construct. The "alpha if item deleted" should increase if a spurious item is deleted.

Table 3. Scale reliability (Cronbach Alphas)

Dimensions	Items	Alpha coefficients for dimensions	Alpha coefficients if item deleted
Reliability and compliant handling	RLC1	0.809	0.778
	RLC2		0.767
	RLC3		0.785
	RLC4		0.807
	RLC5		0.791
	RLC6		0.770
	RLC7		0.786
Responsiveness	RES1	0.699	0.629
	RES2		0.662
	RES3		0.600
	RES4		0.674
	RES5		0.664
Traveling convenience	TRC1	0.700	0.641
	TRC2		0.553
	TRC3		0.634
Tangibility	TAN1	0.779	0.748
	TAN2		0.732
	TAN3		0.753
	TAN4		0.751
	TAN5		0.752
	TAN6		0.742
Trust and assurance	TRA1	0.750	0.639
	TRA2		0.646
	TRA3		0.648
	TRA4		0.667
	TRA5		0.704
	TRA6		0.750
Facility and rationality	FAR1	0.670	0.587
	FAR2		0.602
	FAR3		0.591
	FAR4		0.631
Reliability of the total scale			**0.900**

Respondents' Profile

The demographic profile of the respondents was found to be more or less diverse with almost half of them (49.3%) reported as male and the remaining (50.7%) as female (Table 4). While over half (52.6%) claimed to be in younger age group (18-25), almost one-third (32.2%) fell in the middle (26-35). On education, the majority (68.4%) of the respondents stated to hold a first degree/diploma, followed by 10th/12th completed (28.9%). Little less than half (48%) of the respondents were reported to be government employees, with little over one-fourth (26.35) who claimed to earn a monthly income below ETB 500. Furthermore, over half (54.6%) of the respondents reported to have been users of HIGER bus services for about 2 years while the remaining (45.4%) stated being users for one year or less.

Table 4. Personal profile of the respondents

Characteristics	Percentage (%)
Gender	
Male	49.3
Female	50.7
Age (in years)	
18-25	52.6
26-35	32.2
36-45	13.2
Above 45	2
Education	
Uneducated	0
Elementary	1.3
Characteristics	**Percentage (%)**
High School	28.9

Table 4. *Cont'd.*

Characteristics	Percentage (%)
Diploma/First degree	68.4
Masters and above	1.3
Occupation	
Student	17.1
Own business	16.4
Government employee	48.0
Private sector employee	18.4
Income (in ETB)	
Below 500	26.3
500-1000	23.7
1001-1500	22.4
1501-2000	12.5
2001-3000	11.2
Above 3000	3.9
Number of years of service usage	
Less than 1 year	54.6
1-2 years	45.4

Mean Scores of Performance Ratings

The average service performance, as computed for bus transport service (HIGER) on the six identified dimensions, together with overall service quality and satisfaction is given in Table 5.

Table 5. Descriptive statistics for service quality dimensions and satisfaction

Dimension/ Variable	Mean	Std. Dev.
RLC	2.797	1.001
RES	2.133	0.724
TRC	3.634	1.316
TAN	3.825	1.119
TRA	2.320	0.819
FAR	4.359	1.256
OSQ	3.336	1.089
OST	3.309	1.200

Note: OSQ - Overall Service Quality; OST - Overall Satisfaction.

Mean scores reveal that the transport service is poorly performed, maintaining below mid-point (less than 4 on a 7-point scale), on all service quality dimensions except 'facility and rationality' (4.359). More specifically, the service performance, as perceived by the respondents, was found to be considerably low in the areas of 'responsiveness' (2.133), 'trust and assurance' (2.320), and 'reliability and complaint handling' (2.797). The overall quality of service was also found to be perceived as below average (3.336) by the passenger respondents together with their overall level of satisfaction (3.309) with the HIGER bus service.

Modeling Overall Service Quality and Satisfaction

Before attempting to do regression analysis, correlation coefficients between independent SERVPERF dimensions and dependent variables (overall service quality and satisfaction) were computed (Table 6), as suggested by Croft (1983). All the

perceived dimensions of service quality were found to be significantly ($p<0.001$) associated with each other and overall service quality. Also, strong positive association ($r=0.571$, $p<0.001$) was reported between overall service quality and satisfaction. Similarly, significant associations between overall customer satisfaction and modified SERVPERF dimensions were reported ranging from a low with the dimension of 'responsiveness' (0.191) to a high with 'tangibility' (0.439).

Dimensions/ Variables	RLC	RES	TRC	TAN	TRA	FAR	OSQ	OST
RLC	1							
RES	0.299	1						
TRC	0.535	0.230	1					
TAN	0.668	0.345	0.565	1				
TRA	0.696	0.195	0.510	0.513	1			
FAR	0.584	0.227	0.550	0.628	0.469	1		
OSQ	0.501	0.308	0.374	0.463	0.406	0.350	1	
OST	0.394	0.191	0.375	0.439	0.291	0.239	0.571	1

Table 6. Summary of Correlation Coefficients

Note: All correlations are significant at 0.001 level (2-tailed).

The existence of significantly higher correlation coefficients for overall customer satisfaction and overall perceived service quality with all modified SERVPERF dimensions show that the constructs are both conceptually and empirically distinct from each other and determine strong predictive power in the present study.

Furthermore, the predictive validity of each scale dimension/item was checked by using regression analysis. For this purpose, the data were exposed to multiple regression analysis, by using SPSS 12.0. The system was given command to perform the analysis by applying hierarchical approach of

testing significant interaction effects over and above the simple effects of the independent variables.

As suggested by statisticians, if a correlation coefficient matrix demonstrates the degree of association between variables about 0.75 or higher, there may be the condition of multicollinearity, and must be rectified before using such variables as predictors in regression analysis. However, the level of associations in the study, as given in Table 6, were not found to reach this value; thus the analysis was assumed to be restraint from the unacceptable levels of multicollinearity.

Reliability and complaint handling ($\beta=0.260$, $p<0.001$) emerged as the most critical determinant to overall service quality, followed by 'tangibility' ($\beta=0.166$, $p<0.05$) and 'responsiveness' ($\beta=0.144$, $p<0.01$). This means that service qualities associated with 'reliability and complaint handling' such as responsibility and sincerity of service provider/staff towards passengers, timely follow up of the route plan, trusted and dependable buses maintained by the service provider, and effective complaint handling procedure are the aspects those passengers used in their assessment of HIGER city bus service quality. Additionally, an attempt was made to identify the contribution of each modified SERVPERF dimension together with overall service quality in predicting overall customer satisfaction (Figure 1).

On the part of independent dimensions of SERVPERF, 'tangibility' ($\beta=0.234$, $p<0.001$) was found to be contributed highest, followed by 'travelling convenience' ($\beta=0.164$, $p<0.01$), and 'facility and rationality' ($\beta=-0.160$, $p<0.01$). However, overall service quality was reported as the most significant determinant of passenger satisfaction in HIGER bus transit ($\beta=0.571$, $p<0.001$).
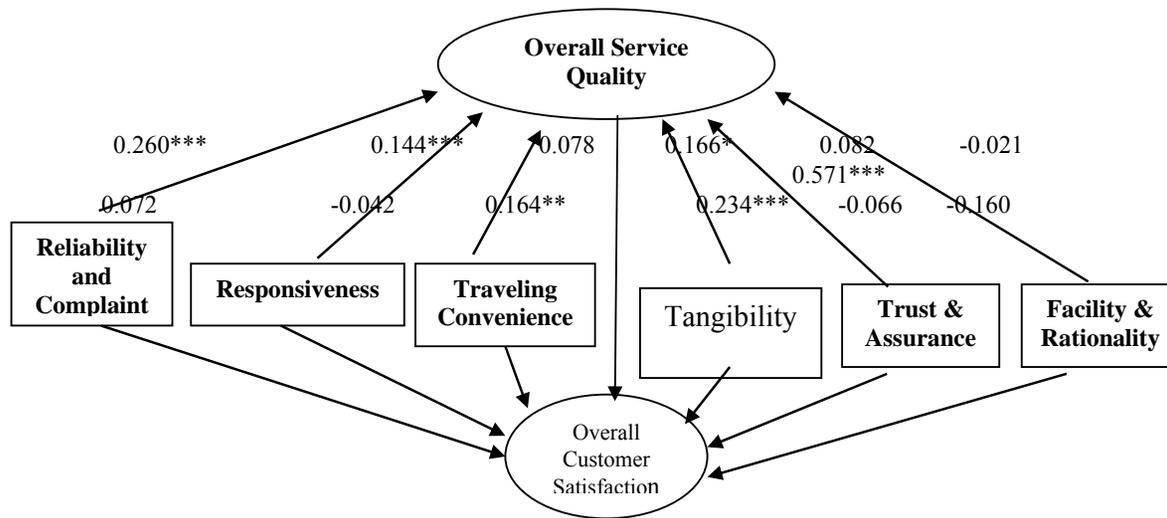
Fig. 1: Framework for Overall Service Quality and Satisfaction; *Note*: Figures represent standardized regression coefficients; *** Significant at 0.001 level; ** Significant at 0.01 level; * Significant at 0.05 level (2-tailed).

Conclusion

The purpose of the present research is to determine customer satisfaction with HIGER city bus services through customer perceived service quality.

Although this study has meaningful implications for improving the HIGER bus service, it is necessary to acknowledge its limitations. The main limitation of this research is that it is restricted to the city bus transportation service of HIGER, and that the results may not be generalized to other transportation service providers, e.g., Anbessa City Bus Enterprise. Second, due to financial, time and other constraints, the sample size is considered to be small. Thirdly, the instrument applied for gathering data from the respondents may account for some differences if the approach used were shifted to SERVQUAL (gap based measurement of responses), from the present approach of SERVPERF, the perception only measurement of bus service performance. Therefore, it is strongly recommended to check the applicability of the study results while replicating it by using a different approach and in various service sectors.

Regarding the results, the majority of the findings of the study indicate that there is a strong relationship between perceived service quality and customer satisfaction in the city bus transport of Addis Ababa.

By examining factor analysis, dimensional structure of reliability and complaint handling, responsiveness, travelling convenience, tangibility, trust and assurance, and facility and rationality were identified. Empirical results show that more than 62% of the variance is explained by the identified six dimensions of service quality. Also, the study suggests that modified SERVPERF dimensions have major implications for determining overall service quality and ensuring satisfaction of bus passengers.

The research results offer important insights relating to overall service quality and satisfaction, as measured using a seven-point Likert scale. The study revealed that there is a moderately low perceived service quality and passengers were somehow dissatisfied with the transport service provided by HIGER city bus enterprise. As noted by participants of the study, suffocation during transit that can cause communicable diseases to passengers, lack of sufficient seats, service irregularity, increasing transportation cost, and lack of concern in keeping passengers' interest by the service provider are some of the factors contributing negatively to passengers' overall satisfaction.

Hence, service providers need to do a lot with respect to these aspects of service quality in order to improve the overall level of service quality that may further ensure satisfaction on the part of passengers.

In order to study the relationship of overall quality of service with passenger satisfaction, correlation and regression analyses were undertaken. The standard regression analysis depicted a significant contribution in estimating overall service quality and satisfaction through independent modified dimensions of SERVPERF. When all the six dimensions are allowed to develop a model estimating overall service quality, reliability and complaint handling was reported to be the most significant contributor, followed by tangibility and responsiveness. However, the remaining dimensions (travelling convenience, trust and assurance, and facility and rationality) were identified as non-significant contributors to estimate overall service quality.

On the other hand, overall service quality emerged as the most significant determinant (β= 0.571, p<0.001) to passengers' satisfaction with HIGER bus service. Dimension of tangibility was found to be the second best predictor (β= 0.234, p<0.001) of satisfaction with the bus service. Surprisingly, this is the dimension that was reported to be the only significant contributor in determining both the overall service quality and satisfaction in HIGER bus service context. Therefore, service providers should display their concern on all the issues of tangibility such as introducing up-to-date bus service, while using buses in the good condition with trained staff and ensuring dust free and comfortable seating, to further ensure both a high quality service and satisfaction with passengers. Additionally, they should be able to provide the service to the passengers reliably and accurately, while maintaining sincere interest in solving passengers' problems.

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