An Empirical Investigation of Consumer Satisfaction from Private Transport Services in District Peshawar

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ARTICLE DETAILS	ABSTRACT
History *Revised format: 30 June 2019* *Available Online: 31 July 2019* **Keywords** *Consumer Satisfaction, Transport Sector, Peshawar, Pakistan* **JEL Classification:** *D11, L91*	This study aimed to find out the consumer satisfaction from private transport services in Peshawar, Khyber Paktunkhwa, Pakistan. For this purpose primary data was collected through structured questioner. Questioners were distributed to 450 targeted samples in the study area. Four hundred and twenty-nine questioners were successful filled from respondents. Different fifteen variables were identified from literatures which determine consumer satisfaction. As the nature of the dependent variable i.e. satisfaction is binary (categorical variable: Yes/No). Therefore, all the information's collected analyzed through Probit-regression technique. Four different models were estimated to investigate different factors affecting consumer satisfaction individually and collectively. Out of fifteen variables nine variables are founded statistically significant. Significant variables were Quality of Vehicles, Cleanness of Vehicles, Availability of Seats, Driver Skills, Rout Characteristic, Waiting Time, Time Taken to reach destination, Regulatory Services and Frequency of Vehicle. All these variables contributed positively with consumer satisfaction. Sub factors of the timeliness were strongly relation with satisfaction level compare to other factors. Mean value of SERVQUAL dimensions showed that customers are dissatisfied from transport services. Consumers are dissatisfied at a large extent in district Peshawar and feel hesitation during traveling. Such tension and frustration during traveling affect adversely efficiency of the consumer. To avoid such dis-comport and increase in social welfare of the society which is the foremost objective of every government. Therefore, government should intervene in private sector transport and ensure suitable policy for the future perspective.

1. Introduction

It is the matter of fact that transportation plays a vital role in determination of economic status of the world economies. Best transportation system means developed societies or economies. Proper transportation help in different ways to fuel up economic growth and development in transition economies. It may help growth and development in the following ways: by increasing efficiency in production, Provides jobs opportunity and make easier access to labor market, Creates new business activities and Fuel supply chain efficiency.

However, all transport sector projects not generate the above mentioned opportunities, but it may play a driving role to improve investments. Job creation, trade facilitation, quick and easy access to market and raw material will definitely help economic status of the economy.

Urbanization occurs mainly because people move from rural areas to urban areas. Due to such persistent and continuous movement urbanization increases and scatters. Though, urbanization caused by rapid and unplanned urban growth resulting in poor infrastructures such as inadequate housing, water and sanitation, transport and health care services (UNDESA, 2014). Poor and inadequate planning regarding population settlement in most of the metropolitan cities in developing countries makes worse the situation. Pakistan is one of the developing countries which face the problem of high population growth and incompatible policy coordination. In this connection Peshawar city is taken an example that faced the problem of high burden on infrastructure and existing resources. According to the bureau of statistics (GOP, 2017) approximately 4,269,079 peoples are living in district Peshawar with a population density of 3,400/km2 (8,800/sq mi). Peshawar city is the capital city of the province Khyber Pakhtunkhwa (KP). It is an important city is respect of administration, business activities, education, health services and other services because it the hub of KP. Due to its importance and most populous city for the different purposes consumers used the private transport services. Passengers demand is rapidly raises with the local transportation services.

Despite, Rapid population growth and urbanization caused the increase in transportation means which results in intensification for demand of transportation services, the rise in transportation demand also affect the growth in private transport means in the urban areas (Kudokeder, 2003). The changes of the structure and system governing of the private transport services over the last decade overall the transport sector remains highly criticized in term of the quality services. The main issues are frequency of vehicles, timeliness factors and availability of seats. An augmented in consumer satisfaction causes an increase the welfare level of the individuals who use that services (Johnson et al., 2001).

The problem associated with the waiting time, vehicles' delay, while on the other side, no information disk to deliver correct information about the services (Demoulin, 2007). Security is also a big issue of the transport sector for consumers' satisfaction, which mostly consumers face the pick pocketing problem during journey time (Iles, 2005). Transportation problem faces by all cities throughout the world, particularly in developing countries such problems rapidly increase the urbanization because people use their own cars instead of public transport. Such problems are harmful impact on social and economic condition (Talba & Saad, 2008). Developing cities consist of weak quality services of the public transport which shifted passengers from public to private transport (Dhingra, 2011). With the passage of time, increase in travel demand and preference is a challenge for the transportation sector which raises the use of private vehicles throughout the world (Ellaway et al., 2003).

Previous studies regarding consumers satisfaction from private transport sector. Literature reported that challenges faced by the consumers are comfortability, cleanliness, time loss poor status of vehicles, over crowdedness etc. which definitely creates discomfort for consumer. These problems associated with traveling affect the physical and psychological aspects of human lives. Moreover, such discomforts also augment the demand for self-motorization which further worsen the private sector transport by increasing the number of vehicles. Private sector transport failed to provide comfortable travel to consumers. Therefore, it is very important to identify those factors, which determine consumer satisfaction in the study area in order to increase social welfare of the society by augmenting private transport according to the consumer needs.

2. Literature Review

Obioma et al. (2013) studied transport system and its problems in Abuja, Nigeria. The study was based on primary data. With the help of survey method, data for 350 respondents were collected. They measured the satisfaction level by applying Chi-square and percentage techniques. The outcomes of the study showed that there were differences

between consumers and other factors like safety, departure and arrival time, affordability, comfort and regularity which causes dissatisfaction. The recommendation of the study was that government intervention is needed to avoid discomfort of the consumer.

Rohani et al. (2013) explained that in Malaysia consumer satisfaction was affected by drivers' skills and the quality of vehicles. Primary data from 220 respondents were gathered through questionnaire. The research was descriptive and data were analyzed through diagrams and tables. This study showed that comforts, cleanness, reliability and safety were the factors which influenced satisfaction of consumers. Another study conducted by Rozmi et al., (2013) revealed the same results for Malaysian transport sector.

Borhan et al. (2014) compared Malaysian private and public transport services. This paper was based on primary data, in which data were collected through structure questionnaire from 290 respondents. They applied structural equation model for the measurements of different factors. This study determined that there is a positive relation of environmental factors and services quality with consumers' satisfaction of public transport sector. This paper recommended the intervention of transport management promote those factors which significantly affected the satisfaction of consumers.

Chandrakumara (2014) studied analyzed factors affecting consumer satisfaction from transport sector of Colombia, Sri Lanka. The study was based on primary and was gathered through questionnaire. For estimation of the impact Box-Plot and Principle Components analyses techniques were applied. Out of 33 elements 17 showed significant relation with the satisfaction of consumers. The factors which showed satisfaction are behavior of staff, information time, and safety, on the other hand dissatisfaction were caused by the factors of delivery. The recommendations of the study were that proper utilization and reallocation of resources should be made to improve transport sector.

Fatma et al. (2014) explained the quality of services for consumer satisfaction. The study was conducted for Turkey. The study was based upon primary and 285 samples were gathered. They applied SERVQUAL model and mean techniques. This study resulted that the satisfaction level of consumers and employees are significantly related with transport sector. The study recommended that the skills and practice will overcome the mechanical needs and will improve consumer satisfaction.

Islam et al. (2014) investigated the satisfaction of consumer for Kedah, Malaysia. They gathered primary data of 300 samples. They used Multiple regression models for estimation of data. The outcomes of the study showed that the factors like availability of time, services and environment are significantly related with consumer satisfaction. They recommended the government intervention for further improving the factors which show significant relation.

Noor et al. (2014) conducted a study for Kota, Malaysia and analyzed public bus services. Primary data of 987 samples were collected through survey method. The estimation techniques used were mean, standard deviation and factor components analyses. The study showed that accessibility, comforts, and safety were the factors of consumer satisfaction while overcrowding and security were the factors of dissatisfaction. The government intervention is suggested in order to improve the factors of satisfaction and to avoid the negative factors.

Sabir et al. (2014) investigated the transport sector of Pakistan and the level of consumer satisfaction. Primary data of 200 samples were collected through questionnaire. Regression and correlation techniques were applied. The outcomes indicated that all the factors have positive correlation with consumer satisfaction. They recommended that government should intervene in order to improve public transport system.

Abenoza et al. (2015) analyzed the factors of consumer satisfaction from transport services for Sweden. They gathered primary data through survey for three years i.e. from 2011-2013. Both analytical and descriptive techniques were applied for measurement. The results revealed that the factors like safety, security, staff and time affect consumers' satisfaction negatively. They suggested that government should intervene to avoid these negative factors.

Hassan (2015) investigated the quality of services to estimate the level of satisfaction of consumers of Dhaka, Bangladesh. The primary data of 250 samples through survey were accumulated. The percentage techniques were

used. The outcomes of the study indicated that arrangement and seat comfortability shows consumers satisfaction while smoking in travelling and security shows dissatisfaction. The study recommended the government intervention to encourage the positive factors as well as to hamper the negative factors for consumers' satisfaction.

Poliakova (2015) conducted a study in Slovakia and investigated the elements which affect the satisfaction level of consumer. The data is primary and quantitative in nature. Data of 30000 respondents were accumulated. He concluded that comforts, safety prices and time are significantly related with consumer satisfaction. He recommended that the government intervention is required to boost the factors which show positive correlation and to avoid all those factors which shows negative correlation.

Yeboah (2015) conducted the study in Ghana to attain consumer satisfaction and its relation with quality of services. This study was obtained for year 2014 based on cross-sectional and primary data. Multiple regression tools were applied for estimation. The outcomes of the study identified that factors like affordability, continues services, comfort, reliability and safety, whereas the behavior of driver shows negative effects on consumer satisfaction. The study recommended that government intervention is required to encourage the positive factors and to dissemble the factors which create dissatisfaction.

Dana et al. (2016) explored consumer satisfaction from quality of services in Ethiopia in 2011. Primary data were gathered from different respondents while secondary data is drawn from different sources. The result showed that time, cafeteria and toilets services caused consumers dissatisfaction. They recommended that government and concerned authority intervention should keep in consideration to avoid and fix all these negative factors.

Morton et al. (2016) conducted a study on consumer satisfaction with regards to quality of services. This study was performed in Ireland. The study was based on primary and a 3797 samples were accumulated by survey method. They applied factor analyses tools to estimate the data. The outcomes of the study stated that all the elements like availability, frequency, reliability and stability significantly affecting the level of satisfaction of consumer. They suggested that transport authority should intervene to encourage transport sector.

Jumbo (2016) conducted a study in Dubai. This study explored the quality of services and the satisfaction level of consumer with regards to these services. Primary data were collected from study area. By survey method he accumulated samples from 257 respondents. Diagrams, tables and other simple statistical tools were applied for estimation of data. The study resulted that all the considered factors like assurance, empathy, reliability, responsiveness and tangibility has negative effects on consumers' satisfaction level. The study recommended government intervention in order to promote the positive factors and to hinder the mentioned factors which have caused consumers' dissatisfaction.

A plethora of literature related to consumer satisfaction from transport sector in different economies located in different regions. Huge number of variables are discussed affecting consumer satisfaction from transport sector depends on socio-economic conditions of the countries and regions. Some of the factors discussed in literature are cleanliness, driver skill, rout or stream used by the vehicles, fare, frequency, time taken during travel, seats conditions, safety and security etc. Some studies are of descriptive nature, while many studies have been used analytical techniques. Primary data are used in most of the studies. Both public and transport sectors are of more importance, but private transport sector transport is ignored in most of the developing countries, while private sector transport is the most common source of communication. Therefore this study aimed to examine consumer satisfaction from private transport services. Khyber Pakhtunkhwa is the most growing province of the country regarding population and Peshawar is the congested city of the province. According to a report about three million vehicles used the 180 kilo meters road of Peshawar city daily. Therefore it is important to investigate the factors affecting consumer satisfaction from such a huge transport used daily in the city of Peshawar.

This may be the first ever study regarding transport sector and consumer satisfaction in the province and city Peshawar. This study is a contribution to literature in the case of consumer satisfaction from transport sector in Peshawar.

3. Materials and Methods

This study was conducted to Peshawar city of KP. Here used those variables have significant impact on consumer satisfaction in the study area.

3.1   Data Collection

To analyzed consumer satisfaction level by using SERVQUAL dimension of the transport services in Peshawar city. Consumer used different local services that targeted for this study. Four Hundred and Fifty samples were targeted but there are 429 valid responded were collected through stratified random sampling and simple random sampling within the same strata.

The present study adopted the comprehensive questionnaire on the base of the previous studies which used five-point likert-Scale like highly satisfied to highly dissatisfied.   There are fifteen variables are used in questionnaire. All variables have included in questionnaire that significant impact on consumer satisfaction. Questionnaire contained on two sections. The first section include on demographic section and second one tangibility, reliability and assurance dimension of SERVQUAL. The present study have used descriptive statistics and as well as Probit regression analyses.

Table-1: Variable Expression from Designed Questionnaire

S/N	Expression
X1	Comfort-ability of seats
X2	Shelter & benches
X3	Vehicles cleanness
X4	Availability of seats
X5	Quality of vehicles
X6	Fare charge
X7	Behavior of conductors
X8	Driver have sufficient skills
X9	Route characteristic
x10	Safety & security
X11	Waiting time
X12	Journey time
X13	Destination time
X14	Frequency of services
X15	Regular of services

3.2   Factor Extraction

Fifteen factors were analyzed by using questionnaire. Every factor were recognized of code base on the whole form of the variable designed than analyzed .

3.3   Tangibility

Tangibility factors concerned with physical appearance that relevant the services of transport sector. It was investigated by five factors, x1, x2, x3, x4 and x5.

3.4   Assurance

According to Buttle., (1996) assurance refers to knowledge and politeness of workers and the ability to stimulate and confidence. This variable is crucial impact on consumer satisfaction. Here it was analyzed by x5, x6, x7, x8, x9 and x10.

3.5   Timeliness

To achieve the reasonable result the average time should be range of 10-15minutes and maximum time should not exceed from 20 minutes (World bank, 1993). Timeliness variable to how much time are was to satisfy the consumer satisfaction. This is represented of the factor by x11, x12, x13, x14, and x15.

3.6　Consumer Satisfaction

Satisfaction is the consumer fulfillment, desire, utility. A consumer is satisfied whenever his needs and expectation are exceeded (Garson, 1993). This variable is notified by yes and no code.

3.7　Estimation Techniques

Statistical Packages for Social Science (SPSS) version 16.0 was used to interpret the data. First, the data were containing the fifteen variables which are represented of all variables of the questionnaire, further the data was extract factor. The data set obtained and factored analyses approach that involving a statistical (SPSS) and excel spreadsheet.

3.8　Probit Regression Analyses

Probit regression technique was employed to measure the consumer satisfaction. The Probit regression used to determine the degree of influence the independent variables on the dependent variable. Functional relation between the consumer satisfaction and the set of variables that expressed here CS= f (x1, x2,,,,,,,, xn) where x1, x2, ,,,, xn that several variables are considered.

The Probit model was first introduced by Chester Bilssin, (1934). According to (Bilssin, (1934), & Ronald Fisher, (1935) a Probit model is a standard specification for the ordinal and binary responses model. Probit models are applicable for those models of the study which are based on e.g. yes/no, agree/disagree, satisfied/ dissatisfied and like/dislike. Here for the research purposes Probit model is used for estimation and derives the suitable model under the consideration.

Suppose a response variable Y is binary. It can be only two possible outcomes which denoted by 1 and 0. Probit model is used in removing the problems of Ordinary Least Square by fitting a nonlinear function to the data. Probit model is generalized to justification for non-constant error variance in more advanced econometric setting (known hetroskedastic probit models (Monkah, 2013, & Cyganski, 2011). Taj Muhammad (2016) also put the data and used the probit model for the estimation. Rosati., (2007) using Probit estimation techniques for the study of Ethiopia in 2001 data survey.

4. Results and Discussions

The result of analyses is obtained through the application of statistical package for social science and excel spreadsheet to the variables are discussed here.

4.1　Probit Regression Analyses

Using the Probit regression model to measure the variables of consumer satisfaction, the models are considered for those variables which have significant relation with satisfaction. There are nine significant variables out fifteen variables.

Table 2: Tangibility Factors

Dependent Variable: Consumer Satisfaction, Marginal Effect				
Variables	dy/dx	Std. Err	Z	P
Comfortability of seats	0.0653	0.854	0.07	0.445
Shelter and benches	0.1635	0.1186	1.38	0.168
Vehicles cleanness	0.4691	0.1248	3.76	0.000
Availability of seats	0.3380	0.0772	4.38	0.000
Quality of vehicles	0.3033	0.0976	3.11	0.002

Source: Field Survey, 2018

Table 3: Assurance Factors

Dependent Variable: Consumer Satisfaction, Marginal Effect				
Variables	dy/dx	Std. Err	Z	P
Fare charge	0.1113	0.069	1.60	0.11
Behavior of conductor	0.0371	0.074	0.50	0.61
Driver have sufficient skills	0.2517	0.082	3.07	0.02

| Rout characteristics | 0.2260 | 0.092 | 2.43 | 0.01 |
| Safety and Security | 0.1502 | 0.092 | 1.62 | 0.10 |

Source: Field Survey, 2018

Table 4: Timeliness Factors

Dependent Variable: Consumer Satisfaction, Marginal Effect				
Variables	dy/dx	Std. Err	Z	P
Waiting time	0.2340	0.0743	3.14	0.02
Journey time	0.0607	0.0954	0.64	0.52
Destination time	0.2118	0.0938	2.26	0.02
Frequency of services	0.6954	0.1307	5.32	0.00
Regulatory of services	0.2516	0.0721	3.49	0.00

Sources: Field Survey, 2018

Table 5: Whole Model

Dependent Variable: Consumer Satisfaction, Marginal Effect				
Variables	dy/dx	Std. Err	Z	P
Tangibility	0.693	0.17	4.01	0.000
Assurance	0.341	0.90	0.38	0.153
Timeliness	0.383	0.13	2.84	0.004

Sources: Field Survey, 2018

As the evidence of table-2, on bases of beta coefficient, the result of the paper highlighted that consumer satisfaction and tangibility factors have positive direction. The vehicles of cleanness x3 worth is 0.4691 unit and p-value are less than 0.05, which have significant impact on satisfaction. Furthermore, x4 define the availability of seats has value is 0.3380 unit positive relation with satisfaction at significant at 0.00 level. The x5 variable denoted by quality of vehicles that positive impact on the satisfaction level. Table 3 indicated that driver skills (DS) have positive relation with satisfaction level. The x8 implies that 1 unit change occur in independent variable while the other side 0.2517 unit change occur in satisfaction level. The rout characteristic variable denote by x9 were significance relation with satisfaction level. The worth of rout characteristic is 0.2260 units and p-value is less than 0.05. In table 4 shows that x11, x13 waiting and destination time were significant impact on consumer satisfaction level. The value of x11, x13 is 0.2340 unit and 0.2118 are respectively and less than 0.05. The x14 and x15 variable are important variables or frequency and regularly of services having both the positive impact on satisfaction level. The value of x14 and x15 is 0.6954 and 0.2516 unit brings in satisfaction level and p-value is significant of 0.00 and 0.00 level. The table 5 indicated the whole model of the study of the tangibility and timeliness have positive and significance relation to satisfaction level, have worth is 0.363 and 0.383 and p- value is less than 0.05 level.

5. Conclusions and Policy Recommendations
This paper is to highlight the consumer's satisfaction from private transport services in Peshawar city (KP). The nature of the data is cross sectional data, while structural questionnaire has been designed for data collection. Approximately three hundred & twenty nine out of three hundred & fifty samples were collected through survey method with outcomes 94 percent. Probit regression technique is used for the estimation purposes. The tangibility, assurance and timeliness are considered in questionnaire. Separately, four models were used for the estimation. Timeliness factors were highly statistically significant and effectively. Nine variables out of fifteen were statistically significant. Overall the result output is consumers are dissatisfied from private transport services.

6. Recommendations
- This study recommended some policies to government to encourage the private transport sector regarding the consumers' satisfaction level.
- Transport sector should provide enough seats for consumers.
- Provide proper vehicles to improve the quality of vehicles and cleanness of vehicles.
- There should be an increase in the number of vehicles to minimize the waste of time of the consumers.

References

Cats, O., Abenoza, R. F., Liu, C., & Susilo, Y. O. (2015). Identifying priority areas based on a thirteen years evolution of satisfaction with public transport and its determinants. Journal of the Transportation Research Board. 978-605,-1-6.

Dhingra c (2011) Measuring the public transport performance: lesson for developing countries. Sustainable urban transport technical documents no 9. GIZ: Bonn, Germany 66, 1196-1206.

Friman M, Gärling T. (2001) Frequency of negative critical incidents and satisfaction with public transport services, II. Journal of Retailing and Consumer Services, 8(2), 105-114.

Friman, M., & Fellesson, M. (2009). Service supply and customer satisfaction in public transportation: The quality paradox. Journal of Public transportation, 12(4), 57-69.

G.D. Garson, Testing Statistical Assumptions, Blue Book Series (2012). Total Quality Management & Business Excellence, 18, 599-612.

Iles, R. (2005). Public transport in developing countries.PP 23-35.

Imam, R. (2014). Measuring public transport satisfaction from user surveys. International Journal of Business and Management, 9(6), 106-114.

Imran M. and N. Low, 2005. Sustainable urban transport in Pakistan: threats and opportunities. Management of Environmental Quality: An International Journal 16 (5): 505-529.

Islam, R., Chowdhury, M. S., Sarker, M. S., & Ahmed, S. (2014). Measuring customer's satisfaction on Bus Transportation. American Journal of Economics and Business Administration 6 (1): 34-41.

Kostakis, A. P., & Pandelis, I. (2009). Measuring Customer Satisfaction in Public Transportation An empirical study based in urban buses in the city of Larissa (Greece)-"The MUSA methodology". In MIBES–Oral .1 (3), 260-275.

Kumar, G., Amandeep, K., & Singh, K. K. Public Transport and urban mobility: Perception of people on services of public transport in Bathinda city, Punjab, India International Research Journal of Social Sciences, 2319–3565 Vol. 3(12), 8-14.

Kundi, A. M. (2013). Factors Influencing Customer's Satisfaction in Urban Public Transport in Tanzania,"A Case Study of Public Transport in Kigoma-Ujiji Urban (Doctoral dissertation, The Open University of Tanzania) 6 (4), 67- 83.

Tolba, M, K. and Saab, N. W. (2008). Arab Environment Future Challenges. Report of the Arab Forum for Environment and Development (AFED), 9 (1), 23-42.

Voss, B. G., Parasuraman, A., & Grewal, D. (1998). The role of price, performance and expectations in determining satisfaction in service exchanges. Journal of Marketing, 62(1), 46-61.