Characteristics of Culture in Thai Society and Virtual Communities

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Abstract

This study investigated the extent to which cultural characteristics of Thai society are evident in internet based virtual communities. Cultural characteristics were assessed using six dimensions of culture proposed by Hofstede and data collected by a questionnaire posted at web sites which satisfied the characteristics of a virtual community. Responses were obtained from a sample of 432 members of the target population of Thai individuals who were at least 18 years of age and were active in these virtual communities for at least an average of seven hours each week. It was found that three of the dimensions of culture (Individualism, Masculinity, and Indulgence) were significantly more evident in Thai society than in the context of a virtual community with no significant differences for the other three dimensions (Power Distance, Uncertainty Avoidance, and Long Term Orientation) although there were a few components associated with these other three dimensions which were significantly more evident in one or the other of the different contexts. Given that Individualism, Masculinity, and Indulgence are not strong characteristics of Thai society it was concluded that the culture experienced in a virtual community was compatible with that experienced as a member of Thai society and based on the few differences that were found practical recommendations were made for bringing the culture of a virtual community into closer alignment with that of Thai society.

***Keywords*:** Culture; Thai society; Virtual community

Introduction

A virtual community is a social network of individuals and web-based social networking services that make it possible to connect people who share interests and activities across cultural, political, economic, and geographic borders in order to pursue mutual interests or goals. An understanding of culture is important to the design, development, and management of virtual communities. Some people believe that basically all people are the same and that the internet growth phenomena has created a global village culture referred to as one big world culture (Hofstede, 2011) or a cosmopolitan culture (Hongladarom, 1999a). Individuals are generally not aware of the cultures of other countries and tend to minimize cultural differences which in fact may play a vital role in managerial processes and may directly or indirectly influence the design, adoption, and use of information technologies. This lack of appreciation of cultural differences may lead to misunderstandings and misinterpretations among people from different countries. Despite the increase in communication between individuals from different cultural backgrounds supported by the internet cultural differences are still significant and it is important for these differences to be understood and accommodated in the context of successful virtual communities.

Increases in the penetration of the internet and the popularity of social network sites in Southeast Asian countries are more than sufficient to make the study of cultural characteristics in the context of internet based communities an important issue. From a philosophical perspective, Hongladarom (1999a, 1999b, 2000) has raised an important theoretical question as to whether a local national culture will continue to prevail or whether a worldwide culture will emerge through the growth of virtual communities supported by the internet. He argues that the internet may not be successful in creating a single super culture which supplants most of the details and nuances of the world's separate cultures, but those cultures will by no means be walled off from one another to the extent that they may have been in the past. Local cultures usually find ways to cope with the impact and are resilient enough to absorb it without losing their identity. According to Hongladarom (1999a), Thai cultural attitudes do

affect computer-mediated communication in a meaningful way and the idea that the internet automatically brings about social change in line with developments in Western societies needs to be critically examined. As the internet is a many-to-many medium, it has the potential to create virtual communities built around shared assumptions and values.

Culture has a powerful influence on information related behaviors not only at the most basic level concerning what is considered to be legitimate information but also at the national level (Hall, 1983). Studies often investigate the applicability of western-based theories in non-western settings and fail to replicate social and psychological findings in the context of different national cultures (Smith and Dugan, 1996). Hofstede theorized these cultural differences using dimensions to produce a general overview and an approximate understanding of other cultures, what to expect from them, and how to behave towards groups from other countries. His pioneer work over decades is well known but it has not been applied adequately in relation to the virtual communities which have been made possible by the rapid advancement of internet based technologies. Although Hofstede's dimensions of culture are referred to in numerous studies of social network sites, none of these studies have compared the extent to which these dimensions are evident in a national society and the society associated with a virtual community. In particular, there have not been any studies focused on assessing the relative importance of the characteristics of Thai culture in the context of virtual communities or social network sites.

Culture has been studied at the level of a nation or society, an organization, and with regard to an individual (Hall, 1973; Triandis, 1995, 2004; Trompenaars, 1993, 1996, 1997; Schwartz, 1994, 1999, 2004; Hofstede and McCrae, 2004). This study was concerned with culture at the level of a society and used the popular quantitative approach to the assessment of cultural characteristics based on six dimensions developed by Hofstede (2011). The study was motivated by the question as to whether or not the cultural characteristics that define Thai society are also characteristic of the societies created by the internet in the form of virtual communities in which Thai people are active members. No other studies conducted in

Thailand which addressed this issue directly were found although a study of the adoption of social networks in Thailand by Sombutpibool (2011) suggested that several of Hofstede's dimensions of culture were evident implicitly among the factors that motivated the use social network sites.

Against this background, the research design and methodology for the study are presented next followed by a review of related literature and the formulation of research hypotheses. The next three sections describe; the methods used for the measurement of the components and the dimensions of culture; the procedures used for data preparation; and the results of data analysis. In the last two sections the findings of the study are discussed and conclusions are drawn.

Research Design and Methodology

The research was designed as a field study and it was partly basic and applied, partly descriptive and explanatory, and cross-sectional in time. The target population included Thai individuals who were at least 18 years of age and were active members of a virtual community for at least an average of 7 hours each week. The size of this target population in Thailand was unknown although it was expected to be large. Consequently, with a 95 percent confidence interval and a precision of 5 percent the minimum sample size was determined to be approximately 400 (https://edis.ifas.ufl.edu/pd006) and this sample size satisfied requirements which ensured the statistical validity of the study.

A self administered structured questionnaire was designed in the English and Thai languages to measure the components of the six dimensions of culture and variables used to determine personal characteristics of the respondents. The questionnaire items were based on the established reliable and valid instrument and accompanying manual by Hofstede et al. (2008a, 2008b). Both language versions were reviewed by a focus group of five individuals with English and Thai language skills and expertise in questionnaire design. Their suggested modifications were included in revised versions of the questionnaire. The Thai language version was then administered in a pretest study with a sample of 10 suitable participants.

Their responses and comments were noted and any modifications were incorporated into the final versions of the questionnaire. The Thai language version was then used in the full study. A notated version of the final questionnaire is included in Appendix A1.

The questionnaires were created using the Google Document web service and were published at four popular virtual community web sites in Thailand (www.pantip.com/cafe/sinthorn/, www.pantip.com/cafe/rajdumnern/, www.pantip.com/cafe/wahkor/, and http://board.thaivi.org/). Only participants who went into these sites could see the online questionnaire. They were informed of purpose of the questionnaire and given an assurance of anonymity for the respondents. The questionnaires were collected with no missing answers because the Google Document web service only allowed completed questionnaires to be submitted.

Completed questionnaires were obtained from 460 Thai individuals who satisfied the conditions of age and hours of weekly experience in virtual communities. No data entry errors were found in a random sample of 10 percent of the questionnaires. However, there were 28 which contained at least one outlier value (i.e. a value for a variable which was 3 or more standard deviations from the mean) and in each case the corresponding questionnaire was removed from the sample leaving a final satisfactory sample of 432 respondents.

Related Literature and Research Hypotheses

The review of related literature begins with an overview of recent studies concerned with culture and the characteristics of virtual communities and social network sites. This is followed by an examination of the literature related to Hofstede's six cultural dimensions and six research hypotheses concerned with these dimensions which were suggested by the findings in previous studies.

An Overview of Previous Studies

Table 1 presents a summary of the nature of recent studies related to this study. They were mostly explanatory and used quantitative techniques to analyze data collected by questionnaire to examine culture especially in

relation to various types of virtual community services (bulletin board, social network sites, and web blogs). In particular, they studied culture at the level of a nation or society and included a small number of studies specifically related to Thailand.

Table 1 An overview of the nature of previous related studies

Project Focus	References
National culture and the value of organization employees	Smith and Dugan (1996)
Cross-cultural comparisons of online collaboration	Kim and Bonk (2002)
The effect of online community on offline community in Saudi Arabia	Al-Saggaf (2004)
Cross-national differences in website appeal: a framework for assessment	Blake and Neuendorf (2004)
Relationships between internet diffusion and culture	Nath and Murthy (2004)
Culture and the structure of the international hyperlink network	Barnett and Sung (2005)
Culture and computer-mediated communication: toward new understandings	Ess and Sudweeks (2005)
Cultural cognitive style and web design: beyond a behavioral inquiry into comput-er-mediated communication	Faiola and Matei (2005)
Culture and internet consumption: contributions from cross-cultural marketing and advertising	Hermeking (2005)
Using message analysis to look beyond nationality-based frames of reference	Hewling (2005)
Community networks where offline communities meet online	Kavanaugh et al. (2005)

Project Focus	References
Virtual community discourse and the dilemma of modernity	Matei (2005)
Computer-mediated relationship development: a cross-cultural comparison	Yum and Hara (2005)
Cultural differences in collaborative authoring of Wikipedia	Pfeil et al. (2006)
Traditional and online support networks in the cross-cultural adaptation of Chinese international students in the United States	Ye (2006)
Mapping diversities and tracing trends of cultural homogeneity/heterogeneity in cyberspace	Segev et al. (2007)
Studies Related to Thailand	
Global culture, local cultures and the internet: the Thai example	Hongladarom (1999a)
The internet and cultural differences	Hongladarom (1999b)
How Thai culture co-opts the internet	Hongladarom (2000)
National characteristics and sustainable or sufficiency for Thailand	Jhundra-indra (2009)
Adoption of social network sites in Thailand	Sombutpibool (2011)

Dimensions of Culture

As evidenced in previous studies the following dimensions of culture were identified as important means of assessing characteristics of culture at the level of a nation or society.

Power Distance is described by Hofstede (1983) and (1991) in terms of the prevailing norms of inequality within a culture as the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally. It concerns the relationship between the higher-ups and lower-downs of a

society and how differences in power and wealth are dealt with involving the degree of centralization of authority and the degree of autocratic leadership. Thai culture exhibits high power distance where there is considerable dependence on subordination to bosses and where subordinates respond by preferring such dependence in the form of an autocratic or paternalistic boss. The emotional distance between subordinates and their bosses is large and subordinates are unlikely to approach and contradict their bosses directly (Hofstede, 1991; Thanasankit and Corbitt, 2000). This tends to create respect for the leader as the father figure of the organization and only those at the top can and are obliged to make decisions. Thai society perceives the role of leader as a controller rather than a colleague and this is referred to as the superior-inferior concept, which is dominant in Thai society (Rohitratana, 1998); Thanasankit and Corbitt, 2000).

Individualism versus Collectivism concerns the extent to which the identity of members of a given culture is shaped primarily by personal choices and achievements or by the groups to which they belong. That is, the extents to which members of a culture rely on and have allegiance to either their self or the group (Hofstede, 1980, 1983, 1991). This dimension is described in terms of the relationship of the individual to groups within their society. Thai society is collectivist as evidenced by a sense of long term responsibility to the group, the family, the extended family, or other extended social groupings. Loyalty in a collectivist culture is dominant, overriding many other communal rules and regulations and the society promotes strong relationships within organizations, such that everyone takes responsibility for each other. Thai society constructs its reality based on social interests rather than individual interests and this supports structures whereby people are born and live in extended families.

Uncertainty Avoidance concerns the extent to which members of a culture feel threatened by ambiguous or unknown situations (Hofstede, 1983, 1991) and is related to mechanisms used in different cultures to cope with the uncertainty of life (Casey, 2010). It describes the extent to which people feel anxious or uneasy in unfamiliar or unpredictable situations (Hofstede, 1991; Pfeil et al., 2006). People in high uncertainty avoidance cultures are

more active, appear emotional, avoid confusing situations, and depend on obligations in their organizations and relationships to assist them to make situations clearer and more readily interpretable. Cultures with low levels of uncertainty avoidance are more tolerant toward others and toward alternative perspectives and display greater tolerance toward risk. Thailand exhibits high levels of uncertainty avoidance. Consequently, employees perceive risk and are resistant to change while executives and managers focus on short-term less strategic planning enabling executives to maintain a close watch on organizational performance (Bagchi et al., 2004; Erumban and Jong, 2006; Laosethakul and Boulton, 2007). In relation to uncertainties associated with politics and the economy Thai leaders seek security.

Masculinity versus Femininity is based on the extent of the dissimilarity between women's and men's roles in a society Hofstede (1991). Men's roles tend to exhibit: competition; assertiveness; and hardiness while women's roles are orientated toward: people; home; children; and compassion. Femininity aims to maintain: good relationships with supervisors, subordinates, and colleagues; good working and living circumstances; and secure employment. Feminine cultures are likely to work against the dissimilarities between the genders and go beyond gender roles, while masculine cultures tend to resiliently maintain the dissimilarities (Marcus and Gould, 2000; Hofstede, 2001; Laosethakul and Boulton, 2007). Thailand has the lowest masculinity ranking among Asian societies, and this low level of masculinity suggests a society that has less competitiveness and assertiveness with little difference between the behaviors of males and females.

Long Term versus Short Term Orientation concerns the extent to which a culture assesses its customs and the degree to which people concentrate on both their past and their future. Long-term orientation is identified by values such as changing customs in the face of new situations, persistence, and the concept that the most significant occurrences in life will take place in the future (Hofstede, 2001; Erumban and Jong, 2006; Gong et al., 2007; Bouaziz, 2008). An opposite short-term orientation counts on rapid outcomes and is based on esteem for the past, custom, and stability and is characteristic of Thai society.

Indulgence versus Restraint concerns the pleasure of life and duty. An indulgent society allows relatively free gratification of basic and natural human drives related to enjoying life and having fun which is the opposite to restraint. Hofstede has only recently added this dimension to his dimensions of culture and this dimension seems likely to play an important role in understanding societies formed around social network sites.

Table 2 displays: the six dimensions and their definitions; their values and ranks for Thai society; a comparison of their value in Thai society with their values in all Asian nations and the whole world; and their values in all Asian nations and the whole world.

Four of the six dimensions are described by their two extremes (e.g. Masculinity versus Femininity) so in those cases in Table 2 one of the extremes has been identified as the label used to refer to the dimension in this study.

Research Hypotheses

Hofstede's six dimensions of culture have not been investigated in the context of virtual communities in Thailand. However, the study of motivations to use social network sites among individuals in Thailand by Sombutpibool (2011) suggested that there was evidence in online environments of the influence of five of Hofstede's cultural dimensions (Collectivism, Femininity, Uncertainty Avoidance, and Short Term Orientation) but there was less evidence of the influence of the dimension of Power Distance. Also, the conceptual discussions by Hongladarom (1999a, 1999b, 2000) suggested that there were differences between the characteristics of culture in Thai society and the characteristics of the culture experienced on the internet. Consequently, the non directional research hypotheses presented in Table 3 were formulated for this study.

Table 2 Hofstede's six dimensions for Thai society (Source: Hofstede, 2011)

Dimension	Label	Value in Thailand (Rank in Thailand)	Definition	Comparison of Thailand with all Asian Nations (Value in all Asian Nations)	Comparison of Thailand with the World (Value in the World)
Power Distance	Power Distance	64(1)	The extent to which the less powerful members of society accept and expect that power is distributed unequally.	Lower than in other Asian societies (71)	Higher than for the world (55)
Individualism versus Collectivism	Individualism	20(6)	The degree to which individuals are integrated into a group in which everyone is expected to look after themselves and their immediate family.	Lower than in other Asian societies (24)	Lower than for the world (43)
Masculinity versus Femininity	Masculinity	34(4)	The extent to which there is a preference in society for achievement, heroism, assertiveness and material reward for success.	Lower than in other Asian societies (54)	Lower than for the world (50)

Dimension	Label	Value in Thailand (Rank in Thailand)	Definition	Comparison of Thailand with all Asian Nations (Value in all Asian Nations)	Comparison of Thailand with the World (Value in the World)
Uncertainty Avoidance	Uncertainty Avoidance	64(1)	The extent to which the members of a society are uncomfortable in unstructured situations involving uncertainty and ambiguity.	Higher than in other Asian societies (57)	The same as the world (64)
Long Term Orientation versus Short Term Orientation	Long Term Orientation	32(5)	The extent to which member in societies believe that truth depends very much on situation, context and time evidenced by: an ability to adapt traditions to changed conditions; a strong propensity to save and invest; thriftiness; and perseverance in achieving results.	Lower than in other Asian societies (71)	Lower than for the world (45)
Indulgence versus Restraint	Indulgence	45(3)	The extent to which a society allows relatively free gratification of basic and natural human drives related to enjoying life and having fun.	Higher than in other Asian societies (38)	The same as the world (46)

Table 3 Research hypotheses

Hypothesis *For Thai individuals there is a significant difference between the values of:*
H1: There is significant difference between the values of Power Distance in Thai society and Power Distance in a virtual community.
H2: There is significant difference between the values of Individualism in Thai society and Individualism in a virtual community.
H3: There is significant difference between the values of Masculinity in Thai society and Masculinity in a virtual community.
H4: There is significant difference between the values of Uncertainty Avoidance in Thai society and Uncertainty Avoidance in a virtual community.
H5: There is significant difference between the values of Long Term Orientation in Thai society and Long Term Orientation in a virtual community.
H6: There is significant difference between the values of Indulgence in Thai society and Indulgence in a virtual community.

Note: Significance refers to statistical significance at a level of 0.05.

Measurement of Components and Dimensions

The measurements of the components associated with the six dimensions and the determination of the values of the dimensions followed the procedure specified in Hofstede et al. (2008a, 2008b).

In summary:

(a) There were four components associated with each of the dimensions as shown in Table 4 and each component was measured in the questionnaire (Appendix A1) by an item derived from Hofstede et al. (2008b) scored on a 5-point Likert scale with the scores treated a interval scale measures in subsequent analyses.

Table 4 Components associated with the dimensions

Dimension	Components (Labels)	Dimension	Components (Labels)
Power Distance	PD1,PD2,PD3,PD4	Uncertainty Avoidance	UA1,UA2,UA3,UA4
Individualism	IN1,IN2,IN3,IN4	Long Term Orientation	LT1,LT2,LT3,LT4
Masculinity	MA1,MA2,MA3,MA4	Indulgence	ID1,ID2,ID3,ID4

(b) For each dimension and for each respondent an index measure for the context of Thai society was computed using formulae provided in Hofstede et al. (2008a). For example, index measures for Power Distance were computed using $35(PD1 + PD2) + 25(PD3 + PD4) + C_{PD}$ where C_{PD} is a constant. The constants in the index formulae were determined by equating the mean values of the index measures in Thai society with the values for the dimensions published by Hofstede (2011). When all of the constants were determined then the index measures for both contexts were known and the mean values of these index measures were computed as the values of the dimensions.

Data Preparation

Construct Validity of the Components

Principle Components factor analysis was used to examine the construct validity of the measures of the components for the six cultural dimensions. In the factor analysis the strength of the association between a component and a cultural dimension is represented by a loading which is considered to be significant if it has a magnitude at least 0.4 and an associated eigenvalue of at least 1 (Straub et al., 2004). The results of the factor analysis are displayed in Table 5.

Table 5 Factor analysis of the components for the dimensions of culture in Thai society and a virtual community

Component	Dimension (Thai Society)					
	Long Term Orientation	Power Distance	Indulgence	Individualism	Uncertainty Avoidance	Masculinity
LT4	.928	-.124	-.059	-.034	-.126	-.059
LT3	.908	-.094	-.124	-.059	-.130	-.089
LT1	.896	-.112	-.093	-.016	-.165	-.080
LT2	.869	-.153	-.064	-.027	-.149	-.114
PD1	-.103	.918	.044	.102	.015	.006
PD3	-.108	.917	.088	.060	.040	.005
PD2	-.140	.897	.078	.022	.111	.099
PD4	-.115	.886	.129	.012	.149	.051
ID4	-.122	.061	.922	.065	.008	.036
ID1	-.038	.064	.900	-.003	.063	.019
ID3	-.085	.136	.893	.084	-.007	.044
ID2	-.074	.067	.876	.050	.064	.130
IN1	-.050	.057	.027	.889	.052	.101
IN3	-.043	.015	.039	.875	.080	.095
IN4	-.031	.079	.004	.842	.086	.218
IN2	.000	.042	.123	.839	.020	.205
UA2	-.106	.013	.050	.002	.848	.103
UA3	-.086	.122	-.028	.073	.848	.132
UA4	-.144	.077	.089	.091	.824	.169
UA1	-.215	.096	.019	.083	.818	.150
MA2	-.075	.027	.083	.133	.119	.835
MA4	-.097	.030	.062	.141	.182	.833
MA1	-.061	.045	.041	.137	.132	.798
MA3	-.087	.048	.041	.196	.114	.793

Extraction Method: Principal Component Analysis. Rotation Method: Equamax with Kaiser Normalization. Rotation converged in 6 iterations. Kaiser-Meyer-Olkin Measure of Sampling Adequacy 0.870, Bartlett's Test of Sphericity: Approx. Chi-Square 7955.988; Degrees of Freedom 276 Statistical Significance 0.000.

Total Variance Explained						
Dimension*	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	Percentage of Variance	Cumulative Percentage	Total	Percentage of Variance	Cumulative Percentage
Long Term Orientation	6.508	27.116	27.116	3.446	14.357	14.357
Power Distance	3.359	13.995	41.111	3.412	14.217	28.575
Indulgence	2.974	12.393	53.504	3.331	13.880	42.455
Individualism	2.608	10.868	64.372	3.119	12.994	55.449
Uncertainty Avoidance	2.082	8.674	73.046	3.006	12.524	67.973
Masculinity	1.691	7.045	80.090	2.908	12.117	80.090

	Dimension (Virtual Community)					
Component	**Masculinity**	**Long Term Orientation**	**Indulgence**	**Individualism**	**Power Distance**	**Uncertainty Avoidance**
MA2	.879	.039	.211	.063	.204	.038
MA3	.878	.128	.175	.011	.210	.072
MA4	.867	.050	.206	.006	.234	.115
MA1	.824	.080	.109	.036	.158	-.052
LT3	.070	.905	.069	-.040	.031	.051
LT1	.038	.900	.064	-.023	.033	.062
LT2	.007	.898	.105	-.054	.036	.044
LT4	.177	.839	.177	.009	.162	.175
ID3	.196	.078	.875	.043	.118	.091
ID1	.088	.059	.871	.032	.035	.087
ID4	.202	.156	.854	.090	.090	.197
ID2	.198	.157	.840	.105	.155	.152
IN2	.038	-.011	.073	.921	.040	.100
IN3	-.061	-.025	.029	.892	-.082	.051
IN1	-.016	-.070	.028	.889	-.059	.055
IN4	.143	-.002	.101	.859	.019	.041
PD1	.093	.078	.020	-.017	.879	.015
PD3	.126	.070	.067	-.026	.873	-.047
PD4	.250	.045	.154	-.040	.831	.089

PD2	.374	.050	.163	-.012	.821	.127
UA4	.083	.095	.089	.079	.033	.888
UA1	.028	.083	.114	.095	.061	.858
UA3	.060	.128	.180	.040	.062	.850
UA2	-.021	.009	.083	.038	-.010	.830

Extraction Method: Principal Component Analysis. Rotation Method: Equamax with Kaiser Normalization. Rotation converged in 6 iterations. Kaiser-Meyer-Olkin Measure of Sampling Adequacy 0.875, Bartlett's Test of Sphericity: Approx. Chi-Square 8309.134; Degrees of Freedom 276 Statistical Significance 0.000.

Total Variance Explained

	Initial Eigenvalues			Rotation Sums of Squared Loadings		
Dimension*	Total	Percentage of Variance	Cumulative Percentage	Total	Percentage of Variance	Cumulative Percentage
Masculinity	6.787	28.281	28.281	3.404	14.182	14.182
Long Term Orientation	3.582	14.924	43.205	3.278	13.658	27.840
Indulgence	3.109	12.953	56.158	3.272	13.633	41.473
Individualism	2.337	9.739	65.897	3.225	13.439	54.912
Power Distance	2.045	8.522	74.419	3.163	13.180	68.092
Uncertainty Avoidance	1.601	6.671	81.090	3.120	12.998	81.090

In Table 5 dimensions with eigenvalues less than 1 are not shown. These dimensions were not associated with any significant loadings (0.4 or more) of indicators and they explained only 19.91percent and 18.91 percent of the variance in the analysis for Thai society and a virtual community, respectively. From Table 5 it is seen that the measures of the components of the dimensions in both contexts have very satisfactory construct validity.

Internal Consistency Reliability of the Components

The internal consistency reliability of the measures of the components was determined using Cronbach alpha coefficients which are displayed in

Table 6 and the all of the coefficients were interpreted as good or excellent using the heuristic recommended by George and Mallery (2003).

Table 6 Reliability analysis of the components for the dimensions of culture

Context	Cronbach Alpha and Interpretation					
	Masculinity	Long Term Orientation	Indulgence	Individualism	Power Distance	Uncertainty Avoidance
Thai Society	.860 Good	.946 Excellent	.921 Excellent	.902 Excellent	.940 Excellent	.885 Good
Virtual Community	.930 Excellent	.921 Excellent	.923 Excellent	.917 Excellent	.907 Excellent	.907 Excellent

Data Analysis

Characteristics of the Respondents

Appendix Tables A1(a), (b), (c), and (d) display the cross tabulations among the four profile variables (Gender, Age, Experience with Virtual Communities, Level of Education, and Work Position). From these tables it is seen that: the majority of the respondents (57 percent) was females; the average age of the respondents was 35.5 years with 23 percent and 27 percent in the age range 28-32 years and 33-37 years, respectively; on average the respondents were engaged in virtual communities for 4 hours per day and the majority (51 percent) were engaged for an average of 1-3 hours per day followed by 35 percent engaged for an average of 4-6 hours per day; 54 percent had a Bachelor's degree and a further 34 percent had a Master's degree; and the two largest groups worked as officers (39 percent) or as a supervisors/managers (31 percent).

There were only slight differences between males and females in the distributions of age, experience with virtual communities, level of education, and work position and t-tests showed no significant differences between the means of these variables for males and females at a significance level of 0.05 or less. On average males were engaged in virtual communities for 4.4 hours per day and females were engaged for an average of 3.8 hours

per day and contrasted with the finding by Hargittai (2007) that men spend significantly more time online than women while women are more likely to use social network systems to engage in person-to-person communication.

Those who were engaged in virtual communities on average for only 1-3 hours per day or, at the other extreme, for more than 9 hours per day were predominantly from the 33-37 year age group which accounted for 27 percent of the respondents. Those engaged in these activities on average for 4-9 hours per day were mainly from the younger 28-32 year age group which accounted for 23 percent of the respondents. Participants in the 33-37 year age group were more likely than those in any of the other age groups to have a Bachelor's degree level of education or higher and to work in the positions of officer, supervisor/manager, and senior executive. The 23-27 year old group was the only other age group that exhibited a similar profile with respect to these characteristics.

The majority (52 percent) of the respondents who were engaged in virtual communities for an average of only 1-3 hours per day had a Bachelor's degree as their highest level of education while the next largest group (38 percent) had a Master's degree. This pattern was also evident among the participants in all of the other categories of experience with virtual communities. Officers together with supervisors/managers accounted for 67 percent of the participants who were engaged in virtual communities for an average of only 1-3 hours per day and this pattern was also evident among the participants in all of the other categories of experience with virtual communities.

Only six percent of the respondents had only a secondary/high school level of education as their highest level of education and about 32 percent of them worked in officer or supervisor manager positions. Only six percent of the respondents had a doctoral level degree and 42 percent and 33 percent of them worked in officer and supervisor/manager positions, respectively. Among the 34 percent with a Master's degree as their highest level of education 27 percent, 33 percent, and 36 percent worked as senior executives, supervisors/managers, and officers, respectively. Fifty four percent of respondents had a Bachelor's degree as their highest level of education and

they were officers (44 percent) or supervisors/managers (28 percent) with the remaining 28 percent almost equally students or senior executives.

Analysis of the Index Measures for the Dimensions of Culture

For each participant an index measure was computed for each dimension using the values of the four components associated with the dimension and the formulae and procedures specified by Hofstede et al. (2008a). Table 7 displays the values of a range of descriptive statistics for the index measures of the dimensions of culture in Thai society and a virtual community. Although the values of the standard errors for skewness and kurtosis are not displayed in Table 7, in each case the magnitudes of skewness and kurtosis are less than twice the values of their standard errors and this validated the use t-tests in subsequent analyses. It is noted that the means of the index measures represent the values of the dimensions and as expected in the context of Thai society these values correspond exactly with Hofstede's published values.

Table 8 describes the correlations between the four profile variables (Age, Daily Experience with Virtual Communities, Level of Education, and Work Position) and the index measures. In Table 8 significant correlations at 0.05 level or less (2-tailed) are represented by * and among those the

Table 7 Descriptive statistics for the index measures of the six dimensions

Index Measure	Thai Society				Virtual Community			
	Mean	Standard Deviation	Skew-ness	Kurtosis	Mean	Standard Deviation	Skew-ness	Kurtosis
Individualism	20	99.32	-.578	-.012	-28.61	107.79	-.253	.056
Masculinity	34	87.86	-.572	-.351	-106.19	120.59	-.105	.074
Power Distance	64	111.16	.174	-.542	60.70	93.51	-.286	.547
Indulgence	45	131.17	-.671	-.194	10.06	126.55	-.341	-.287
Uncertainty Avoidance	64	89.69	-.254	-.525	64.60	93.22	-.074	-.916
Long Term Orientation	32	119.76	-.393	-.375	44.29	108.83	.031	-.457

coefficients in shaded cells are negative while the others are positive. Blank cells correspond to correlations that are not statistically significant at a level of 0.05 or less.

Correlations among the four profile variables are not shown in Table 8 and the only statistically significant correlations were positive and involved Age with Level of Education and Age with Work Position. Although the correlations among the components for the index measures are not shown here it was noted that the results for the correlations among the index measures shown in Table 8 were supported by the correlations among the components.

Table 9 shows the results of using t-tests to compare the means for the index measures for Thai society with those for a virtual community for all of the respondents and for males and females separately.

For the three highlighted dimensions in Table 9 there was a statistically significant difference, at a level of 0.05 or less, between the mean values of the index measure (i.e. the value of the dimension) for Thai society and a virtual community for all respondents as well as for males and females separately. In each case the mean for Thai society was significantly greater than the mean for a virtual community. For the other dimensions there was no significant difference between the mean values of the index measures in the different contexts for any of the groups.

Table 10 shows the results of using t-tests to examine the differences between the means of the index measures for males and females in the context of Thai society and separately in the context of a virtual community.

In Table 10 the three highlighted dimensions in the context of Thai society indicate that there was a statistically significant difference between the mean for males and females at a level of 0.05 and among those for Long Term Orientation the mean for the females was significantly greater than the mean for the males while for the other two the reverse was true. For all other cases the differences were not statistically significant.

Table 11 shows the results of using t-tests to compare the mean values of the index measures with their neutral values which were computed by assuming that the mean value of each component was 3. A neutral value

Table 8 Correlations between profile variables and index measures

Correlations		Profile Variables				Thai Society						Virtual Community						
	Age	Daily Experience with Virtual Communities	Level of Education	Work Position	IN	MA	PD	ID	UA	LT	IN	MA	PD	ID	UA	LT		
Thai Society	Individualism (IN)	*	*	*		1												
	Masculinity (MA)		*			*	1											
	Power Distance (PD)		*			*	*	1										
	Indulgence (ID)	*				*	*	*	1									
	Uncertainty Avoidance (UA)					*	*	*	*	1								
	Long Term Orientation (LT)					*	*	*	*	*	1							
Virtual Community	Individualism (IN)											1						
	Masculinity (MA)		*			*	*	*	*	*	*		1					
	Power Distance (PD)					*	*	*	*	*	*		*	1				
	Indulgence (ID)		*			*	*		*	*	*	*	*	*	1			
	Uncertainty Avoidance (UA)					*				*		*	*	*	*	1		
	Long Term Orientation (LT)		*			*	*						*	*	*	*	1	

Table 9 Comparison of the means of the index measures in Thai society and a virtual community

Index Measure	All Respondents			Males			Females		
	Mean Thai Society – Mean Virtual Community	t	Sig. (2-tailed)	Mean Thai Society – Mean Virtual Community	t	Sig. (2-tailed)	Mean Thai Society – Mean Virtual Community	t	Sig. (2-tailed)
Individualism	48.53	7.13	.000	46.41	4.25	.000	50.10	5.77	.000
Masculinity	140.65	24.22	.000	147.03	16.39	.000	135.90	17.84	.000
Power Distance	3.23	.52	.605	18.75	1.87	.063	-8.28	-1.05	.294
Indulgence	35.17	4.48	.000	43.12	3.42	.001	29.27	2.94	.004
Uncertainty Avoidance	-.75	-.14	.892	.51	.06	.952	-1.69	-.24	.814
Long Term Orientation	-12.20	-1.53	.127	-20.84	-1.67	.096	-5.78	-.56	.577

Table 10 Comparison of the means of the index measures between males and females

Thai Society				Virtual Community			
Dimension	t	Significance (2-tailed)	Mean Males – Mean Females	Dimension	t	Significance (2-tailed)	Mean Males – Mean Females
Individualism	-.31	.755	-3.02	Individualism	.06	.949	.67
Masculinity	1.15	.249	9.85	Masculinity	-.10	.914	-1.28
Power Distance	2.40	.017	25.85	Power Distance	-.13	.896	-1.19
Indulgence	1.42	.155	18.16	Indulgence	.34	.727	4.31
Uncertainty Avoidance	2.08	.038	18.08	Uncertainty Avoidance	1.75	.080	15.87
Long Term Orientation	-2.75	.006	-31.77	Long Term Orientation	-1.58	.115	-16.71

for a dimension represents a situation where on average respondents have a neutral attitude to the importance of the dimension. The results are shown separately for all of the respondents, males, and females.

In Table 11 for the highlighted dimensions the value of the dimension was significantly greater than its neutral value at a level of 0.05 or less. For the other dimensions the difference from the neutral value is not statistically significant.

Table 12(a) shows the rank position of the value of each of the six dimensions where a rank of 1 (6) indicates the dimension with the greatest (least) value and tied ranks were treated in the conventional manner. The rankings by males, females, and all of the respondents are shown separately. Table 12(b) shows the rank order correlation coefficients used to compare the rankings.

From Table 12(a) it is seen that for Thai society the ranking of the values of the dimensions from largest to smallest was as published by Hofstede with Uncertainty Avoidance = Power Distance > Indulgence > Masculinity > Long Term Orientation > Individualism. From Appendix Table A2 which shows the results of using t-tests to compare the values of the

Table 11 Comparison of the values of dimensions with their neutral values

Thai Society												
Dimension	Neutral Value	All Respondents			Dimension	Males			Dimension	Females		
		t	Sig. (2-tail)	Mean – Neutral Value		t	Sig. (2-tail)	Mean – Neutral Value		t	Sig. (2-tail)	Mean – Neutral Value
Individualism	-94.8	24.01	.000	114.72	Individualism	14.52	.000	112.98	Individualism	19.29	.000	116.01
Masculinity	-115.1	35.38	.000	149.56	Masculinity	24.06	.000	155.21	Masculinity	25.99	.000	145.36
Power Distance	64.55	-.11	.907	-.62	Power Distance	1.69	.093	14.21	Power Distance	-1.69	.091	-11.63
Indulgence	-62.9	17.13	.000	108.13	Indulgence	12.35	.000	118.55	Indulgence	12.01	.000	100.40
Uncertainty Avoidance	-35.45	23.01	.000	99.29	Uncertainty Avoidance	17.30	.000	109.67	Uncertainty Avoidance	15.71	.000	91.59
Long Term Orientation	12.9	3.33	.001	19.18	Long Term Orientation	.11	.912	.95	Long Term Orientation	4.27	.000	32.72
Virtual Community												
Individualism	-94.8	12.76	.000	66.19	Individualism	8.82	.000	66.57	Individualism	9.28	.000	65.91
Masculinity	-115.1	1.53	.125	8.91	Masculinity	.94	.347	8.17	Masculinity	1.21	.227	9.45
Power Distance	64.55	-.85	.392	-3.85	Power Distance	-.61	.539	-4.53	Power Distance	-.59	.552	-3.34
Indulgence	-62.9	11.98	.000	72.96	Indulgence	8.03	.000	75.43	Indulgence	8.87	.000	71.12
Uncertainty Avoidance	-35.45	22.30	.000	100.04	Uncertainty Avoidance	16.27	.000	109.15	Uncertainty Avoidance	15.55	.000	93.28
Long Term Orientation	12.9	5.99	.000	31.38	Long Term Orientation	2.60	.010	21.79	Long Term Orientation	5.78	.000	38.50

Table 12(a) Rankings of the values of the dimensions

Dimension	Thai Society						Virtual Community					
	Males and Females		Males		Females		Males and Females		Males		Females	
	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank
Individualism	20	6	18.12	5	21.21	6	-28.61	5	-28.22	5	-28.89	5
Masculinity	34	4	40.12	4	30.26	5	-106.19	6	-106.92	6	-105.64	6
Power Distance	64	1.5	78.76	1	52.92	2	60.70	2	60.01	2	61.20	1
Indulgence	45	3	55.66	3	37.50	4	10.06	4	12.53	4	8.23	4
Uncertainty Avoidance	64	1.5	74.22	2	56.14	1	64.60	1	73.71	1	57.84	2
Long Term Orientation	32	5	13.85	6	45.62	3	44.29	3	34.69	3	51.41	3

Table 12(b) Comparisons of the rankings of the dimensions

Spearman's Rank Order Correlation Coefficient		**Context**					
		Thai Society	Virtual Community	Thai Society		Virtual Community	
Context	Group	All Respondents	All Respondents	Males	Females	Males	Females
Thai Society	All Respondents	1					
Virtual Community	All Respondents	.696	1				
Thai Society	Males	.928	.543	1			
	Females	.696	1.000	.543	1		
Virtual Community	Males	.696	1.000	.543	1.000	1	
	Females	.696	.943	.600	.943	.943	1

Note: Highlighted correlation coefficients are statistically significant at a level of 0.05.

dimensions in Thai society and separately in a virtual community it is seen that for Thai society there was no statistically significant difference between the values of Uncertainty Avoidance and Power Distance both of which had values that were statistically significantly greater than all of the other dimensions. The only other statistically significant differences were between the value of Individualism and the values of Indulgence and Masculinity. For a virtual community the ranking was Uncertainty Avoidance > Power Distance > Long Term Orientation > Indulgence > Individualism > Masculinity and from Table A2 there was no statistically significant difference between the values of Uncertainty Avoidance and Power Distance but the differences between the values of all of the other dimensions were statistically significant.

Discussion of the Findings

Characteristics of the Participants

The participants in this study were Thai individuals who were at least 18 years of age and were active members of a virtual community for at least an average of 7 hours each week. A profile of the participants was developed using information from the questionnaire concerned with the four variables Gender, Age, Experience with Virtual Communities, Level of Education, and Work Position. The analysis of these variables and their cross tabulations presented above indicated that participants had sufficient formal education, work experience, maturity, and experience with virtual communities to ensure that they were qualified to provide appropriate responses in the study questionnaire.

Correlations among Profile Variables and Index Measures of the Dimensions of Culture

Figure 1 summarizes the statistically significant correlations among profile variables and the index measures for the dimensions of culture in the context of a virtual community and Thai society.

From Figure 1 it is seen that older (younger) individuals had higher (lower) levels of education, work positions with higher (lower) levels of responsibility, and low (high) index measures on Individualism

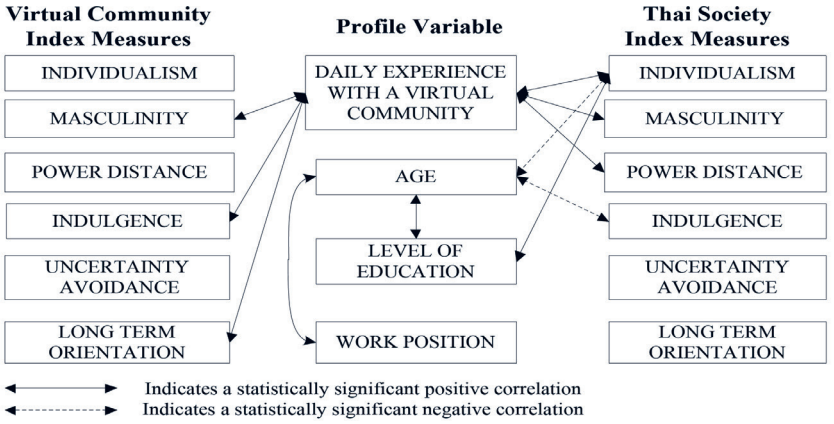

Figure 1 Significant correlations between profile variables and index measures (Derived from Table 8).

and Indulgence in the context of Thai society where those with a high (low) levels of education also had a high (low) index measure for Individualism. In particular, the insignificant correlations between Daily Experience with a Virtual Community and Age and Level of Education contradicted the findings by Kavanaugh et al. (2005) where an individual's level of education and age were significant in explaining an individual's involvement in internet communities and internet use.

Individuals with a large (small) amount of daily experience with a virtual community were likely to have high (low) index measures on Masculinity, Indulgence, and Long Term Orientation in the context of a virtual community and high (low) index measures on Individualism, Masculinity, and Power Distance in Thai society. However, there were no significant associations between Age, Level of Education, and Work position and any of the six index measures in the context of a virtual community.

Figure 2 summarizes the statistically significant correlations between the values of the index measures in Thai society and in a virtual community.

In the context of Thai society all index measures were significantly correlated with each other and the same was true for a virtual community except for Individualism which was not significantly correlated with Masculinity, Power Distance, and Long Term Orientation (see Table 8).

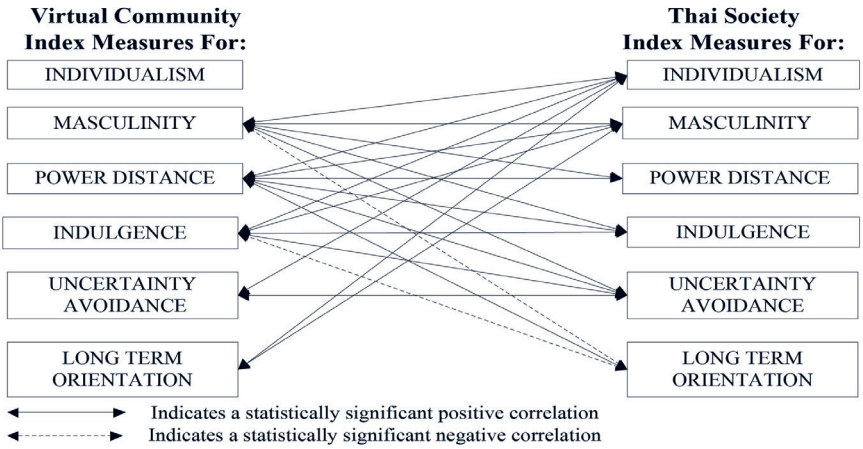

Figure 2 Significant correlations between index measures (Derived from Table 8).

To illustrate the interpretation of the correlations in Figure 2 consider an individual in the study who has a low score on Individualism measured in the context of the Thai society where they live. Then it is likely that this same individual has a low score on the other five dimensions measured in the context of Thai society and a low score on all dimensions measured in the context of a virtual community where the individual is an active member except for Individualism for which their score cannot be predicted with confidence. In fact, if an individual's score on Individualism in the context of a virtual community is known to be high (low) then it is only possible to make a confident prediction that in the virtual community their scores on Indulgence and Uncertainty Avoidance are also high (low). However, knowing an individual's score on Individualism in the context of a virtual community does not enable confident predictions to be made about any of their scores on the dimensions in the context of Thai society.

Comparisons among the Values of the Dimensions

In the context of Thai society the only significant differences between the values of the dimensions for males and females concerned Power Distance and Uncertainty Avoidance, which were more evident among

males than females, and Long Term Orientation, which was more evident among females than males. In a virtual community there were no significant differences between the values of the dimensions for males and females (Table 10).

In the context of Thai society the values of all of the dimensions, except Power Distance, were significantly greater than a neutral value which represented a neutral attitude to the importance of the dimension and the value of Power Distance was not significantly different from the neutral value. The same result was true for females and males separately although for males Long Term Orientation was also not significantly different from than a neutral value. In the context of a virtual community the values of the dimensions, except for Masculinity and Power Distance, were significantly greater than a neutral value and the values of Masculinity and Power Distance were not significantly different from a neutral value. These results applied to all of the respondents and also to males and females separately (Table 11).

Comparing the values of the dimensions in the context of Thai society with those in the context of a virtual community (Table 9) enabled decisions to be reached regarding the research hypotheses proposed in Table 2. These decisions as well as comments are shown in Table 13.

Table 13 Decisions and comments for research hypotheses

Research Hypothesis *For Thai individuals there is a significant difference between the values of:*	**Decision and Comment**
H1: There is significant difference between the values of Power Distance in Thai society and Power Distance in a virtual community.	**Not supported.** There is a statistically significant positive correlation between the index measures of Power Distance in Thai society and a virtual community.
H2: There is significant difference between the values of Individualism in Thai society and Individualism in a virtual community.	**Supported.** The value of Individualism in Thai society is statistically significantly greater than in a virtual community. There is no statistically significant correlation between the index measures of Individualism in Thai society and a virtual community.
H3: There is significant difference between the values of Masculinity in Thai society and Masculinity in a virtual community.	**Supported.** The value of Masculinity in Thai society is statistically significantly greater than in a virtual community. There is a statistically significant positive correlation between the index measures of Masculinity in Thai society and a virtual community.
H4: There is significant difference between the values of Uncertainty Avoidance in Thai society and Uncertainty Avoidance in a virtual community.	**Not supported.** There is a statistically significant positive correlation between the index measures of Uncertainty Avoidance in Thai society and a virtual community.
H5: There is significant difference between the values of Long Term Orientation in Thai society and Long Term Orientation in a virtual community.	**Not supported.** There is no statistically significant correlation between the index measures of Long Term Orientation in Thai society and a virtual community.
H6: There is significant difference between the values of Indulgence in Thai society and Indulgence in a virtual community.	**Supported.** The value of Indulgence in Thai society is statistically significantly greater than in a virtual community. There is a statistically significant positive correlation between the index measures of Indulgence in Thai society and a virtual community.

From Table 13 it is seen that the values of only the three dimensions Individualism, Masculinity, and Indulgence had significantly different values in Thai society and a virtual community and in each case the value in Thai society was significantly greater than the value in the context of a virtual community. These results for all of the respondents were also true for males and females separately (Table 9). Consequently, in terms of the values of the six dimensions of culture the main difference between Thai society and a virtual community was that the three dimensions (Individualism, Masculinity, and Indulgence), which were not prominent characteristics of Thai society anyway, were less prominent characteristics in the context o f a virtual community where they represent the three least prominent characteristics. This was evident in the rankings of the values of dimensions in Thai society and a virtual community as illustrated in Figure 3.

In Figure 3 it is noted that in Thai society the values of Uncertainty Avoidance and Power Distance were not significantly different but both had values that were significantly greater than all of the other dimensions and the only other significant differences were between the value of Individualism and the values of Indulgence and Masculinity. For a virtual community there was no statistically significant difference between the values of Uncertainty Avoidance and Power Distance but the differences between the values of all of the other dimensions were statistically significant.

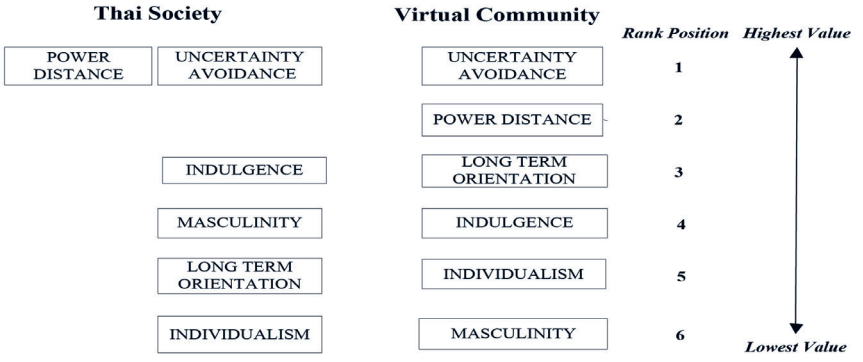

Figure 3 The rankings of the values of the dimensions (Derived from Table 12(a)).

The analyses have focused on the index measures and their mean values (i.e. the values of the dimensions). However, there were statistically significant differences between the mean values of some of the components in both contexts and in general these significant differences supported the findings concerning the index measures and the values of the dimensions and in particular the findings in Table 13. The values of the dimensions are based on index measures involving the mean values of the components and therefore significant differences between the mean values of some components in the two different contexts does not necessarily mean that the values of the dimensions will be significantly different in those contexts. However, it was considered instructive to identify the components which were significantly more important in the context of Thai society than in a virtual community and visa versa and these findings are presented in Table 14.

In Table 14 the notations S (NS) were used to indicate that the component was supportive (not supportive) of the characteristics represented by the dimension. For example, for the dimension Long Term Orientation To persevere in pursuing goals, activities, and information definitely supported the notion of a Long Term Orientation while To protect one's 'face' at all times did not support the notion of a Long Term Orientation and actually characterizes a Short Term Orientation. An examination of the first three dimensions in Table 19 and the support for them among their components in the context of Thai society confirms the findings that the values of these three dimensions were significantly greater in Thai society than in a virtual community. For the next three dimensions the support from the components confirms the findings that there were no significant differences between their values in the two different contexts.

Figure 4 summarizes the significant rank order correlations among the rankings of the values of the dimensions by all of the respondents, males, and females. In each case the significant correlation was positive indicating that there was significant agreement about the rankings.

Table 14 Significant differences between the two contexts in terms of the components of the index measures

Dimension	***Components that are significantly more important in Thai society than in a virtual community***	***Components that are significantly more important in a virtual Community than in Thai society***
Individualism	To have the opportunity to pursue personal interests. **(*S*)** To have interesting activities, work, and interaction with others. **(*S*)**	To be loyal to others. **(*NS*)** To have support and friendship from others. (NS)
Masculinity	To receive recognition from others. **(*S*)** To be assertive. **(*S*)** To have opportunities to be seen as a leader. **(*S*)**	To have pleasant people with whom to interact and communicate. **(*NS*)**
Indulgence	To have time for fun. **(*S*)** To have freedom to do what one wants despite others. **(*S*)** To have a happy environment. **(*S*)**	*Nil*
Power Distance	To have leaders who consult you about decisions and your opinions involving your work. **(*NS*)** To have leaders who are respected. **(*S*)** To have subordinates who are not afraid to contradict their leaders. (NS) To be influenced by only one direct leader. **(*S*)**	*Nil*
Uncertainty Avoidance	To have leaders who have precise answers to questions. **(*S*)**	To have strict guidelines and rules for people to follow. **(*S*)**
Long Term Orientation	To protect one's 'face' at all times. **(*NS*)** To fulfill obligations to other people. **(*NS*)** To persevere in pursuing goals, activities, and information. **(*S*)**	*Nil*

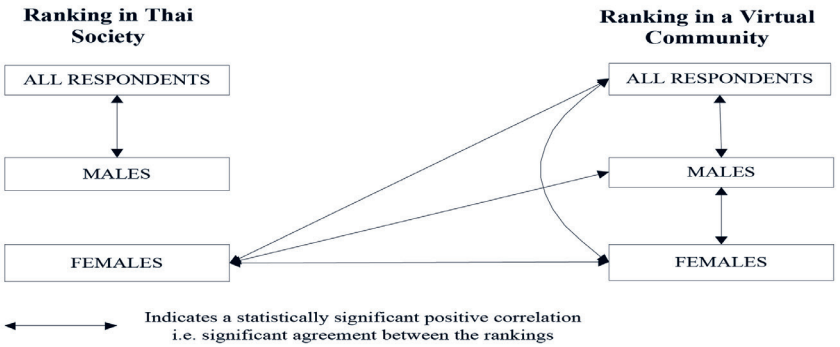

Figure 4 Significant correlations among the rankings (Derived from Table 12(b)).

From Figure 4 it is seen that in the context of a virtual community there was significant agreement among the three groups with respect to the relative importance of the dimensions but this was not the case in the context of Thai society where only males were in significant agreement with all of the respondents and both of these groups showed neither significant agreement nor disagreement with females.

Conclusion

In summary the main aspects of the findings were:

(a) There were numerous significant correlations among personal characteristics of individuals and index measures within and between the two different contexts which meant that with very few exceptions given an individual's score on an index measure or personal characteristic in one of the contexts it was possible to make confident predictions for their scores on the other index measures and personal characteristics (Figures 1 and 2). (b) The three dimensions Individualism, Masculinity, and Indulgence had significantly greater values in the context of Thai society than in the context of a virtual community but there were no significant differences for the values of the other three dimensions (Power Distance, Uncertainty Avoidance, and Long Term Orientation) (Table 9). In the context of Thai society Individualism, Masculinity, and Indulgence were ranked in

positions 6, 4, and 3, respectively with values for Masculinity and Indulgence lower than in other Asian societies and the world and a value for Individualism which was higher than for other Asian societies but the same as the world (Table 2). In a virtual community Individualism, Masculinity, and Indulgence were ranked in positions 5, 6, and 4, respectively (Figure 3). Even though the values of these three dimensions were significantly less in a virtual community compared to Thai society their relative positions in both contexts indicated that they were not dominant characteristics of Thai society and they were even less so in the context of a virtual community. Consequently, it was expected that members of Thai society would find the culture associated with a virtual community to be similar to their experiences outside of the virtual community and therefore it was expected that they would feel comfortable engaging in the virtual environment.

(c) The analyses based on gender revealed very few differences between all of the respondents, males, and females (Tables 9, 10, 11, and Figure 4). In the context of Thai society males had significantly higher values Power Distance and Uncertainty Avoidance compared to females but the reverse was true for Long Term Orientation (Table 10). In the context of Thai society the ranking of the dimensions by males showed significant agreement with the ranking by all of the respondents but the ranking by females showed neither significant agreement nor disagreement with these rankings (Figure 4).

From a practical perspective the findings are of value to those who are responsible for the design, development, and management of virtual communities. Understanding the cultural characteristics of Thai society and the characteristics of the culture associated with virtual communities in which Thai people participate could be a part of training and education programs related to virtual communities and social network sites for professional, commercial, and entertainment oriented purposes.

As noted above, the dimensions of Individualism, Masculinity, and Indulgence were more evident in Thai society than in a virtual community and there were particular components among the other dimensions which were more evident in one of the contexts than the other (Table 14).

Table 15 Actions in a virtual community to make it more compatible with Thai society

Actions in a Virtual Community	Dimension
➢ Increase the opportunity within the community to pursue personal interests. ➢ Increase the amount of interesting activities, work, and interaction with others ➢ Reduce any necessity for members to demonstrate loyalty to other members. ➢ Reduce any necessity to have to seek support and friendship from other members.	Individualism
➢ Encourage members to acknowledge and recognize other members for their contributions. ➢ Encourage members to be assertive. ➢ Provide public recognition for members who are displaying leadership within the community. ➢ Try to ensure that unpleasantness between members is minimized.	Masculinity
➢ Introduce activities that increase a member's opportunity to have fun. ➢ Provide freedom for members to pursue their own interests regardless of the interests of other members. ➢ Promote a happy environment.	Indulgence
➢ Encourage leaders in the virtual community to consult other members about decisions and opinions. ➢ Identify leaders who will be respected by the membership. ➢ Encourage junior community members not to be afraid to contradict leaders in the community. ➢ Try to assign or have members select a person who they consider to be their most important leader or mentor.	Power Distance
➢ Encourage leaders in the community to provide precise answers to questions from other members. ➢ Maintain useful guidelines and reasonable rules for members to follow.	Uncertainty Avoidance
➢ Structure interactions and communications among members so that a member is able to protect their 'face' Encourage members to fulfill their obligations to other members. ➢ Encourage members to persevere in pursuing goals, activities, and information.	Long Term Orientation

Consequently, the findings identified aspects of the dimensions that may be changed in a virtual community in order to bring the values of the dimensions in both contexts into closer alignment and this would be expected to make Thai members of those communities even more comfortable with the community. Table 15 identifies actions in a virtual community that would bring it into closer alignment with the characteristics of Thai society.

The findings provide insights into the relationships among and between the characteristics of a virtual community and the characteristics of Thai society and these insights should be noted in the design of applications and the adoption and use of information technologies especially if the virtual communities are important for economic and other beneficial developments for Thai users. Because this is the first study of this kind to be conducted in Thailand it is strongly recommended that the study be repeated in order to establish the external validity of the findings. There is also a possibility for future studies to consider cultural issues related to the concept of culture at levels different from the national or societal level which has been the focus in this study. At the level of an organization the cultural characteristics of organizations that operate in a bricks and mortar environment may be compared to the cultural characteristics of organizations that operate in a virtual environment. Also, at the level of an individual personality traits of individuals revealed by their behaviors in daily life may be compared to their personality traits revealed by their behaviors in virtual environments. It may also be useful to consider different age groups and males and females separately in these suggested investigations.

Furthermore, from a completely different perspective, a question arises as to whether or not the characteristics of culture that were observed in a virtual community are becoming an international standard defined as the 'cosmopolitan culture' by Hongladarom (1999a, 1999b, 2000). Although this study has not addressed this question it has established that for Thai people the cultural characteristics that apply to Thai society as a whole do not appear to be greatly different from the cultural characteristics of the societies formed by virtual communities of Thai members. It seems evident that national cultural characteristics may certainly be transferred to and adopted within virtual communities where members are of that nationality.

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Appendix

A1. Notated Questionnaire

The questionnaire has been abbreviated and notated to show the labels for variables/indicators and the measuring scales.

SECTION 1:

1. Age in years: (A)

○ Less than 18 ○ 18 - 22 (20) ○ 23 - 27 (25) ○ 28 - 32 (30) ○ 33 - 37 (35) ○ 38 - 42 (40) ○ 43 - 47 (45) ○ 48 - 52 (50) ○ 53 - 57 (55) ○ 58 - 62 (60) ○ 63 - 67 (65) ○ More than 67 (70)

2. Gender: (G) ○ Female (1) ○ Male (2)

3. What is your highest level of education? (E) ○ Secondary/ High School (12) ○ Bachelor Degree (16) ○ Master Degree (18) ○ Doctoral Degree (22)

4. Which category best describes your current work position? (W) ○ Student (1) ○ Officer (2) ○ Supervisor/Manager (3) ○ Senior Executive (4)

5. The average number of hours each day that you spend on activities in a virtual community (such as webboard and chat room) (EX) ○ Less than 1 ○ 1 - 3 (2) ○ 4 - 6 (5) ○ 7 - 9 (8) ○ More than 9 (11)

SECTION 2: Items were scored on a five point scale: Extremely Important (5), Very Imp

Component	Question	Component	Question
	In your everyday life and experiences how important is it to:		In your everyday life and experiences how important is it to:
in1	1. Be loyal to family and friends	id1	13. Display moderate behavior and few desires
in2	2. Pursue personal interests	id2	14. Have time free for fun
in3	3. Have support from close family and friends	id3	15. Have freedom to do what you want despite other people
in4	4. Have interesting work	id4	16. Have a happy life
ma1	5. Have pleasant people to work with	ua1	17. Have strict guidelines and rules for people to follow
ma2	6. Receive recognition for good performance at work	ua2	18. Have a workplace that is free of feelings of nervousness or stress
ma3	7. Be assertive	ua3	19. Have managers who have precise answers to employees' questions about work
ma4	8. Have opportunities to be seen as a leader at work	ua4	20. Have employees who never break an organization's rules under any circumstances
pd1	9. Have a boss who consults you about decisions and your opinions involving your work	lt1	21. Display the same personality at work (school/university) as at home
pd2	10. Have leaders who are respected	lt2	22. Protect one's 'face' at all times

Component	Question	Component	Question
	In your everyday life and experiences how important is it to:		In your everyday life and experiences how important is it to:
pd3	11. Have subordinates who are not afraid to contradict their bosses	lt3	23. Fulfill obligations to other people
pd4	12. Have only one direct boss at work	lt4	24. Persevere in pursuing goals, activities, and information

SECTION 3: Items were scored on a five point scale: Extremely Important (5), Very Important (4), Moderately Important (3), Of Little Importance (2), and Of No Importance (1). Highlighted items were reverse scored.

Component	Question	Component	Question
	In virtual communities (e.g. webboards and chat rooms) how important is it:		In virtual communities (e.g. webboards and chat rooms) how important is it:
in1	1. To show loyalty to other members of the virtual community	id1	13. For members to display moderate behavior and few desires
in2	2. For members to be able to explore their personal interests	id2	14. To have opportunities for members of the virtual community to have fun
in3	3. To have friendship and support from other members of the virtual community	id3	15. For members to be free to do what they want despite other members
in4	4. To have activities and discussions that are interesting	id4	16. To have a happy atmosphere in the virtual community
ma1	5. To have pleasant people to communicate with in the virtual community	ua1	17. To have strict guidelines and rules to govern the members of the virtual community
ma2	6. To have recognition from other members for a good performance by a member	ua2	18. To have no feelings of nervousness or stress among the members

Component	Question	Component	Question
	In virtual communities (e.g. webboards and chat rooms) how important is it:		In virtual communities (e.g. webboards and chat rooms) how important is it:
ma3	7. To be assertive in dealing with other members of the virtual community	ua3	19. To have community leaders who have precise answers to members' questions
ma4	8. To have opportunities to be seen as a leader among members of the virtual community	ua4	20. To have members who never break the virtual community's rules under any circumstances
pd1	9. For a leader in the virtual community to consult you about decisions and your opinions	lt1	21. For members to display the same personality in the virtual community as at home
pd2	10. To have leaders in the virtual community who are respected by the members	lt2	22. For members in the virtual community to protect one's 'face' at all times
pd3	11. Junior members of the virtual community who are not afraid to contradict the leaders	lt3	23. For members to fulfill their obligations to other members of the virtual community
pd4	12. For each member of the virtual community to be influenced by only one of the community leaders	lt4	24. For members to persevere in pursuing goals, activities, and information

Table A1(a) Cross tabulation of Gender with other profile variables

Age (Years)	Gender								
	Males			Females			Males and Females		
	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent	Frequency	Percent	Cumulative Percent
18-22	14	7.6	7.6	17	6.9	6.9	31	7.2	7.2
23-27	18	9.8	17.4	25	10.1	16.9	43	10.0	17.1
28-32	44	23.9	41.3	55	22.2	39.1	99	22.9	40.0
33-37	45	24.5	65.8	70	28.2	67.3	115	26.6	66.7
38-42	26	14.1	79.9	27	10.9	78.2	53	12.3	78.9
43-47	17	9.2	89.1	25	10.1	88.3	42	9.7	88.7
48-52	10	5.4	94.6	14	5.6	94.0	24	5.6	94.2
53-57	5	2.7	97.3	11	4.4	98.4	16	3.7	97.9
58-62	4	2.2	99.5	4	1.6	100.0	8	1.9	99.8
63-67	1	.5	100.0	0	100.0	-	1	0.2	100
Total	184	100.0	-	248	6.9	6.9	432	100	-

	Mean 35.4, Std. Dev. 9.4			Mean 35.5, Std. Dev. 9.2			Mean 35.5, Std. Dev. 9.3		
Experience with Virtual Communities (Hours per Day)									
1-3	83	45.1	45.1	139	56.0	56.0	222	51.4	51.4
4-6	68	37.0	82.1	83	33.5	89.5	151	35.0	86.3
7-9	19	10.3	92.4	16	6.5	96.0	35	8.1	94.4
More than 9	14	7.6	100.0	10	4.0	100.0	24	5.6	100.0
Total	184	100.0	-	248	100.0	-	432	100	-
	Mean 4.4, Std. Dev. 2.7			Mean 3.8, Std. Dev. 2.4			Mean 4.0, Std. Dev. 2.5		
Level of Education									
Secondary/High School	8	4.3	4.3	20	8.1	8.1	28	6.5	6.5
Bachelor Degree	94	51.1	55.4	138	55.6	63.7	232	53.7	60.2
Master Degree	70	38.0	93.5	78	31.5	95.2	148	34.3	94.4
Doctoral Degree	12	6.5	100.0	12	4.8	100.0	24	5.6	100.0
Total	184	100.0	-	248	100.0	-	432	100	-
Work Position									
Student	22	12.0	12.0	28	11.3	11.3	50	11.6	11.6
Officer	80	43.5	55.4	90	36.3	47.6	170	39.4	50.9
Supervisor/Manager	54	29.3	84.8	81	32.7	80.2	135	31.3	82.2
Senior Executive	28	15.2	100.0	49	19.8	100.0	77	17.8	100.0
Total	184	100.0	-	248	100.0	-	432	100.0	-

Table A1(b) Cross tabulation of Age with other profile variables

Experience with Virtual Communities (Hours per Day)	Age (Years)										Total
	18-22	23-27	28-32	33-37	38-42	43-47	48-52	53-57	58-62	63-67	
1-3	13	21	44	71	27	21	12	9	3	1	222
4-6	14	19	38	29	19	16	6	5	5	0	151
7-9	3	1	13	5	4	2	6	1	0	0	35
More than 9	1	2	4	10	3	3	0	1	0	0	24
Total	31	43	99	115	53	42	24	16	8	1	432
Level of Education											
Secondary / High School	3	5	4	5	4	1	4	2	0	0	28
Bachelor Degree	27	32	51	52	23	22	9	10	5	1	232
Master Degree	1	6	38	49	23	16	9	4	2	0	148
Doctoral Degree	0	0	6	9	3	3	2	0	1	0	24
Total	31	43	99	115	53	42	24	16	8	1	432
Work Position											
Student	25	10	8	2	3	2	0	0	0	0	50
Officer	3	23	48	55	16	14	4	4	2	1	170
Supervisor/ Manager	1	7	26	35	29	17	12	5	3	0	135
Senior Executive	2	3	17	23	5	9	8	7	3	0	77
Total	31	43	99	115	53	42	24	16	8	1	432

Table A1(c) Cross tabulation of Experience with Virtual Communities with other profile variables

Level of Education	Experience with Virtual Communities (Hours per Day)				Total
	1-3	4-6	7-9	More than 9	
Secondary /High School	9	15	3	1	28
Bachelor Degree	116	82	17	17	232
Master Degree	84	44	14	6	148
Doctoral Degree	13	10	1	0	24
Total	222	151	35	24	432
Work Position					
Student	28	17	4	1	50
Officer	87	58	12	13	170
Supervisor/Manager	60	55	14	6	135
Senior Executive	47	21	5	4	77
Total	222	151	35	24	432

Table A1(d) Cross tabulation of Level of Education with other profile variables

Work Position	Level of Education				Total
	Secondary/ High School	Bachelor Degree	Master Degree	Doctoral Degree	
Student	5	35	6	4	50
Officer	8	103	49	10	170
Supervisor/ Manager	9	65	53	8	135
Senior Executive	6	29	40	2	77
Total	28	232	148	24	432

Table A2 Comparison of the means of the index measures in Thai society and in a virtual community

Index Measure 1	Index Measure 2	Mean Index Measure 1 – Mean Index Measure 2	t	Sig. (2-tail)	Index Measure 1	Index Measure 2	Mean Index Measure 1 – Mean Index Measure 2	t	Sig. (2-tail)
Individualism	Masculinity	-14.54	-2.84	.005	Individualism	Masculinity	77.58	10.31	.000
Individualism	Power Distance	-44.00	-6.57	.000	Individualism	Power Distance	-89.30	-12.81	.000
Individualism	Indulgence	-25.31	-3.42	.001	Individualism	Indulgence	-38.67	-5.21	.000
Individualism	Uncertainty Avoidance	-43.92	-7.48	.000	Individualism	Uncertainty Avoidance	-93.20	-14.71	.000
Individualism	Long Term Orientation	-12.17	-1.55	.123	Individualism	Long Term Orientation	-72.90	-9.66	.000
Masculinity	Power Distance	-29.47	-4.62	.000	Masculinity	Power Distance	-166.88	-31.13	.000
Masculinity	Indulgence	-10.78	-1.53	.127	Masculinity	Indulgence	-116.25	-18.00	.000
Masculinity	Uncertainty Avoidance	-29.38	-5.99	.000	Masculinity	Uncertainty Avoidance	-170.78	-24.88	.000
Masculinity	Long Term Orientation	2.37	.30	.764	Masculinity	Long Term Orientation	-150.48	-21.36	.000

Index Measure 1	Index Measure 2	Mean Index Measure 1 – Mean Index Measure 2	t	Sig. (2-tail)	Index Measure 1	Index Measure 2	Mean Index Measure 1 – Mean Index Measure 2	t	Sig. (2-tail)
Power Distance	Indulgence	18.69	2.52	.012	Power Distance	Indulgence	50.63	7.83	.000
Power Distance	Uncertainty Avoidance	.081	.01	.990	Power Distance	Uncertainty Avoidance	-3.90	-.66	.511
Power Distance	Long Term Orientation	31.84	3.58	.000	Power Distance	Long Term Orientation	16.41	2.60	.010
Indulgence	Uncertainty Avoidance	-18.61	-2.56	.011	Indulgence	Uncertainty Avoidance	-54.53	-8.50	.000
Indulgence	Long Term Orientation	13.15	1.41	.161	Indulgence	Long Term Orientation	-34.23	-4.94	.000
Uncertainty Avoidance	Long Term Orientation	31.75	3.83	.000	Uncertainty Avoidance	Long Term Orientation	20.31	3.26	.001

Notes: (a) For highlighted pairs of index measures there is a statistically significant difference, at a level of 0.05 or less, between the mean of index measure 1 and index measure 2; (b) Shaded cells identify pairs of index measures where the mean for index measure 1 is significantly less than the mean for index measure 2.