

ERA OF APPLICATIONS AND WEBSITES: EFFECT OF INFORMATION TECHNOLOGY ON SATISFACTION AND LOYALTY OF CUSTOMERS IN HOTEL INDUSTRY

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Abstract: Information Technology sector has seen big boom and many new sectors have emerged while some traditional sectors declined. E-commerce has emerged as one of the important sector in contemporary world. Numerous websites and applications have been launched for customer convenience. In hotel industry many e-commerce companies have invested. These investments have changed the entire hotel industry and changed the way we book the hotels and plan our vacations. Therefore, it is important to study how these information technology innovations have changed the customer satisfaction and customer loyalty. Present study will contribute in the area by focusing on this emerging concept. Researcher has invested 500 hotel customers about customer satisfaction and loyalty using standardized questionnaire. These customers have been investigated from Doaba region of Punjab. Researcher has used regression analysis to study the effect of Information technology on Customer satisfaction and customer loyalty. It is found that the Information technology has Positive effect on customer satisfaction. However, customer loyalty has been affected negatively by Information technology. Possible reason could be more offers on applications and websites.

Key words: Hotel industry, Information Technology, Loyalty, Satisfaction

1. INTRODUCTION

The Indian tourism and hospitality industry has materialized as one of the key drivers of growth among the services sectors in India. Tourism in India accounts for 6.8 per cent of the GDP and 8.78 percent of the total employment in the country. It is the third largest foreign exchange earner for the country. The tourism and hospitality sector's direct contribution to GDP is US\$ 44.2 billion in 2015. The figures are expected to rise to Rs 4.35 trillion (US\$ 72.17 billion) by 2024. Constant transformation, functional growth and improving standards have gained the hospitality industry of India approval all over the world. The industry is broadly

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compartmentalized in two segments: Tourism and Hotels. This industry in India has generated immense employment opportunities and is a vital source of foreign exchange for the country. The Indian hospitality sector has been growing at a cumulative annual growth rate of 14 per cent every year adding significant amount of foreign exchange to the economy. This industry is a labor intensive one and India has a large concentration of english speaking individuals, which prove as a catalyst in advancement and prosperity of the industry. Besides the regular jobs of a travel agent, tour guide, air hostess, chef, waiter and managers other opportunities await those who are keen on taking up a job in the sector.

The hotel industry today is recognized as a global industry, producers and consumers are spread across the globe. The use of hotel facilities are no longer considered a luxury. These facilities have become life style for many people (Kadampully and Suhartanto, 2000). Information and communication technologies have changed the way business is being conducted in the industries of hospitality and tourism (Buhalis and Law, 2008). Progress in information and communication technologies has transformed business practices, strategies and industry structures dramatically (Porter, 2001). Increase in importance to Information and communication technology as they have had a great impact on hospitality and tourism organizations and destinations, as well as the entire set of industries as a whole (Buhalis and Law, 2008; United Nations World Tourism Organization, 2001). Technology is gradually becoming a critical source of sustainable competitive advantage in the hospitality industry, particularly in the areas of description, Promotion, distribution, amalgamation, organization, and delivery of hospitality products (Ham *et al.*, 2005). Presently, online purchase of hospitality related products/services through channels of web have attained growth rapidly (Bai *et al.*, 2008). The rapid growth of online transactions in service industries raises important research questions about the levels of satisfaction and loyalty in the online environment (Wind and Rangaswamy, 2001).

Loyalty and satisfaction are not used for each other as synonymously (Bloemer & Kasper, 1995; Oliver, 1999). There is possibility of customers possessing loyalty even when they are not highly satisfied (when other alternatives are available) and got high level satisfaction but yet not showing loyalty (when there is availability of many other choices). For allocating efforts for marketing in online mode between the initiatives of satisfaction and programs for loyalty firms are needed for gaining a better understanding about the relationships between loyalty and satisfaction in this online environment. If, for example, it is found by a firm that there is an association between loyalty and increase in satisfaction, then focus could be directly enhanced towards programs of loyalty.

There is a concern among managers about the influence of online mediums on loyalty and satisfaction and the relationships between these two constructs. Typically, comparison between alternatives in customers online is easier than

customer's offline, especially when services and products are functional. Just a click can make access to offers in competition on internet. Because, such properties of internet, fears seen among managers about induction of low customer satisfaction and loyalty by online mediums as compared to offline mediums, and that increase in satisfaction level with any service/product will not make high level of loyalty when choices are made online (Shankar *et al.*, 2003). Some recent studies showed that there may be systematic differences in customer attitudes and behavior for products and services chosen online versus offline (Degeertu *et al.*, 2000; Lynch & Ariely, 2000; Shankar *et al.*, 2001).

In a virtual environment for maintaining values for customers in long term its essential providing a well perceived service quality, satisfying the customers and building loyalty. In virtual environment devoting of some studies have been done to the importance of service quality, satisfaction of customers and their experience (Al-Hawari and Ward, 2006; Parasuraman *et al.*, 2005; Wolfinbarger and Gilly, 2003). However, there are needed endeavors of substantial empirical research for electronic services, having impacts of service quality in online medium on the constructs of customer satisfaction and loyalty (Fassnacht and Koese, 2006).

A "loyal customer" is a customer who will purchase repeatedly from the one service provider whenever possible; a positive attitude is continued and recommended for the same service provider (Kandampully and Suhartanto, 2000). Behavior and attitude are the two dimensions of the customer loyalty (Julandar *et al.*, 1997). The behavior of a customer on repeat purchases, indicating a brand or a service preference over time refers to the behavior dimension (Bowen and Shoemaker, 1998). An intention of a customer for repurchasing and recommending refers to attitudinal dimension (Getty and Thompson, 1994). Theoretical framework, which identifies factors leading to development of customer loyalty, is what practitioners couldn't clearly identify (Gremler and Brown, 1997). A consensus amongst academics and practitioners is that prerequisites of loyalty are customer satisfaction and the quality of service (Gremler and Brown, 1996; Cronin and Taylor, 1992).

In a market-oriented firm one of the most important outcomes of all marketing activities considered is customer satisfaction (Kadampully and Suhartanto, 2000). Business expansion is the need for satisfaction of a firm's customer, to gaining of a high market share, and to acquiring of referral and repeat business, all this leads to improvement of profitability (Barsky and Labagh, 1992). Purchase intentions are significantly affected by customer satisfaction (Cronin and Taylor, 1992). Relationship is positive between customer satisfaction and customer loyalty (Kandampully and Suhartanto, 2000).

Initially hotel bookings were made either through counters or telephonic, but with technological innovations online mode of hotel bookings and travel operations have created opportunities as well as threats. Following are some of the leading

websites and applications on hotel and travel bookings: *www.hotels.com*, *www.hotwire.com*, *www.goibibo.com*, *www.makemytrip.com*, Trivago, Orbitz, Expedia etc.

2. LITERATURE REVIEW

2.1. Customer satisfaction

It is a satisfied experience of post purchase with a service or product which gives an existing expectation of purchase (Vovra *et al.*, 1997). "The buyer's cognitive state of being adequately or inadequately rewarded for the sacrifices he has undergone" (Howard and Sheth, 1969). Satisfaction is fulfillment consumer responses which includes under or over fulfillment levels (Rossomme, 2003). Measuring of customer satisfaction is an issue of complexity and it helps in promoting and increasing focus on customer outcome and stimulating improvement in work practice and process (Vijay, 2014). Service quality significantly determines the customer satisfaction (Bedi, 2010). There is a minimal influence of programs of customer loyalty on buying decisions (Jeevananda, 2011). Desta (2011) reliability largely influences to customer satisfaction and overall satisfaction affects positively on their word of mouth. Al-Zoubi (2013) SERVQUAL dimensions significantly impacts on customer loyalty.

2.2. Information technology in hotel industry

With the increase in demands for intensive information from both customers and hotel management, computer based information technology facilities have been adopted by hotels to the improvement in efficiency of operations, reduction in costs, and enhancement in service quality (Camison, 2000; Cobanoglu *et al.*, 2001). With the usage of IT in hotel business, managers are expecting that there will be increase in financial returns and profit margins (Siguow and Enz, 1999). Oslén and Connolly (2000) argue that the usage of IT helps in placing information and other knowledge at the core of competitive profile of a hospitality organization. There are indications from prior studies that to implement a kind of new technology hotels are not intended to take lead (Cho and Oslén, 1998). Such type of slow responses, according to Gamble (1998) is causes for hospitality industry in lagging behind other industries in application of IT. Therefore, in turn, it causes in having lower degree of accrued benefits when there is a change in competitive position of hotels. In addition, lower technological competence of hotel staff, and hotel operations assisted by IT at large scale means that there will be a high risk of IT problems in hotel industry (Law and Lau, 2000). The importance of information and communication is fast increasing, they greatly impact on organizations from tourism and hospitality industry, as we as to the entire industry (Buhails and Law, 2008; United Nations World Tourism Organization, 2001). Search engines are now used by more and more travelers for planning and experiencing their trips and

vacations because of speedy information retrieval (Buhails and Law, 2008). As from information and communication technology development and its commercialization tourism and hospitality industries have been advantaged, hotels, travel agencies and other tourism companies are necessitated for adoption of these technologies (Sahadev and Islam, 2005). Information and communication technologies are not only enabling customers to searching for and purchasing of customized products of tourism and hospitality, but also benefits suppliers in development, management and in distributing services/products in overcoming geographical constraints and time limits and supporting in globalizing the industry by providing tools of effectiveness (Buhails and Law, 2008). By adopting information and communication technologies a platform to access the global market is provided (Law *et al.*, 2009). Accordingly to Connolly and Oslon (2000), in tourism and hospitality changes are largely affected by information and communication technologies.

As we know advancement in information technology has influenced every business. IT literacy and ease to electronic gadgets has made it for enterprises to run business through commercial websites and develop applications, so can be accessed by masses from computers and smart phones. This has given more rise to e-commerce and made a compulsion to adopt modes of e-commerce for those sectors which were influenced least. Hotel industry is one of those industries which adopted the way of e-commerce. A lot of websites and applications in hotel industry came up in recent years. A kind of competition has been created among these websites and applications available of hotel industry. No doubt it has eased the way of business for hotel management, and way of bookings for customers. As this e-commercialization of hotel industry is at boom but, lack of research is found in this sector. Although, some research studies has been done but, regarding the influences of IT on hotel business particularly on customer area, a need of research studies is felt. There arises a gap for research. Second, a lot of research has been done on customer satisfaction and customer loyalty in offline mode but, in online mode of hotel business this area has not been touched yet. Studies have been carried out on the impact of customer satisfaction on customer loyalty and vice versa in offline mode but, there is a concern in management of hotel industry about the influence of online mediums on customer satisfaction and customer loyalty so, the impact of information technology on customer satisfaction and customer loyalty comes as a strong gap and arises a need for research study on it.

3. METHODOLOGY

3.1. Sample and data

In this study population consists of all those who used information technology i.e. websites and applications for hotel bookings in planning their vacations and other

trips in India. A sample of 500 hotel customers of Doaba region in Punjab was selected and data was collected using a standard questionnaire.

3.2. Measurement development

Three constructs information technology, customer satisfaction and customer loyalty were measured using '5' point likert scale for each, with '5' as 'strongly agreed' and '1' as 'strongly disagreed'. The constructs of customer satisfaction and customer loyalty were measured in dimensions using '5' point likert scale for each dimension through a standardized questionnaire.

3.3. Data survey instrument

A standardized questionnaire was used for data collection. The questionnaire was divided into three constructs of information technology, customer satisfaction and customer loyalty. The construct of customer loyalty was divided into different dimensions as behavioral loyalty, attitudinal loyalty, and composite loyalty. Similarly, the construct of customer satisfaction having dimensions as value satisfaction, guest satisfaction, satisfaction with service quality, satisfaction with ambience, satisfaction with food and beverages, satisfaction with guest rooms, and satisfaction with reception/front desk. All the three constructs were covered by 34 statements. Language used was quite simple, and content used was free of any controversial elements as taking into consideration different cultural backgrounds of respondents.

3.4. Tools and Techniques for analysis

Data was collected through a questionnaire, responses recorded on a '5' point likert scale. Tools used are MS Excel for data handling and SPSS (Statistical Package for Social Sciences) as a data analysis tool. As we were to analyze impact of information technology on customer satisfaction and customer loyalty so, regression was suitably matching technique as all assumptions were met. Besides descriptive statistics, regression as a technique and SPSS as a tool for data analysis were employed.

4. FINDINGS

In this study we have to investigate the impact of information technology (websites and applications) on customer satisfaction and customer loyalty in hotel industry. So, linear regression technique is applied. Linear regression helps to identify the underlying relationship between two variables. It is used when we want to predict the value of a variable based on the value of another variable. First, we apply linear regression using SPSS on information technology and customer satisfaction, taking customer satisfaction as dependent variable and information technology as

an independent variable. Second, we applied linear regression in the similar manner between variables information technology and customer loyalty, taking customer loyalty as dependent variable and information technology as an independent variable.

4.1. Customer satisfaction

The regression equation is:

$$Y = a + bx + e$$

Here Y= dependent variable

a = intercept or constant term

b = variation in dependent variable due to independent variable

x = independent variable

e = error term

Before interpreting we have to check whether the model is fit or not for this we come to ANOVA table from our output file of linear regression technique applied between information technology and customer satisfaction. ANOVA table is given in table 1.

Table 1
Table representing ANOVA summary

<i>Model</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
1 Regression	290505.813	1	290505.813	326.317	.000 ^b
Residual	442457.072	497	890.256		
Total	732962.886	498			

a. Dependent Variable: VAR00001

b. Predictor: (Constant), VAR00003

To check the statistical significance of the regression model that has been run. Here, P=0.000 which is less than 0.05, which means model is fit. Indicates that overall, the regression model statistically significantly predicts the output variable (i.e. it is a good fit for the data). So, we can interpret our model. Now we have to proceed and interpret the model summary table from output file given in table 2.

Table 2
Table representing Model summary

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	.630 ^a	.396	.395	29.83715

a. Predictors: (Constant), VAR00003

Table 2 represents the model summary of linear regression analysis. This table provides the values of R, R square, adjusted R square and standard error of estimate. R value represents the simple correlation between the two variables information technology and customer satisfaction. Simple correlation value is (0.630) indicates a moderate positive correlation. R square value indicates how much of the total variation in dependent variable that is customer satisfaction can be explained by the independent variable that is information technology. From the table 2 we come to know 39.6% change in customer satisfaction is caused by information technology. Adjusted R square represents the generalization of the regression; its value should be same or very close to value of R square. The value of adjusted R square (0.395) is very close to the value of R square (0.396) which means this model is generalized to population.

Table 3
Table representing Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	8.572	4.203		2.039	.042
VAR00003	2.021	.112	.630	18.064	.000

a. Dependent Variable: VAR00001

Table 3 shows that the value of B is 2.021 which are positive. It means there is positive relationship between information technology and customer satisfaction. The beta value is associated with the standard error which is used to determine whether or not beta value differ significantly from 0. To test the statistical significance of this variable, the T-test and the corresponding P value has been seen. It shows that the T value (18.064) is statistically significant (P = 0.00) which means the use of information technology to customer satisfaction is making a significant contribution to the model.

$$\text{Customer satisfaction} = 8.572 + 2.021(\text{IT}) + 29.83715$$

The equation shows that if there is one unit increase in usage of IT by hotel industry, it will contribute positively to the customer satisfaction by 2.021 units. From the linear regression analysis, it has been found that use of information technology (websites and applications) by hotel industry has significant positive impact on overall satisfaction of customers.

4.2. Customer loyalty

The regression equation is:

$$Y = a + bx + e$$

Here Y= dependent variable

a = intercept or constant term

b = variation in dependent variable due to independent variable

x = independent variable

e = error term

Before interpreting we have to check whether the model is fit or not for this we come to ANOVA file from our output file of linear regression technique applied between information technology and customer loyalty. ANOVA table is given in table 4.

Table 4
Table Representing ANOVA

<i>Model</i>	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
1 Regression	8409.425	1	8409.425	247.955	.000 ^b
Residual	16855.806	497	33.915		
Total	25265.230	498			

a. Dependent variable:VAR00002

b. Predictors: (Constant), VAR00003

To check the statistical significance of the regression model that has been run. Here, P = 0.000 which is less than 0.05. Which means model is fit. Indicates that overall, the regression model statistically significantly predicts the output variable (i.e. it is a good fit for the data). So, we can interpret our model. Now we have to proceed and interpret the model summary table from output file given in table 5.

Table 5
Table representing Model Summary

<i>Model</i>	<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
1	.577 ^a	.333	.332	5.82367

a. Predictors: (Constant),VAR00003

Table 5 represents the model summary of linear regression analysis. This table provides the values of R, R square, adjusted R square and standard error of estimate. R value represents the simple correlation between the two variables information technology and customer loyalty. Simple correlation value is (0.577) indicates a moderate positive correlation. R square value indicates how much of the total variation in dependent variable that is customer loyalty can be explained by the independent variable that is information technology. From the table 5 we come to know 33.3% change in customer satisfaction is caused by information technology. Adjusted R square represents the generalization of the regression; its value should

be same or very close to value of R square. The value of adjusted R square (0.333) is very close to the value of R square (0.332) which means this model is generalized to population.

Table 6 shows that the value of B is (-0.344) which are negative. It means there is negative relationship between information technology and customer satisfaction. The beta value is associated with the standard error which is used to determine whether or not beta value differ significantly from 0. To test the statistical significance of this variable, the T-test and the corresponding P value has been seen. It shows that the T value (-15.747) is statistically significant (P = 0.00) which means the use of information technology to customer loyalty is making a significant contribution to the model.

$$\text{Customer loyalty} = 23.561 - 0.344(\text{IT}) + 5.82367$$

The equation shows that if there is one unit increase in usage of IT by hotel industry, it will contribute negatively to the customer loyalty by (-0.344) units. From the linear regression analysis, it has been found that use of information technology (websites and applications) by hotel industry has significant negative impact on overall loyalty of customers.

Table 6
Table representing Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	23.561	.820		28.720	.000
VAR00003	-.344	.022	-.577	-15.747	.000

a. Dependent Variable: VAR00002

5. DISCUSSION AND CONCLUSION

Hotel industry has faced, and continues, to a technology based revolution. High tech services have been adopted in hotel operations. From hotel bookings to customer feedback technology is highly involved, this high involvement of technology has put hotel industry on the platform of e-commerce internationally. A lot of websites and applications for smart phones on hotel industry are available now, which have become a promotional platform and a medium of interaction with potential customers. These websites and applications showing the varied services offered by hotels have created now a competitive environment. In the current business environment, to remain competitive, managers in hospital industry should not ignore the potential advantages of information and communication technology applications (Ip, C. *et al.*, 2011). There is a significant impact of information technology on the performance of hotel operations. Thus management should invest more to adopt IT in different applications in upscale

hotels (Ham *et al.*, 2005). Managers in hotel industry should maintain a good relationship with existing customers by using appropriate information and communication technologies and integrating information and communication technologies into company's strategies (Law *et al.*, 2009). The use of information technology (websites and applications) by hotel industry has affected both to management as well as customers.

In our study, we investigated the impact of information technology (websites and applications) on customer satisfaction and loyalty. It was conducted on the 500 hotel customers from Doaba region of Punjab. As per our study, information technology impacts positively to the overall customer satisfaction. However, customer loyalty has been affected negatively. It is in contradiction with findings of Shanker *et al.*, (2003) that level of customer satisfaction remains same in online as when it is chosen offline, loyalty in customer's increases when online mode adopted and, loyalty and overall satisfaction act as reinforcement for each other in online mode. In recent times a bulk of websites and applications have come into market, making it easy to access for customers, displaying special and distinguishing features about their hotel services. A customer feels it comfortable to book hotels anywhere in world from their home, office, while traveling etc. A hotel booking is done depending on budget available, and services offered, by a customer. Use of IT (websites and applications) by customers of hotel industry has helped in adding into their satisfaction level. Same has been reported by Bai *et al.*, (2008). But, this bulk of websites and applications has created a competitive market, as most of the luxurious hotels have gone through the e-commerce way. Bookings are done from different websites; customers can access different websites and compare the services and budget of different hotels at the same time. Accessing of features and services offered by different hotels are just a click away on internet. Therefore, customer loyalty is negatively influenced by the use of information technology (websites and applications) by hotel industry.

MANAGERIAL IMPLICATIONS AND LIMITATIONS

The rapid development of websites and applications in recent times has lead to an unprecedented revolution in the hospitality industry. Presently, websites and applications are used as new platforms promotions and medium of interaction by hotel industry. It acts as a link between customers and suppliers, websites and applications have now become an integral part of the competitiveness of hotel industry. This paper studies the impact of information technology on customer satisfaction and loyalty. It contributes to hotel practitioners to have focus on the content and features of websites and applications used, helps management in adopting strategies related to e-commercial ways of business. It contributes in knowledge about impact of IT on customer satisfaction and loyalty and accordingly devising strategies.

Major limitation of this study is it has been carried on in a particular region; hence replication can be taken as an extension. In this study, impact of information technology on only two variables customer satisfaction and loyalty has been studied, impact on other variables as overall performance can be studied. Finally, while studying loyalty brand loyalty has been ignored.

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