

Passengers Level of Satisfaction on Operational Aspects of Infrastructure - (With Special Reference To Coimbatore Airport)

¹Dr.R.Deena

Assistant Professor

SRM Faculty of Management, SRM University

²Ms.V.Narmatha

Assistant Professor

SRM Faculty of Management, SRM University

³Mr.A.P.Karthik Kumaran

Assistant Professor

SRM Faculty of Management, SRM University

Abstract

Airports are the nodal points in the Global logistic system and are poised with the challenge of handling increasing volume of international cargo and increasing number of passengers. Availability of adequate infrastructure facilities is an essential pre-requisite for the day-to-day working and expansion of the aviation infrastructure. This pathetic picture drawn on the airport infrastructure in India is quite vivid and clear. With all the developments planned for the Coimbatore airport, it is important to know if the main user of the airport, the passenger, is satisfied with the operational aspects of the airport

Review of Literature

A review of past literature is always useful to understand various aspects of the problem taken up for research, to plan the current study, to select the tools of analysis and to analyze the research problem effectively. The findings of many studies have revealed that a focus on infrastructure and development is highly essential in India. The development of India's infrastructure is the key to sustaining the growth rate in India. The Indian government plans to invest US\$ 320 billion for the up gradation of ports, railroads, highways and airports over the next 15 years. **Sushi Shyamal**,¹explained the dire need for infrastructure development in the aviation

¹ 'Focused approach to aviation infrastructure is a must', Project monitor –India's first news paper on Projects,Economic research India limited,www.projectsmonitor.com,19/06/2006.

industry to ensure the overall economic growth on a sustainable basis. If the aviation industry could sustain this growth for the next four-five years, the overall economy will get largely benefited as aviation propels growth in tourism, hospitality, real estate etc. **Debendranath Sarangi**² had highlighted the problems in the infrastructure development of an airport in India and he has also made an attempt to suggest a solution to these problems. One of the main problems identified is the lack of funds required to put infrastructure programmes into practice. **Chen, Andrew H and Kubik, Jennifer W**³ in their study found out that a lack of infrastructure development is seen as one of the leading obstacles for India in realizing its economic growth potential. **Pullin, John**⁴ talks about the neglect of airports even in the developed nations and the impact it has on the performance of the Airport. Vast areas of infrastructure have suffered years of financial and organizational neglect. **Ionides, Nicholas**⁵ discussed that Indian Airlines have added aircrafts at an aggressive pace. However airport infrastructure in India had failed to keep abreast of rapid growth in the air transport sector. He has highlighted the key issue as with their infrastructure being woefully inadequate where will the airlines go. **Darpan**⁶ pointed out that poor airport infrastructure, abused security procedures and long lines at security, little or no information in the event of delays, lousy toilets and signage at the Chennai airport.

The research article titled “Passenger level of satisfaction on operational Aspects of Infrastructure – (with special reference to Coimbatore Airport)” deals with the analysis of data that have been collected from the respondents, who are the users of infrastructure at the Coimbatore airport.

Objective of The Study

- To analyse the passenger level satisfaction on the operational aspects of infrastructure with reference to the Coimbatore Airport

The interpretation of the analyzed data is presented with the help of tables and diagrams wherever required. The objective of the research is “To analyze the level of satisfaction of the passengers on the operational aspects of the Infrastructure at the Coimbatore Airport.

² Infrastructure development: a public-private partnership in India Source: International Social Science Journal Volume 54 Page 267 - June 2002, 10.1111/1468-2451.00379, Volume 54 Issue 172

³ Complementing Economic Advances in India: A New Approach to Financing Infrastructure Projects Source: Journal of Structured Finance; Summer2007, Vol. 13 Issue 2, p29-39, 11p ISSN: 1551-9783, Accession Number: 26133664

⁴ Vast areas of infrastructure have suffered years of financial neglect Source: Professional Engineering; 3/19/2008, Vol. 21 Issue 5, p3-3, 2/3pISSN: 0953-6639, Accession Number: 31540798

⁵ Airports India, Source: Airline Business; Dec2007, Vol. 23 Issue 12, pp 54-57, 3p, 1 chart, 2cISSN No: 0268-7615, Accession Number: 28101412,

⁶ Chennai Airport misfot for passengers, Meri news, 2008, www.merineews.com

For the purpose of the study the infrastructural facilities are clustered as Buildings, Equipments and Amenities. The available infrastructure and that which is likely to be used by any passenger at any given time was identified and the satisfaction was analyzed using a five point scaling technique.

The personal attributes of the respondents are taken as independent variables and the level of satisfaction on operational aspects of infrastructure is analyzed. The satisfaction level is analyzed using the five point scaling namely - Highly satisfied, Satisfied, Neutral, Dissatisfied, Highly dissatisfied. The following are the personal attributes that have been identified for the purpose of analysis.

- Gender, Age of the respondents, Educational Qualification of the respondents, Occupational Status of the respondents

Level of satisfaction on operational aspects is the satisfaction that is derived while operating the infrastructural facilities under normal conditions. Using the Infrastructure can be mandatory but it does not mean that all the passengers who use the infrastructure should be satisfied with its operation. The extent of satisfaction an individual has on the operational aspects of any infrastructural facility will determine the repeated use of that infrastructure.

Gender Vs. Level of Satisfaction on Operational Aspects

It is quite natural that the female group cannot be satisfied very easily. On the other hand the male group will be satisfied with minimum operation. Therefore the personal attribute of Gender is taken as an important variable while analyzing the level of satisfaction on operational aspects of infrastructural facilities

Hypothesis: There is no significant difference among the male and female respondents in the level of satisfaction on the operational aspects of the infrastructural facilities.

Gender Vs. Level of Satisfaction on Operational Aspects T-Test

Dependent variable	Gender	Mean	 Zo 	Significance	Remarks
Building	Male	40.90	.117	.91	Accepted
	Female	40.83			
Equipments	Male	21.92	.337	.74	Accepted
	Female	22.04			
Amenities	Male	58.32	.065	.95	Accepted
	Female	58.27			

Interpretation

It can be understood from the above table that the calculated value is greater than the expected value ($\text{sig}(p) > .05$), hence the Hypothesis is accepted in all the three cases of buildings, equipments and amenities. Both the male and female respondents are satisfied with the operational aspects of Buildings, Equipments and Amenities.

Age Vs. Level of Satisfaction on Operational Aspects

The age of the respondents has an impact on the level of satisfaction on operational aspects of the infrastructural facilities. It is a general opinion that with age the satisfaction level increases. Hence the age factor was considered as an independent variable for the purpose of analysis.

Table of Means

Dependent variable	Age	Mean
Buildings	20-30 years	41.45
	31-40 years	41.62
	41-50 years	38.97
	>51 years	40.27
Equipments	20-30 years	22.18
	31-40 years	22.28
	41-50 years	21.62
	>51 years	20.92
Amenities	20-30 years	58.50
	31-40 years	58.95
	41-50 years	57.36
	>51 years	57.43

When the age of the respondents was taken as an independent variable to analyse the level of operational satisfaction of the respondents, it was inferred that all the respondents belonging to different age groups are satisfied with the operational aspects of Equipments and Amenities. It was also inferred that the respondents are satisfied in the case of buildings but one age group significantly differs in the level of satisfaction. In order to find out the group which differs significantly ANOVA was applied as a statistical tool.

Hypothesis: There is no significant difference in the level of satisfaction on the operational aspects of the infrastructural facilities among the various age groups of respondents.

Anova

Particulars		Sum of squares	Df	Mean	F	Sig	Remarks
Buildings	Between groups	330.32	3	110.11	5.25	.002	Rejected
	Within groups	6418.27	306	20.98			
	Total	6748.58	309				
Equipments	Between groups	63.69	3	21.23	2.61	.052	Accepted
	Within groups	2490.76	306	8.14			
	Total	2554.46	309				
Amenities	Between groups	130.93	3	43.64	1.31	.270	Accepted
	Within groups	10168.56	306	33.23			
	Total	10299.50	309				

Interpretation

From the ANOVA table it can be inferred that the calculated value is greater than the expected value (sig (p)>.05) in the cases of Equipments and Amenities hence the Hypothesis is accepted. But in the case of Buildings the calculated value is less than the expected value (sig (p) <.05), hence the Hypothesis is rejected. It is understood that there is significant difference in the level of satisfaction among the respondents belonging to different age groups in the case of building as an infrastructural facility. In order to find out which age group differs significantly from the others Post hoc tests were administered.

Post Hoc Tests

Dependent variable	Age (I)	Age (J)	Mean difference	Significance
Building	20-30 years	41-50 years	2.48	.005
	31-40 years	41-50 years	2.60	.002

Interpretation

All the groups of respondents are satisfied with the operational aspects of the Buildings but from the post hoc tests, it can be understood that the respondents belonging to the age group of 20-30 years and 31-40 years are comparatively more satisfied than the age group of 41-50 years. The other age groups do not differ significantly.

Educational Qualification Vs. Level of Satisfaction on Operational Aspects

The educational Qualification of an individual will have an impact on the level of satisfaction on operational aspects of the infrastructure as people who are more qualified will have a greater awareness about the various infrastructures available and will also possess more knowledge on how to operate the infrastructural facilities.

Table of Means

Dependent variable	Educational qualification	Mean
Buildings	Graduate	42.03
	Post Graduate	40.16
	Professional	40.83
Equipments	Graduate	22.13
	Post Graduate	21.85
	Professional	21.69
Amenities	Graduate	59.75
	Post Graduate	57.32
	Professional	57.60

It is vivid from the above table which presents the mean values of the level of satisfaction on operational aspects in relation to the educational qualification of the respondent. All the respondents are satisfied with the operational aspects of buildings, equipments and amenities. But however to analyse the significant difference among the respondents ANOVA was applied.

Hypothesis: There is no significant difference in the level of satisfaction on the operational aspects of the infrastructural facilities among the respondents of different educational qualification.

Anova

Dependent variable		Sum of squares	df	Mean	F	Sig	Remarks
Buildings	Between groups	192.49	2	96.24	4.45	.012	Rejected
	Within groups	6371.29	295	21.60			
	Total	6563.78	297				
Equipments	Between groups	8.50	2	4.25	.510	.601	Accepted
	Within groups	2455.28	295	8.32			
	Total	2463.78	297				
Amenities	Between groups	349.54	2	174.77	5.50	.005	Rejected
	Within groups	9367.82	295	31.76			
	Total	9717.36	297				

Interpretation

It is understood from the table that the Hypothesis is accepted in the case of amenities because the calculated value is more than the expected value ($\text{sig}(p) > .05$). Thus it is clear that there is no significant difference in the level of satisfaction on the operational aspects of equipment as an infrastructural facility. It can also be inferred that the calculated value is less than the expected value ($\text{sig}(p) < .05$) in the case of

buildings and amenities hence the Hypothesis is rejected. This means that when considering the level of satisfaction on the operational aspects of Buildings and Amenities the respondents belonging to various educational qualifications differ significantly.

Post hoc tests were conducted to find out which group differs significantly from the other in the case of Buildings and Amenities.

Post Hoc Test

Dependent variable	Educational Qualification (i)	Educational Qualification (j)	Mean difference	significance
Building	Graduate	Post Graduate	1.87	.009
Amenities	Graduate	Post Graduate	2.43	.004
		Professional	2.15	.044

Interpretation

Although the respondents are satisfied with the operational aspects of Buildings and amenities, it is also true that they differ significantly. From the post hoc tests it can be understood that the respondents who are graduates have a better satisfaction as compared to post graduates regarding the level of satisfaction on operational aspects of Buildings. Regarding Amenities, the respondents who are graduates have better satisfaction than the Post graduates and Professionals.

Occupational Status Vs. Level of Satisfaction on Operational Aspects

The Occupational status of the respondents has an impact on the level of satisfaction on Operational aspects as the respondents whose occupational status permits to travel frequently have a better exposure to the operational aspects of more number of infrastructural facilities. Hence hypothesis is framed to study occupational status as a variable that has an impact on level of satisfaction on operational aspects.

Table of Means

Dependent variable	Occupational status	Mean
Buildings	Employee	41.40
	Business Person	40.00
	Professional	41.22
	Others	40.52
Equipments	Employee	22.72
	Business Person	21.29
	Professional	21.88
	Others	22.09
Amenities	Employee	58.84
	Business Person	57.05
	Professional	58.62
	Others	58.85

To identify the level of satisfaction on operational aspects of the infrastructural facilities with the occupational status of the respondents the above table was drafted. From the table it can be understood that all the respondents are satisfied with the operational aspects of Buildings Equipments and Amenities. However to understand if there are any significant difference among the various group of respondents and if there is any significant difference within the groups ANOVA was carried out.

Hypothesis: There is no significant difference among the respondents of various occupational statuses in the level of satisfaction on the operational aspects of infrastructural facilities.

Anova

Dependent variable		Sum of squares	df	Mean	F	Sig	Remarks
Buildings	Between groups	99.22	3	33.07	1.52	.209	Accepted
	Within groups	6649.36	306	21.73			
	Total	6748.58	309				
Equipments	Between groups	79.20	3	26.40	3.26	.02	Rejected
	Within groups	2475.25	306	8.09			
	Total	2554.46	309				
Amenities	Between groups	166.19	3	55.40	1.67	.17	Accepted
	Within groups	10133.30	306	33.12			
	Total	10299.50	309				

Interpretation

It is clear from the above table that the calculated value is greater than the expected value (sig (p) > .05) so the Hypothesis is accepted in the cases of Buildings and

Amenities. It is also clear from the above table that Hypothesis stands rejected for Equipments as the calculated value is less than the expected value ($\text{sig}(p) < .05$). It is understood that the respondents of different occupational statuses differ in their satisfaction level on operational aspects of equipments. Post hoc tests were administered to identify which group of respondents significantly differ among themselves.

Post Hoc Test

Dependent variable	Occupation(i)	Occupation(j)	Mean difference	significance
Equipments	Employee	Business Person	1.43	.011

Interpretation

From the post hoc test it can be understood that the group of respondents who belong to the category of employees have a slightly better level of satisfaction than the group of respondents who belong to the category of Business persons on the operational aspects of Equipments. The other group of respondents does not differ significantly.

Findings

Buildings as an infrastructural facility - Irrespective of the gender, both the male and female respondents are satisfied with the operational aspects of the buildings. The respondents of different age groups are satisfied with the operational aspects of buildings, but when analyzed if any age group significantly differs, it was understood that the respondents who belonged to the age group of 20- 30 years and the respondents belonging to the age group of 31-40 differ from the respondents belonging to the age group of 41-50 years. Although the respondents are satisfied with the operational aspects, the graduates differ in their satisfaction level when compared with the post graduates. The professionals are satisfied with the operational aspects of the buildings. The respondents of different occupational status are satisfied with the operation of the buildings and there is no significant difference among the respondents.

Equipment as an Infrastructural facility - Irrespective of the gender, both the male and female respondents are satisfied with the operational aspects of the equipments, the same is the case with the respondents belonging to different age groups .They are also satisfied with the operational aspects of the equipments. All the respondents are satisfied with the operation of equipments. Although all the respondents are satisfied with the operation of amenities in the airport, the category of employees show a better level of satisfaction than the Business persons.

Amenities as an infrastructural facility - Irrespective of the gender, both the male and female respondents are satisfied with the operational aspects of the amenities .All the respondents irrespective of the age groups, are satisfied with the operational aspects of amenities. Similar to the buildings, here also the graduates have a better level of satisfaction than the post graduates and the professionals who are

satisfied with the operation of amenities. The respondents of different occupational status are satisfied with the operation of the amenities and there is no significant difference among the respondents.

Thus it can be concluded that even though there are slight changes in the level of operational satisfaction, all the respondents are satisfied with the operational aspects of the buildings, equipments and amenities.

Suggestions

Achieving good results in the aviation sector is not the question of building new airports and creating newer infrastructure. It is also about developing the existing infrastructure to match the needs and initiating better utilization of existing assets. The scope for developing the aviation sector should have a different approach which should be fact based, understanding the country freight flow and passenger flow. The development plan should also take into consideration the degree of inefficiency in the existing infrastructural setup and the future growth. Addressing to only one part of the issue will not give a wholesome solution.

Conclusion

The Indian airports have a long way to go to compete with the Aviation infrastructure of the other countries. Airports of the western countries are equipped to handle any kind of an emergency at any given point of time. Taking into consideration the investment requirement and the policy standardization it is quite clear that the Indian airports need more than privatization. It needs timely implementation (whether the Government does it or the private parties' do it is not important) but it is important to cash in on the situation. It is also important that an airport should be looked at an integral part of the aviation industry.