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**Muslim Surfers on the Internet: Using the Theory of Planned Behaviour to Examine the
Factors Influencing Engagement in Online Religious Activities**

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Abstract

This study seeks to describe the types of religious activities Muslim surfers in Singapore engage in on the internet, and uses the theory of planned behaviour as a theoretical framework to examine how internet perception, subjective norms, perceived behavioural control, internet self-efficacy, religiosity and other key demographic variables affect the use of the internet for religious purposes among Muslim surfers in Singapore. A total of 578 Muslim internet users aged 18 and above participated in a computer-assisted telephone interviewing survey in May 2004. We found that Muslim surfers tend to engage in online activities that were more related to personal religious concerns than those activities that were related to traditional institutional religion. Findings also indicate that perceived social pressure from the Muslim community, internet self-efficacy, and religiosity were positively related to engagement in online religious activities, while age was negatively related to engagement.

Keywords: internet • internet perception • internet self-efficacy • Islam • Muslim • religiosity • religious activities • Singapore • subjective norms • theory of planned behaviour

Muslim Surfers on the Internet: Using the Theory of Planned Behaviour to Examine the Factors Influencing Engagement in Online Religious Activities

INTRODUCTION

As a new form of technology, the internet has generated numerous lines of research inquiry within the mass communication discipline. Particularly, the area on religion in cyberspace has caught the attention of many communication scholars. There have been some empirical studies on the profiles of religious surfers on the internet and their usage patterns in general (e.g. Larsen, 2001; Hoover et al., 2004), and on how and why individuals use religious websites (e.g. Bainbridge, 2000; Howard, 2000). However, many of these studies remained largely descriptive and exploratory, without a systematic effort made to explain online religious faith seekers' key motivations behind the use of the internet for religious purposes. Moreover, literature on the relationship between religion and internet use have focused mainly on the majority religions in North America, while minority religions such as Islam have received, relatively, a smaller amount of attention.

To fill the existing gap in research on religion and the internet, this study not only attempts to provide an overview of the types of religious activities Muslim surfers engage in online in relation to their traditional offline religious activities, but also uses Ajzen's (1991) theory of planned behaviour to systematically examine how such key beliefs and motivations as subjective norms, internet self-efficacy, internet perception, and religiosity, affect Muslim surfers' engagement in online religious activities. In using the theory of planned behaviour as the central theoretical framework for this study, we hope to propel research towards explaining and predicting factors that could plausibly motivate the religious uses of interactive technologies, above and beyond the current descriptive level of analysis found in extant computer-mediated communication research.

Although numerous scholars have employed other theoretical frameworks to examine motivations behind the religious uses of media in previous studies, we argue that the theory of planned behaviour could provide a comprehensive framework for us to gain a better understanding of the research area. For instance, the uses and gratifications perspective was commonly employed in previous studies that examined the religious uses of traditional mass media (e.g. Abelman, 1987; Hamilton and Rubin, 1992) and, more recently, the internet (Armfield and Holbert, 2003; Richardson, 2003; Laney, 2005). Seemingly alike, we contend that the two theoretical frameworks are inherently different. Uses and gratifications perspective assumes that the selection of, and attention to, different media messages emanates from social-psychological factors where audience actively select and consume media messages to satisfy their preexisting needs (Rubin, 2002). However, this perspective fails to take into consideration other important factors such as subjective norms and perceived behavioural control that are invariably included in the theory of planned behaviour. As such, using the theory of planned behaviour in this study as an interpretive tool will undoubtedly add new insights and contribute to our existing body of knowledge on religion and the internet.

The religious domain on the internet seems to auger well for individual faith-seekers and traditional religious institutions, as religious information search and interactions online may be a new avenue to strengthen internet users' own religious beliefs. The notion of reinforcing one's religiousness in this increasingly secular society is important as a growing body of empirical studies have shown that certain dimensions of religiousness may enhance positive health outcomes, such as improving one's subjective states of well-being (Ellison, 1991), and lowering one's levels of psychological distress and depression (Idler, 1987; Williams et al., 1991). In a comprehensive report by the Fetzer Institute (1999), the researchers concluded that religiousness plays a consequential role in individuals' physical

and mental health outcomes. Scholars have also found a positive influence of religious beliefs on such civic activities: as voting participation (Peterson, 1992; Harris, 1994; Verba et al., 1995); social capital (Putnam, 2000); and other forms of political mobilization (Diaz, 1996; Campbell, 2004). These potentially favourable outcomes of religious reinforcement therefore lend legitimacy to research on religion and the internet, and underscore the importance of examining what motivates religious surfers (in this case, Muslim surfers), to go online for religious purposes.

RESEARCH ON ISLAM AND THE INTERNET

Undoubtedly, the advent of the internet has fuelled the emergence of new religious expressions and spiritual communities online. Many traditional forms of religion have been adapted to cyberspace and are manifested in such diverse forms as cybermosques, online rituals (e.g. e-prayer and virtual pilgrimages) and online Muslim communities in the context of Islam. In fact, scholars have rendered the internet as a new domain for experiencing the spiritual dimensions of life (O'Leary, 1996; Cobb, 1998). With the abundance of Islamic information found on the internet, not only can the average Muslim go online to check for mosque schedules, to read the latest news on Islam and, to gather chapters from the Qur'an and other Islamic literature, they can also express their opinion online through emails and use chat rooms to spread Islamic religion and belief.

Ironically, despite the large amount of Islamic information in cyberspace, theoretically-driven empirical research on Islam and the internet has been surprisingly scant. This under-representation may be due, in part, to the fact that much of the academic research was conducted in North America where Islam is a minority religion. Furthermore, scholars who examined this topic tend to use critical or case study approaches that mostly described and proclaimed the potential benefits that the internet could bring for online faith-seekers (Bunt, 2000; Mazrui and Mazrui, 2001; Andersen, 2003; Kort, 2005). For example, using a

critical approach in the study of new media and Islam, Andersen (2003) argued that the internet has recreated an expanded public sphere among the Muslim community by allowing more religious individuals to access Islamic materials online. Similarly, in the explorations of the adaptation of traditional religious practices online, Bunt (2000) has also predicted that greater communication networks and enhanced interactivity will enable Islamic websites to bring people together efficiently in cyberspace. Although these studies provided new insights and perspectives to religion online, more theoretically-driven empirical research, drawing from across diverse disciplines such as psychology, sociology and communication, are needed in the study of Islam and the internet.

In addition, we also argue here that research on religion and the internet should go beyond exploratory and critical analysis to make space for inquiry that focuses on examining factors that motivate individuals to go online for religious purposes. Certainly, a series of studies conducted by the Pew internet and American Life Project have given a comprehensive description of online religious surfers and their general internet usage trends within the United States (Larsen, 2000; Larsen, 2001; Hoover et al., 2004). A recent Pew's 'Faith Online' report found that 64 percent of internet users have sought religious information online (Hoover et al., 2004). Earlier on, a similar study also found that a majority of churches and temples surveyed in the US believe internet usage has aided congregational life by 'strengthening the faith and spiritual growth of its members' through the activities and practices it facilitates (Larsen, 2000: 2). Additionally, the Pew's 'Cyberfaith: How Americans Pursue Religion Online' report also observed that active religious surfers perceived the internet as a 'supplemental tool that enhances already deep commitments to their churches, synagogues or mosques' (Larsen, 2001: 3). However, as mentioned earlier, these studies conducted in North America were mostly descriptive in nature, often without deeper understanding of the motivations behind the use of the internet for religious purposes by

online faith-seekers.

In fact, Campbell, in her critical reflection in 'Making Space for Religion in internet Studies' (2005), not only argued for greater recognition of religion in the realm of internet studies, but also advocated greater focus on uncovering the motivating factors that propel particular uses of the internet for religious purposes that were often overlooked in other studies.

In response to this, we attempt to describe the type of religious activities Muslims in Singapore engage with on the internet, and to identify factors that determine their use of the internet for religious purposes. Geographically situated in Southeast Asia, Singapore is a multiracial cosmopolitan city state. With a population of just over four million, the country is made up of a majority of Chinese (77%), followed by minority groups of Malays (14%), Indians (8%) and expatriates (1%) (Singapore Department of Statistics, 2000). In terms of religious structure, approximately 15 percent of the population in Singapore is Muslim. Although Muslims in Singapore are a religious minority, they enjoy a relatively high internet penetration rate vis-à-vis most of their counterparts in other Muslim-majority countries. Singapore has one of the highest internet penetration rates in the world, reaching 67.2 percent in 2005 (ITU, 2005) – a remarkable figure comparable to many developed nations such as the United States and Sweden (Nielsen Net Ratings, 2002). According to the Singapore internet Project (2003), about 44 percent of Malay Singaporeans, who make up 95 percent of the Muslim population, are internet users. Therefore, this would be an appropriate context in which to examine engagement in online religious activities amongst Muslim surfers.

Accordingly, our study seeks to answer two related questions. What are the types of religious activities Muslim surfers engage in on the internet? And what factors motivate them to use the internet for religious purposes? By identifying and understanding the factors that influence their going online to engage in religious activities, we could garner new insights

that could potentially increase the activity and presence of the Muslim community in cyberspace.

THEORY OF PLANNED BEHAVIOUR AND ENGAGEMENT IN ONLINE RELIGIOUS ACTIVITIES

The conceptual framework for this study was provided by the theory of planned behaviour (Ajzen, 1991). This theory has been used successfully in attempts to provide a better understanding of such diverse online behaviours as internet purchases (George, 2002), virtual banking adoption (Liao et al., 1999), electronic service acceptance (Hsu and Chiu, 2004), and information communication and technology adoption and use (Vuorela and Nummenmaa, 2004). With its emphasis on personal attitudes, perceived social expectations and self-efficacy concerns, this theory appeared appropriate for examining the factors that influence Muslim surfers' engagement in online religious activities in the context of Singapore.

Briefly, the theory of planned behaviour postulates that an individual's action is influenced by three major factors: favourable or unfavourable evaluation of the behaviour (attitude toward the behaviour); perceived social pressure to perform or not perform the behaviour (subjective norm); and self-efficacy in relation to the behaviour (perceived behavioural control). These three factors combine to determine the formation of a behavioural intention. Generally, the more favourable the attitude, and the greater the perceived social pressure and perceived behavioural control, the stronger would be an individual's intention to perform the behaviour of inquiry. Finally, when the opportunity arises, individuals would carry out their intentions, given a sufficient degree of actual control over their behaviour (Triandis, 1977; Gollwitzer, 1993). Therefore, the theory also assumes that intention is an immediate antecedent of actual behaviour.

When applied to Muslim online faith-seekers' use of the internet for religious

purposes, the theory of planned behaviour suggests that attitude toward engagement in online religious activities, perceived social pressure to undertake religious activities on the internet and perceptions of control over this behaviour, would determine intention and hence actual engagement in online religious activities.

Attitudes—internet perception

In the theory of planned behaviour, attitudes refer to positive or negative evaluations of a behaviour and its consequences. In particular, individuals tend to form favourable attitudes toward behaviours they believe would have largely desirable consequences, while forming unfavourable perceptions towards behaviours they associate mostly with negative outcomes (Ajzen, 1991). As such, individuals with favourable perceptions towards a certain behaviour would be more likely to engage in it, as opposed to those with unfavourable perceptions. Relevant to our study, we would expect that individuals who have a positive perception of the internet would be more likely to engage in religious activities on it than those who have a negative perception of the interactive medium. We propose the following relationship between the perception of the internet and engagement in online religious activities:

H1: Internet perception is positively related to engagement in online religious activities.

Subjective norms

According to the theory of planned behaviour, subjective norms are individuals' perceived social pressures to behave in a particular way (Ajzen, 1991). Although these perceived social pressures are not necessarily real, they could influence an individual's behaviours in many ways. Specifically, subjective norms consist of two components: an individual's perceived social pressures to perform or not to perform a particular behaviour; and their motivations to comply with specific referent individuals or groups, such as their

family and friends (Ajzen, 1991). This perceived social pressure, in conjunction with an individual's motivation to comply with the different referents, determines the prevailing subjective norm toward using the internet for religious purposes. Specifically, people would be more motivated when the referent individuals or groups are important to them.

Religious people tend to conform and act in accordance to communities or groups that share their religion (Stark et al., 1982). Previous studies have also found that involvement in religious groups can establish stronger social bonds (e.g. Regnerus and Elder, 2003). Moreover, empirical studies have shown that Singapore is generally a collectivistic culture (Kurman and Sriram, 2002; Soh and Leong, 2002; Hwang et al., 2003), and people in collectivistic cultures have been demonstrated to have a tendency to conform to societal norms and values (e.g. Soh and Leong, 2002). As such, we would expect subjective norms to play an important role in shaping behaviours amongst Muslims in Singapore. As mentioned earlier, people's motivation to behave is linked to important referent groups or individuals. In our study, we are interested in two types of referent groups: the Muslim community as a whole and the family. Singapore's Muslim population is closely-knit, with ties to major religious organizations. Hence, we predict that:

H2: Subjective norm from the Muslim community is positively related to engagement in online religious activities.

The distinction between community and family is important as they may not exert the same type or same amount of influence on individuals. Studies have shown that the religiosity of children and parents are linked, not only in childhood, but also in adulthood (Myers, 1996), and that parental desire for their child to be religious is positively related to the internalization of religion in the adolescent (Flor and Knapp, 2001). Therefore, we may expect individuals' religious information-seeking behaviour to be influenced differently by perceived social pressure from the family:

H3: Subjective norm from one's family is positively related to engagement in online religious activities.

Perceived behavioural control and internet self-efficacy

Perceived behavioural control refers to an individual's belief that they are able to engage in a particular behaviour, and presumably it is more influential than actual behavioural control on behaviour intent and action (Ajzen, 1991). Not all behaviours are within an individual's control. For example, people may have the intention to maintain their health. However, they have no control over their own genetic makeup and environmental hazards. According to the theory, perceived behavioural control is context-specific and varies across situations. Therefore, we posit the following:

H4: Perceived behavioural control is positively related to engagement in online religious activities.

Closely related to Ajzen's perceived behavioural control is Bandura's concept of perceived self-efficacy (Bandura, 1986); that is, confidence in one's ability is associated with successful performance of a behaviour. According to Bandura, self-efficacy is the belief 'in one's capabilities to organize and execute the courses of action required to produce given attainments' (1986: 3). Although Ajzen (1991) likens perceived controllability to self-efficacy, we argue that the two concepts are not identical. The former measures control in a more general way, while the latter measures how confident one is in handling specific tasks. Therefore, examining the two concepts independently is not only crucial, but also necessary. For the purpose of the current research, internet self-efficacy, which is defined as the belief in one's ability to organize and execute internet actions (Eastin and LaRose, 2000), is examined:

H5: Internet self-efficacy is positively related to engagement in online religious activities.

Religiosity

Islam encourages the use of science and technology for moral ends and for all the legitimate needs of society. Moreover, in Arabic, knowledge is equivalent to science (Spigelman, 2000). Scholars have contended that Muslims are receptive to technological advances and have used the internet to practice, teach and debate issues related to their faith (e.g. Bunt, 2000). According to this view, we may expect that the more religious one is, the more likely one will be to harness new communication technologies, such as the internet, for the advancement of knowledge. Furthermore, existing research has shown that religion surfers tend to take their faith seriously in the offline world and use online tools to enrich their knowledge of their faith and to practice their devotions (Hoover et al., 2004). This study, therefore, posits:

H6: Religiosity is positively related to engagement in online religious activities.

Demographic and socio-economic variables

Previous studies have found women, the middle-aged, the college-educated and [the relatively well-to-do] to be more likely to use the internet for religious or spiritual purposes (e.g. Hoover et al., 2004). As such, we measured and controlled for gender, age, education and income in our analysis.

METHOD

Sample and procedure

Using a nationwide random digit dialing procedure, data for our study came from a computer-assisted telephone interview (CATI) survey administered between 10 May 2004 and 13 May 2004 to a random sample of Muslims in Singapore. The Islamic Religious Council of Singapore provided a comprehensive sampling frame of about 300,000 Muslims in Singapore. The religious council maintains a database of telephone numbers for various

reasons, including tithing, pilgrimage and financial assistance. A total of 1390 Muslims aged 18 and above participated in the survey. Among them, 578 were internet users. As the purpose of this study was to examine the factors influencing Muslim surfers' engagement in online religious activities, only responses from internet users were analyzed. The response rate, calculated with the American Association for Public Opinion Research (AAPOR) Formula 3, was 67.8 percent.

In Singapore, the Malays make up 95 percent of the Muslim population, while the remaining five percent are mainly Indian and Chinese Muslims. As such, two language versions of the survey, English and Malay, were constructed to ensure that the majority opinions of the Muslim community were adequately captured. Pretests of the surveys were carried out to enhance face validity of the instruments through the early elimination of discrepancies. Interviewers were undergraduates of a local national university who had undergone extensive training on telephone interview techniques and hands-on practice with the CATI equipment. Only Singapore citizens and permanent residents aged 18 and above were surveyed. The youngest male/oldest female technique was used to randomize within households. For each contacted household, interviewers asked to speak with 'a male 18 years or older who is now at home'. If there was no eligible male at home, interviewers asked to speak to the oldest female at home. This technique has yielded representative samples in the past (Kennedy, 1993; Willnat et al., 2002).

Dependent variable

Engagement in online religious activities

Our dependent variable was based on a modified version of the measures from a study by Underwood and Teresi (2002). Respondents were asked to indicate, in the past 12 months, the number of times they had gone online:

- a) to read accounts about Islam;
- b) to get ideas on how to celebrate significant Islamic holidays such as *Hari Raya* (Eid), *Awal Muharram* (Muslim New Year) or the Prophet Muhammad's birthday;
- c) to search for mosques or *suraus* near their house;
- d) to buy Islamic books;
- e) to download or listen to online audio files with Islamic themes (e.g. readings from the Qur'an, Islamic lectures, etc.);
- f) to make a donation to an Islamic related organization or charity online;
- g) to use email to plan a meeting for an Islamic group or mosque;
- h) to send an online greeting card for an Islamic holiday like *Hari Raya*;
- i) to send, receive or forward emails with Islamic content; and
- j) to check for prayer times.

For the purpose of standardization, we recoded each item into two dichotomous categories (0 = 'No', 1 = 'Yes') and added all the ten items to develop an additive index (range = 0 – 10, $M = 3.27$, $SD = 2.42$).

Independent variables

Internet perception

The five-item measure of internet perception developed by the Singapore internet Project (2003) was adopted for use in this study. With the consent of the SIP, we ran the raw dataset from the original study and the items for internet perception combined to generate a good alpha value of .73 ($N = 1048$). The respondents were asked on a five-point scale (1 = 'strongly agree', 5 = 'strongly disagree') to what extent they agreed with the following statements:

- a) The internet is unimportant to you.
- b) The internet is not a useful tool to you.

- c) The internet is interesting to you.
- d) The internet can make your life convenient.
- e) The internet is difficult for you to use.

Items (c) and (d) were reverse-coded. Responses to the five items were averaged to create a scale, with higher scores indicating a more favourable perception of the internet ($M = 4.00$, $SD = .46$, $\alpha = .66$).

Subjective norms

According to Fishbein and Ajzen (1975), subjective norm is a function of normative beliefs which are quantified by multiplying the perception of a significant other's (i.e. a referent) preferences about whether an individual should engage in a behaviour by the motivation of the individual to comply with that referent's expectation. We operationalized the important referent into two dimensions: namely, influence from the Muslim community and influence from the family members. To measure influence from the Muslim community, respondents were asked to point out on a five-point scale (1 = 'strongly agree', 5 = 'strongly disagree') to what extent they agreed with the following statements:

- a) People close to you in the Muslim community encourage you to use the internet.
- b) You care about what people close to you in the Muslim community think.

Item (a) is the normative belief while item (b) is motivation. We multiplied the two items, with higher scores indicating a larger influence of the Muslim community over the respondents' use of the internet for religious purposes ($M = 13.47$, $SD = 4.46$). Likewise, for the influence from family members, respondents were asked the following statements:

- a) Your immediate family encourages you to use the internet (i.e. normative belief).
- b) You care about what your family thinks (i.e. motivation to comply with referent).

Similarly, these two items were multiplied to create a score, where the size of the score was proportionate to the influence of family members over the respondents' use of the

internet for religious purposes ($M = 14.60$, $SD = 4.31$).

Perceived behavioural control

The extent of behavioural control respondents were perceived as possessing was measured using the scales adapted from Pedersen and Nysveen (2002), where the original alpha value was .66. In our study, respondents were asked, on a five-point scale (1 = 'strongly agree', 5 = 'strongly disagree'), how much they agreed with the following statements:

- a) You feel free to use the internet to do what you want to do.
- b) Whether you use the internet or not is completely within your control.
- c) You have the necessary means and resources to use the internet.

By averaging across the three items, a composite scale was created, with higher scores indicating more control ($M = 3.91$, $SD = .50$, $\alpha = .53$).

Internet self-efficacy

An abbreviated, nine-item version of the internet self-efficacy scale (Torkzadeh and Van Dyke, 2001), with an original alpha value of .97, was used to assess whether the respondents were confident using the internet. Specifically, respondents were asked to rate on a five-point scale (1 = 'strongly agree', 5 = 'strongly disagree') whether they felt confident browsing the web, chatting on the internet, sending email messages, reading email messages, creating a homepage, making changes on a homepage, downloading items from a computer, finding information on the web and sending a fax via the computer. As brevity is preferred in telephone interviews, duplicated or similar items in the original Torkzadeh and Van Dyke's (2001) internet self-efficacy scale were eliminated. Responses to these nine items were averaged to create a scale, with higher scores reflecting higher levels of self-efficacy ($M = 3.57$, $SD = .44$, $\alpha = .71$).

Religiosity

To determine the religiosity of the respondents, they were asked, during a typical week:

- a) how many times they pray privately in places other than the mosque;
- b) how many times they watch or listen to Islamic programs on the TV or radio;
- c) how many times they read the Qur'an or other Islamic literature;
- d) how many times they look to *Allah subha na wata'ala* (God is the most powerful) for strength, support and guidance;
- e) how many times they turn to Islam to help them understand or deal with stressful situations in any way; and
- f) the number of hours they spend in activities that are related to Islam in any way.

These items were adapted from the Fetzer Institute (1999) report, where items (e) and (f) were added to the original four-item measure. Each item was recoded into three levels of religiosity (1 = 'low', 2 = 'medium', 3 = 'high') with relatively equal proportions. The six recoded items were then averaged to create a composite scale ($M = 2.11$, $SD = .44$, $\alpha = .56$), where the higher the value, the stronger the religious belief held.

Demographic information

Respondents were asked to report demographic information at the end of the survey, including age, gender, education and household income. The age of the respondents ranged from 18 to 76 years old ($M = 31.54$, $SD = 11.47$) and 57.9 percent of the respondents were women. In terms of education, 2.5 percent of the respondents only attended elementary school, 8.7 percent attended high school, 34.9 percent graduated from high school, 43.1 percent attended some form of college and 10.8 percent obtained a college degree. In general, the demographics of the respondents compared well with the Singapore ethnic Malay population from the 2000 census data (Singapore Department of Statistics, 2000) in terms of

education and household income. There were some differences in gender and age. There were far more female respondents in the sample (57.9 percent) than in the population census (49.7 percent). However, we were mainly interested in controlling for gender for our analysis instead of the specific effect of gender. As such, the over-representation of female respondents is of minor concern. Also, the sample registered a smaller proportion of respondents from the 15–19-year-old group (7.5%) than did the population census (12%). However, this discrepancy was expected as the sample did not include anyone younger than 18. Therefore, there were grounds to believe that these differences were not significant enough to affect the overall results.

RESULTS

Our first research question seeks to get a general overview of the types of religious activities Muslim surfers in Singapore usually undertake online. Figure 1 summarizes the percentage of faith-related activities Muslim surfers reported to have engaged in on the internet in the past 12 months. Our results show that about 80 percent of the Muslims who use the internet in Singapore have used it for faith-related matters. A majority of the Muslim internet users reported going online for personal religious or spiritual concerns: 62.3 percent of the Muslim internet users went online to read accounts about Islam; 61.7 percent sent, received or forwarded emails with Islamic content; 37.2 percent downloaded or listened to online audio files with Islamic themes; and 7.2 percent bought Islamic books online.

[Insert Figure 1 about here.]

In addition, Muslim surfers also engaged in online activities related to traditional institutional religion: 50.4 percent sent an online greeting card for an Islamic holiday like *Hari Raya*; 33.0 percent sought ideas on how to celebrate significant Islamic holidays; 30.7 percent searched for mosques or *suraus* near their home; 28.2 percent went online to check for prayer times; 16.3 percent used email to plan a meeting for an Islamic group or mosque;

and 11.7 percent made a donation to an Islamic related organization or charity online.

Overall, the results show that Muslim surfers in Singapore engaged in online activities that were related to both personal religious concerns and to traditional institutional religion.

Our second research question attempts to provide an explanation as to what motivates Muslims to use the internet for religious purposes. To do so, we examined the relationships among the independent and dependent variables postulated in our study using hierarchical linear regression analysis as suggested by Cohen and Cohen (1983). Results of the hierarchical regression analysis for engagement in online religious activities amongst the Muslim surfers were summarized in Table 1.

[Insert Table 1 about here.]

As shown in the table, the independent variables were entered into the regression model according to their assumed causal order. We controlled for gender, age, income, education and religiosity by entering these demographic and socio-economic variables into the first block of the regression model. The first block of variables accounted for 9.9 percent of the variance.

Next, internet perception, subjective norms from the Muslim community, subjective norms from the family, perceived behavioural control and internet self-efficacy were entered into the second block of the regression model, accounting for an additional 13.2 percent of the variance.

As expected, our results showed that perceived social pressure from the Muslim community was positively associated with engagement in online religious activities ($\beta = .14, p < .01$). In other words, higher perceived social pressure from the immediate Muslim community played a significant role in motivating the use of the internet for religious purposes amongst the respondents. Hence, H2 was supported. On the contrary, H1 and H3, which stated that internet perception and subjective norm from the family were positively

associated with engagement in online religious activities respectively, were not supported.

In addition, the result for perceived behavioural control was not significant. Hence, H4 was not supported. However, as predicted, the analysis showed that internet self-efficacy was positively related to engagement in online religious activities ($\beta = .14, p < .01$). Put differently, the more efficacious the respondents were about using the internet, the more likely they would be to go online for religious purposes. This finding supported H5.

In addition to the above hypothesized relationships, we examined demographics and socio-economic variables as well. Overall, we found that engagement in online religious activities was negatively related to age ($\beta = -.23, p < .001$), positively related to monthly household income ($\beta = .09, p < .05$), and positively related to religiosity ($\beta = .11, p < .05$). In other words, being younger, wealthier and more religious would positively relate to use of the internet for religious purposes. On the other hand, the results showed that gender and educational level were not significantly related to internet use for religious activities. Overall, the full regression model explained 23.1 percent of the total variance of our dependent variable.

DISCUSSION

One main objective of the present study was to profile the types of religious activities Muslims in Singapore engage with on the internet. In general, the findings reveal that a slightly higher proportion of Muslim surfers engaged in online activities that were associated more with personal religiosity concerns, and somewhat less so for activities related to involvement in traditional religious institutions.

Similar to the findings of Pew's 'Faith Online' report (Hoover et al., 2004), it appears that instead of totally substituting offline religious activities, Muslim surfers' online activities seem to supplement the traditional offline activities. That is, Muslim surfers seem to be more interested in augmenting their traditional religious experiences through personally expressing

their own faith and spirituality, rather than seeking a totally new online experience. This implies that the internet can potentially be a new avenue to augment traditional offline religious practices amongst Muslim faith seekers.

Another major objective of this study was to examine the factors that influence Muslim surfers' use of the internet for religious purposes, using the theory of planned behaviour (Ajzen, 1991). The present study confirms that subjective norms contribute to engagement in online religious activities, but with two divergent outcomes. Conformity to the larger Muslim community is congruent with our hypothesis, where it is positively related to the use of the internet for religious purposes. Conformity to family members, on the other hand, does not have any significant association with online religious use. This suggests that the larger Muslim community may be a more important referent group, exerting more influence on the average Muslim individual than the family does. In line with our earlier supposition, the results also show that religious group conformity should be measured at two separate levels.

The strong influence exerted by the larger Muslim community may be explained by the social identity theory, which is defined by Tajfel (cited in Hogg and Williams, 2000: 87) as 'the individual's knowledge that he belongs to certain social groups together with some emotional and value significance to him of his group membership'. In Singapore, like many other parts of the world, Muslims are required to perform prayers five times daily, be it in the office, at home or in the mosque. In addition, attendance at the Friday prayers, which is preceded by Qur'anic recitation and funeral prayers, is mandatory. Usually conducted in a mosque and performed in groups, the Friday prayers can help to create a sense of familiarity, friendliness and unity for Muslims (El Azayem and Hedayat-Diba, 1994). Along with the regular prayers, other symbolic rituals such as fasting, ablution, alms giving and pilgrimage, all contribute to the development of a communal lifestyle for Muslims, which is believed to

be a good psychological guard against anxiety and depression (El Azayem and Hedayat-Diba, 1994). These unique practices of Islam thus engender interconnectedness between the self (individual) and the in-group (the larger Muslim community). Although Muslims are a minority religious group in Singapore, as a tightly-knit community they do possess the potential to emit influence and originate their own norms. Our explanations and data thus imply that the larger Muslim community could play a vital role in motivating internet users to engage in religious activities online.

Additionally, this study also presents some interesting findings as to how religiosity affects Muslim surfers' level of religious activities online. This study demonstrates that religiosity is positively related to engagement in online religious activities. An early-adopter of the internet, the Singapore government develops state-of-the-art infrastructure and encourages its people to ride on the tide of the information-superhighway. As a modernized and highly urbanized city, the government of Singapore places a high premium on human capital, where individual self-enhancement through harnessing new technologies is seen as imperative to building a strong economy for the country. Furthermore, the Islamic Religious Council of Singapore continuously promotes internet usage by conducting internet-related courses for the Muslim community and these efforts have been largely successful. As such, it is evident that Muslims in Singapore do not perceive the internet as an inimical scientific production that will pose a threat to the fundamental traditions and beliefs of Islam. Instead, through their accurate understanding of the Qur'an, local Muslims have Islamized modernity by adopting new technologies, the internet in particular, to serve their communal needs and improve their lives.

Consistent with the robust results of previous research contending that self-efficacy is an important determinant of behaviour (Hsu and Chiu, 2004; Vuorela and Nummenmaa, 2004), this study found a significant relationship between internet self-efficacy and online

religious uses. In other words, the more efficacious Muslim surfers are towards the internet, the more likely they are to log on to the internet for religious purposes. Therefore, our research further confirms that internet self-efficacy is a meaningful and tenable construct within the context of information retrieval on the Web, and this implies that increasing Muslim surfers' confidence of using the internet is critical to their going online to look for materials regarding Islam and to participate in activities related to Islam. Moreover, this also underscores the validity and reliability of the internet self-efficacy construct and further demonstrates its potential to be applied across varied cultures and contexts.

Contrary to what we have hypothesized, this study found that perceived controllability does not have a significant influence on online religious use. This indicates that the decision of Muslim surfers' to use the internet for religious purposes is independent of how much control they see themselves possessing over it. Although our study generates a null finding in this case, it also shows that perceived behavioural control and internet self-efficacy are two distinct entities that should be measured and conceptualized independently, at least in the case of the Muslim community and their online religious use, as opposed to similarities between these two concepts as claimed by other researchers (Ajzen, 1991; Vuorela and Nummenmaa, 2004).

Inconsistent with our hypothesis, internet perception is found to be unrelated to religious use on the internet. However, Muslim internet users have a very favourable perception of the internet in general. They may have perceived the internet in a positive light, but this may not be enough to motivate them to go online for religious purposes. In other words, perceived social norms and self-efficacy may be better predictors of online religious use than of internet perceptions.

Besides the key beliefs and motivations discussed above, demographic and socio-economic variables such as age, income, education and gender were analyzed. Consistent

with previous findings, results of this study show that Singaporean Malay Muslims who are older and have a lower monthly household income tend to engage in less religious activities on the internet than younger and wealthier Singaporean Malay Muslims. On the other hand, both education and gender were not found to be significantly related to online religious use. The fact that we only analyzed internet users in our study reduced the variation in educational level of our respondents, as internet users tend to be better educated than non-internet users (e.g. Kuo et al., 2002). This may be a possible explanation for the null finding between education and online religious use.

However, there are some limitations in this study that could be overcome in future research. The low reliability of some of the measurements, such as perceived behavioural control, may have contributed to the non-significant findings in our study. Future research may have to develop clearly distinct measurements that are localized to suit studies in various contexts. The scope of this study could be expanded by comparing and contrasting religious activities among the Muslim community across other mediums, such as television, radio and print, and the corresponding reasons behind the different usage. Our current measures do not allow us to examine or draw conclusions about the existence of transnational links with the *Ummah* (the worldwide Islamic community) amongst the online Muslim community. This is an interesting area of research that could be examined in future studies. In addition, future studies may also examine the factors that motivate religious surfers to search for information about other religious groups. Other than the key independent variables examined in this study, more variables may be included in future research for a more comprehensive understanding of the motivations behind Muslim surfers' engagement in online religious activities.

In its entirety, the present study contributes to the current body of literature on religion and the internet by providing a comprehensive profile of the types of religious

activities Muslim surfers in Singapore engage with online, and by understanding the motivating factors behind their religious use behaviour through a theoretically-driven approach. Finally, this study also unveils some practical implications. Policymakers and related religious bodies could focus more on using religious group conformity, internet self-efficacy, and religiosity to motivate Muslim surfers to go online for religious purposes in future.

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Tables and Figures

Table 1. Summary of multiple hierarchical regression analysis for variables influencing Muslim surfers' engagement in online religious activities (n = 480)

	<i>Before-entry beta</i>	<i>Final beta</i>
<i>Block 1: Socio-demographic variables</i>		
Gender (0 = 'Male', 1 = 'Female')	-.02	-.01
Age	-.28***	-.25***
Income	.09	.09*
Education	.09 ⁺	.08
Religiosity	.12**	.11*
R^2 (%)		9.90***
<i>Block 2: Key beliefs and motivations</i>		
Internet perception	.07	.01
Subjective norms		
Muslim community	.12**	.14**
Family	.03	-.07
Perceived behavioural control	.01	-.04
Internet self-efficacy	.14**	.14**
Incremental R^2 (%)		13.20**
Total R^2		23.10**

⁺ $p < .06$, * $p < .05$, ** $p < .01$, *** $p < .001$.

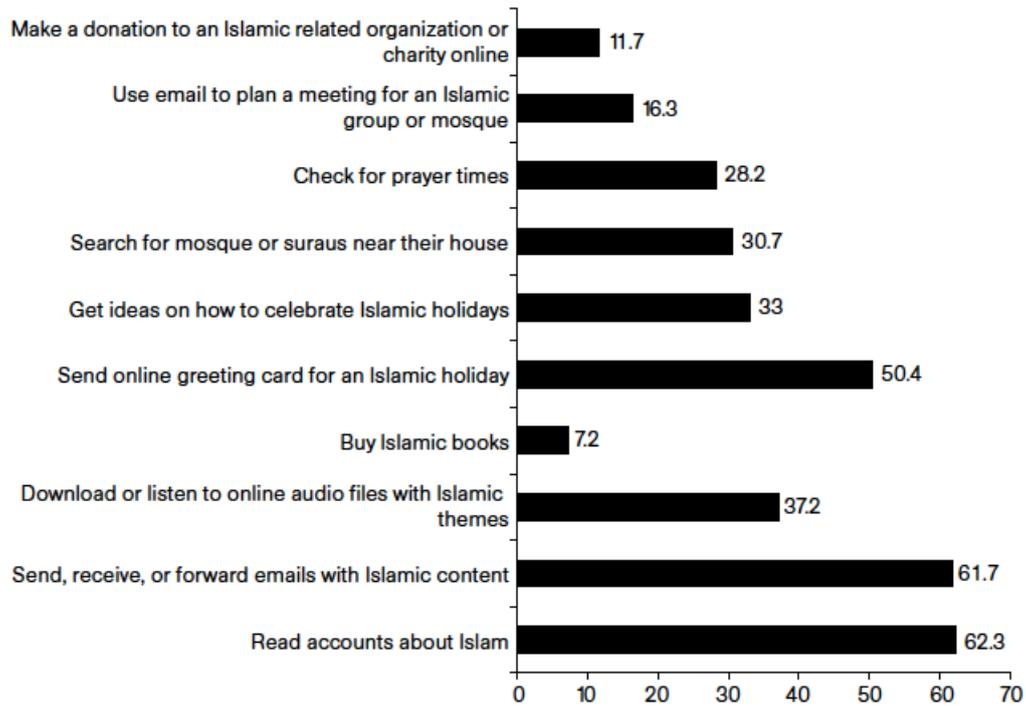


Figure 1. Percentage of Muslim surfers who engaged in various online religious activities.