

Features influencing Islamic websites use: A Muslim user perspective

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Abstract: Muslim scholars and organisations use the Internet through various websites to spread Islam globally. The presence of many websites providing Islamic contents online makes it necessary to examine their Islamic features and the factors that influence Muslims to use Islamic websites. This paper empirically investigates the Islamic features that influence the use of Islamic websites by Muslim users. The identified Islamic factors were grouped under five factors: beliefs, ethics, services, symbols, and values. A survey of 246 Muslim Islamic website users was conducted between November and December 2012 at the International Islamic University Malaysia (IIUM). The study develops and tests a path measurement model to confirm the psychometric properties of the five identified factors. The study found that Islamic features significantly influence Muslims to use Islamic websites. The measurement model and empirical results provide valuable indicators for the direction of future research and also suggest guidelines for developing Islamic websites that will easily influence many Internet users to visit them in order to learn about Islamic teachings and practices. The findings are also of considerable importance as they contribute to the present body of knowledge on Islamic websites' evaluation and for practice in designing and developing quality Islamic websites.

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Abstrak: Organisasi dan cendekiawan Islam menggunakan Internet melalui pelbagai laman sesawang untuk menyebarkan agama Islam ke seluruh dunia. Dengan terdapatnya banyak laman sesawang yang memberikan kandungan Islam secara atas talian (online) adalah perlu bagi mengkaji ciri-ciri Islamik laman-laman itu dan faktor-faktor yang mempengaruhi orang Islam menggunakan laman sesawang tersebut. Kertas kerja ini menyelidik secara empiris ciri-ciri Islamik yang mempengaruhi penggunaan laman sesawang tersebut oleh orang-orang Islam. Faktor-faktor Islamik yang dikenal pasti diklasifikasikan di bawah lima faktor: kepercayaan, etika, perkhidmatan, simbol, dan nilai. Satu tinjauan terhadap 246 pengguna laman sesawang Islamik telah dilaksanakan dari November hingga Desember 2012 di Universiti Islam Antarabangsa Malaysia (IIUM). Kajian tersebut membentuk dan menguji model pengukuran arah bagi mengesahkan ciri-ciri psikometrik kelima-lima faktor yang telah dikenalpasti. Hasil kajian menunjukkan bahawa ciri-ciri Islamik ketara mempengaruhi orang-orang Islam untuk menggunakan laman sesawang Islamik tersebut. Model pengukuran dan keputusan empirikal memberikan petunjuk yang bermakna bagi arah tuju penyelidikan masa depan. Ia juga dapat menyarankan garis panduan bagi pembentukan laman sesawang Islamik yang senang mempengaruhi ramai pengguna Internet untuk melawatinya bagi mempelajari ajaran dan amalan Islam. Hasil kajian juga adalah penting kerana ia dapat menyumbang kepada pengetahuan semasa tentang penilaian sesawang Islamik dan bagi tujuan amalan dalam membentuk dan membangunkan laman sesawang Islamik yang berkualiti.

Kata kunci: Laman sesawang Islamik; ciri-ciri Islamik; persepsi pengguna; penggunaan laman sesawang; faktor analisis.

The use of Islamic websites is quite common among Muslim Internet users. Many Islamic organisations and scholars use these websites to spread their teachings and to educate the people. As such, having an excellent website provides the potential to attract more online users and to encourage them to keep revisiting the website. Despite the increasing number of Islamic websites and the increasing participation in online-Islam by online users, there appears to be a lack of clear identification of the generic website features that influence website use. This possible inadequacy may have caused users to lose confidence in the use of Islamic websites.

This lack of confidence may be due to users' inability to be fully satisfied with a particular Islamic website design, its contents, its online scholars, and perhaps the Islamic features portrayed. This situation may have fuelled the quest by many researchers to seek more understanding on why a good number of Muslims are reluctant to seek Islamic knowledge online. Some researchers found that a substantial number of users reject information derived from various Islamic websites because of their lack of trust in the legitimacy of their contents (Ibrahim, Wan Hamzah, Taslim, & Wan Adnan, 2010; Nor Shahrizah and Norzelatun, 2005).

An Islamic website is widely regarded as an Internet-based site created for and devoted to the service of Islam as a religion and Islamic way of life. Bunt (2003) defined Cyber Islamic Environment "as having the potential to transform aspects of religious understanding and expression within Muslim contexts, and the power to enable elements within the Muslim populations in minority and majority arenas to dialogue with each other" (p. 202). Wan Abdul Rahim, Nor Laila, and Shafie (2008, p. 3) define an Islamic website as a genre website that accentuates Islamic ideologies, norms, and values. Also, Islamic website refers to website whose main objective is to portray the commandments of Allah (SWT) in accordance with the teachings of Prophet Muhammad (SAW) (Mahmud, Aliyu, Hussein, & Tap, 2011). This study views Islamic website as a medium through which Islamic features are portrayed online for the benefit of the people. The purpose of this study is to identify Islamic features available on the websites that influence Muslim users to use the websites. The study explores the underlying factors of the identified Islamic features using partial least squares (PLS) analysis, and investigates the relationship between these features and website use. Lastly, a model for Islamic website use is developed and empirically tested.

Literature review

There exists a good deal of scholarly research on the use of websites in various domains, especially in e-commerce and e-learning (DeLone & McLean, 2003). However, researchers paid less attention to explore the features that influence the use of Islamic websites. Many researchers believe that website use can be measured in terms of number of visits, pattern of use, frequency of use, time spent on the website, and

dependency on the website for information (DeLone & McLean, 2004; Kim, Oh, Shin, & Chae, 2009).

As Islamic website use, like other websites, is completely a voluntary activity, some Muslim users might frequently visit and spend more time using the websites than others. Frequent website use can be attributed to the website quality in terms of its design, content, and domain features (e.g. Islamic features). The website that provides most important and relevant features is likely to attract more users to spend long time using the website. It is assumed that the more time spent using the websites to learn/search information about Islam, the higher the possibility of users becoming dependent on the websites for seeking Islamic knowledge and practice. In this study, Islamic features are considered the most important features that can easily attract Muslims to visit a website to learn about Islamic teachings and practices.

Islamic website features can easily be observed by users when surfing any Islamic website. These features may influence users' perception on the authenticity of the website as genuinely Islamic. This use depends on the extent to which users think that the website features provided are genuine, lawful, current, appropriate, and not misleading (Loiacono, Watson, & Goodhue, 2007; Song & Zinkhan, 2003). There are other scholars who found that Islamic features are very important measures for evaluating Islamic websites' quality (Hameed, 2009; Mehad, Isa, Noor, & Husin, 2010).

Furthermore, these Islamic features can help a user to confirm the source and authenticity of information and other scholars' opinion. Most importantly, the features can aid the user in identifying the credentials of online scholars who give *fatwā* (scholarly opinion on matters of Islamic law) on the website. Moreover, website features are meant to create unique confidence and satisfaction to attract many users to keep using the websites. Generally, the quality of these features is reflected in the users' perception not only in website use but also in creating positive user experience (Wan Abdul Rahim et al., 2008). For example, an objective piece of information should include all contradicting points of view related to the topic under discussion, and should not incline to a particular position (Suleman, 2005). Therefore, the extent to which a website is free from bias towards or against any Islamic group or people reflects the true teachings of Islam (Mahmud, Aliyu, & Tap, 2010).

Hameed (2009, p. 564) defines Islamic ethical values “as a set of moral principles and guidance that recognises what is right behaviour from what is wrong or what one should do or not.” He identifies the following Islamic ethics and values as significant to Islamic websites: beneficence, sincerity, forgiveness, honesty, good model, guidance, keeping promise and secrecy, enjoining goodness and prohibiting badness, beliefs, and piety, wisdom, thankfulness, patience, fairness, truth, mercy, and deep thought (Hameed, 2009). Mehad et al. (2010) see the use of Islamic symbols on a website as a representation of Islamic values to the users. For example, website displaying Islamic symbols such as liturgical Islamic image: art, picture of Qur’ān, Ka’bah, moon, mosque, woman in *hijāb*, and scholars are indicative of genuine Islamic features. These symbols could be unique signs of Islamic beliefs. In addition, Islamic features can be observed by the way a website consistently displays respect to the prophets especially Muhammad (SAW) and his companions.

Recently, Islamic online services have become an important component of many Islamic websites. These online services are measured by the provision of free software/applications, chats/blogs/forums, educational training, community development programmes, online marriage opportunity, online donation, relief/assistance activities, and direct consultation with online scholars.

Overall, 42 Islamic features were identified and summarised in Table 1 as the main survey items for this study. The features were generated from three main sources. First, review of related literature on Islamic websites (Ahmadan, Nordin, & Rawi, 2010; Kasmani, Buyong, & Muhammad, 2008; Mehad et al., 2010) and a study on Islamic ethical values (Hameed, 2009). Second, review of Information Systems (IS) literature in order to adapt the items for measuring Islamic website use (DeLone & McLean 1992; Porter & Donthu 2006; Kim et al., 2009). Third, the selection of three popular Islamic websites (islamicity.com, islamweb.net, and islamonline.net) based on Alexa ranking software and assessment of these websites individually in order to identify additional Islamic features that are commonly used on Islamic websites.

Based on the Islamic features identified, this study proposes that Islamic features can be factored into Islamic beliefs, ethics,

services, symbols, and values. The following hypotheses are proposed:

- H1: Islamic beliefs features positively influence the use of Islamic website.
- H2: Islamic ethics features positively influence the use of Islamic website.
- H3: Islamic services features positively influence the use of Islamic website.
- H4: Islamic symbols features positively influence the use of Islamic website.
- H5: Islamic values features positively influence the use of Islamic website.

In order to test the above hypotheses, this study proposes the following research model (Figure 1).

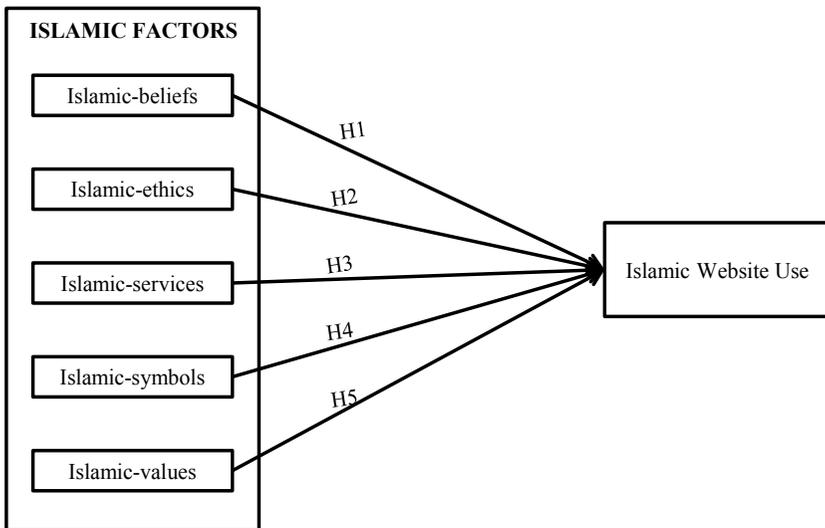


Figure. 1. Research model for Islamic website use

Population and sample

This study is based upon a sample survey. The population is Muslims who had visited any Islamic website for information search, references, Q&A, blog/forum, reading Qur'ān, learning *ḥadīths*, audio/video

downloads, reading news updates, and others. Therefore, the first step to make sure that the data collected for this study is useful is to ensure that all the respondents are Muslims and have experience in using Islamic website by naming the Islamic website(s) they used often. Those who didn't name the website were removed.

The sample comprises of 246 Malaysian undergraduate students of the International Islamic University Malaysia (IIUM) in order to form a homogenous group of Muslim users. These students were given the opportunity to voluntarily participate in the study. The sample size (N=246) is considered sufficient to meet the minimum satisfactory sample size requirement in conducting partial least square (Chin, 1998; Gefen, Straub, & Boudreau, 2000). IIUM was chosen to ensure that the respondents have significant understanding of Islamic perspective and English proficiency to answer the questions asked. All the respondents had taken at least one Islamic related course in addition to their personal Islamic knowledge background. The courses require students to use online Islamic resources for their assignments, projects and term papers.

Data collection procedure

A questionnaire was used to collect data to test the proposed hypotheses and validate the research model. The questionnaire consists of three sections: (A) demographic questions and experience with Islamic websites; (B) questions about Islamic features; and (C) questions related to the Islamic websites use. All items except demographic data were assessed using 5-point Likert scales (5 = strongly agree and 1 = strongly disagree). To assess Islamic website experience, respondents were asked to answer how often they use Islamic websites and the time spent using them as well as activities and reasons why they use Islamic websites as alternative to the traditional way of seeking Islamic knowledge through books and scholars.

The questionnaires were administered during November and December 2012 to eliminate any significant effect of the long term non-response bias. The study used a convenient technique to administer the questionnaires directly to the students from various faculties. The completion of the questionnaires took about 10 minutes. The questionnaire was administered to students in their classes and they

were asked to fill-in and submit it immediately. Pens were distributed to respondents to help increase the response rate.

Data screening procedure

Data screening is sometimes referred to as the process of ensuring the data collected is clean and good enough before carrying out statistical analyses. Data is screened to ensure that it is useful, reliable, and valid for testing causal relationship (Gaskin, 2012). A total of 313 responses were originally received from the survey respondents. A data screening analysis was conducted before embarking upon the main data analysis. This data screening was conducted for three reasons: (a) to ensure the accuracy of the data collected; (b) to deal with missing data; and (c) to deal with extreme cases, or outliers. In order to eliminate these three problems, each of the returned questionnaires was examined. A total of 37 questionnaires were identified and dropped due to large missing data or careless response and/or not being completely honest. Also, a descriptive frequencies using SPSS17.0 was conducted to identify additional missing data and human error during the data entry. A total of 11 cases with missing data were identified and removed from the dataset, leaving a balance of 265.

Outliers in the dataset were identified by conducting Mahalanobis distance analysis (Gaskin, 2012). The outlier cases that fell within the 90th percentile were identified. A total of 19 cases were observed and removed from the dataset before further analyses were conducted. Thus, after removal of these responses, 246 responses were retained for further analyses.

Sample profile

In order to generalise the findings of the study, the sample used must be representative of the population (Sekaran, 2003). As such appropriate demographic data of the respondents were requested from the survey participants. Generally, the respondents' data distribution appears to be representative of the population.

The total number of respondents surveyed who had used Islamic websites was 246 of whom 32% were males (N=79) and 68% were females (N=167). Majority of the respondents are aged between 15-24 (N=231, 93.9%) and only few are between the age of 25-34 (N=15,

6.1%). All the respondents indicated that they used the Internet every day, with majority (N=104, 42.3%) spending between 3-5 hours online followed by (N=40, 16.3%) spending between 6-8 hours. Some respondents (N=6, 2.4%) spend between 9-11 hours and more than 12 hours on the Internet daily (N=7, 2.8%). However, there are a good number of respondents (N=89, 36.2%) who spend only a maximum of 2 hours daily on the Internet. Almost half of the respondents (N=118, 48%) visits Islamic websites regularly (N=93, 37.8%), while some (N=33, 13.4%) said they visit Islamic websites always. In addition, only small number of respondents (N=2, 0.8%) indicates they never use Islamic website before. As for the duration, majority of the respondents (N=115, 46.7%) said they spend between 11-20 minutes, followed by (N=67, 27.2%) who spend 0-10 minutes. Among the rest, 47 respondents (19.1%) spend about 21 minutes and 17 respondents (6.9%) spend 31 minutes.

Lastly, respondents were asked to choose as many options as applicable to them. Majority 69.1% and 58.1% indicates they use Islamic websites to search for references and for research purposes respectively. With regards to Islamic activities performed online, respondents indicated that they spend most of their time searching for information, reading Qur'ān/*ḥadīth*, and networking with other users through blog/forum.

Reliability test

The authors conducted mean and standard deviation for each of the Islamic features as well as Cronbach's (1951) Alpha reliability test for each factor and found these to be adequate for the analysis. The Cronbach's Alpha for each factor was calculated to determine the internal consistency across the identified Islamic features. Accordingly, all those features tested were included in the subsequent analyses because of their high Cronbach's Alpha values ranging from 0.84 to 0.95 (See Table 1). The Cronbach's Alpha values ranging between acceptable (i.e. >.70s) to high (i.e. >.90s) values indicate good measurement reliability of this instrument (Santos, 1999).

Partial least squares (PLS) analyses

PLS estimates a linear composite in order to maximise the variation in a set of variables as it assumes that all the measured variance is useful

to be explained (Chin, 1998). PLS was chosen because it is relatively robust to deviations from a multivariate distribution, prediction-oriented, and gives optimal prediction accuracy. It can be applied to relatively small sample size, and appropriate for testing theories in the early stages of development (Fornell & Bookstein, 1982; Hassanein & Head, 2007). According to Fornell and Bookstein (1982), PLS has an advantage over similar approaches as it can be used without meeting the sample size requirements or specific scale measurements of nominal, ordinal, or interval. A model with large number of variables and a limited sample size such as in this study can also be analyzed using PLS. Additionally, PLS can be used to analyze a model with weak theoretical establishments or relationships between variables (Falk & Miller, 1992).

Table 1: Descriptive statistics and reliability measures

Factors	Islamic Website Features	Mean	SD	C. Alpha
Islamic-beliefs		4.12	0.82	0.84
I_BL1	Website portrays belief in the oneness of Allah (SWT)	3.98	0.90	
I_BL2	Website follows the authentic traditions (<i>Sunna</i>) of the prophet Muhammad (SAW)	3.96	0.95	
I_BL3	Website follows the practice of all the Sahabah (RA)	4.32	0.72	
I_BL4	Website follows the teachings of the four <i>Sunni</i> school of thought	4.22	0.71	
Islamic-ethics		4.55	0.91	0.92
I_ET1	Website starts with " <i>bismillāh al-Raḥmān al-Raḥīm</i> "	4.09	0.75	
I_ET2	Website page begins with <i>Salam</i>	3.95	0.83	
I_ET3	Website consistently writes the name of Allah with SWT	4.00	0.79	
I_ET4	Website consistently seeks blessing for prophet Muhammad when His name is written/mentioned	4.08	0.76	
I_ET5	Website consistently seeks blessing for other Prophets	3.89	0.82	
I_ET6	Website consistently seeks blessing for <i>Ṣaḥābah (RA)</i>	3.96	0.77	
I_ET7	Website consistently uses the words " <i>Assalām 'alaykum</i> ", " <i>Mashā'Allāh</i> ", " <i>Alḥamdulillāh</i> ", and/or " <i>Jazakallāhu khay-ran</i> " when communication with users	3.96	0.85	

Islamic-services		3.67	0.86	0.91
I_SV1	Donate online services	3.57	0.84	
I_SV2	Chat with online scholars	3.59	0.85	
I_SV3	Islamic software/applications	3.91	0.83	
I_SV4	Bazaar/online shopping services	3.60	0.90	
I_SV5	Community development services	3.81	0.84	
I_SV6	Interest free financial transactions	3.63	0.89	
I_SV7	Online relief and assistance services	3.74	0.83	
I_SV8	Online marriage/matrimony services	3.43	0.95	
I_SV9	Online educational training services	3.91	0.82	
I_SV10	Direct call services to online scholars	3.48	0.91	
Islamic-symbols		3.83	0.87	0.91
I_SY1	Use of Arabic text	3.42	0.94	
I_SY2	Use of Islamic arts	3.95	0.82	
I_SY3	Displaying picture of Hijab	3.90	0.87	
I_SY4	Displaying picture of Moon	3.59	0.92	
I_SY5	Displaying picture of Qur'ān	4.14	0.82	
I_SY6	Displaying picture of Ka'abah	3.98	0.89	
I_SY7	Displaying picture of scholars	3.65	0.88	
I_SY8	Displaying picture of Mosques	3.98	0.85	
Islamic-values		4.29	0.63	0.95
I_VL1	Teaching fairness/justice	4.24	0.62	
I_VL2	Teaching sincerity/honesty	4.28	0.62	
I_VL3	Teaching patience/tolerance	4.25	0.65	
I_VL4	Teaching caring/thankfulness	4.31	0.59	
I_VL5	Portraying good model/guidance	4.32	0.63	
I_VL6	Promoting good and discouraging bad deeds	4.33	0.60	
I_VL7	Providing beneficial/helpful information	4.38	0.59	
I_VL8	Securing user's data and information properly	4.24	0.70	
Website Use		3.45	0.87	0.85
W_US1	I frequently use Islamic website	3.35	0.86	
W_US2	I spend a lot of time using Islamic website	3.21	0.84	
W_US3	I have been using Islamic website for a very long time	3.42	0.89	
W_US4	I am highly dependent on using Islamic website to learn about Islam	3.59	0.94	
W_US5	Overall, I have good experience using Islamic website	3.66	0.82	

Therefore, PLS is the appropriate analysis method for this research since the number of samples gathered for the initial data analysis was 246, little bit larger than the minimum required sample size of five cases per variable ($5 * 42 = 210$) (Hair, Anderson, Tatham, & Black, 1995). In addition, PLS determines the relationships between

established statements (i.e. indicators) to its respective latent variables (i.e. constructs), which is critical for the initial model validating stage.

In order to determine the overall relationship robustness, the measurement model was analyzed in terms of reliability and validity. The reliability for each indicator is measured through respective factor loadings. Thus, factor loading greater than 0.70 denotes more shared variance between the construct and its indicators than error variance (Hassanein & Head, 2007). At this initial model testing stage, our proposed research model was tested using the PLS to identify the best fitted features to their factors.

Islamic features' factor validity

The Islamic features explored in Table 1 above were grouped under five factors, Islamic-beliefs, Islamic-ethics, Islamic-services, Islamic-symbols, and Islamic-values. Each factor has its indicators (i.e. Islamic features) which were analysed using PLS to determine its linear relationship between them. Based on the PLS threshold mark for indicators' loadings greater than 0.70, three indicators ($I_ET1=0.68$, $I_SV8=0.57$, and $I_SY1=0.57$) were removed from further analyses. All the remaining indicators' loadings were greater than 0.70 producing an average factor loadings from 0.77 to 0.86 indicating acceptable measures. The weights ranged from 0.14 to 0.30. The composite reliability (CR) which shows the internal consistency for the given block of indicators was 0.89 for Islamic-beliefs; 0.94 for Islamic-ethics; 0.93 for Islamic-services; 0.93 for Islamic-symbols; and 0.96 for Islamic-values. All reliability tests were higher than the benchmark value of 0.70.

The Average Variance Extracted (AVE), which is the amount of variance that each factor obtains from its indicators based on the measurement errors, was 0.68 for Islamic-beliefs; 0.72 for Islamic-ethics; 0.59 for Islamic-services; 0.64 for Islamic-symbols; and 0.75 for Islamic-values. All the AVE values obtain were higher than 0.50 thresholds, indicating adequate relationships between factors and its indicators. Moreover, the Cronbach alpha values ranged from 0.84 to 0.95 showing the acceptable values for each factor as shown in Table 2.

Table 2: Islamic factors PLS loadings

Factors	Loadings	Weights	CR	AVE	Cronbach Alpha
Islamic-beliefs	0.8225	0.3041	0.8938	0.6786	0.8410
Islamic-ethics	0.8495	0.1959	0.9399	0.7229	0.9230
Islamic-services	0.7706	0.1440	0.9295	0.5949	0.9149
Islamic-symbols	0.7994	0.1798	0.9257	0.6408	0.9066
Islamic-values	0.8642	0.1445	0.9594	0.7475	0.9516
Website Use	0.7871	0.2536	0.8917	0.6223	0.8494

The discriminant validity illustrating whether the construct is different from other constructs was examined. All values of AVE were greater than the squared correlation between any five constructs (i.e. the inter-construct correlations) as indicated in Table 3 satisfying the minimum criteria for demonstrating good discriminant validity. Thus, diagonal values in bold (the square root of the AVE) exceed the inter-construct correlations below and across them for adequate discriminant validity (Hair et al. 1995; Kim et al., 2009).

Table 3: Constructs discriminant validity tests

Factors	AVE	Islamic-beliefs	Islamic-ethics	Islamic-services	Islamic-symbols	Islamic-values	Website Use
Islamic-beliefs	0.6786	0.8238					
Islamic-ethics	0.7229	0.6444	0.8502				
Islamic-services	0.5949	0.3274	0.4217	0.7713			
Islamic-symbols	0.6408	0.5477	0.5862	0.4171	0.8005		
Islamic-values	0.7475	0.4577	0.5320	0.4563	0.4501	0.8646	
Website Use	0.6223	0.3230	0.4010	0.3848	0.3333	0.3286	0.5683

*square root of AVE on diagonal

Website use is the main dependent construct to determine the extent of Islamic website use by Muslim users. The website use construct has five indicators. These indicators were analyzed to determine the

linear relationship with the Identified Islamic features across their five underlining factors (i.e., independent variables). The construct produced an average loading of 0.79 and average weight of 0.25 indicating acceptable measures. The constructs' Cronbach's Alpha of 0.84, CR value of 0.89 and AVE value of 0.62 are considered adequate since they exceed the 0.7 and 0.5 marks respectively (Chin, 1998; Hassanein & Head, 2007). Thus, they indicate adequate construct reliability for website use construct.

The loadings of an individual indicator were cross-compared in a factor structure matrix to determine whether indicators have better explaining power in another factor. Table 4 indicates the initially hypothesised sets of indicators for a respective factor showed the highest loadings suggesting the satisfactory clustering of factors.

Table 4: Islamic factor structure matrix of loadings and cross-loadings

Items code	Islamic-beliefs	Islamic-ethics	Islamic-services	Islamic-symbols	Islamic-values	Website Use
I_BL1	0.7899	0.5664	0.2831	0.4946	0.4466	0.2423
I_BL2	0.8621	0.5247	0.2431	0.4640	0.4007	0.2586
I_BL3	0.8720	0.5564	0.2976	0.4860	0.4098	0.2729
I_BL4	0.7660	0.4782	0.2538	0.3661	0.2625	0.2848
I_ET2	0.5544	0.7755	0.3739	0.4657	0.3610	0.3138
I_ET3	0.5383	0.8445	0.3585	0.4765	0.4525	0.3008
I_ET4	0.5765	0.8721	0.3231	0.4861	0.4537	0.3322
I_ET5	0.5056	0.8571	0.3281	0.5128	0.4376	0.3630
I_ET6	0.5306	0.8882	0.3460	0.5033	0.5065	0.3553
I_ET7	0.5853	0.8597	0.4208	0.5384	0.4929	0.3707
I_SV1	0.2421	0.3403	0.7742	0.3213	0.3666	0.3541
I_SV2	0.2370	0.2914	0.7566	0.2578	0.3422	0.3093
I_SV3	0.2890	0.3694	0.7605	0.3119	0.3392	0.2917
I_SV4	0.2448	0.2768	0.7054	0.3020	0.2635	0.2625
I_SV5	0.3502	0.3857	0.8228	0.4099	0.3854	0.3286
I_SV6	0.2281	0.2550	0.8124	0.3271	0.3836	0.2717
I_SV7	0.2193	0.3390	0.7877	0.3445	0.3670	0.2226
I_SV9	0.2515	0.3828	0.7448	0.3840	0.4123	0.2583
I_SV10	0.1982	0.2839	0.7708	0.2503	0.3107	0.3256

I_SY2	0.4210	0.4215	0.3420	0.7303	0.3688	0.2951
I_SY3	0.4246	0.4989	0.3232	0.8039	0.3970	0.2875
I_SY4	0.3733	0.3797	0.2642	0.7671	0.2663	0.2788
I_SY5	0.4875	0.5378	0.2985	0.8484	0.3845	0.2365
I_SY6	0.4850	0.5146	0.3847	0.8454	0.3967	0.2302
I_SY7	0.3919	0.4297	0.3847	0.7699	0.3463	0.2983
I_SY8	0.5077	0.5194	0.3184	0.8309	0.3510	0.1848
I_VL1	0.3921	0.4952	0.4465	0.4563	0.8721	0.3332
I_VL2	0.3888	0.4711	0.3277	0.3673	0.8636	0.2336
I_VL3	0.4027	0.5046	0.4108	0.3875	0.9018	0.2657
I_VL4	0.4005	0.4894	0.4209	0.3480	0.8952	0.3166
I_VL5	0.3890	0.4296	0.4011	0.3884	0.8592	0.2941
I_VL6	0.4292	0.4274	0.3606	0.4224	0.8713	0.2824
I_VL7	0.3982	0.3870	0.3413	0.3408	0.8392	0.2632
I_VL8	0.3652	0.4702	0.4252	0.3908	0.8108	0.2592
W_US1	0.2045	0.2663	0.2984	0.2094	0.2087	0.8042
W_US2	0.2107	0.2529	0.3233	0.2494	0.2040	0.7882
W_US3	0.2819	0.2494	0.2606	0.2165	0.2758	0.7828
W_US4	0.2471	0.3710	0.3590	0.3241	0.2843	0.7793
W_US5	0.3182	0.4044	0.2657	0.2888	0.3057	0.7895

The discriminant validity illustrating whether the construct is different from other constructs was examined. All values of AVE were greater than the squared correlation between the constructs (i.e. the inter-construct correlations) satisfying the minimum criteria for demonstrating good discriminant validity. Moreover, the indicators within each construct loaded highly, which is an indication of convergent validity and with very low cross-loadings (<0.50) indicating adequate divergent validity.

Findings

PLS analysis for testing measurement model was used in this study because of its robustness and simplicity (Ringle, Wende, & Will, 2005). PLS method is appropriate for testing new indicators and factors to predict construct causality (Hassanein & Head, 2007). This study used SmartPLS 2.0 software to investigate the statistical significance of the research model (Ringle et al., 2005). PLS path coefficients and R-square

values obtained were used to establish the validity of the research model (Chwelos, Benbasat, & Dexter, 2001).

A bootstrapping algorithm using 1000 resamples performed revealed the statistical significance of each factor relationship with the dependent construct (i.e. website use) based on the path coefficients' t-statistics (Chin, 1998; Hassanein & Head, 2007). This study uses the 1.96 t-statistics value threshold to either accept or reject the proposed hypotheses as recommended by Gefen & Straub (2005).

The R-square value (0.327) of the endogenous construct (website use) indicates that upto 33% of the total variance is explained, which is significant (exceeds 10% acceptable mark) as recommended by Falk & Miller (1992). The results are shown in Figure 2.

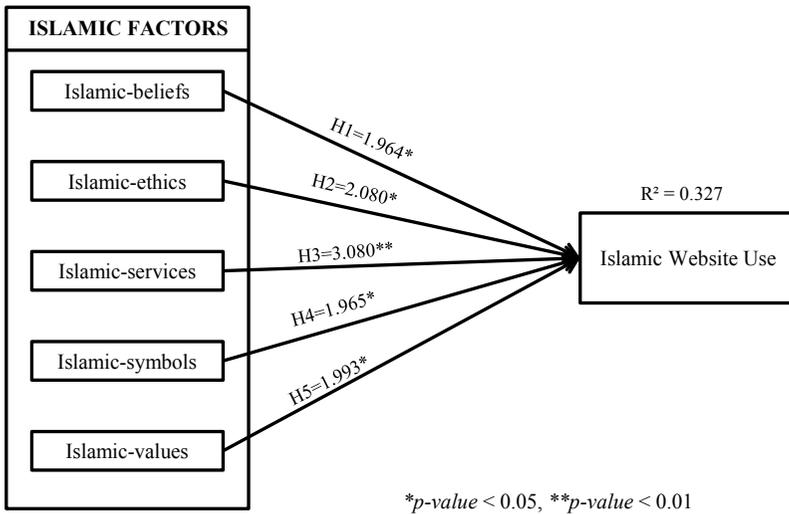


Figure 2: Results of the research model

The findings of this study shows that the significant factors of Islamic websites use are Islamic beliefs, ethics, online services, symbols, and values. The study found that these factors significantly influence Muslim online users to visit Islamic websites for several Islamic activities. This influence varies significantly among these factors. For example, Islamic online services (H3) encourages Muslim users to use Islamic websites with a significance level of 0.01. While the rest of the factors (H1, H2, H4, and H5) show a significant relationship with the use of Islamic websites at 0.05 confidence level.

Moreover, the findings indicate that all the five hypotheses are supported. It means that Islamic website features related to Islamic beliefs, ethics, services, symbols, and values have positive relationships with the use of Islamic websites. These relationships are significant at a confidence levels of 0.05($\beta=0.158, t=1.964, p<0.05$) with Islamic beliefs, 0.05($\beta=0.197, t=2.080, p<0.05$) with Islamic ethics, 0.01($\beta=0.227, t=3.080, p < 0.01$) with Islamic online services, 0.05($\beta=0.162, t=1.965, p < 0.05$) with Islamic symbols, and 0.05($\beta=0.166, t=1.993, p < 0.05$) with Islamic values. Hypotheses H1, H2, H3, H4, and H5 are supported as shown in Table 5.

Table 5: Hypothesis testing results

Hypothesis	Path	Mean	SD	Path co-efficient	T-statistics	Results
H1	Islamic-beliefs → Website Use	0.069	0.090	0.158	1.964*	Supported
H2	Islamic-ethics → Website Use	0.182	0.095	0.197	2.080*	Supported
H3	Islamic-services→ Website Use	0.240	0.737	0.227	3.080**	Supported
H4	Islamic-symbols → Website Use	0.072	0.096	0.162	1.965*	Supported
H5	Islamic-values → Website Use	0.060	0.071	0.166	1.993*	Supported

Based on this empirical evidence, we argue that when a website provides good Islamic features and improves their online services, the use of Islamic websites by Muslim users will increase.

Discussion

This study examines empirically the factors affecting the use of Islamic websites by Muslim online users and a model for evaluating Islamic websites use from Muslim users’ perspective. The result demonstrates that several factors influence the use of Islamic websites. The results from Table 4 show that 39 items extracted from the exploratory factor analysis were factored into five factors: beliefs, ethics, services, symbols, and values. All the five underlining factors demonstrate a direct relationship with Islamic websites use from Muslim users’ perceptive. This finding confirms the relative significance of the indicators and the proposed model based on the path coefficient, t-values, and R-square explaining up to 33% variance which is far above the 10% acceptable threshold (Falk & Miller, 1992). The fact of this study being an initial investigation and majority of the indicators used are new items may be one of the reasons for the low variability issues.

In contemporary cyber Islamic environment, anyone can create a website or post information online whether the information is authentic or not. But with the existence of many misleading Islamic website, it is very important for users to verify the legitimacy and authenticity of both the website and its contents. It is equally important to verify the true faith of the websites' owners, that is, they must portray belief in the oneness of Allah and that the website uses only authentic *ḥadīth* for their teachings and according to the practice of the companions of the Prophet (SAW). Also, important is to make sure the scholars providing *fatwā* on the website are following the teachings of at least any of the four Sunni schools of thought.

Also our findings indicate that portraying the good Islamic ethics by the websites strongly influence the use of Islamic websites. Any website that focuses on teaching its users the values of tolerance and patience, fairness and justice, honesty and sincerity, as well as good model for guidance will definitely attract more visitors (Hameed, 2009). In addition, users claimed that they will use a website if the information provided is beneficial and helpful in promoting virtue and prohibit vice. Securing users' personal data and information also play a role in encouraging them to keep using the website.

The rapid incorporation of various online services into the fabric of cyber Islamic environment has made it important to investigate the type of services that enhance Islamic websites use. Ten Islamic online related services were selected from three popular Islamic websites (i.e. islamicity.com, islamweb.net, and islamonline.net) for investigation in this study. Nine out of the ten online services were found to be strongly associated with the use of Islamic websites as shown in Figure. 2. The ten selected services are: donate online, chat with online scholars, Islamic software/applications, bazaar/online shopping, community development, interest-free financial transactions, online relief and assistance, online educational training, and direct call services to online scholars. Interestingly, those websites keep increasing these online services. Currently, islamicity.com provides more than twenty online services to its users and visitors. Such additional services provided by islamicity.com are membership, discussion forums, advertising, ICTtunes, eCards, cooking recipes, events, learn Qur'ān, Islamic e-learning, Arabic education, web hosting, and domain registration. As a result, the IslamiCity website has serviced 1,209,471,094 requests

since January 2001 (www.islamicity.com [12 April 2013]). Based on our empirical result and using IslamiCity as an example, we argue that when online services improve, the use of Islamic website will increase.

Furthermore, Islamic symbols also have a great influence on the use of Islamic websites. This means that displaying images (such as Ka'bah, mosque, moon, *hijāb*, Qur'ān, scholars) that symbolise Islam readily attracts Muslims to accept the website. Therefore, displaying these images shows a symbol of Islam and consequently attracts users to visit the website.

Another important factor that attracts Muslims to use a particular Islamic website is the presentation of its contents. This includes the use of “*Al-salām ‘alaykum wa-rahmatullāh wa-barakātuh*” at the beginning of messages; the writing of the name of Allah with “*Subhānahu wa-ta’alā/(SWT)*”, Prophet Muhammad with “*sallallāhu ‘alayhi wa-sallam/(SAW)*”, other prophets (e.g. Moses, Jesus) with “*Alayhissalām/(A.S.)*”, and all the Saḥābah (companions of the Prophet) with “*Raḍiyallāhu ‘Anhum/(RA)*”; and the use of the words “*Assalām ‘alaykum*”, “*Māsha’ Allāh*”, “*Alḥamdulillāh*”, and/or “*Jazākallāhu khayran*” in communication with the users. Thus, portraying the true Islamic values will increase number of users and frequent visits to the websites to learn about Islamic teachings and practices.

Conclusion

The findings of this study are significant, considering the growing number of Islamic websites and Muslim Internet users. This study provides empirical evidence for Islamic website use from Muslim users’ perspective. Based on the review of related literature and websites assessments, 42 Islamic website features were identified and explored under five factors: Islamic beliefs, ethics, services, symbols, and values. Out of the 42 features, 39 loaded highly for the reliability and validity tests. The three features removed due to the poor factor loadings are: I_ET = website starts with “*Bismillāh al-Raḥmān al-Raḥīm*”, I_SV8 = online marriage/matrimony services and I_SY1= use of Arabic text.

However, this study is not without limitations. First, it was conducted with data collected from the students of International Islamic University Malaysia (IIUM). Future studies may use different locations in order to further confirm the reliability and validity of the proposed model and the overall findings of this study. Second, this study was conducted using a

survey method, further studies may be conducted using experiment to directly observe users' experience while using Islamic website. Third, this study explored five factors that influence Islamic website use. Future research may explore other factors and their related features that can influence Muslim users to engage in many online Islamic activities.

Despite the limitations of this study, it does provide valuable ground for future investigation. The research model and empirical results provide useful indicators for the direction of future research and also suggest guidelines for the improvement of Islamic website use.

References

- Bunt, G. R. (2003). *Islam in the digital age: E-Jihad, online fatwas and cyber Islamic environment*. London: Pluto Press.
- Chin, W. W. (1998). Issues and opinion on structural equation modeling. *MIS Quarterly*, 22(1), vii-xvi.
- Chwelos, P., Benbasat, I., & Dexter, A. S. (2001). Research report: Empirical test of an EDI adoption model. *Journal of Information Systems Research* 12(3), 304-321. doi: 10.1287/isre.12.3.304.9708.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334.
- DeLone, W. H., & McLean, E. R. (1992). Information system success: The quest for the dependent variable. *Information Systems Research*, 3(1), 60-95.
- DeLone, W. H., & 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.
- DeLone, W. H., & McLean, E. R. (2004). Measuring e-commerce success: Applying the DeLone and McLean information system success model. *International Journal of Electronic Commerce*, 9(1), 31-47.
- Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. Akron, Ohio: The University of Akron Press.
- Fornell, C., & Bookstein, F. L. (1982). Two structural equation models: LISREL and PLS applied to consumer exit-voice theory. *Journal of Marketing Research*, 19(4), 440-452.
- Gaskin, J. (2012). *Exploratory factor analysis*. Gaskination's Statwiki. Retrieved February 10, 2012 from <http://statwiki.kolobkcreations.com>.

- Gefen, D., & Straub, D. W. (2005). A practical guide to factorial validity using PLS-Graph: Tutorial and annotated example. *Communications of the AIS*, 16(25), 91-109.
- Gefen, D., Straub, D. W., & Boudreau, M. C. (2000). Structural equation modeling and regression: Guidelines for research practice. *Communications of the Association for Information Systems*, 4(7), 2-77.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multi-variate Data Analysis with Readings*, 4th ed. Englewood Cliffs, NJ: Prentice-Hall.
- Hameed, S. A. (2009). Software engineering ethical principles based on Islamic values. *Journal of Software*, 4(6), 563-570.
- Hassanein, K., & Head, M. (2007). Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping. *International Journal of Human-Computer Studies*, 65(11), 689-708. doi: 10.1016/j.ijhcs.2006.11.018.
- Ibrahim, E. N. M., Wan Hamzah, W. N. I., Taslim, J., & Wan Adnan, W. A. (2010). Evaluating trust elements in the context of Islamic based informational websites. *Proceeding of the International Conference on User Science Engineering (i-USEr 2010)* (pp. 268-272). Kuala Lumpur: IEEE Xplore Digital Library.
- Kasmani, M. F., Buyong, M., & Muhammad, K. M. B. (2008). Dakwah content and its method: An analysis on Islamic websites. Retrieved August 17, 2009 from <http://www.surrey.ac.uk/politics/research/documents/CP-FaizalKasmani.pdf>.
- Kim, C., Oh, E., Shin, N., & Chae, M. (2009). An empirical investigation of factors affecting ubiquitous computing use and U-business value. *Journal of Information Management*, 29(6), 436-448.
- Loiacono, E. T., Watson, R. T., & Goodhue, D. L. (2007). WebQual: An instrument for consumer evaluation of websites. *International Journal of Electronic Commerce*, 11(3), 51-87. doi:10.1108/14635770910948259.
- Mahmud, M., Aliyu, M., & Tap, A. O. M. (2010). Quality rating of Islamic websites features: A single-user evaluation. *Proceeding of the 3rd International Conference on Information & Communication Technology for the Muslim World (ICT4M)* (pp. 26-32). Jakarta: IEEE Xplore Digital Library.
- Mahmud, M., Aliyu, M., Hussein, I., & Tap, A. O. M. (2011). *Proposing a working definition and framework to evaluate Islamic website. Proceeding of the 10th International Workshop on Internalisation of Products and Systems (IWIPS 2011)*. Kuching Sarawak: Product & Systems Internationalisation, Inc, 91-103.

- Mehad, S., Isa, W. A. R. W. M., Noor, N. L. M., & Husin, M. S. (2010). Muslim user interface evaluation framework (Muslim-UI) for Islamic genre website: A quantitative approach. *Proceeding of the 3rd International Conference on Information & Communication Technology for the Muslim World (ICT4M)* (pp. 1-6.). Jakarta: IEEE Xplore Digital Library.
- Nor Shahriza, A. K., & Norzelatun Rodhiah, H. (2005). Assessing Islamic information quality on the Internet: A case of information about hadith. *Malaysian Journal of Library & information Science*, 10(2), 51-66.
- Porter, C. E., & Donthu, N. (2006). Using the technology acceptance model to explain how attitudes determine Internet usage: The role of perceived access barriers and demographics. *Journal of Business Research*, 59(6), 999-1007. doi: 10.1016/j.jbusres.2006.06.003.
- Ringle, C. M., Wende, S., & Will, S. (2005). *SmartPLS 2.0 (M3) Beta*. Hamburg, Germany: University of Hamburg. Retrieved April 10, 2013 from <http://www.smartpls.de>.
- Santos, J. R. A. (1999). Cronbach's Alpha: A Tool for Assessing the Reliability of Scales. *Journal of Extension*, 37(2). Retrieved April 13, 2013 from <http://www.joe.org/joe/1999april/tt3.php>.
- Sekaran, U. (2003). *Research methods for business* (4th ed.). Hoboken, NJ: John Wiley & Sons.
- Song, J. H., & Zinkhan, G. M. (2003). Features of web site design, perceptions of website quality, and patronage behavior. *Proceedings of the Annual Meeting of Association of Collegiate Marketing Educators* (pp. 106-114). Houston: TX.
- Straub, D. W. (1989). Validating instrument in MIS research. *MIS Quarterly*, 12(2), 147-170.
- Suleman, H. I. (2005). Developing web metrics for measuring the quality of Islamic websites (Unpublished master dissertation). International Islamic University Malaysia, Kuala Lumpur.
- Wan Abdul Rahim, W. M. I., Nor Laila, M.. N., & Shafie, M. (2007). Unravel the drivers of using web information architecture in Islamic genre web: An exploratory study on Muslim online user. *Proceedings of the 10th MMU International Symposium on Information and Communications Technologies (M2USIC 2007)*, Kuala Lumpur.