

**A Research Report On Identifying The Relationship Between Bus Passengers' Attitude And Their Level Of Satisfaction
(With Reference To Public And Private Sector Bus Transport Service Industries In Tamil Nadu, Chennai)**

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ABSTRACT

Measurement of passengers' level of satisfaction is too difficult since it is related to the psychological state of mind. An attempt is made in this study to understand the passengers' attitude and level of their satisfaction on services provided by both public and private sector bus transport industries in Tamil Nadu. In addition to this, a brief report is made about the existing services, delivery of services, how far the passengers using those services and the reasons if any for their preference towards the particular service provider. The main aim of this study is to analyse the demographical factors, level of attitude and relationship between the Passengers' attitude and level of satisfaction. So that we can improve the existing services of service providers based on the opinion of the passengers who travelled in buses from Chennai Mofussil Bus Terminus (CMBT). Also this study attempts to get the opinion of the passengers about their attitude towards the quality and types of services provided the service providers at appropriate level or not. The researcher also expects that this article persuade many researchers to do further research in the related area and believes that the facts and found points that expressed by him through this research article will be more helpful to the state government, private Omni bus transport operators to upgrade their quality standards of bus transport sector based on the passengers views and opinion.

Key words: Bus Passengers' Socio- Economic / Demographical Factors, Bus Passengers' Attitude, Level of Satisfaction, State Express Transport Corporation (SETC), Tamil Nadu State Express Transport Corporation (TNSTC), Omni buses, Service Quality Attributes.

INTRODUCTION

The bus transport is much more needed in metropolitan cities and it is very important for any city to have an effective public transportation system and the same has to be managed to face upcoming, future challenges. The metropolitan city like Chennai is with the demand for Bus Transportation system to go with economic growth and infrastructural development. But it also creates overcrowding at the bus terminus and it will be the main cause of many service-related problems. The possibilities to increase better service quality overnight is also not possible for the bus transport service industries whether it is public sector or private bus transport service provider.

Chennai district includes both public and private sector transport industries which carry the public from Chennai to various destinations. That are, State Transport Units (STU) such as Short distance :Metropolitan Transport Corporation (MTC), Long distance such as State Express Transport Corporation (SETC) and Tamil Nadu State Transport Corporation (TNSTC) and on the other hand Private Omni Buses. Out of these, SETC, TNSTC from State Transport Unit and Private Omni Buses from Private Sector taken for this present Study. Both service providers put their efforts to give optimal services to the passengers' day by day. An efficient and effective service provider will increase passengers' satisfaction and the same will also promote the bus transport business. To induce more people to avail the services of public bus transportation system, it is very important for the service providers to identify the levels of expectations, taste and preferences of the passengers at different levels. The research objectives of this study are to highlight the needs, attitude, socio-economic factors which will influence the users of bus transport in Chennai district. and to trace various

techniques, methods adopted by both bus transport sectors operating from Chennai to attract new passengers and retain the existing ones.

STATEMENT OF PROBLEM

Bus transport services are the most essential mode and it helps the people in greater manner for their mobility. It is generally believed that services of the private sector transport agencies are better than the public sector. Hence, a comparative study is attempted to ascertain the performance of the public and private bus transport service industries in Tamil Nadu to test the belief of the people and to find out the factors responsible for such kind of opinion. Movement of the people from one place to another place and the increase in population resulted in heavy demand for quick, efficient transport services. Under these circumstances, there is every possibility for deterioration of the quality of services provided by transport industries because of healthy competition. Yet, the private sector transport industries have to provide better services because it is a question of survival for them. The importance of the study is to find out answer for the question, how far the private sector transport industries are able to withstand the competition of their competitor (public sector).

OBJECTIVES OF THE STUDY

- To identify, analyze and interpret the socio-economic factors of the passengers.
- To highlight the needs and attitude of the passengers towards the use of the transport services.

HYPOTHESIS

There is no significant difference in passengers' attitude between the public and private sector bus transport services.

RESEARCH METHODOLOGY

The data required for this study collected from primary and secondary sources. The primary data are collected by distributing questionnaires to passengers (only those who are able to understand and give responses towards the questions in the questionnaire) who commence their travel from CMBT and Private Omni bus terminus situated at Koyambedu, Chennai, and different boarding points located in Chennai as well. Questionnaire includes both dependent and independent variables. 5 point Likert's scale is used which ranges from strongly agree to strongly disagree and the same 5 point Likert's scale is used in all sections of the questionnaire. The researcher hopes that it is the first attempt of him in Chennai District carried out this research in bus transport sectors. Passengers were interviewed by the researcher himself or by his trained interviewers during their leisure time at the waiting halls of the CMBT bus terminus, Private Omni bus terminus at Koyambedu and other major boarding points.

SELECTED SERVICE PROVIDERS, DATA COLLECTION, SURVEY AND SAMPLE SIZE

Bus Passenger Satisfaction Survey has been carried out to monitor bus passengers perceptions of State Transport Units (Excluding Metropolitan Transport Corporation) were taken which includes only long distance buses such as State Express Transport Corporation (SETC), Tamil Nadu State Express Transport Corporation (TNSTC) and Omni Buses operated from Chennai district at different intervals of the period from June 2011 to October 2013. The data are also collected from different categories of passengers' at different levels. This research is a part of researchers research work. Due to some restrictions, author of this research paper is not able to publish the article at the time of data collection, that is why he felt this is the appropriate time to release his research findings for the benefit of the society and for the enhancement of bus transport sector by identifying the needs and requirements of the passengers' at this movement. Factor analysis is applied to find out the influencing factors of passengers' attitude of the passengers of both private and public sectors bus transport service industries in Chennai district.

Samples selected for the study covers only the Chennai district. Totally, 500 passengers of State Express Transport Corporations (SETC), Tamil Nadu State Transport Corporations (TNSTC) and

Private Omni bus transport services are selected on simple random sampling method. Out of the total samples of 500, 109 samples are from SETC, 216 samples from TNSTC comprising a total of 325 samples of public sector bus transport service industries. The balance of 175 samples from the passengers of private sector Omni buses is chosen.

LIMITATIONS OF THE STUDY

- The present study includes only the long distance buses that are SETC, TNSTC and private Omni buses only. It excludes MTC (Metropolitan Transport Corporation) and other short distance buses from both government and private sector bus transport service providers operated in Chennai district.
- The researcher focused and collected required information only from the respondents who are able to understand and to give their answers for the questions asked for this research work.
- The researcher has not taken short distance buses from Chennai district for his study because only a few private buses are operated in Chennai district. So it is not possible to compare the unequal's (few private buses with larger number of government buses). Moreover, all these short distance buses are operated in and around and suburban areas of Chennai district only and not from Chennai to other districts of Tamil Nadu.

RESULTS AND DISCUSSIONS

After the pilot study, the necessary modifications were made in the questionnaire and it was finalized. the reliability test was also done. The data collected at the appropriate venue at CMBT and Private Omni Bus Terminus at Koyambedu, Chennai. The dependent and independent variables are finalized, factors are determined and factor analysis were made and then cluster analysis also done. Finally, With the help SPSS Version 20, the collected data scrutinized, tabulated and the following results were found and the same was given for the clear understanding of the readers. Primarily the demographical factors of the passengers are given as follows:

Table - 1
Demographical Factors of the Total Passengers

Age group	Frequency	Valid Percent	Cumulative Percent
Below 20	122	24.4	24.4
21- 40	307	61.4*	85.8
41 – 60	63	12.6	98.4
Above 60	8	1.6	100.0
Total	500	100.0	
Gender	Frequency	Valid Percent	Cumulative Percent
Male	245	49.0	49.0
Female	255	51.0*	100.0
Total	500	100.0	
Marital Status	Frequency	Valid Percent	Cumulative Percent
Married	276	55.2*	55.2
Single	217	43.4	98.6
Others	7	1.4	100.0
Total	500	100.0	
Passengers' Segmentation	Frequency	Valid Percent	Cumulative Percent
Student	148	29.6	29.6
Business People	24	4.8	34.4
Salaried Persons	267	53.4*	87.8
Retired Person	7	1.4	89.2
Self employed	19	3.8	93.0
Others	35	7.0	100.0
Total	500	100.0	
Level of Income	Frequency	Valid Percent	Cumulative Percent
Less than 1 Lakh	132	26.4	26.4

Less than 2 Lakhs	182	36.4*	62.8
Less than 3 Lakhs	96	19.2	82.0
3 & More than 3 Lakhs	90	18.0	100.0
Total	500	100.0	

Source: Primary Data

In addition , the Next part of the analysis is cluster analysis, result of clusters given as follows :

Table - 2

CLUSTER SAMPLING – ATTITUDE of the Passengers

Final Cluster Centre's for the ATTITUDE of Passengers'

Factors of Attitude	Cluster		
	Moderately Satisfied	Highly Satisfied	Dissatisfied
Service Efficiency	3.37	4.09	2.46
Safety and supervision	3.49	4.34	2.61
Transport frequency	2.93	4.07	2.28
Maintenance	3.75	4.62	2.62
Effective time management system	3.13	4.22	2.33
Impact of hike in bus fare	3.73	4.34	3.07

Number of Cases in each Cluster for ATTITUDE related Factor

Opinion of Passengers		Frequency	Percentage
Cluster	Moderately Satisfied	236	47.2%
	Highly satisfied	104	20.8%
	Dissatisfied	160	32%
Valid	Total	500	100%

Source : Primary data

From the above table ,When we divide the total sample size of this research study, according to Cluster sampling on the factors of Attitude of the Passengers , it was found that 20.8% of the bus passengers are highly satisfied at their travel. Similarly 47.2% of the respondents were moderately satisfied and almost one third of the passengers that is 32% of the passengers' are dissatisfied with the services of bus transport. Therefore it means to say that , the bus transport service sectors should be so cautious and aware to upgrade their quality standards with regard to their services and service quality in both cases.

The second important result of analysis is t- test results. Through t-test the analysis were made with 26 attitude related dependent variables which was already grouped under 6 factors mentioned and indicated in cluster analysis and the respective results were given as follows:

Table – 3
Group Statistics for Attitude of the Passengers

Variables of Attitude	Service Provider	N	Mean	Std. Deviation	Std. Error Mean	T	Sig. (2-tailed)
ATT-DV - 1	Public Sector	325	3.7477	1.04425	.05792	0.694	0.488
	Private Sector	175	3.6800	1.03413	.07817		
ATT-DV- 2	Public Sector	325	3.5846	.96052	.05328	0.958	0.339
	Private Sector	175	3.4971	.99928	.07554		
ATT-DV- 3	Public Sector	325	3.2308	1.07682	.05973	-0.374	0.708
	Private Sector	175	3.2686	1.07847	.08152		
ATT-DV- 4	Public Sector	325	3.4000	1.04231	.05782	-	0.954

	Private Sector	175	3.4057	1.06186	.08027	0.058	
ATT-DV- 5	Public Sector	325	3.3077	1.13207	.06280	-	0.587
	Private Sector	175	3.3657	1.14619	.08664	0.544	
ATT-DV- 6	Public Sector	325	3.0677	1.04603	.05802	-	0.595
	Private Sector	175	3.1200	1.05721	.07992	0.531	
ATT-DV- 7	Public Sector	325	3.4062	.97244	.05394	-	0.577
	Private Sector	175	3.4571	.98093	.07415	0.558	
ATT-DV- 8	Public Sector	325	3.6523	.95211	.05281	0.074	0.941
	Private Sector	175	3.6457	.96500	.07295		
ATT-DV- 9	Public Sector	325	3.6646	1.06927	.05931	0.247	0.805
	Private Sector	175	3.6400	1.05678	.07988		
ATT -DV- 10	Public Sector	325	3.6615	1.07262	.05950	0.765	0.445
	Private Sector	175	3.5829	1.14105	.08626		
ATT -DV- 11	Public Sector	325	3.7046	1.16222	.06447	0.016	0.987
	Private Sector	175	3.7029	1.19517	.09035		
ATT -DV- 12	Public Sector	325	3.3292	1.05668	.05861	-	0.755
	Private Sector	175	3.3600	1.03480	.07822	0.313	
ATT -DV- 13	Public Sector	325	3.2677	1.06532	.05909	-	0.815
	Private Sector	175	3.2914	1.11453	.08425	0.234	
ATT -DV- 14	Public Sector	325	3.4585	.99798	.05536	-	0.866
	Private Sector	175	3.4743	1.01039	.07638	0.168	
ATT -DV- 15	Public Sector	325	3.3785	.96297	.05342	0.015	0.988
	Private Sector	175	3.3771	.95022	.07183		
ATT -DV- 16	Public Sector	325	3.4000	1.01835	.05649	-	0.671
	Private Sector	175	3.4400	.98003	.07408	0.424	
ATT -DV- 17	Public Sector	325	3.2185	1.11318	.06175	-	0.966
	Private Sector	175	3.2229	1.11497	.08428	0.042	
ATT -DV- 18	Public Sector	325	2.7754	1.05205	.05836	-	0.760
	Private Sector	175	2.8057	1.06511	.08051	0.306	
ATT -DV- 19	Public Sector	325	2.6123	1.04697	.05808	-	0.608
	Private Sector	175	2.6629	1.05348	.07964	0.514	
ATT -DV- 20	Public Sector	325	2.8985	1.02387	.05679	0.251	0.802
	Private Sector	175	2.8743	1.03178	.07800		
ATT -DV- 21	Public Sector	325	3.1015	1.04475	.05795	0.455	0.649
	Private Sector	175	3.0571	1.03232	.07804		
ATT -DV- 22	Public Sector	325	2.8185	1.16308	.06452	-	0.576
	Private Sector	175	2.8800	1.19019	.08997	0.560	
ATT -DV- 23	Public Sector	325	3.2708	1.04847	.05816	-	0.659
	Private Sector	175	3.3143	1.05513	.07976	0.442	
ATT -DV- 24	Public Sector	325	3.5015	1.08191	.06001	-	0.682
	Private Sector	175	3.5429	1.05979	.08011	0.410	
ATT -DV- 25	Public Sector	325	3.2554	1.07123	.05942	-	0.723
	Private Sector	175	3.2914	1.10416	.08347	0.355	

ATT -DV- 26	Public Sector	325	3.0892	1.06344	.05899	0.149	0.882
	Private Sector	175	3.0743	1.08817	.08226		

Source: Computed Data ; (ATT – Attitude , DV – Dependent Variable)

From the above table, the p value are found are given in the following paragraphs. It is inferred that the calculated p values for the different attitude related variables (dependent variables) are given as follows , that are : Recent hike in bus fare implemented by Tamil Nadu government for providing services to the public is (p = 0.488), Impact of hike in bus fare by the transport industries in Tamil Nadu (p =0.339), Level of response from the service personnel's (p = 0.708), Level of supervision (p = 0.954) , Effective time management in departure (p = 0.587), Boarding points (p =0.595), Maintenance of driving path within the bus terminus (p = 0.577), Safety measures at bus terminus (p = 0.941), Bus fare charged at buses (p = 0.805), Availability of toilets and bathrooms (p = 0.445) , Maintenance of toilets and bath rooms at bus terminus (p = 0.987), Conditions of the service lines (p =0.755), Comfort in car parking and two wheeler parking space at the bus terminus (p = 0.815), Availability of leisure rooms (p = 0.866), Functioning of cloak rooms (p =0.988), Security system (p = 0.671), Availability of post office , medical shops (p = 0.966), Availability of canteen , restaurants , hotels and lodges at bus terminus (p = 0.760) , Frequency in transport services from CMBT (p =0.608), Actual time taken to reach the required destinations (p =0.802), Frequency of bus transport service offered at night time (p =0.649), frequency of bus transport services offered at day time (p = 0.576) and at weekends (p = 0.659), Conditions and maintenance of buses (p = 0.682), availability of service offer information boards at the bus terminus(p = 0.723), availability of covered shelters for passengers at bus terminus (p = 0.882).

From the above table, it is concluded that, there is no significant difference between the attitudes of passengers of government buses and the passengers of private Omni buses. It implies both group of passengers possess the same attitude towards service efficiency, safety and security, maintenance, impact of hike in bus fare and effective time management system.

The next part of this research is about the relationship between the factors related to Attitude of Passengers and Independent variables. Regarding the same the results were given as follows to check the hypotheses and to identify whether there is a relationship between Passengers' attitude and independent variables like age, gender , marital status , passenger segmentation, Level of Income , Pattern of Usage and Level of satisfaction etc.,

Table - 4
Pearson's Chi Square Test @ 5% Level of Significance
The Association between the Attitude of the Passengers and Independent Variables

Independent variables	Chi Square Value	Df	Asymp. Sig. (2-sided)
Age	30.038	6	0.000
Gender	13.977	2	0.001
Marital status	12.491	4	0.014
Passenger segmentation	99.678	10	0.000
Level of Income	101.909	8	0.000
Pattern of usage (Official)	22.478	8	0.004
Pattern of usage (Business)	71.214	8	0.000
Level of Satisfaction (SETC)	68.564	4	0.000
Level of Satisfaction (INSTC)	30.515	2	0.000

Source : Computed Data

From the above table and with the tested results, we can come to the conclusion that there is a relationship between the factors of attitude of passengers and independent variables. Because when we go through the above table is very clear that the p value is lesser than that 0.005 @ 5% level of

significance. All the independent variables are related and it has its own impact on the attitude of the passengers of public and private sector bus transport service industries in Tamil Nadu , Chennai.

An another important element of this research paper is to check whether the independent variables are having influence on dependent factors which are related with the attitude of the bus passengers.

Table – 5
Results of ANOVA
Influence of Independent Variable on Attitude related factors

Factors of Attitude	Age		Sex		Marital Status		Passengers' Segmentation	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.
Service Efficiency	3.824	0.010	11.900	0.001	NI		8.931	0.000
Safety and Supervision	5.734	0.001	14.492	0.000	NI		9.340	0.000
Maintenance	9.901	0.000	9.109	0.003	3.479	0.032	7.817	0.000
Effective time management system	2.827	0.038	5.839	0.016	NI		4.973	0.000
Impact of Hike in Bus Fare	15.014	0.000	5.798	0.016	NI		7.270	0.000
Transport frequency	NI		4.735	0.030	NI		7.219	0.000
Level of Influence	MODERATE		HIGH		LOW		HIGH	

Source : Computed data

* NI – No Influence

As per the result of ANOVA, it was found that except few independent variables , all variables are having their influence on attitude related factors.

Table 5.1
Results of ANOVA
Influence of Independent Variable on ATTITUDE related factors

Factors Attitude	Income		Period of Usage		Pattern of Usage (SETC)		Period of Usage (TNSTC)		Pattern of Usage (OMNI BUSES)	
	F	Sig.	F	Sig.	F	Sig.	F	Sig.	F	sig.
Service Efficiency	7.133	0.00	2.761	0.042	NI		3.452	0.009	2.970	0.019
Safety and Supervision	4.363	0.002	3.927	0.009	NI		NI		4.797	0.001
Maintenance	NI		5.25	0.001	3.300	0.011	NI		3.966	0.004
Effective time management system	3.462	0.008	3.459	0.016	NI		3.569	0.007	NI	
Impact of Hike in Bus Fare	3.468	0.008	13.52	0.000	4.037	0.033	NI		2.350	0.053
Transport frequency	4.122	0.003	NI		4.795	0.001	5.199	0.000	3.140	0.014
Level of Influence	MODERATE		MODERATE		LOW		LOW		MODERATE	

Source : Computed data

* NI – No Influence

In similar to table 5 , table 5.1 is also confirms the same point and it was found that the rest of independent variables like Income , Period of Usage , Patter of Usage (Private Omni Buses) are influenced more on attitude related factors such as service efficiency , safety and supervision etc.,

RESEARCH FINDINGS

- With regard to age of the respondent , it is found that 61.4 % of the passengers belong to the age group between 21-40 , followed by 24.4% in the age group below 20, 12.6 % represent the age group between 41-60 and 1.6 % is represented by the aged passengers above 60.
- Based on Gender of the respondent , it is observed that the total numbers of respondents are divided in to two major groups. Out of the total respondents, 49% belong to male category and the rest of the respondents i.e. 51% belong to female category.
- According to marital status , It is found that 55.2% are married , 43.4% are unmarried or single and rest of the respondents i.e. 1.4% belong to other category which includes widower and divorcees etc.,
- On the basis of passenger segmentation, it is observed that out of the total samples, 29.6% belong to students community, 4.8% of them are business people and 53.4% of passengers and the next 7 respondents 1.4% of the passengers come under the category of salaried personals and retired persons respectively, the rest of the passengers 3.8% and 7% of passengers are belong to self-employed and other category.
- On the basis of level of income , Out of the total respondents, 26.4% of passengers belong to the first category of income group i.e. less than 1 lakh and 36.4% are at the second level of income category i.e. less than 2 lakhs and 19.2% and 18% of passengers or the passenger are belongs to the 3rd and 4th level of income group i.e. less than 3 lakhs, 3 lakhs and more than 3 lakhs respectively.
- As per cluster analysis ,It is found that 47.2 % of first cluster passengers , 20.8 % of second clusters passengers and 32 % of the third cluster passengers are moderately satisfied, highly satisfied and dissatisfied with the factors of passengers attitude.
- As per the analysis of variance (ANOVA) , it is revealed that all the predominant factors of attitude of the passengers are influenced by age, sex, and marital status, and income, period of usage, pattern of passengers.
- The application of chi-square analysis and analysis of variances clearly revealed that the independent variables such age, gender, passenger segmentation and income are well associated with clusters and these variables are creating more influence on maximum number of attitude-related factors.

SUGGESTIONS FOR UPGRADING SERVICE QUALITY STANDARDS

- It is important to focus more on maintaining service efficiency, safety and security, maintenance of buses, reasonable hike in bus fare, effective time management system, level of comfort, attractive features, accessibility, convenience and response of service personnel's to enhance the services and service quality to attract the new passengers and to retain the existing passengers.
- Equal priority should be given to various categories of passengers like children, student, officials, business people, professionals and others to attract them at different age groups.
- Priority should be given on giving quality services in maintenance, bus fare, comfort, behavior , attitude and attentiveness of passengers, performance of service personnel's and effective time management to enhance the passengers' satisfaction at various levels.
- Taking important measures towards the service quality enhancement and to improve passenger satisfaction is also needed to ensure the business development of public sector or survival of private bus transport sectors among the competitors in future.

CONCLUSION

From the analysis, results and discussions, the researcher concluded that it is important for the bus transport service sectors to give more priority for the passengers' attitude, taste and their preferences. Bus transport sectors should identify their mind set, behavior by conducting survey, awareness programs which express the facilities that are given or introduced by them at present or in the near future. They should make the passengers to know about the recent up gradation in their



service related facilities and service quality standards. If the bus transport service sector fails to identify the perception, attitude, taste, priority and preferences of the passengers then surely they will lose their customers and they may fail to achieve their business objectives too. Therefore the success of bus transport business starts from identifying the real attitude that is nothing but identifying the fundamental or basic needs and expectations of the passengers'. So it is mandatory for the bus transport sectors to concentrate more and giving high priority for the attitude, perception of passengers to get success in transport business.

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