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## The Effect of Implementing SEO Techniques and Websites Design Methods on E-Tourism Development: A Study of Travel Agencies E-Tourism Websites

**Majid Mohammad shafiee**

*Assistant Professor, Department of Management, University of Isfahan, Isfahan, Iran*  
*m.shafiee@ase.ui.ac.ir*

**Shirin rahimzadeh**

*BSc, Department of Management, University of Isfahan, Isfahan, Iran*  
*Shrahimzadeh13@yahoo.com*

**Reyhane haghhighizade**

*BSc, Department of Management University of Isfahan, Isfahan, Iran*  
*Reyhane\_haghhighizade@yahoo.com*

**Abstract-** In modern societies, all activities of businesses is for participating more effectively among of market competitors and in addition to their physical presence , their virtual presence is also felt. This new sort of presence has caused that at present time we can see all businesses design websites and in this way notify their customers in the virtual space about the information of their business. As a result, it is possible that in the beginning costumers become familiar with Companies websites and then figure out the real part of the businesses that this issue takes special attention for websites design and website's position improvement in search engines. In this study, with a particular focus on the Web sites that are related to tourism centers and travel agencies, the effect of their websites design styles and implement of SEO techniques on the e-tourism development has investigated. Statistical data have been collected through distributing questionnaire among 70 users of mentioned website and after approving its validation, the results indicate that there is a significant relationship between the effective factors of affecting a proper website design and implement of SEO with the development of tourism.

**Keywords-** *Website design, SEO techniques, E-tourism, Tourism centers, Travel agencies*

### I. INTRODUCTION

Today, the tourism industry is one of the world's largest industries. The development of information and communication technologies has contributed to the growth of this industry over the past decades and has facilitated the growth of tourism in the electronic platform. E-Tourism is one of the major sources of income for many countries. Therefore, it is critical that efficient, real-time services be provided for tourists in an attempt to create a crucial competitive asset which can be enhanced using major technological advances. In order to attract tourists, e-tourism companies should understand their customers and be able to identify elements of their behavioral intention. In other words, the factors that affect intentions of tourists need to be identified. With the development of this electronic platform, it is required that the effective factors on e- tourism be considered in this context. The essential factors for any e-business include website design method as well as

techniques that increase website visitors. The first step to launching an e-business is to have a website; search engines are the starting point for millions of web users; thus introducing the website in the first pages of search engines, is an opportunity to seize the market. This allows us to bring the user to our website and by using marketing techniques, make them dependent on the website. Along with the rapid growth of Internet users, the website for many businesses is the first point of communication. Website attractiveness has an important role in user retention time and enhancing browse and search intentions. Furthermore, the quality of website design is a necessary condition for sustainability. If the website is difficult to use, is illegible or does not provide sufficient information or not attractive, users leave the website [1].

E-tourism refers to the use of e-business in travel and tourism and entails digitizing all of the processes and value chain in tourism (e.g. travel and sale of food) [2]. In fact, e-tourism is the possibility of offer all of the services that tourists used traditionally in the past. Also, e-tourism refers to a set of internet bases (governmental and private) and standards and special protocols that by producing and republishing information in different formats such as text, images, catalogs and brochures, promotional teaser and even services such as hotel reservations and e-purchase can be meaningful[ 3]. A search engine a computer program that searches for keywords in a document or informational bank [4], [5]. In the context of Internet, it refers to a program that searches for files keywords, documents of the World Wide Web, newsgroups, gopher menus and FTP archives. Search engines, through its different sectors, gather desired information, analyze it, and store it in databases. When the queries the search engine, only the indexed database is searched, rather than the entire web [6], [7].

Search Engine Optimization (SEO) is the procedure of designing, writing, and coding a website in a way that leads to increased volume, quality and visibility of a company website by people using search engines via the natural or un-paid search results. Numerous definitions have been proposed for SEO which imply the dynamic nature of this



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concept. As an example, Cheffey et al. (2006) defined SEO as a structured approach used to increase the position of a company or its products in search engine natural or organic results listings for selected keywords or phrase. SEO comprises a number of techniques that aim to achieve higher ranking for a website in search engine listings, which increases the likelihood that the end user will choose to visit the site [8],[9] .

In general, when users are exposed to a list of search results, the choice of the website may be influenced by a number of factors. Particularly, the ranking of a specific search result link along with its relevancy to the search query is widely recognized as the most important factor in influencing the travel information searcher's behavior. For example, a large proportion of search engine users only visit the first three pages of search results [10]. According to Gommans et al. (2001, p. 51), "A website has to be designed for a targeted customer segment... local adaptation should be based on a complete understanding of a customer group's culture" [11]. Different user preferences have been found in studies that focus on design characteristics such as color or screen images across cultures [12], [13]. Contrarily, in other research, results have been inconclusive with no systematic design preferences determined across cultures [14]. As a result of the mentioned importance about the effect of website design and SEO, this paper aims to investigate this effect. Three dimensions of website design are used: visual design, social cue design, and content design. Furthermore, effective factors in SEO techniques i.e. on-page SEO and off-page SEO measure the effect of these indicators on e-tourism according to model of Rohani and Zarei Ravasan.

## II. LITERATURE REVIEW

To the best of our knowledge, there has not been a study that investigates the effect of these two variables on e-tourism. Thus, this is innovation of this research. Some of the related literature will be reviewed to in the following.

### E-TOURISM

Rohani and Zarei Ravasan (1392) examined and identified the effective factors in e-tourism promotion in Iran. Based on the results of the study the effective factors in e-tourism promotion in the country by priority included policy administration and management, software and application programs, hardware and infrastructure, cultural and social factors and the factors of supporting information systems [15]. Atafar et al. (1391) in an article entitled "Factors Affecting the Adoption of Information Technology in the Tourism Industry" concluded that attitudes and perceived usefulness are the main factors influencing the intention of online reservation of hotels. Other variables include trust, credibility, and consistency, which impact the intention to use the online reservation of hotels through attitudes [16]. Hashemi et al. (1393), based on SWOT analysis, studied the effective factors in the field of e-tourism development planning. Results showed that the number of decision-

makers, management weaknesses and inadequate communication and telecom infrastructure are the main obstacles to achieving the development of e-tourism [17]. Yousefi et al. (1391) in an article entitled "An Analytical Comparative Study of E-Tourism Development Indicators in the City of Isfahan" by using application models studied the feasibility and how to materializing the virtual tourism through two questionnaires, (first: investigating the indicators of electronic citizenship toward materializing virtual tourism and second examining the citizens belief in virtual tourism development). The results indicated that municipal areas 12 and 2 have the highest and lowest mean for e-citizen index among fourteen areas, respectively [18]. Buhalis (2004) examined the e-tourism developments in Greece where e-commerce is gradually being embraced. They found that the Greek online travel market is at the early stages of its e-commerce deployment; however, great potential is available for further e-tourism developments [19]. Ye et al (2012) investigated how customer perceptions of service quality and value are influenced by price. The findings revealed that price has a positive impact on perceived quality but has a negative impact on perceived value [20]. Stockdale (2007) concluded that supporting the development of customer relationships is effective in developing the self-service environment of e-tourism [21].

### SEO

Rezazadeh et al. (2012) confirmed the growing importance of social media and search engines in the online tourism domain. That also provides evidence for challenges faced by traditional providers of travel-related information. They indicated a great need for search engine optimization efforts as well as search engine advertising to ensure that a tourism website is represented and can compete with the rankings of social media sites [22]. Aslani et al. (2015) in an article entitled "Examine the Effects of SEO Parameters in Ranking of a Website by Search Engines" investigated numbers of SEO parameters to determine what extent each of these parameters are effective in ranking of a website by search engines. The result of this study showed that if the parameters of any site are considered in the following order of priority, then a good search ranking can be achieved: (1) link text, (2) unique title, (3) description label, (4) the structure of URLs, (5) good quality content, (6) optimization of images, (7) heading label, and (8) sitemap [23]. Bo Xing and Zhangxi Lin (2004) in a paper entitled "The Impact of Search Engine Optimization on Online Advertising Market" analyzed the condition under which SEO exist, as well as how it affects the advertising market. The findings of this study fill the gap of SEO in academic research and allow online advertising managers to make informed advertising decisions [24]. Salim Khraim (2015) investigated the significance and benefits of SEO in E-marketing. The author also examined the impact of SEO on online advertisement. Through Factor Analysis, four dimensions were identified, namely SEO strategies, SEO

competitiveness, SEO experience and SEO techniques. These factors were used later in Multiple Regression. Results show that SEO strategies were not significant, while the remaining three dimensions were all significant [25]. According to Seomoz (2011) and Evans (2007), search engines constantly work to improve their ranking calculations resulting in more complicated algorithms. As a result the calculated relevance of webpages has varied over time, due to changes in the relative weights assigned to individual SEO factors, as well as the incorporation of new factors and the elimination or modification of others [26],[27].

#### METHOD OF WEBSITE DESIGN

Chung et al (2015) considered the correlation between the qualities of the destination website and the intention to continuous use, and the subsequent effects on the intention to visit the destination. Information quality was found to have the largest impact on tourists' behavior to determine destination selection [28]. Romanazzi et al. (2011) proved that higher informational value as perceived by the tourists lead to higher quality considerations, which also positively influences tourists' selection of the tourist destination [29]. Studies of tourist's attitude-involvement association by Kaplanidou and Vogt (2006) and Tang et al. (2012) revealed that the tourists' high involvement with the website improves the attitude toward the destination, and as a result, affects their intention to visit the destination [30], [31]. Parsaei et al. (2014) focused on the behavioral intentions of tourists in e-tourism. According to the results, subjective norm and perceived behavioral control were shown to have the greatest impact on Iranian customer's intention to engage in e-tourism [32]. Glin (2011) argued that a revolutionary transformation, accelerated by technological advances, formed the world-wide economy of 20th century. The rapid advances of Information and Communication Technologies (ICTs) in addition to the expansion of Internet throughout the world changed industrial structures globally [33]. Karimi and Ahmadi (1392) examined the impact of news website design quality on loyalty and recommended electronic advertising. Results showed that the Quality of Website design has a direct and significant impact on how much users enjoy a website as well as their perceptions of information quality. Moreover, it has an indirect and significant impact on satisfaction, trust, loyalty and electronic word of mouth [34].

Hamidzadeh et al. (1387) found that payment security, customization, ease of purchase, brand credibility of website, and its interaction include the specific sides of sustainable loyalty of customers in e-commerce. In their study the effects of all variables on e-loyalty was confirmed in the model [35]. Javanmard and soltanzadeh (1388) demonstrated that website and e-brand features that instill positive attitudes and trust are security indicators, trust, usability, being free of errors, orders completion, logo shape, color, resolution graphics, text an ads with logo,

layout and composition of pictures and backgrounds, respectively [36]. Liu and Arnett (2000) showed that information and service quality, system use, playfulness, and system design quality determine the success of a website in the context of e-commerce [37]. Sam et al. (2009) examined six website quality factors: usability, website design, information quality, trust, perceived risk and empathy as factors that influence customer intentions to purchase air ticket. It was shown that empathy and trust have the highest impact on predicting online purchase intention [38]. According to previous works that were summarized in this section, the majority of studies in the field of e-tourism investigated structural, cultural-social and technological factors. However, the effect of website design method and SEO techniques have not been examined. Therefore, this study examines the impact of these two factors and these points out the distinction and innovation of this research. In the following the models used in this paper will be discussed.

#### III. CONCEPTUAL MODEL

In this study, the model explained by Rohani and Zare Ravasan (1392) was used to define tourism development. In that study the factors affecting the development of tourism are identified as IT infrastructure, public policy and management and social and cultural factors. In the current study, it is assumed that reinforcing any of these factors could lead to the development of these businesses. Also, for determining the effect of website design method the model of Karimov et al (2011) is used wherein the method of website design is defined according to three variables of visual design, social cue design and content design. Finally, in order to consider the impact of implementing SEO techniques, the model designed by Aslani et al. (2015) is employed. Among the variables affecting the impact of SEO techniques on-page SEO and off-page SEO are considered. In the following, each of the variables of research model are defined [15], [45], and [23].

#### E-TOURISM DEVELOPMENT

##### I.T. INFRASTRUCTURE (HARDWARE - SOFTWARE)

Offering e-tourism services with adequate quality requires preparation of proper infrastructure hardware, software, network and relevant intermediaries related to support the associated processes of e-tourism services. This infrastructure can be greatly facilitated by governments. In general, it can be stated that information technology infrastructure form a platform for e-tourism development. Due to the emergence and application of new enabling technologies in the field of e-tourism, these tools can be used for enhancing the attractiveness and use of e-tourism.

##### GOVERNMENT POLICIES AND MANAGEMENT

Government and public administration play an important role in the development of tourism and especially governmental tourism. On one hand, government policies

strengthen the tourism infrastructure and on the other hand the government investment, boost this industry, increase the employment and gross domestic product. E-tourism, as in any other business in the current highly competitive market needs to find its place among the people of society. It is here that the role of culture making and effective government support packages become clear. Despite more fierce competition among Internet businesses compared to their traditional counterparts, customers are less loyal to the organization.

### CULTURAL AND SOCIAL FACTORS

Surely factors such as religion and culture are the fundamental factors of any application area, but due to the boundaries of the present issues, these factors cannot be fully controlled by the authorities. In Iran, considering the growing trend of technology among people, it is necessary to have a look at the growing trend with respect to social and cultural factors in the tourism industry. Higher numbers of Internet users and increased dependence on the Internet, interest in travelling using new methods of economic ability, familiarity and skill in working with Internet, and familiarity with other languages are among social and cultural factors that can be used to investigate the individual's tendency to use modern travelling methods [15].

### METHOD OF WEBSITE DESIGN

In this paper, a conceptual framework is utilized that classifies Web design features into three broad categories, namely (1) visual design, (2) social cue design, and (3) content design. '*Visual design*' refers to graphical and structural factors that give consumers a first impression. '*Social cue design*' includes various social cues such as face-to-face interaction and social presence, which are implemented into the web interface via different communication media. Finally, '*content design*' consists of informational components of the website in the form of text or graphics [39], [40].

### VISUAL DESIGN

*Visual design* is defined as "the attention-grabbing, aesthetic, visual quality of individual Web pages" [41]. Visual design elements pertain to, emotional appeal, aesthetics, and uniformity of the overall graphical look [42]. Visual atmospheric cues give information regarding the retailer and influence shoppers' emotional responses [43]. Tan et al. [2009] found that visual design elements such as "Color usage", "Layout/Space usage", "Graphics usage" and "Presentation of information" are viewed as the most "effective" attributes of B2C websites by web-designers. Based on this, it may be concluded that Internet users might associate the visual appeal of a website with the trustworthiness of the e-retailer. According to Wang and Emurian [2005a], visual design can be further divided into (a) 'graphic design' and (b) 'structure design' [44], [39].

### SOCIAL CUE DESIGN

Adopting social media applications to increase the degree of consumer engagement in online shopping is becoming common practice. Social media features constitute social cues that simulate social presence and face-to-face interaction in the web interface using various media such as facial photos, video streams, or social blogs [45].

### CONTENT DESIGN

Content design refers to the information components of a website i.e. text or graphics [39]. These can include a host of components such as company information (i.e., contacts, company background, FAQ), comprehensive product information (i.e., descriptions, price information), service information (i.e., delivery and return policies), and privacy policies [46]. Through these information components consumers can obtain clues regarding the trustworthiness of an e-retailer [47].

### SEO

Considering that the SEO process is in two main categories, namely on-page and off-page SEO, factors related to measuring the impact of SEO can be evaluated by the following items: On-page SEO factors are items relevant to the website and its content. Clearly, regardless of the popularity of a website, if it does not contain the searched item, it is not found even in the last ranks of search results. Some of these factors include unique titles for web pages, the use of description labels, reforming the structure of addresses, offering good quality content, use of heading label and optimizing images. Off-page SEO factors are those that do not require changes to the programming of the website. These factors include choosing the best words for text links, easy user guidance system, introducing the website to search engines and use of websites with high rankings [23]. This conceptual model is structured according to the aforementioned dimensions in the figure 1.

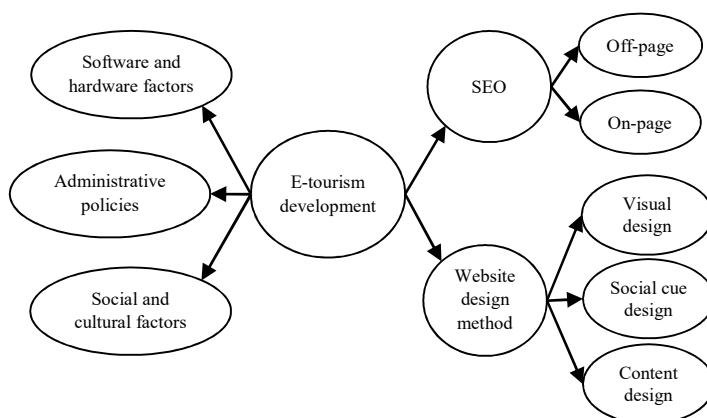


Fig1: Conceptual model of the study

According to the model, the main and sub hypotheses of this study are as following.



The main hypothesis one: There is a significant relationship between SEO techniques and E-tourism development.

The main hypothesis two: There is a significant relationship between website design method and E-tourism development.

The sub-hypothesis 1-1: There is a significant relationship between on-page SEO factors and E-tourism development.

The sub-hypothesis 2-1: There is a significant relationship between off-page SEO factors and E-tourism development.

The sub-hypothesis 1-2: There is a significant relationship between visual design and E-tourism development.

The sub-hypothesis 2-2: There is a significant relationship between social cue design and E-tourism development.

The sub-hypothesis 3-2: There is a significant relationship between content design and E-tourism development.

#### IV. RESEARCH METHODOLOGY

The data were collected through library method with the tools like books, articles, theses and the survey method was through questionnaire. Dimensions and components of the questionnaire are presented in Table. 1. The statistical sample includes managers and senior employees of travel agencies and tourism centers in Isfahan. Considering the population and the survey method (partial least squares), according to Barklay et al. (1995), 70 samples were selected and the questionnaire was randomly distributed among these managers [48].

TABLE I

DIMENSIONS AND COMPONENTS OF RESEARCH QUESTIONNAIRE

Variable	Dims.	Coms.	Ref.
E-tourism development	Hardware and software factors	Having hardware and network infrastructure	Berger et al[49]
		Using cell phone in e-tourism usage	Buhalis & O'Connor [50]
		Supporting e-tourism software's	Eraqi [51]
		Websites and informing portals and communicating with customer	Kim et al[47]
	Factors associated with government policies and management	The role of government in supporting e-tourism through legislation and related facilities	Eraqi, [51]
		The importance of senior management support of related organizations in the implementation of e-tourism	
		Encouraging tourism tools such as national travel card	
	Cultural and social factors	Computer and Internet diffusion coefficient in society	Bojnec & Kribel. [52] Wang et al [53]
		Familiarity with English language for effective use of e-tourism services	
		Acceptance of using of new technologies by people of society	
	Visual design	Good style (ambience – the poor style condition provided background graphics that reduced the contrast between the text and the background)	Everard and Galletta [54] Lee and Rao [55]
		Completeness (functionality-	

Quality of designed pages		incompleteness was operationalized by selecting one salient element on each page and replacing it with a placeholder such as “under construction” or “image not yet available”)	
		No language errors (the reliability of the information on the site – language errors were operationalized by misspelling words and making obvious grammatical errors on each page)	
	Social cue design	High social presence (products are shown worn by people in emotional settings and text evoking positive emotions) Live-help with text-to-speech (TTS) voice Online Social Networks such as YouTube, Twitter and other online blogs or forums	Hassanein and Head [56] Qiu and Benbasat [57]
	Content design	Company identity information disclosure (i.e., a description or contact information)	Chou et al. [58] Yang et al. [59] Lowry et al. [60] Yang et al. [61] Pennington et al. [62]
		Product information quality (the high-quality conditions were manipulated by presenting most important product attributes: (pixel, built-in microphone, etc.), (brand, product service, etc.), and other (price, appearance, etc.))	
		Web site of an unknown brand displaying high-image third-party brand	
		Website's ethical performance (privacy policy stated clearly and explicitly; responsible for the information posted)	
Implementing SEO techniques	On-page SEO	Use of unique title for web pages	Aslani et al [23]
		Offering good quality content	
		Optimizing website images	
	Off-page SEO	Choosing the best words for text links	
		Easy user guidance system	

#### V. RESULT AND DISCUSSION

Before analyzing the data, the questionnaire was checked for validity and reliability. The face validity was confirmed by experts. Convergent validity of the constructs was demonstrated using Average Variance Extracted (AVE), while reliability was confirmed using two commonly used standard methods, namely Cronbach's alpha and Composite Reliability (CR). According to Cronbach (1951), acceptable values of alpha are greater than 0.7. And Cronbach's alpha coefficient of the present study was 0.76 [63]. Also, AVE and CR values need to be greater than 0.5 and 0.6, respectively. Based on these values, the instrument has adequate reliability and validity. Table 2 presents the reliability and validity of the questionnaire and its items.

TABLE II  
RELIABILITY AND VALIDITY MEASURES OF THE MEASUREMENT MODEL

Construct	Items	Cronbach's alpha	Average Variance extracted	Composite Reliability
Hardware & Software	4	0.75	0.542	0.791
Administrative policies	3	0.79	0.692	0.657
Social and cultural	3	0.71	0.586	0.722
On-page	3	0.78	0.605	0.783
Off-page	2	0.75	0.611	0.649
Visual Design	3	0.83	0.721	0.751
Social cue Design	3	0.73	0.655	0.782
Content Design	5	0.81	0.597	0.737

As is shown in Table 3, % 0.80 of the sample population were male and the rest of it were female. In addition, the majority of managers and senior employee of travel agencies and tourism centers have a Bachelor's degree. Most managers and senior employees' aged between 36 and 45 years old. More than 84% web sites of tourism centers and travel agencies that were studied are one to three years old. Also, it can be perceived from other questions that more than 55% of managers are aware of effective factors in their electronic activities, 71% of them don't have individual or separate section for examining the activities of this segment and ultimately 60% of them don't have regular program to strengthen and advance of their electronic activities. Based on the awareness of managers, they may have difficulty using and planning for these areas.

TABLE III  
DEMOGRAPHIC ANALYSIS

		No.	Frequency
Gender	Male	56	80
	Female	18	20
Education	Diploma & Associate degree	9	12.9
	Bachelor's degree	55	78.6
	Master's degree and upper	6	8.6
Age	Below 25	2	2.9
	25-35	11	15.7
	36-45	49	70
	Above 45	8	11.4
Work Experience of company website	Below 1 year	4	5.7
	1-3 years	59	84.3
	4-6 years	7	10
Awareness of influencing factors on electronic activities improvement	Yes	39	55.7
	No	31	44.3
Having a separate section for handling website activities	Yes	20	28.6
	No	50	71.4
Regular program for improving electronic activities performance	Yes	28	40
	No	42	60

By analyzing the collected data using PLS software, Figures 2 were obtained as the output. In order to examine the

significance of the causal relationships, two partial indices namely p-value and t-value were used at 0.05 significance, the t-value must be greater than 1.96; thus, smaller values are not considered significant. Furthermore, p-values that are smaller than 0.05 are indicative of a significant difference between the calculate regression weights and zero with 0.95 confidence. The causal paths together with regression coefficients and t-values can be seen in Table 4.

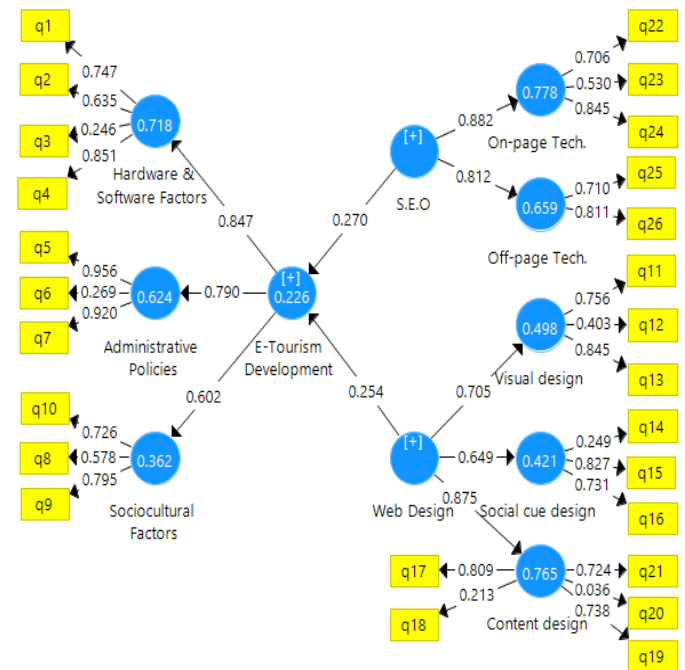


Fig. 2. Results of path analysis

Table IV  
SUMMARY OF HYPOTHESIS TESTING AND RESULTS

Path	B	T-Value	Result
on page SEO → e-tourism development	0.882	13.21	Supported
off page SEO → e-tourism development	0.812	12.88	Supported
visual design → e-tourism development	0.705	11.81	Supported
social cue design → e-tourism development	0.649	10.37	Supported
content design → e-tourism development	0.875	13.02	Supported

The results of Table 4, indicates that among implementing SEO techniques, on-page factors has the greatest impact on e-tourism development. Also among the related indicators of website design method, Content design has the greatest impact on e-tourism development and in total, among the all factors associated with on-page SEO factors that include unique titles for Web pages, the use of Description label, reform the structure of addresses, offering good quality content, use of heading label, optimizing images can effect e-tourism more than other factors. According to the above points all hypothesis are confirmed at a significance level of 5%. Also the results of other studies and researches showed the impact of these variables on e-tourism development and improving electronic performance of travel agencies and tourism websites.

## VI. CONCLUSION AND SUGGESTIONS

The analyzes results indicate that all hypotheses that include the significant relationship of e-tourism development with indicators website design method including Visual design, Social cue design and Content design and SEO techniques that are on-page SEO and off-page SEO factors were approved. Among the dimensions of Website Design method and SEO techniques on-page SEO has the greatest impact on e-tourism development. Considering to the findings of this research for improving the current state of e-tourism the following items are recommended:

Firstly, based on the highest correlation of content design with e-tourism development it is recommended to tourism center managers and travel agencies that put the website's information in high level of quality and also strive for creating the company's brand image through their website. Also, subsequent to confirming other hypotheses related to website design method, managers are recommended to pay more attention to electronic payments security issues and design beautiful appearance, user-friendly and relevant to the content of the website. Additionally, they need to have a regular program for improving the electronic activities of their business. Confirming the hypothesis of significant relationship of implementing SEO techniques and e-tourism indicates that managers should make decisions within the scope of these topics including special and unique names for their websites, high quality of content and user-friendly and easy-to-use website. This hypothesis was approved in the research of Rezazade et al. (2012) wherein SEO techniques were found to improve the rank of a website in cyberspace leading to increased access of users to e-tourism services [22]. Among the limitations of this study, relatively difficult to access the tourism center managers can be pointed out. Also for examining the impact of SEO techniques we were not able to measure the rank of 70 websites accurately and changes in the rank after improving SEO techniques. In this regard, for researchers that want to study in this field, they are recommended to measure the website rank changes through changes in algorithms associated with SEO and provide feedback to managers so that the best algorithm can be selected.

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