

AN INVESTIGATION ON WEBSITE ADOPTION AND PERFORMANCE ON IRANIAN HOTELS

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This study investigates website adoption and performance among Iranian hotels. Using content analysis technique, this study identifies the presence of 28 website features on 57 Iranian hotels. The results found Iranian hotels are at very early stage of Internet adoption. E-commerce activities are very minimal among the Iranian hotels as none of the hotels provide online reservation. This study adds to the limited study of e-commerce and hospitality in Iran.

Keywords: E-tourism; Website; Evaluation; Hotel; Iran.

1. Introduction

The rapid growth in the number of online users and the increasing rate of online transactions provide clear evidence of the popularity of the technology (Law, Qi, & Buhalis, 2010). The Internet has brought in huge impact and becoming the life blood to tourism (Buhalis 2003; Poon 1993; Sheldon 1997). Tourism operators and businesses use the Internet to market their product and services and to communicate with customers (Park, 2000; Law, Leung, and Wong 2004; Maswera, Dawson, and Edwards 2008). The Internet has also changed the entire value chain of tourism creation, marketing, distribution, and consumption (Gretzel, Yuan, and Fesenmaier 2000; Minghetti and Buhalis 2009).

In 2010, there are 1.97 billion Internet users worldwide (Internet World Stats, 2010). The Middle East countries show a significant increase in Internet users from in 2000, when Internet was introduced. Although, statistics shows an increase in Internet use from the Middle East region, the number is still low compared to other regions such as North America (77.4%), Europe Union (67.6%), and Oceania (60.4%), (Internet World Stats, 2010). Among the 18 Middle East countries, Iran has the highest number of Internet users with 33,222,000 and ranks the third in Internet penetration with 43% of penetration level. Nonetheless, the use of e-commerce particularly in tourism sector is disappointing. For instance, a report by Economist Intelligence Unit (EIU) (2007) shows Iran as the last among 69 developing countries in using e-commerce.

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In the last decade, Iran government paid more attention to develop e-commerce activities among the Iranians and business organizations. For instance, electronic visa is available in the website of the Ministry of Foreign Affairs Islamic Republic of Iran (<http://www.mfa.gov.ir/cms/cms/Tehran/fa/evisa/>). Banks and universities are among the earliest industry to have website. The tourism sector however, remains slow.

There is little published information related to e-commerce and tourism in Iran. Search through research databases such as ScienceDirect, Emerald, Web of Science and search engine such as Google Scholar found only two articles related to tourism (see Zamani-Farahani and Musa, 2008; Honaria, Goudarzib, Heidari, and Emami, 2010). None of these papers however, relate to e-commerce use in tourism.

This study adds to e-commerce literature in Iran by investigating website adoption and performance by Iranian hotels. Performance in this study refers to website features presence on the hotel websites. Specifically, this study attempts to answer these questions:

- (a) What is the website adoption rate among the Iranian hotels?
- (b) What is the business activities conducted on Iranian hotels website?

This paper begins with a background on Internet and tourism industry in Iran and followed by the literature on common website evaluation features. Next, it describes the methodology and discusses the results. This paper closes with discussion and future research agenda.

2. Background

2.1. Internet in Iran

Internet first introduced in Iran in 1993 while Iran was the second country in the Middle East accessed to Internet (Telecommunication Company of Iran (TCI), 2010) after Israel. Currently Iran is placed among the top countries in terms of rate of growth of Internet access, reflecting a more than 500% growth in five years (Digital Media Access Asia (DMAA), 2010). The nation also has the highest Internet user population in the Middle East.

Telecommunication Company of Iran (TCI) was established in 1971 is responsible to the administration of the entire telecommunication affairs (TCI, 2010). It is the sole provider of Telecommunication infrastructure to all private and public operators in Iran. TCI is also the sole responsible party for all international gateways and IP capacity and connectivity services in the country (DMAA, 2010).

The Internet is an urban phenomenon in Iran, with 91% of most users coming from major cities (Iran Statistics Center, 2010). Fifty-eight percent of Iranian Internet users are male and users between the ages of 10 to 29 form the majority of Internet users. Most of the users are students and professional with high education.

Furthermore, the rate of Internet accessibility at home is 75.2% and 91.9% of these use dial-up service. The Internet speed is another imperative factor which influences on the usage of this facility. Iran ranked 174 (0.58 Mbps) for download speed and 170 (0.18 Mbps) for upload speed among the 181 countries. These figures are not comparable with the average Asia Internet speed (6.6 Mbps), South Korea (34.51 Mbps), or even other Middle East countries such as United Arab Emirates (5.35 Mbps), Israel (4.83 Mbps), and Saudi Arabia (3.62 Mbps).

2.1. Iran tourism industry

Iran is blessed with natural attractions and historical monuments scattered across the country, including those in tourist cities of Shiraz, Isfahan, Hamedan, Tous of Mashhad and Ardebil. The constant changes in Iran political and economical scenario over the last 30 years, has huge impact to Iran tourism industry.

Due to continuing political tension with western governments and the negative images set up by media such as Islamic extremism and continued inequality for women, Iran tends to be less popular in destination selection. Furthermore its location in the Middle East, which is not renowned for security, means that Iran is not considered as an ideal destination among many potential tourists despite its many tourist attractions.

Iran tourism history undergoes three important periods; before the Iran revolution, during the Iran-Iraq war between 1980 and 1988, and after the war. Before the Iranian revolution and the Iran–Iraq War, Iran received a significant numbers of visitors (Economist Intelligence Unit, 2008). Since the Iranian revolution in 1979, the majority of visitors to Iran have been religious pilgrims and business people.

Tourism declined dramatically during the Iran–Iraq War. A few years after war, the country was involved in the reconstruction of war damages and tried to reorganize the economy. Despite the international tensions, the government continues to project strong rises in visitor numbers and tourism revenue over the forecast period, and to talk of projects to build an additional 100 hotels (Economist Intelligence Unit, 2008).

In 1990 only 154,000 tourist visited Iran and the number continue to increase steadily to 1,342,000 in 2000. From this year Iran tourism sector experienced 23% growth to 1,659,000 tourists in 2004 (WTO, 2005). The figures from the World Tourism Organization in 2005 for the origin of visitors to Iran show an increase number of visitors from the Islamic and wider Asian world. However, around three-quarters of those entering Iran in 1999 came from Europe and very little from other Western countries.

From 2004, the country experienced a 100-percent growth in foreign tourist arrivals until mid-2008 when the number of foreign arrivals surged up to 2.5 million. About 2.3 million tourists have visited Iran in 2009 according to Iran's Cultural Heritage, Tourism and Handicrafts Organization (Press TV, 2010). To encourage tourism activities, the government has improved its complex and time-consuming visa application process and

began to issue week-long visas for the nationals of 68 countries at airports. Moreover, online visa application is available now in Iran.

2.2. Website evaluation

Website evaluation studies ensure that a website provides useful content that meets user expectations and setting usability goals (Law and Buhalis, 2010). Researchers propose different criteria and measurement to evaluate website. Hashim and Murphy (2007), for instance, mentioned the range of multimedia resources - quality images, animation, real-time webcams, 360-degree panoramas, streaming audio and short videos. Schmidt, Cantalops, and Santos (2008) divided the features into eight main categories –promotion, price, product, multimedia, navigability, reservation system, customer retention, and privacy and security.

Law and Bai, (2006) argue that studies on website evaluation fall into two major categories of empirical and theoretical research. Theoretical studies develop concepts or approaches, while empirical studies validate or verify with experimental findings (Law & Bai, 2006). The empirical studies could be with or without user involvement. On the other hand, Schmidt et al. (2008) divided investigations focused on the evaluation of websites into three categories, based on their research method: (1) evaluation by phases, (2) evaluation by characteristics and (3) evaluation by characteristics and effectiveness. The following is a brief of each.

Researchers performed the evaluation by phases method presumes that the richness of a website's characteristics depends upon the company's experience in electronic commerce. This experience is expressed in website phases, each comprising certain features. In other words, according to these studies, the more experience a company has in electronic commerce, the richer its website will be. For example, Teo and Pian (2003) proposed a web adoption model in terms of levels of characteristics, based on a company's objectives in using the Internet. They evaluated the websites in five levels of adoption; Level 0 when there is no website; Level 1 a simply established in active website; Level 2 delivering actual information about products and services; Level 3 online links to clients and suppliers; Level 4 is business transformation.

The evaluation by characteristics method does not suggest a path for website development, unlike the evaluation by phases. On the contrary, this method bases its analysis on the presence of website characteristics or functionalities. For instance, Rocha (2003) qualitatively analyzed the websites of 50 hotels in Rio de Janeiro using a 61-items instrument in seven dimensions including general characteristics, travel information, general information, special characteristics, design and functionality, product information and reservation facilities.

When websites are approached from a perspective of their effectiveness, their characteristics gain a fresh pragmatic relevance, probably welcomed by practitioners. Authors that have adopted this approach have understood the construct "website effectiveness" in different ways: financial results, consumer intentions, etc. Not many

studies have been undertaken with this perspective. For instance, Mummalaneni (2005) proposed an analysis structure in which the features of web shopping environments are associated with shoppers' emotional status and this in turn with behavior and shopping intentions. Previously existing scales were used and the author verified their reliability using Cronbach's alpha, although the scale's validity was not assessed. After regression analysis, the author concluded that website characteristics were associated with emotional status, but not with shopping intentions. Neither was emotional status associated with shopping intentions.

3. Methodology

The population of this study includes all hotels registered with Iran Hotel website (www.hoteldari.com). This study uses the web content analysis technique to evaluate the presence of website features on the Iran hotel website. Table 1 shows the features investigated in this study, derived from previous research by Maswera et al. (2008) and Yao (2004).

Table 1: Website Features

Category	Features	Category	Features
<i>1. Hotel information</i>		<i>4. CRM</i>	
• Hotel overview	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• Contact details	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• Financial reports	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• E-mail address	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• News	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• Promotions and special offers	1 <input type="checkbox"/> 0 <input type="checkbox"/>
<i>2. Product information</i>		• E-newsletter	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• Room description	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• Free downloads	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• Rates/fares	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• Competition and games	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• Photo gallery	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• Customer surveys	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• Virtual tours	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• English language availability	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• FAQs	1 <input type="checkbox"/> 0 <input type="checkbox"/>	<i>5. Reservation</i>	
<i>3. Non-product information</i>		• Checking availability	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• Weather/climate	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• Making online reservations	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• How to get there	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• Tracking reservations	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• Local transport information	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• Cancelling reservations	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• Other places to see/visit	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• Cancellation policy	1 <input type="checkbox"/> 0 <input type="checkbox"/>
• Customs	1 <input type="checkbox"/> 0 <input type="checkbox"/>	• Amending reservations	1 <input type="checkbox"/> 0 <input type="checkbox"/>
		<i>6. Payment</i>	
		• Electronic cash	1 <input type="checkbox"/> 0 <input type="checkbox"/>

(1= presence, 0= absence)

Sources: Maswera et al. (2008) and Yao (2004)

A check list facilitates the coding process. Before data collection, this study pre-tested the coding check lists. The pre-test helps researcher to be familiar with the items and to identify the suitability of the items. For instance, since using credit/master card is not possible to use in Iran or Iran is not target country for immigration, the elements relate to this component had been eliminated.

The final checklist for data collection includes 28 elements in six categories as in Table 1. The following is a brief description of the main references on which each category is grounded:

Hotel information: Hotel information refers to the description about the hotel. This category includes three subsets; hotel overview, financial reports and news. These elements are able to make a noteworthy view in potential customers.

Product information: Product information describes information related to the products. It contains; rooms description and rates/fares, photo gallery, virtual tours, and FAQs.

Non-product information: These elements make further information that may be useful for accommodation or travel to the region. It includes; weather/climate, how to get there, local transport information, other places to see/visit and local customs information.

Customer relationship management (CRM): This part relates to all components which can build relationship with customer. Hotel contact details and e-mail address, special promotions and offers (like group discount), e-newsletter, free download, competition and games, customer surveys (asking for customer opinion about the hotel's service and staff), and English language availability are all the elements of this category.

Reservation: This part relates to online reservation activities. It contains checking for room availability, making online reservations, cancelling and makes amendments to reservations and cancellation policy.

Payment: Since there is no facility to use credit or master card the research just inquired for electronic cash. Customers are able to pay electronically by their electronic bank account.

4. Results

4.1 Website adoption

From 932 hotels registered in www.hoteldari.com website, only 111 have a URL address. Visits to the 111 URLs, found only 57 website working, 14 websites were under construction, 16 websites were unavailable, and 24 hotels use a sharing website. The researcher visited the website twice to ensure the validity and reliability of the database. Table 2 shows the percentage of website adoption by the hotel ratings.

The results show that website adoption is very low (6%) among the Iranian hotels. The Kruskal Wallis test however, indicates significant differences between hotel characteristics with website adoption. Although very minimal adoption rate, compared to low rated, high-rated hotels led in website adoption.

Table 2: Website Adoption by Iranian Hotels

	N	Website		Kruskall Wallis and p-value
		Yes	No	
Star Ratings (higher the "better")		N (%)	N (%)	
One	30	5 (9)	25 (81)	26.52, p<.001
Two	70	10 (18)	60 (82)	
Three	149	17 (30)	132 (70)	
Four	268	14 (25)	254 (75)	
Five	415	11 (19)	404 (81)	
Total	932	57 (6)	875 (94)	

4.2 Website Performance

Table 3 shows the presence of the website features.

Table 3: Website features presence (N=57)

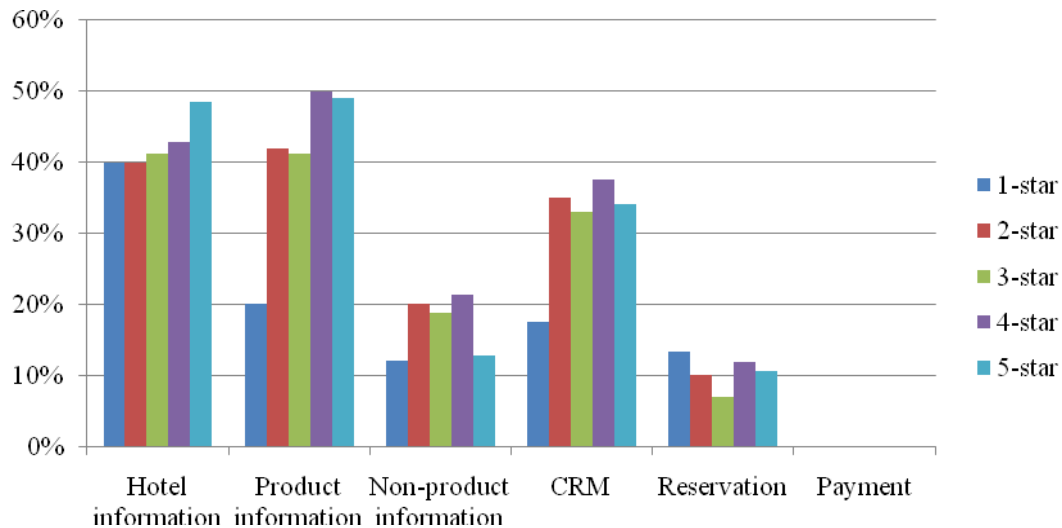
Category	Features	Percentage	Category	Features	Percentage
<i>1. Hotel information</i>			<i>4. CRM</i>		
	• Hotel overview	89		• Contact details	91
	• Financial reports	0		• E-mail address	83
	• News	39		• Promotions and special offer	0
<i>2. Product information</i>				• E-newsletter	0
	• Room description	84		• Free downloads	5
	• Rates/fares	61		• Competition and games	2
	• Photo gallery	61		• Customer surveys	28
	• Virtual tours	9		• English language availability	42
	• FAQs	5	<i>5. Reservation</i>		
<i>3. Non-product information</i>				• Checking availability	2
	• Weather/climate	14		• Making online reservations	49
	• How to get there	32		• Tracking reservations	0
	• Local transport information	5		• Cancelling reservations	0
	• Other places to see/visit	37		• Cancellation policy	0
	• Customs	1		• Amending reservations	
			<i>6. Payment</i>		
				• Electronic cash	0

Table 4 shows the ANOVA test results for the presence of website features across the star rating. The results suggest significant difference in two categories, product information and CRM. As shown in Figure 1, the higher rated hotels have higher presence on these features than the lower rated hotels.

Table 4: ANOVA analysis

Features	Items (n =11)	5-Star (n =14)	4-Star (n =17)	3-Star (n =10)	2-Star (n =5)	1-Star	F value	P value
Hotel information	(3)	1.4*	1.2	1.2	1.2	1.2	0.28	0.885
Product information	(5)	2.6	2.5	2.1	2.1	1.0	3.27	0.018
Non-product information	(5)	0.6	1.0	0.9	1.0	0.6	0.42	0.790
CRM	(8)	2.7	3.0	2.6	2.8	1.4	3.11	0.023
Reservation	(6)	0.6	0.7	0.4	0.6	0.8	0.46	0.746
Payment	(1)	0.0	0.0	0.0	0.0	0.0	-----	-----

* Arithmetic means.

^a $p < 0.05$ **Figure 1: Website features presence according to star ratings**

5. Discussion and conclusion

With 6% adoption rate, this study concludes that website adoption is still at very early stage. This suggests a huge opportunity for website adoption by Iranian hotels in future. Existing hotels use website primarily to introduce the business. E-commerce activities are very minimal among the Iranian hotels as none of the hotels provide online reservation. Given growing tourism trend in Iran, this area is vital to explore.

The advantages of using virtual facilities in tourism are obvious and discussed in many tourism literature. Thus, hotels should pay more attention to this equipment. To encourage purchasing through websites, hotels should consider to the customers' needs and wants. Privacy and security policies, for instance, are some of important factors that visitors concern to treat with a website. They want to know how secure it is to carry out transactions over the Internet or whether the personal data they are

entering in the on-line forms will be misused (Maswera, et al. 2008). It is recommended that Iran hotels evolve their websites into marketing tools to capitalize on the potential Internet market.

This study is not without shortcomings. The website features used in this study are not by any means comprehensive. Future study could add more website features variables and to investigate relationship between hotel characteristics with the website features. Finally, future research could also extend the study to email use by Iranian hotels.

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