



Study of Delphi Technique in the Application of the Identification of the Factors Affecting The Satisfaction of Passengers in Road Transport Industry

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ABSTRACT

Original Article:

One of the main indicators of economic development of country is growth and development of the transportation industry. The role of transport in sustainable development is very clear and irrefutable. The dramatic developments in the world of today and the deep transport connections with everyday life in terms of access to services and social welfare, indicate the importance and role of transportation and is a major component of the national economy. The study aimed to identify and rank the factors affecting passenger satisfaction in the road transport sector has been carried out. After identifying the factors affecting passenger's satisfaction with the results of other researchers and through interviews with senior managers and executives in the industry studied and also, field observations and surveys in this area, factors affecting passenger satisfaction in the road transport industry to identify and by the two-stage Delphi method, in the form 43 factor finalized. Then, due to a number of factors were identified, using a questionnaire distributed among the passengers, while determine the degree of importance of factors at looking them, factor analysis and classification of variables in the form eleven factor was considered.

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1. Introduction

Throughout history, the evolution of transport has always been closely linked with the development of human societies. The human needs become more complex, transportation is also more extensive. The changing needs of society and developments in technology, transportation has changed its regularly. Undoubtedly, today's transportation industry, in turn, has an important role in furthering the objectives of the country. Numerous scientific studies show, identify factors affecting customer satisfaction and operational effort to find ways of influencing their behavior, a very important role in gaining market share and profitability will increase. Also, managers are able to better decisions, optimal allocation of limited resources to achieve the highest degree of customer satisfaction and customer satisfaction as well as a better understanding of the data. One of the main indicators of economic development is growth and development of the transportation industry. The role of transport in sustainable development is very clear and irrefutable. Dramatic changes in today's world with the technical know-how, technology and new and advanced technologies for sustainable development in all aspects and aspects of human life, including the transportation industry, brought new momentum in this direction, a new action is visible (the toll road and transportation; 2013). To determine the importance of each factor to be dealt with travelers opinions.

2. The importance and necessity of research

Currently in our country, a large number of transit passengers carried by bus. Bus fleet, using the new buses and Extremist and secure areas should provide better welfare of their clients. Road transport fleet of the country, but only if the market can compete with rail and air resistance, which is more attention to the quality of their services and able to meet the real needs of our customers and to the reform and restructuring of its structure (Department of Transport and Terminals Yazd, 2011: 12). Despite the expansion of the transportation network in passenger transportation (road, rail, sea and air), more than 90 percent of it is done by road (vice president of strategic planning and oversight of the Department of Transportation, 2007: 3). Accordingly, the need to deal with the road passenger transportation services is evident.

3. Theoretical foundation

In this section, after a brief review of definitions and concepts, history of previous research in the field has been studied.

3.1 Definitions and Concepts

Customer satisfaction is one of the most basic concepts of assessment that many businesses are looking for. Customer satisfaction is not new to the organization, but the most important priorities of the organization from 1970 onward (Sehat et al, 2010: 203). Today, customer-centric organization's activities are located, so that the modern mission statement based on customer defined. "Quality" is a longstanding concern of management today is defined in terms of customer satisfaction and said, "The quality of response to customer needs" (Firozian et al, 2006: 38). From a new perspective, that is the customer who wants the value-which

raises the impact of his behavior. And order of value, something that solve customer problems and meet the need (Kotler, 2010: 104). In the present study, the order of the customer, those customers that the passenger service organizations in fact, the traveler, the one who attempted to travel. Also, a review of existing literature is much of the research on customer satisfaction variation in the definition of the concept of customer satisfaction. Such as Mokonyama and Venter (2013: 60) satisfy customer needs and expectations are met his judgment in faced with moved with the service definition.

3.2 Review of previous studies

On the identification and study of factors affecting customer satisfaction in various industries and organizations, many studies have been done. The study also aimed to identify factors affecting the satisfaction of passengers in road passenger transport, many factors in this context, the recent research at home and abroad, have been identified and used in the study. Wang (2013) in a study of tourism and hotel in Macau China to examine the relationships between variables and history of relations with the consent of the customer service experience is discussed. In another study in the same industry, performance and perceived value and perceived as independent variables influencing customer satisfaction have been studied (Wong & Dioko; 2013). Awwad (2012) in a paper to assess customer satisfaction with mobile services in Jordan, using the American model of customer satisfaction (ACSI); customer expectations, perceived quality and perceived value as predictors of customer satisfaction is important. On the other hand, as a consequence of his complaint, customer loyalty and customer satisfaction are listed.

Kamaruddin et al (2012: 432) research in mass transit in Malaysia to investigate the relationship between customer satisfaction and customer expectations and writing; public transportation is undoubtedly an important role in the movement of passengers and reduce traffic and believe; public transportation should be competitive for private transport vehicles to provide a safe journey, reliable, efficient, attractive and seamless travel for passengers from point of origin to reach the destination. Kim and Lee (2011) in a study to examine the relationship between perceived service quality in the transport industry in South Korea airline deals using SERVQUAL model, the effect of the quality of services, including tangibles, reliability, responsiveness, assurance and empathy and trust between Airport in South Korea studied. The tangible, physical objects such as aircraft, seat comfort and space, in-flight entertainment services, such as books, newspapers, magazines, movies and games, dress and appearance, staff and crew, catering service and quality. The reliability can be attributed to perform accurate and timely services. Accountability, staff willing help and solve their problems in the field of passenger services and rapid response in emergency situations. Assurance and confidence, and trust in the ability to ensure the safe operation of passengers and having the knowledge to answer their questions.

Empathy and attention to passenger service is favorable to him. The results of this study indicate that the most effective response to customer satisfaction. Also, the tangible, the important factor is customer satisfaction. Kazemi and Mohajer (2009) in an article on the factors affecting customer satisfaction of the quality of the Bank's Novin Eqtesad Mashhad using a two-stage identification and ranked among the 24 factors, identify and rank the factors affecting the quality of the car in order to have satisfied customers. Some of these factors include; there are adequate procedures to compensate for the losses sustained by the customer, reliable staff, staff and tidy, good location for leisure customers, the importance of customer time (not wasting time customer, employee accountability and responsibility), personnel with suitable treatment, the proportion of the price (quality of provided services), and the staff is eager to help customers, handle complaints in a timely manner. "Efficient use of systems such as

the system of turn" is in the first place and then the response and accountability of staff, regular employees and whether the appearance, rank second and third in terms of its consent was allocated. Vahdati (2006), in their study, variable costs of providing banking services, management of the bank staff and how the bank is very much on the customer satisfaction is effective. Also, the location of bank branches, quality banking services, physical facilities, banks largely on customer satisfaction is affecting the banks. After reviewing the research conducted in the study area and identifies factors that can be used in passenger road transport industry, the continuation of the research was conducted.

4- Methodology

The present study sought to identify the factors affecting the satisfaction of passengers in the road transport industry that in term of the purpose is an applied research and in term of nature is descriptive. Methods of data collection, is the library and information needs of the research literature derived from research conducted in the past and partly through field observation and interviews with experts gathered. In this research, in order to identify the primary factors affecting the satisfaction of road passenger transport industry, Delphi Technique and double sweep Delphi questionnaires were studied between senior executives and experts. Then, because of the multiplicity of factors have been identified, in order to classify the factors, factor analysis was used. To determine the sample of clients, the 30-player versions of the questionnaire and the collection and analysis of data, the sample size was estimated to be 214 clients. Needless to say, the validity of the questionnaire used in this study in terms of academics and experts in the study was approved. Also, to determine reliability, SPSS software separately at each stage of the investigation; Cronbach's alpha coefficient results indicated as in Table 1.

Table 1: Cronbach's alpha coefficients at each stage of research

Research stage	The number of questions	Cronbach's alpha coefficients
The first phase of the Delphi method	28	0.913
The second phase of the Delphi method	54	0.925
Customer Questionnaire	43	0.942

As can be seen in the table above, in both rounds of the Delphi method and the customer questionnaire, Cronbach's alpha value is greater than 0.7. So, is the test of reliability is acceptable.

5. Analysis of Data

The Delphi technique to identify the factors affecting the satisfaction of travelers and the number of known factors, factor analysis was used to classify them.

5-1- Delphi technique

This study aimed to identify factors affecting passenger satisfaction; first, the review of previous studies and organizations of all sizes and industries, customer satisfaction. After reaching a conclusion in this regard, as a first step, factors relevant to the satisfaction of passengers as a group of customers in the road transport industry, with experts in industry and academics studied separately and entered the Delphi method was first questionnaire. First questionnaire containing 28 factors to determine the viewpoints of experts about the approval or disapproval of each factor effect on passenger satisfaction was designed. Variables can

be removed from the initial list, based on the consensus of experts and the results of analysis of the first phase of the Delphi method can be seen in Table 2.

Table 2: omitted variables in the first phase of the Delphi method One-Sample Test (Test Value = 3)

Variable number	Variable (factor)	sig.(2-tailed)
X2	History of customer service experience	/218
X5	Marketing organization	/834
X8	Customer perceived value	/053
X25	Place of Birth clients	/451
X26	Ethnicity clients	/855

This process and the remaining 23 of the 28 proposed in the first questionnaire, the second phase of this study, we Delphi. To prepare the second questionnaire, Delphi method, in addition to 23 of the initial proposal of the calculations performed according to the first questionnaire remained 31 another factor identified through surveys or research to propose experts, satisfaction agencies and departments involved in the transportation of passengers in passenger traffic was detected, enter and so the second survey to provide a total of 54 proposals for the second time as the first phase of the experts and the Delphi method to modify their views as the first phase of the Delphi method was given. Upon receipt of all completed questionnaires by the expert, preliminary analysis of the data obtained in Phase II.

Table 3 shows the parameters and variables are removed in the second phase of the Delphi method.

Table 3: Factors and variables Eliminated in the second phase of the Delphi method One-Sample Test (Test Value = 3)

Variable number	Variable (factor)	sig.(2-tailed)
X10	Customer emotions	/130
X20	Employee satisfaction	/577
X22	Customer Education	/055
X23	Electronic customer relationship management system	/083
X26	Avoid taxis operating in the private passenger terminal complex	1/000
X28	Avoid increasing the dealers to nab passenger	/878
X33	Building houses the passenger terminal complex	/226
X42	Non-commercial transportation by bus	/871
X49	Obtaining additional funds for overhead carry-on regulations	/694
X50	Loan book in a terminal window and press	/090
X52	Information at the beginning of the journey	/428

Through this process, the Delphi method has finished and 43 of the 54 recommendations in the second questionnaire as factors affecting the satisfaction of passengers in road passenger transport has been finalized and enter the third questionnaire to assess the importance of each factor were the eyes of customers.

5-2 Average grade-related matters at the end of travelers

Specifications subject and responsive public information, and show the number of 214 respondents, 110 of the subjects were female and 104 male form number. The study aimed to 38.3 percent, 20.6 percent, to recreation, 16.8 out to work, 4.2 to pilgrimage to visit and 20.1% of the respondents have stated their purpose among others. Also, 45.8% of the sample population average journey by bus in the city and more than 5 times a year. In Table 4, the average degree of importance of each factor using the Delphi technique, satisfaction passengers were identified from the perspective of the passengers see the final.

Table 4: Average grade of factors have been identified at the end of travelers

Priority	Factors affecting passenger satisfaction	Average	Priority	Factors affecting passenger satisfaction	Average
1	Using a passenger bus model, high quality, safe and affordable	4.3365	23	Between a bus stop in the right places	3.9765
2	Quality bus seats and equipment (by international standards)	4.3175	24	Customers the organization	3.9484
3	Driver performance	4.3005	25	Flexibility at expense	3.9429
4	Behavior of drivers and attendants (crew) buses with passengers	4.2535	26	Quality of communication with customers	3.9333
5	Lengthy and numerous nonstop passengers during the trip	4.2488	27	The bus terminal and the intended purpose of the online collection	3.9043
6	Quality Services	4.2430	28	Facilities, amenities and attractive	3.8967
7	Hygiene and cleaning of internal bus	4.2383	29	Data quality and information to customers	3.8962
8	Punctuality and timely movement of buses	4.2196	30	Platforms and specific sites for unloading passengers	3.8915

19	No smoking on the bus by the driver passengers	4.0841	41	Staff regularly justified Appearance	3.7451
18	During the trip, utility services (catering)	4.0845	40	Organizational Performance	3.7536
17	Quality of staff	4.0861	39	Suitable parking for staff and customers	3.7594
16	There Warehouse (Warehouse) luggage of passengers	4.0865	38	Senior management and support of customer-centric programs	3.7778
15	Relevance price (quality of services provided)	4.1005	37	There are wheel topaintings andshippers transport cargo andpassengers in the terminal set	3.7804
14	Customer confidence	4.1137	36	There are Coordination and interaction between different sectors in the Tourist providing services to passengers	3.8122
13	Passengers and their luggage during travel (and operators of insurance and commercial companies)	4.1143	35	Coordination and interaction between different sectors in the Tourist providing services to passengers	3.8341
12	How the staff (and operators of commercial companies)	4.1381	34	Use of passenger luggage tag	3.8350
11	Quick and easy to passengers forby taxi and bus tickets	4.1381	33	The suitability of the site (where the terminal and the ease of access to it)	3.8406
10	Service provide continuous and adequate service at affordable prices in the terminal	4.1509	31	Customer expectations	3.8792
9	Staff pleasant and reliable	4.1596	31	The continuous presence of police officers (police terminal)	3.8873

22	Launched over more ticket offices in the city	4.0000	43	Image (customer mindset than aof road trip withservices by public fleets)	3.7156
21	Prompt and reasonable response to the complaints, criticisms, suggestions, etc	4.0425	42	New methods providing services by	3.7415
20	Access (available at office hours)	4.0721			

The table above shows, the passengers at the "top model using a passenger bus, safe and good quality "with the highest average in terms of importance to 4.3365 allocated. Other factors in order of preference, and you can see out in Table 4.

5.3 The results of the factor analysis run

Given the multiplicity of factors have been identified to the stage of research, factor analysis is used to classify agents. In this process, since the KMO value is equal to 0.854 and is close to one, factor analysis is a satisfactory and good to say, sample (214 respondents) is adequate for factor analysis. The Bartlett test sig value is less than 5% of the show factor analysis of the structure, operating model, known as the correlation matrix is assumed to be rejected. The output of the show from 1 to 11 with eigenvalues is greater than 1 and then the remaining analysis. It can also 65.989 11% of the variability (variance) variables to explain. Table 5 shows the factor loadings for the variables in the following categories and eleven.

Table 5: Classification of factors and factor loadings of variables

Mass	Parameters and values of the highest loadings for each
Customer relationship management	Relevance price (quality of services provided) (0.731), access (available at office hours) (0.731), data quality and provide information to customers (0.579), new methods of service delivery organizations (0.439), the reaction and reasonably fast complaints, criticisms, suggestions, etc. (0.420)
Driver behavior	Lack of long and frequent stops for passengers during the trip (0.834), and no smoking on the bus by the driver or passengers (0.754), behavior of drivers and attendants (crew) buses with passengers (0.667), between a bus stop in appropriate places (0.377), hygiene and domestic cleaning buses (0.377), the driver (such as how to drive traffic rules and regulations) (0.328).
Facilities	Passenger platforms and certain positions or unloading of passengers (0.736), presence of police officers (police terminal) (0.707), the presence of deposit to delivery and maintenance of temporary storage (up to one day) at the time the passenger terminal (passenger luggage storage) (0.673), the wheels of the carriage to transport passengers and cargo terminal set (0.525), the bus and the intended purposes are online at the terminal set (0.465), for employees and customers of car parking appropriate (0.429).
Information Systems	Launched over more ticket offices in the city (0.741), the presence of signs and guides and tourist information booth (0.637), flexibility in the cost of services (Ticketing) (0.571), coordination and interaction between different parts of services to passengers (0.529).
Staff	Regular and justification of their appearance (0.737), competent and reliable personnel (0.567), attitude of staff

	(and company officers passenger) (0.470), quality of service staff (0.437).
Equipment	Using a passenger bus model, high quality, safe and affordable (0.776), and provide continuous and adequate service agencies, taxi and bus services at affordable prices in the terminal (.494), on-time departure punctuality and buses (0.442) , quick and easy access for passengers tickets (0.429), while traveling utility services (catering) (0.386).
Expectations	Quality bus seats and equipment (by international standards) (0.620), insurance of passengers and cargo and luggage insurance when they travel (0.584), customer expectations (0.501), organizational performance (0.481).
Senior management commitment	Quality of Service (0.812), Customers Organization (0.486), top management commitment and support of customer-centric strategies and programs (.483)
Expectations	Customer confidence in the organization (0.793), the quality of communication with customers (0.617), image (customer perceptions about the Company) (0.368).
Location	The suitability of the location (terminal) (0.750), physical facilities, amenities and attractive organization (0.578).
Assurance	Use of passenger luggage tag (0.606).

As can be seen, according to factor analysis, 11 of the 43 variables that influence the satisfaction of road passenger transport passengers in the industry as the main factors identified were classified according to the table above.

6. Conclusion and Discussion

One of the biggest issues in transportation management is the question of how use and selection of appropriate methods attract more passengers in order to use public transportation travel within suburban or reduce the use of private vehicles. This study aimed to identify factors influencing satisfaction and prioritization of road passenger transport industry and the degree of importance of each factor was the view of travelers. In the first step, agents, using the Delphi technique, review of previous studies and according to the experts knowledgeable about the industry and in the second step of identifying, to navigate between the passengers, the importance of identifying specific and based on the priorities were clear. If passed, the results of 28 previous studies in the area of customer satisfaction into the Delphi questionnaire was based on the consensus of experts, 5 factors; previous experience in customer service, marketing organization, customer perceived value, birthplace customers, clients ethnicity removed and the remaining 23 were the second phase of the Delphi method.

23 the remainder of the first phase of the Delphi method and 31 another factor affecting passenger satisfaction through surveys or research to suggest experts identified, Delphi was the second phase. Analysis shows this phase, 11, emotions customer, employee satisfaction, customer education, electronic customer relationship management systems, avoid taxis operating in the private passenger terminal complex, avoid increasing the dealers to snatch passengers, have a house in the passenger terminal complex, non-commercial transportation by bus, obtaining additional funds for overhead carry-on regulations, in a terminal window and press the loan book, notification at the beginning of the trip, according to the consensus of experts removed finally, 43 of the 54 recommendations in the second questionnaire as factors affecting the final passenger satisfaction and enter the third questionnaire to assess the importance of each factor and factor analysis were looking passengers. Among the 43 factors listed; passenger bus using a top model, safe and appropriate quality of the highest importance was recognized at the passengers. The results of the factor analysis, the final factor of 43 within 11 classified.

Eleven of customer relationship management, driver behavior, facilities, information systems, personnel, equipment, expectations, top management commitment, engagement, positioning and

securing each of which includes a number of variables ie the factors are identified during the study and had final and in the process of conducting factor analysis based on factor loadings assigned to each category in their respective clusters.

Evidence suggests that the factors that are more tangible for travelers and more time traveling and more time traveling with them are facing, have given priority to such factors the welfare and comfort of travel on buses, the use of buses with standard equipment, performance and behavior of drivers, non-stop during the long bus trip and it seems, the results indicate the importance of this sector more and more cases the finger of responsibility in it, organization in charge of transport and terminals to other agencies and departments involved in providing services to road travelers. Hence, the organization and at the top of the toll and transport and Road Country should be based on facts available to plan and organize and optimize your service and a survey of passengers on the level of services provided and to measure their satisfaction, assessment of passengers and new ideas and solutions and do their best to provide a quiet and safe for passengers to take a trip.

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