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Role of Online Reviews in Hotel Reservations Intention Based on Social Media

[1]Zhuling Zhong, [1]Yang Yang and [2]Mu Zhang
[1]School of Management, Jinan University, Guangzhou, China
[2]Shenzhen Tourism College, Jinan University, Shenzhen, China

Abstract: Social media are playing an increasingly important role as information sources for travelers and online reviews reconstruct the decision-making of purchase. The goal of this study is to investigate the influence extent of online reviews on consumer's hotel reservation intention. Based on the data analysis from the online comments, the measurable conceptual model of online comment which affecting the consumer's hotel reservation intention is built up, the five observed variables and the relevant suppose have been put forward. The model is evaluated according to a national survey of potential consumers. All data have been analyzed with the Structural Equation Model (SEM). The results show that all variables except comment source significantly affected tourists' hotel reservation intention. It also puts forward a reference case for the tourism company and its websites on improving online reservation service quality to meet customer's satisfaction.

Key words: Social media, online reviews, hotel reservation intention

INTRODUCTION

According to CNNIC's (CNNIC, 2011) statistics, China had 591 million netizens by the first half of 2013, 271 million of which frequently visited shopping websites. Specifically, online travel market size has reached 132.56 billion, including the reservation of the air or train tickets, hotel and itinerary. With increasing amounts of travel-related information provided by online-travel websites and company official website, tourists have a number of choices about how to travel conveniently. As a result, the popularity of online payment and mobile devices applications will promote the combination of tourism and information (The People's Republic of China National Travel Bureau, 2010).

On the other hand, research has shown that interpersonal influence arising from opinion exchange between consumers is an important factor influencing consumer's purchase decisions (Pan *et al.*, 2007). The Internet provides a new ways for individuals to realize word-of-mouth that is social media. Travelers can choose text, image, sound and video etc. to share experience in travel, meanwhile, these User Generated Content (UGC) become fresh information recommend to others through e-mail, blog and microblog etc., even based on it, commends will bring out further influence to travelers. So, far there are currently 288 million social media users, showing a 4.7% increase from 2012 in China (CNNIC, 2011). However, litter research with high relevance has been conducted on this emergent marketing practice to offer useful insights for the tourism industry (Xiang and Gretzel, 2010).

As an important type of social media, online reviews pose new possibilities and challenges for tourism marketers. The goal of this research is to understand how the hotel online reviews impact on tourists' reservation intention in China. The rest of the paper is organized as follows: The Research Background section critically reviews relevant literature on basic principal of social media and the relationship between the tendentiousness of review sand purchasing intention. Then, the Research Hypotheses section explains the use of data collection technique to extract and describe key words from vast quantities of online reviews by hospital customers based on setting up research model and hypotheses. In the Methodology section, the design of the research with questionnaire and Structure Equation Model (SEM) is explained. Findings are then presented in correspondence with each of the hypotheses. Finally, limitations and future research directions are discussed.

LITERATURE REVIEW

Social media on the Internet: While there is a lack of a formal definition, "social media" can be generally understood as Internet-based applications that carry consumer-generated content which encompasses "media impressions created by consumers, typically informed by

Corresponding Author: Mu Zhang, Shenzhen Tourism College, Jinan University, Shenzhen, China

relevant experience and archived or shared online for easy access by other impressionable consumers (Blackshaw and Nazzaro, 2006). Social media exists in a variety of forms, including Social Networking Sites, Video Sharing Sites, Photo Sharing, Collaborative Directories, Social type Sites, Content Voting Sites, Business Networking Sites and Social (Collaborative) Bookmarking Sites (Tang, 2011). Despite social media's significant impact on business, its marketing applications have received little research attention (Line and Runyan, 2011). Wang explained the influence by "Strong connection-weak connection model" and "Star network transmission model" (Wang and Ding, 2011). That is social media can expand interpersonal relationship effectively (such as Facebook, Twitter) or become interactive and communitization information platform (such as ZAGAT, Trip advisor).

In the tourism, social media is more and more close to tourism marketing. On the one hand, multimedia has attracted tourism researchers by generating interests in understanding the role of this type of social media content in transforming travel experiences (Tussyadiah and Fesenmaier, 2009). On the other hand, social media was not only more important than "web 1.0 enterprise sources" and "independent media search websites" for tourists, but also highlight the significant in search engine marketing (Jacobsen and Munar, 2012). Therefore, it's uncertain how social media impact the tourists' travel decision.

Communication rationale of user-generated content: Because hospitality and tourism products are intangible with an experiential nature, e-word of mouth has become important in travel planning (Kim *et al.*, 2011). With development of Internet, the traditional word of mouth, such as verbal communication, mass media, advertisements cannot satisfy tourists requirements, but user-generated content supported through social media is "a mixture of fact and opinion, impression and sentiment, founded and unfounded tidbits, experiences and even rumor" (Blackshaw, 2006).Accordingly, many research studies also focus on Use-Generated Content (UGC) effect, in particular, online reviews and travel blogs (Kwok and Yu, 2013).

There is a specific standards to explain UGC: (1) On the premise of Internet publishing, (2) Creativity content and (3) Created by non-professionals (Zhao *et al.*, 2012). Accordingly speaking, online review is also a common form of UGC and applied to tourism marketing widely. Past research has explained the communication process by "Transmission theory of ternary", that is say, both sides of communication and the content of comment is pivotal in purchase decision of potential customer (Hao, 2010).

Generally, professional degree, opinion leader and relationship of sender and receiver are main indexes to measure the reliability of information sources (Gilly *et al.*, 1998); the quality and quantity of comments, tendentiousness and strength would change purchase intention of different level (Park *et al.*, 2007); Moreover, receiver's professional and sensory ability and risk perception also take important positions in the communication process. In short, the major factors that influence the spread of UGC are comment volume, rating, valence, variance, dispersion and so on.

Online reviews and tourism reservation: Many research studies focus on online reviews' effect, especially in destination and hospital. For example, O'Connor's analysis showed hotel location, room size, staff and cleanliness were important attributes for positive online review and few hotels responded to traveler's online reviews. Pantelidis used a content analysis approach to analyze about 2500 online reviews of 300 restaurants in London and summarized the key word from these sentences (Pantelidis, 2010). In addition, the relationship between the sales volume and reviews are proved to be significant, including positive attribute which can greatly stimulate reservation intention of potential customer (Ye *et al.*, 2010).

However, the report mapping the travel mind-the influence of social media joint published by Conrad advertising and You Gov concluded that social media's influence on the travel plan was not greater than our imagination (ChinaFace, 2011).

Therefore, there are two key components about the research: (1) The online traveler (hotel potential customers), who is driven by a number of personal and trip-related needs, (2) The online tourism domain, which is composed of informational entities provided by a number of "players", including individual consumers through means of social media, this tourism domain has a distinct semantic structure determined by the hyper textual nature of the internet and the tourism industry structure (Zheng and Bing, 2011). Thus, this study attempts to investigate the consistency between online information's demand and supply and find the key factors to influence hotel reservation.

ANALYSIS AND HYPOTHESES

This exploratory research is designed to realize what is the most important aspects for hotel consumers and to prepare for the next research.

This study employed a data collection tool, "Locoy Spider", to obtain hotel experience related online reviews. The authors collected totally 3823 valid reviews on

Table 1: Hotel online reviews keyword statistic

Category	Retrieval keyword	Frequency	Percentage (%)
Price	Price, cost, sale, expenses, outlay etc.	1170	30.6
Service and facilities	Service, facilities, serve, decoration, furniture, WIFI, Internet, pool, bed, room size, cleanliness etc.	2981	78.0
Catering	Catering, food, drink, restaurant, beverage etc.	1643	43.0
Surroundings and transportation	Surroundings, transportation, location, scenery, environment, park etc.	3131	81.9
Entertainment	Swimming, spa, fitness, sauna, chess and card etc.	1174	30.7
Brand effect	Shangri-La. Well-known brand etc.	619	16.2

Table 2: Tendency of hotel online reviews

Tendency	Representation	Frequency	Percentage (%)
Positive	Fully satisfied without any negative comments	1078	28.2
Neutral	Overall is fine and make suggestions	2630	68.8
Negative	Fully dissatisfied without any affirmative comments	115	30.0
Total		3823	10.0

Table 3: Form of hotel online reviews

Form	Representation	Frequency	Percentage (%)
Brief words	Just title, grade and the content no more than 20 words	107	0.28
Specify describe	Detailed information about guest experience	3716	97.2
Total		3823	100

Guangzhou Shangri-La Hotel from 4 online travel booking website (agoda.com; daodao.com; xicheng.com; qunar.com) with content analysis method based on word frequency analysis to find high frequency region (Table 1) and these keywords represented the domain which likely to be cared about and discussed by hotel customer based on their experience.

Therefore, the authors suppose this region is exactly accord with the potential consumer's demand:

- **H1:** There is a consistency between the online comment content and the consumer's requirement and it has the positive correlation with the hotel reservation intention

Table 2 and 3, respectively show customers' attitude of overall evaluation and the form of content. As a result, most reviews neutrality described both strengths and weaknesses, at the same time, consumer prefers to detailed experiences more than just a grade or summary. In addition, compared with literature, we presume potential consumers will be influenced in different level.

So, we propose the following two hypotheses:

- **H2:** The tendentiousness of the online comment is positive relation to consumer's reservation intention. The positive attitude has greater influence than the negative
- **H3:** The online comment style is positive to the potential consumer's reservation intention, which means the more detailed and comprehensive reviews are, the more serious impact on potential consumers' decision-making will be

As above mentioned, the quantity of comments can change purchase intention of different level and reflect reliability of the communication. What's more, the professional of disseminator and the information resource also decide consumption decision. Many travel booking websites set "hotel-sleeper" or "inspector" to intensify professional. Thus we can put forward the new suppose as below:

- **H4:** The number of online reviews has positive correlation to the hotel reservation intention
- **H5:** The comment source is positive relation to consumer's reservation intention

METHODOLOGY

We constructed a research model based on contest analysis and recent researches, as shown in Fig. 1. The model and the measurable conceptual model of the online comment which affecting the consumer's hotel reservation intention were designed and built up as five observed variables. Then, the questionnaire is used to implement the survey according to the potential consumers. Finally, all the survey's data have been analyzed when they are put into the Structural Equation Model (SEM).

Survey instrument: A questionnaire was designed to collect data in this study. Based on the literature review and specific features of research setting, the questionnaire contained two parts, the first section used a seventeen item questionnaire with 7-point, Likert-type scales anchored by strongly disagree and strongly agree; the second section consisted of demographic questions.

Data collection: A total of 338 survey questionnaires, both online and paper survey, were distributed to consumers in InterContinental hotel Shenzhen and The Venice Hotel Shenzhen in random sampling method. The 304 were acceptable and effective rate was 89.9%, so it was acceptable.

Table 4: Respondent demographic

| Respondent profile	Classification	Frequency	Percentage
Gender	Male	179	58.9
	Female	125	41.1
Age	18-24	32	10.5
	25-30	73	24.0
	31-40	81	26.6
	41-50	97	32.0
	>50	21	6.9
Education	Secondary vocational (or below)	35	11.5
	College/University	222	73.0
	Postgraduate (or above)	47	15.5
Living requirement	Meeting and business	228	75.0
	Travel and vacation	76	25.0
Average daily Internet use time (h)	1 (or below)	19	6.3
	1-3	58	19.1
	3-6	132	43.4
	6 (or above)	95	31.3
Booking method	Hotel's official website	57	18.8
	Third party websites	247	81.2
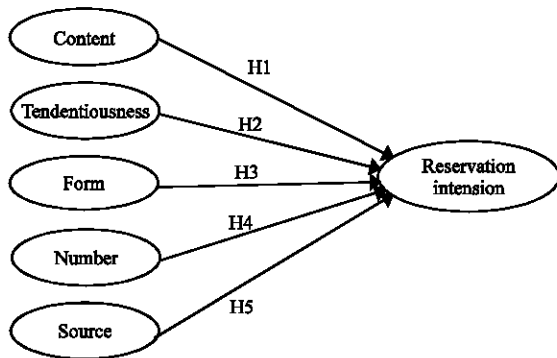
Fig. 1: Research model

RESULTS

Descriptive statistics: The demographic profile of the respondents is presented in Table 4. It shows that 58.9% of the responders are male. The majority of respondent are 31-50 years old (50.6%). The largest educational group have bachelor degree (73%) and most of them reside for business affairs (75%). In terms of Internet use time, approximately 74.7% of the respondents is more than 3 h day^{-1} and half of them have used the third party websites to book hotel.

The proposed research model was then evaluated by SEM. The analysis followed a two-step procedure: Firstly, the measurement model was composed to establish the validity and reliability of the theoretical constructs. Secondly, the structural model was used to conduct a path analysis and test our hypotheses.

Measurement model: The hypothesized model included 17 observed items measuring 6 latent constructs. Before analyzing the measurement model, the reliability and validity using SPSS was assessed by computing the Principal Axis Factoring with Varimax rotations. Hair pointed out Cronbach's α value exceed 0.7 (Nassuora, 2013), then data could reliable.

Moreover, the Composite Reliability (CR) and Average Variance Extracted (AVE) measures to assess construct reliability. CR value was estimated to evaluate the internal consistency of the construct indicators, whereas AVE value reflected the overall amount of variance in the indicators due to the latent construct (Mallat *et al.*, 2009). All items measured exceed the recommended minimum values, as shown in Table 5. In the light of the results, reliability and validity of the constructs in the model were deemed to be satisfactory.

Structural model: This study tested the hypotheses of our research model by SEM. The first, the overall relatively goodness of fit was evaluated with different criteria. The authors applied six indices, as shown in Table 6: Chi-square/degrees-of-freedom ($\lambda 2$ df^{-1}), Goodness of Fit Index (GFI), Root Mean Square Error of Approximation (RMSEA), adjusted Goodness of Fit Index (AGFI) and Comparative Fit Index (CFI). Majority of them meet the criteria, but X2 df^{-1} and AGFI cannot be acceptable (Table 6).

Subsequently, the authors want to improve the fitting degree through increasing or decreasing computable paths, based on Modification Index (MI) and combine with research model and the actual situation. On the basis of one at a time, the authors modified the research model and found relationship between comment number and source. Meanwhile, X2 df^{-1} was down to 4.657; GFI valued up to 0.922; RMSEA valued down to 0.073; AGF valued up to 0.903. These indicated that our model fit was acceptable.

Table 5: Construct reliability measures

Construct	Indicators loading	Item R^2 (>0.5)	Measurement error	Cronbach's α (>0.7)	CR (>0.7)	AVE (>0.5)
Content	0.61	0.36	0.64	0.81	0.85	0.55
	0.78	0.61	0.39			
	0.83	0.69	0.31			
	0.74	0.57	0.43			
	0.72	0.52	0.48			
Tendentiousness	0.81	0.66	0.34	0.76	0.83	0.63
	0.84	0.71	0.29			
	0.73	0.53	0.47			
Form	0.63	0.39	0.61	0.87	0.82	0.61
	0.83	0.69	0.31			
	0.87	0.76	0.24			
Number	0.83	0.69	0.31	0.83	0.79	0.65
	0.78	0.61	0.39			
Source	0.65	0.42	0.58	0.74	0.68	0.52
	0.78	0.61	0.39			
Reservation	0.75	0.56	0.44	0.79	0.82	0.70
	0.91	0.83	0.17			

Table 6: Chi-square results and goodness of fit indices for structural model

| Indicators | X^2 | df | Absolutely indicator | | | Relatively indicator | | |
			X^2 df^{-1}	GFI	RMSEA	AGFI	PGFI	CFI
Result	596.227	114	5.230	0.915	0.076	0.894	0.680	0.933
Decision criteria	-	-	1-3	>0.9	<0.08	>0.9	>0.5	>0.9

Table 7: Path coefficient result

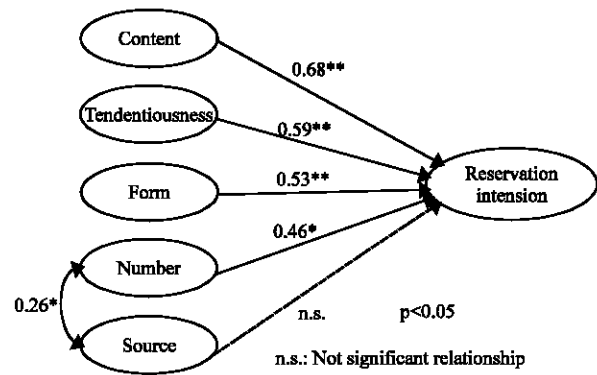| Path relationship	C.R	P	Hypotheses	
Intention~content	7.52	***	H1	Acceptable
Intention~tendentiousness	4.37	***	H2	Acceptable
Intention~number	10.46	***	H3	Acceptable
Intention~form	5.68	***	H4	Acceptable
Intention~source	1.48	0.139	H5	Unacceptable

Fig. 2: Result of structural modeling analysis

Given the acceptable fit of the model, the estimated path coefficients of the structural model were then studied to evaluate the hypotheses. Content and Tendentiousness had a direct positive effect on behavior intention with path coefficient of 0.68 and 0.59, which supported the hypothesis H1 and H2. Form and number had a direct positive relationship to behavior intention with path coefficients of 0.53 and 0.46. This provided support for hypotheses H3, H4. But there seems no significant relationship between the comment source and reservation intention. The critical ratio was less-than 1.96,

as shown in Table 7. Thus, the data provided support for most of hypotheses, but H5 was not acceptable results are shown in Fig. 2.

DISCUSSION

First, this study provides a preliminary understanding of the relationship between travel information sender and receiver. On the one hand, consumer gives overall evaluation about hotel including criticisms and suggestions according to experience during their stay. We have obtained the favorite topic for consumer by abstracting key word from their comments, which represents the supply of information. On the other hand, potential consumers have the demand to realize more about hotel's situation when they have reservation intention. Our findings suggest that there is significant relationship between the information of supply and demand.

Second, this study has examined hotel consumer reservation intention influenced by various kinds of factors and presented 5 hypotheses to form a measureable model. It's worth nothing that a consistency between the online comment content and the consumer's requirement and it has the most influence and positive correlation with the hotel reservation intention. Using text analysis method to refine keyword, we have found the price, service and facilities, catering surroundings and transportation, entertainment and brand effect attract consumers and potential consumers. Among these indicators, transport and service are more contribute to

content and price has less impact. This article supplements previous research that only cares about the quality of content with regarding every topic of comment has independent influence to reservation intention.

Therefore, we have the conclusion that the tendentiousness of the online comment has positive relation to consumer's reservation intention. This implies that positive attitude has greater influence than negative and which is supported by Charlett, Hammond (East *et al.*, 2008). However, this is contrasted with Li (2008), who thinks the negative comments have more influence, but we can find it from result.

As shown in this study, the number of online reviews has positive correlation to the hotel reservation intention. This is in line with the previous findings of Park *et al.* (2007), who has found most potential consumers always assess the quality of a hotel by the number of word-of-mouth, that is online review from other consumers. As presented in our findings, the online comment style are positive to the potential consumer's reservation intention, which means the more detailed and comprehensive reviews are, the more serious impact the potential consumers decision-making will be.

However, the comment source has no significant relationship with consumer's reservation intention. Because most Chinese consumers prefer to book from the third party travel website, which is commented from non-professional visitors. Thus, this is in contrasted with Gilly *et al.* (1998) and a limitation of this study.

CONCLUSION

The article aimed to identify some factors that influenced the hotel reservation intention based on social media and its user general content: Online review. The author selected the hotel online reviews as the study object and focused on its influence on the consumer's reservation intention. Based on the text analysis, it confirmed the consumer's main interested key words such as "service", "entertainment" and "transportation". Then, the authors presented five hypotheses and a measurable conceptual model by using the questionnaire to implement the survey, all data had been analyzed with the Structural Equation Model (SEM). Finally, the study suggested the online comment content, tendentiousness, number, style were positive to the potential consumer's reservation intention, which had no significant relationship with comment source.

In short, this study puts forward a reference case for the tourism company and its websites on improving online reservation service quality to meet customer's satisfaction.

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