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Perception towards use of Information and Communication Technology in Indian Aviation Industry: A Study of Punjab and Chandigarh

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Abstract

Advancement in technology has completely transformed the way in which the businesses interact with their customers. It has brought a complete paradigm shift in delivering various services to the customers and made easy for the organizations to reach them in lesser time. In India, the Aviation sector is one of the fastest growing sectors with a large number of public and private airlines operating in the country. This sector has realized the need to indulge Information and Communication Technology in order to improve on-time performance, convenience to passengers and relationship management in the most economical manner. This paper discusses the adoption of information and communication technology in the airline sector and assesses the perception of passengers and employees regarding the use of Information and Communication Technology in Aviation Sector. The data is collected from 300 passengers and 150 employees from different regions of Punjab and Chandigarh. The findings of the study show that respondents have an overall positive attitude towards all the statements related to the usage of information and communication technology in the implementation of Customer Relationship Management activities. The respondents have agreed that the use of ICT in the implementation of CRM brings positive results in business performance.

Keywords: Relationship management, ICT (Information and Communication Technology), Interactive features, Computerized Reservation system, Web Check-in.

I. Introduction

In present era, with the increase in competition every organization make efforts to attract new customers and retain the existing customers by offering better services and maintaining good relations with them. Customer Relationship Management allows a company to treat different customers with different actions accordingly which allow the company to act more efficiently and effectively while retaining their customers. The effective relationship between customers and organization largely depends upon the extensive understanding of various needs of customers at different stages. Effective Management of Customer Relationship Management requires managing customer knowledge. It included all the marketing activities, which are designed to establish, develop maintain and sustain a successful relationship with the target customers. Customer Relationship Management is often used to describe technology-based customer solutions and has emerged in the information technology vendor community and practitioner community in the mid-



the 1990s. It takes a wider view and is an attitude to customers and to the organization itself. Airlines are advanced users of ICTs and a number of airline activities depend heavily on ICT (Christensen, 2000). Distribution and collaboration with partners is perhaps one of the most critical areas of ICT contribution (Shon and Chang, 2003).

Technology has been a cornerstone of aviation industry ever since the dawn of aviation commencing with the conquering of 'flight' to becoming a key enabler for communications, business innovation, and business models. The aviation sector in India has seen tremendous growth over the last decade. A large variety of new players have commenced operations which are offering both domestic and international services. The aviation industry in India has implemented some of the latest technologies in some functional areas to enhance operations and provide better customer service. Majority of low-cost carriers exclusively rely on ICTs for displaying their handiness, communication and transacting with their clientele. ICTs are equally important in operations management and contribute to the optimization of procedures and processes (Jo et al., 1997) as well as for softer service elements such as in-flight entertainment and customer service (Alamdari, 1999). In addition, (Nadja, 2004) noted that the choice of airline travelers is not only driven by frequent flyer programs but also by price, schedule, product attributes, customer service and individualization. The choice was attainable for the travelers due to the use of CRM tools.

II. Review of literature

Bukhari et al. (2012) explored the factors that attract travelers to purchase airline tickets online in Saudi Arabia. A conceptual framework was developed based on literature pertaining e- consumer behavior, website quality, and travel and tourism streams which also based on Technology Acceptance Model. A Structured questionnaire was used to examine the construct. The sample population was consisting of online users/ travelers from the Kingdom of Saudi Arabia. The questionnaire based on nine constructs: information quality, system quality, perceived usefulness, perceived ease of use, e- trust, airline reputation, price perception, e- satisfaction and intention to purchase. Structural equation modeling was adopted to validate and test the hypothesis. The findings of the study present a framework that help decision makers within the airline companies to understand their customers' online behavior and enable enhancements and modifications to be made to their airline shop front, therefore guaranteeing the satisfaction of potential customers and conversion of holidaymakers into patrons.

Byambaa and Chang (2012) examined the factors that influence customer satisfaction in online services in Mongolian Airlines. The survey was based on three airlines- MIAT Mongolian airline, AeroMongolia, Eznis Airways. The data was collected from 138 passengers based on five variables which have an effect on passengers' satisfaction levels of Airlines. The dependent variable in the study was customer satisfaction and independent variables include ease of use, website design, information quality, interactivity, and payment security. The result of the study concluded that the website design and information quality did not have an impact on e-satisfaction whereas ease of use, payment security and interactivity positively influenced users' level of satisfaction.

Irungu, I.W. (2012) in his study tried to ascertain the influence of information and communication technology on the performance of the aviation industry in Kenya with the case of Kenya Airways –



Kenya office. The study used descriptive survey design and the population comprised of all Kenya Airways staff in Nairobi office. A sample of 244 employees was randomly selected for the study. Purposive sampling was used to select Nairobi office as the study site. The data was collected through a questionnaire structured to meet the objectives of the study. The findings of the study indicated that information and communication technology which incorporates communication networks, portable technology, hand-held devices like iPads and web and pc applications influenced the performance of the aviation to an outsized extent and raised the revenue generated from improved access to information.

Sardjono (2013) evaluated the use of e-commerce in the Airline industry in Indonesia. The data used in the study was collected from 124 respondents. The research used quantitative analysis technique based on the dimensions of e-commerce usability, information quality, and service quality. Regression analysis and Factor analysis was carried out to analyze the results of the study. The findings of the study indicated four factors affecting e-commerce quality of the Airline industry- quality of trust, quality user interface, and quality of information and quality interactions. It was concluded that passengers still expect an increase in the quality factor of the user interface.

Sambasivam and Tseye (2013) in their study aimed to analyze the factors affecting the e-ticketing practices in Ethiopian airlines. The main objectives of the study were to identify the factors affecting e-marketing practices related to e-ticketing and to examine passengers' perceptions about e-ticketing services. Judgmental sampling was used to select frequent routes and Convenience sampling technique was applied to select the respondents from each selected routes to distribute questionnaires. Primary data was collected through questionnaires and interviews whereas secondary data included research reports, annual reports, books, and websites. Data were analyzed by applying both quantitative and qualitative strategies. The quantitative strategies concerned a series of cross-tabulation and statistical tools like correlation, multivariate analysis to present the ultimate findings. The different variables involved included- infrastructure, ease of use, security, perceived usefulness, perceived risk, subjective norms, trust, and behavioral control. The outcomes of the study indicated that majority of respondents realized that infrastructure facilities are inadequate to practice e-ticketing in EAL website. The findings also showed that the majority of passenger perceived that the system is not easy to perform and less user-friendly.

III. Need of the study

Information Communication Technologies (ICTs) have revolutionized the whole business world. The airline industry, in particular, has fostered a dependency on technology for their operational and strategic management processes. Airlines were early adopters of ICTs and have a long history of technological innovation, in comparison to many other travel and tourism businesses (Buhalis, 2004). In aviation sector, airline companies have realized the need of efficient, quick, inexpensive and accurate handling of their list and records and is one of the most independent organizations in tour and travel industry, airlines use technology in form of internet, intranet and extranets to facilitate all this as these features facilitates their operational, administrative and competitive roles in the market. The Internet allows airlines to demonstrate their competitiveness worldwide as it is possible to directly communicate with the customers through the use of internet applications. Every airline has an



official website for the convenience of passengers and it has all the information necessary for ticket booking and other services on it. Few additional benefits like, Web check-in, additional baggage, seat preference, car –rentals and hotel bookings that make travel more comfortable are also displayed on the website. Computer Reservation System is also considered as a powerful tool to manage the inventory and it allows airlines to improve their internal organization. In addition, use of specialized software facilitates scheduling in order to optimize crew, aircraft, and other resources and to maximize the operational efficiency whilst keeping costs under control. So it is necessary to understand the perception of the passengers about these facilities provided by the airlines. Employees are also important part of every organization so it is desirable to analyze what they feel about the adoption of new technology. This study is an effort to assess the perception of passengers' and employees regarding the use of Information and Communication Technology in implementation of CRM activities in Aviation sector.

IV. Research methodology

The study was based on assessing the perception of passengers and employees towards the role of information and communication in implementing CRM practices in the Indian Aviation industry. Data was collected using a well- structured questionnaire. All the respondents were briefed properly about the research study before they give their responses. The questionnaire was formulated by reviewing existing literature related to the use of information and communication technology in various sectors. The questionnaire uses a five point Likert scale (1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree) for measuring the perception level of the respondents with respect to the various statements related to ICT usage in the Aviation sector. The socio-demographic profile of the respondents is also studied.

A. Objective of the study

The main objective of this research study is to analyze the perception of passengers and employees towards the use of information and communication technology in the aviation sector.

B. Sample size and Scope of the study

The study emphasizes to study the adoption of Information and Communication technology by airlines in the implementation of CRM practices by identifying the perception of employees and passengers towards ICT related statements. The sample size consists of total 450 respondents out of which 150 respondents were employees of different airline companies operating in airports of Punjab and Chandigarh and 300 respondents were passengers who have travelled widely through airlines. The respondents for the study were selected from different districts of Punjab and Union Territory Chandigarh.

C. Sample Design: Non-probability sampling technique was used to select the respondents of the study. The sampling design was selected keeping in mind that sample selected will be a true representative of the population thus enabling to answer the research questions of the study.



V. Analysis and discussion

A. Demographic Profile of the respondents

This section presents the demographic profile of the respondents which are taken under on and study based on gender, age, education and monthly income.

Table no. 1 Gender and age Profile of the respondents

Demographic Profile	Description	Passengers		Employees	
		N	%	N	%
Gender	Male	224	74.7	73	48.7
	Female	76	25.3	77	51.3
Age	Below 25 years	18	6.0	5	3.3
	25-45 years	111	37.0	144	96.0
	46-65 years	118	39.3	1	0.7
	Above 65 years	53	17.7	0	0

From the above table it is shown that 224 (74.7%) of the passengers are male and 76 (25.3%) are female. Under employee category, it exhibits that there are more female employees than male employees in the study i.e. 77 (51.3%) are female and 73 (48.7%) are male employees. The table also exhibits the age distribution of the respondents. According to the table, out of 300 passengers, majority of the passengers i.e. 118 (39.3 %) belongs to the age group between 46 –65 yrs followed by 111 (37.0 %) in 25-45 yrs age group, 53 (17.7 %) fall under above 65 yrs and the least number of respondents belongs to below 25 years age group i.e. 18 (6.0 %) and Out of the total 150 employees, the majority of the employees 144 (96.0 %) belong to the age group between 25 –45 yrs which shows that while recruiting airlines focused on both enthusiasm and experience.

Table no. 2 Education and monthly income distribution of the respondents

Demographic Profile	Description	Passengers		Employees	
		N	%	N	%
Education	Under graduate	129	43.0	0	0
	Graduate	111	37.0	74	49.3
	Post graduate	31	10.3	31	20.7
	Professional degree	27	9.0	43	28.7
	Any other	2	0.7	2	1.3
Monthly Income	Below Rs. 80,0000	87	29.0	149	99.3
	Rs. 80,000 – 1,20,000	138	46.0	1	0.7
	1,20,000- 1,60,000	38	12.7	0	0
	Above Rs. 1,60,000	37	12.3	0	0



Table no. 2 presents the education and monthly income distribution of the respondents. An analysis of the table provides that majority of the passengers who participated in the study i.e. 129 (43%) are undergraduate and having Bachelor's degree 111 (37.0%) respectively. This is followed by 31 (10.3%) respondents having Master Degree, 27 (9%) having Professional qualification and 2 (0.7%) of respondents have education level other than these categories. An analysis of the table also provides that majority of the employees i.e. 74 (49.3%) have graduated in different streams followed by 43 (28.7%) having a professional degree and respondents having Master's degree 30 (20.7%) respectively. As it is evident from table no. 2 , 87 (29.0%) of passengers earn below Rs. 80,000 per month , 138 (46.0%) belong to Rs.80,000- 1,20,000 the monthly income category , 38 (12.3%) lie in Rs. 1,20,000- 1,60,000 income group. There are only 37 (12.3%) of passengers who have monthly income more than Rs. 1, 60,000. The majority of employees 149 (99.3%) have monthly income below Rs. 80,000 while there is only 0.7 % employees who mentioned their monthly income in Rs.80,000- 1,20,000 category .

B. Perception of respondents regarding Use of Information and Communication Technology in implementation of CRM activities

This section discusses the perception of the respondents regarding the use of technology in implementing Customer relationship practices in aviation sector. There are 16 statements based on Information and communication technology and the perceptions towards these statements are recorded and analyze to study the attitude towards these statements.

Table no. 3 Perception of respondents regarding ICT usage

Statements	P (Mean)	E (Mean)
(S1) Airline company provides Web Check-in and Tele check- in facility	4.32	4.51
(S2) The Airlines provides Kiosk Check-in services to the customers	4.02	4.51
(S3) Airline company provides the facility to cancel and re-book online	4.47	4.75
(S4) Airline company provides facility to book seat and meal preferences online using mobile and internet	4.38	4.48
(S5) Airline company website personalizes customers' needs	4.02	4.43
(S6) The website has interactive features that help passengers' with navigating	4.07	4.19
(S7) The website has mechanism to ensure the safe transmission of its user's information	4.12	4.38
(S8) The detailed information about the services is available at website of airline company	4.21	4.92
(S9) Airline company uses interactive – voice response based payment and ticketing system	3.68	3.99
(S10) The passengers can submit their feedback on website	4.08	4.13



(S11) Airline company is actively present on social networking sites like Facebook, Twitter, You Tube, Flickr and LinkedIn	3.72	4.69
(S12) Airline company rapidly responds to various on social media sites	3.71	4.05
(S13) Airlines use cookies to establish user session by providing site users appropriate information, advertisements and services	3.76	3.96
(S14) Airline company has a blog on website for customers' to share their emotional experiences about their flight	3.72	4.05
(S15) It is easy to made payment through online	4.58	4.68
(S16) The airline company charges zero penalty fees for cancellations within 24 hours through online	2.64	2.40

Table no. 3 represents the perception of passengers towards the usage of Information and Communication Technology by airline companies. It is seen that passengers have an overall positive attitude towards all the statements except “The airline company charges zero penalty fees for cancellations within 24 hours through online” which shows the neutral behavior of the passengers towards this facility. The results indicate that the passengers extend their agreement that airlines make use of technology to provide better CRM to its travelers. But there is need for improvement in case of cancellation of ticket within time through the use of the internet. The highest mean value is 4.58 for the statement “It is easy to made payment through online” which indicates that with the usage of ICT passengers’ feel that it is really easy to make payment of ticket online. The least mean score value for the statement “The airline company charges zero penalty fees for cancellations within 24 hours through online” i.e. 2.64 exhibits the disagreement of passengers and they respond that companies always make some reductions whenever the passenger cancels the ticket booking. So there is a need that airlines should indulge a zero cancellation system in case of ticket cancellation within 24 hours.

The information in the above table also shows the employees’ perception of the usage of ICT in the implementation of CRM activities by airline companies. The results of the study present that there is a positive attitude of employees towards all the questions except “The airline company charges zero penalty fees for cancellations within 24 hours through online” which has a mean score value of 2.40. The statement with the highest mean value 4.92 which says “The detailed information about the services is available at Website of Airline Company” indicates that airline company official sites provide detail information about services. The lowest noted mean is 2.40 for the statement “The airline company charges zero penalty fees for cancellations within 24 hours through online” which shows the disagreement of employees that airlines offer zero cancellation charges. From the table, mean value for statement S1, S2, S3, S8, S11, and S15 is 4.51, 4.51, 4.75, 4.92, 4.69 and 4.68 respectively. It shows that when employees were asked to give their responses towards these statements they strongly agree about these facilities offered by airlines. The mean score for other statements exhibits that employees were agreed on all the statements except for statement S16 which has a mean score of 2.40 indicating that employees have neutral behavior towards this statement.

It is possible to make a comparative analysis of the perception of passengers and employees by looking at the information given in the above table. For passengers, the mean value for statements-



S1, S2, S3, S8 and S11 is 4.32, 4.02, 4.47, 4.21 and 3.72 which represent that passengers give their agreement towards these statements but for employees the mean value for same statements is 4.51, 4.51, 4.75, 4.92 and 4.69 thus indicating that they gave strong agreement towards these facilities provided by the airlines in which they work. The mean values for other statements exhibit that both passengers and employees are agreed on these statements although their extent of agreement varies except for statement S16 where both the parties shows neutral behavior.

VI. Conclusion

The study presents that employees' have agreed that usage of ICT in the implementation of CRM brings positive results in business performance. The passengers also have overall positive attitude towards all the statements related to the usage of Information and Communication Technology by airline companies except in statement 16 where passengers respond that airline company always charge some penalty whenever passenger cancel ticket due to some reason. The respondents felt that airlines should also make its customers aware of internet facilities in order to get hassle-free services.

It could be concluded from the results of the study that airlines should pay concentration on improving the areas of technology in which they lag behind as passengers are asset to every organization and if they are not satisfied this will affect the image of the company. Moreover best use of technology is only possible when everyone get benefit from it.

VII. Limitations of the study

1. Proper care has been taken in selecting the sample size for the study and was sufficient in terms of survey research but a large response would have increased the authenticity of statistics.
2. The scope of the study was confined only to Punjab state and Chandigarh so if same study will be conducted in other states there may be possibility that it may yield different results.
3. It has been experienced that time and resource used in any research work is a big constraint. The pressures of the time may restrain the attention of the participants to the question they responds.

References

- [1] Alamdari, F. (1999). Airline Inflight entertainment: The Passengers' perspective travel agent monitoring and management. *Journal of Air Transport Management*, 5 (5), 203-209.
- [2] Buhalis, D. (2004). eAirlines: Strategic and tactical use of ICTS in the Airline Industry. *Information & Management*, 41(7), 805-825.
- [3] Bukhari, S., Ghoneim, A., & Dennis, C. (2012). Understanding the factors that attract travelers to buy airline tickets online in Saudi Arabia. *European, Mediterranean & Middle Eastern Conference on Information Systems*, pp.619-628.
- [4] Byambaa, B., & Chang, K.C. (2012). The influence factors of online purchase on customer satisfaction in Mongolian Airlines. *IPEDR*, 57(15), 80-85.



- [5] Chalmeta, R. (2006). Methodology for customer relationship management" *Journal of Systems and Software*, 79, 1015-1024.
- [6] Christensen, J. (2000). IT and Business: a History of Scandinavian Airlines. Aarhus University Press, Aarhus: Denmark.
- [7] Dargah, D.B., & Golrokhsari, H. (2012). E - Tourism and customer satisfaction factors. *International Journal of Advances in Management Sciences*, 1, 35-40.
- [8] Irungu , I.W. (2012). Influence of information and communication technology on performance of aviation industry - A Case of Kenya airways Ltd. Master Thesis University of Nairobi.
- [9] Jo. G., Jung. J. and Yang. C. (1997). Expert System for Scheduling in an Airline Gate Allocation. *Expert Systems with Applications*, 13 (4), 275-282.
- [10] Nadja K. (2004). Customer Relationship Management: Going Beyond a Frequent Flyer Program. *Ascend: A Magazine for Airline Executives*, (2).
- [11] Sardjono, W. (2013). Using factor analysis to evaluate e-Commerce of Airline Industry in Indonesia. *Australian Journal of Basic and Applied Sciences*, 7(11) ,530-536.
- [12] Sambasivam, Y., & Tseye, E. (2013). Consumers perspectives on the factors affecting e- ticketing practices at Ethiopian airlines. *International journal of Economics and Business studies*, 2(5), 32-43.
- [13] Shon, J.Z., Chen, F. and Chang, Y. (2003). Airline e-commerce: The revolution in ticketing channels. *Journal of Air Transport Management*, 9(5), 325-331.
- [14] The Travel & Tourism Competitiveness Report 2013, 2015