

Factors Influencing the Adoption of Social Networking Sites by Malaysian Users: An Empirical Study Using Structural Equation Modelling

Muhammad Tahir Jan

Assistant Professor: Faculty of Economics and Management Sciences,
International Islamic University Malaysia, Kuala Lumpur, Malaysia
tahirjan@iiium.edu.my.

Kalthom Abdullah

Associate Professor: Faculty of Economics and Management Sciences,
International Islamic University Malaysia, Kuala Lumpur, Malaysia
kalthom@iiium.edu.my

Abdul Momen

PhD scholar: Faculty of Economics and Management Sciences,
International Islamic University Malaysia, Kuala Lumpur, Malaysia
momeniiium@gmail.com

ABSTRACT

The objective of the paper is to determine the factors associated with the adoption of social networking sites for Malaysian Muslim users where it is hypothesized that the thought of the Muslims might differ from others due to their unique religious and social beliefs. A complete self-administered questionnaire was collected from 223 Malaysian Muslim social networking users. Both exploratory and confirmatory factor analysis are used to sort the significant items for the constructs and check the validity where a path model is approached with the use of structural equation model to test the hypothesis. The proposed model acquires the overall goodness-of-fit having the satisfactory results on Normed Chi Square, Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). These results met the cut of values where CFI is more than .90, RMSEA is less than .08 and Normed Chi Square is less than 3. The results of full structural model attest that technological and social factors are the most significant factors behind the adoption of social networking sites among the Malaysian Muslim users, followed by educational factor. However, the study does not find significant influence of brand or product communication behind this adoption. Since Malaysia is a multi-racial country, a promising future study would be to consider race as a moderating variable in the model of this study.

Keywords: Social networking sites (SNSs), Adoption, Factors, Muslim Users, Malaysia.

INTRODUCTION

Social networking sites (SNSs) have achieved a leading advancement in this new age. Chan (2011) discussed about an expanded platform of SNSs that affects the usual way of thinking and is the result of both online and conventional activities. Large numbers of people are now attached with these networking sites (Chan, 2011). Social networks provide users a distinct profile that allows them visiting, viewing and interacting their opinions and viewpoints between and among the members through several types of encounters which can be social and personal. In order to communicate and interact, people can be searched based on keyboard descriptions on these networking sites and at the same time social incidents can be ascertained.

Overall, these social networking sites give individuals opportunities so that they are able to represent themselves, they can eloquent and administer their own virtual world on their own pages. The popularity of SNS is a little bit slower in the academic world where concentration of resourceful applications are required even though this popularity is great in the world of business and social communications (Booth & Matic, 2011).

Now a days various latest media technologies are used by many people to satisfy their social and psychological needs through SNSs. Because of its effectiveness in communicating commercial services, the importance of SNSs has risen while its use is extended even to educational and religious purposes. In daily lives, this sort of social communication and interaction have become progressively more frequent (Greenhow, 2011). By using social networking sites, people can update their status, upload new photos and/or videos and in this way, it has become a new culture for them. Social networking is gradually becoming a part of routine activity of people. The Muslim users' particularly Muslim teenagers who are using ICT facilities and computers from their early ages have accepted this new culture or lifestyle very easily. Many studies done discuss the issues pertaining the usage of social networking sites and people's perceptions of its security and features (Hawkins, Bulmer, & Eagle, 2011).

On the other hand, few research studies are conducted to explore the factors affecting the use of SNSs particularly among the Muslim users. Due to the spiritual and social identity of Muslim users, they are not hypothetically similar to others and at the same time their motives behind the use of SNSs are crucial and unique. The study is effective as it considers all the aforementioned factors and it can discover the underlying causes that influence the Malaysian Muslim users to adopt social networking sites. Additionally, it can assist the major role players in developing the strategy on the use of social networking sites among the Muslim users.

Not only for the adults, but also for the teenagers; social networking sites have become endemic in the daily life. Teenagers are adopting SNSs more robustly (Zhang & Daugherty, 2011). This study can be treated as a significant one as it is eliciting the motive behind the adoption of SNSs. Moreover, Muslim users, especially teenagers are often erroneous in their choice that may eventually cause significant loss to them, their family and the society as a whole, even though they are the future leaders of the society. In this sector, the key role players can take motivational or corrective actions in the usage of social networking sites by determining the factors and nature of usage of SNSs (Pierson & Heyman, 2011). To our knowledge no such study has been conducted on this issue, the research may provide many sub areas or a potential platform to study Malaysian Muslim users and their f SNSs.

LITERATURE REVIEW

Within last few years, social networking has become a top affair. SNSs consist of distinctive virtual community sites like Facebook and twitter. In the world of social networking and blogging, these are the most famous sites. Besides that, 50 to 70 million active users join in Facebook and twitters each month. Formerly, SNSs focused on the communications between and among university or college students and faculty members; afterwards it involved other social groups like high schools, companies and different geographic clusters (Chan, 2011) .

Several SNSs like Facebook and other sites use “type oneself into being” formula to design the profile of the users with distinct page by themselves. Social networking sites may differ in various aspects such as applications and functions like incorporating information and communication tools. These tools may include blogging, mobile connectivity, photo and video sharing, wikis and chatting.

Some remarkable facts are disclosed that the average individual user uses SNS like Facebook around 20 minutes daily and two third of the users as a minimum open their accounts once in a day. The highest used networking site was MySpace before the dominant introduction of Facebook. Facebook involves the users to connect with the network with specific e-mail address and it is highly innovative. By having 20 million members and 1.6 billion page views every day Facebook crosses the record of MySpace in 2007. Facebook has become the fastest rising social networking site in 2008 and the growth rate was 150% from June, 2007 to June, 2008 (Haque, Momen, Sultana, & Yasmin, 2013). After addressing the demographic and socioeconomic factors as the key element of SNSs, the literature review section moves to concentrate on the factors behind the adoption of social networking sites in extracting the evidence of derived hypothesis.

Demographic and socioeconomic factors as the key element of SNSs:

As the ability to use the computer and internet technologies have become increasingly more critical concern to economic success, demographic and socioeconomic differences are also becoming inevitable(Booth & Matic, 2011). The perspectives of Information and Communication Technologies (ICT) are immensely diverse in different types of communities of any society. Mostly, internet use is dependent on the specifications of culture and religion (Carlos et al., 2011).

Based on some previous research findings, Internet use can be classified into three types such as social, leisure and academic. Many studies show that, age is the major factor that affects Internet use (Harris & Rae, 2009). Such fact may include that the objectives of young generation are totally different than those of old generation in the case of Internet use. Young generation spends their time on Internet to browse entertaining things, to play games and to chat. These are the main scopes of their Internet use.

SOCIAL INFORMATION SHARING IN SNSs:

SNSs or social networking sites have become an essential part of the daily life for most of the Internet users. Almost four out of five Internet users have the SNSs account worldwide, as it becomes so popular. Because of its high literacy rate in Internet, Malaysia is very much a part of this emergent trend. 60 per cent of these users are young stars whose ages range from 13 to 25 (alexa.com).

The doorway of social networking sites is the Internet. It is progressively being used more and has become mandatory for most of the people around the world. The Internet is a source of information and in addition, it is treated as an effective foundation of communications and social interactions. In the past, people used emails, forums, chats rooms, and instant messaging in the cyber world for communicating with each other (Salman, 2010). The communications via Internet turned into a new form since the introduction of web 2.0 technologies. Web 2.0 is referred to the second generation of web development that is associated with the application like social media. This web ultimately offers a modern social platform that deals with interactive rudiments for users of huge participations (Haque et al., 2013).

H1: Social factors have positive influence behind the adoption of social networking sites.

Technological advancement behind the adoption of SNSs:

It is possible for people to interact virtually because of the technological advancement in the Information and Communication (ICT). Partially this study is

to determine that there are certain factors influencing teenagers' adoption of SNSs and ICT is one of the major factors. All around the world, millions of youngsters are using these sorts of networks on a daily basis. All these networks may include thousands of social networking sites in different languages for various purposes in many countries (Carlos et al., 2011).

The latest advanced technologies consist of broadband internet and smart mobile phones. The daily activities, pattern of the interaction, behaviour and life style of teenagers are shaped by this technological advancement. Teenagers have a preference of using SMS, MMS, email and Social Networking Sites to communicate with their friends, family and teachers and it has been proven by various researches. The most active users of mobile phone and the broadband Internet are the teenagers (Kennedy, 2011).

H2: Technological factors have positive influence behind the adoption of social networking sites.

Knowledge allocation with SNSs:

Separating the social and technological aspects, users use social networking sites for learning and sharing the idea and knowledge more often. An example of that would be, using YouTube for educational videos and then sharing it with social friends using Facebook. Further, some may become a member of any webpage to enhance their knowledge. Therefore the research will validate the contributing factors like social, technological and educational intentions behind the adoption of social networking sites used by the Malaysian Muslim users. In addition, Facebook as a SNS is widely used to gain information according to individuals' demands and to discover this fact.

In order to acquire required information Facebook could substitute classic search engines. The information may come from referrals of personal experiences and print sources and it is not limited within the loop of web (Chapleo, 2011).

H3: Educational factors have positive influence behind the adoption of social networking sites.

SNSs as a media of product/brand communication:

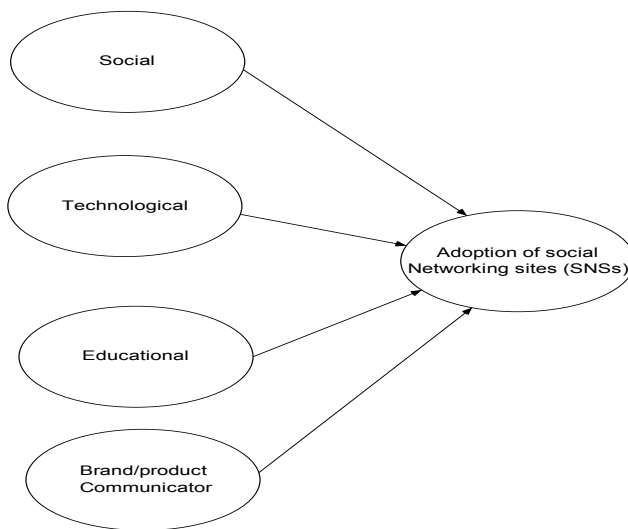
In the area of business communication, Social Networking Sites have gained great commercial importance. The present value of Facebook is \$85 billion where it expects to earn more than \$22 billion of revenue and \$234 billion of market value within 2015. In the world of social media and also in the overall market arena, Facebook has become the market leader (Till, Baack, & Waterman, 2011). SNSs are totally free of cost for general users, as they do not need to pay to use or register their accounts.

Compared to broadcast media such as television, SNSs allows for the use of banner ads and targeted ads, and the selling of virtual games and goods without incurring economic loss. In 2010, overall sales of virtual knick-knacks was up to \$1.6 billion and cakes and champagne like virtual products are available here on this site (Booth & Matic, 2011). SNS is an innovative institution in order to utilize its users as social capital. SNSs always persuade to use their original names and actual information rather than any kind of indistinctness. Through these SNSs, by analysing the actual profiles, advertisers can get their target customers. Companies can customize or segment their required groups for the appropriate offers by acquiring the information of users' lives and their friends and family affiliation. Commercial entities are provided with vast prospects by SNSs to learn about the exact demographic characteristics and also the precise social ties and the networks they belong to, such as family, co-workers, classmates, peers. As the users of Facebook gain information from diverse sources, it gives valuable information to the business companies automatically (Lilley, Grodzinsky, & Gumbus, 2012).

H4: Brand or product communication related factors have positive influence behind the adoption of social networking sites.

CONCEPTUAL FRAMEWORK

Figure 1: Conceptual model of factors influencing the adoption of social networking sites



METHODOLOGY

Since the fundamental objective of the study is to assess the role and relative value such as: educational, technological, social and brand selection behind the adoption of social networking sites (SNSs) among the young Malaysian Muslim, a survey based self-administered questionnaire is used to collect the response of

the users. A justified sampling technique applies to choose the respondents for the general study of common phenomena; it can produce the standard outcomes (Hair et al., 2010). First hand data of the study is collected from various places of Selangor and Kuala Lumpur state of peninsular Malaysia. In collecting the data, face-to-face survey is deployed in most of the cases. The study applies five-point Likert scales as the scaling techniques where the responses are ranged from strongly disagree to strongly agree. Total of 260 questionnaires were distributed. However, 223 remain valid for the data analysis. With the consideration of cost, time and other constraints, success rate of more than 80 per cent is modest in consumer-based survey. To choose the right items for each constituting constructs, exploratory factor analysis (EFA) is used. It is addressed as the effective statistical tools to elicit the important items from the many with the involvement of minimum risks (Sekaran, 1996). To test the hypothesis of the study and justify the relative importance of the constituting constructs behind the adoption of social networking sites, a structural equation modelling approach is considered with the use of AMOS graphics.

Demographic profile of the respondents:

Of the total respondents, about 37% are females in comparison with 63 per cent of males. It shows that unlike the participation in higher education, males are not reluctant to use social networking sites.

Since the study is designed to reveal the young Muslim users' opinion on the factors behind the adoption of social networking sites (SNSs), most of the respondents (95%) are in the age group of 18-25. The rest of the respondents are aged from 25 to 35 years.

In terms of academic status of the respondents, not many respondents are having Master's and PhD degree while most of them are the students of either diploma or undergraduate level of study. Among 223 respondents, 21% are diploma students where 78 per cent of them are undergraduate level students. In contrast, only about 1 per cent is masters' level student.

The overall demographic picture of the respondents reflects the objective of the study, since it aims to extract the relative importance of the factors associated with the adoption of social networking sites among the Malaysian Muslim users.

ANALYSIS AND RESULT

Factor Analysis:

Exploratory factor analysis (EFA) applies, as stated earlier, to sort out the items for each constructs. Principle component analysis is used in the analysis to examine the responses of the study. Table one in the following gives the modest reliability statistics of the analysis where value of overall Cronbach's Alpha is over .80. In all aspects, the study is conducted with the adequate number of sample and produces the significant value in Sphericity test. The significant value of Bartlett's

test and KMO value more than .60 clearly show that exploratory factor analysis would be appropriate for the study.

Table1: Reliability statistics

Cronbach's Alpha	Number of Items
.863	28

Table 2: KMO and Bartlett’s Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.846	
Bartlett's Test of Sphericity	Approx. Chi-Square	1589.016
	Df	136
	Sig.	.000

Once the applicability of EFA is finalized, the study needs to configure the number of factors it might associate with. Based on the Eigen value 1 and more, most of the researchers extract the number of factors. On this way, the study come up with five factors where more than 60per cent total variance is explained. Rotated component matrixes (see Table3) organize and settle the possible associated items with the constituting factors. Since the dominant group of statistician signifies the loading .40 and more for an item to fit with the factor, the study suppress the loading less than.40 and finally come out with varimax rotation results. Thetable with the loading value ranges from .63 to .88 shows the perfect fit of the items with the associated factor where higher loading indicates the better affiliation. Total 17 items are loaded into five constructs and none of the items in the final table is insignificant.

Table 3: Results of Factor Analysis

Rotated Component Matrix

Items or Variables	Component				
	Technological Factor	Adoption of SNSs	Social Factors	Educational Factors	Brand Communicator
E2				.762	
E3				.769	
E4				.755	
S1			.732		
S2			.862		
S3			.880		
T1	.786				
T2	.795				
T3	.764				
T4	.690				
B4					.642
B6					.813
B7					.846
A1		.667			
A2		.807			
A3		.757			
A4		.633			
Initial eigenvalues	5.940	1.699	1.602	1.232	1.148
% of Variance	15.676	14.600	13.948	12.234	11.901
Cumulative	15.676	30.276	44.224	56.458	68.360

To find the relationship among the constructs, structural equation modelling (SEM) is a comprehensive approach. Unlike other analytical tools, SEM justify overall model fit of the analysis where it calculates simultaneous relationship in a single frame (Hair et al., 2010). It shows the overall model fit either the researcher can accept or reject from the single view. Moreover, running a measurement model is also important prior to baseline model since it justifies whether the model defines the constructs adequately (Hair et al., 2010). Furthermore, it helps to define the construct validity.

To seek the overall statistical fit for the measurement model or confirmatory factor analysis, at least one of the measures from absolute fit index, incremental fit index and parsimonious fit index is essential (Hair, 2010). Among the various measures, RMSEA, CFI and Chisq/df are treated as the most reliable one for absolute, incremental and parsimonious fit respectively (Byrne, 2010). In all respects, revised CFA model confirms that the items belong to the constituting factors and attains the overall model fit. In this case, Normed Chi-Square resulted as 1.611, CFI emerged as 0.956, and RMSEA as 0.052, attesting an acceptable fit of the measurement model. Hence, the study can proceed to baseline structural model with the confirmed items of the constructs.

Figure 2: Measurement Model

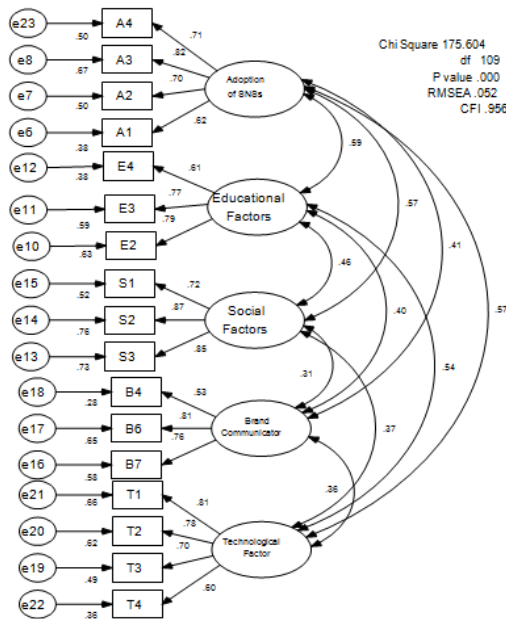
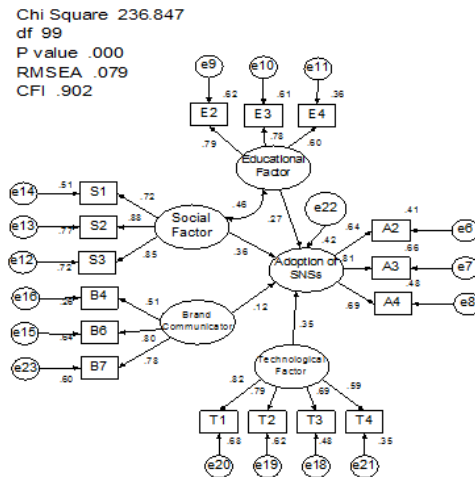


Figure 3: Hypothesized Structural Model



Likewise confirmatory factor analysis, to seek the overall statistical fit for the baseline model, at least one of the measures from absolute fit index, incremental fit index and parsimonious fit index is essential (Byrne, 2010). Among the various measures, RMSEA, CFI and Chisq/df are treated as the most reliable one for absolute, incremental and parsimonious fit respectively. χ^2/df or normed chi-square is the fundamental measures to assess the overall fit of the baseline model

where the chi square value is calculated based on the sample size and covariance matrix. Hence, the lower the value, the better the model as the estimated and calculated value becomes closer at given “p” value. The result of the main model shows that the value of CMIN/DF is below than the cut off value of 3.

Table 4: Values from the Main Model

ChiSq	236.847
Df	99
Chisq/df	2.392
CFI	0.902
RMSEA	0.079

Constituting items of the questionnaire along with the number of respondents participates in the study are considered in justifying the “p” values of the model. As stated earlier, CFI or comparative fit index is commonly used to measure the incremental fit of the study. The cut off value for CFI is minimum .90 and is expected to close to 1. Among all the measures of absolute fit indices, RMSEA or root square error of approximation is widely used. Here, the lesser the better. The value is expected less than 0.08 for the absolute fit of the overall model. A fully fledged structural model is depicted in Figure 3.

Table 5: assessment of the fitness of the overall model

Fit Indices	Cut-off value	Value obtained	Interpretation
CMIN/df	3	2.392	The Required level is achieved
CFI	0.90	0.902	The Required level is achieved
RMSEA	0.08	0.079	The Required level is achieved
Table 5: assessment of the fitness of the overall model			

Hypothesis testing:

Critical ratio or CR value 1.96 is used as the benchmark value to test the hypothesis in SEM. To establish the stronger relationship the greater value is expected. CR value of the study (Table 6) suggests that to form adoption of social networking sites, all the constituting factors have the significant positive influence except brand communication factor.

Therefore, it can be said that alternative hypothesis h1, h2 and h3 are not rejected. However, null hypothesis h4 is rejected since the CR value (table 6) for this case is below 1.96. As table 5 shows, for their entire fundamental measures parsimonious, absolute and incremental fit indices demonstrate the good fit of the model. It indicates that endogenous variable has significant direct relationship with the constituting exogenous variables. In other words, the baseline model elicits the significant relationship of educational, technological and social factor with the adoption of social networking sites while the relationship with brand or product communication is not significant here.

Table 6: Standard estimation of the main model

			Estimate	S.E.	C.R.	P	Hypothesis
Adoption of_SNSs	<---	Social Factor	.184	.045	4.058	***	Supported
Adoption of_SNSs	<---	Brand Communicator	.078	.049	1.578	.114	Not Supported
Adoption of_SNSs	<---	Technological Factor	.224	.051	4.369	***	Supported
Adoption of_SNSs	<---	Educational Factor	.190	.063	3.000	.003	Supported

To test the validity of the analysis, the study considers the output of the measurement model besides the baseline model. To justify the construct validity of the analysis, structural equation modelling needs to test convergent, discriminant and face validity. Both factor loading (more than .70 in most of the cases) and reliability statistic of the result shows convergent validity while squared correlation matrix is significant at the level of 0.001 indicating the satisfactory result of discriminant validity of the analysis. Furthermore, with the consideration of strong theoretical support from the literatures, the face validity of the study is confirmed.

Critical ratio (table 6) indicates that like other users, Malaysian Muslims are also accelerating their usage of social networking sites due to the convenience of usage on Smartphone and other gadgets. It also reveals the fact that young Malaysian Muslim users use social networking sites for both social and educational purposes. However, marketing communication over the social networking sites

is yet to be significant for the Malaysian Muslim users. Meaning that, they don't rely heavily on the advertisements or marketing communication over the social networking sites. The finding of the study for first three hypothesis are similar to the previous studies discussed in the literature review section while the result of the hypothesis four proves the assumption that Malaysian Muslims are not identical to other groups in every aspect and marketing promotion via SNSs yet to get significant attention from them.

CONCLUSION AND LIMITATION

For the social and cognitive development of online surfers of all ages including the young stars, the emergence of social media gives a major breakthrough. The study produces an important milieu for the key role players and stakeholders to uncover the underlying factors behind this adoption of social networking sites. It shows that Malaysians are also not reluctant to use social networking sites where technological advancement accelerates the use of SNSs. Meaning that, they use social networking sites since it becomes so easy to access due to the latest technological advancement such as Smartphone and other gadgets. Managing the social relationships with different groups of people including friends and family is another most important reason behind the adoption of SNSs. Many of the young stars are using social networking sites to extend the learning opportunities and exchange the learning values.

Among the many factors, the study has revealed the most relevant constructs that cause the adoption of social networking sites particularly among the young stars of Malaysian Muslims while the relative importance of the factors is also shown in the analysis. However, adoption of social networking sites is not limited to these factors while many other studies show the different factors. In addition, since Malaysia is a multi-racial country, a future study can be done considering the race as a moderating variable.

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