A COMPARATIVE ANALYSIS OF SOCIAL NETWORKING SITE USE IN TWO DISTINCT CULTURES: EVALUATING THE IT-CULTURE CONFLICT

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ABSTRACT

The popularity of social networking sites (SNSs) continues to grow worldwide, however, with varying acceptance in different regions. This study examines the effects of both culture and gender on the intention to use an SNS. The study compares users from Saudi Arabia, a culture known to be driven by conservative religious values known to influence acceptance and use of new technologies to students from the United States (US), a culture which has been recognized as being more individualistic in behavior. An online survey was used to collect data from both Saudi and US Facebook users. The interaction of gender and culture was found to have an impact on the determinants of intention to use. The strongest effect was found with Saudi females and the beliefs regarding self-presentation through the use of personal images.

INTRODUCTION

Social networking sites such as Facebook, MySpace and Twitter have become commonplace in today's Internet world. Users around the world can access these free services to "stay connected online with their offline friends and new online acquaintances, or to share user-created content" (Kim, et al., 2009). However, one observed phenomenon is the way in which these SNSs grow in some areas more than others. "Orkut and Friendster originated in the US, but have been

overshadowed by other sites and instead enjoy popularity elsewhere" (Kim, et al., 2009).

This varying acceptance in different regions leads to research questions such as: What motivates use of a specific SNS in various regions of the world? Is culture involved in determining which SNS thrives and which one doesn't? Can an SNS increase its usability through customization to fit diverse cultures? This study attempts to answer these questions by studying the use of Facebook in Saudi Arabia, a culture known to be driven by conservative religious values that have been shown to influence acceptance and use of new technologies. Facebook currently boasts over 3.2 million users in Saudi Arabia since it launched its interface in Arabic in March 2009, and over 800 million worldwide (Facebook Press Release, CITC 2010). An identical, comparative study was also conducted in the United States (US), a culture which has been recognized as being more individualistic in behavior and therefore less likely to accede to cultural pressure. The study examines the perceptions of Facebook users from both nations to determine what differences may exist in the effect of the two distinct cultures on SNS adoption and use.

It has been suggested that "the need to uphold the tenets of Islam was probably responsible for the delay (until January 1999) in allowing public access through the PC to the enormous potential of the internet within Saudi Arabia" (Al-Khaldi & Wallace, 1999). The banning of mobile phones with cameras in 2004 is an illustration of how the Saudi culture "evaluates" and reacts to new technology and its use. "Saudi Arabia has taken the drastic step of banning the import or sale of camera cell phones and declaring them religiously forbidden" (Shihri, 2004). A year later this ban was lifted. However, the use of cell phones with cameras is still controlled in any female gathering, indicating that gender will likely have an effect on SNS use in that nation.

A significant number of studies on SNS use have been carried out in the US (Lin & Bhattacherjee, 2010; Lin, et al., 2005; Shi et al., 2010; Sledgianowski & Kulviwat, 2009), but there are relatively few studies that have been completed in Saudi Arabia (Al-Saggaf, 2011). This paper will attempt to fill this gap in the literature by examining the impact of gender on both Saudi and US users' intentions to use an SNS. We begin by reviewing the literature concerned with culture and adoption of information technology in a diverse culture such as Saudi Arabia. Next we propose a model of SNS adoption based on a synthesis of the theory of reasoned action (TRA)

and the IT-culture conflict, and describe the methodology employed in the study. Finally, we discuss the analysis of the data, and conclude with a discussion of the results and implications for both literature and practitioners.

BACKGROUND AND LITERATURE REVIEW

Culture

The concept of culture and its relation to IT use in both the US and Saudi Arabia can be illustrated by the review of culture in information systems (IS) research (Leidner & Kayworth, 2006). This review found numerous studies that have attempted to explain the relationship between IT and culture at several levels. The importance of noting the difference in cultural dimensions stems from the fact that culture will influence the design of any information technology system.

In a study conducted in the Arab world the authors stated that "as most technology is designed and produced in developed countries, it is culturally-biased in favor of those developed countries" (Hill, Loch, Straub, & El-Sheshai, 1998). Therefore, the cultural bias in an information system originates from the differences of cultural dimensions between the designers of that system and any adopters. It is noted in a comparison of values between Arab countries and the United States of America that "Arab cultural values and norms are formed based on Islamic religious beliefs as well as other cultural factors such as the more collectivistic (Hofstede 1980) and high-context (Hall 1976) nature of Arabic culture. The American value system, on the other hand, is based predominantly on Christian beliefs (Protestant and Catholic), and is more individualistic (Hofstede 1980) and low-context (Hall 1976)" (Al-Olayan & Karande, 2000). This contrast between these two nationalities helps to develop an understanding of the cultural differences that exist which can influence the adoption and use of information systems.

Other culture and IT interaction studies examine the effect of culture on transfer of IT (Hill, Loch, Straub, & El-Sheshai, 1998, Al-Gahtani, 2008). One study suggests that a person's willingness to be innovative with IT is significantly affected by culture (Thatcher, et al., 2003). Culture in this study was defined as a subset of the cultural national values previously defined by Hofstede (1980). From this research we can conclude that national culture has a significant effect on how IT is transferred, diffused, adopted and used.

The current research examines Facebook, currently one of the most popular SNSs. An SNS can be defined as "web based services that allow individuals to (1) construct a public or semipublic profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system" (Boyd & Ellison, 2007) or more simply "social networking sites are web sites that allow people to stay connected with other people in online communities" (Kim, et al., 2009).

In a study on the usage of SNSs, Sledgianowski & Kulviwat (2009) found that perceived playfulness, critical mass and trust were significant predictors of SNS use. A prior study compared users and non-users of SNSs on the concepts of social grooming and self-presentation and found the main factors that influenced SNS were "attitudes towards social grooming and privacy concerns" (Tufekci, 2008). These studies highlight the importance of investigating behaviors that are associated with the adoption and use of SNSs. The next step is to clearly identify which of these factors can be generalized across cultures and which are culture-specific.

An issue of relevance to the study of SNS adoption in Saudi Arabia is the current rate of Internet penetration in Saudi homes. In 2007, the Saudi Communications and Information Technology Commission (CITC) conducted a study evaluating Internet usage in Saudi Arabia and found PC penetration in homes to be 43% across the entire population with 73% owned by those 15-25 years of age. A recent study reported that Internet user penetration in Saudi Arabia is 41% and younger users being the majority of Internet users (CITC, 2010). The study also found that the younger generation was more interested in "participating in forums and blogs, while the older respondents carry out banking activities and derive information on health services, etc." This study provides clear evidence that the Internet has a significant presence in Saudi Arabia.

Gender

Culture can also have an impact on the ways in which gender affects the use of IT. In 2007, the CITC (2007) reported one barrier to using the internet in Saudi Arabia was "not allowed by family," reported by 10-15% of females and youngsters (15-24 years of age). More recently, the CITC published an updated report regarding inhibitors use and family restriction was found to be 12% (CITC 2010). This point illustrates how Saudi culture can control the use of IT through regulating access to the Internet, specifically for females. Until 2004 female students were not granted

Internet access from public university labs. This phenomenon was investigated in a quantitative study (Uthman, 2009) that measured and compared factors affecting the use of the Internet specifically by Arab females. The study was conducted on both Egyptian and Saudi female college students to identify usage of the Internet.

Saudi females identified the perceived bad reputation of Internet users as one of the major problems of using this technology, whereas Egyptian females did not (Uthman, 2009). In the case of Saudi culture, which is fully grounded in Islamic religion, it is essential to note that religion "influences Arab values with regard to issues such as business conduct (e.g., the appropriateness of business practices) as well as personal conduct (e.g., relationships with others and the role of women)" (Al-Olayan & Karande, 2000).

Research on the effect of gender in the adoption and use of information systems has been conflicting, with some studies finding that gender has a significant effect on adoption and use (Johnson 2010; Venkatesh, et al., 2003), while others did not (Al-Gahtani, 2008; Baker, Al-Gahtani, & Hubona, 2007; Glass & Li, 2010). However, it is important to note that most of these studies were done in utilitarian contexts, both in western studies and Arab culture-IT studies. The current study is focused on the hedonic context of an SNS.

Social psychology literature has shown the importance of gender roles in examining behavior based on gender (Eagly, and Karau, 1991). Gender role theory proposes that females are more concerned with the socially oriented aspects of communication. Research has found that women are more concerned than men with creating and maintaining relationships (Johnson, 2010). The interactive and shared social context of SNSs provides a greater opportunity for females to foster their penchant for communication and relationship maintenance. As the current study is also investigating the effect of culture, it is thought that the intention to use as SNS will be significantly different among male and female users in both the US and Saudi Arabia. The current study evaluates the effect of gender and culture as interaction variables, with nationality considered to be a direct indicator of culture as proposed by Hofstede's (1980) cultural dimensions.

CONCEPTUAL MODEL AND HYPOTHESES

Behavioral Intention – Intention to Use and Self-Presentation Beliefs

The proposed research model is based on the Theory of Reasoned Action (TRA) originally proposed by Ajzen & Fishbein (1973) in social psychology. TRA posits that behavioral intentions are influenced by both attitudes and social norms. In the context of the current study, behavioral intention is examined in the context of the intention to use an SNS. In the two distinct cultures being investigated in this study, it is expected that both culture and gender will have a significant interaction effect on the intention to use an SNS.

Because using an SNS involves the controversial function of sharing personal photos, it is expected that particular behavior should be investigated separately through the concept of self-presentation (Tufecki, 2008). Self-presentation refers to the public image one projects to others. Photos shared on Facebook are just one method of shaping that image. However, there are numerous media reports of employees who were fired or students who were dismissed or otherwise punished for violating school policies as a result of posting their pictures on Facebook (Marketwire, 2009; Roberts, 2009). Additionally, religious values in Saudi Arabia restrict the images of women taken with cell phones (Shihri, 2004). Therefore, it is expected that self-presentation beliefs, or the sharing of personal photos, will also be significantly affected by the interaction of both culture and gender.

Attitude toward Behavior

As mentioned above, attitude toward behavior stems from an individual's feelings (either positive or negative) regarding erngaging in a specific behavior. Attitude toward behavior is defined as the user's evaluation of the desirability of his or her using the SNS. It also takes into account a person's belief regarding the related consequences occuring from that specific behavior. Attitude toward the behavioral intention of using an SNS has been included in some studies of technology acceptance and dropped in others (Davis, 1989; Venkatesh & Davis, 2000). However, there has been some interest recently in adding the concept once again to help improve the explanatory power of usage studies (Benbasat & Barki, 2007).

Considering the current study is investigating the intention to use an SNS in two distinct cultures, it is expected that attitude will have a significant effect on the behavioral intention to use an SNS. Therefore, the following hypotheses are presented:

H1: Attitude will have a positive relationship with a user's intention to use the SNS.

H2: Attitude will have a positive relationship with self-presentation beliefs.

Perceived Enjoyment

IS research has subsequently evaluated other factors that affect behavior intentions toward using technology, including perceived enjoyment. The research initiated by van der Heijden (2004) investigated user acceptance of hedonic systems, finding that predictors vary depending on the context in which the system is used, being either utilitarian or hedonic. When investigating hedonic system usage of an SNS, adoption is likely to be influenced by how much an individual enjoys using the SNS and perceived enjoyment has been incorporated in a consistent manner in the literature (Lin & Bhattacherjee, 2010; Lin, et al., 2005; Sledgianowski & Kulviwat, 2009).

In research of a hedonic system such as an SNS, Sledgianowski & Kulviwat (2009) found that the intrinsic motivator of perceived playfulness or enjoyment one finds by using the system had the strongest impact on intent to use. Therefore, following the research of van der Heijden (2003) and Sledgianowski and Kulviwat (2009), perceived enjoyment is defined as the level of pleasure a user of a SNS believes using that site gives him/her. Therefore we propose the following hypotheses:

H3: Perceived enjoyment will have a positive relationship with intention to use the SNS.

H4: Perceived enjoyment will have a positive relationship with self-presentation.
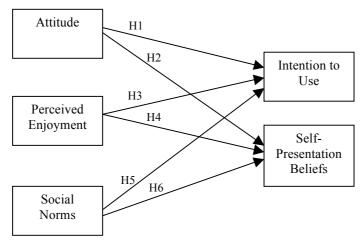
Social Norms

Social norm stems from an individual's perception of whether people important to that person think the behavior should be performed and should also include the weight of the motiviation to comply (Ajzen & Fishbein, 1973). What is accepted and even expected by the community which the individual values is therefore thought to have an impact on the individual's opinions regarding the behavior and thus, the likelihood of the individual to perform that specific behavior. Expectations of others are especially significant in the context of an SNS because they are an indication of the extent to which members in a society influence each

other's behavior and experience social pressure to perform in a particular manner (Sledgianowski & Kulviwat, 2009).

Social norms have been added to various research models to improve the explanatory power of technology acceptance and usage (Ajzen and Fishbein 1975; Sledgianowski & Kulviwat, 2009; Venkatesh et al., 2003). For the purposes of this study, social norm is defined as an individual's perception of whether people important to the individual think they should use Facebook. Therefore, we present the following hypotheses:

H5: Social Norms will have a positive relationship with intention to use the SNS.

H6: Social Norms will have a positive relationship with self-presentation.

Figure 1 Proposed Research Model

METHODOLOGY

The data for this study were collected in two phases. An online survey in English was first administered to undergraduate students at a large university in the southwestern United States. College students were deemed appropriate respondents since Facebook, the focus of this study, was originally targeted towards college students as a tool to stay connected. The survey was then translated into Arabic, verified independently and distributed online to both Saudi students at an American University and to Saudi Facebook groups. We received a total of 260 responses (131 US and 129 Saudi). Although some of the respondents were not nationals of the US or Saudi Arabia, the percentage was considered to be insignificant.

The survey consisted of previously validated scales that were adapted to the context of this study where necessary in addition to a developmental scale for the construct of self-presentation beliefs. Questions related to sharing personal photos and using a personal photo as a profile picture were used to evaluate self-presentation beliefs. Seven-point Likert scales were used to measure the perception items in the survey (from 1 – strongly agree to 7 – strongly disagree). Demographic data were also collected from both groups and the descriptive statistics for our samples are presented in Tables 1 and 2.

These statistics do not reveal any significant differences between US and Saudi respondents in terms of measurements such as age, gender, or those with a Facebook account. There are also similarities in how often respondents use their account. Of interest in both groups are the numbers who report having a Facebook account – 91% for the US and 98% for Saudi Arabia. Fully 80% of US respondents reported using their account within the last 24 hours while 89% of Saudis reported use in the last 24 hours. The two groups also had fairly similar average ages, with an average age of 26 years in the US and 28 years in Saudi Arabia.

US Descriptive Statistics			
Gender	**%**	**Use Real Name**	**%**
Male	63%	Yes	95%
Female	37%	No	5%
Facebook Use			
Have account	91%		
Don't have account	9%		
Last use of Facebook		**Age**	
Within last 24 hrs	80%	Average	26 yrs
Past week	18%	Maximum	53 yrs
Past month	2%	Minimum	19 yrs

Table 1. United States descriptive statistics

Saudi Descriptive Statistics			
Gender	**%**	**Use Real Name**	**%**
Male	46%	Yes	95%
Female	54%	No	5%
Facebook Use			
Have account	98%		
Don't have account	2%		
Last use of Facebook		**Age**	

Within last 24 hrs	89%	Average	28 yrs
Past week	9%	Maximum	58 yrs
Past month	2%	Minimum	18 yrs

Table 2. Saudi Arabia descriptive statistics

DATA ANALYSIS

Assessment of the Measurement Model

The adequacy of the measurement instrument is determined by examining both the reliability of the items and also through construct validity, which is comprised of both convergent and discriminant validity (Gerbing & Anderson, 1998). Reliability is most commonly measured by items having Cronbach's alpha values of .70 or higher (Nunnally, 1967).   The Cronbach's alpha values of the model's constructs were considered to be acceptable although the developmental construct of self-presentation beliefs was .64. This value is considered marginal in terms of acceptability, however for a developmental scale item, is considered acceptable for exploratory analysis (Peterson, 1994).

Convergent and discriminant validities are determined through factor analysis of the survey items. Convergent validity provides a measure of the variance shared between a construct and its factors. It is demonstrated when items that measure the same construct have high correlations and discriminant validity is shown when items measuring different constructs do not have high correlations (Gefen and Straub, 2005).

Factor analysis was performed on the latent variables after reverse-coding the necessary values and confirmatory factor analysis (CFA) and exploratory factor analysis (EFA) (for the developmental construct) results endorsed the unidimensionality of our variables. This strong construct validity supported proceeding with the testing of the hypothesized relationships.

Assessment of Hypotheses

In order to assess the hypothesized relationships in the proposed model, we preformed univariate analysis of variance (ANOVA) on each of the dependent constructs: intention to use and self-presentation beliefs. A recognized advantage of conducting ANOVA is the ability to test the effects of interaction variables in this study of gender and nationality.

An ANOVA was performed which tested attitude, perceived enjoyment, and social norms as predictors of intention to use. The results confirm that hypotheses H1, H3 and H5 are supported by the data with an R^2 of 0.426 (p-value = 0.000). The coefficients are displayed on the respective arrows on Figure 2. The interaction of

gender and nationality is also confirmed at a .012 level of significance while gender or nationality alone does not significantly impact the main effects of the constructs in the model.

A separate ANOVA was performed to evaluate attitude, perceived enjoyment, and social norms as predictors of self-presentation beliefs. The results confirm that hypotheses H2 and H4 are supported by the data while H6 was found to be an insignificant indicator of self-presentation beliefs (p-value = .586). Attitude, perceived enjoyment and the interaction of gender and country significantly predict self-presentation beliefs with an R^2 of 0.278 (p-value=0.000). A summary of the hypotheses and their results are listed in Table 3.
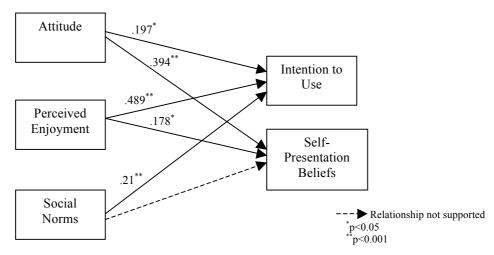

Figure 2 Measured Model

Hypothesis	Result
H1: Attitude will have a positive relationship with a user's intention to use the SNS	Supported
H2: Attitude will have a positive relationship with self-presentation beliefs.	Supported
H3: Perceived enjoyment will have a positive relationship with a user's intention to use the SNS	Supported
H4: Perceived enjoyment will have a positive relationship with self-presentation beliefs.	Supported
H5: Social Norms will have a positive relationship with a user's intention to use the SNS	Supported
H6: Social Norms will have a positive relationship with self-presentation beliefs.	Not Supported

Table 3: Summary of Hypotheses Results

Further analysis of the constructs using ANOVA Contrast results confirmed that the only significant difference among the interaction of nationality and gender was associated with self-presentation beliefs with an observed power of .99. Table 4 demonstrates the different confidence interval of the construct among the respondents where the values were consistently lower for Saudi females.

Nationality	Gender	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
USA	Male	4.317	.157	4.008	4.625
	Female	4.967	.199	4.574	5.359
Saudi	Male	4.361	.182	4.003	4.719
	Female	3.092	.170	2.758	3.426

Table 4. Contrast Test for Self Presentation Beliefs

DISCUSSION, LIMITATIONS, AND FUTURE DIRECTIONS

The goal of this study was to examine how intention to use an SNS and self-presentation beliefs are affected by attitude, perceived enjoyment, and social norm and the interaction effects of both culture and gender. The study examined the perceptions of SNS users in both Saudi Arabia and the US. The findings indicate that there are no significant differences based on culture or gender regarding the intention to use the SNS. However, a major finding was that the self-presentation beliefs varied significantly between males and females in the two cultures. Not surprisingly, female SNS users in Saudi Arabia were much less willing to engage in self-presentation by posting their personal photos.

One finding that was surprising is that social norms is not significantly related to the sharing of personal photos. However, attitude toward using the SNS had the strongest effect on self-presentation beliefs. Additionally, perceived enjoyment also had a positive effect on intention to use the SNS. The implications for research are that social norms has a limited effect on the intention to use an SNS when the attitude and enjoyment of using that SNS are already well established.

There were some limitations to the study that should be noted. First, the study used only college students, which has received some criticism for the lack of generalizability. However, as Facebook was originally intended for college students and still retains a large demographic of college students, it was felt that their use was

appropriate. Another limitation was the selection of only the US and Saudi Arabia as the two cultures of study. This further reduces the generalizability of the findings, but the study still offers a glimpse of potential issues for SNS developers when implementing their platforms in foreign countries. A final limitation is the exclusion of other factors that have been identified as significant predictors of SNS use, such as privacy and trust. However, the inclusion of these factors was outside the scope of this study and is suggested as a potential area for future studies.

CONCLUSION

The current study evaluated the intention to use an SNS in both the US and Saudi Arabia. A major contribution of the findings is that the proposed model has significance in both countries. The results extend the IS literature by providing empirical evidence supporting the effect of attitude on intention to use an SNS. While prior studies have removed this construct, this study shows the strength of attitude when examining the use of social networking systems. Another significant finding is the difference between the two cultures that exists regarding the self-presentation beliefs. The results confirm the importance of considering cultural values and beliefs when designing global information systems.

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