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The Impact of Web Knowledge Networks on E-service Innovation in Iraqi Tourism Companies

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Abstract

Service in Iraqi tourism companies is instable which causes low performance of industry, thus, it is lacking as compared to other developing countries. There can be two hundred million Shiites wanting to visit republic of Iraq on journey. Additionally to the holy cities of Najaf and Karbala, the country has various religious order shrines. The Islamist Ali International airport, presently underneath construction on the Furat of Najaf, will create a positive contribution to the growing numbers of tourists. During the past few years, there have been tremendous attempts among various Iraqi tourism companies to implement e-service innovation to increase their capabilities; E-service innovation is an important element to support competitive advantages. Therefore, implementation of this task needs to be stimulated. In this context, many literature points out that the use of web knowledge networks contributes to competitive success. So, this study aims to investigate the impact of web knowledge networks on e-service innovation for tourism companies in Iraq. Data were collected from nine tourism companies and the relationships proposed in the framework were tested using structural equation modeling. The results indicate that using web knowledge networks can lead to improved e-service innovation.

Keywords

Tourism; Knowledge management strategy; Knowledge management processes; Knowledge management environment; Structural equation modeling, Iraq

Introduction

The 21st-century tourist is tech-savvy and expects only quality services which are different from previous generations. The service environment has been transformed dramatically by innovative technology and business models (Hui & Ling, 2016). E-service innovations have introduced new concepts the tourism companies, timing, and placement of individual and collective processes relating to customers (Bilgihan & Nejad, 2015). Previous research has shown that tourism remains one of the active consumers of E-service innovations developed in other sectors (Neuhofer, 2016). Such innovations include climate control systems, electronic guides, satellite navigators, computerized management systems and accounting tools, electronic marketing and e-commerce. Innovation is the process of generating, adopting and implementing new ideas, processes, and products.

Alla and Mykhaylo (2017) defined service innovations in the service sector as new service concepts, communication channels, distribution systems and technological solutions that jointly offer services to the market, update the key organizational functions and need new organizational, technological and human skills. According to Jalil (2016), the concept of tourism e-service innovation represents one obvious application of information and communication technology in various sub-sectors.

The acquisition of knowledge is a fundamental element by which tourism industry adjusts and adapts to its vibrant background (Neuhofer et al., 2014; Kasemsap, 2017). Web knowledge networks and e-service innovations are critical factors in the tourism destination success which competes for customers with other tourist destinations and assist less developed destinations in surviving the ever-changing socio-economic demands (Zach & Hill, 2017). These networks and innovations rely on the knowledge flow through official and informal links that join companies in and amongst destinations. Neuhofer (2016) argued that tourism destinations are ideal settings for evaluation of web knowledge networks and e-service networks among organizations since firms in the tourism sector are extremely networked and co-create the significance and images of the destinations.

Over the years, tourism companies have been progressively linked to meet anticipations and preferences of the customers of all-encompassing experiences instead of a series of discrete exchange (Pereira et al., 2017). Continual innovations are essential for tourism companies to compete with other companies and for those collaborating with other tourism destinations for highly traveling customers (Kourtesopoulou et al., 2018). Boundary spanning provide a platform for innovation and introduce new concepts. Networks collaboration of enhance ideas and knowledge flow thus leading to electronic service innovativeness within the tourism sector (Gomezelj, 2016).

Wang et al., (2014) defined a knowledge network as an assembly of persons and groups that converge through organizational, three-dimensional and discipline limitations to develop and distribute a bulk of knowledge. Knowledge receipt is a vital factor through which the organization adjusts and adapts to the dynamic environments. Even though the importance of web knowledge network has recognized the industry fragmentations due to its composition of smaller and average size firms, it understanding of knowledge management becomes challenging (Del & Baggio, 2015). Understanding how tourism companies search, share and use knowledge is a prerequisite for innovation (Zach & Hill, 2017). Web knowledge networks consist of three components: knowledge management strategy, knowledge management processes and knowledge management environment (Kanbe & Yamamoto, 2008)

Knowledge management strategy defines the overall approach that organization intends to align its resources and capabilities with the intellectual requirements of its business strategy (Norshidah et al., 2013); thereby reducing the knowledge gap between what the organization must know to perform its strategy and what it knows (Meron et al., 2007).

Knowledge management process defines as the practice of acquiring, assimilating, sharing, and using productive knowledge, wherever it exists, to enhance learning and performance in organizations (Tunc, 2007). Similarly, Sequeira and Marques (2013) identify the process of knowledge management such as, Creating new knowledge has many inspiration sources and involves several activities including learning, creative thinking, research, testing, innovation, client observations, instrumental exploration, benchmarking and project improvement processes.

Knowledge management environment is introduced to effectively collect, evaluate, allocate and distribute intellectual capital (Bose, 2003). A smooth transition to a knowledge management environment is part of the challenge of managing change. People naturally resist change, so the steps of change management and operations should help to enhance the purchasing impact of those in organizations for the roles and values of knowledge management (Liebowitz, 2001).

The tourism sector in Iraq has been affected by many negative factors, such as tensions, terrorism and wars, which makes the importance of searching for ways to address the problems of this important and vital sector, and moving to provide tourism services electronically, and this is achieved through the creation of e-service innovation. Over the years, tourism companies have invested in innovation to encourage tourism in Iraq. However, the effect of web knowledge networks on e-service innovation in tourism companies in Iraq is so limited.

Numerous literatures has indicated that web knowledge networks are a positive factor in achieving competitive advantage and organizational success (Husseini, & Elbeltagi, 2018). So, the current research has been done to determine the effects of web knowledge networks on e-service innovation in tourism companies in Iraq.

Materials and Methods

The current study is based on the qualitative research technique. A questionnaire was applied in order to gather the data. Before applying to fill the questionnaire, a pre pilot study was conducted, and this pilot study was formed and sent to ten experts (university professors) from different universities for evaluation. Data were collected randomly from 317 employees of nine tourism companies in Iraq. The instrument of the study was the questionnaire. Originally, the questionnaire covered 14 items belong to web knowledge network (WKN) as independent variable with items (q1-q14) which is associated with three variable dimensions: Knowledge management strategy (KMS), Knowledge Management processes (KMP), and Knowledge management environment (KME), on the one hand, and a dependent variable, E-service innovation (ESI): Distant search (DS), Market introduction (MI), Exploitation (EX) and Proximity (PR) (z1 to z12, a total of 12s items (see: Figure 1).

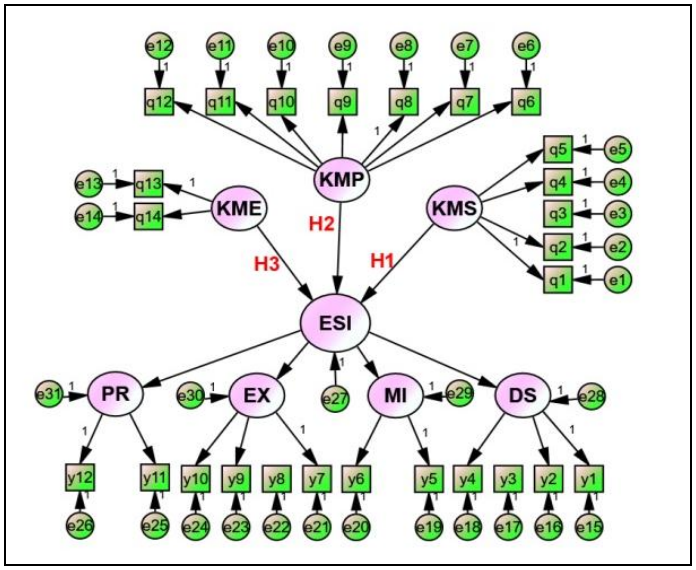

Figure 1. The study model

The study model consists of the following components: KMS: Knowledge Management Strategy; KMP: Knowledge Management Processes; KME: Knowledge Management Environment; ESI: E-service Innovation; DS: Distant Search; MI: Market Introduction; EX: Exploitation; PR: Proximity. A structural modeling analysis was conducted to test the effect of WKN on ESI, A statistic hypothesis are formulated as follow:

- Hypotheses 1: KMS has a significant Impact on ESI.
- Hypotheses 2: KMP has a significant Impact on ESI.
- Hypotheses 3: KME has a significant Impact on ESI.

A total of 317 persons completed the questionnaire, of which 76.7 percent were male and 23.3 percent were female. In terms of age, nearly 42.3 percent of the participants were between 40-49

years, 27.4 percent were between 30-39 years, 18 percent were more than 50 years, and 12.3 percent were less than 30 years. In terms of years of experience, nearly 38.2 percent of the participants were less than 10 years, 35.5 percent were more than 20 years, and 26.5 percent were between 10-19 years. Table 1 describes the demographic profile of respondents.

Table 1. Demographic profile of respondents

Characteristics	Frequency (N=317)	Percentage (%)
Gender:		
Male	243	76.7
Female	74	23.3
Age:		
Less than 30	39	12.3
30-39	87	27.4
40-49	134	42.3
50- above	57	18
Years of Experience:		
Less than 10	121	38.2
10-19	84	26.5
20- above	112	35.5

The reliability and validity of the data under analysis is analyzed based on the Cronbach's Alpha. In accordance with (Mokkink et al., 2017), Cronbach alpha is calculated based on the coefficient of reliability of the studied variables be in the excess of the acceptable minimum level of 0.70. The aspects of principal component factor analyses (PCFA) helps in determination of the variable constructs under analysis. Substantiation of the internal validity of the measured variable items is shown though computation of the Cronbach's alpha. The use of the Split-half test as hypothesized by (Wafaa & Abderrezzak, 2014) plays a critical role in the analysis. According to (Mokkink et al., 2017), the coefficient of reliability of the studied variables should be more than 0.70 to validate the analysis as shown in Table 2. Based on these items, computation of coefficients from factor analysis was performed to identify specific items with communality values less than 0.4 for potential elimination from the analysis (Al Meqbaali, & Kasim, 2018).

Table 2. Results of Validity and Reliability Analysis of Components

Measures	Communality	Cronbach's Alpha
KMS	0.604-0.891	0.877
KMP	0.411-0.787	0.880
KME	0.422-0.759	0.872
DS	0.481-0.789	0.802
MI	0.682-0.865	0.818
EX	0.451-0.886	0.706
PR	0.655-0.783	0.822
All items	0.541-0.889	0.815

Results

It is important to use confirmatory factor analysis (CFA) of the model before analysis the data (Afthanorhan et al., 2014), in order to test how well the measurement represents the number of constructs and to see whether the model of variables satisfies the goodness of fit conditions of conforming to the models (Hair et al., 2010) according to the data of sample.

The measurement model was adopted according to structural equation modeling (SEM) to identify the effect of independent and dependent variables. This model is the second level (Wang et al., 2015), which is part of the important analysis because it is better than the traditional method of statistical analysis.

Two confirmatory factor analyses were used to evaluate the general measurement model for WKN and ESI, The confirmatory factor analyses model of WKN consists of three dimensions (KMS, KMP, KME) and ESI consists of four dimensions (DS, MI, EX, PR). The analysis of this model was conducted and some items were less than 0.50 and were removed to improve the model quality by using modification indices techniques (Rasudin et al., 2016). As a results of the modeling the goodness of fit of the model were not acceptable. So it need to be modified by the modification indices suggestions in order to improve the model (Tobia & Bonifacci, 2015), then it be close to the required conditions (Stevanovic, 2016).

Table 3 show the result of CFI and SEM analysis for the two measurements, measurement model for WKN indicates that some items have records less than (0.50), and therefore they were removed to improve the required model index, the value of (GFI=0.934), which satisfies the required condition (> 0.90), (AGFI=0.873) is close to the acceptance value (> 0.90), (CFI=0.968) is acceptable and the desired value is achieved (> 0.95), (RATIO=2.002) is good (<5), furthermore, the root of mean square error result were (RMSEA=0.069) which is accepted (<0.08).

The second measurement model for ESI indicates that some items have records less than (0.50), and therefore they were removed to improve the required model index. The results of goodness of fit of the model were acceptable and close to the required conditions. The value of (GFI = 0.958), which satisfies the required condition (> 0.90), (AGFI = 0.907) is good (> 0.90) and the value of (CFI = 0.978) is acceptable and the desired value (> 0.95), (RATIO = 1.969) is good (<5), furthermore, the root of mean square error result (RMSEA=0.068) which is accepted (<0.08). Therefore, the models now are acceptable as in Figure 3 and 4.

Table 3. Goodness of fit result and conditions

Goodness of fit indices			Results	Cut Off Value	Description
WKN	Ratio	X^2/df	2.002	<5	Good
	GFI	Goodness of Fit Index	0.934	>0.90	Good
	AGFI	Adjusted Goodness of Fit Index	0.873	>0.90	Approximately Good
	CFI	Comparative Fit. Index	0.968	>0.95	Good
	EMSEA	Root Mean Square Error of Approximation	0.069	<0.08	Good
ESI	Ratio	X^2/df	1.969	<5	Good
	GFI	Goodness of Fit Index	0.958	>0.90	Good
	AGFI	Adjusted Goodness of Fit Index	0.907	>0.90	Good
	CFI	Comparative Fit. Index	0.978	>0.95	Good
	EMSEA	Root Mean Square Error of Approximation	0.068	<0.08	Good

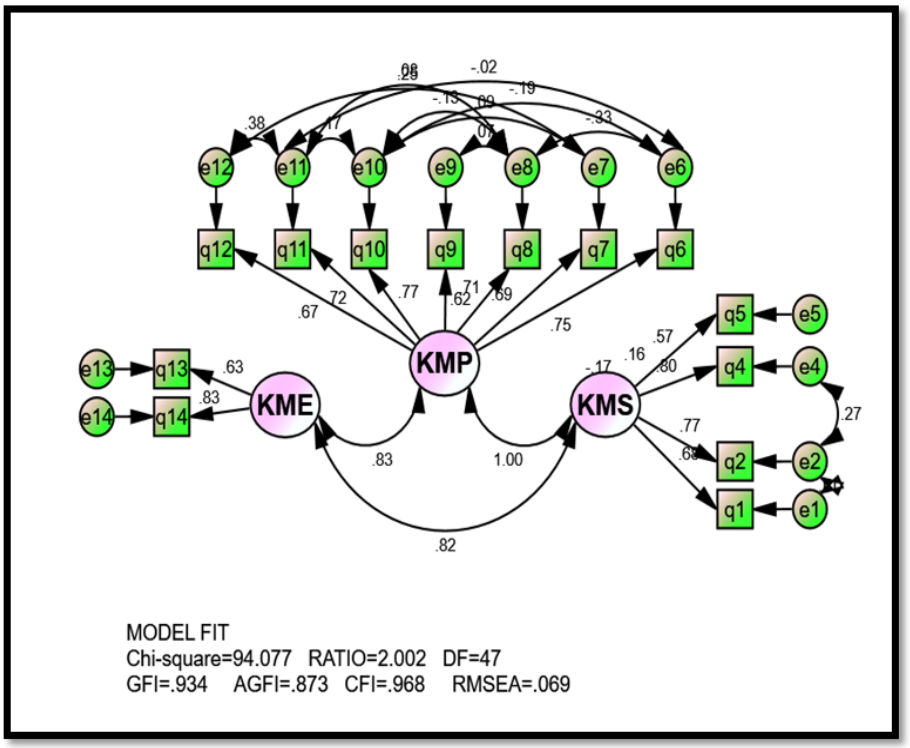

Figure 2. SEM for WKN components

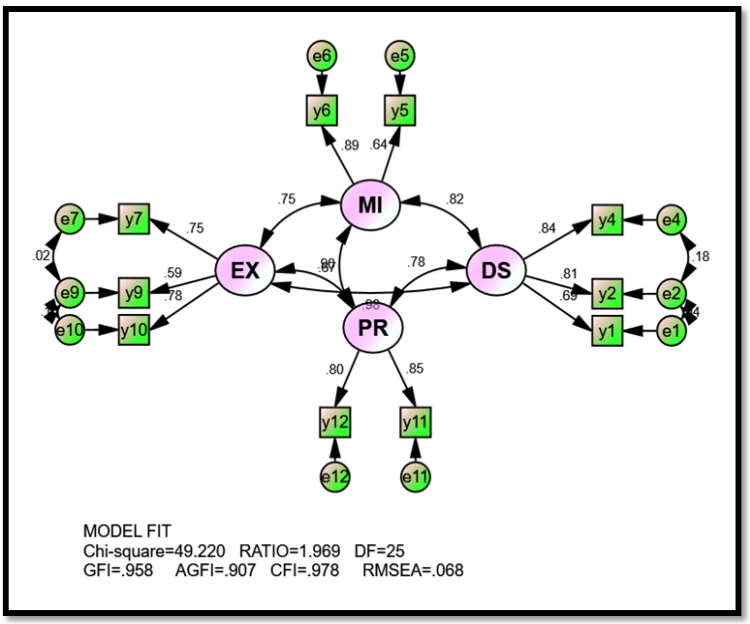

Figure 3. SEM for ESI components

The model is conceptualized to understand the relationship between WKN and ESI. According to the result shown in Table 4 and Figure 4 the standardized regression weight for the path linking KMS to ESI was 0.400 which was found to be significant at a significance level of 0.05. Therefore, hypothesis H1 of KMS positively impacting the ESI is supported. Also the standardized regression weight for the path linking KMP to ESI was 0.375 which was found to be significant at a significance level of 0.05. Therefore, hypothesis H2 of KMP positively impacting the ESI is supported. In addition the standardized regression weight for the path linking KME to ESI was 0.691 which was found to be not significant at a significance level of 0.05. Therefore, hypothesis H3 of KME positively impacting the ESI is supported.

Table 4. Regression Weights for factor Model

			Estimate	S.E.	C.R.	P	Label
ESI	<---	KMS	.400				
ESI	<---	KMP	.375				
ESI	<---	KME	.691				
EX	<---	ESI	.816				
PR	<---	ESI	.671				
MI	<---	ESI	1.111				
DS	<---	ESI	.982				
m1	<---	DS	.625				
m2	<---	DS	.670	.142	7.853	***	
m4	<---	DS	.663	.146	7.791	***	
q7	<---	EX	.662				
q9	<---	EX	.580	.188	6.665	***	
q10	<---	EX	.691	.182	7.530	***	

m5	<---	MI	.549			
m6	<---	MI	.653	.168	7.625	***
q12	<---	PR	.830			
q11	<---	PR	.727	.096	7.771	***
y1	<---	KMS	.693			
y2	<---	KMS	.837	.101	10.395	***
y4	<---	KMS	.860	.105	10.506	***
y5	<---	KMS	.498	.138	6.558	***
y8	<---	KMP	.664			
y9	<---	KMP	.638	.136	8.161	***
y10	<---	KMP	.746	.105	9.337	***
y11	<---	KMP	.818	.128	10.048	***
y12	<---	KMP	.767	.134	9.543	***
m8	<---	KME	.714			
m9	<---	KME	.738	.113	7.747	***
y7	<---	KMP	.734	.113	9.204	***
y6	<---	KMP	.639	.131	8.173	***

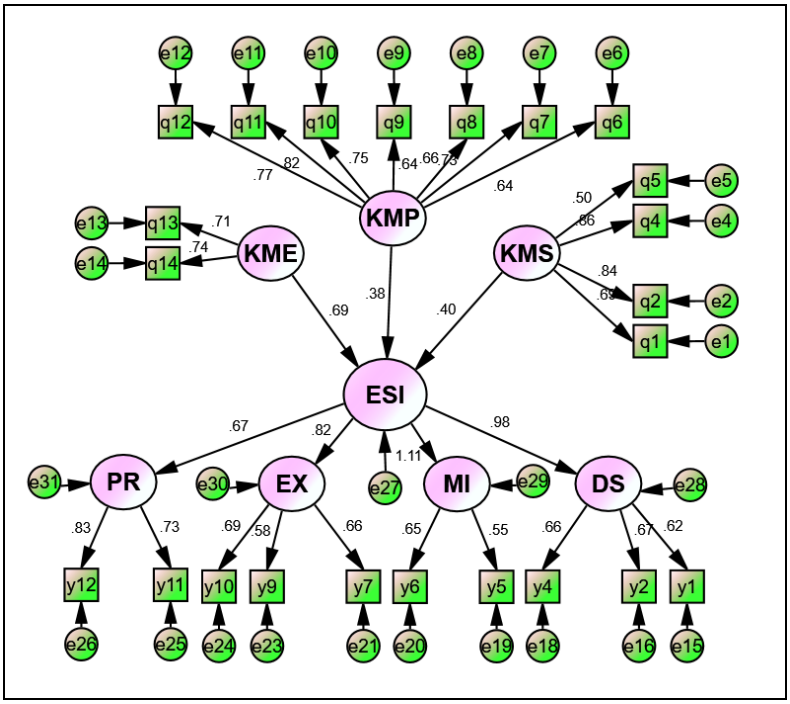

Figure 4. Path estimated Model

Discussion

Web knowledge networks and e-service innovation give tourism companies to acquire a competitive advantage within the tourism market. Some scholars have shown that tourism entrepreneurs typically show limited business skills and limited innovative skills (Bessant & Joe, 2007). However, many tourism companies have introduced research and development (R&D)

departments for entirely enhancing systems networking and innovation within their organizations (Lopes et al., 2014).

The study sought to explore the relationship between web knowledge networks and e-service innovation in the tourism sector in Iraq. The collection, analysis, and result of data reveal a strong relationship between web knowledge networks and service innovation variables. From the results, the service innovation is affected by web knowledge networks in the attraction of tourists and promotion of sectors income.

Despite other forces playing a key role in the influence, the assumption of such factors like previous war and tension in the country reveals a relative correlation among the variables. The knowledge management strategy, knowledge management processes and knowledge management environment correlate with service innovation to varying degree when each individual variable are analyzed.

This study is significant in terms of the feasibility of service innovation as a test tool for monitoring the tourism sector of Iraq, as well as the changes in web knowledge networks variables within tourism sector. This critical view of the document is important for the management of Iraqi tourism companies as a tool to identify the effect of web knowledge networks on e-service innovation. These aspects of the study have been supported by many previous studies as (Al-Husseini, & Elbeltagi, 2018). Although these factors have been addressed by a number of previous studies and literature, none of them have dealt collectively with a sample of companies in area suffering from a harsh environment such as the Iraqi environment.

Conclusion

Companies around the world are continuously challenged to deliver better services to customer. Recognizing this, we propose a conceptual framework on e-service innovation using the web knowledge networks approach through structural equation modeling. The research builds on prior literature. This constitutes knowledge management strategy, knowledge management processes, knowledge Management environment. One of the effective means of improving the tourism service in Iraq is to shift towards the e-services which are considered the high priority for Muslim tourists, which affected by many factors like web knowledge networks. For researchers, this presents a first step toward clarifying relationships between web knowledge networks and e-service innovation.

For tourism companies, this provides insights into the web knowledge networks elements that may be considered when managing e-service innovation. It is worth mentioning that the paper presents an initial conceptualization of association between web knowledge networks and e-service innovation. Thus, if more insights are collected through the web knowledge networks and used to manage innovation in Iraq, the tourism industry will grow exponentially.

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