
IMPACT OF DEMOGRAPHICS ON PASSENGERS' AIRPORT NEEDS

RAJIV GUPTA**Sr. Associate Professor****National Institute of Construction Management And Research****NICMAR'S CISC, NAC Campus, Hyderabad-500084****ABSTRACT**

The Rajiv Gandhi International Airport at Hyderabad holds the distinction of being India's first Greenfield airport under the Public Private Partnership model. This study examines the air traveller's demographic data and most recent trip data with his needs at the Hyderabad airport to ascertain whether the needs vary with respect to the demographic data. Primary data from 502 respondents was collected in a survey in October 2014 and empirically analysed using Statistical Package for Social Sciences, version 21. The analysis reveals that there exist differences of few airport needs amongst passengers with different demographic profiles even though many needs remain unchanged across all the profiles. As such, airport management should create different offerings of these needs to suit specific requirements of the air travellers in order to enhance the customer satisfaction of their passage through the airport.

KEYWORDS

Customer Needs, Customer Demographics, Airport Services.

1. INTRODUCTION

Rajiv Gandhi International Airport (RGIA) is located in south India in the city of Hyderabad. It was initially developed to handle a capacity of 10 million passengers per annum (mppa). Commercial operations commenced in March 2008 and it could reach the 10 mppa mark only in the year 2015. For the purpose of the Airport Service Quality (ASQ) surveys it is categorised in the 5-15 mppa category and it has won the ASQ awards consistently since the last 7 years.

2. REVIEW OF LITERATURE

An Oracle white paper (2014) states that airports need to continue innovating in order to improve profitability and respond to the increasing needs of passengers. Today airports rely on passengers' impulsive buying; if airports could develop a much greater understanding of individual needs and behaviour, and target them with relevant offers and communications, the average revenue per passenger could be significantly increased. Paternoster (2008) states that excellent customer service is the synergy created when an airport's ability to exceed its customers' needs and expectations consistently matches its customers' perception that their needs and expectations are well met. Popovic et al (2010) maintain that passengers are the main customers of an airport, so their needs must be investigated to understand which aspects are important, and how airports and airlines should respond to any shortcomings. An airport creates the traveller's initial and final impression of a city and country and it is reported that a pleasant airport experience encourages spending, and influences future travel plans.

3. IMPORTANCE OF THE STUDY

Public Private Partnership airports having larger dependence on non-aeronautical revenues like retail, food and parking have become customer-centric in their approach for providing various facilities and services to the passengers using their airports. In India, four PPP airports have already become operational and the Government of India has plans to develop several airports based on this model coupled with regulation and close monitoring of the quality of service provided by the private sector developer. In these circumstances it is important for the private sector developers to design the facilities and services and offer them in unique customised ways to the air passengers in order to maintain continuous high service quality ratings. This study provides areas where the airport services to passengers can be improved.

4. OBJECTIVES

The objectives of this research paper are:

- 1) To determine whether the airport needs of air travellers vary with their demographic parameters of gender, age, education, marital status, employment, residency status and frequency of travel.
- 2) To determine the impact of most recent travel on passengers' perception of their airport needs by evaluating parameters like financing of most recent air travel and company for most recent air travel.

5. RESEARCH METHODOLOGY

65 Needs were identified based on extensive review of literature, focus group discussions, passenger online feedback and coverage in the newspapers; these are given in Table 10 as an annexure. In October 2014 a total of 800 questionnaires were distributed using the snowball sampling technique. 548 questionnaires were returned out of which 46 were discarded being defective, incomplete etc. Thus the final survey got a total of 502 valid responses, resulting in a response rate of 62.75%. The data was used to test various objectives of a larger study. This paper deals specifically with objectives stated above. Hypotheses were tested to ascertain any differences in Needs based on the Demographic data and most recent air trip data of the passengers. Using SPSS version 21, Non-parametric Mann-Whitney U test of two independent samples was conducted due to its robustness for dual choice models for the demographic factors of gender – male or female, marital status – single or married, residency status – Hyderabad city resident or visitor, financing of most recent air travel – self or sponsored, company for most recent air travel – alone or accompanied and for demographics with more than two choices Kruskal Wallis H, Non-Parametric Tests of K Independent Tests were conducted for age, education, employment and frequency of air travel. Reliability was tested using Cronbach's Alpha which showed good internal structural reliability with Cronbach's Alpha of 0.958.

5. RESULTS & DISCUSSION

The demographic characteristics of the sample are given in Table 1 that shows that the sample had an almost equal proportion of male and female respondents, almost equally dispersed in all the age categories till fifty five years of age and thereafter with a considerable decline in travel. The respondents were highly educated with maximum post graduates and in the private sector employment and mainly residents of Hyderabad city. Most of them flew two to five times in the past one year. Most travelled accompanied and financed their own travel.

Table1. Demographic Characteristics of the Sample

Demographic Variable	n=502	Percentage
Gender	Male	55.6%
	Female	44.4%
Marital Status	Single	32.3%
	Married	67.7%
Age	< 25 years	21.9%
	25-34	24.3%
	35-44	23.1%
	45-54	18.3%
	55-64	7.6%
	>65 years	4.8%
Education	PG and Above	58.0%
	Graduate	35.6%
	Diploma	2.2%
	Intermediate (12 th Std)	3.4%
	Secondary (10 th Std)	0.8%
Employment	Government	6.4%
	Private Sector	56.5%
	Self-Employed	12.0%
	Not Employed	25.1%
Hyderabad City Residency Status	Resident	78.1%
	Visitor	21.9%
Frequency of Air Travel through RGIA (past 12 months)	Nil	13.5%
	1 trip	17.5%
	2-5 trips	51.2%
	6-12 trips	12.8%
	>12 trips	5.0%
Financing of Most Recent Air Travel	Self	78.1%
	Sponsored	21.9%
Company for Most Recent Air Travel	Alone	38.9%
	Accompanied	61.1%

Cross Tabulation of Needs with Demographic Data

To test the hypotheses postulated the 65 needs were tested against each of the demographic factors and the results are presented in Tables 2 to 9.

(i) Gender

Ho: There is no difference between the airport needs of males and females

Ha: There is difference between the airport needs of males and females

Table 2. Hypothesis Test Results of Airport Needs and Gender

TEST	Demographic Variable	Specific needs across which differences exist (p value) < 0.05, Null Hypothesis rejected
Mann-Whitney U test	Gender – male or female	D7 Valet Parking (0.038), D9 Baggage Trolley (0.021), D11 Security (0.042), D18 Aerobridge (0.001), D19 Lift (0.001), D20 Travelator (0.005), D21 Escalator (0.005), D22 Buggy Battery Car (0.011), D24 Restrooms (Toilets) (0.025), D28 Computer with Internet (0.021), D29 Public Telephone (.0002), D30 New Mobile SIM (0.015), D31 Pharmacy (0.018), D32 Hospital Emergency (0.020), D33 Doctor (0.006), D 34 Police (.023), D 37 Luggage Lockers (0.036), D41 Money Exchange (0.010), D43 Bar (0.000), D45 Fast Food (0.039), D56 Infant Facility (.005), D64 General Information Centre (0.004)
No. of Needs across which differences exist on the basis of Gender		22
No. of Needs not affected by the Gender of passengers		43

As the null hypothesis is rejected in respect of the 22 needs identified, we can conclude that Gender plays a role in respect of above mentioned 22 airport needs.

(ii) Marital Status

Ho: There is no difference between the airport needs of Single and Married Persons

Ha: There is difference between the airport needs of Single and Married Persons

Table 3. Hypothesis Test Results of Airport Needs and Marital Status

TEST	Demographic Variable	Specific needs across which differences exist (p value) < 0.05, Null Hypothesis rejected
Mann-Whitney U test	Marital Status – single or married	D3 Bus (0.001), D18 Aerobridge (.035), D27 Free Wi-Fi (0.004), D29 Public Telephone (.030), D31 Pharmacy (.004), D32 Hospital Emergency (0.017), D35 Hotel Lodging (0.008), D36 Shower Rooms (0.021), D37 Luggage Lockers (0.034), D40 ATM (0.011), D41 Money Exchange (0.009), D43 Bar (0.000), D44 Fine Dining (0.002), D47 Shopping (0.002), D48 Books and Periodicals (0.043), D49 Souvenir and Gift Shops (0.001), D50 Duty Free Shops (0.002), D55 Prayer Room (0.032), D59 Florist (0.047), D60 Translator (0.000), D61 Post Office (0.011), D62 Courier (0.009), D63 Photo kiosk (0.004), D65 Wheel Chair (0.026)
No. of Needs across which differences exist as per the marital status of the air passengers		24
No. of Needs across which no differences exist as per the marital status of the air passengers		41

As the null hypothesis is rejected in respect of the 24 needs identified, we can conclude that Marital Status plays a role for the 24 above mentioned airport needs.

(iii) Hyderabad City – Resident or Visitor Status

Ho: There is no difference between the airport needs of Residents and Visitors to Hyderabad City

Ha: There is difference between the airport needs of Residents and Visitors to Hyderabad City

Table 4. Hypothesis Test Results of Airport Needs and Resident or Visitor Status

TEST	Demographic Variable	Specific needs across which differences exist (p value) < 0.05, Null Hypothesis rejected
Mann-Whitney U test	Hyderabad City Residency Status – Resident or visitor	D7 Valet Parking (0.002), D14 Quick Baggage Arrival (0.029), D15 Weighing Machine (0.008), D18 Aerobridge (0.017), D29 Public Telephone (0.029), D31 Pharmacy (0.000), D32 Hospital Emergency (0.004), D33 Doctor (0.000), D34 Police(0.001), D37 Luggage Lockers (0.019), D43 Bar (0.008), D45 Fast Food (0.020), D57 Public TV (0.040),
No. of Needs across which differences exist based on Hyderabad City residency status		13
No. of Needs for which no differences exist based on Hyderabad City residency status		52

As the null hypothesis is rejected in respect of the 13 needs identified, we can conclude that residents and visitors to Hyderabad differ in their requirements of the 13 above mentioned airport needs.

(iv) Finance of Most Recent Air Travel

Ho: There is no difference between the airport needs of Self Financed Travellers and Sponsored Travellers

Ha: There is difference between the airport needs of Self Financed Travellers and Sponsored Travellers

Table 5. Hypothesis Test Results of Airport Needs and Finance of Most Recent Travel

TEST	Demographic Variable	Specific needs across which differences exist (p value) < 0.05, Null Hypothesis rejected
Mann-Whitney U test	Financing of most recent air travel – self or sponsored	D18 Aerobridge (0.026), D19 Lift (0.003), D20 Travelator (0.021), D21 Escalator (0.028), D22 Buggy Battery Car (0.032), D23 Porter (0.011), D29 Public Telephone (0.002), D30 New Mobile SIM (0.024), D31 Pharmacy (0.012), D32 Hospital Emergency (0.018), D33 Doctor (0.005), D34 Police (0.025), D35 Hotel Lodging (0.024), D37 Luggage Lockers (0.027)
No. of Needs across which differences exist based on the source of financing of the air travel		14
No. of Needs across which no differences exist based on the source of financing of the air travel		51

As the null hypothesis is rejected in respect of the 14 needs identified, we can conclude that Self Financed Travellers and Sponsored Travellers differ in their requirements of the above mentioned 14 airport needs.

(v) Company for Most Recent Air Travel

Ho: There is no difference between the airport needs of Passengers travelling alone and those travelling with others

Ha: There is difference between the airport needs of Passengers travelling alone and those travelling with others

Table 6. Hypothesis Test Results of Airport Needs and Most Recent Travel Alone or with Others

TEST	Demographic Variable	Specific needs across which differences exist (p value) < 0.05, Null Hypothesis rejected
Mann-Whitney U test	Company for most recent air travel – alone or accompanied	D3 Bus (0.042), D7 Valet Parking(0.016), D15 Weighing Machine (0.035), D29 Public Telephone (0.002), D32 Hospital Emergency (0.023), D33 Doctor (0.006), D36 Shower Rooms (0.021), D37 Luggage Lockers (0.009), D39 Bank (0.035), D43 Bar (0.009), D57 Public TV (0.009)
No. of Needs across which differences exist based on the company during air travel		10
No. of Needs across which no differences exist based on the company during air travel		55

As the null hypothesis is rejected in respect of the 10 needs identified, we can conclude that Passengers travelling alone and those travelling with others differ in their requirements of the above mentioned 10 airport needs.

(vi) Age

Ho: There is no difference between the airport needs of Passengers of different age groups

Ha: There is difference between the airport needs of Passengers of different age groups

Table 7. Hypothesis Test Results of Airport Needs and Age of Passenger

TEST	Demographic Variable	Specific needs across which differences exist (p value) < 0.05, Null Hypothesis rejected
Kruskal Wallis Test	AGE	D3 Bus (0.020), D18 Aerobridge (0.001), D28 Computer with Internet (0.025), D43 Bar (0.009), D52 Beauty Parlour (0.021), D60 Translator (0.001)
No. of Needs across which differences exist based on the age of the passengers		6
No. of Needs for which no differences exist based on the age of the passengers		59

As the null hypothesis is rejected in respect of the 6 needs identified, we can conclude that Age of Passengers affects 6 of the above mentioned airport needs.

(vii) Education

Ho: There is no difference between the airport needs of Passengers with different educational qualifications

Ha: There is difference between the airport needs of Passengers with different educational qualifications

The p values of all the 65 needs for different education levels were greater than 0.05 hence we accept the null hypothesis that there is no difference between the airport needs of Passengers with different educational qualifications.

(viii) Nature of Employment

Ho: There is no difference between the airport needs of Passengers of different types of employment.

Ha: There is difference between the airport needs of Passengers of different types of employment.

Table 8. Hypothesis Test Results of Airport Needs and Type of Employment

TEST	Demographic Variable	Specific needs across which differences exist (p value) < 0.05, Null Hypothesis rejected
Kruskal Wallis Test	Nature of Employment	D13 Quick Immigration (0.019), D15 Weighing Machine (0.036), D26 Special Lounge (0.017), D29 Public Telephone (0.017), D31 Pharmacy (0.043), D37 Luggage Lockers (0.014), D40 ATM (0.031), D64 General Information Centre (0.013).
No. of Needs across which differences exist based on the nature of employment		8
No. of Needs for which no differences exist based on the nature of employment		51

As the null hypothesis is rejected in respect of the 8 needs identified, we can conclude that nature of employment affects 8 of the above mentioned airport needs.

(ix) Frequency of air travel through RGIA

Ho: There is no difference between the airport needs of passengers' frequency of air travel through RGIA

Ha: There is difference between the airport needs of passengers' frequency of air travel through RGIA

Table 9. Hypothesis Test Results of Airport Needs and Frequency of Air Travel through RGIA

TEST	Demographic Variable	Specific needs across which differences exist (p value) < 0.05, Null Hypothesis rejected
Kruskal Wallis Test	Frequency of Travel through RGIA	D1 Taxi (0.017), D7 Valet Parking (0.039), D10 Flight Information (0.015), D11 Security (0.006), D12 Friendly Customs (0.008), D27 Free Wifi (0.027), D31 Pharmacy (0.016), D35 Hotel Lodging (0.003), D37 Luggage Lockers (0.009), D 38 Travel Desk (0.035), D41 Money Exchange (0.039), D46 Free Drinking Water (0.005), D51 Recreation Facility (0.046), D57 Public TV (0.017), D61 Post Office (0.042), D62 Courier (0.043)
No. of Needs across which differences exist based on the frequency of travel through RGIA		16
No. of Needs for which no differences exist on the frequency of travel through RGIA		49

As the null hypothesis is rejected in respect of the 16 needs identified, we can conclude that of frequency of travel affects 16 of the above mentioned airport needs.

6. RECOMMENDATIONS AND SUGGESTIONS

For each of the demographic factors the needs vary as identified in Tables 2 to 8, for such of these needs the airport management should create mechanisms for creating the offering of such needs in a manner which meets different requirements of passengers and not offer the same in one standard format. This can best be understood by illustrations given by Doganis (2005) that "the landside chemist's shop at Geneva airport is one of the few airport shops in the world where one can buy crutches! This chemist caters for skiers with leg injuries on their way home from the Alps. At Sharjah airport in the Middle East the Weitnauer Group, which runs the duty-free shop, ensures that when a China Airlines flight flying to or from Taiwan comes through, the gold counter is staffed by twelve sales assistants and the goods on display are 22 carat gold—that is what this market requires. When German charter flights come through the 22 carat goods on display are replaced by 18 carat and only six assistants are needed. This is really fine tuning to individual market requirements".

7. CONCLUSIONS

Based on the analysis our alternate research hypotheses is supported that differences exist for the demographic factors examined except in the case of education where it was determined that requirement of the airport needs was independent of the level of education. Hence airports must adapt the facilities and services that they offer to the different demographic factors of the passengers in order to enhance their service quality experience. This study confirms the observations of Doganis (2005) that passenger profiles and needs will vary from airport to airport depending on the demographic factors of the passengers, like, average age, local circumstances and so on.

8. LIMITATIONS

The research was carried out for the passengers travelling through RGIA, Hyderabad only and this study did not cover passengers at other PPP airports in India viz. at Delhi, Mumbai and Bengaluru.

9. SCOPE FOR FURTHER RESEARCH

There is scope for carrying out similar research at other airports to compare the results. Further, based on the specific needs which differ for each of the demographic factors research can be carried out to determine the attributes on which the differences exist so that it can facilitate in creating variants of the specific needs of the passengers to enhance their service experience at the airports.

10. REFERENCES

1. Doganis Richard (2005), "The Airport Business", Routledge p 145.
2. Oracle (2014) white paper, "Building the next generation passenger experience", Oracle Marketing Cloud accessed from <http://www.oracle.com/us/industries/public-sector/building-next-gen-passenger-2288412.pdf>
3. Paternoster Joanne, (2008) "Excellent airport customer service meets successful branding strategy", Airport Management, Vol. 2, No. 3, 218–226 April–June 2008.
4. Popovic, Vesna and Kraal, Ben and Kirk, Philip J. (2010) "Towards airport passenger experience models". In: Proceedings of 7th International Conference on Design & Emotion, 4-7 October 2010, Spertus Institute, Chicago, Illinois.

Websites

5. <http://www.hyderabad.aero>
6. <http://www.civilaviation.gov.in>

11. APPENDIX

Table 10 Descriptive Statistics of the 65 Identified Airport Needs of Passengers

	N	Mean	Std. Deviation
D1 Taxi	502	1.72	.966
D2 Car Rental	502	2.29	1.195
D3 Bus	502	2.12	1.190
D4 Train	502	2.69	1.361
D5 Metro Rail	502	2.04	1.208
D6 Parking	502	1.59	.908
D7 Valet Parking	502	2.29	1.288
D8 Quick Check-in	502	1.41	.644
D9 Baggage Trolley	502	1.43	.688
D10 Flight Information	502	1.32	.599
D11 Security	502	1.31	.615
D12 Friendly Customs	502	1.57	.788
D13 Quick Immigration	502	1.54	.825
D14 Quick Baggage Arrival	502	1.38	.646
D15 Weighing Machine	502	1.88	.971
D16 Seating	502	1.57	.673
D17 Terminal Comfort	502	1.54	.672
D18 Aerobridge	502	1.76	.863
D19 Lift	502	1.76	.878
D20 Travelator	502	1.86	.945
D21 Escalator	502	1.60	.740
D22 Buggy (Battery Car)	502	2.13	1.099
D23 Porter	502	2.45	1.191
D24 Rest Rooms (Toilets)	502	1.42	.663
D25 Business Lounge	502	2.15	1.065
D26 Special Lounge	502	2.32	1.153
D27 Free Wi-Fi	502	1.68	.915
D28 Computer with Internet	502	2.13	1.085
D29 Public Telephone	502	2.05	1.126
D30 New Mobile SIM	502	2.33	1.261
D31 Pharmacy	502	1.66	.818
D32 Hospital Emergency	502	1.53	.806
D33 Doctor	502	1.53	.798
D34 Police	502	1.51	.773
D35 Hotel Lodging	502	2.23	1.045
D36 Shower Rooms	502	2.47	1.157
D37 Luggage Locker	502	2.18	1.079
D38 Travel Desk	502	2.14	1.083
D39 Bank	502	2.24	1.160
D40 ATM	502	1.47	.744
D41 Money Exchange	502	1.69	.927
D42 Snack Counter	502	1.92	.926
D43 Bar	502	3.48	1.398
D44 Fine Dining	502	2.45	1.212

D45 Fast Food	502	2.29	1.102
D46 Free Drinking Water	502	1.55	.869
D47 Shopping	502	2.47	1.112
D48 Books & Periodicals	502	2.20	.986
D49 Souvenir & Gift Shops	502	2.43	1.082
D50 Duty Free Shopping	502	2.21	1.112
D51 Recreation Facility	502	2.51	1.158
D52 Beauty Parlour	502	3.48	1.241
D53 Spa and Massage	502	3.42	1.243
D54 Children's Play Area	502	2.61	1.213
D55 Prayer Room	502	2.89	1.337
D56 Infant Facility	502	2.12	1.199
D57 Public Television	502	2.41	1.176
D58 Smoking Zones	502	3.02	1.555
D59 Florist	502	3.02	1.250
D60 Translators	502	2.72	1.286
D61 Post Office	502	3.08	1.279
D62 Courier	502	2.72	1.265
D63 Photo Kiosk	502	3.11	1.255
D64 Gen Information Counter	502	1.63	.855
D65 Wheel Chair	502	1.69	1.059
Valid N (list-wise)	502		