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AN EMPIRICAL EVALUATON OF SERVICES PROVIDED TO IMPROVE THE QUALITY OF AIRPORT

[1] Dr. M. Sangeetha, [2] K. Jeyamathuri
[1] Research and Development Head, [2] Student
[1]Department Of Aviation and Management,
[1]Remo International College, Chennai, India

Abstract: The world is changing very fast, much of the places and things are very close to each other. One such a booming area in the Indian market is airport sector. The passenger perception towards airport services may have a significant impact towards the development of business and tourism sectors. In the present study, a convenient sampling (100 nos.) by using descriptive research design, a survey is done in order to get the opinion of the respondent about the airport services quality at Chennai international Airport, India. Relationship between customer satisfactions on various dependent variables namely effectiveness, efficiency, maintenance and relativity and airport quality at Chennai is done. Analysis is done on descriptive variables, t-test, chi-square test is conducted by using SPSS tools. After analysis, it is concluded that the study on these variables cause related impact on the airport quality can be enhanced, because customer satisfaction is the main motto of any service industry. It is concluded that there is an association among the variable relating to effectiveness. This study recommended the procedures of development of the excellence of airport facilities provided to carriers by considering the customer needs. This study on these variables will enable the passengers to gain the revisit intension to airport for their further travelling.

I. INTRODUCTION

The airport services are provided inside the airport like customer, cargo and other services. The services which is provided inside the airport decides the level of quality of the airport which leads to increase in passenger traffic with developing new services. In order to improve the quality of airport a study was conducted, by analyzing the difficulties faced by the passengers in terms of services provided inside Chennai international airport through their feedback.

The airport service quality is nothing but, it deals with the customer satisfaction which brings an outcome by comparing the actual performance with expectations of the passengers (*Kien-Quoc and Simpson, 2006)*. In order to earn the customer satisfaction, the organization should understand the customer expectation (*Berry et al., 2002)*. It is possible only if the organization members completely understand the need and want of the passengers (*Asher,1989)*. Passenger satisfaction with regard of the airport service quality is measured from the past experience of the passengers. It causes the advanced facility exceed the existing facility.

The rivalry in the market turns the development in service quality to be prioritized first. Airport plays a vital role in traveler journey because according to the perception of the traveler the airport infrastructure influences them. The two important factors in the airport is customer service and safety. The safety and security must be provided to the passengers without affecting the comfort the passengers (*Appelbaum & Fewster, 2003*).

Customer service is a key tool for the success of any business by maximizing the profit and sales. The services have to be planned in an effective way on part of minimizing the travel time for the passengers in commercial airports (*Martin-Cejas, 2006)*. Not only airlines, airports also take responsibility to know the customer complaints and work for finding the solution for it, which leads to improve the service quality of the airport (*Bell & Luddington, 2006; Robbins & Miller, 2004)*.

The world has developed into global village. It has become easier for people to travel from one corner of the world to another corner. The international carrier operates business in India because of the increase in passenger traffic. Some of the major airlines who operates India is Emirates, British airways, Lufthansa etc. The international airlines continue to operate in India because of the fact there is lot of probability to fascinate the business and leisure travelers.

The development in the civil aviation industry creates the demand for the quality in airport services for effective and efficient operations. The rivalry in the Asian markets, North America, and European markets has increased. In order to sustain in the competitive market, the airlines expand their operations at successfully operating airport in order to reduce their operating cost and provide quality of services to their travelers *(Oum, Yu & Fu, 2003).*

The introduction of low-cost carrier in the market forces the airports to expand the infrastructure for the sake of sales. The low-cost carrier concept is used worldwide and it is successful too.

Airport development deals with both the landside and the airside facilities of the airport. *According to the ministry of transportation Decree Number 129 (2015)* states that the services which are provided inside the airport is forced to be best by the standard which is

framed by the minister of transportation. In order to better the service quality the service planning is launched which improves passenger service within the terminal building which is also known as people move system *(Kurniawan, 2016).* Airport planning operations needs time and capacity to make decisions.

In olden days the computer, check-in counters were not used inside the airport, only local cops were available for security purposes. The facilities which was not used in olden days it is used now a days especially, CISF is newly introduced in order to tighten the security of the airport. Naturally airlines choose more efficient and higher level of services for themselves and their customers *(Oum, Yu & Fu ,2003).*

In earlier days, the study of airport services level concentrated more on the operational standards like queuing duration, service process time, distance or area, facilities and so on. But now the concentration is slightly move towards the passenger's perception which is required to sustain in the highly competitive air transportation market and also to analyze the existing services in order to rectify the existing services and launch new services which leads to improvement of the airport. One of the major motives of the airport is to maximize the passenger satisfaction by developing the level of services. The air transportation agencies like Federal aviation administration [FAA], Airport council international [ACI] and Transport Canada [TC] has developed methods assess and better the level of services which is provided inside the airport *(Correia &Wirasinghe, 2004).*

Mostly past studies focus on components of passenger terminal building [i.e. check- in counters, departure, lounge etc.] and the components of landside and airside of the airport such as parking area, transportation link, runway, taxiway, ramp etc. Some of other authors focused on passengers' expectations through their experience. Other study deals with airport operation and production using various methods. By omitting the difficulties faced by the passengers while travelling through airport.

A comprehensive survey which revert the valuation of services provided inside the airport to improve the quality of airport. This research develops the framework to better the services in order to improve the quality of the Chennai international airport by analyzing the difficulties faced by the passengers through their feedback. This survey helps the managers, investors, airlines and airports for the investment allotment which improves the service quality in airport. The data is collected from the passengers who travels through air, based on their travel experiences. It is collected from the passengers because the passengers create the demand for the services which needs to be improved.

II. RESEARCH METHODOLOGY

In this study, Google forms is been used to gather information from the passengers through online and the total number of samples is 100.

III. RESULTS AND DISCUSSION

Descriptive statistics

Descriptive statistics provide clear picture on the minimum, maximum and range values of the collected opinion. The mean statistics and standard error and deviation is calculated from the software and shown in the table below:

Descriptive Statistics

		Range	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
VAR00001	100	4.00	1.00	5.00	3.1100	.11091	1.10914
VAR00002	100	4.00	1.00	5.00	3.4200	.09763	.97628
VAR00003	100	4.00	1.00	5.00	3.2700	.10527	1.05270
VAR00004	100	4.00	1.00	5.00	3.3600	.11057	1.10572
VAR00005	100	4.00	1.00	5.00	3.2100	.11128	1.11278
Valid N (List wise)	100						

From the above table depicts that the mean values are above 3, hence it is proved all the mean score ranking of all the variables relating to effectiveness. It has shown as more than 3, so it can be proved that the respondents are satisfied with the variable related to effectiveness.

T-Test Analysis

These variables are further analyzed to know the relationship between the satisfaction of the respondents and the airport quality.

HYPOTHESIS I

H0: There is no significant relationship between the customer satisfaction on effectiveness and airport quality.

H1: There is significant relationship between the customer satisfaction on effectiveness and airport quality.

The above hypothesis I is checked with T-test analysis and the results are shown below table:

T-Test Analysis -One-Sample Test

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
VAR00001	28.040	99	.000***	3.11000	2.8899	3.3301
VAR00002	35.031	99	.000***	3.42000	3.2263	3.6137
VAR00003	31.063	99	.000***	3.27000	3.0611	3.4789
VAR00004	30.387	99	.000***	3.36000	3.1406	3.5794
VAR00005	28.847	99	.000***	3.21000	2.9892	3.4308

*** - Significant at 1% level.

From the above table, it can be inferred that the P value for all the variable shows .000 and the values are less than 0.001. So, the null hypothesis is rejected at 1% level and hence the alternate hypothesis is accepted. Hence it is clear and concluded that there is significant relationship between the customer satisfaction on effectiveness and airport quality.

Chi-Square Test:

To know the association among the variable pertaining to effectiveness have been testified by using Chi-square test. The result is showing as follows

	Results					
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	**Row Totals**
Variable1	12(6.20) [5.43]	13(17.20) [1.03]	34(28.20) [1.19]	34(36.60) [0.18]	7(11.80) [1.95]	100
Variable2	6(6.14) [0.00]	9(17.03) [3.78]	30(27.92) [0.16]	46(36.23) [2.63]	8(11.68) [1.16]	99
Variable3	4(6.20) [0.78]	20(17.20) [0.46]	34(28.20) [1.19]	29(36.60) [1.58]	13(11.80) [0.12]	100
Variable4	5(6.20) [0.23]	13(17.20) [1.03]	22(28.20) [1.36]	42(36.60) [0.80]	18(11.80) [3.26]	100
Variable5	4(6.26) [0.82]	31(17.37) [10.69]	21(28.48) [1.97]	32(36.97) [0.67]	13(11.92) [0.10]	101
Column Totals	31	86	141	183	59	**500(Grand Total)**

The Chi-square statistic is 42.5612. The p-value is .000325. The result is significant at p<.05.

From the above table it can be seen that the P value 0.000325 which is less than 0.001and it is concluded that there is an association among the variable relating to effectiveness such as facilities provided inside (Variable 001), carriage of baggage (Variable 002), services provided to passengers during flight delay (Variable 003), transportation facility provided to the passengers (Variable 004), passenger baggage's check is appropriate and results without delay are interrelated.

All the variables together will lead to effectiveness to the passenger to attain the satisfaction in all spheres to improve the airport quality.

T-Test Analysis

These variables are further analyzed to know the relationship between the satisfaction of the respondents and the airport quality.

HYPOTHESIS II:

H0: There is no significant relationship between the customer satisfaction on the efficiency and airport quality.

H1: There is significant relationship between the customer satisfaction on the efficiency and airport quality.

The above hypothesis I is checked with T-test analysis and the results are shown below table:

T-Test Analysis - One-Sample Test

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
VAR00006	32.690	99	.000***	3.55000	3.3345	3.7655
VAR00007	30.703	99	.000***	3.32000	3.1054	3.5346
VAR00008	23.994	99	.000***	3.09000	2.8345	3.3455
VAR00009	34.714	99	.000***	3.24000	3.0548	3.4252
VAR00010	30.086	99	.000***	3.20000	2.9890	3.4110

*** - Significant at 1% level.

From the above table, it can be inferred that the P value for all the variable shows).000 and the values are less than 0.001. So, the null hypothesis is rejected at 1% level and hence the alternate hypothesis is accepted.

Hence it is clear and concluded that there is significant relationship between the customer satisfaction on effectiveness and airport quality.

Chi-Square Test:

To know the association among the variable pertaining to efficiency have been testified by using Chi-square test. The result is showing as follows

Results						
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	**Row Totals**
Variable 6	5(7.80) [1.01]	13(14.60) [0.18]	22(29.40) [1.86]	42(37.20) [0.62]	18(11.00) [4.45]	100
Variable 7	7(7.80) [0.08]	15(14.60) [0.01]	25(29.40) [0.66]	43(37.20) [0.90]	10(11.00) [0.09]	100
Variable 8	15(7.80) [6.65]	12(14.60) [0.46]	25(29.40) [0.66]	37(37.20) [0.00]	11(11.00) [0.00]	100
Variable 9	7(7.80) [0.08]	18(14.60) [0.79]	38(29.40) [2.52]	26(37.20) [3.37]	11(11.00) [0.00]	100
Variable 10	5(7.80) [1.01]	15(14.60) [0.01]	37(29.40) [1.96]	38(37.20) [0.02]	5(11.00) [3.27]	100
Column Totals	39	73	147	186	55	**500(Grand Total)**

The chi-square statistic is 30.6646. The p-value is .014846. The result is significant at p<.05.

From the above table it can be seen that the P value 0.015 which is less than 0.01and it is concluded that there is an association among the variable relating to efficiency with the variables are interrelated.

All the variables together will lead to efficient to the passenger to attain the satisfaction in all spheres to improve the airport quality.

Descriptive Statistics

Descriptive statistics provide clear picture on the minimum, maximum and range values of the collected opinion. The mean statistics and standard error and deviation is calculated from the software and shown in the table below:

Descriptive Statistics - One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
VAR00011	100	3.2100	1.13969	.11397
VAR00012	100	3.3200	1.13600	.11360
VAR00013	100	3.4600	1.06761	.10676
VAR00014	100	3.5300	1.20985	.12099
VAR00015	100	2.9800	1.23075	.12308

From the above table depicts that the mean values are above 3, hence it is proved all the mean score ranking of all the variables relating to effectiveness. It has shown as more than 3, so it can be proved that the respondents are satisfied with the variable related to effectiveness.

T-test analysis

These variables are further analyzed to know the relationship between the satisfaction of the respondents and the airport quality.

HYPOTHESIS III:

H0: There is no significant relationship between the customer satisfaction on maintenance and airport quality.

H1: There is significant relationship between the customer satisfaction on maintenance and airport quality.

The above hypothesis I is checked with T-test analysis and the results are shown below table:

T-Test Analysis - One-Sample Test

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
VAR00011	28.166	99	.000	3.21000	2.9839	3.4361
VAR00012	29.225	99	.000	3.32000	3.0946	3.5454
VAR00013	32.409	99	.000	3.46000	3.2482	3.6718
VAR00014	29.177	99	.000	3.53000	3.2899	3.7701
VAR00015	24.213	99	.000	2.98000	2.7358	3.2242

*** - Significant at 1% level.

From the above table, it can be inferred that the P value for all the variable shows .000 and the values are less than 0.001. So, the null hypothesis is rejected at 1% level and hence the alternate hypothesis is accepted.

Hence it is clear and concluded that there is significant relationship between the customer satisfaction on maintenance and airport quality.

Chi-Square Test

To know the association among the variable pertaining to maintenance have been testified by using Chi-square test. The result is showing as follows

Results						
	Very dissatisfied	Dissatisfied	Neutral	Satisfied	Very satisfied	**Row Totals**
Variable 11	4(9.00) [2.78]	31(16.20) [13.52]	21(26.00) [0.96]	32(34.00) [0.12]	12(14.80) [0.53]	100
Variable 12	10(9.00) [0.11]	9(16.20) [3.20]	35(26.00) [3.12]	32(34.00) [0.12]	14(14.80) [0.04]	100
Variable 13	6(9.00) [1.00]	12(16.20) [1.09]	28(26.00) [0.15]	38(34.00) [0.47]	16(14.80) [0.10]	100
Variable 14	7(9.00) [0.44]	15(16.20) [0.09]	20(26.00) [1.38]	34(34.00) [0.00]	24(14.80) [5.72]	100
Variable 15	18(9.00) [9.00]	14(16.20) [0.30]	26(26.00) [0.00]	34(34.00) [0.00]	8(14.80) [3.12]	100
Column Totals	45	81	130	170	74	**500(Grand Total)**

The chi-square statistic is 47.3656. The p-value is .00006. The result is significant at p<.05.

From the above table it can be seen that the P value 0.00006 which is less than 0.01and it is concluded that there is an association among the variable relating to maintenance with the variables are interrelated.

All the variables together will lead in terms of maintenance to attain the satisfaction in all aspects to improve the airport quality.

Descriptive Statistics

Descriptive statistics provide clear picture on the minimum, maximum and range values of the collected opinion. The mean statistics and standard error and deviation is calculated from the software and shown in the table below:

Descriptive Statistical Opinion

Descriptive Statistics							
	N	**Range**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**	**Variance**
VAR00016	100	4.00	1.00	5.00	3.3000	1.06837	1.141
VAR00017	100	4.00	1.00	5.00	3.4100	1.08334	1.174
VAR00018	100	4.00	1.00	5.00	3.4900	.93738	.879
VAR00019	100	4.00	1.00	5.00	3.1818	1.07251	1.150
VAR00020	100	4.00	1.00	5.00	3.1600	1.07045	1.146
Valid N (listwise)	99						

From the above table depicts that the mean values are above 3, hence it is proved all the mean score ranking of all the variables relating to effectiveness. It has shown as more than 3, so it can be proved that the respondents are satisfied with the variable related to effectiveness.

T-Test Analysis

These variables are further analyzed to know the relationship between the satisfaction of the respondents and the airport quality.

HYPOTHESIS IV:

H0: There is no significant relationship between the customer satisfaction on relativity and airport quality.

H1: There is significant relationship between the customer satisfaction on relativity and airport quality.

The above hypothesis I is checked with T-test analysis and the results are shown below table:

T-Test Analysis - One-Sample Test

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
VAR00016	30.888	99	.000	3.30000	3.0880	3.5120
VAR00017	31.477	99	.000	3.41000	3.1950	3.6250
VAR00018	37.231	99	.000	3.49000	3.3040	3.6760
VAR00019	29.518	98	.000	3.18182	2.9679	3.3957
VAR00020	29.520	99	.000	3.16000	2.9476	3.3724

*** - Significant at 1% level.

From the above table, it can be inferred that the P value for all the variable shows .000 and the values are less than 0.001. So, the null hypothesis is rejected at 1% level and hence the alternate hypothesis is accepted.

Hence it is clear and concluded that there is significant relationship between the customer satisfaction on relativity and airport quality.

***Chi-Square Test*:**

To know the association among the variable pertaining to relativity have been testified by using Chi-square test. The result is showing as follows:

	Results					
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	**Row Totals**
Variable 16	20(10.40) [8.86]	25(15.80) [5.36]	20(30.00) [3.33]	25(33.60) [2.20]	10(10.20) [0.00]	100
Variable 17	11(10.40) [0.03]	14(15.80) [0.21]	30(30.00) [0.00]	33(33.60) [0.01]	12(10.20) [0.32]	100
Variable 18	5(10.40) [2.80]	5(15.80) [7.38]	37(30.00) [1.63]	42(33.60) [2.10]	11(10.20) [0.06]	100
Variable 19	7(10.40) [1.11]	20(15.80) [1.12]	28(30.00) [0.13]	35(33.60) [0.06]	10(10.20) [0.00]	100
Variable 20	9(10.40) [0.19]	15(15.80) [0.04]	35(30.00) [0.83]	33(33.60) [0.01]	8(10.20) [0.47]	100
Column Totals	52	79	150	168	51	**500 (Grand Total)**

The chi-square statistic is 38.2783. The p-value is .001381. The result is significant at p<.05.

From the above table it can be seen that the P value 0.001381 which is less than 0.001and it is concluded that there is an association among the variable to relative are interrelated. All the variables together will lead to relativity to the passenger to attain the satisfaction in all aspects to improve the airport quality.

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