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Exhibition Guide System Acceptance for Smart MICE

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A B S T R A C T

Meeting, Incentive travel, Convention, Exhibition (MICE) industries recently introduced new information systems, such as the exhibition guide system (EGS), to keep pace with Smart MICE and maximize the effect of exhibition performance. We investigate how persuasive EGS can affect the EGS acceptance of attendees via cognitive and affective response. We analyzed data from 442 EGS users at an exhibition. We found that information accuracy, information relevance, and source credibility were predictors of cognitive response. Source credibility had a significant effect on affective response. Furthermore, cognitive response was found to be a positive predictor of affective response and EGS acceptance. We also found affective response is a predictor of EGS acceptance. The theoretical and practical implications of the study were presented based on the results.

Keywords: Smart MICE, Smart Tourism Ecosystem, Exhibition Guide System (EGS), Elaboration Likelihood Model (ELM), Impact

Ⅰ. Introduction

The smart era has come thanks to the accumulation of information technology (IT). Tourism industry was quick to follow the new era, which is evolved to 'Smart Tourism' using various smart IT and set about establishing the 'Smart Tourism Ecosystem', providing a smart tourism community interacting organizations and tourists of the tourism business world. Thus, previous tourism studies suggest that smart technologies play a crucial role in formatting tourist decision (Fesenmaier et al., 2006; Gretzel et al., 2012) Moreover, IT user's acceptance of smart technologies are constructed by the cognitive and affective response (Li, 2013).

Recently in MICE (Meeting, Incentive travel, Convention, Exhibition) industries much attention has been paid to a Smart MICE such as the exhibition guide system (EGS) in order to maximize the effect of exhibition performance (Chung et al., 2014). And exhibition visitors have a variety of motivation; building relationships, gathering information, buyng, and

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learning the latest trends (Rittichainuwat and Mair, 2012). To meet these motivations, recommender systems have been developed and it allows tourists to simplify their decision making process by providing personalized information and by suggesting alternatives (Fesenmaier et al., 2006; Gretzel et al., 2012).

Despite anecdotal evidence that the EGS is crucial service in Smart MICE, there are some gaps in the way the phenomenon has been understood. First, there is a general lack of empirical studies on the EGS. Secondly, the research occurs mainly remains on system-related views (ex. Guo and Lu, 2007; Moon et al., 2013). Thirdly, there is relatively little sustained research that has explored the understanding of the EGS associated with the persuasive information technology.

In this study, we investigate how the persuasive information of the EGS service can affect the visitors' acceptance of the EGS via cognitive and affective response. To fill the gap in the literature, we reviewed the 'Elaboration likelihood model (ELM)' as a main theory. This theory explains how persuasive messages may affect the personal's acceptance of information technology (Li, 2013; Petty and Cacioppo, 1986). When attendees are using the EGS, information in EGS is persuasive messages which affect decision making. In this context, the present study intends to explain how the persuasive information of the EGS affects exhibition attendees' adoption using the EGS from a viewpoint of the ELM theory. The research model of this study conceptualizes attendees' perceptions of the EGS in terms of its 'information accuracy', 'information relevance' and 'source credibility' and how these concepts influence attendee' acceptance through cognitive response (ease of use, usefulness) and affective response. To this end, the following research objectives are suggested.

First, to explain attendees' acceptance of thee EGS, a research model based on the ELM is created.

Second, empirically test is identified by performing an analysis using data.

The results provide valuable information for both academicians and practitioners of MICE industry investigating and developing EGS persuasive strategies for attendees.

Ⅱ. Theoretical Background

2.1. Exhibition Guide System

Recommender system is a system that "people provide recommendations as inputs, which the system then aggregates and directs to appropriate recipients" (Resnick and Varian, 1997). The usage of this term has broadened to include any system that creates individual recommendations or has a role to guide in a large space (Burke, 2002). And the exhibition guide system (EGS) has begun to be used for intelligent exhibition in Korea and is a set of service of personalized information systems. Particularly it has recommendation algorithms based on collaborative filtering (Chung et al., 2014).

When exhibition attendees visit booths at an exhibition, they try to gather information, learn the latest trends (Rittichainuwat and Mair, 2012). Thus, visitors try to get a chance to experience a new product or service, and to gather information about targeted items within a limited time. The EGS is designed to help the attendees to get valuable information about products or services they are looking for in a smart technology environment (Moon et al., 2013). Recently it is designed to use QR (Quick Response) code, NFC(Near Field Communication), and RFID (Radio Frequency Identification) technology to find exhibition booth.

The QR code is considered to be one of the new technologies in the exhibition; in TFMA 2014, a company encouraged interactions among customers by providing QR codes for their products (TECH.CO, 2015). At the IBTM America 2015 held in Chicago, attendees used NFC devices to exchange and collect digital brochures, and contacts between participants (NFC word, 2015). In an exhibition in England, RFID was used for monitoring the movements of users to control attendees' access (Campaign, 2012).

2.2. Elaboration Likelihood Model

The exhibition visitors use the EGS in order to meet their motivations and preferences. When the EGS recommend the exhibition information to visitors, its information quality and source credibility are important and could influence visitors' responses. Further these factors can affect visitors' decisions about whether to use it or not. In other words, the EGS is considered as the persuasive system which could affect users' behavior and thought. Also, it is crucial to understand the processes of visitors' acceptance but previous studies approached the acceptance of information technology from this perspective were rare (Bhattacherjee and Sanford, 2006; Sussman and Siegal, 2003). Meanwhile, ELM (Elaboration Likelihood Model) can help understand this influence processes and so explain visitors' process of EGS acceptance. The ELM is one of dual-process models that provides a conceptual foundation for IT adoption (Angst and Agarwal, 2009; Li, 2013). This is because - based on social psychology research in the context of IT acceptance - the attitude which is a dependent variable of the existing ELM can be extended to belief, affect and intention (Bhattacherjee and Sanford, 2006).

According to the ELM, people process the persuasive message through the central and peripheral route based on the elaboration of information (Chen and Ku, 2012; Mason, 2001; Petty et al., 1981). People who are thinking deeply about the persuasive message have high elaboration and focus on the quality and evaluate it. Thus, the central route reflects thoughtful processing of persuasive information; however, people with low elaboration think via the peripheral route based on heuristic cues (Petty and Cacioppo, 1986). In other words, central route processing is related to argument quality (information quality) which means the individual's perception about the persuasive strength of arguments embedded in an informational message (Bhattacherjee and Sanford, 2006), while the peripheral route processing is related to non-message elements in the absence of inspection issue-relevant information (i.e., characteristics of the source of the message and graphics) (Lee and Schumann, 2004).

Previous studies using ELM theory have chosen 'argument quality (or information quality)' related to the central route, and 'source credibility' related to peripheral route (Bhattacherjee and Sanford, 2006; Chen and Ku, 2012; Ha and Ahn, 2011; Li, 2013; Sussman and Siegal, 2003). Information (argument) quality is defined as the extent to the persuasive strength of information (Bhattacherjee and Sanford, 2006). In studies about information system (e.g., Delone and McLean, 2003), information quality is defined as a term to explain the content quality of information systems and is measured by accuracy, timeliness, completeness, relevance, and consistency (Delone and McLean, 2003). Information quality in this study is defined as the persuasive strength of the EGS that influence the use of the EGS for gathering exhibition information. And accuracy of information is defined as the extent to which information that the EGS represents is correct based on the previous re-

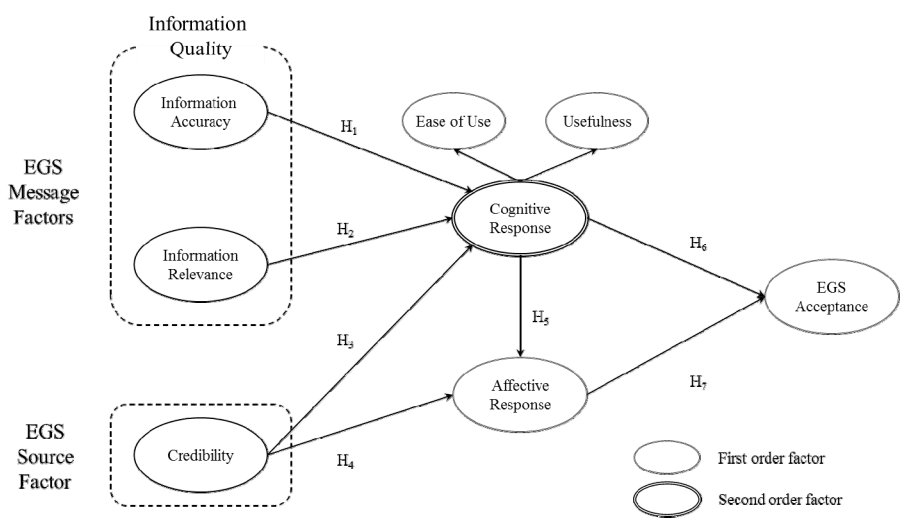
search (e.g., Filieri and McLeay, 2014; Nelson et al., 2005). And relevance of information is defined as the correspondence between users' expectation and the EGS responses (Kim et al., 2009). Source credibility refers to the degree of source trustworthiness (Bhattacherjee and Sanford, 2006; Petty et al., 1981; Sussman and Siegal, 2003).

Thus, when exhibitor attendees are using the EGS, this study considered information quality, measured by information accuracy and relevance, as factors related to the central route because information accuracy and relevance are important factors of the EGS. The source credibility is considered as a factor of peripheral route processing. Based on the previous researches (ex. Bhattacherjee and Sanford, 2006; Chen and Ku, 2012; Li, 2013), the information accuracy and relevance related to the central route will affect visitors' cognitive response while the source credibility related to the peripheral route will affect visitors' cognitive and affective response. Because cognitive and affective responses are important factors that affect in predicting person's attitudes (Huskinson and Haddock, 2006). Further these factors can affect EGS acceptance through visitors' cognitive and affective response.

Ⅲ. Research Model and Hypotheses

This study confirmed that the ELM theory can serve as a theoretical framework to understand EGS acceptance of exhibition attendees. Therefore, the current study proposed the research model as shown in <Figure 1>. This model suggests that the information accuracy and information relevance of the EGS are predictors of the cognitive response. And the source credibility of the EGS is a predictor of the affective response. Further cognitive response influences affective response. Also, cognitive and affective responses are predictors of EGS acceptance.

When visitors use the EGS, information accuracy and information relevance are considered as a factor related to the attitude of the individual. Information accuracy and information relevance are considered as the measurement of information quality. According to the ELM, they are related to the in-



<Figure 1> Research Model

dividual's rational judgment, which are made through the central route (Bhattacherjee and Sanford, 2006). And the previous study of ELM considered cognitive reaction as factors associated with the adoption of information technology (Bhattacherjee and Sanford, 2006; Li, 2013; Sussman and Siegal, 2003). In other words, information quality had an effect on the cognitive response because they strengthen the belief of the acceptance of information system (Bhattacherjee and Sanformd, 2006). The cognitive response is defined as this belief and considered as perceived usefulness and perceived ease of use of the information system (Li, 2013). The purpose of the EGS users is obtaining the personalized and appropriate information. When the EGS provide high-quality and customized information, the users would realize that the EGS is a useful and easy device for this exhibition. Hence, the following hypotheses are formulated.

H1: Information accuracy has a positive effect on cognitive response.

H2: Information relevance has a positive effect on cognitive response.

Source credibility in this study is defined as extent to which the EGS suggests information source is credible. Source credibility has been a critical heuristic cues related to peripheral route in ELM studies (Bhattacherjee and Sanford, 2006; Petty et al., 1981; Sussman and Siegal, 2003). Thus characteristics of the EGS such as source credibility would be important factors and peripheral cues which are related to non-message elements of the EGS. Because source credibility is used as a clue to simply judge the cognitive judgment, if IT such as EGS provides reliable information, those who use IT will strengthen the favorable thoughts about IT (Bhattacherjee and Sanford, 2006; Li, 2013). Also, as there are strong peripheral cues, individual cognitive reaction and human affection associated with information systems will be strengthened (Bhattacherjee and Sanford, 2006; Li, 2013). Thus, the stronger source credibility of the EGS will enable more ease of use, usefulness and fun using the EGS service, which will eventually develop affective and cognitive response. Bhattercherjee and Sanford (2006) insisted that source credibility positively influences usefulness and emotion. And Li (2013) also found that source credibility has a significant impact on affective response such like enjoyment and cognitive response. As such, the study proposed the following hypotheses.

H3: Source credibility has a positive effect on cognitive response.

H4: Source credibility has a positive effect on affective response.

Cognitive response consists of the perceived ease of use and usefulness, which can be considered as a factor that affects the intention to use the information system (Venkatesh et al., 2003; Wu and Chen, 2005). When visitors using the EGS in order to gathering information of the exhibition, if it is useful and easy, they will form emotional response such as enjoyment and try to acceptance it. This is because people form an emotional response based on a cognitive assessment of an object or situation (Hsu and Lin, 2016; Yuan and Jang, 2008).

In this study, EGS acceptance refers to the persistent use of EGS and its future intention to use. Previous studies have shown that cognitive response and affective response are positively related to adoption intentions (Kim et al., 2013; Li, 2013). Accordingly, this study proposes the following hypotheses.

H5: Cognitive response has a positive effect on affective response.

H6: Cognitive response has a positive effect on the EGS acceptance.

H7: Affective response has a positive effect on the EGS acceptance.

Ⅳ. Research Methodology

4.1. Measurements

The measurements in this study were derived from prior studies regarding the constructs of information accuracy, information relevance, cognitive response, affective response, and EGS acceptance. Particularly, cognitive response was measured with sub-constructs, using a second-order model. All items were measured on a seven-point Likert scale with strongly disagree (1) and strongly agree (7). Three items to measure information accuracy of the EGS were derived from Hostler et al. (2011). Three items from Lee and Lee (2009) were used to examine information relevance. Four items were used to indicate source credibility about the EGS (Wang and Benbasat, 2005). Three usefulness items and three ease of use items were consisted of cognitive response and were adopted from the previous study (Lee and Lee, 2009). Also, four measurement scales for the affective response were borrowed from Kim et al. (2007). Finally, the EGS acceptance was measured using items adopted from Lee et al. (2011). To suit the context of this study, three academic experts verified the content validity of the items.

4.2. Data Collection

In the context of this study, one the Korean Exhibition, the EGS using applications with QR codes was applied to test its effectiveness. This project developed an EGS system to suggest real-time recommendation by collecting preference and demographic information of a user. Specifically, the exhibition attendees installed the EGS application that can read the QR code in their smart phones at the information desk. The EGS recommended booths based on the personal information that visitors entered in advance and the recognition of the visited booth's QR code.

The on-site survey was conducted at this exhibition. The respondents who are used the EGS for the exhibition selected for this study. Using convenience sampling, selected visitors were asked to use EGS in front of the exhibition buildings and participate in the survey when they were finished visiting.

A total of 442 responses were collected from onsite survey and coded for the analysis. The respondent gender ratio was male 282 (63.8%). The 20-29 age group had the largest proportion at 47.7% (211), followed by those under 30-39 years (106, 24.0%) and those 40-49 years (80, 18.1%). Most respondents were students (169, 38.2%) and office workers (84, 19.0%). The typical respondent's yearly income level was less than 30 million won at 240 (54.3%), followed by 30 million to 40 million Korean won (76, 17.2%), where 1,100 Korean won equals US$1.

Ⅴ. Data Analysis and Results

5.1. Analysis Method

The hypotheses in <Figure 1> were tested using a structural equation modeling (SEM) approach. SEM is designed to estimate the fit between a proposed model and collected data (Hair et al., 2006). The collected data were analyzed using SEM software, such as Analysis of Moment Structures (AMOS 18.0)

(Arbuckle, 2009). The SEM approach analyzed a confirmatory factor and latent structural model analysis (Kline, 2011).

5.2. Confirmatory Factor Analysis

Confirmatory factor analysis assessed the con-

<Table 1> Results of Convergent Validity Testing[a]

Constructs		Variables	Loadings	CR[b]	AVE[c]	Cronbach's α
Information accuracy		The recommendation information provided by the EGS is accurate.	0.840	0.878	0.707	0.875
		The quality of recommendation information provided by the EGS is good.	0.887			
		I was able to accomplish what I wanted to on this exhibition using the EGS.	0.793			
Information relevance		The EGS will select according to my needs.	0.803	0.869	0.689	0.868
		The EGS will know what I want.	0.862			
		The EGS will take my needs as its own preferences.	0.824			
Source credibility		This EGS is like a real expert in recommending the booths.	0.802	0.899	0.690	0.894
		The EGS has the expertise to understand my needs and preferences.	0.888			
		The EGS has the ability to understand my needs and preferences.	0.887			
		The EGS has good knowledge about this exhibition.	0.736			
Cognitive Response	Usefulness	Using the EGS enables me to find a desired booth more quickly.	0.834	0.898	0.746	0.895
		Using the EGS enables me to find a desired booth more easily.	0.904			
		Using the EGS is helpful for the show experience.	0.851			
	Ease of use	The EGS is easy to understand.	0.923	0.907	0.830	0.907
		The EGS is easy to learn how to use	0.899			
		The EGS is easy to use.	-			
Affective Response		I had fun using the EGS.	0.893	0.925	0.757	0.924
		The EGS was entertaining for me.	0.897			
		I enjoyed the EGS.	0.886			
		The EGS was not boring.	0.800			
EGS Acceptance		I have the intention to use again the EGS.	0.874	0.912	0.775	0.910
		I have the intention to use the EGS as frequently as possible.	0.918			
		I will persistently use the EGS in the future.	0.848			

Note: [a] X^2 = 367.914, *d.f* = 188 (X^2/*d.f* = 1.957), p = 0.000, GFI = 0.930, AGFI = 0.906, NFI = 0.955, CFI = 0.977, RMSEA = 0.047
[b] Composite Reliability
[c] Average Variance Extracted
[d] The item was deleted following the confirmatory factor analysis.

structs for convergent and discriminant validity. In confirmatory factor analysis, items that share a high degree of residual variance with other items was removed for revising our measurement model. We removed a total of five items that shared a high degree of residual variance. As shown in <Table 1>, the statistics showed a χ^2 fit of 367.914 (p = 0.000) with 188 degrees of freedom (χ^2/df = 13957). The goodness-of-fit index was 0.930, the adjusted goodness-of-fit index was 0.906, the normed fit index was 0.955, the comparative fit index was 0.977, and the root mean square error of approximation was 0.047. All statistics supported the quality of our measurement (Anderson and Gerbing, 1992).

Convergent validity was confirmed using three other criteria. First, the standardized path loading of each item had to be statistically significant and greater than 0.6 (Gefen et al., 2000). Second, the composite reliability and the Cronbach's α for each construct had to be greater than 0.7. Third, the average variance extracted (AVE) for each construct had to exceed 0.5 (Fornell and Larcker, 1981). As shown in <Table 1>, all of the standardized path loadings were significant and greater than 0.6. Additionally, the composite reliability and the Cronbach's α for all constructs exceeded 0.7. Finally, the AVE for each construct was greater than 0.5. Therefore, the convergent validity of the constructs was supported.

The discriminant validity of the measurement model was verified by comparing the square root of the AVE for each construct with the correlations among the constructs. If the square root of the AVE was greater than the correlations among the constructs, then this outcome would indicate the discriminant validity of the model (Fornell and Larcker, 1981). The square root of the AVE for each construct exceeded the correlations among the constructs in <Table 2>. Therefore, discriminant validity was established.

5.3. Hypothesis Testing

<Table 3> presents the maximum-likelihood estimates for the various overall fit parameters. The χ^2 statistic fit was 392.283 with 197 degrees of freedom (χ^2/df = 1.991, p = 0.000). The goodness-of-fit index was 0.925, the adjusted goodness-of-fit index was 0.904, the normed fit index was 0.951, the comparative fit index was 0.975, and the root mean square error of approximation was 0.047. These multiple in-

<Table 2> Correlation and Descriptive Statistics

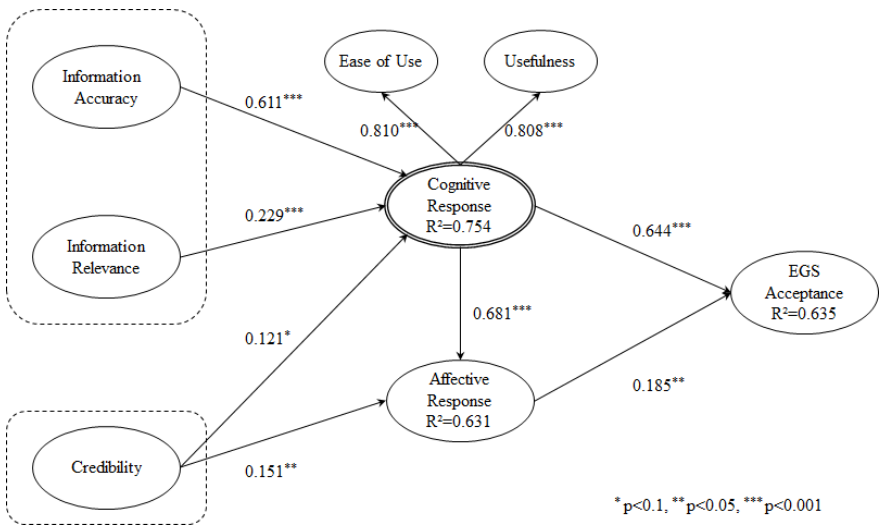
Construct	Correlation of constructs							Mean	S.D.
	1	2	3	4	5	6	7		
1. Information accuracy	**0.841**							5.02	1.10
2. Information relevance	0.546**	**0.830**						4.75	1.03
3. Source Credibility	0.616**	0.658**	**0.831**					4.69	0.99
4. Cognitive Response(Ease of use)	0.612**	0.460**	0.484**	**0.864**				5.27	1.09
5. Cognitive Response(Usefulness)	0.622**	0.484**	0.541**	0.615**	**0.911**			5.13	1.23
6. Affective Response	0.593**	0.549**	0.577**	0.615**	0.582**	**0.870**		4.89	1.11
7. Intention to use	0.600**	0.560**	0.572**	0.584**	0.553**	0.642**	**0.880**	5.03	1.12

Note: The boldface diagonal elements of the "correlation of constructs" matrix are the square roots of the average variance extracted (AVE). For adequate discriminant validity, the diagonal elements should be greater than the corresponding off-diagonal elements. (**p < 0.01).

<Table 3> Standardized Structural Estimates and Tests of the Main Hypotheses

Hypotheses	Path			Estimates	*t*-value	Results
H1	Information accuracy	→	Cognitive response	0.611	9.207	Supported
H2	Information relevance	→	Cognitive response	0.229	3.615	Supported
H3	Source credibility	→	Cognitive response	0.121	1.776	Supported
H4	Source credibility	→	Affective response	0.151	2.402	Supported
H5	Cognitive response	→	Affective response	0.681	9.104	Supported
H6	Cognitive response	→	EGS acceptance	0.644	7.672	Supported
H7	Affective response	→	EGS acceptance	0.185	2.518	Supported
R^2 Cognitive response : Affective response : EGS acceptance :				0.754 (75.4%) 0.631 (63.1%) 0.635 (63.5%)		

Note: χ^2 = 392.283 *d.f* = 197 (χ^2/*d.f* = 1.991), *p* = 0.000, GFI = 0.925, AGFI = 0.904, NFI = 0.951, CFI = 0.975, RMSEA = 0.047



<Figure 2> Results of the Structural Equation Modeling Analysis

dicators suggested that the model demonstrated a good fit and thus merited further interpretation.

The squared multiple correlations (R^2: coefficient of determinant) for the structural equations for cognitive response, affective response, and the EGS acceptance are shown in <Table 3> and <Figure 2>. For cognitive response, 75.4% of the variance was explained by the direct effects of information accuracy and information relevance, and 63.1% of the variance in affective response was explained by the direct effects of source credibility and cognitive response. Additionally, 63.5% of the variance in the EGS acceptance was explained by the direct effects of Cognitive response and EGS acceptance. <Table 3> presents the standardized parameter estimates.

In regards to hypothesis testing, hypotheses 1 and 2 posited the structural relationships among information accuracy, information relevance and cog-

nitive response. Information accuracy had a positive effect on cognitive response (β = 0.611, t-value = 9.207) with statistical significance at the $p < 0.001$ level. And information relevance had a positive effect on cognitive response (β = 0.229, t-value = 3.615) with statistical significance at the $p < 0.001$ level; thus, H1 and H2 were supported. The significant positive effect of source credibility on cognitive response supports H3 (β = 0.121, t-value = 1.776, $p < 0.10$). In addition, source credibility also positively affects affective response (β = 0.151, t-value = 2.402, $p < 0.05$), supporting H4. Moreover, H5 posited that cognitive response is associated with affective response. Cognitive response had a significant positive effect on affective response (β = 0.681, t-value = 9.104, $p < 0.001$); thus, this result supports H5. Finally, this study also tested other hypotheses related to the EGS acceptance. The relationships between cognitive response (β = 0.644, t-value = 7.672, $p < 0.001$) and the EGS acceptance, and between affective response (β = 0.185, t-value = 2.518, $p < 0.05$) and the EGS acceptance were significantly positive, supporting H6 and H7.

Ⅵ. Conclusions and Implications

Exhibition is considered as one of the crucial parts of the MICE industry, and is an important axis of Smart MICE. This study is aimed at understanding the acceptance of the EGS which allows exhibition attendees to acquire persuasive information for exhibition based on ELM theory. Our study focused on whether exhibition attendees' perception of the persuasive EGS information leads to their acceptance of the EGS. According to the analysis results, all hypotheses were supported. Information accuracy, information relevance and source credibility had a significant effect on cognitive response. And we found that source credibility was a predictor of affective response. Furthermore, cognitive response was found to have a significant effect on affective response. Lastly, cognitive response and affective response affect the EGS acceptance.

Particularly, current study provided some empirical support that when the EGS user experience a higher level of information accuracy with EGS contents, they perceived more strong cognitive response about the EGS, which strongly formatted the acceptance of the EGS. The strong role of information quality is consistent with the findings of Bhattacherjee and Sanford (2006) study which suggests that argument quality was a strong role of influencing intention to use IT and Filieri and McLeay (2014) study which suggests that accuracy of information had a strong effect on the intention to recommendation. As such, this study also confirmed that cognitive response is more important than affective response for the EGS acceptance being consistent with the previous studies in information technology literature (Li, 2013; Yang and Yoo, 2004).

The findings of this study bear some implications. First of all, the theoretical implication of this study is that this study explains the visitors' acceptance of the EGS using a theoretical framework based on the ELM. The ELM theory offers a conceptual basis for understanding the acceptance of persuasive information technology such as the EGS. As such, the present study confirmed the acceptance of IT such as the EGS being consistent with the earlier study related to the ELM theory. Accordingly, the empirical results of current study provide acceptable evidence that general recommendation system can be expanded to exhibition attendees' acceptance of the EGS in exhibitions within the framework of ELM theory. Secondly, there is a general lack of empirical

studies on the EGS but our study tested empirically to interpret acceptance of the EGS.

This study provided some practical guidelines for exhibitors, exhibition organizers. First, the results showed that information accuracy had a strong effect on cognitive response; thus, there is a need in the EGS to strengthen the information itself. For exhibition organizers and exhibitors, it is recommend to offer high-quality information with accuracy and relevance, given the fact that the current study observed that a higher information is an important for formatting visitors' cognitive response (i.e., ease of use and usefulness) related to EGS acceptance. Second, this study confirmed the strong effect of cognitive response on EGS acceptance of visitors and the affective response. So it is important that the exhibitors or developers of the EGS should consider deriving visitors' cognitive response.

Limitations of this study are as follows, through which future research directions are presented. First, this study has a limit that characteristics of the EGS system or exhibition are not completely ruled out because the study is limited to users only for the exhibition. In the future, it is necessary to study the application of EGS in other situations to increase the representative of research subjects. This study did not fully consider the motivation of visitors who use the information provided by the EGS or their personality. Therefore, future studies will be required to perform an additional analysis that reflects such individual characteristics. Therefore, the interpretation of the results of this study requires caution.

Ⅶ. Acknowledgement

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References

[1] Anderson, J. C., and Gerbing, D. W. (1992). Assumptions and comparative strengths of the two-step approach comment on Fornell and Yi. *Sociological Methods & Research, 20*(3), 321-333.

[2] Angst, C. M., and Agarwal, R. (2009). Adoption of electronic health records in the presence of privacy concerns: the elaboration likelihood model and individual persuasion. *MIS Quarterly, 33*(2), 339-370.

[3] Arbuckle, J. L. (2009). *Analysis of MOment Structures AMOS (Version 18.0)*. IL: SPSS Inc., Chicago.

[4] Bhattacherjee, A., and Sanford, C. (2006). Influence processes for information technology acceptance: an elaboration likelihood model. *MIS Quarterly, 30*(4), 805-825.

[5] Burke, R. (2002). Hybrid recommender systems: Survey and experiments. *User modeling and user-adapted interaction, 12*(4), 331-370.

[6] Campaign (2012). *RFID predicted for UK exhibitions in 2013*. Retrieved from https://www.campaignlive.co.uk/rfid-predicted-uk-exhibitions-2013/%7Bsubjects%7D/article/1149983.

[7] Chen, C. D., and Ku, C. S. (2012). Building member's relationship quality toward online community from the elaboration likelihood model perspective. *Proceedings of the Pacific Asia Conference on Information Systems (PACIS) 2012*.

[8] Chung, N., Koo, C., and Kim, J. K. (2014). Extrinsic and intrinsic motivation for using a booth recommender system service on exhibition attendees' unplanned visit behaviour. *Computers in Human Behavior, 30*, 59-68.

[9] Delone, W. H., and McLean, E. R. (2003). The DeLone

and McLean model of information systems success: a ten-year update. *Journal of management information systems, 19*(4), 9-30.

[10] Fesenmaier, D. R., Werthner, H., and Wöber, K. (2006). *Destination Recommendation Systems: Behavioural Foundations and Applications*. CABI, Cambridge, MA.

[11] Filieri, R., and McLeay, F. (2014). E-WOM and accommodation an analysis of the factors that influence travelers'adoption of information from online reviews. *Journal of Travel Research, 53*(1), 44-57.

[12] Fornell, C., and Larcker, D. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

[13] Gefen, D., Straub, D. W., and Boudreau, M. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems, 4*(7), 2-76.

[14] Gretzel, U., Hwang, Y. H., and Fesenmaier, D. R. (2012). Informing destination recommender systems design and evaluation through quantitative research. *International Journal of Culture, Tourism and Hospitality Research, 6*(4), 297-315.

[15] Guo, X., and Lu, J. (2007). Intelligent e-government services with personalized recommendation techniques. *International Journal of Intelligent Systems, 22*(5), 401-417.

[16] Ha, S., and Ahn, J. (2011). Why are you sharing others' tweets?: The impact of argument quality and source credibility on information sharing behavior. *ICIS 2011 Proceedings*.

[17] Hair Jr., J. F., Black, W. C., Babin, B. J., Anderson, R. E., and Tatham, R. L. (2006). *Multivariate data analysis (6th ed.)*. Upper Saddle River NJ: Pearson Prentice Hall.

[18] Hostler, R. E., Yoon, V. Y., Guo, Z., Guimaraes, T., and Forgionne, G. (2011). Assessing the impact of recommender agents on on-line consumer unplanned purchase behavior. *Information & Management, 48*(8), 336-343.

[19] Hsu, C. L., and Lin, J. C. C. (2016). Effect of perceived value and social influences on mobile app stickiness and in-app purchase intention. *Technological Forecasting and Social Change, 108*, 42-53.

[20] Huskinson, T. L., and Haddock, G. (2006). Individual differences in attitude structure and the accessibility of the affective and cognitive components of attitude. *Social cognition, 24*(4), 453-468.

[21] Kim, H. W., Chan, H. C., and Gupta, S. (2007). Value-based adoption of mobile internet: an empirical investigation. *Decision Support Systems, 43*(1), 111-126.

[22] Kim, S. B., Sun, K. A., and Kim, D. Y. (2013). The influence of consumer value-based factors on attitude-behavioral intention in social commerce: The differences between high- and low-technology experience groups. *Journal of Travel & Tourism Marketing, 30*(1-2), 108-125.

[23] Kim, C., Oh, E., Shin, N., and Chae, M. (2009). An empirical investigation of factors affecting ubiquitous computing use and U-business value. *International Journal of Information Management, 29*(6), 436-448.

[24] Kline, R. B. (2011). *Principles and practice of structural equation modeling*. New York: Guilford.

[25] Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.

[26] Lee, G., and Lee, W. J. (2009). Psychological reactance to online recommendation services. *Information & Management, 46*(8), 448-452.

[27] Lee, E. J., and Schumann, D. W. (2004). Explaining the special case of incongruity in advertising: Combining classic theoretical approaches. *Marketing Theory, 4*(1-2), 59-90.

[28] Lee, K. C., Chung, N., and Lee, S. (2011). Exploring the influence of personal schema on trust transfer and switching costs in brick-and-click bookstores. *Information & Management, 48*(8), 364-370.

[29] Li, C. Y. (2013). Persuasive messages on information system acceptance: A theoretical extension of elaboration likelihood model and social influence

theory. *Computers in Human Behavior, 29*(1), 264-275.

[30] Mason, L. (2001). The process of change through persuasion: a commentary. *International Journal of Educational Research, 35*(7-8), 715-729.

[31] Moon, H. S., Kim, J. K., and Ryu, Y. U. (2013). A sequence-based filtering method for exhibition booth visit recommendations. *International Journal of Information Management, 33*(4), 620-626.

[32] Nelson, R. R., Todd, P. A., and Wixom, B. H. (2005). Antecedents of Information and System Quality: An Empirical Examination within the Context of Data Warehousing. *Journal of Management Information Systems, 21*(4), 199-235.

[33] NFC world (2015). *Reed Exhibitions uses NFC for IBTM America visitors*. Retrieved from https://www.nfcworld.com/2015/06/12/335933/reed-exhibitions-uses-nfc-for-ibtm-america-visitors/

[34] Petty, R. E., Cacioppo, J. T., and Goldman, R. (1981). Personal involvement as a determinant of argument-based persuasion. *Journal of Personality and Social Psychology, 41*(5), 847-855.

[35] Petty, R. E., and Cacioppo, J. T. (1986). *Communication and Persuasion: Central and Peripheral Routes to Attitude Change*. New York: Springer-Verlag.

[36] Resnick, P., and Varian, H. R. (1997). Recommender systems. *Communications of the ACM, 40*(3), 56-58.

[37] Rittichainuwat, B., and Mair, J. (2012). Visitor attendance motivations at consumer travel exhibitions. *Tourism Management, 33*(5), 1236-1244.

[38] Sussman, S. W., and Siegal, W. S. (2003). Informational influence in organizations: An integrated approach to knowledge adoption. *Information Systems Research, 14*(1), 47-65.

[39] TECH.CO (2015). *The 4 New Technologies to Feature in Your Exhibition Stands*. Retrieved from https://tech.co/4-new-technologies-feature-exhibition-stands-2015-11.

[40] Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, F. D. (2003). User acceptance of information technology: toward a unified view. *MIS Quarterly, 27*(3), 425-478.

[41] Wang, W., and Benbasat, I. (2005). Trust in and adoption of online recommendation agents. *Journal of the Association for Information Systems, 6*(3), 72-101.

[42] Wu, I. L., and Chen, J. L. (2005). An extension of trust and TAM model with TPB in the initial adoption of on-line tax: a empirical study. *International Journal of Human-Computer Studies, 62*(6), 784-808.

[43] Yang, H. D., and Yoo, Y. (2004). It's all about attitude: revisiting the technology acceptance model. *Decision Support Systems, 38*(1), 19-31.

[44] Yuan, J., and Jang, S. (2008). The effects of quality and satisfaction on awareness and behavioral intentions: Exploring the role of a wine festival. *Journal of Travel Research, 46*(3), 279-288.

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