INFORMATION QUALITY, USEFULNESS AND INFORMATION SATISFACTION IN ISLAMIC E-TOURISM WEBSITES

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ABSTRACT

In line with the advancement of internet technology, e-Tourism has become an important platform for promotional, marketing and product development of tourism products and services. It provides a way to perform relevant transactions as well as mechanism to interact with potential tourists. E-Tourism has become popular among Muslim tourists since they are also referring to the websites to search for travelling information. As a Muslim, the travelling information that they seek should comply with the need of the religion such as Halal food, prayer time, religious places etc. However it is still difficult to find a specific and comprehensive website that provide necessary information to the Muslim tourists due to the lacking in the knowledge about information quality. Information quality is an important element in e-commerce which is one of the Information System (IS) success factors dimension based on IS success Model introduced by [1]. Companies that sell products or services online must ensure that the information provided on their website has certain criteria of information quality which may influence the purchasing decision of the customers. 138 respondents amongst Muslim tourists participated in the survey that was conducted both online and offline, which the data was then analyzed using SPSS software. This paper will discuss, (i) The information that is expected by Muslim tourists available on Islamic e-Tourism websites; and (ii) The relationship between information quality with usefulness and information satisfaction. The result has proven that Islamic content, timeliness, legitimacy, relevancy, reliability, Islamic design, consistency, accessibility and security are significant in predicting usefulness whereas for information satisfaction, only relevancy, Islamic design and security and privacy are significant. This study will benefit Islamic e-Tourism businesses, website owners, developers and designers by providing a guideline on the expected information that should be available on the website that serve Muslim tourists and how to make sure that the website fulfill the requirements needed by them.

Keywords: Information Quality, E-Tourism, Islamic E-Tourism, E-Tourism Website,

1. INTRODUCTION

Tourism industry has moved to the new era where tourists are depending more on information posted online rather than traditional travel agents. [2] have stated in their paper that one of the information that is most visited on the internet is tourism information. Many websites focusing on providing travel information are developed and maintained so that they serve the people who are looking for travel-related information worldwide. In e-commerce, it is known as e-Tourism. [3] defined e-Tourism as transactions that are made online, including flight, accommodation and room reservation that require information research.

Information Quality is a very essential aspect in e-Tourism. According to [4], one of the critical success factors of online business is information quality. Some e-Tourism websites are being developed to serve specific groups of people with specific information requirements. One of the groups is Muslim tourists who seek information that suits their culture and religion. A study conducted by [5] reported that the internet usage among Muslims were growing more than 100 percent from 2000 to 2005 and the numbers keep...
increasing as reported in [6] which stated that the internet usage numbers for Middle Eastern countries where majority Muslims stayed from the year 2000 to 2014 have shown a growth rate of up to 3304 percent.

In order to meet the requirements of the Muslim tourists in terms of quality of the information posted on the website, it is very important for the website developers to have the knowledge on the expectation of the tourists themselves. Information quality, on the other hand, should be measured from different perspectives in order to know whether that aspect is critical for the website’s usefulness and Muslim users’ satisfaction.

Thus, Islamic e-Tourism can be defined as tourism websites that provide tourism related information specifically for Muslim tourists such as Muslim friendly travelling packages, travel information to the religious locations such as Makkah and Madinah and other historical places related to Islam. The website must provide information expected by Muslim tourists for example Muslims’ required facilities in non-Muslim countries such as Halal food, Muslim friendly accommodation, prayer time etc.

The literature review section of this paper will explore Islamic e-Tourism concept and information quality with all its dimensions, usefulness and information satisfaction. It will be followed by the elaboration of the research methodology and the last part will explain the results and discussions from the analysis which will highlight the outcomes of the research and its contributions to the area.

2. LITERATURE REVIEW

2.1 Tourism and Islamic Tourism

World Tourism Organization defines tourism as “Tourism is a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes” [7]. Tourism activities include marketing, promotion, creating tourism products and services that meet tourists expectations as well as preparing and maintaining the required facilities or infrastructure.

Islamic tourism on the other hand related to the tourism activities related to Muslims. There are a lot of Qur’anic verses mentioning travelling in Islam, which prove that Islam encourages Muslims to travel in order to achieve physical, social and spiritual goals [8]. [9] outlines that Travelling is also considered as Sunnah or the way of life practiced by the Prophet Muhammad S.A.W [10]. Nowadays, Muslims travel from one place to another for various reasons such as holidays, performing ‘ibadah (worship), to seek education, career growth, etc. The most important in Islamic tourism is the intention of the tourists to travel is not contrary with Islamic teachings and laws [11]. Islamic Tourism Centre (ITC), an agency under Ministry of Tourism Malaysia defined Islamic Tourism as:

“any activity, event or experience undertaken in a state of travel that is in accordance of Islam” [12].

It can be concluded that the differences between traditional tourism and Islamic tourism are: (i) the Islamic tourism related activities are related to Muslim communities; (ii) the intention to travel must not contrary with Islamic teachings and laws; (iii) tourism business activities such as marketing, product development, tourism services, tourism infrastructure and facilities development must in line with Islamic teachings.

2.2 Islamic e-Tourism

To deliver required information that is expected by the Islamic tourism tourists or tourists in the era where people are highly dependent on the information technology, tourism websites are the most popular mechanism. Thus, Islamic e-Tourism is using websites as platform to provide Islamic tourism information In order to plan for their travelling, they have to gather and get all the information, where one of the sources is the tourism web pages, i.e. e-Tourism pages.

Table-1 below shows the examples of Islamic e-Tourism websites that currently active in providing Islamic tourism information.

<table>
<thead>
<tr>
<th>Website URL</th>
<th>Information on the website</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.itc.gov.my">www.itc.gov.my</a></td>
<td>Introducing Malaysia as a Muslim friendly country and highlights Muslim related information such as mosques in Malaysia,</td>
</tr>
</tbody>
</table>
Islamic tour packages, Islamic museum in Malaysia as well as information for Islamic tourism businesses.

www.halalbooking.com Provides information and booking facilities for the Muslim tourists that need accommodation that fulfil the following criteria:

a. Does not serve alcohol.

b. Separates swimming pool and facilities for man and woman.

c. Serve only Halal food.

www.islamichina.com Provides information related to Islamic tourism such as Muslim tour packages, Halal restaurants in china, mosques in China, prayer time etc.

www.andalusia2u.com Provides information on Hajj and Umrah package (travel to worship the almighty) and Muslim tour packages.

2.3 Information Quality

Information is a communication of knowledge which is organized for a purpose, presented in a form that gives it meaning and can lead to increase in understanding any uncertainty. Information can be obtained through various means such as investigation, observation, instruction, reading as well as surfing the Internet. Nowadays, with the rapid growth of the Internet, more people are relying on online information as their reference due to its benefits of convenience in obtaining the necessary information.

In e-Tourism, information is the essential aspect of tourism products where it influences travelling-related decisions [2]. Even though online information offers people great convenience as well as a variety of information, they must have great quality of information especially in Islamic e-Tourism websites. This is because the Islamic e-Tourism websites act as a platform and mechanism to guide Muslim tourists to seek information related to travel around the world without any doubt. The quality of information received from the website depends on the accuracy, relevancy, security, up-to-date and trustworthiness, which come from the right sources.

Quality refers to the value of the content delivered to users. It can be considered to have a quality of information which users are satisfied and confident to use without any hesitation. [13] has mentioned that quality in a product or service is not what the supplier puts in. It is what the customer gets out and is willing to pay for. [14] on the other hand, explained that the quality reflects the intrinsic value of an information resource. Information that is unreliable or impossible to understand is worthless, even if it may otherwise be highly relevant or important.

In the context of information quality, several studies and researchers have emphasized the importance of providing information quality to users. According to [1] [15] information quality is a measure of value perceived by a customer of the output produced by a website. Information characteristics, such as being up-to-date, accurate, useful and complete, together with its presentation, have been viewed as important determinants of perceived information quality.

[16] in their study among virtual community users, used reliability, objectivity, value-added, timeliness, richness and format as the dimensions of information quality. Meanwhile, [17] concentrated on three information quality dimensions derived from the rights. With correct information, they meant the right information in the right condition. With timely information, they meant information received at the right time, to the right receiver and to the right place. Complete information is related to the right quantity. Meanwhile, in Islamic perspective, providing the right sources will increase the belief among users to use the information and meets their expectation.

According to [18], a website with high quality is a website with very good structure, interactive, availability of search engine with quick option and
However, in the Islamic perspective, for e-Tourism website, the measurement of high quality information depends on the website’s presentation about the accuracy and trustworthiness about the contents of Islamic tourism that perceives usefulness and ease of use. Thus, the quality of a website is often determined by the quality of the information that is used.

In a review about the concept of information quality, [19] in their study have emphasized that information has little value if it has poor reliability and validity. They further discussed accuracy, timeliness and proper formatting as important qualities of information, but without defining the dimensions [20]. Several studies indicate that poor, incomplete, late or missing information is perceived as a most serious quality problem [21], [22], [23]. However, quality of information has been suggested to be one of the most significant factors that explain use of information. By having all of the trustworthiness sources, users possibly can get accurate information before they make a decision which should get them to have a quality outcome. Based on the study conducted by [24], information quality was found to be the most significant variable that affects tourists’ confirmation.

Thus, this research defines information quality based on four different dimensions, i.e.; (i) Content; (ii) Format; (iii) Accessibility and; (iv) Security and Privacy.

2.3.1 Content

The content of the website includes Islamic content, accuracy, timeliness, legitimacy, relevancy and reliability of the information on the website.

[25] discussed in their papers that religion has significant influence towards customer behaviour. [26] studied how trust is important in the web environment where the audience of the information has specific characteristics in terms of religion, culture and lifestyle, specifically Muslim web users. It is therefore very crucial to ensure the legitimacy of the information on the website since the website deals with very sensitive information context. A study that was conducted in U.S tourism websites presented consistent findings where the researchers found that presenting information for specific users will be able to build trust between the website and the users [2], [18] stated that Islamic website contents should not contradict Islamic teachings, values and the principles of Islam or can be defined as legitimacy of the website content. Relevancy, on the other hand, is defined as getting the trust from the customers that the content of the website are authoritative, accurate, useful and current. Table-2 below summarizes the content dimension in this research.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Islamic content</td>
<td>Extent to which Islamic website contents provides information needed by Muslim tourists.</td>
<td>[18]</td>
</tr>
<tr>
<td>Accuracy</td>
<td>Extent to which information are correct, accurate and valid</td>
<td>[27], [28], [29]</td>
</tr>
<tr>
<td>Timeliness</td>
<td>Extent to which information is sufficiently up-to-date</td>
<td>[30], [31], [32]</td>
</tr>
<tr>
<td>Legitimacy</td>
<td>The extent to which the Islamic website’s content did not contradict Islamic faith, moral values, and pillars.</td>
<td>[18]</td>
</tr>
<tr>
<td>Relevancy</td>
<td>Extent to which information is relevant, appropriate and useful</td>
<td>[27],[33], [32], [18]</td>
</tr>
<tr>
<td>Reliability</td>
<td>Extent to which information is regarded as true, trustworthy and credible</td>
<td>[34], [16], [18]</td>
</tr>
</tbody>
</table>

2.3.2 Format

Format of the Islamic e-Tourism website refers to the Islamic design and consistency. [2] have mentioned that website attractiveness has a big impact on the tourists’ choices of the tourism products and services that they purchase.
According to [25], religious symbols or ques that represent specific religions will impact product evaluation by customers, which includes attitude towards the brand, the attitude towards the products as well as customers’ purchase intention. Putting Islamic elements in advertisements such as Qur’anic verses and Islamic symbols produce a favourable feeling among Muslims towards the products. In the online environment or website, web developers should consider adding Islamic elements and symbols that favour and are consistent with the personality of Muslim customers, which could finally encourage them to visit and make purchasing decision towards the products or services offered.

Islamic identity or anything that symbolizes Islam or Islamic traits, such as content, photos, sounds etc. that represent Islam as well as usability traits are also three important Islamic user interface elements proposed by [26] in their paper. Thus, it is very important for web developers to consider Islamic relevant format for the information in Islamic e-Tourism websites.

[35] named the elements in a website that become the interface between customers and sellers as social presence. It includes the pictures, text, interface elements that encourage interactions in the website. Their studies on two different cultures, i.e. Canadian and Chinese, found that the increase of social presence embedded in the website format will have a positive impact on perceived usefulness. [36], on the other hand, found that user interface quality is an important determinant of customer satisfaction. Table-3 below summarizes the Format dimension and other research that use the same variables in format dimension.

### 2.3.3 Accessibility

Accessibility is another important factor in information quality which can be defined as the extent to which information is accessible and retrievable to the user. [39] in their paper discussed that the usefulness of a website depends on the functionality and usability. Website functionality refers to the content which includes information quality, website flexibility and accessibility. Accessibility is defined as how fast and easy the website users are able to reach and access the information posted on the website. [40] include accessibility as an Information Quality dimension in their paper which discussed accessibility as how a computer system is able to deliver information that is easy to interpret, understandable, presented concisely and consistently. Accessibility dimension has been used in [37] to explain the extent to which information is available and easily retrievable.

### 2.3.4 Security

[4] defined security as the ability to protect information while it is being transmitted and stored. Security of information include whether the information provided by the website users are well protected from unauthorized access, will not be revealed to a third party without consent, and the protection towards online payments made by the customers upon completing a transaction [30].

### 2.4 Usefulness

There have been debates about the variables “use” and “usefulness” amongst the researchers. DeLone and McLean proposed use as one of the variables in IS success theory [1]. However, [41] argued that the term usefulness is more meaningful to measure IS success rather than use because even if the system is not being used or used for lesser hours, it does not mean that the system is not useful. [41] idea about usefulness is consistent with perceived usefulness in Technology Acceptance Model (TAM) introduced by Davis in 1989. Perceived usefulness is defined as the extent to which website users feel that they can successfully accomplish their goals by using the website [42]. Therefore, in this research, we use usefulness and study whether information quality in Islamic e-Tourism has a significant relationship with usefulness or not.

[43] proposed that the quality of information has a positive effect on perceived usefulness. It is expected that when customers are satisfied with the information presentation and accessibility in a website, the level of usefulness and satisfaction will

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
<th>Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design</td>
<td>The extent to which design for their website is user-friendly and easy to navigate</td>
<td>[37]</td>
</tr>
<tr>
<td>Consistency</td>
<td>Extent to which information is presented in the same format and compatible with previous data</td>
<td>[38], [29]</td>
</tr>
</tbody>
</table>

2.5 Information Satisfaction

Information satisfaction is defined as the overall satisfaction or dissatisfaction level of the customers or web visitors toward the overall information services on a website [38]. It measures customer’s satisfaction and their emotional reaction to the experience towards overall information provided by particular websites. Many researchers used the term ‘customer satisfaction’ in their research to indicate the satisfaction of the users towards online systems, information system, computer systems, etc. [45], [36], [27]. In this study, therefore, the term information satisfaction is being used since it focuses on the information quality only.

3. METHODOLOGY

3.1 Research Instrument

A survey research questionnaire was used for this study as the main data collection method. The questionnaire was developed and distributed mainly to local and international Muslim tourists in Malaysia who have experience in using Islamic e-Tourism websites as the population. The measurement used in this study is based on a 5-point Likert scale with scale anchors ranging from ‘1’ (Strongly Disagree) to ‘5’ (Strongly Agree). The measurement of information quality was done as in Table-4.

Table 4 - Measurement Of Information Quality

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Sources of Measurement</th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Islamic Content</td>
<td>Three items adapted from [18]</td>
<td><em>Tourism website X provides information that I need as a Muslim traveller.</em></td>
</tr>
<tr>
<td>Accuracy</td>
<td>Five items adapted from [27], [28], [29]</td>
<td><em>I am satisfied with the accuracy of the information provided on tourism website X.</em></td>
</tr>
<tr>
<td>Timeliness</td>
<td>Four items adapted from [37], [38]</td>
<td><em>The information provided by tourism website X is kept updated.</em></td>
</tr>
<tr>
<td>Legitimacy</td>
<td>Five items adapted from [18]</td>
<td><em>The services offered in tourism website X are beneficial to Muslim.</em></td>
</tr>
<tr>
<td>Relevancy</td>
<td>Five items adapted from [27], [33], [32], [18]</td>
<td><em>I found relevant information in tourism website X.</em></td>
</tr>
<tr>
<td>Reliability</td>
<td>Four items adapted from [34], [16], [18]</td>
<td><em>I feel that tourism website X is reliable.</em></td>
</tr>
<tr>
<td>Islamic Design</td>
<td>Four items adapted from [18]</td>
<td><em>The information presented in tourism website X portrays the image of Islam.</em></td>
</tr>
<tr>
<td>Consistency</td>
<td>Three items adapted from [38], [29]</td>
<td><em>I feel comfortable with the graphic used, colors and the way information is arranged on the tourism website X.</em></td>
</tr>
<tr>
<td>Accessibility</td>
<td>Three items adapted from [37]</td>
<td><em>The information in the tourism website X is easily retrievable.</em></td>
</tr>
<tr>
<td>Security</td>
<td>Six items adapted from [29]</td>
<td><em>Tourism website X protects information against unauthorized access.</em></td>
</tr>
</tbody>
</table>

3.2 Population and Sample

The data for this study were collected via online surveys and also through personal distribution at different areas of tourist attractions, including at the airport. The questionnaires were conveniently distributed to respondents and 138 were returned. During preliminary data screening, 8 were discarded due to high amount of missing data of more than 50%. As a result, 130 were used as the final sample throughout the data analysis. Data analysis was done using SPSS software where descriptive; and multiple linear regression analysis were conducted. Descriptive Analysis was
Participants of this study comprised of 100% Malaysian and female participants make up 64% of the final sample, while the remaining are males. Most of the participants are in the age range of 18 to 29 years old (46%), followed by 30 to 39 years old (39%). More than half of the participants in this study are married (56%), 38% are single and a majority is employed (69%).

To achieve objective 2, a multiple regression analysis was conducted to predict the factors for website usefulness and information satisfaction. Islamic content, accuracy, timeliness, legitimacy, relevancy, reliability, Islamic design, consistency, accessibility and security were set as independent variables. Table-6 and Table-7 present the results for this analysis.

Table 6 - Multiple Linear Regression Analysis for Website Usefulness.

<table>
<thead>
<tr>
<th>Information expected</th>
<th>Frequency (N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Halal food</td>
<td>118</td>
</tr>
<tr>
<td>2. Prayer times</td>
<td>109</td>
</tr>
<tr>
<td>3. The nearest Mosque location</td>
<td>102</td>
</tr>
</tbody>
</table>

Note: Respondents were allowed to choose more than one answer.

Results showed that Islamic content \((\beta=0.22, t=3.49; p<0.01)\), legitimacy \((\beta=-0.208, t=-2.18; p<0.05)\), relevancy \((\beta=0.528, t=5.67; p<0.01)\), Islamic design \((\beta=0.148, t=2.11; p<0.05)\) and security \((\beta=0.274, t=3.19; p<0.01)\) were found to be significant predictors of website usefulness. Among all of these predictors, relevancy has the highest
influence towards website usefulness and legitimacy was found to have a negative relationship with website usefulness.

Table 7 - Multiple Linear Regression Analysis for Information Satisfaction.

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.024</td>
<td>.312</td>
<td>.76</td>
<td>.940</td>
</tr>
<tr>
<td>Islamic Content</td>
<td>.140</td>
<td>.074</td>
<td>.153</td>
<td>1.887</td>
</tr>
<tr>
<td>Accuracy</td>
<td>-.137</td>
<td>.116</td>
<td>-.125</td>
<td>-1.182</td>
</tr>
<tr>
<td>Timeliness</td>
<td>.207</td>
<td>.113</td>
<td>.200</td>
<td>1.839</td>
</tr>
<tr>
<td>Legitimacy</td>
<td>.100</td>
<td>.112</td>
<td>-.100</td>
<td>.896</td>
</tr>
<tr>
<td>Relevancy</td>
<td>.377</td>
<td>.109</td>
<td>.351</td>
<td>3.447</td>
</tr>
<tr>
<td>Reliability</td>
<td>-.228</td>
<td>.125</td>
<td>-.212</td>
<td>-1.824</td>
</tr>
<tr>
<td>Islamic Design</td>
<td>.189</td>
<td>.082</td>
<td>.203</td>
<td>2.294</td>
</tr>
<tr>
<td>Consistency</td>
<td>.083</td>
<td>.095</td>
<td>.077</td>
<td>.869</td>
</tr>
<tr>
<td>Accessibility</td>
<td>.044</td>
<td>.103</td>
<td>.041</td>
<td>.427</td>
</tr>
<tr>
<td>Security</td>
<td>.234</td>
<td>.001</td>
<td>.185</td>
<td>2.318</td>
</tr>
</tbody>
</table>

Note: R²= 0.605; Adj. R²= 0.571; F=17.74 ; p= .000

The finding indicates that legitimacy has a significant but negative relationship with usefulness. However, legitimacy did not have a significant relationship on information satisfaction. It shows that although the Muslim tourists agreed that Islamic e-Tourism website is useful with legitimate information, the current state of information in the websites that they used is not fully legitimate. In this paper, the legitimacy of information in the Islamic e-Tourism covers benefits to Muslim tourists, legality, compliance with Islamic principle and clarity of the contract. This indicates that there is a need to improve the aspect of legitimacy since it is significant for useful Islamic e-Tourism websites.

Finally, the security of the website has both significant and positive relationship on usefulness and information satisfaction. This is consistent with the studies by [47] and [48].
6. CONCLUSION

As conclusion, this paper proposed that there should be improvements in Islamic e-Tourism websites on the aspects of Islamic content, legitimacy, relevancy, Islamic design and security of the information to remain useful to the Muslim tourists. On the other hand, to achieve information satisfaction, the Islamic e-Tourism websites should improve its information relevancy, consistency and security. On top of information quality, the findings on the information expectations from the Muslim tourists would help Islamic e-Tourism operators in preparing and improving the information in their websites.

The overall contribution of this research can be divided towards two main stakeholders of the Islamic tourism sector. It can be summarised as follow:

1. Islamic e-Tourism businesses – the findings of this research can be used as the guideline for the Islamic e-Tourism businesses to develop better website which contain information as expected by the tourists and in the format that encourage the tourists to make purchasing decision, increase the stickiness level to the website and increase the number of return customers. It will also help in increasing their internal processing efficiency, interact effectively with consumers by building relationships with consumers and partners, save the cost for developing, printing, storing, distributing conventional brochures

2. Muslim tourists - The improvement in Islamic e-Tourism websites will be able to help Muslim tourists in searching the best information for them such as which hotels that having Halal certification in terms of food servicing and accommodation, which travel agencies that provide travel package for Muslim, information of prayer time, articles or events of interest to Muslim, shops and attractions for Muslim and so on.

However, this study only focus on the information quality in IS success Model by [1]. It does not cover other IS success dimensions i.e. system quality and service quality. The future studies could include these two dimensions in order to get more comprehensive perspective about Islamic e-Tourism.

ACKNOWLEDGEMENTS

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REFERENCES


[32] R. Stockdale and M. M. Borovicka, “Using quality dimensions in the evaluation of
websites,” in Information and Communication Technologies in Tourism, Springer Vienna, 2006, p. 344.


