iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 3 **Issue:** V **Month of publication:** May 2015

DOI:

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)

Airport Service Improvement Strategies Using Importance-Performance Analysis

Dr. J Ashok Babu
Professor, School of Management, Hindustan University, Chennai, India

Abstract - The Importance-Performance Analysis (IPA) is a widely used analytical technique that yields prescriptions for the management of customer satisfaction. IPA is a two-dimensional grid based on customer-perceived importance of quality attributes and attribute performance. The main purpose of this study is to present an evaluation method that employs the well-established IPA for understanding air passenger's degree of care, degree of satisfaction and priority list on airport service items. The results of this analysis will serve as the basis for airports to improve their service strategies in response to air passenger needs. The proposed method has been applied to Chennai domestic airport. The results of this applications clearly indicate that the proposed IPA technique can be effectively identify critical airport service items to be improved, and serve as a valuable technique to assist airport managers in developing service improvement strategies.

Key words; Airport Service Quality Attributes, Importance-Performance Analysis, Service Improvement Strategies ,Two Dimensional Grid

I. INTRODUCTION

Understanding, creating, communicating and delivering customer value are at the very heart of modern service marketing practice. In service industries such as the airline and airport industry, the distinctive features of services require that managers understand customer needs and expectations, and keep promises (Zeitham1, Bitner 2000). Understanding travelers' airport choice behaviors is an important topic in the aviation industry. Airport managers need to know how air travelers make airport-choices, as each airport needs to constantly generate adequate passenger traffic to justify its very existence (Suzuki, 2007).The airport industry is changing rapidly. Today's air travelers have meaningful choices among airports and there is an increasing urgency among airport marketers to differentiate themselves by meeting the needs of customers better than their competitors. While passengers' perception of airport service quality is an important variable that contributes to overall airport attractiveness. Airport service quality literature and research is distinguished from the main stream service quality perspective by its focus on quality at the attribute level. Researchers attempting to measure airport service quality typically proceed from a list of objective indicators of service that are developed from discussions with airport stakeholders rather than passengers. Only a limited amount of conceptual and empirical work on passengers' perceptions and Importance of airport service quality exists.

This particular aspect motivated the development of "Which is the object of this paper". In airport markets, the importance of assessing and managing air passenger's satisfaction is widely recognized. It is crucial to identify the critical factors that determine satisfaction. An effective method to set priorities is by importance-performance analysis (IPA). It analyses quality attributes on two dimensions: their performance level (satisfaction) and their importance to the customer. Hence this paper intends to address such critical issues, based on a comprehensive air passenger survey. The importance-performance approach is then applied to analyze the degree of satisfaction and care towards different service items from the perspective of both overall passengers and different classified groups of passengers. Research findings from this study can provide valuable information for airport managers to identify appropriate measures for improving their service quality and responding to the expectation of their customers.

II. LITERATURE REVIEW

Importance-performance analysis (IPA) is widely used by many researchers in various areas and has been proven to a popular managerial tool. It is based on the comparison of importance and performance of service quality attributes developed by Martilla and James (1977). They found the IPA to be a useful technique for addressing both importance and performance attribute questions. Martilla and James (1977) applied the IPA technique to analyze the performance of an automobile dealer's service department. They declared IPA to be a low-cost, easily understood technique for exploring different aspects of the marketing mix, and enabling managers to reallocate resources according to the four areas identified. Evans and Chon (1989) used the IPA technique to develop and assess tourism policy in two destinations in the United States, and found IPA to be an effective tool. Cheron, McTavish, and Perrien (1989) also employed IPA to examine bank financial services in three business segments, while Almanza, Jaffe, and Lin (1994) applied it to evaluate customer satisfactions in foodservice. Duke and Persia

©IJRASET 2015: All Rights are Reserved

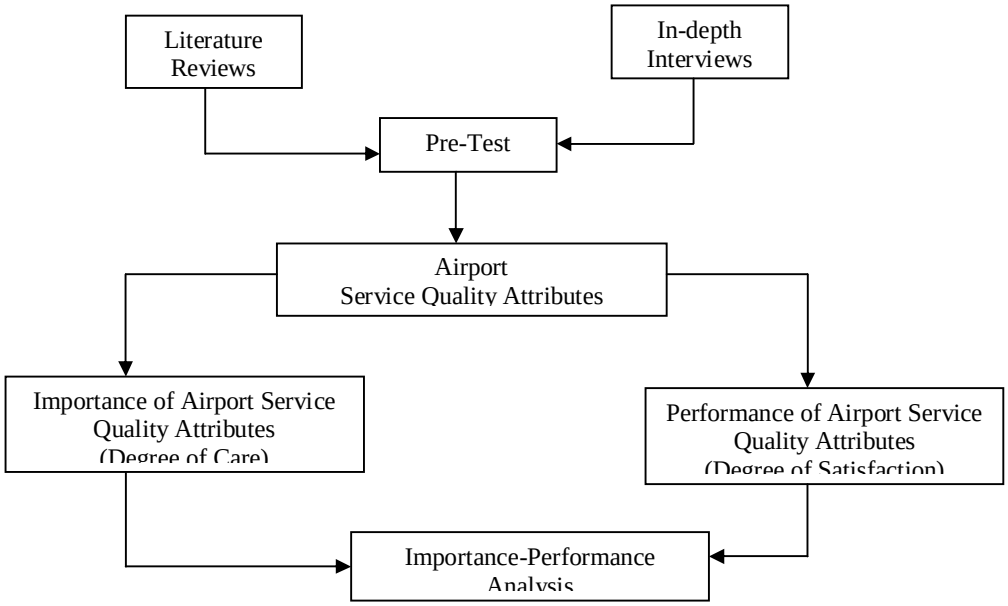
(1996) surveyed the performance of national escorted tours using IPA. They suggest that performance-importance analysis can provide an insight into customer evaluations on critical issues in the tourism industry. Cheng-Min FENG and Kung-Yeun Jeng (2005) applied the IPA technique to analyze the performance of airline. The comparison between perceived importance and performance on the IPA grid allows managers to identify the relative features of successful business.

III. RESEARCH METHODOLOGY

A. Research Frame Work

A research frame work was developed to guide the research shown in figure 1

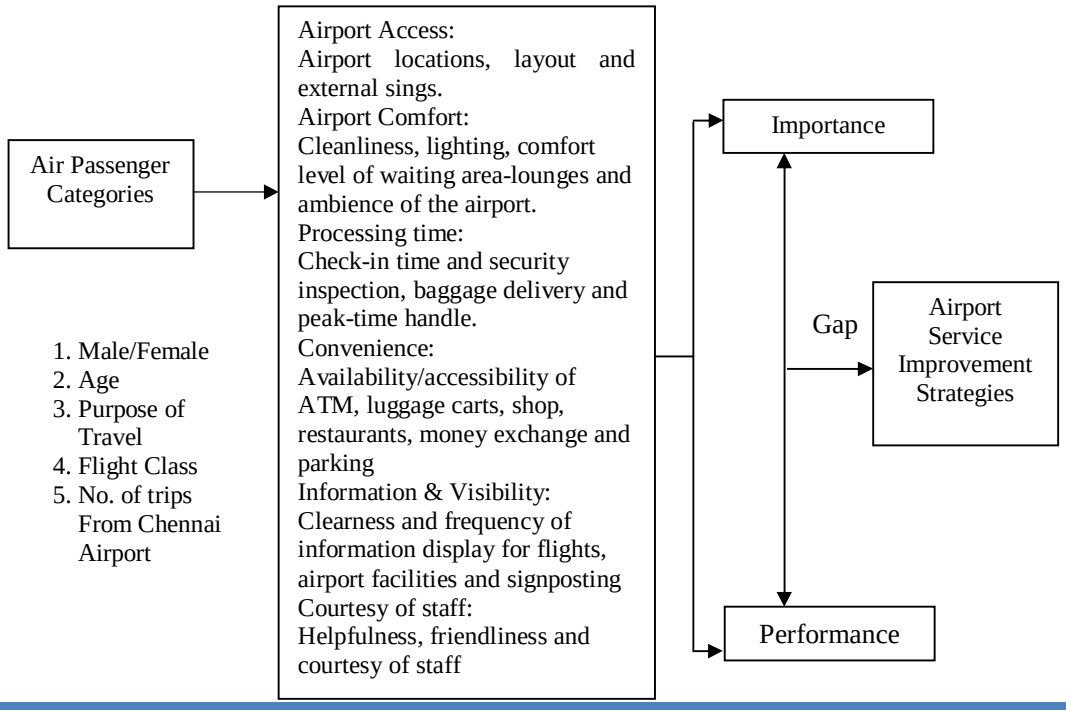
Fig.1 Research framework



B. Research Structure

The study based on the overall research structure in figure 2 intends to explain how the gap between importance and performance can be appropriately handled with composition of different service items.

Figure 2: Overall Research Structure



©IJRASET 2015: All Rights are Reserved

IV. DATA ANALYSIS

The survey was conducted at the Chennai Domestic airport. Sampling was done by interviewing randomly selected passengers, at different times of the day. A total of 180 questionnaires were distributed to domestic air passenger while they are checking in/waiting hall. Some 170 completed questionnaires were collected but 12 questionnaires were incomplete, 158 samples for data analysis. The quality of service is measured with the seven degree of LIKERT Scales. Demographic analysis is presented in Table 1.

Table 1: Demographic results

Classification	Air passenger attributes	N=158 Number of Samples	Percentage
Gender	Male	124	78%
	Female	34	22%
Age	20 to 29	54	34%
	30 to 39	44	28%
	40 to 49	27	17%
	50 to 59	25	16%
	60 and above	8	5%
Purpose of Travel	Business	58	36%
	Tourist	36	23%
	Visiting friends/Relatives	36	23%
	Education	6	4%
	Medical	3	2%
	Others	19	12%
Fight Class	Business	9	6%
	Economy	149	94%
No. of trips from Chennai airport in the last 12 months	1 to 5	134	85%
	6 to 10	18	11%
	10 +	6	4%

A. Importance Analysis

Important analysis based on different passenger classification (Overall/ Age). Data Analysis results listed in Table 2.

Table 2: Importance Analysis Based on Different Passengers Classification (Over all / Age)

S.No	Service Item	Over all passengers	Age				
			20-29	30-39	40-49	50-59	Above 60
		Score	Score	Score	Score	Score	Score
1	Well connected airport location	5.84	5.78	6.00	5.81	5.72	5.75
2	Ground transportation options to/from airport	6.08	6.11	6.09	6.11	6.04	5.75
3	Airport's external signs clearly direct me to airport services such as parking, car rentals, hotels, terminals. etc	5.94	5.81	6.14	5.67	6.16	5.88
4	Ease of transit through airport	5.98	6.24	5.84	5.52	6.04	6.38
5	Parking space availability in airport	5.67	5.63	5.66	5.56	5.92	5.63

©IJRASET 2015: All Rights are Reserved

6	Airport Layout – ease for passengers to find what they need i.e. Terminal entry/Baggage deliver/Security/Check-in/Restaurants restroom, gates etc.	6.08	6.09	6.02	6.00	6.20	6.13
7	More Information displays, such as Rail/Road transport timetables/Airport information services/ Hotels	6.05	5.96	6.11	6.26	6.04	5.63
8	Airport kept clean at all times	6.27	6.26	6.39	5.93	6.32	6.63
9	Good ambience of the airport – Temperature, lighting, noise, music and scent	6.04	5.91	5.98	5.85	6.44	6.75
10	User – friendliness of Terminal	5.94	5.96	6.09	5.48	5.84	6.88
11	Effective "Directions and Signage' system in airport – Baggage, Ticket counters, Check-in, Security, Restrooms, Moving walkways and Customer comments and suggestions	6.22	6.17	6.30	6.07	6.32	6.38
12	More flight information displays in the terminals	5.96	6.07	5.95	5.56	6.08	6.13
13	Effective quality of Announcements – Audible in all areas of an airport terminal, including restaurants, retail stores and check-in	6.19	6.22	6.18	6.30	5.96	6.38
14	Airport has 'current décor'	5.15	5.15	5.11	5.19	5.28	4.75
15	Visually appealing airport office, terminal and gate facilities	5.47	5.39	5.43	5.11	5.92	6.00
16	Comfort of waiting hall of the airport	6.30	6.26	6.23	6.19	6.48	6.75
17	Effective air conditioning in airport	6.12	6.07	6.16	5.85	6.36	6.38
18	Effective Transportation system to the terminals	6.06	6.09	6.09	6.07	6.00	5.75
19	Cleanliness of the airport toilets	6.50	6.57	6.45	6.33	6.68	6.25
20	Employees' uniforms are visually appealing	5.79	5.35	5.55	6.74	5.92	6.50
21	Effective size of the airport in holding passengers.	6.12	6.06	6.11	6.00	6.28	6.50
22	Effective airport customer service counter	6.17	6.22	6.25	5.96	6.08	6.38
23	Availability of baggage carts/trolleys/wheel chair	6.31	6.26	6.36	6.37	6.40	5.88
24	Speed of baggage delivery	6.12	6.15	6.14	6.04	6.32	5.50
25	Good airport facilities - Restaurants, Restrooms and shops	6.42	6.02	6.27	5.93	8.24	5.88
26	Choice of Drinks and Food in Restaurant	5.76	5.85	6.02	5.56	5.64	4.75
27	Telephone/Fax Services/Cell phone charging	5.63	5.57	5.86	5.26	5.88	5.13
28	ATM cash machines/Bank	5.83	5.83	6.09	5.37	5.96	5.50

©IJRASET 2015: All Rights are Reserved

Volume 3 Issue V, May 2015
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)

29	Internet/Wifi availability	5.65	5.63	5.75	5.96	5.24	5.50
30	Conference facilities	4.44	4.39	4.32	4.63	4.36	5.00
31	Comfortable waiting/gate area	6.09	6.24	6.07	5.85	5.92	6.63
32	Cleanliness in washrooms	6.28	6.28	6.32	5.96	6.52	6.50
33	Medical/Emergency services	6.19	6.06	6.45	6.04	6.24	6.00
34	Provisions for the aged/disabled passengers.	6.12	5.94	6.34	6.00	6.28	6.00
35	Minimum waiting time at check-in process	6.42	6.15	7.34	5.93	6.00	6.25
36	Minimum waiting time at security inspection	5.97	6.09	5.91	5.74	6.00	6.13
37	Ability of 'Security' to speak in all Languages	5.90	5.93	5.82	5.70	6.08	6.25
38	Efficient capability of "Peak-Time handling"	6.17	6.15	6.14	6.30	6.20	6.00

B. Performance Analysis

Performance analysis based on Different passengers Classification Overall and Age. Data analysis results listed in Table 3.

Table 3: Performance Analysis Based on Different Passengers Classification (Over all / Age)

S.No	Service Item	Over all passengers	Age				
			20-29	30-39	40-49	50-59	Above 60
		Score	Score	Score	Score	Score	Score
1	Well connected airport location	5.17	5.22	5.34	4.63	5.16	5.75
2	Ground transportation options to/from airport	4.88	5.20	4.73	4.15	5.04	5.50
3	Airport's external signs clearly direct me to airport services such as parking, car rentals, hotels, terminals. etc	4.77	4.91	4.66	4.15	5.20	5.13
4	Ease of transit through airport	4.85	4.98	4.86	4.41	5.04	4.88
5	Parking space availability in airport	4.59	4.87	4.45	4.00	4.92	4.38
6	Airport Layout – ease for passengers to find what they need i.e. Terminal entry/Baggage deliver/Security/Check-in/Restaurants restroom, gates etc.	4.81	4.83	4.77	4.59	5.04	4.88
7	More Information displays, such as Rail/Road transport timetables/Airport information services/ Hotels	4.23	4.52	4.14	3.78	4.36	3.88
8	Airport kept clean at all times	4.44	4.56	4.20	4.33	4.52	5.00
9	Good ambience of the airport – Temperature, lighting, noise, music and scent	4.42	4.35	4.25	4.19	4.80	5.38
10	User – friendliness of Terminal	4.84	5.09	4.75	4.41	4.72	5.50

©IJRASET 2015: All Rights are Reserved

Volume 3 Issue V, May 2015
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)

11	Effective "Directions and Signage' system in airport – Baggage, Ticket counters, Check-in, Security, Restrooms, Moving walkways and Customer comments and suggestions	4.85	4.78	4.93	4.52	5.04	5.38
12	More flight information displays in the terminals	4.80	4.85	4.75	4.44	5.12	4.88
13	Effective quality of Announcements – Audible in all areas of an airport terminal, including restaurants, retail stores and check-in	4.70	5.81	4.36	3.93	4.00	3.88
14	Airport has 'current décor'	4.13	4.24	3.86	4.15	4.20	4.50
15	Visually appealing airport office, terminal and gate facilities	4.25	4.31	4.14	4.04	4.44	4.50
16	Comfort of waiting hall of the airport	4.11	4.22	4.09	3.63	4.12	5.13
17	Effective air conditioning in airport	4.79	4.89	4.75	4.11	5.04	5.88
18	Effective Transportation system to the terminals	4.77	5.17	4.73	4.04	4.96	4.25
19	Cleanliness of the airport toilets	4.37	4.28	3.93	5.11	4.48	4.50
20	Employees' uniforms are visually appealing	4.63	4.78	4.59	4.22	4.72	5.00
21	Effective size of the airport in holding passengers.	4.75	4.98	4.59	4.19	5.08	5.00
22	Effective airport customer service counter	4.58	4.83	4.43	4.26	4.40	5.38
23	Availability of baggage carts/trolleys/wheel chair	5.59	5.54	5.41	5.89	5.76	5.50
24	Speed of baggage delivery	5.06	5.15	5.07	4.89	5.24	4.50
25	Good airport facilities - Restaurants, Restrooms and shops	4.11	4.24	4.05	3.81	4.16	4.38
26	Choice of Drinks and Food in Restaurant	3.99	4.24	3.66	4.04	4.00	4.00
27	Telephone/Fax Services/Cell phone charging	4.33	4.50	4.07	4.30	4.44	4.38
28	ATM cash machines/Bank	3.97	4.20	3.84	4.11	3.92	2.75
29	Internet/Wifi availability	3.65	3.72	3.52	3.52	3.84	3.63
30	Conference facilities	3.62	3.81	3.43	3.63	3.64	3.25
31	Comfortable waiting/gate area	4.19	4.59	4.05	3.85	4.04	3.88
32	Cleanliness in washrooms	4.09	4.59	3.80	3.81	3.96	3.75
33	Medical/Emergency services	4.23	4.44	4.27	3.96	4.20	3.50
34	Provisions for the aged/disabled passengers.	4.56	4.65	4.70	4.44	4.36	4.25

©IJRASET 2015: All Rights are Reserved

Volume 3 Issue V, May 2015
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)

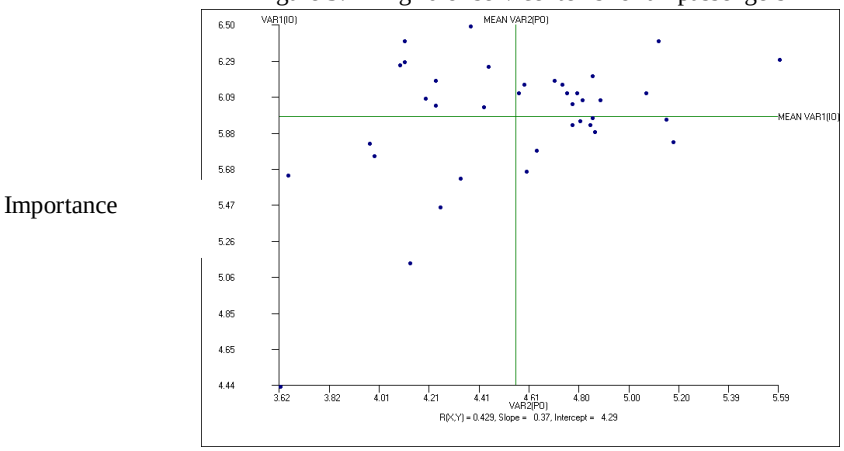
35	Minimum waiting time at check-in process	5.11	4.83	5.00	5.33	5.44	5.75
36	Minimum waiting time at security inspection	5.14	4.94	5.16	4.96	5.52	5.75
37	Ability of 'Security' to speak in all Languages	4.86	4.81	4.93	4.48	5.16	5.13
38	Efficient capability of "Peak-Time handling"	4.73	4.78	4.50	4.37	5.24	5.38

C. Important Performance Analysis (IPA)

This research applies the IPA diagram, proposed by Martilla and James (1977), to study the Importance and Performance perceptions for the overall passengers and these are classified into different age groups.

IPA diagram for Overall passengers shown in Figure 3.

Figure 3: IPA grid of service items for all passengers

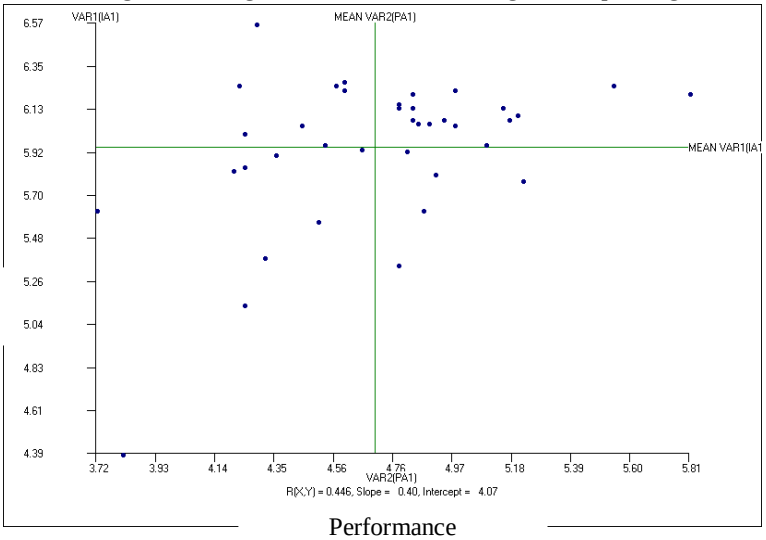


Importance

Performance

IPA diagram for age 20-29 passengers shown in figure 4

Figure 4: IPA grid of Service items for age 20-29 passengers



Importance

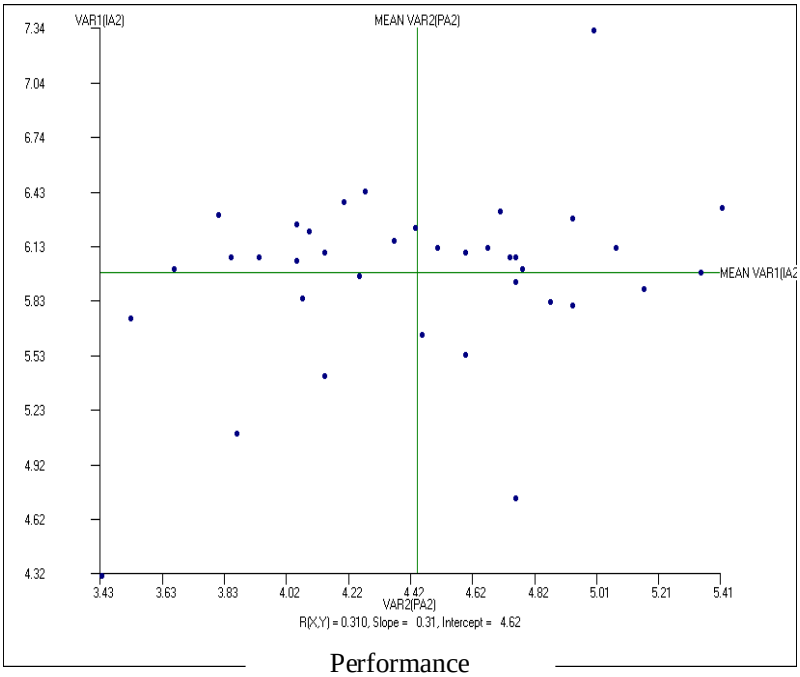
Performance

IPA diagram for age 30-39 passengers shown in shown in figure 5

©IJRASET 2015: All Rights are Reserved

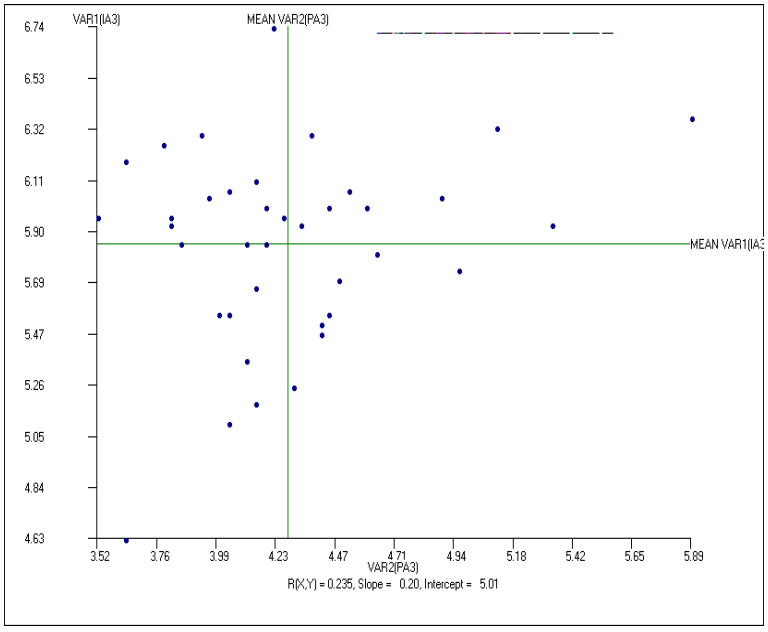
Volume 3 Issue V, May 2015
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)

Figure 5: IPA grid of Service items for age 30-39 passengers



IPA diagram for age 40-49 passengers shown in figure 6.

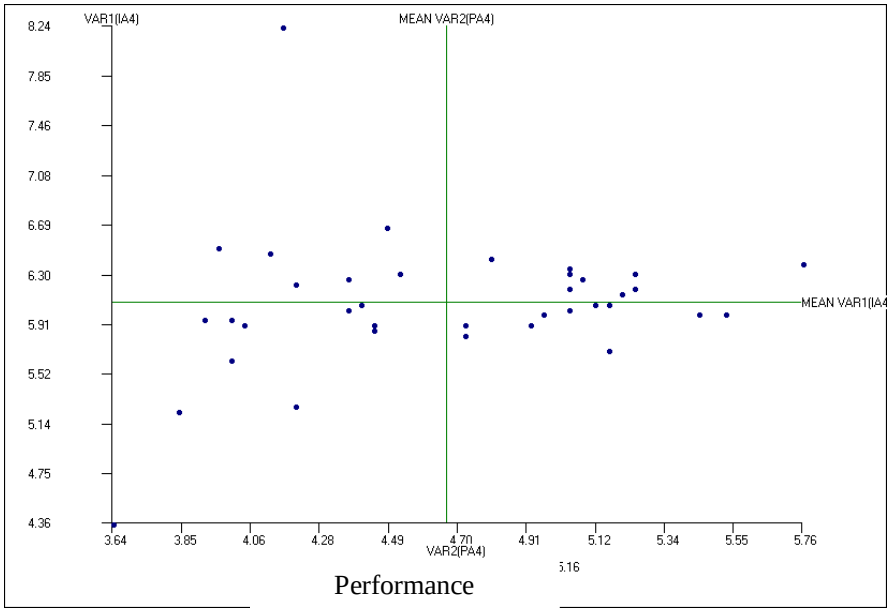
Figure 6: IPA grid of Service items for age 40-49 passengers



IPA diagram for age 50-59 passengers shown in figure 7.

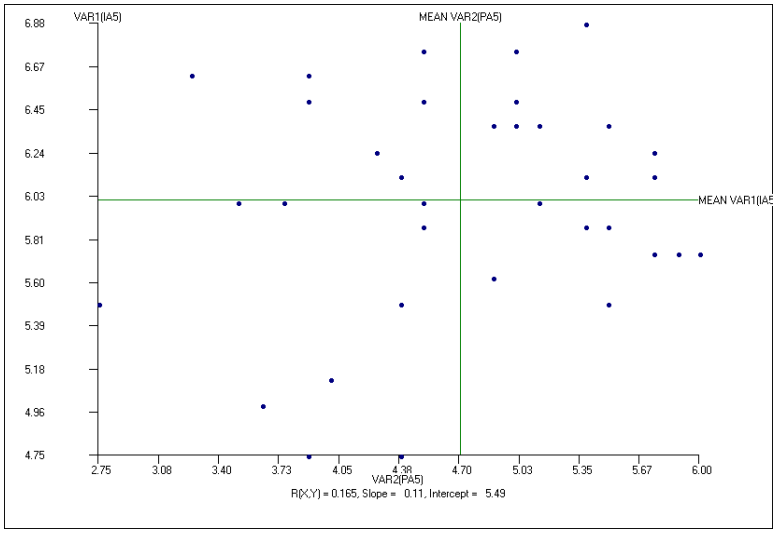
©IJRASET 2015: All Rights are Reserved

Figure 7: IPA grid of Service items for age 50-59 passengers



IPA diagram for age 60 and above passengers shown in figure 8.

Figure 8: IPA grid of Service items for age 60 and above passengers



V. CONCLUSIONS AND RECOMMENDATIONS

This paper has presented and evaluation method for understanding air passengers' care and satisfaction with respect to airport service items. The proposed method has been applied the analysis of the air passengers with a comprehensive survey in Chennai airport. The service improvement strategy for Chennai airport is given below in the table 4.

©IJRASET 2015: All Rights are Reserved

Volume 3 Issue V, May 2015
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)

Table 4: The Service Improvement Strategy matrix for Chennai domestic airport

S.No	Service Item		Age					Strategy
		Overall	20-29	30-39	40-49	50-59	60 & above	
1	Well connected airport location	IV	IV	I	IV	IV	IV	
2	Ground transportation options to/from airport	I	I	I	II	IV	IV	Keep up the Good Work
3	Airport's external signs clearly direct me to airport services such as parking, car rentals, hotels, terminals. etc	IV	IV	I	IV	IV	IV	
4	Ease of transit through airport	I	I	IV	IV	IV	I	
5	Parking space availability in airport	IV	IV	IV	IV	IV	IV	
6	Airport Layout – ease for passengers to find what they need i.e. Terminal entry/Baggage deliver/Security/Check-in/Restaurants restroom, gates etc.	I	I	I	I	IV	II	Keep up the Good Work
7	More Information displays, such as Rail/Road transport timetables/Airport information services/ Hotels	II	II	II	II	IV	IV	Concentrate here
8	Airport kept clean at all times	II	II	I	I	II	II	Concentrate here
9	Good ambience of the airport – Temperature, lighting, noise, music and scent	II	III	III	III	II	I	
10	User – friendliness of Terminal	IV	I	IV	IV	IV	I	
11	Effective "Directions and Signage' system in airport – Baggage, Ticket counters, Check-in, Security, Restrooms, Moving walkways and Customer comments and suggestions	I	I	I	I	I	I	Keep up the Good Work
12	More flight information displays in the terminals	IV	I	IV	IV	IV	I	
13	Effective quality of Announcements – Audible in all areas of an airport terminal, including restaurants, retail stores and check-in	I	I	II	II	III	I	Keep up the Good Work
14	Airport has 'current décor'	III	III	III	III	III	III	
15	Visually appealing airport office, terminal and gate facilities	III	III	III	III	III	III	
16	Comfort of waiting hall of the airport	II	II	II	II	II	II	Concentrate here
17	Effective air conditioning in airport	I	I	II	II	I	I	Keep up the Good Work
18	Effective Transportation system to the terminals	I	I	II	II	IV	IV	Keep up the Good Work

©IJRASET 2015: All Rights are Reserved

19	Cleanliness of the airport toilets	I	II	I	I	II	II	Concentrate here
20	Employees' uniforms are visually appealing	IV	IV	II	II	II	II	Concentrate here
21	Effective size of the airport in holding passengers.	I	I	II	II	I	I	Keep up the Good Work
22	Effective airport customer service counter	I	I	I	I	I	I	Keep up the Good Work
23	Availability of baggage carts/trolleys/wheel chair	I	I	II	II	IV	IV	Keep up the Good Work
24	Speed of baggage delivery	I	I	II	II	IV	IV	Concentrate here
25	Good airport facilities - Restaurants, Restrooms and shops	II	II	II	II	III	III	Concentrate here
26	Choice of Drinks and Food in Restaurant	III	III	III	III	III	III	
27	Telephone/Fax Services/Cell phone charging	III	III	IV	IV	III	III	
28	ATM cash machines/Bank	III	III	II	III	III	III	
29	Internet/Wifi availability	III	III	III	II	III	III	
30	Conference facilities	III	III	III	III	III	III	
31	Comfortable waiting/gate area	II	III	II	II	III	II	Concentrate here
32	Cleanliness in washrooms	II	II	II	II	II	II	Concentrate here
33	Medical/Emergency services	II	II	II	II	II	II	Concentrate here
34	Provisions for the aged/disabled passengers.	II	III	II	II	II	II	Concentrate here
35	Minimum waiting time at check-in process	I	I	I	I	I	II	Keep up the Good work
36	Minimum waiting time at security inspection	III	I	IV	IV	I	I	Keep up the Good work
37	Ability of 'Security' to speak in all Languages	III	IV	IV	IV	I	I	
38	Efficient capability of "Peak-Time handling"	I	I	I	I	I	I	Keep up the Good work

I Located in the Cell I of "Keep Up the Good Work".
II Located in the cell II of "Concentrate Here"
III Located in the cell III of "Low Priority"
IV Located in the cell IV of "Possible Overkill".

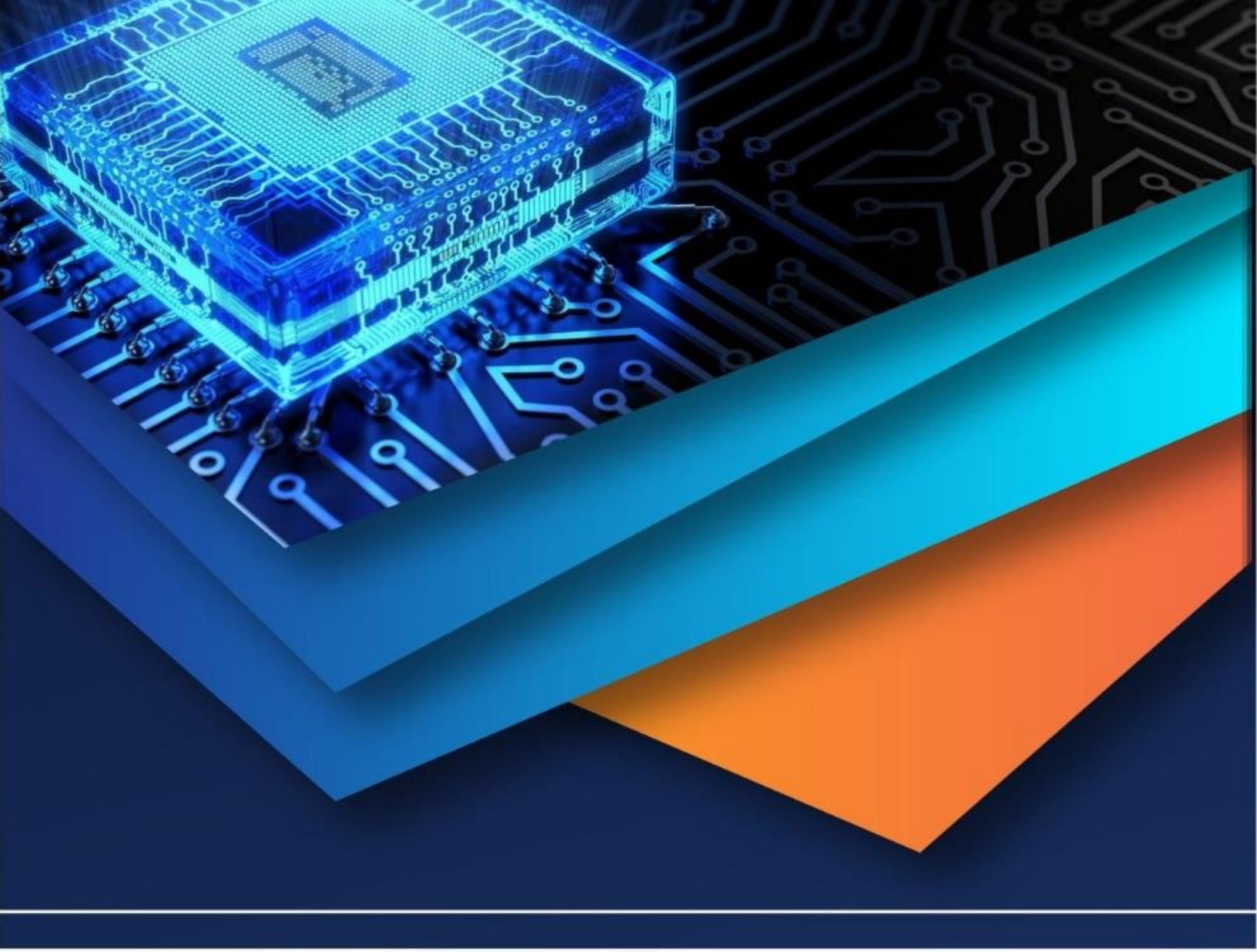
REFERENCES

[1] Chen Yuan-Fang., Chang Hern-Yu. (2005). Examining Airline Service Quality from a Process Perspective. Journal of Air Transport Management, Vol. 11, 79-87.
[2] Chu K.S.Raymond., Choi Tat. (2000). An Importance-Performance Analysis of Hotel Selection Factors in The Hong Kong Hotel Industry: A comparison of Business and Leisure travelers. Tourism Management, Vol. 21, 363-377.
[3] Feng Min-Cheng., Jeng Yeun-Kung. (2005) Analyzing Airline Service Improvement Strategy through Importance and Performance Analysis. Journal of the Eastern Asia Society for Transportation Studies, Vol. 6, 782-797.
[4] Martilla A. John., James C. John. (1977). Importance-Performance Analysis. Journal of Marketing, 41, 78-79.

©IJRASET 2015: All Rights are Reserved

[5] Parasuraman, A., Zeithaml, V. A., Berry, L. L. (1996) The behavioral consequences of service quality. *Journal of Marketing*, 60, 31-46.
[6] Parasuraman, A., Zeithaml, V.A., Berry, L. L. (1985) A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing*, 49, 41-50.
[7] Parasuraman, A., Ziethaml, V. A., Berry L. L. (1988) SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12-40.
[8] Yeh, C. H.and Kuo, Y. L. (2003) Evaluating passenger services of Asia-pacific international airports. *Transportation Research Part E*, 39, 35-48.
[9] Zeithaml A. Valarie., Bitner J. Mary. (2000). Services Marketing: Integrating Customer Focus Across the Firm. 2nd edition. New York: McGraw-Hill Irwin.

©IJRASET 2015: All Rights are Reserved



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089 (24*7 Support on Whatsapp)