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The Cause Effect Relationship Model of Service Quality in relation with Overall Satisfaction

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Abstract

Public transportation has become one of the cornerstones of a country's infrastructure development. In particular, road transportation plays a critical role in developing countries, as large numbers of people use bus transportation as the means to commute between one place to another for work, home, visiting friends, trips etc. Ensuring the service quality in this service, therefore, is crucial. There are limited scientific studies, however, on the service quality of intercity passenger transport in India, especially with regard to infrastructure aspects. In this paper the cause effect relationship model of service quality in relation with overall satisfaction of intercity bus transport is attempted. Results demonstrate three types of passenger profile emerging from the data (K-means clustering). According to findings of the study, the service quality dimension such as empathy, information reliability, luggage assurance, responsiveness, service time reliability, external tangibles and tangibles exhibit the cause effect relationship with respect to overall satisfaction of passengers with technology mediation. It also indicates that, Technology alleviates the influence of responsiveness and environmental dimensions on overall satisfaction. A comprehensive service quality model is built, consisting of core service quality dimensions and external dimension such as technology, policy and road infrastructure for intercity bus transport, a contribution is made to public transport literature. This helps the intercity transport organizations to devise a strategy for service quality for competitive edge.

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Keywords: Service Quality; Intercity bus transport; public transport; transport policy; bus transport.

Introduction

Transport is an important entity of infrastructure and a developed transport network encourages speedy and satisfactory movement of men and material (Namboodiri, 2007). There is a growing demand for transport which provides business accessibility and safe mobility, with minimum negative impacts on natural social and the artificial environment (Hubschneider et al, 2011). The major goal of public transport policy is to satisfy the demands of passengers (Kaushik, 2015). Customer perception about fulfilling the service expectations is influenced by the service quality of the transport industry (Czepiel, 1990; Parasuraman et al., 1988). In India's comprehensive surface transport network, intercity bus transportation holds important place because of its potential in connecting cities, smaller communities, rural areas and less populated regions (Fravel, 2003). Service quality perception varies

between developed and developing nations due to differences in service delivery environment (Das & Pandit, 2016). Therefore, context specific service quality models should be developed because of the influence of attributes such as lifestyle, individual characteristics, journey type, service performance perception about transport modes and other situational factors on transport choice (Dabholkar et al., 1996; Dagger et al., 2007). There are no sufficient studies which builds up service quality of bus transport with respect to passenger perception (Das and Pandit, 2016).

Literature Review

According to Parasuraman et al., (1988), service quality is a global judgment regarding the superiority of the service and evaluations of the outcome of service received by the customer and proves of its delivery. Satisfaction in the passenger's perception is determined by the cost, travel distance, purpose and frequency (Ponrahono et al., 2016). Cronin and Taylor (1992) introduced SERVPERF model with the argument that service quality should be measured as an attitude and reinforced the perception-based measurement of service quality. There is a need to develop service quality measurement model in accordance with nature and characteristics of road public transport services (Bakti et al., 2015). Clemes et al., (2008) suggests conducting more research regarding service quality measurement model for road public transport because different passengers evaluate the service quality differently due to differences in their characteristics. Reliability is the ability to deliver guaranteed services accurately, dependably, consistently according to the promised schedule and in a timely manner without making mistake each time (Parasuraman et al. 1991). According to Freitas et al. (2013), the aspects such as customer handling ability, politeness, courteous, information dissemination and issue redressal are important for assurance. According to Parasuraman et al. (1991), tangibles are those entities associated with the service delivery such as appearance of personnel and physical facilities, equipment, physical and communication materials. According to Leong et al. (2015) willingness of offering individual service to each customer by the service organization is termed as empathy.

According to Parasuraman et al. (1991), the employees will and desire to help the customers by providing adequate services needed to them is termed as a responsiveness dimension of service quality. Perceived value is defined as the products' utility assessment by the customers based on perception about benefits received for the cost given (Zeithaml, 1988). He also argues that by increasing perceived benefits or reducing perceived costs, perceived value by customers can be improved. Research studies indicate that by promoting the use of public transport problems like air and noise pollution caused by traffic congestion, parking issues and energy consumptions can be reduced (Chapman, 2007; Black and Black, 2009; Nocera, 2011). Passenger miles per gallon in intercity bus is two times more than the fuel efficiency of intercity rail and four time higher than the domestic air carriers (Woldeamanuel, 2012). Preferences values, and needs of individuals change over time and varies among groups and cultures (Steg et al. 2005). Generally intercity buses are designed for comfort since they hold passengers for significant time period on long journeys for example, sleeper buses (Carreira et al., 2013). Road is one of the major infrastructure of the country and large number of surface transport happen on roads. By evaluating existing quality level in the service provision and constructing corresponding policies and strategies will improve the service quality (Morton et al., 2016). Technology has the potential to advance the sustainability of services by enabling the delivery of values which benefits service providers and customers (Adi et al. 2014). Passengers using internet evaluates the quality of road transportation through availability of travel related information like bus transport firm, travel distance, date and time of travel (Zeithaml et al., 2002). A crucial role in recognizing the satisfaction of a transport service is played by the passengers' perceived service quality through website (Zeithaml et al., 2002). A greater patronage of customers can be acquired through information technology-based services such as real time information of bus operations and communicating bus location through text messages (Clean Air Asia Report, 2012).

Service quality is positively related to customer satisfaction in the context of public transport (Khurshid et al., 2012). Behavioural intention is directly influenced by service quality which can be used to explain the passengers perceived satisfaction with the bus service effectively (Minser and Webb, 2010; De Oña et al., 2015; Lai and Chen, 2011; Morton et al., 2016). It was found that there is lack of comprehensive models on measuring service quality of intercity bus passenger transport and its cause effect relationship on overall satisfaction of the service by taking all important dimensions such as service quality dimensions, technology, road infrastructure, and policy aspects. For a

high population country like India, encouraging more public transport and reducing the dependency on private vehicles becomes important because transport sector is one of the major contributors of environmental degradation. A model for measuring the service quality of intercity transportation may help in considering all important dimensions and their impact on overall satisfaction of the transport service. This may help in bringing harmony in transport service users, transport service providers and as a whole, society and planet.

The main objective of this study is to attempt the cause effect relationship model of service quality in relation with overall satisfaction of intercity bus transport. It addresses the four research objectives namely, a. To explore the cause effect relationship model which addresses the service quality dimensions, technology and satisfaction attributes of intercity bus passenger transport. b. To explore the cause effect relationship model which addresses the service quality dimensions, transportation and infrastructure, technology and satisfaction attributes of intercity bus passenger transport for high service quality preference (HSQP) passengers. c. To explore the cause effect relationship model which addresses the service quality dimensions, transportation and infrastructure, technology and satisfaction attributes of intercity bus passenger transport for low service quality preference (LSQP) passengers. To explore the cause effect relationship model which addresses the service quality dimensions, transportation and infrastructure, technology and satisfaction attributes of intercity bus passenger transport for service quality preference (MSQP) passengers.

Methodology

Data is collected to capture the perceptions of service quality of intercity bus transport from the passengers traveling between urban cities/towns/villages like Bangalore – Mysore, Bangalore – Tumkur, Bangalore - Mangalore, Bangalore – Hubli. Data is collected through survey method using structured questionnaire. The survey was conducted between August 2016 and March 2017 at the intercity bus stations mainly in the Bangalore region, through convenience sampling technique. The intercity bus passenger data based on service quality and satisfaction was not available with the service providers and also the characteristics of population were not known, hence convenience sampling method was employed. According to KSRTC key statistics (2015), on an average, 26.90 lakh passengers travel in Karnataka every day. Taking 26.90 lakh per day as the sample population, with 95% confidence level and 4% margin of error, the sample size in this study is 605. A structured questionnaire captured passengers' perception on service quality of intercity bus passenger transport. Statistical techniques for data analysis involved Partial Least Square Structural Equation Modelling (PLS-SEM), mediation analysis, moderation analysis and multi group analysis. Three clusters are defined using K mean clustering technique. Cluster1 (HSQP), Cluster2 (LSQP) and Cluster3 (MSQP) consist of 225, 238 and 142 cases respectively.

PLS-SEM Model Assessment

PLS-SEM approach is used to assess the measurement model (also referred to as the outer model) and structural model (also referred to as the inner model). Fig. 1 represents the structural model. SmartPLS (v.3.2.7) is used to perform PLS-SEM to achieve the above-mentioned objective. In PLS-SEM, assessment of the measurement model (also referred to as the outer model) includes composite reliability (CR) to evaluate internal consistency, individual indicator reliability and average variance extracted (AVE) to evaluate convergent validity (Hair et al., 2016). Internal consistency reliability is a form of reliability test that is used to assess the consistency of results across items of the same variables (Hair et al., 2013). It determines whether the items measuring a variable are similar in their scores (Hair et al., 2006). Internal consistency reliability is accessed by using composite reliability (CR). Convergent validity refers to the extent to which a measure correlates positively with alternative measures of the same variable (Hair et al., 2016). AVE was calculated to access convergent validity. Discriminant validity is the extent to which a variable is truly distinct from other variables, in terms of how much it correlates with other variables, and how much indicators represent only a single variable (Hair et al., 2016). The criterion and cross-loading scores of Fornell&Larcker (1981) were used to establish discriminant validity.

Technology mediation model

Fig. 1 depicts the PLS-SEM path model with service quality factors namely, service time reliability, information reliability, luggage assurance, tangibles, external tangibles, empathy, responsiveness, women friendliness, economic

and environmental factors as exogenous variables. Overall satisfaction is considered as the endogenous variable. The technology factor is considered as mediating variable between service quality factors and overall satisfaction of intercity bus transport. The thickness of the paths between latent variables indicates the strength of significant impact on mediating and exogenous variables by endogenous variables. Table 1 shows the construct validity of the latent variables used in this section. CR values of all the latent variables used were found to be > 0.70 (Hair et al., 2006) which establishes internal consistency of the constructs. Table 1 shows the AVE values of the latent variables used in this section. These values were found to be more than the prescribed value of 0.50 (Hair et al., 2006) and therefore establish convergent validity.

Table 1. Construct Validity

Latent Variables	Composite Reliability	Average Variance Extracted (AVE)
Economic	0.891	0.673
Empathy (Emp)	0.842	0.642
Environmental (Env)	0.891	0.674
External tangibles (Etan)	0.879	0.786
Information reliability (Inf_Rel)	0.906	0.764
Luggage assurance (Lug_Ass)	0.851	0.656
Responsiveness (Resp)	0.852	0.591
Service time reliability (STR)	0.868	0.767
Overall satisfaction (satisfaction)	0.770	0.463
Tangibles (Tan)	0.852	0.657
Technology (Techno)	1.000	1.000
Women friendliness (Wm_fnd)	0.932	0.872

Table 2. Discriminant Validity – Fornell and Lacker Criterion

Latent variables	Eco	Emp	Env	Etan	Inf_Rel	Lug_Ass	Resp	STR	Satfn	Tan	Techno	Wm_fnd
Eco	0.820											
Emp	0.275	0.801										
Env	0.024	-0.034	0.821									
Etan	0.168	0.139	-0.101	0.887								
Inf_Rel	0.208	0.303	-0.099	0.278	0.874							
Lug_Ass	0.240	0.461	-0.099	0.182	0.327	0.810						
Resp	0.322	0.451	-0.011	0.213	0.288	0.328	0.769					
STR	0.172	0.376	0.014	0.133	0.103	0.243	0.165	0.876				
Satfn	0.264	0.524	-0.094	0.092	0.340	0.471	0.409	0.315	0.680			
Tan	0.204	0.456	-0.186	0.249	0.292	0.431	0.354	0.321	0.452	0.810		
Techno	0.034	0.068	-0.130	-0.020	0.197	0.172	0.210	0.014	0.257	0.105	1.000	
Wm_fnd	0.105	0.215	-0.014	0.092	0.059	0.093	0.134	0.075	0.151	0.168	-0.014	0.934

Notes: AVE: Average Variance Extracted; CR: Composite Reliability

The off-diagonal values are the correlations between latent variables and the diagonal are the square root of AVE.

Table 2. demonstrates the discriminant validity using Fornell and Lacker Criterion. The square root of AVE for all latent variables was higher than the inter-construct correlations (Fornell&Larcker, 1981) and therefore they confirm discriminant validity. Further, all indicators’ individual loadings were found to be higher than their respective cross-loadings (Hair et al., 2013). Indicator reliability represents how much of the variation in an item is explained by a variable (Hair et al., 2013). A higher outer loading on a variable indicates that the associated measure has much in common, that is measured by the variable (Hair et al., 2013). Hair, Hult, Ringle, and Sarstedt (2013) suggested that items having a loading >0.70 should be retained, items having an outer loading value >0.40 should be omitted and that its impact on the AVE and CR of the variable should be analyzed.

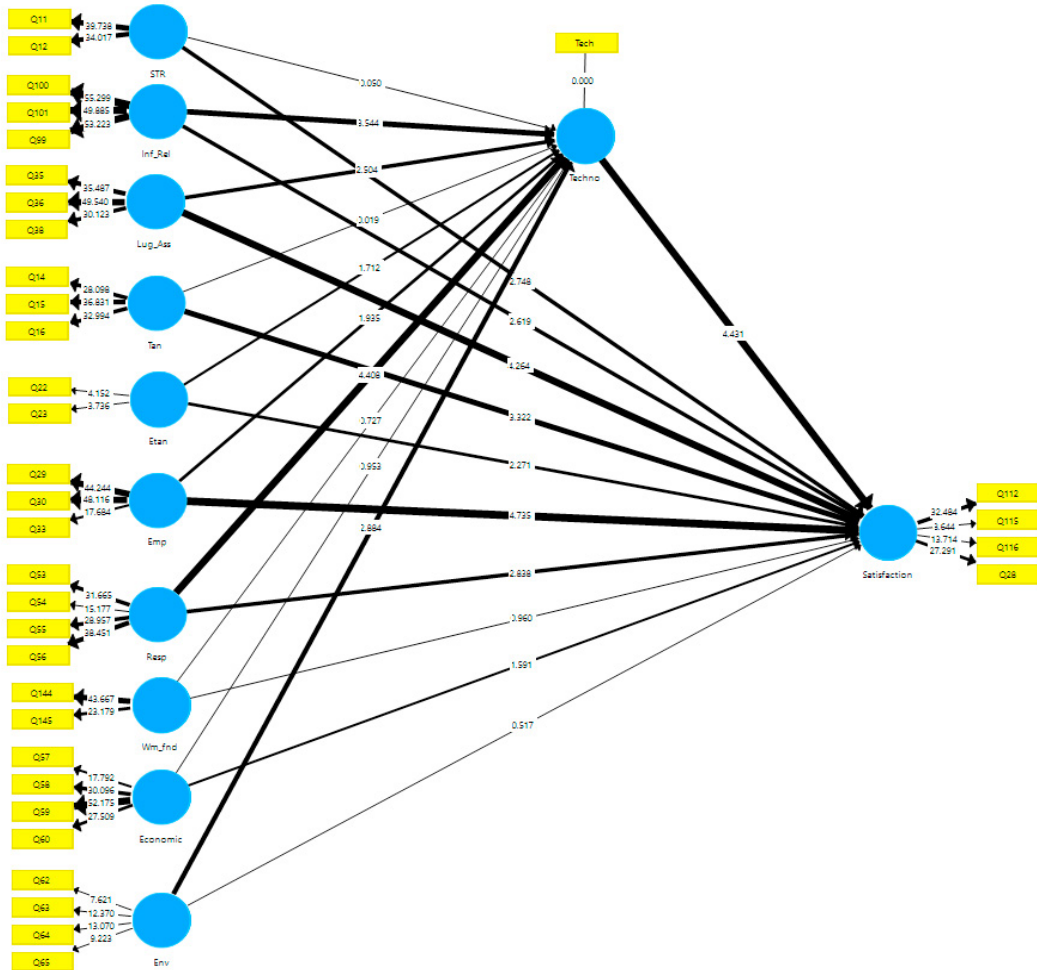


Fig. 1. Technology mediation model

Structural Model Assessment

After establishing the reliability and validity of the latent variables in the measurement model, the structural model (also referred to as the inner model) is assessed to test the relationship between endogenous and exogenous variables. In PLS-SEM, structural model assessment includes path coefficients to evaluate the significance and relevance of structural model relationships, R2 value to evaluate the model’s predictive accuracy, Q2 to evaluate the model’s predictive relevance and f2 to evaluate the substantial impact of the exogenous variable on an endogenous variable (Hair et al., 2013). Figures 1 shows the path coefficient for the direct relationship between service quality

factors with the satisfaction and technology constructs. Nonparametric bootstrapping routine advocated by Vinzi et al., (2010), has been used on 605 data points and 1000 samples. “Bootstrapping is a re-sampling approach that draws random samples (with replacements) from the data and uses these samples to estimate the path model multiple times under slightly changed data constellations” (Hair et al., 2013, p. 162). The main purpose of bootstrapping is to calculate the standard error of coefficient estimates to examine the coefficient’s statistical significance (Vinzi et al., 2010).

Table 3. Results of Structural Relationship

Path	Path Coefficient	Standard Deviation	T Statistics	P Values	Decision
Economic -> Satisfaction	0.058	0.037	1.591	0.112	Not supported
Economic -> Techno	-0.042	0.044	0.953	0.341	Not supported
Emp -> Satisfaction	0.231	0.049	4.735	0.000**	Supported
Emp -> Techno	-0.101	0.052	1.935	0.053	Not supported
Env -> Satisfaction	-0.021	0.041	0.517	0.605	Not supported
Env -> Techno	-0.115	0.040	2.884	0.004**	Supported
Etan -> Satisfaction	-0.089	0.039	2.271	0.023*	Supported
Etan -> Techno	-0.119	0.070	1.712	0.087	Not supported
Inf_Rel -> Satisfaction	0.106	0.040	2.619	0.009**	Supported
Inf_Rel -> Techno	0.159	0.045	3.544	0.000**	Supported
Lug_Ass -> Satisfaction	0.174	0.041	4.264	0.000**	Supported
Lug_Ass -> Techno	0.121	0.048	2.504	0.012*	Supported
Resp -> Satisfaction	0.111	0.039	2.838	0.005**	Supported
Resp -> Techno	0.212	0.048	4.408	0.000**	Supported
STR -> Satisfaction	0.105	0.038	2.748	0.006**	Supported
STR -> Techno	-0.002	0.045	0.050	0.960	Not supported
Tan -> Satisfaction	0.154	0.046	3.322	0.001**	Supported
Tan -> Techno	-0.001	0.050	0.019	0.985	Not supported
Techno -> Satisfaction	0.144	0.032	4.431	0.000**	Supported
Wm_fnd -> Satisfaction	0.034	0.035	0.960	0.337	Not supported
Wm_fnd -> Techno	-0.027	0.037	0.727	0.467	Not supported

** p < 0.01, * p < 0.05

Assessing F², R² and Q² value

F² size effect is the measure to evaluate the change in R² value when a specified exogenous variable is omitted from the model. F² size effect shows the impact of a specific predictor latent variable on a specific endogenous variable as shown in table 4. In this study, F² size effect is small for all the exogenous variables in explaining the overall satisfaction and technology.

Table 4. Results of F²

Endogenous Latent Variables	Satisfaction			Technology		
Exogenous Latent Variables	Path Coefficients	F ² Effect Size	Effect	Path Coefficients	F ² Effect Size	Effect
Economic	0.058	0.005	Small	-0.042	0.002	Small

Emp	0.231	0.054	Small	-0.101	0.007	Small
Env	-0.021	0.001	Small	-0.115	0.014	Small
Etan	-0.089	0.012	Small	-0.119	0.014	Small
Inf_Rel	0.106	0.015	Small	0.159	0.022	Small
Lug_Ass	0.174	0.037	Small	0.121	0.011	Small
Resp	0.111	0.015	Small	0.212	0.036	Small
STR	0.105	0.016	Small	-0.002	0.000	Small
Tan	0.154	0.027	Small	-0.001	0.000	Small
Techno	0.144	0.033	Small			
Wm_fnd	0.034	0.002	Small	-0.027	0.001	Small

Small: $0.0 < F^2$ effect size < 0.15 ; Medium: $0.15 < F^2$ effect size < 0.35 ; Large: F^2 effect size > 0.35

R^2 (Coefficient of determination) value is used to evaluate the structural model. This coefficient measures the predictive accuracy of the model and is calculated as the squared correlation between actual and predictive values of a specified endogenous construct. In our study, the endogenous variables namely satisfaction and technology have R^2 values 0.438 and 0.106 respectively. This reflects the fact the structural model developed in this study has predictive relevance. Further the examination of the endogenous variables' predictive power has medium and small R^2 values respectively (refer table 5).

Table 5. Results of R^2 and Q^2

Endogenous Latent Variable	R^2	Adjusted R^2	Q^2	Effect Size ^a
Satisfaction	0.438	0.427	0.182	Medium
Technology	0.106	0.091	0.061	Small

a. Small: $0.0 < Q^2$ effect size < 0.15 ; Medium: $0.15 < Q^2$ effect size < 0.35 ; Large: Q^2 effect size > 0.35
 Q^2 values of 0 and below indicates a lack of predictive relevance (Hair et al., 2017).

Blindfolding was used to cross-validate the model's predictive relevance for each of the individual endogenous variables, the Stone-Geisser Q^2 value (Geisser, 1974; Stone, 1974). By performing the blindfolding technique (Hair et al., 2013) with an omission distance of 8 yielded cross-validated redundancy Q^2 values of all the endogenous variables. In this study, overall satisfaction has a Q^2 value of 0.182 and technology has 0.061 respectively. This shows medium and small effect sizes, respectively. Because all the Q^2 values are >0 , it establishes the fact that the PLS structural model has predictive relevance.

In this study, mediation analysis was carried out to estimate the magnitude of indirect effect of mediating variable namely technology on the relationship between exogenous variables namely service time reliability, information reliability, luggage assurance, tangibles, external tangibles, empathy, responsiveness, economic and environment and endogenous variable namely overall satisfaction. From table 6, VAF values clearly indicates that technology mediate the relationship between exogenous variables namely environment and responsiveness variables with overall satisfaction. The mediation effect is complementary partial. Whereas the technology does not mediate the relationship between exogenous variables namely economic, empathy, external tangibles, information reliability, luggage assurance, service time reliability, tangibles and women friendliness with overall satisfaction.

Table 6. Mediation Analysis: Technology as Mediator

Factors	P13 (Direct effect)	Indirect Effect	Total Effect	VAF	Mediation
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Economic	0.058	-0.006	-0.006	-0.117	No
Emp	0.231	-0.015	-0.015	-0.067	No
Env	-0.021	-0.017	-0.017	0.439	Complementary Partial
Etan	-0.089	-0.017	-0.017	0.162	No
Inf_Rel	0.106	0.023	0.023	0.178	No
Lug_Ass	0.174	0.017	0.017	0.091	No
Resp	0.111	0.031	0.031	0.216	Complementary Partial
STR	0.105	0.000	0.000	-0.003	No
Tan	0.154	0.000	0.000	-0.001	No
Wm_fnd	0.034	-0.004	-0.004	-0.130	No

Mediating Variable: Technology; Endogenous Variable: overall satisfaction

i) If $0 < VAF < 0.20$, then No Mediation.

ii) If $0.20 < VAF < 0.80$, then Partial Mediation.

iii) If $VAF > 0.80$, then Full Mediation.

if VAF is positive = Complementary Partial Mediation

if VAF is negative = Competitive partial mediation

Partial Least Square Multi Group Analysis (PLS-MGA)

PLS-MGA refers to a set of different techniques that have been developed for comparing PLS-SEM model estimates across two or more groups of data. Usually, PLS-MGA is used to explore differences between path coefficients in the structural model, but one can also compare, for example, loadings or weights (Hair et al., 2017). In our study, since there are three passenger clusters, PLS-MGA technique is employed to compare the estimates across all the three passenger clusters.

Table 7. Partial Least Square Multi Group Analysis of passenger clusters

Path	Path Coefficients-diff (Clus1 -Clus2)	Path Coefficients-diff (Clus1 -Clus3)	Path Coefficients-diff (Clus2 - Clus3)	p-Value (Clus1 vs Clus2)	p-Value (Clus1 vs Clus3)	p-Value (Clus2 vs Clus3)
Economic -> Satisfaction	0.156	0.071	0.086	0.110	0.330	0.688
Economic -> Techno	0.087	0.016	0.102	0.228	0.556	0.797
Emp -> Satisfaction	0.018	0.156	0.138	0.563	0.857	0.831
Emp -> Techno	0.055	0.187	0.242	0.309	0.936	0.963
Env -> Satisfaction	0.247	0.162	0.410	0.995	0.073	0.003**
Env -> Techno	0.383	0.090	0.293	1.000	0.825	0.003**
Etan -> Satisfaction	0.261	0.186	0.075	0.002**	0.083	0.730
Etan -> Techno	0.307	0.307	0.000	0.999	0.998	0.503
Inf_Rel -> Satisfaction	0.097	0.031	0.128	0.147	0.597	0.757
Inf_Rel -> Techno	0.279	0.171	0.449	0.008**	0.958	1.000
Lug_Ass -> Satisfaction	0.169	0.178	0.009	0.031	0.074	0.469
Lug_Ass -> Techno	0.008	0.116	0.107	0.530	0.864	0.823
Resp -> Satisfaction	0.090	0.305	0.394	0.829	0.016*	0.003**
Resp -> Techno	0.354	0.041	0.395	0.009**	0.634	0.995
STR -> Satisfaction	0.069	0.203	0.134	0.242	0.068	0.147

STR -> Techno	0.141	0.282	0.142	0.107	0.017*	0.105
Tan -> Satisfaction	0.013	0.039	0.026	0.560	0.631	0.594
Tan -> Techno	0.056	0.045	0.101	0.685	0.353	0.186
Techno -> Satisfaction	0.023	0.027	0.004	0.619	0.601	0.525
Wm_fnd -> Satisfaction	0.007	0.079	0.085	0.471	0.774	0.799
Wm_fnd -> Techno	0.054	0.109	0.056	0.258	0.123	0.285

** p < 0.01, * p < 0.05

The findings of the PLS-MGA presented in the table 7 indicates that there is a significant difference between the passenger cluster1 and passenger cluster 2 with respect to the effect of external tangibles to overall satisfaction, the effect of information reliability and responsiveness to the technology dimension of the intercity bus transport. There is a significant difference between the passenger cluster1 and passenger cluster 3 with respect to the effect of responsiveness to the overall satisfaction of the intercity bus transport and the effect of service time reliability to technology dimension. There is a significant difference between the passenger cluster2 and passenger cluster 3 with respect to the effect of environment and responsiveness to the overall satisfaction of the intercity bus transport and the effect of environment to technology dimension.

Table 8. Path coefficient of passenger clusters

Path	t-Values (Clus1)	t-Values (Clus2)	t-Values (Clus3)	p-Values (Clus1)	p-Values (Clus2)	p-Values (Clus3)
Economic -> Satisfaction	1.537	0.454	0.293	0.125	0.650	0.769
Economic -> Techno	0.298	1.300	0.104	0.766	0.194	0.917
Emp -> Satisfaction	1.645	1.976	2.308	0.100	0.048*	0.021*
Emp -> Techno	1.696	1.923	0.723	0.090	0.055	0.470
Env -> Satisfaction	1.582	2.163	2.708	0.114	0.031*	0.007**
Env -> Techno	3.033	2.380	1.660	0.002**	0.017*	0.097
Etan -> Satisfaction	1.009	3.506	1.031	0.313	0.000**	0.303
Etan -> Techno	5.049	0.193	0.163	0.000**	0.847	0.871
Inf_Rel -> Satisfaction	2.842	0.822	1.128	0.005**	0.411	0.260
Inf_Rel -> Techno	1.966	1.768	4.352	0.050*	0.077	0.000**
Lug_Ass -> Satisfaction	4.294	2.033	1.093	0.000**	0.042*	0.275
Lug_Ass -> Techno	0.064	0.158	1.395	0.949	0.875	0.163
Resp -> Satisfaction	2.037	3.626	1.309	0.042*	0.000**	0.191
Resp -> Techno	4.199	0.515	3.583	0.000**	0.607	0.000**
STR -> Satisfaction	2.185	1.466	0.335	0.029*	0.143	0.738
STR -> Techno	1.628	0.061	1.726	0.104	0.951	0.085
Tan -> Satisfaction	1.682	2.095	1.379	0.093	0.036*	0.168
Tan -> Techno	0.192	0.525	0.714	0.848	0.600	0.475
Techno -> Satisfaction	2.519	3.011	1.565	0.012*	0.003**	0.118
Wm_fnd -> Satisfaction	0.815	0.773	1.663	0.415	0.439	0.097
Wm_fnd -> Techno	0.902	0.038	0.762	0.367	0.969	0.446

** p < 0.01, * p < 0.05

The table 8 indicates the path coefficients and significance of paths between endogenous and exogenous constructs in multi group analysis. The path between environment and technology, external tangibles and technology, information reliability and satisfaction, information reliability and technology, luggage assurance and satisfaction, responsiveness and satisfaction, responsiveness and technology, service time reliability and satisfaction, technology and satisfaction are significant in the passenger cluster1. The path between empathy and satisfaction, environment and satisfaction, environment and technology, external tangibles and satisfaction, luggage assurance and satisfaction, responsiveness and satisfaction, tangibles and satisfaction, technology and satisfaction are significant in the passenger cluster2. The path between empathy and satisfaction, environment and satisfaction, information reliability and technology, responsiveness and technology are significant in the passenger cluster3.

Model Fit

Table 9 represents the model fit summary. The SRMR and NFI value of the model is 0.064 and 0.651 respectively. Since SRMR value is less than 0.08, model is considered good fit whereas NFI value is not closer to 1. By considering the Q2 value, the model has medium predictive relevance.

Table 9. Model fit summary

Fit Summary	Saturated Model	Estimated Model
SRMR	0.064	0.064
d_U LS	2.551	2.551
d_G1	1.107	1.107
d_G2	0.830	0.830
Chi-Square	3,099.604	3,099.604
NFI	0.651	0.651

Discussion

According to findings of the study presented in the table 3, empathy, information reliability, luggage assurance, responsiveness, service time reliability, tangibles factors of service quality and technology factor is positively associated with and have significant impact on overall satisfaction of intercity bus transport. Whereas external tangible is negatively associated with overall satisfaction and have significant impact on it. The service quality factors namely, information reliability, luggage assurance and responsiveness are positively associated with mediating variable namely technology and have significant relationship. Whereas environment is negatively associated and have significant relationship with mediating variable namely, technology. Hence, it is very important for intercity bus passenger transportation to give importance on empathy, information reliability, luggage assurance, responsiveness, service time reliability and tangibles dimensions of service quality and practice it, because it has a direct and positive impact on overall satisfaction of transport service. Also, information reliability, luggage assurance and responsiveness are important for technology dimension, because technology is not a standalone entity and call for the joint efforts of service providers to ensure better service quality.

The factors such as economic, environment and women friendliness do not have significant relationship with overall satisfaction of intercity transport. Also, factors such as economic, empathy, external tangible, service time reliability, tangibles and women friendliness do not have significant relationship with technology dimension of intercity bus transport.

Fig. 2 depicts the PLS-SEM path model with service quality factors namely, service time reliability, information reliability, luggage assurance, tangibles, external tangibles, empathy, responsiveness, women friendliness, economic and environmental factors as exogenous variables. Overall satisfaction is considered as the endogenous variable. The technology factor is considered as mediating variable between service quality factors and overall satisfaction, policy and road infrastructure variables as moderators of intercity bus transport. Moderator effect occurs when the effect of an exogenous latent variable on an endogenous latent variable depends on the values of another variable that moderates the relationship (Hair et al., 2017). The thickness of the paths between latent variables indicates the strength of significant impact between exogenous, mediating, moderating and endogenous constructs. The

moderation effect of policy on overall satisfaction with respect to empathy, tangibles, economic and environmental constructs are considered. The moderation effect of road infrastructure on

overall satisfaction with respect to empathy, tangibles and economic constructs are considered. This is because other constructs do not fit into the model as per the CR and AVE requirements.

Structural Model Assessment: Path-Coefficients of HSQP cluster

Fig. 2 shows the path coefficient for the direct relationship between service quality factors with the satisfaction and technology constructs. Nonparametric bootstrapping routine advocated by Vinzi et al., (2010), has been used on 225 data points and 1000 samples.

High Service Quality Perception (HSQP) Cluster

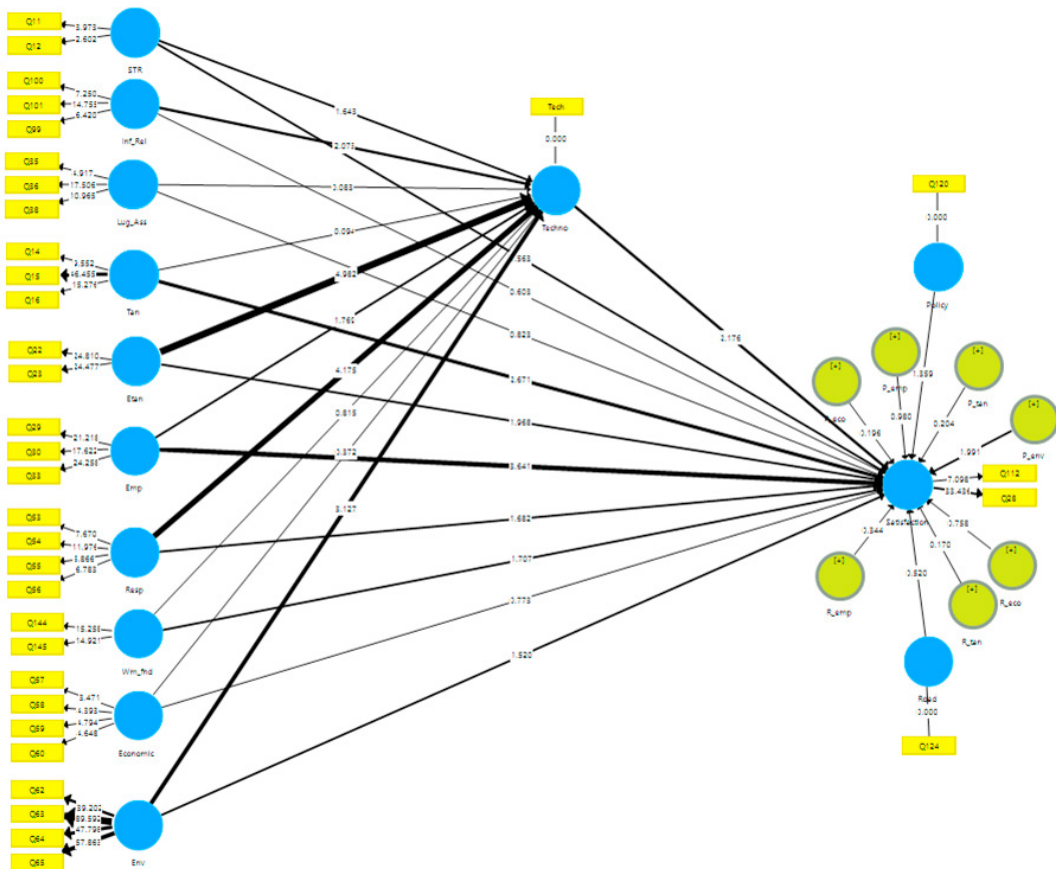


Fig. 2. High Service Quality Preference Cluster

Table 10. Results of Structural Relationship

Path	Path Coefficient	Standard Deviation	T Statistics	P Values	Decision
Economic -> Satisfaction	0.178	0.231	0.773	0.440	Not supported
Economic -> Techno	-0.027	0.073	0.372	0.710	Not supported
Emp -> Satisfaction	0.271	0.075	3.641	0.000**	Supported
Emp -> Techno	-0.120	0.068	1.769	0.077	Not supported

Env -> Satisfaction	0.417	0.275	1.520	0.129	Not supported
Env -> Techno	-0.200	0.064	3.127	0.002**	Supported
Etan -> Satisfaction	0.152	0.077	1.968	0.049*	Supported
Etan -> Techno	-0.289	0.058	4.982	0.000**	Supported
Inf_Rel -> Satisfaction	0.045	0.075	0.603	0.547	Not supported
Inf_Rel -> Techno	0.152	0.073	2.073	0.038*	Supported
Lug_Ass -> Satisfaction	0.059	0.072	0.823	0.411	Not supported
Lug_Ass -> Techno	0.005	0.065	0.083	0.934	Not supported
P_eco -> Satisfaction	-0.054	0.275	0.196	0.845	Not supported
P_emp -> Satisfaction	0.079	0.081	0.980	0.327	Not supported
P_env -> Satisfaction	-0.503	0.252	1.991	0.047*	Supported
P_tan -> Satisfaction	-0.016	0.080	0.204	0.838	Not supported
Policy -> Satisfaction	0.706	0.520	1.359	0.175	Not supported
R_eco -> Satisfaction	0.106	0.140	0.758	0.449	Not supported
R_emp -> Satisfaction	0.024	0.070	0.344	0.731	Not supported
R_tan -> Satisfaction	0.014	0.080	0.170	0.865	Not supported
Resp -> Satisfaction	0.124	0.074	1.682	0.093	Not supported
Resp -> Techno	0.291	0.070	4.175	0.000**	Supported
Road -> Satisfaction	-0.140	0.269	0.520	0.604	Not supported
STR -> Satisfaction	0.118	0.076	1.563	0.118	Not supported
STR -> Techno	0.132	0.081	1.643	0.101	Not supported
Tan -> Satisfaction	0.198	0.074	2.671	0.008**	Supported
Tan -> Techno	-0.008	0.083	0.094	0.925	Not supported
Techno -> Satisfaction	0.155	0.071	2.176	0.030*	Supported
Wm_fnd -> Satisfaction	0.142	0.083	1.707	0.088	Not supported
Wm_fnd -> Techno	0.047	0.058	0.815	0.415	Not supported

** p < 0.01, * p < 0.05

HSQP cluster Mediation Analysis

From Table 11, VAF values clearly indicates that technology mediate the relationship between exogenous variables namely external tangibles, information reliability and responsiveness constructs with overall satisfaction. The mediation effect is complementary partial for information reliability and responsiveness, the effect is competitive partial for external tangibles. Whereas the technology does not mediate the relationship between exogenous constructs namely economic, empathy, environmental, luggage assurance, service time reliability, tangibles and women friendliness with overall satisfaction.

Table 11. Mediation Analysis: Technology as Mediator

Factors	P13 (Direct effect)	Indirect Effect	Total Effect	VAF	Mediation
Economic	0.178	-0.004	0.174	-0.024	No
Emp	0.271	-0.019	0.253	-0.074	No
Env	0.417	-0.031	0.386	-0.080	No
Etan	0.152	-0.045	0.108	-0.417	Competitive Partial

Inf_Rel	0.045	0.024	0.069	0.341	Complementary Partial
Lug_Ass	0.059	0.001	0.060	0.014	No
Resp	0.124	0.045	0.169	0.267	Complementary Partial
STR	0.118	0.021	-0.140	0.148	No
Tan	0.198	-0.001	0.138	-0.006	No
Wm_fnd	0.142	0.007	0.197	0.049	No

Mediating Variable: Technology; Endogenous Variable: overall satisfaction

i) If $0 < VAF < 0.20$, then No Mediation.

ii) If $0.20 < VAF < 0.80$, then Partial Mediation.

iii) If $VAF > 0.80$, then Full Mediation.

if VAF is positive = Complementary Partial Mediation

if VAF is negative = Competitive partial mediation

Discussion

According to findings of the study presented in the table 10, empathy, external tangibles, tangibles and technology constructs are positively associated with overall satisfaction of intercity bus transport and have significant impact on it. Policy to environment moderation, is negatively associated with overall satisfaction and have significant impact on it. The information reliability and responsiveness constructs are positively associated with mediating variable namely technology and have significant relationship. Whereas environmental, tangibles and external tangibles constructs are negatively associated with mediating variable namely, technology and have a significant relationship. Hence, it is very important for intercity bus passenger transportation to give importance on empathy, external tangibles, tangibles and technology dimensions of service quality and practice it, because it has a direct and positive impact on overall satisfaction of transport service. Also, information reliability and responsiveness dimensions are important for technology dimension, because technology is not a standalone entity and call for the joint efforts of service providers to ensure better service quality.

Low Service Quality Preference (LSQP) Cluster

Fig. 3 depicts the PLS-SEM path model with service quality factors namely, service time reliability, information reliability, luggage assurance, tangibles, external tangibles, empathy, responsiveness, women friendliness, economic and environmental factors as exogenous variables. Overall satisfaction is considered as the endogenous variable. The technology factor is considered as mediating variable between service quality factors and overall satisfaction, policy and road infrastructure variables as moderators of intercity bus transport. Moderator effect occurs when the effect of an exogenous latent variable on an endogenous latent variable depends on the values of another variable that moderates the relationship (Hair et al., 2017). The thickness of the paths between latent variables indicates the strength of significant impact between exogenous, mediating, moderating and endogenous constructs. The moderation effect of policy on overall satisfaction with respect to empathy, tangibles, economic and environmental constructs are considered. The moderation effect of road infrastructure on overall satisfaction with respect to empathy, tangibles and economic constructs are considered. This is because other constructs do not fit into the model as per the CR and AVE requirements.

Structural Model Assessment: Path-Coefficients of LSQP cluster

Fig. 3 shows the path coefficient for the direct relationship between service quality factors with the satisfaction and technology constructs. Nonparametric bootstrapping routine advocated by Vinzi et al., (2010), has been used on 238 data points and 1000 samples.

Table 12. Results of Structural Relationship

Path	Path Coefficient	Standard Deviation	T Statistics	P Values	Decision
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Economic -> Satisfaction	-0.260	0.147	1.776	0.076	Not supported
Economic -> Techno	-0.108	0.075	1.437	0.151	Not supported
Emp -> Satisfaction	0.153	0.074	2.057	0.040*	Supported
Emp -> Techno	-0.151	0.088	1.716	0.087	Not supported
Env -> Satisfaction	0.069	0.149	0.464	0.643	Not supported
Env -> Techno	0.179	0.074	2.415	0.016*	Supported
Etan -> Satisfaction	-0.120	0.055	2.188	0.029*	Supported
Etan -> Techno	0.023	0.075	0.298	0.765	Not supported
Inf_Rel -> Satisfaction	0.043	0.086	0.502	0.616	Not supported
Inf_Rel -> Techno	-0.131	0.077	1.696	0.090	Not supported
Lug_Ass -> Satisfaction	0.138	0.059	2.330	0.020*	Supported
Lug_Ass -> Techno	0.020	0.079	0.255	0.799	Not supported
P_eco -> Satisfaction	-0.199	0.178	1.116	0.264	Not supported
P_emp -> Satisfaction	0.093	0.081	1.139	0.255	Not supported
P_env -> Satisfaction	-0.050	0.335	0.148	0.882	Not supported
P_tan -> Satisfaction	0.031	0.083	0.370	0.711	Not supported
Policy -> Satisfaction	0.308	0.468	0.658	0.511	Not supported
R_eco -> Satisfaction	0.288	0.163	1.771	0.077	Not supported
R_emp -> Satisfaction	-0.107	0.077	1.392	0.164	Not supported
R_env -> Satisfaction	0.056	0.196	0.286	0.775	Not supported
R_tan -> Satisfaction	0.022	0.081	0.266	0.790	Not supported
Resp -> Satisfaction	0.294	0.074	3.985	0.000**	Supported
Resp -> Techno	-0.100	0.095	1.054	0.292	Not supported
Road -> Satisfaction	-0.339	0.294	1.151	0.250	Not supported
STR -> Satisfaction	0.111	0.070	1.571	0.117	Not supported
STR -> Techno	-0.005	0.075	0.071	0.943	Not supported
Tan -> Satisfaction	0.105	0.066	1.607	0.108	Not supported
Tan -> Techno	0.041	0.075	0.543	0.587	Not supported
Techno -> Satisfaction	0.118	0.056	2.118	0.034*	supported
Wm_fnd -> Satisfaction	0.016	0.071	0.229	0.819	Not supported
Wm_fnd -> Techno	-0.009	0.060	0.147	0.883	Not supported

** p < 0.01, * p < 0.05

LSQP cluster mediation analysis

From table 13, VAF values clearly indicates that technology mediate the relationship between exogenous variables namely information reliability and environmental constructs with overall satisfaction. The mediation effect is complementary partial for environmental, the effect is competitive partial for information reliability. Whereas the technology does not mediate the relationship between exogenous constructs namely economic, empathy, external tangibles, luggage assurance, responsiveness, service time reliability, tangibles and women friendliness with overall satisfaction.

Table 13. Mediation Analysis: Technology as Mediator

Factors	P13 (Direct effect)	Indirect Effect	Total Effect	VAF	Mediation
Economic	-0.260	-0.013	-0.273	0.047	No
Emp	0.153	-0.018	0.135	-0.132	No
Env	0.069	0.021	0.090	0.234	Complementary Partial
Etan	-0.120	0.003	-0.118	-0.023	No
Inf_Rel	0.043	-0.015	0.028	-0.557	Competitive Partial
Lug_Ass	0.138	0.002	0.140	0.017	No
Resp	0.294	-0.012	0.283	-0.042	No
STR	0.111	-0.001	-0.339	-0.006	No
Tan	0.105	0.005	0.110	0.044	No
Wm_fnd	0.016	-0.001	0.110	-0.069	No

Mediating Variable: Technology; Endogenous Variable: Satisfaction

i) If $0 < VAF < 0.20$, then No Mediation.

ii) If $0.20 < VAF < 0.80$, then Partial Mediation.

iii) If $VAF > 0.80$, then Full Mediation.

if VAF is positive = Complementary Partial Mediation; if VAF is negative = Competitive partial mediation

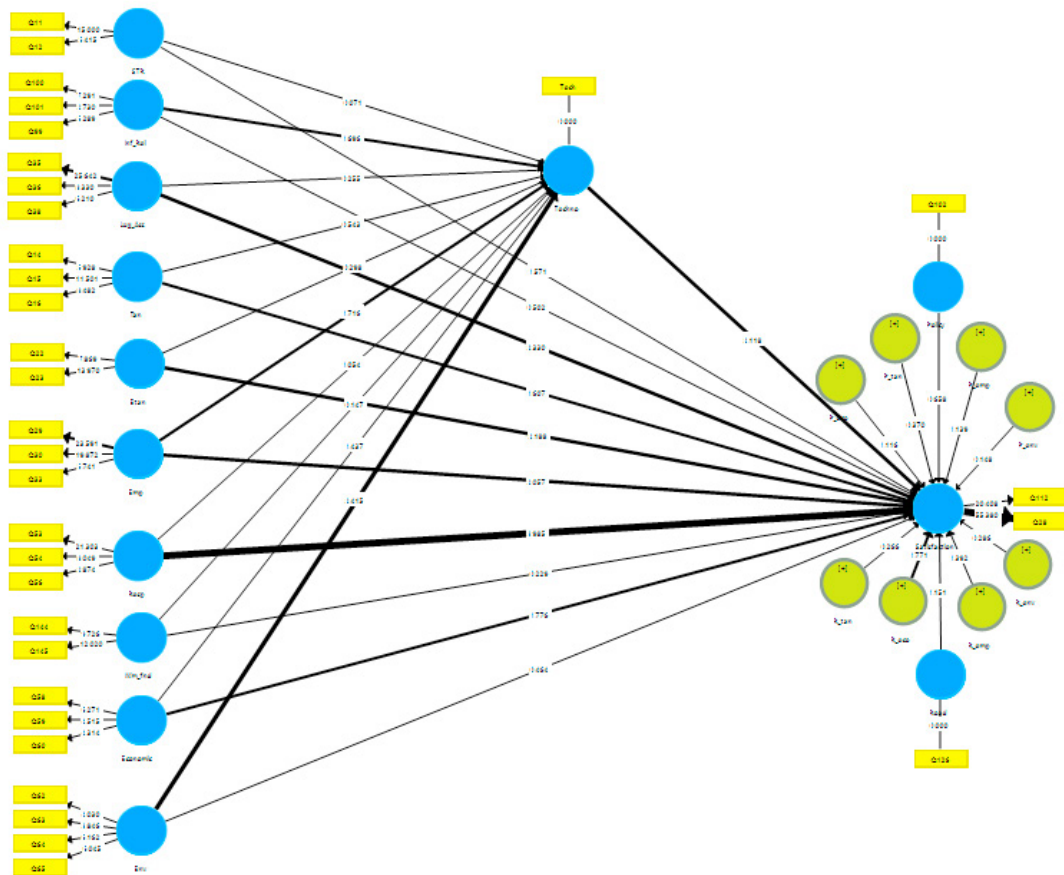


Fig. 3. Low service quality preference cluster

Discussion

According to findings of the study presented in table 12, the empathy, external tangibles, tangibles, luggage assurance and responsiveness constructs are positively associated with overall satisfaction of intercity bus transport and have significant impact on it. The environmental construct is positively associated with mediating construct that is, technology and have significant relationship. Hence, it is very important for intercity bus passenger transportation to give importance on empathy, external tangibles, tangibles, luggage assurance and responsiveness dimensions of service quality and practice it, because it has a direct and positive impact on overall satisfaction of transport service. Also, environmental dimension is important for technology dimension, because technology is not a standalone entity and call for the joint efforts of service providers to ensure better service quality.

Moderate Service Quality Preference (MSQP) Cluster

Fig. 4 depicts the PLS-SEM path model with service quality factors namely, service time reliability, information reliability, luggage assurance, tangibles, external tangibles, empathy, responsiveness, women friendliness, economic and environmental factors as exogenous variables. Overall satisfaction is considered as the endogenous variable. The technology factor is considered as mediating variable between service quality factors and overall satisfaction, policy and road infrastructure variables as moderators of intercity bus transport. Moderator effect occurs when the effect of an exogenous latent variable on an endogenous latent variable depends on the values of another variable that moderates the relationship (Hair et al., 2017). The thickness of the paths between latent variables indicates the strength of significant impact between exogenous, mediating, moderating and endogenous constructs. The moderation effect of policy on overall satisfaction with respect to tangibles, economic and environmental constructs are considered. The moderation effect of road infrastructure on overall satisfaction with respect to empathy, environmental and economic constructs are considered. This is because other constructs do not fit into the model as per the CR and AVE requirements.

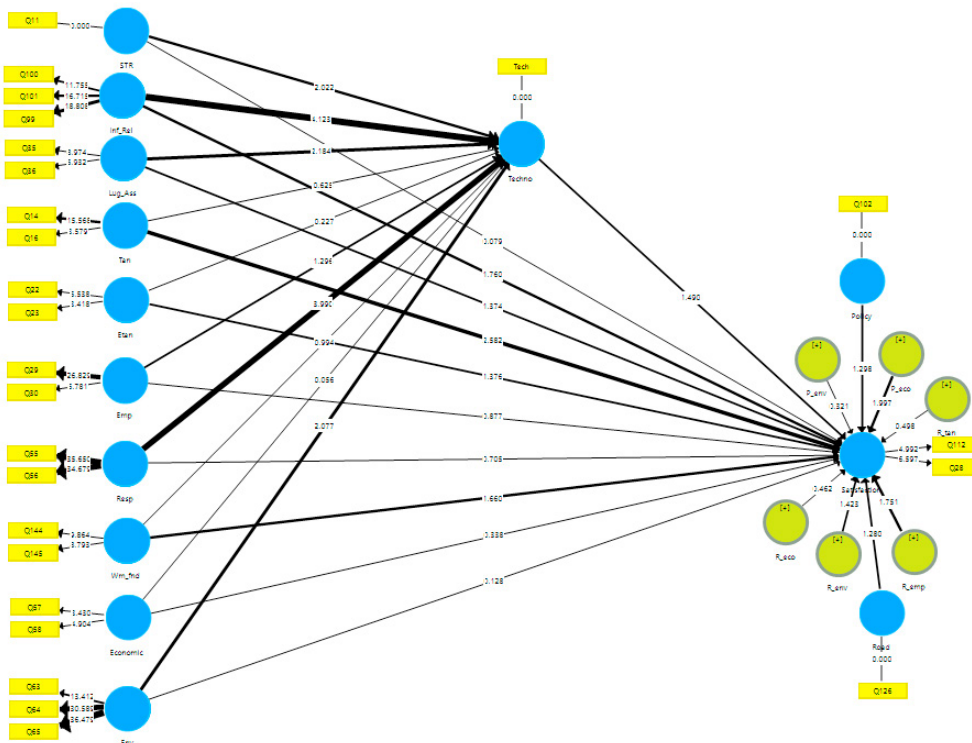


Fig. 4. Moderate Service Quality Preference (MSQP) Cluster

Structural Model Assessment: Path-Coefficients of MSQP cluster

Fig. 4 shows the path coefficient for the direct relationship between service quality factors with the satisfaction and technology constructs. Nonparametric bootstrapping routine advocated by Vinzi et al., (2010), has been used on 142 data points and 1000 samples.

Table 14. Results of Structural Relationship

Path	Path Coefficients	Standard Deviation	T Statistics	P Values	Decision
Economic -> Satisfaction	0.087	0.251	0.349	0.727	Not supported
Economic -> Techno	0.004	0.077	0.055	0.956	Not supported
Emp -> Satisfaction	-0.253	0.297	0.852	0.395	Not supported
Emp -> Techno	0.109	0.084	1.289	0.198	Not supported
Env -> Satisfaction	0.024	0.186	0.131	0.896	Not supported
Env -> Techno	-0.144	0.070	2.065	0.039*	Supported
Etan -> Satisfaction	-0.140	0.100	1.400	0.162	Not supported
Etan -> Techno	0.018	0.084	0.219	0.827	Not supported
Inf_Rel -> Satisfaction	0.231	0.136	1.704	0.089	Not supported
Inf_Rel -> Techno	0.318	0.079	4.003	0.000**	Supported
Lug_Ass -> Satisfaction	0.126	0.093	1.364	0.173	Not supported
Lug_Ass -> Techno	0.162	0.074	2.186	0.029*	Supported
P_eco -> Satisfaction	-0.528	0.239	2.211	0.027*	Supported
P_env -> Satisfaction	0.073	0.229	0.317	0.751	Not supported
Policy -> Satisfaction	0.484	0.363	1.332	0.183	Not supported
R_eco -> Satisfaction	0.103	0.224	0.460	0.646	Not supported
R_emp -> Satisfaction	0.833	0.478	1.743	0.082	Not supported
R_env -> Satisfaction	-0.328	0.230	1.424	0.155	Not supported
R_tan -> Satisfaction	0.058	0.110	0.528	0.597	Not supported
Resp -> Satisfaction	-0.068	0.097	0.700	0.484	Not supported
Resp -> Techno	0.314	0.077	4.087	0.000**	Supported
Road -> Satisfaction	-0.932	0.747	1.248	0.212	Not supported
STR -> Satisfaction	0.006	0.077	0.080	0.936	Not supported
STR -> Techno	-0.144	0.072	2.007	0.045*	Supported
Tan -> Satisfaction	0.225	0.089	2.536	0.011*	Supported
Tan -> Techno	-0.047	0.082	0.579	0.563	Not supported
Techno -> Satisfaction	0.156	0.100	1.560	0.119	Not supported
Wm_fnd -> Satisfaction	0.122	0.068	1.801	0.072	Not supported
Wm_fnd -> Techno	-0.077	0.079	0.967	0.334	Not supported

** p < 0.01, * p < 0.05

MSQP cluster mediation analysis

From table 15, VAF values clearly indicates that technology construct mediates the relationship between exogenous constructs that is, environmental, responsiveness and service time reliability with overall satisfaction. The mediation

effect is full for environmental, responsiveness and service time reliability constructs. Whereas the technology does not mediate the relationship between exogenous constructs namely economic, empathy, external tangibles, information reliability, luggage assurance, tangibles and women friendliness with overall satisfaction.

Table 15. Mediation Analysis: Technology as Mediator

Factors	P13 (Direct effect)	Indirect Effect	Total Effect	VAF	Mediation
Economic	0.087	0.001	0.088	0.007	No
Emp	-0.253	0.017	-0.236	-0.072	No
Env	0.024	-0.022	0.002	-11.506	Full Mediation
Etan	-0.140	0.003	-0.137	-0.021	No
Inf_Rel	0.231	0.050	0.281	0.177	No
Lug_Ass	0.126	0.025	0.152	0.166	No
Resp	-0.068	0.049	-0.019	-2.546	Full Mediation
STR	0.006	-0.023	-0.932	1.381	Full Mediation
Tan	0.225	-0.007	-0.016	-0.034	No
Wm_fnd	0.122	-0.012	0.218	-0.109	No

Mediating Variable: Technology; Endogenous Variable: Satisfaction

i) If $0 < VAF < 0.20$, then No Mediation.

ii) If $0.20 < VAF < 0.80$, then Partial Mediation.

iii) If $VAF > 0.80$, then Full Mediation.

if VAF is positive = Complementary Partial Mediation

if VAF is negative = Competitive partial mediation

Discussion

Technology in the new era is inevitable. It has the potential to advance the services by enabling the delivery of values which benefits service providers and customers (Adi et al. 2014). Passengers using internet evaluates the quality of road transportation through availability of travel related information like bus transport firm, travel distance, date and time of travel (Zeithaml et al., 2002). Today seats booking through internet are one of the common services offered by many public and private transport service providers along with the third-party players. In the context of transport service, some of the benefits offered by internet technology includes online ticket booking, online payments, online seat reservation across India and e-tickets. Overall trip experience of the passengers could be enhanced through new technologies, information provision and on-board entertainment (Carreira et al., 2013). This study has used technology such as online ticket booking, safe online payment, online information and confirmation message to mediate the service quality and overall satisfaction of intercity bus transport.

Technology has penetrated to majority of the population especially for youth through mobile phones and internet in acquiring services. This study indicates that technology significantly impact the overall satisfaction of the passengers when they are using intercity bus service. Apart from this, technology mediates the responsiveness such as getting reserved seats and individual attention of the service with respect to overall satisfaction. Similarly, environmental dimension is mediated by technology in determining overall satisfaction with respect to service quality. This also indicates that technology based services can address the environmental concerns. Along with this, technological interface make the pre-journey procedures simpler and faster.

Generally, luggage assurance and reliability aspects significantly impact overall satisfaction. Carrying luggage is one of the main features of intercity journey. Intercity public transport vehicles are designed to facilitate luggage mobility along with the passengers. Passengers use intercity transport for visiting family, friends, work place or tourism which are long distance apart and may expect to stay for considerable time at the destination place. Therefore, they usually carry luggage consisting of personal belongings, valuable things, fragile articles, gifts, food and beverages, laptops etc. Generally, the aspects of luggage considered during intercity bus journey are allowing

luggage to be carried with the passengers, sufficient place for keeping their luggage and safety of their luggage. The sufficient place for placing passenger's luggage makes their journey more comfortable. Additionally, the safety and security of the luggage is very important and high priority for passengers in Indian context, which makes them free from worries and improve their satisfaction perception of the bus transport service. Due to the protective nature of passengers about the luggage while traveling in intercity bus, luggage assurance is considered as one of the defining and important dimensions of the service quality. Our study indicates that the overall satisfaction is influenced by the luggage assurance positively which confirms with the study findings of Parasuraman et al. (1991), Freitas (2013), Cunningham et al. (2000), Yi and La (2003), Clemes et al. (2008), Wijaya (2009), Carreira et al. (2013).

Passengers especially when traveling in intercity buses aspire for trustworthy services which significantly influences their overall satisfaction of the service. Consistent service in the context of intercity bus transport significantly impact the overall satisfaction to greater extent. In this study, the perceptions of service time reliability and information reliability significantly impacts the overall satisfaction which confirms with the study findings of Morton et al. (2016), Ponrahono et al. (2016), Bakti et al. (2015), Pérez et al. (2007), Sam et al. (2018), Birago et al. (2017), Deb et al. (2018), Wijaya (2009), Redman et al. (2013) and Carreira et al. (2013). This study indicates that timely services with the appropriate information are very important for intercity passengers traveling from metropolitan city like Bengaluru.

In contrast to the findings of overall data model, there are differences with high service quality preference passengers in terms of luggage assurance and reliability aspects. For these passengers, tangibles of service are more important than the intangibles except empathy dimension. When it comes inside bus clean, good conditioned and comfortable seats are more important and with respect to bus stops eateries, clean drinking water and clean toilets are important for passengers who prefer high service quality. Passenger satisfaction is also determined by the driver and conductor courteousness. Along with this, technological interface creates a significant impact on overall satisfaction of the passengers.

In contrast to high service quality preference passenger, for the low service quality preference passengers, bus infrastructure is not so important compared to bus stop infrastructure like clean toilets and drinking water availability. For these passengers, luggage safety and security is one of the significant entity which influences their overall satisfaction. Also, positive quick response from the staff members is appreciated by these passengers. Although these passengers do not prefer high service quality but they want technology interface to make the intercity bus transport service more user friendly.

Interestingly, passengers who prefer moderate service quality are not interested towards the specifics of service quality except for tangibles. Their service satisfaction is solely dependent on bus condition such as cleanliness, good condition and comfortable seats. Additionally, these are the ones who are concerned about policy of government towards the service especially with economic dimension.

Conclusion

The main reasons for the satisfaction of high service quality preference are the infrastructure facilities provided by the transport service. This coupled with staff behavior makes these passengers more satisfied. Further technological interface plays an important role in determining the satisfaction for high service quality. Instant and adequate information through hand held devices results in positive impression and user friendliness of the service especially for young travelers. Therefore, when dealing with educated and economically better passengers, service providers should focus more on providing appealing infrastructure facilities along with ensuring approachable staff behavior. Generally, Can I trust the service? Can I trust the service to show consistent performance? Are the questions which reflects peoples' dilemma during the course of choosing the public transport. This is more evident in the case of intercity bus transport. This study strengthens the concern by indicating reliability as one of the most important attributes in the transport. Passengers always want to experience the trustworthy services offered accurately and consistently. This confidence can be instilled in the passengers by providing timely services with appropriate and adequate service related information. Moving ahead the pleasant behavior of the staff will add to the satisfaction of their journey. The sense of safe and secured environment for passengers luggage especially in the intercity transport contributes greatly to their satisfaction. Because carrying luggage is one of the distinguished features of intercity travel. Instant and adequate information through hand held devices results in positive perception of information reliability and responsiveness.

References

- Black, D. and Black, J., 2009. A review of the urban development and transport impacts on public health with particular reference to Australia: trans-disciplinary research teams and some research gaps. *International journal of environmental research and public health*, 6(5), pp.1557-1596.
- Carreira, R., Patrício, L., Jorge, R.N., Magee, C. and Hommes, Q.V.E., 2013. Towards a holistic approach to the travel experience: A qualitative study of bus transportation. *Transport Policy*, 25, pp.233-243.
- Chapman, L., 2007. Transport and climate change: a review. *Journal of transport geography*, 15(5), pp.354-367.
- Clemes, M.D., Gan, C., Kao, T.H. and Choong, M., 2008. An empirical analysis of customer satisfaction in international air travel. *Innovative Marketing*, 4(2), pp.50-62.
- Cronin Jr, J.J. and Taylor, S.A., 1992. Measuring service quality: a reexamination and extension. *The journal of marketing*, pp.55-68.
- Dagger, T.S., Sweeney, J.C. and Johnson, L.W., 2007. A hierarchical model of health service quality: scale development and investigation of an integrated model. *Journal of service research*, 10(2), pp.123-142.
- Das, S. and Pandit, D., 2016. Qualitative assessment of public facilities: the “public bus”. *The TQM Journal*, 28(2), pp.275-294.
- De Oña, R., Machado, J.L. and de Oña, J., 2015. Perceived service quality, customer satisfaction, and behavioral intentions: structural equation model for the Metro of Seville, Spain. *Transportation Research Record: Journal of the Transportation Research Board*, (2538), pp.76-85.
- Fornell, C. and Larcker, D.F., 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, pp.39-50.
- Fornell, C. and Larcker, D.F., 1981. Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of marketing research*, pp.382-388.
- Fravel, F.D., 2003. Intercity Bus Links: Moving into New Territory. *TR news*, (225).
- Freitas, A.L.P., 2013. Assessing the quality of intercity road transportation of passengers: An exploratory study in Brazil. *Transportation Research Part A: Policy and Practice*, 49, pp.379-392.
- Hair Jr, J.F., Hult, G.T.M., Ringle, C. and Sarstedt, M., 2016. *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L., 2006. *Multivariate data analysis* (Vol. 6).
- Khurshid, R., Naeem, H., Ejaz, S., Mukhtar, F. and Batool, T., 2012. Service quality and customer satisfaction in public transport sector of Pakistan: an empirical study. *International Journal of Economics and Management Sciences*, 1(9), pp.24-30.
- Lai, W.T. and Chen, C.F., 2011. Behavioral intentions of public transit passengers—The roles of service quality, perceived value, satisfaction and involvement. *Transport Policy*, 18(2), pp.318-325.
- Minser, J. and Webb, V., 2010. Quantifying the benefits: application of customer loyalty modeling in public transportation context. *Transportation Research Record*, 2144(1), pp.111-120.
- Morton, C., Caulfield, B. and Anable, J., 2016. Customer perceptions of quality of service in public transport: Evidence for bus transit in Scotland. *Case Studies on Transport Policy*, 4(3), pp.199-207.
- Namboodiri, U. (2007). State Policies Affecting Competition: Passenger Road Transportation Sector, (April). Retrieved from http://www.cci.gov.in/sites/default/files/2statepoliciesaffecting_20080508111218.pdf
- Nocera, S., 2011. The key role of quality assessment in public transport policy. *Traffic Engineering & Control*, 52(9).
- Parasuraman, A., Berry, L.L. and Zeithaml, V.A., 1991. Refinement and Reassessment of the SERVQUAL Scale. *Journal of retailing*, 67(4).
- Parasuraman, A., Zeithaml, V.A. and Berry, L.L., 1988. Servqual: A multiple-item scale for measuring consumer perc. *Journal of retailing*, 64(1), p.12.
- Ponrahono, Z., Bachok, S., Ibrahim, M. and Osman, M.M., 2016. Assessing passengers' satisfaction level on bus services in selected urban and rural centres of Peninsular Malaysia. *Procedia-Social and Behavioral Sciences*, 222, pp.837-844.
- Steg, L., 2003. Factors influencing the acceptability and effectiveness of transport pricing. In *Acceptability of transport pricing strategies* (pp. 187-202). Pergamon Press.

- Sumaedi, S., Bakti, I. G. M. Y., Rakhmawati, T., Astrini, N. J., Widiyanti, T., & Yarmen, M., 2016. Factors influencing public transport passengers' satisfaction: a new model. *Management of Environmental Quality: An International Journal*, 27(5), 585-597.
- Vinzi, V.E., Trinchera, L. and Amato, S., 2010. PLS path modeling: from foundations to recent developments and open issues for model assessment and improvement. In *Handbook of partial least squares* (pp. 47-82). Springer, Berlin, Heidelberg.
- Woldeamanuel, M., 2012. Evaluating the competitiveness of intercity buses in terms of sustainability indicators. *Journal of public transportation*, 15(3), p.5.
- Zeithaml, V. A. (1988). Consumer perceptions of price, quality, and value: a means-end model and synthesis of evidence. *The Journal of marketing*, 2-22.
- Zeithaml, V.A., Parasuraman, A. and Malhotra, A., 2002. Service quality delivery through web sites: a critical review of extant knowledge. *Journal of the academy of marketing science*, 30(4), p.362.

Appendix

Variables of complete data model

Name of Variables	Item number	Item
STR1	Q11	On time arrival
STR2	Q12	On time departure
IR1	Q99	Information on arrival and departure
IR2	Q100	Information announcement in bus
IR3	Q101	Information sufficiency
Lugg_Assu1	Q35	Luggage place
Lugg_Assu2	Q36	Carrying luggage
Lugg_Assu3	Q38	Luggage safety
Tan1	Q14	Clean bus
Tan2	Q15	Good condition seats
Tan3	Q16	Comfortable seats
ETan2	Q22	Clean toilets at bus stops
ETan3	Q23	Clean drinking water at bus stops
Emp1	Q29	Driver courteousness
Emp2	Q30	Conductor courteousness
Emp3	Q33	Eateries
Res1	Q53	Conductor individual attention
Res2	Q54	Other staff individual attention
Res3	Q55	Getting reserved seats for special passengers
Res4	Q56	Getting reserved seats for general passengers
WFrnd1	Q144	Women friendly
WFrnd2	Q145	Safety and Security
Eco1	Q57	Bus fare satisfaction
Eco2	Q58	Service satisfaction for price paid
Eco3	Q59	Service to price paid
Eco4	Q60	Service to cost
Env1	Q62	Air pollution
Env2	Q63	Noise pollution
Env3	Q64	Abnormal vibration
Env4	Q65	Disturbance due to vibration
OS1	Q28	Bus as a safe mode

OS2	Q112	Service consistency
OS3	Q115	Brand preference
OS5	Q116	Using Service in future

Variables of HSQP cluster

Name of Variables	Item number	Item
STR1	Q11	On time arrival
STR2	Q12	On time departure
IR1	Q99	Information on arrival and departure
IR2	Q100	Information announcement in bus
IR3	Q101	Information sufficiency
Lugg_Assu1	Q35	Luggage place
Lugg_Assu2	Q36	Carrying luggage
Lugg_Assu3	Q38	Luggage safety
Tan1	Q14	Clean bus
Tan2	Q15	Good condition seats
Tan3	Q16	Comfortable seats
ETan2	Q22	Clean toilets at bus stops
ETan3	Q23	Clean drinking water at bus stops
Emp1	Q29	Driver courteousness
Emp2	Q30	Conductor courteousness
Emp3	Q33	Eateries
Res1	Q53	Conductor individual attention
Res2	Q54	Other staff individual attention
Res3	Q55	Getting reserved seats for special passengers
Res4	Q56	Getting reserved seats for general passengers
WFrnd1	Q144	Women friendly
WFrnd2	Q145	Safety and Security
Eco1	Q57	Bus fare satisfaction
Eco2	Q58	Service satisfaction for price paid
Eco3	Q59	Service to price paid
Eco4	Q60	Service to cost
Env1	Q62	Air pollution
Env2	Q63	Noise pollution
Env3	Q64	Abnormal vibration
Env4	Q65	Disturbance due to vibration
OS1	Q28	Bus as a safe mode
OS2	Q112	Service consistency
Policy	Q120	Usage of cell phone punishable
Road Infrastructure	Q124	Favour of speed breakers

Variables of LSQP Cluster

Name of Variables	Item number	Item
STR1	Q11	On time arrival
STR2	Q12	On time departure
IR1	Q99	Information on arrival and departure
IR2	Q100	Information announcement in bus

IR3	Q101	Information sufficiency
Lugg_Assu1	Q35	Luggage place
Lugg_Assu2	Q36	Carrying luggage
Lugg_Assu3	Q38	Luggage safety
Tan1	Q14	Clean bus
Tan2	Q15	Good condition seats
Tan3	Q16	Comfortable seats
ETan2	Q22	Clean toilets at bus stops
ETan3	Q23	Clean drinking water at bus stops
Emp1	Q29	Driver courteousness
Emp2	Q30	Conductor courteousness
Emp3	Q33	Eateries
Res1	Q53	Conductor individual attention
Res2	Q54	Other staff individual attention
Res3	Q55	Getting reserved seats for special passengers
WFrnd1	Q144	Women friendly
WFrnd2	Q145	Safety and Security
Eco2	Q58	Service satisfaction for price paid
Eco3	Q59	Service to price paid
Eco4	Q60	Service to cost
Env1	Q62	Air pollution
Env2	Q63	Noise pollution
Env3	Q64	Abnormal vibration
Env4	Q65	Disturbance due to vibration
OS1	Q28	Bus as a safe mode
OS2	Q112	Service consistency
Policy	Q102	Electronic information display in bus stops
Road Infrastructure	Q126	speed cameras maintain speed limits

Variables of MSQP Cluster

Name of Variables	Item number	Item
STR1	Q11	On time arrival
IR1	Q99	Information on arrival and departure
IR2	Q100	Information announcement in bus
IR3	Q101	Information sufficiency
Lugg_Assu1	Q35	Luggage place
Lugg_Assu2	Q36	Carrying luggage
Tan1	Q14	Clean bus
Tan3	Q16	Comfortable seats
ETan1	Q22	Clean toilets at bus stops
ETan2	Q23	Clean drinking water at bus stops
Emp1	Q29	Driver courteousness
Emp2	Q30	Conductor courteousness
Res1	Q56	Personal attention in getting seats
Res2	Q55	Getting reserved seats for special passengers
WFrnd1	Q144	Women friendly
WFrnd2	Q145	Safety and Security
Eco1	Q58	Service satisfaction for price paid
Eco2	Q57	Affordability

Env1	Q63	Noise pollution
Env2	Q64	Abnormal vibration
Env3	Q65	Disturbance due to vibration
OS1	Q28	Bus as a safe mode
OS2	Q112	Service consistency
Policy	Q102	Electronic information display in bus stops
Road		speed cameras maintain speed limits
Infrastructure	Q126	

Questionnaire

1. What is your Age?

15-30 31-50 51-65 66-75 Above 75

2. What is your Gender? Male Female Others

3. What is your Qualification?

Below Graduation Graduate Post Graduate above Post Graduate

Illiterate

4. What is your occupation?

Student Self-employed Employed in Private Company

Employed in Government Company Unemployed Others

5. When was your last intercity bus journey?

Today 1-3 days back 4-7 days back 8-15 days back

More than 15 days back

6. Who was your bus transport service provider for your last intercity bus journey?

Government Private Others _____

7. What was your approximate travel distance of your last intercity bus journey?

< 50 kms 50-150 kms 150-250 kms 250-350 kms > 350kms

8. What kind of route was your last intercity bus journey?

Plain route Hilly route Both Plain & Hilly Others _____

9. What kind of journey was yours?

Day journey Night journey Day & Night journey

10. What bus type in your last journey?

Non-AC semi sleeper AC semi sleeper Non-AC Sleeper AC Sleeper

Non-AC normal Others _____

Section A: In this section there are items on reliability, tangibles, responsiveness, assurance and empathy dimensions of **intercity bus passenger transport service**.

Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

11. Bus departure of my last journey was on time	1	2	3	4	5
12. Bus arrival of my last journey was on time	1	2	3	4	5
13. Sufficient number of buses are available on time in this route for my destination place	1	2	3	4	5
14. The bus was clean during my last journey	1	2	3	4	5
15. Seats of bus were in good condition (Eg: not torn, clean, proper handles etc)	1	2	3	4	5
16. Seats of bus were comfortable to sit in my last journey	1	2	3	4	5
17. Bus stops in my journey were clean	1	2	3	4	5
18. Bus stops in my journey had seats to sit	1	2	3	4	5
19. Interior of bus in my last journey was pleasant	1	2	3	4	5
20. Buses have Display screen to display bus related information	1	2	3	4	5
21. Employees were wearing tidy uniform	1	2	3	4	5
22. Clean toilets were available in bus stops	1	2	3	4	5
23. Clean drinking water was available in bus stops	1	2	3	4	5
24. Eateries were present in bus stop	1	2	3	4	5

25. Conductor responded to my query in last journey immediately	1	2	3	4	5
26. Other staff of bus transport service organisation responded to my queries (Eg: person in ticket window, person at information desk etc)	1	2	3	4	5

27. AC was working properly in bus in my last journey (if you had travelled in AC bus)	1	2	3	4	5	N/A
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Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

28. Bus was a safe mode of transportation for my last journey	1	2	3	4	5
29. Driver was courteous in my last journey	1	2	3	4	5
30. Conductor were courteous in my last journey	1	2	3	4	5
31. When asked, drivers gave sufficient journey related information	1	2	3	4	5
32. Doors of bus were closed while driving	1	2	3	4	5
33. Sufficient poles were present inside bus to get the support	1	2	3	4	5
34. Sufficient information on safety precautions in bus in case of emergency was present inside	1	2	3	4	5
35. I was allowed to carry luggage in the bus	1	2	3	4	5
36. Sufficient place for keeping luggage in the bus was present	1	2	3	4	5
37. Conductors helped me in placing my luggage in bus	1	2	3	4	5
38. Luggage was safe against theft and damage in the bus	1	2	3	4	5
39. I am willing to complain about the inferior service provided by the bus service to concerned authority	1	2	3	4	5

40. Was there a fire exit in the bus in your last journey?

Yes No Don't know

41. Was there a first aid box in the bus in your last journey?

Yes No Don't know

42. Did you lose your luggage in the last journey?

Yes No

→43. If **Yes**, to Q.42, then did you get your lost luggage back? If **No** to Q.42 then go to **sub-section A(a), Q 46**.

Yes No

→44. If **Yes**, then did you get your lost luggage in original condition? If **No**, skip this question.

Yes No

→45. If yes, what is the time taken to get back your lost luggage? If No, skip this question.

< 1 day 1-3 days 4-7 days 8-15 days >15 days

Sub-section A(a):46. Do you know if there is a dedicated complaint receiving authority to receive the complaints on to **intercity bus service**?

Yes No don't know

47. Have you ever complained about the poor bus service quality?

Yes No

→48. If **Yes**, to Q.45 then how did you complain? If **No**, go to **sub-section A(b)**

Written Verbal Online Others _____

→49. Did you get a response for your complaint? Yes No

→50. If yes, then was the authority courteous? Yes No

→51. Was the complaint addressed? Yes No

→52. If yes, once the complaint is addressed, is it communicated to you? Yes No

Sub-section A(b):

Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

53. Conductor gave individual attention in providing service	1	2	3	4	5
54. Other staff members (Eg: person in ticket window, person in information desk etc) gave individual attention	1	2	3	4	5
55. Conductor helped in getting reserved seats for disabled/elders/women passengers	1	2	3	4	5
56. Conductor helped in getting reserved seats	1	2	3	4	5

Section B: In this section there are items on value for money, environment, transparency, feedback, technology and period of service of **intercity bus passenger transport** service.

Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree					
57. Ticket price of bus in my last journey was affordable	1	2	3	4	5
58. I am satisfied with current bus fare	1	2	3	4	5
59. I was satisfied with the service provided for the price paid	1	2	3	4	5
60. I got the service in relation to the ticket price paid	1	2	3	4	5
61. I am willing to compromise with bus service quality for lower cost	1	2	3	4	5
Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree					
62. Bus was creating air pollution in my last journey	1	2	3	4	5
63. Bus was creating noise pollution in my last journey	1	2	3	4	5
64. Bus was vibrating abnormally while travelling in my last journey	1	2	3	4	5
65. Vibration in the bus was creating disturbance	1	2	3	4	5
66. Do you know about feedback concept?	<input type="checkbox"/> Yes		<input type="checkbox"/> No		
67. Feedback box was available in bus in your last journey	<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> Don't know
68. Feedback box is available in bus stops in your last journey	<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> Don't know
69. Have you given feedback on bus service quality for last journey?	<input type="checkbox"/> Yes			<input type="checkbox"/> No	
If Yes to Q.69 then answer the following questions> If No, then continue from Q.74					
Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree					
→70. Verbal feedback about service quality is accepted in my last journey	1	2	3	4	5
→71. Drivers are receptive in taking feedback about service quality in my last journey	1	2	3	4	5
→72. Conductors are receptive in taking feedback about service quality in your last journey	1	2	3	4	5
→73. Action is taken on feedback given about bus service quality	1	2	3	4	5
Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree					
74. I am willing to give feedback about bus service quality if opportunity is given	1	2	3	4	5
75. I think feedback improves the service quality of the bus service	1	2	3	4	5
76. I expect action to be taken on my feedback about bus service quality	1	2	3	4	5
77. Is there a concerned authority to take feedback on bus service quality?	<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> Don't know
78. What should be the response time for feedback?	<input type="checkbox"/> <1 day		<input type="checkbox"/> 1-3 days		<input type="checkbox"/> 3-7 days
			<input type="checkbox"/> 7-30 days		<input type="checkbox"/> > 30 days
79. Does Intercity Bus service provider of your last journey have website?	<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> Don't know
80. If you had purchased ticket offline then answer the following questions, if not then go to Sub-section B (a), Q.81					
→81. Were tickets issued as you got into bus?	<input type="checkbox"/> Yes		<input type="checkbox"/> No		
→82. Did you get seat as you got into bus?	<input type="checkbox"/> Yes		<input type="checkbox"/> No		
→83. Did you get change immediately for the money given	<input type="checkbox"/> Yes		<input type="checkbox"/> No		<input type="checkbox"/> NA
Sub-section B(a)					
84. Does the website contain online ticket booking facility?	<input type="checkbox"/> Yes		<input type="checkbox"/> No		
85. Did you book your bus ticket online?	<input type="checkbox"/> Yes		<input type="checkbox"/> No		
→86. If Yes to Q.85, then answer the following questions. If No , then go to sub-section B(b)					
Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree					
→87. Necessary information was available on website regarding booking bus tickets online	1	2	3	4	5
→88. Online bus ticket booking was user friendly	1	2	3	4	5
→89. Necessary information was present in the online ticket	1	2	3	4	5
→90. Online bus ticket booking facility directed you to electronic payment	1	2	3	4	5

gateway

→91. Necessary safety measures were there while accessing your account details	1	2	3	4	5
→92. I am comfortable with online payments for online bus ticket booking	1	2	3	4	5
→93. Only required money deducted from my account after booking bus tickets online	1	2	3	4	5
→94. I got confirmation message with necessary information about travel for bus ticket booked	1	2	3	4	5
→95. Text messages was considered by the conductors as a valid bus ticket	1	2	3	4	5
→96. I got confirmation email with necessary information about travel for ticket booked for my last journey	1	2	3	4	5
→97. Email is accepted by the conductors as a valid bus ticket	1	2	3	4	5

Sub-section B(b)

Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

99. Information about respective bus arrival & departure announced clearly in bus stops	1	2	3	4	5
100. Information about the bus stops was announced clearly in bus	1	2	3	4	5
101. Information announced was sufficient for my journey and helpful	1	2	3	4	5

102. Electronic information display was available on bus stops on your previous **intercity bus** journey

Yes No Don't know

103. Electronic information display was available in bus in your last journey

Yes No

→104. If **Yes**, answer the following questions. If **No**, then go to **sub-section B(c)**

Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

→105. Necessary information was displayed on electronic information display clearly about the journey	1	2	3	4	5
→106. Information displayed in electronic information display was helpful to me	1	2	3	4	5

Sub-section B(c):

Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

107. I think entertainment on board improves the service quality	1	2	3	4	5
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108. Was there an entertainment opportunities in bus in your last intercity bus journey?

Yes No Don't know

109. If **No** to Q.108, then skip this question. What kind of Entertainment opportunities were there in your last intercity bus journey?

TV Radio Music player Others _____

110. What was the time taken to reach your destination in your last journey?

1-2 hours 2-4 hours 4-6 hours 6-8 hours > 8 hours

111. Total time spent in the traffic in your journey?

<15 mins 15-30 mins 30-45 mins 45 mins -1 hour

>1 hour

Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

112. I got the same kind of service quality throughout the journey period	1	2	3	4	5
113. Necessary intervals were given between starting place and ending place of my journey (to have coffee, snacks, food, to go to rest room)	1	2	3	4	5
114. I prefer short distance routes to reach my destination	1	2	3	4	5
115. I prefer image/brand of the intercity transport organisation for my journey choice	1	2	3	4	5
116. I use bus service of this organisation happily in future	1	2	3	4	5

117. How often do you use bus public transport for travelling in this route?

Every day only weekdays only weekends weekdays & weekend

Occasionally

Section C: In this section there are items on regulation/ policy dimensions like action taking ability, seat belt, speed limit, license, drink-n-drive of **intercity bus passenger transport service**.

118. Does inspection by officials of bus service is helpful in quality of bus service	Yes	No	
119. Do ban on hand held cell phone use while driving bus is necessary to ensure safe driving	Yes	No	
120. Should hand held cell phone usage while driving punishable?	Yes	No	
121. Do seat belt in buses improves the safety of passengers?	Yes	No	
122. Was seat belt present in the bus in your last journey?	Yes	No	
123. Should seat belts in bus be made mandatory?	Yes	No	
124. Are you in favour of speed breakers?	Yes	No	
125. Does sufficient number of speed breakers were present in my last journey route?	Yes	No	
126. Do you think speed cameras are helpful in maintaining the speed limit?	Yes	No	
127. Should speed cameras be present on the route to minimize speed limit?	Yes	No	
128. Do you think educated bus drivers ensure more safety while driving	Yes	No	
129. Do you think that educated bus drivers are courteous to passengers?	Yes	No	
130. Should graduated Driver License (drivers should be a graduate) be practised?	Yes	No	
131. Was bus driver using phone while driving bus?	Yes	No	Don't know
132. In your last journey, have you experienced the Drink-N-Drive by the bus driver?	Yes	No	Don't know
→ 133. If yes, was your journey comfortable due to Drink-N-Drive?	Yes	No	NA

134. Who should ensure that passengers have put seat belt?
 Conductor Driver Dedicated authority Other staff _____
135. What should be the time taken to address the issue related to bus service?
 < 1day 1-3 days 4-7days 7 – 15 days > 15 days
136. How many times have you used the bus service of this organisation?
 1 time 2-5 times 6-10 times 10-20 times > 20 times
137. Why do you use this bus service? _____
138. How did you reach to the intercity bus stop in your last journey?
 Local Bus Bike Car Auto-rickshaw others _____
139. With respect to above question, was the mix mode of journey convenient to you?
 Yes No
140. Overall, how satisfied are you with the bus service of this organisation?
 Highly satisfied Satisfied Partially satisfied Not satisfied
 Not at all satisfied
141. What is your monthly income?
 1000-5000 5000-10000 10000-25000
 25000-50000 Above 50000 No income
142. What is the name of your starting place (source) of your last intercity bus journey?

143. What is the name of your ending place (destination) of your last intercity bus journey?

Rating Scale: 1-Strongly Disagree, 2-Disagree, 3-Neutral, 4-Agree, 5-Strongly Agree

144. Last intercity journey was women friendly	1	2	3	4	5
145. Safety and security of women is ensured in the last journey	1	2	3	4	5