Application of Hofstede's Cultural Dimensions in Social Networking

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Abstract: Hofstede, Hofstede and Minkov (2010) said, "Culture is everything." Hofstede et al. (2010) claimed that culture acts as mental software, and influences all decisions, including technology usage. Yet a lack of studies exists in support of this generalised assertion. One potential test and measure of this statement by Hofstede et al. (2010) results in the examination of social network adoption rates within the framework of Hofstede's cultural dimensions.

Three well-known social networking sites were chosen for this study: Facebook, LinkedIn and Twitter. A comparison that examines the percentage adoption rates globally within Hofstede's six dimensions of culture was performed, using statistical analysis. These results provided the the basis necessary in order to determine if a relationship exists between culture and social networking adoption rates.

The findings suggest a correlation between specific cultural values, some that differ across the three selected applications: Facebook, LinkedIn and Twitter. All three of the services examined revealed a strong relationship with indulgence and adoption rates. Other dimensions showed varying results across the three applications. Also observed was a noticeable lack of activity in certain dimensional values, these non-results also suggests a potential relationship between cultural dimensions and non-behaviours.

Keywords: Social Networking, Hofstede, cultural dimensions, LinkedIn, Twitter, Facebook, adoption rates.

1. Introduction

Hofstede, Hofstede, and Minkov (2010) said, "This dominance of technology over culture is an illusion. The software of the machines may be globalized, but the software of the minds that use them is not" (p. 391). This broad statement has implications for various aspects of technology usage, and asserts that a relationship exists between culture and technology usage. The extent to which culture may influence technology usage is not known.

One study that offers support to Hofstede's claim is the study by Sanchez-Franco, Martinez-Lopez, and Martin-Velicia (2008) observed different usage patterns per culture during web-based training. Sanchez-Franco et al. (2008) surveyed over 600 users and determined that cultural differences play a potentially critical role in "acceptance and use" (p. 597). Thus, Sanchez-Franco et al. (2008) concluded, "Cultural aspects need to be taken into account when developing online applications that are specifically intended for use by a global audience" (Ibid). This study examined two of Hofstede's six dimensions of culture: individualism versus collectivism (IVC) and uncertainty avoidance (UAI), thus raising questions about the remaining four dimensions.

When Hofstede et al. (2010) discussed Internet usage they addressed the sixth dimension, indulgence versus restraint. Hofstede et al. (2010) said that restrained countries tend toward "less use of e-mail and Internet for private contacts and fewer e-mail and Internet contacts with foreigners" (Hofstede et al., 2010, p. 297). This behaviour contrasts with indulgent countries, which Hofstede et al., (2010) observed tend toward e-mail and Internet usage "for private contacts and more e-mail and Internet contacts with foreigners" (Ibid).

The observations by Hofstede et al. (2010) and Sanchez-Franco (2008) with regard to Internet usage patterns lead to a more fundamental question: Do social networking adoption rates vary by any other cultural dimensions? This correlational study by Sample and Karamanian will examine social networking adoption rates within the framework of all six of Hofstede's cultural dimensions.

Geert Hofstede's cultural dimensions provide a well-known framework of operationalized data for usage in evaluating and understanding various behaviours. This operationalized data can be used for quantitative analysis when determining the existence of a statistical relationship between variables. Hofstede avails his data, for researchers in all disciplines, on his website. These same values are found in his various published books.

Presently, there exists a lack of recognized literature that examines the role of national culture in social networking adoption rates. The goal of this study is to determine the nature of the relationship between Hofstede's six cultural dimensions and the adoption rates of Facebook, LinkedIn, and Twitter in order to determine if a correlation exists. This study provides insights to each of these three applications and why each may appeal to different dimensional values.

2. Literature Review

A quick review of Hofstede's dimensions of culture is helpful in understanding cultural influences on behaviours. Hofstede et al. (2010) define six cultural dimensions; a brief explanation of the dimensions follows:

1. Power Distance Index (PDI) – Characterized by "treating people differently" based on group membership (Minkov, 2013, p.414).
2. Individualism versus Collectivism (IVC) - Defines the primary responsibility the societal member considers – the group or the individual.
3. Masculine versus Feminine (M/F) - Defines the relationship between societal members as a contrast between aggressive, masculine traits and nurturing, feminine traits.
4. Uncertainty Avoidance Index (UAI) - Measures the response of a society – fear versus curiosity – to the new or unknown.
5. Long-Term Orientation versus Short-Term Orientation (LTOvSTO) – Defined by the interval of delayed gratification.
6. Indulgence versus Restraint (IVR) - Deals with society's acceptance of freedom of self-expression.

Each dimension associates with very specific behaviours – e.g. low UAI associates with less precision (Hofstede et al, 2010, p.201). The three selected social networking sites also have different missions that could possibly appeal to users from cultures with specific dimensional behaviours. Therefore, these dimensional preferences may result in the user simply having a subconscious preference for one application over the other. Evans (2008) said, "Although much of our behaviour is unconsciously controlled, 'we' (conscious beings) are not aware of this fact and may live with an illusion that we are much more in control of our behaviour than we actually are" (p. 270). By examining the usage preferences by culture the researchers hope to determine that a correlation exists between cultural dimensions and social networking adoption rates.

Richter and Koch (2008) associated two functionalities in common with social networking: identity management and the ability to keep in touch with other users. Ellison (2007) noted a third feature: access to the list of connections. The differences between the method of implementation by application that allow users to both manage their identity and keep in touch with other users may appeal to different cultural groups. For example, group memberships are associated with Facebook and LinkedIn but not Twitter.

Richter and Koch's (2008), along with Ellison's (2007), noted features are common among the three selected applications: Facebook, LinkedIn, and Twitter. The mission statements to each of the three sites reflect the same general goal of wider communications, but each application uses wording that may appeal to one group of users over another.

- "Facebook's mission is to give people the power to share and make the world more open and connected" (www.facebook.com)

- "This mission of LinkedIn is to connect the world's professionals to enable them to be more productive and successful" (www.linkedin.com)
- "The mission we serve as Twitter, Inc. is to give everyone the power to create and share ideas and information instantly without barriers" (Moss, 2013)

All three applications were developed in the United States for global usage. LinkedIn is the oldest of the three applications, having been launched in 2003 (www.linkedin.com). Facebook was launched in 2004 (Wadhwa, 2014), and Twitter in 2006 (www.twitter.com). According to Twitter, over 70% of their users are outside the US (about.twitter.com). Facebook and LinkedIn have greater representation in the US, where the largest number of users is from the US (www.internetworldstats.com, www.socailbakers.com).

3. Methodology

The goal of this study is to determine if a statistical relationship can be correlated between the independent variable – culture – and the dependent variable – adoption rates of the applications. A correlational study was chosen due to the lack of studies in this area from which to build, and a need to observe the relationship between culture and social networking adoption rates. The correlational analysis may be used to provide evidence of a relationship between culture and social networking adoption rates. This study will rely on hypothesis testing for each of the six cultural dimensions. Because the tests must be decomposed to six individual tests, one for each dimension, the results will be placed into a truth table for final analysis.

This study also relies on statistical analysis of Hofstede's dimensional values data and national adoption rates of social networking programs Twitter, LinkedIn, and Facebook as reported on the websites www.internetworldstats.com, www.beevolve.com, peerreach.com, and seiocast.com. The website www.internetworldstats.com contains the Internet user adoption rates by country for 237 countries and territories worldwide as of 2012. In addition to the Internet user adoption rates, this site maintains the Facebook user numbers that will be used for this study. This studied relied on the most recent set of statistics, the June 2012 findings. The website www.socialbakers.com maintains user statistics by country for over 80 countries; December 2013 statistics were used for this study. Finally, Twitter statistics relied on joining together data from Beevolve.com (www.beevolve.com) and peerreach.com (www.peerreach.com) for 26 countries as of December 2013.

Hypothesis testing will be performed against the null hypothesis using the Spearman correlation due to the distribution of data. The non-parametric distribution of both control and variable data requires the use of Spearman rather than Pearson for the correlation method. In the event of insufficient sample sizes of data, the Mann-Whitney measure of central tendency analysis will be performed and the resulting probability values (p-value) will be tested to the 5% rule. Calculations are performed on the Vassarstats website of Vassar College This website is the accompaniment to Lowry's textbook *Concepts & Applications for Inferential Statistics.*

Facebook samples were collected for 63 countries. LinkedIn data were collected for 56 countries. Hofstede provided cultural value data for 78 countries across four dimensions and 96 countries across 2 dimensions. The cultural value data was obtained from the book *Cultures and Organizations* (Hofstede et al., 2010). The adoption rate was obtained by dividing the number of users by the number of Internet users in each of the countries.

Countries with a less than 20% rate of Internet users were not included. The largest amount of data was available for Facebook and LinkedIn. Twitter data was more difficult to obtain and the dataset was significantly smaller, thus it may be more prone to variations; inferential statistics that measure central tendency will be used for Twitter data. The list of countries, the dimensional scores, and the application's penetration rate among Internet users in the country are all presented in Table 1.

Table 1: Social Network Adoption Rates By Country

Country	% Pop. Internet Users	FB	Linked In	Twitter	PDI	IVC	M/F	UAI	LTOv STO	IVR
Argentina	66.4	47.5	12	12	49	46	56	86	20	62
Australia	88.8	59.7	26.2	9.2	36	90	61	51	21	71
Austria	79.8	44.4	5.8	6.3	11	55	79	70	60	63
Belgium	81.3	57.9	20.75	Null	65	75	54	94	82	57
Brazil	45.6	66.1	17.48	5	69	38	49	76	44	59
Bulgaria	51	2.8	9	Null	70	30	40	85	69	16
Czech Republic	73	51.6	7.2	Null	57	58	57	74	70	29
Canada	83	63.5	30.5	7	39	80	52	48	36	68
Chile	58.6	96.8	22.1	Null	63	23	28	86	31	68
China	40.1	0.11 *	0.7	Null	80	20	66	30	87	24
Columbia	59.5	64.3	11.3	10	67	13	64	80	13	83
Costa Rica	43.1	94.4	19.38	Null	35	15	21	86	Null	Null
Croatia	70.7	50.3	8.6	Null	73	33	40	80	58	33
Denmark	90	60.8	26.4	Null	18	74	16	23	35	70
Ecuador	43.8	74.5	11.6	Null	78	8	63	67	Null	Null
Egypt	35.6		40.8	2	Null	Null	Null	Null	7	4
Finland	89.4	48.6	11.6	Null	33	63	26	59	38	57
France	79.6	49	12.2	4	68	71	43	86	63	48
Germany	83	37.5	4.1	1	35	67	66	65	83	40
Greece	53	67.3	12.2	Null	60	35	57	112	45	50
Hong Kong	74.5	75.7	14.4	Null	68	25	57	29	61	17
Hungary	65.4	65.4	5.7	Null	46	80	88	82	58	31
Indonesia	22.1	92.9	Null	19	78	14	46	48	62	38
Iran	53.3	33.1	2.2	Null	58	41	43	59	14	40
Ireland	76.8	60.2	28.1	Null	28	70	68	35	24	65
Israel	70	71.3	17.7	Null	13	54	47	81	38	Null
Italy	58.4	64	1.6	5	50	76	70	75	61	30
Japan	79.5	19.98	0.96	11	54	46	95	92	88	42
Latvia	71.7	26.3	Null	Null	44	70	9	63	69	13
Lithuania	65.1	48.7	6.9	Null	42	60	19	65	82	16
Malaysia	60.7	76.6	8.48	6.3	104	26	50	36	41	57
Mexico	36.5	91.5	12.6	8	81	30	69	82	24	97
Morocco	51	30.9	4.4	Null	70	46	53	68	14	25
Netherlands	92.9	48.5	29.2	11	38	80	14	53	67	68
Norway	96.9	60.7	20.2	Null	31	69	8	50	35	55
New Zealand	88	59.2	25.3	18.3	22	79	58	49	33	75
Panama	42.8	67.4	17	Null	95	11	44	86	Null	Null
Peru	36.5	86.7	17	Null	64	16	42	87	25	46
Philippines	32.4	88.9	6.19	4	94	32	74	44	27	42
Poland	64.9	33.4	3.4	Null	68	60	64	93	38	29
Portugal	55.2	78.3	24.5	Null	63	27	31	104	28	33
Romania	44.1	55.7	11.82	Null	90	30	42	90	52	20
Russia	47.7	11.7	3.1	4	93	39	36	95	81	20

Country	% Pop. Internet Users	FB	Linked In	Twitter	PDI	IVC	M/F	UAI	LTOv STO	IVR
S. Arabia	49	45	Null	33	95	25	60	80	Null	Null
South Korea	82.5	24.8	1.74	Null	60	18	39	85	100	29
Serbia	56.4	82.2	7.4	Null	86	25	43	92	52	28
Singapore	75	72.6	29.5	Null	74	20	48	8	72	46
Slovakia	79.1	46.8	4.7	Null	104	52	110	51	77	28
Slovenia	72.1	50.7	Null	Null	71	27	19	88	49	48
Spain	67.2	55.6	16.9	14	57	51	42	86	48	44
Sweden	92.7	58.6	18.5	5.6	31	71	5	29	53	78
Switzerland	82.1	46.9	16.3	Null	34	68	70	58	74	66
Taiwan	75.4	75.5	3.35	Null	58	17	45	69	93	49
Thailand	30	88.1	3.55	7	64	20	34	64	32	45
Trinidad & Tobago	53.1	75.3	29.19	Null	47	16	58	55	13	80
Turkey	45.7	88.1	7.5	45.7	66	37	45	85	46	49
United Kingdom	83.6	62.4	26.5	12	35	89	66	35	51	69
Uruguay	55.9	88.7	17.8	Null	61	36	38	100	26	53
United States	78.1	67.7	37.8	11	40	91	62	46	26	68
Venezuela	41	80.7	11.5	41	81	12	73	76	16	100
Vietnam	33.9	34.3	2.1	Null	70	20	40	30	57	35

- Note: * China blocks Facebook so the Facebook rate was not included in the analysis.

The research question asks, "Does culture, as defined by Hofstede, correlate with social networking adoption rates?" Hypotheses: H_0: There is no statistical relationship (correlational or inferred) between culture and social networking adoption rates. The alternative hypothesis, H_1, states that there is a statistical relationship between culture and social networking adoption rates. H_{1A}, states that there is a statistical relationship between culture and Facebook adoption rates. H_{1B}, states that there is a statistical relationship between culture and LinkedIn adoption rates. H_{1c}, states that there is a statistical relationship between culture and Twitter adoption rates. Tests will be performed separately for each of the three social networking sites.

Results of the correlational testing will rely on Cohen's effect size as the standard used to interpret the correlation coefficient, the r score, results (Cohen, 1988). An r score of 0.1 – 0.29 is considered a small correlation, 0.3 – 0.49 is considered a moderate correlation, and an r score greater than 0.5 is considered a strong correlation (Cohen, 1988). Cohen's effect size will be applied since behaviour is being measured. Mann-Whitney test results will rely on the 0.05% testing rule.

The adoption rates will be determined by dividing the number of service users by the number of Internet users in each of the countries. Countries that have less than a 20% Internet adoption rate will not be included in the study, as these results may not reflect the values of the overall country population. China will not be included for the Facebook results since RenRen is the social networking service used in lieu of Facebook and "is the most popular social networking site in China", while as of this date, Facebook.com is still an unreachable domain (Zhao & Jiang, 2011, p. 1130).

4. Results Figures and Tables

The results for Facebook show a strong correlation with indulgence, moderate correlations to both collectivism and short-term orientation, and a weak correlation to low power distance. No correlations were observed in the remaining dimensions; however these two dimensions showed

an unanticipated degree of activity on the lower poles of the dimensions. Table 2 provides the results of the Spearman correlations for each dimension.

Table 2: Facebook Adoption Rates by Cultural Dimensions

Dimension	No. of Entries	Correlation Coefficient (Rho)	t-value	Degrees Freedom	Correlation Strength	H_0	$H_{1A\ (1\text{-}6)}$
PDI	**59**	**0.1471**	**1.12**	**57**	**Weak**	**Reject**	**Consider**
IVC	**59**	**-0.4163**	**-3.46**	**57**	**Moderate**	**Reject**	**Accept**
M/F	57	-0.0186	-0.14	55	None	Accept	Reject
UAI	61	-0.0056	-0.04	59	None	Accept	Reject
LTOvSTO	**63**	**-0.3407**	**-2.83**	**61**	**Moderate**	**Reject**	**Accept**
IVR	**62**	**0.6402**	**6.46**	**60**	**Strong**	**Reject**	**Accept**

The weak correlation with high PDI values provides minimal evidence to reject H_0 but this finding does not provide sufficient evidence to accept H_{1A1}. The IVC, LTOvSTO, and IVR findings are stronger and resulted in acceptance of H_1. Table 3 displays the truth table entries for evaluating Facebook results.

Table 3: Facebook Truth Table H_0 H_{1A} test

PDI	IVC	M/F	UAI	LTOvSTO	IVR
1	1	0	0	1	1

The results for LinkedIn adoption rates show a strong correlation to indulgence, moderate correlations to short-term orientation, and low power distance. Weak correlations were observed with LinkedIn adoption rates and individualism, femininity, and low uncertainty avoidance. Table 4 shows the results of the correlational analysis

Table 4: LinkedIn Adoption Rates by Cultural Dimensions

Dimension	No. of Entries	Correlation Coefficient (Rho)	t-value	Degrees Freedom	Correlation Strength	H_0	$H_{1B\ (1\text{-}6)}$
PDI	**56**	**-0.3702**	**-2.93**	**54**	**Moderate**	**Reject**	**Accept**
IVC	**56**	**0.2586**	**1.97**	**54**	**Weak**	**Reject**	**Consider**
M/F	**56**	**-0.196**	**-1.47**	**54**	**Weak**	**Reject**	**Consider**
UAI	**56**	**-0.167**	**-1.24**	**54**	**Weak**	**Reject**	**Consider**
LTOvSTO	**54**	**-0.3882**	**-3.01**	**55**	**Moderate**	**Reject**	**Accept**
IVR	**52**	**0.6308**	**5.75**	**50**	**Strong**	**Reject**	**Accept**

The results for LinkedIn diverged from the Hofstede distribution in every dimension. For example, in the UAI dimension the range of 80-89, indicative of fearful of the new, has the highest representation rate, yet the highest adoption rate for LinkedIn is seen in the 0-9 score, fearful of the new, low uncertainty avoidance countries. Similarly with the M/F dimension the greatest representation is in the neutral range of 40-49; the highest adoption rates, however, are in the feminine 0-20 range.

The weak correlations resulted in rejection of H_0 and consideration, but not acceptance, of H_{1B}. The weak correlation associated with individualism is noteworthy since the result is close to the boundary between weak and strong. A notable difference between Facebook adoption rates and LinkedIn adoption rates occurred in the IVC dimension, in which Facebook showed a moderate correlation with collectivism, and LinkedIn showed a weak correlation with individualism. Similarly, the difference between Facebook and LinkedIn also appeared with the PDI dimension,

as Facebook showed a weak correlation to high PDI scores, and LinkedIn showed a moderate correlation to low PDI scores. The activity across each dimension for LinkedIn resulted in rejection of H_0. The truth table for evaluating the results is displayed in Table 5.

Table 5: LinkedIn Truth Table H_0 H_{1B} test

PDI	IVC	M/F	UAI	LTOvSTO	IVR
1	1	1	1	1	1

The test for Twitter relied on a measure of central tendency comparison of the Twitter adoption rates per country to the control data group otherwise known as the full Hofstede distribution. This comparison was performed for each dimension using the Mann-Whitney U test. Twitter showed a very significant result for IVR and a slightly significant finding for M/F. Table 6 shows the Mann-Whitney results for Twitter adoption rates.

Table 6: Twitter Adoption Rates by Cultural Dimensions

Dimension	U	Z Score	P Value	Significance	H_0	$H_{1C\ (1\text{-}6)}$
PDI	1129.5	-0.27	0.3936	Not Significant	Accept	Reject
IVC	1175.5	-0.58	0.2776	Not Significant	Accept	Reject
M/F	**1318.5**	**-1.62**	**0.0526**	**Significant**	**Accept**	**Consider**
UAI	945.5	1.05	0.1469	Not Significant	Accept	Reject
LTOvSTO	1244.5	0.59	0.2776	Not Significant	Accept	Reject
IVR	**1759.5**	**2.48**	**0.0066**	**Significant**	**Reject**	**Accept**

While UAI did not show statistical significance the findings were of interest, as a high adoption rate was observed on the lowest grouping in UAI. Figure 9 depicts Hofstede's overall population distribution for the UAI dimension with the most populated range in the 80-89 ranges. Figure 10 shows the Twitter adoption rate by UAI.

Table 7: Twitter Truth Table H_0 H_{1C} test

PDI	IVC	M/F	UAI	LTOvSTO	IVR
0	0	0	0	0	1

LinkedIn and Facebook appear to have greater adoption rates by "feminine" countries and Twitter appears to have a greater adoption rate in countries that are outside the feminine range. The highest adoption rate for Facebook occurs in the 20-29 ranges, the feminine range of the pole where the average adoption rate is 78%. In comparison to Facebook the overall adoption rates for LinkedIn are lower so the data may be less stable. The LinkedIn results showed that the countries with the highest adoption rates displayed feminine tendencies. The highest adoption rates occurred in the 20-29 ranges (20.83%) and the 10-19 ranges (19.35%). Also of note in findings for all three applications are the non-behaviours, or the lack of activity, at various dimensional poles. The lack of activity on the restrained area of IVR for both Facebook and Twitter is remarkable.

5. Discussion

Historically high PDI scores correlate with low IVC scores (Hofstede et al., 2010; Guess, 2004). This makes the Facebook findings interesting because the weak, nearly non-existent positive correlation with high PDI and the solidly moderate collectivist correlation are somewhat surprising. Collectivism with low PDI is not common with the exception of countries in the Americas (Hofstede et al., 2010, p.103).

The Facebook findings affirmed the suggestion of higher adoption rates by collectivist countries; however, no correlation existed between femininity and adoption rates. A surprise finding was

the weak correlation between high power distance and Facebook adoption rate. Also unanticipated was the moderate short-term orientation correlation with Facebook adoption. The strong correlation between indulgence and Facebook adoption, while not explicitly anticipated, is not as surprising due to the nature of this dimension, which correlated "positively with extraversion" (Hofstede et al., 2010), and the association with "content gratification alongside building social capital" (Joinson, 2008, Hofstede et al., 2010).

The LinkedIn findings contrasted with the Facebook findings in that a moderate negative correlation to low PDI exists with LinkedIn and a weak positive correlation to PDI exists with Facebook. LinkedIn (Skeels and Grudin, 2009) noted the professional use of LinkedIn; thus, the correlation with individualism is explained. However, Skeels & Grudin (2009) also noted the professional adoption of Facebook. "Facebook was quickly adopted by tens of thousands of employees to connect with friends, family, and colleagues" (Skeels & Grudin, 2009). While employers and co-workers access Facebook pages, these pages contain more personal information and less professional information than their LinkedIn counterparts.

The collectivist correlation with both Facebook and LinkedIn is not surprising based on the community nature of these applications. The LinkedIn finding toward individualism may reflect consideration of self-needs, since LinkedIn is a networking site for professional career advancement, over the group needs consistent with individualist behaviours. Twitter is slightly different because a user builds the network in a slightly different manner. In the case of Twitter, the user does not gain access to other users through groups instead the user explicitly follows another.

The observation by Hofstede et al. (2010) on Internet usage and IVR did show statistical significance for all three applications. However, other dimensions such as IVC and PDI also showed activity that previously had not been identified. The differing findings across the other five dimensions such as PDI, IVC, and M/F suggest the need for further research.

6. Conclusion

This is an observational study. As such, the use of correlation and the Mann-Whitney measure of central tendency are appropriate tools for observational evaluation. The resultant report shows that correlations have been identified between social networking adoption rates and cultural dimensions. These correlations go beyond the anticipated finding for IVR and show differences on IVC, a dimension where statistical significance also occurred. While not statistically significant, all three applications had higher adoption rates amongst low UAI countries.

All three applications – Twitter, LinkedIn, and Facebook –showed strong relationships with the indulgence pole of the IVR dimension and adoption rates. Each of the applications requires the users to determine the presentation of data to the Internet. Of the three, LinkedIn is the most structured and Twitter is the least structured. Twitter was not eligible for this same analysis, but the results of the Mann-Whitney test suggests a very strong indulgence factor that could correlate with Twitter usage; a larger dataset is needed, however, before conclusions may be drawn.

These results may point to an interesting question regarding the social nature of indulgence, and as was suggested by Hofstede et al (2010), that indulgence can be associated with extroversion. When examining the cultural framework of social networking site adoption, countries with higher levels of indulgence are more interested in these services.

When considering extroversion, one surprise is the opposite correlation between IDV for Facebook and LinkedIn. Hofstede et al (2010) found extroversion was strongly correlated with IDV (in addition to indulgence). This may suggest two different flavours of extroversion. One version may suggest an indulgent social display, where other forms of extroversion are more functional than indulgent. This may be an area of future study, and could provide further

revelations into the specific nature of the cultural connection, beyond the scope of this observational study.

This study demonstrates a relationship between culture and social networking adoption rates, and the data represents a single point in time. As more data becomes available, additional research can clarify and hopefully further validate the Twitter findings. Additional research such as a longitudinal study of the adoption rates of Facebook and LinkedIn may provide greater insight to the relationship between culture and adoption rates. Further studies that examine the differences between characteristics of RenRen in China vs. Facebook may provide insight into what cultural characteristics can be associated with social network consumption models.

The adoption rates offer insights to service features that may attract or repel users based on their cultural preferences. This observation can apply to areas where social media may have an impact. Examples of this impact may include marketing, international affairs, and computer attack vectors. .

The international nature, and decidedly human nature, of social networking technologies and services provide a unique glimpse into human sociality. Like a well-constructed experiment, the social network interface is predominantly controlled across borders. Thus, the humans and their collective mental programming offer the changing variables.

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