การวิเคราะห์ความสำคัญและการดำเนินการของคุณภาพข้อมูลดิจิตอลของแหล่งท่องเที่ยวในมุมมองนักท่องเที่ยวต่างชาติ

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แก้ไข: 23 กันยายน 2562
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บทคัดย่อ

ข้อมูลดิจิตอลเป็นแหล่งข้อมูลที่นักท่องเที่ยวใช้ในการรวบรวมข้อมูลเกี่ยวกับสถานที่ท่องเที่ยว ปัจจุบันตลาดการท่องเที่ยวมีการแข่งขันสูงคุณภาพของข้อมูลที่นำเสนอต่อนักท่องเที่ยวเป็นสิ่งจำเป็นการทำความเข้าใจความสำคัญและความพึงพอใจของคุณภาพข้อมูลที่นำเสนอในมุมมองของนักท่องเที่ยวเป็นสิ่งจำเป็น ดังนั้นวัตถุประสงค์ของการศึกษานี้คือ 1) เพื่อระบุจุดแข็งและจุดอ่อนของคุณภาพข้อมูลดิจิทัล

ของประเทศไทยโดยใช้วิธีการวิเคราะห์ความสำคัญและผลการดำเนินงาน (Importanceperformance analysis: IPA)2) เพื่อตรวจสอบช่องว่างระหว่างคุณภาพและประสิทธิภาพของข้อมูลดิจิทัล

จากคุณลักษณะทั้งหมด 17 รายการมี 8 รายการที่อยู่ในหมวดที่ 1 “ทำดีอยู่แล้วทำดีต่อไป” ไม่มีรายการใดอยู่ในหมวดที่ 2 “ต้องแก้ไขด่วน” มี 8 คุณลักษณะ ในหมวดที่ 3 “เป็นปัญหารองยังรอได้” และมีเพียง 1รายการในหมวดที่ 4 “เป็นประเด็นรองแต่ทำได้ดี” การศึกษาครั้งนี้มีประโยชน์เพราะสามารถระบุประสิทธิภาพและความพึงพอใจในมุมมองนักท่องเที่ยวต่อข้อมูลดิจิทัลของประเทศไทยและสามาถใช้ผลการศึกษานี้ในการปรับปรุงพัฒนาคุณภาพของข้อมูลดิจิตอลให้ดีขึ้น

คำสำคัญ: คุณภาพข้อมูลดิจิตอล; การวิเคราะห์ความสำคัญและผลการดำเนินงาน (IPA); การวิเคราะห์ช่องว่าง; การท่องเที่ยว

Importance-performance analysis (IPA) of Digital Information Quality: The international tourists' perspective

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Received: February 26, 2019
Revised: September 23, 2019
Accepted: October 28, 2019

Abstract

Nowadays digital information is the most common source of information used for tourists to gather information about destination. In a highly competitive tourism market, the quality of information provided for tourists is essential. understanding the importance and satisfaction of information quality provided by destination in the tourists' point of view is necessary. Therefore, the objective of this study are 1) to identify the

strengths and weaknesses of digital information quality of Thailand by importance-performance analysis (IPA) 2) to investigate the gap between ‘importance digital information quality and performance. From total 17 attributes, 8 of them are located in Quadrant 1 “Keep up the Good Work”. There is no attribute located in Quadrant 2 “Concentrate Here. There are 8 attributes in Quadrant 3 “Low Priority”, and only 1 attribute in Quadrant 4“Possible Overkill”. This study is beneficial because the performance and satisfaction of digital information quality of Thailand can be identified for further improvement.

Keywords: Digital Information Quality; Importance-performance analysis (IPA); Gap analysis; Tourism

Introduction

The intangibility of tourism industry character makes it different from other industries in the world. Since tourism mainly sells service rather than goods, there is no trial or tester for tourism products which makes it difficult to evaluate the quality. Consumers can only experience it during the purchase of tourism products. Therefore, tourism products take more involvement and also considered to have a higher perceived risk rather than other industries (Heung, 2003).

To reduce the risk of purchasing, consumer relies mainly on information they found (Grewal et al, 1994). Therefore, information plays an important role as a reassurance in experiential products (Varlander, 2007). However as Poon and Joseph (2001) stated, experiential products such as those in travel and tourism industries are difficult to describe using a standard description.

In term of information source, the advancement of technology gives more options to the consumers. Over the time, some literatures showed that digital information is always preferred by the consumers to find the information about the destination they will visit (Bell, 2016; Gronflaten, 2005; PhoCus Wright, 2012). Some previous literatures then tried to measures the quality of information and develop a framework in this regard (e.g. Wang and Strong, 1996; DeLone and McLean, 2003; Lee et al., 2002).

Even though the framework for information quality has been developed and there are numerous study about information and communication technology (ICT) (i.e. Chung, Lee, Lee & Koo, 2015; Leung, Law, Van Hoof, & Buhalis, 2013; No & Kim, 2015; Xiang, Wang, O' Leasry & Fesenmaier, 2014), however the importance level of

digital information quality has not yet been found. Meanwhile, digital information produced by other users can be main information for other prospective customer (Marchiori and Cantoni, 2015) and therefore will influence tourists on their trip. Thus, the purpose of this study is to investigate the importance and performance level of digital information quality. Therefore, the objectives of this study are 1) to identify the strengths and weaknesses of digital information quality of Thailand by importance-performance analysis (IPA) 2) to investigate the gap between 'importance digital information quality and performance. This study is beneficial because the performance and satisfaction of digital information quality of Thailand can be identified for further improvement.

Literature Review

1. Digital Information Quality

The intangible characteristic of tourism makes it relies on information to ensure the decision making before purchase. The ease offered by technology to find information has great impact in how people gather information. Previously most people will find information about the destination in travel book or by go to travel agent. However, nowadays digital information is the most common source of information used for tourists to gather information about destination (Bell, 2016; Gronflaten, 2005; PhoCus Wright, 2012).

The quality of information provided which tourists found are different from one source to another. There are many studies about the framework of information quality such as DeLone and McLean (2003) which measures the quality of information in context of e-commerce. Wang and Strong (1996) designed a conceptual framework

of information quality with the purpose of seeing it from consumers' point of view. The conceptual framework of information quality (IQ) of Wang and Strong (1996) is differentiated into four categories of following qualities: intrinsic quality, contextual quality, representational quality, and accessibility quality.

The intrinsic IQ means that the information has quality in its own right. Contextual IQ implies the quality that must be within the information to make sure customer satisfaction with the information presented. Representational IQ and accessibility IQ focus on the importance that the information presented must be easy to understand and interpret and also has a concise and consistent representation, also it must be accessible and secure for the user.

Intrinsic quality dimension attributes are reputation, believability, accuracy and objectivity. Value added, timeliness, relevancy, completeness, and appropriate amount of data are attributes of contextual quality dimension. Interpretability, ease of understanding, representational consistency, and concise representation are attributes of representative quality dimension. Last, accessibility quality dimension attributes are accessibility and access security.

2. Importance Performance Analysis (IPA) Framework

The IPA mapping has been widely used to analyze relationship between product/service attributes to customer satisfaction. It was first introduced by Martilla and James (1977) who suggested to presents research result regarding to customer perception of the importance and performance attributes in four quadrants and set the means of the scale as the cross-points. In tourism studies, this method is usually used to analyze performance of destination

attributes in terms of tourism service (Deng, 2007), concept of tourist destination (Sorensson and Friedrichs, 2013; Boley et al., 2017), destination competitiveness (Djeri et al., 2018; Waldearegay, 2017), destination attributes (Deng and Pierskalla, 2018). Those studies identified strengths and weaknesses of the attributes competitiveness which can be utilize for tourism developer and industry player for a better strategic plan.

The cross-points of IPA mapping used by researchers (Daphet, 2016; Djeri et al., 2018; Huang et al., 2013; Oh, 2001; Yang et al., 2011) is to set the empirical means obtained from the data as cross-points. Therefore, the attributes will fall into one of the quadrants based on their position in the average score. Each quadrant of IPA plot has different strategy that will help the industry players or policy maker to create a better strategy and to know the necessary action that needed to take to increase the customers' satisfaction. Therefore, by applying IPA mapping to digital information quality then the result will help how to provide better digital information for tourist to experience the trip better.

Though IPA is popular in tourism and hospitality literature, but the application to investigate relationship between digital information quality performance to tourist satisfaction has been very limited. Study of Gros (2012) found that information in social media can influence consumer behavior into recognize a need to purchase and their decision making. Meslat (2018) also stated that trust and reliability are also factors in social media that influence consumer purchase decision. These studies show that information in social media influences consumer behavior, however performance of the digital information quality is unknown. Thus, in recognition of limited

application of IPA to digital information quality, this study attempt to apply IPA into digital information quality.

Figure 1 Standard IPA Plot

Quadrant 2 **"Concentrate Here"** High Importance Low Performance	Quadrant 1 **"Keep up the Good Work"** High Importance High Performance
Quadrant 3 **"Low Priority"** Low Importance Low Performance	Quadrant 4 **"Possible Overkill"** Low Importance High Performance

Methodology

A questionnaire survey was developed based on comprehensive review of digital information quality literature review. The importance and satisfaction of 17 digital information quality attributes was used. The data collection was conducted at Suvarnabhumi Airport International Departure Terminal in October 2018. The sampling method used in the data collection was convenience sampling. Before filling the questionnaire, some screening questions were asked to ensure they have finished the trip in Thailand and have searched information on internet about their trip. There are 450 participants completed the survey.

Descriptive statistics and paired sample t-test were used to analyzed data. Mean value was used to find the gap between level

of importance and satisfaction level of respondents. To identify the strengths and weaknesses for digital information quality attributes, importance-performance-analysis were conducted. For putting information quality attributes on IPA matrix, the satisfaction and importance mean of each attribute were used as the x and y coordinate values, respectively.

Results

1. Descriptive profile of respondents

Demographic profile of respondents visiting Thailand are analyzed. From total 450 participants there are 260 males (57.8%) and 190 females (42.2%). Mostly, the participants are from age group of 21-30 (51.8%) of the population followed by age group of 31-40 which is 29.8% and the lowest is from age group above 60 which is only 0.9% of total population. 62.9% of the participants are single and 34.9% are married, 2.2% are stating they are divorced. The educational level of the participants mostly is bachelor's degree which is 39.3% followed by master degree 31.8% and high school 16.9%. Only 1.1% of the participants had their education below high school.

Table 1 Paired Sample t-tests and Gap Analysis between Satisfaction and Importance Attributes

Digital Info. Qty	Import. Mean	Satisf. Mean	Gap	t-value	Sig
Accurate	4.35	3.96	-0.39	9.01	.00
Objectivity	3.89	3.64	-0.26	5.30	.00

Digital Info. Qty	Import. Mean	Satisf. Mean	Gap	t-value	Sig
Reputation of the source	3.97	3.78	-0.19	4.15	.00
Believability	4.23	3.79	-0.44	9.83	.00
Up to date	4.26	3.78	-0.48	9.16	.00
Relevancy	4.19	3.83	-0.36	7.55	.00
Value added	3.89	3.62	-0.27	5.71	.00
Appropriate amount of data	3.82	3.61	-0.21	4.18	.00
Variety of information sources	3.84	3.69	-0.15	3.09	.00
Completeness	3.92	3.66	-0.26	5.51	.00
Ease of understanding	4.30	3.92	-0.38	8.20	.00
Interpretable	3.91	3.73	-0.18	3.93	.00
Format used are the same	3.46	3.61	0.16	-2.84	.00
Well presented	4.16	3.85	-0.31	2.58	.00
Accessible	4.18	3.83	-0.35	8.29	.00
Access security	3.90	3.70	-0.19	2.80	.00
Ease of operation	4.21	3.82	-0.40	3.35	.00

2. The mean values of attribute importance and attribute satisfaction

Table 1 shows the mean value of importance and satisfaction attributes. The result indicated that the most important digital information quality for tourists are accurate (4.35), followed by ease to understand (4.30), and up to date (4.26). The top 3 least important are format (3.46), appropriate amount of information (3.82) and

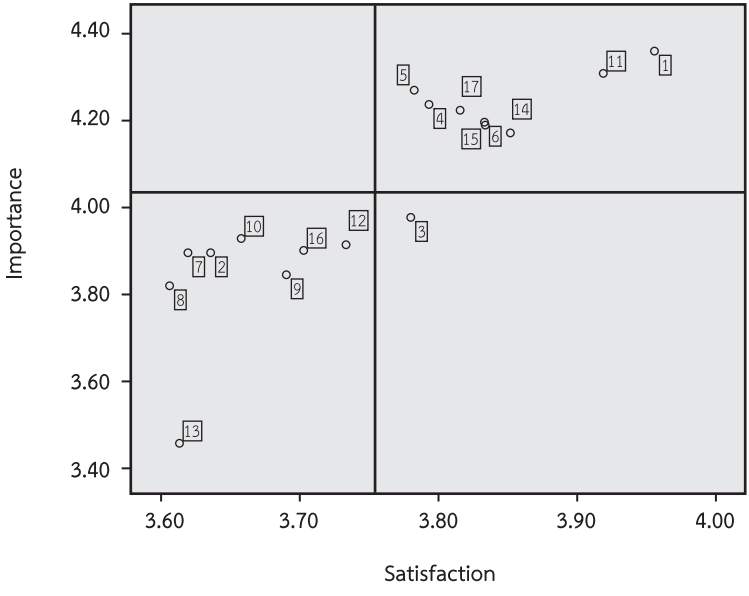
variety of information sources (3.84).

The digital information quality which tourists most satisfied are accuracy (3.96), followed by ease to understand (3.92) and well presented (3.85). The top 3 qualities which tourists least satisfied are appropriate amount of information (3.61), followed by format (3.61) and value added (3.62). Interestingly, qualities such as appropriate amount of information and format which tourist rate as the least satisfied are also the same qualities tourist rated as the least important.

3. Gap analysis

Paired sample t-test shows that there are significant different among importance attributes and satisfaction attributes. All of importance attributes mean are higher than satisfaction attributes except attributes of "Information are presented in same format" which is part of representative dimension. In addition, the result found that there are still gaps on accuracy attributes which have the highest satisfaction (3.96) while the importance level is 4.35 (table 1).

Figure 2 IPA results of digital information quality perception of Thailand



By employing the IPA to analyze the importance of attributes and its performance as shown in the figure 2, the results revealed that there were 8 attributes out of 17 attributes are located in Quadrant 1 “Keep up the Good Work”. This quadrant represents that it had high importance and well performance perceived by respondents. In this quadrant, all dimensions (intrinsic, contextual, representative, accessibility) of digital quality are equally have 2 attributes. The attributes from intrinsic dimension are “Accurate” and “Believability”. From contextual dimension are “Up to date” and “Relevancy”. From representative dimension are “Ease of understanding” and “Well presented”. From accessible dimension are “Accessible, retrievable, available” and “Ease of operation”.

There is no attribute located in Quadrant 2 “Concentrate Here”. The attribute appears in this quadrant represent that they are underperforming. Therefore, it should be urgently improved since it represents weakness and also, such a threat to its competitiveness. However, the result shows that there is no attribute from digital information quality that appears in this quadrant. Thus, there is no quality of digital information of Thailand which underperformed and threaten its competitiveness.

There are 8 attributes in Quadrant 3 “Low Priority”. This quadrant represents perception of tourist who thinks that the attributes of digital information quality had low importance and low performance. They are: 1 attribute from intrinsic quality (“Objectivity”); 4 attributes from contextual quality (“Value added”, “Appropriate amount of data”, “Variety of information sources”, “Completeness”); 2 attributes from representative quality (“interpretable”, “Format used are the same”); and 1 attribute from accessibility quality (“Access security”).

In Quadrant 4 “Possible Overkill”, there is only 1 attribute “Reputation of the source” which comes from intrinsic dimensions of digital information quality. This quadrant represents that attribute which appears here has low importance for tourist, yet performing well. This indicates that there is a possible waste that are used inefficiently which could be reallocated in other else (Dwyer, et al 2012).

Conclusion and Discussion

This research investigates the performance of digital information quality tourist use to search about Thailand. Since information,

mostly digital, is one of the key factors in influencing to tourist on decision making (Sadovykh et al., 2015) before visit a destination, it is very important to examine the quality regarding the information they found. By this information, tourism industry players and authorities will be able to develop strategy to increase the satisfaction of tourists by providing information as per criteria.

The findings show that the top 5 important attributes of digital information quality were accuracy, ease of understanding, up to date, believability and ease of operation. This finding is similar with the study of Fotis et al. (2012) which stated that people choose to use social media during the holiday planning process because it is perceived more trustworthy than official tourism websites, travel agents, and media advertising. Bizirgianniand Dionysopoulou (2013) study also concluded that since 89% of participants are using mobile phone to receiving information during their trip because of the ease of use offered by this tool. Even though these attributes are falling into quadrant 1 “Keep up the Good Work” and there is no attribute appears in quadrant 2, yet the satisfaction level is still lower than the importance level.

Therefore, to increase satisfaction of accuracy and believability could be by adding more pictures and videos to the information. Other thing is to let people provide their own experience regarding the information provided. This way could also increase the timeliness or up-to-date of the information since many people will keep adding the information from day to day. To increase ease of understanding could be providing translation tool, so more people will understand the information in their own language which will make it easier for them. As for the ease of operation attribute could be by let people

download the information so they can use it online and offline.

The top 5 satisfaction attributes were accuracy, ease of understanding, well presented/well organized, relevancy and accessible. Luckily, the top 5 important attributes were shown in Quadrant 1 "Keep up the Good Work" which means that it has been performed well. However, a gap between importance and satisfaction still remains where all of the importance score of the attributes are higher than satisfaction. This means even though based on IPA analysis they are good, but it still needs to improve, so the level satisfaction might increase. Therefore, these aspects need attention of the tourism industry player and tourism developer when posting online information to minimize the negative impact which resulted in dissatisfaction. The tourism industry player and tourism developer can add more budget in order to make the customization and the website more comfortable and convenient to use both in pc and mobile phone so it might increase tourists' satisfaction and reduce the gap.

The application of IPA to digital information quality can be used by industry player and developer to create competitive strategies at how to provide digital information for tourist. Furthermore, the result also can be used to identify strengths and weaknesses of digital information quality of Thailand, so it improves and tourists' satisfaction might increase.

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