

# Cultural Values, Information Sources, and Perceptions of Security

[Authors]

## Abstract

This exploratory study examines the relationships among cultural values, sources of information about a current event, and perceptions of national security. The study uses the case of Edward Snowden and his actions in releasing information classified as secret by the U.S. Federal government. The study compares the perceptions of survey respondents from India and the U.S. at two times soon after Snowden released the information and examines the relationship among cultural values, information sources, and perceptions of Snowden and his actions. The cultural dimension follows the Hofstede cultural values measures of *power distance* and *individuality*, measures in which India and the U.S. exhibit significant differences. The survey was conducted using Amazon's Mechanical Turk (MTURK) to solicit responses in July and August 2013. The results reveal that the U.S. and India respondents agree on some aspects of the case (e.g., that Snowden is a courageous individual) and do not shift their viewpoints from the first survey to the next. However, the respondents differ significantly in their use of information sources and report significantly different opinions on the potential impact of Snowden's actions on national security issues. This limited study revealed an unexpected difference from Hofstede's work in the power distance cultural dimension, raising questions about the use of MTURK for cross-cultural studies.

**Keywords:** Values; Culture; Hofstede; Mechanical Turk; Snowden

## Background

The Case: Most people who have access to news sources know something about Edward Snowden and his actions in releasing information—classified as secret by the U.S.—that detailed how U.S. intelligence programs had been collecting telephone metadata and Internet records on citizen and government communications as part of a massive surveillance effort. Snowden, an employee of Booz Allen Hamilton, a contractor to the U.S. National Security Agency (NSA), provided information to The Guardian, which published the information in a series of articles in the newspaper beginning in June 2013 (Gidda, 2013). Snowden released his information while in Hong Kong. As this is written, Snowden is living in Russia, which granted him asylum and has resisted extradition requests from the U.S. Moreover, additional information on the surveillance program continues to be released through newspaper stories.

Culture: Hofstede (2001), based on earlier work by Kluckhohn (1961), defines culture as “the collective programming of the mind that distinguishes the members of one group or category of people from another” (p. 9). In a series of studies of community values, initially in the late 1960s with IBM employees from different countries, he identified several dimensions of cultural differences. In our study, we are interested in two of these: power distance (PDI), which is a

measure of the degree of acceptance of inequality in society by its members; and individualism (IND), which is a measure of how loosely members of a society feel tied together. Low power distance represents a more egalitarian society than one with high power distance; and low individualism represents a more collectivist society. Hofstede's indicators are relative measures, not a ratio scale.

In this study, we examine differences and relationships among these two cultural measures for responses from India and the US, the information sources used, and perceptions of Snowden and the possible consequences of his actions. We collected data at two points in time separated by about five weeks in order to assess if there were changes in perceptions in this period.

### Method

We conducted the study by recruiting participants in the U.S. and India using Amazon's Mechanical Turk (often abbreviated as MTURK). Using MTURK has advantages of response time and cost-effectiveness compared with other recruitment methods (using students, direct mail, etc.), and the quality of responses from MTURK can be relatively high. In one study, only 4.17 percent of respondents failed a quality control question, compared with failures of 6.47 percent and 5.26 percent for participants from a university and Internet message board, respectively (Paolacci, Chandler, & Ipeirotis, 2010). The cost per usable response can be low (less than \$1, even for surveys that take 20-40 minutes to complete). The use of crowdsourcing for research has increased in popularity and acceptance for these reasons and others (Howe, 2006; Kittur, Chi, & Suh, 2008; Mahmoud, Baltrusaitis, & Robinson, 2012).

In our study, the survey instrument for both time periods included questions about the use of different information sources for learning about the Edward Snowden situation. The questions asked about the use of 1) Blogs; 2) Online social media discussions; 3) Search engine news; 4) Online news services; 5) Television shows; 6) Personal discussions and email exchanges, and 7) Newspapers (including online versions). Responses were in the form of an anchored five-point Likert scale (1=not used at all; 2=used rarely in one week; 3=used at least weekly; 4=used daily, and 5=used several times per day). Both surveys asked for the respondents' degree of agreement with statements related to security and to how Snowden might be viewed (e.g., as publicity-seeker; courageous whistle-blower; etc.). Finally, both surveys included demographic questions. We also asked for the respondents' views of Snowden as a person and views of the significance of his actions to personal and national security, again using Likert response scale.

The first survey included questions to measure cultural values and other personal measures that are not discussed in this research note. The cultural values questions are taken from Hofstede's *Values Survey Model 2008* (1984, 2008); we used the 2008 version.

We included quality control questions intended to assure that the respondent read and understood the questions and was not simply providing responses simply to complete the task. We eliminated responses that failed these simple quality control questions.

We had a total of 101 usable responses (respondents completed both surveys and passed the quality control questions) from the US and 107 from India. The analysis of these sets of responses forms the basis of our findings.

## Findings

The expected alignment of cultural values from our survey with the prior work of Hofstede was mixed. As anticipated, we found a significant difference between US and India responses on both PDI and IND. The direction of the difference in IND was as expected: the US sample measure score was significantly higher, indicating a higher degree of individuality in the US compared with more collectivism in India. However, the direction of the difference in PDI was *opposite* what we expected: the US sample score was *higher* than the India score, with the US indicating *less* egalitarian/individuality. We say more about this anomaly in the discussion section.

There were no significant changes in response statistics from the first survey to the second survey, either in the use of the information sources or in the agreements with the statements about Snowden and the impact of his actions on security.

We observe significant differences ( $p < .01$ ) in sample means from the US and India on the frequency of use of different information sources (Table 1). The India sample reports more frequent use of all sources compared with the US sample. Similarly, on two of the questions about Snowden's motivation (Table 2), we see significant differences between the US and India. Finally, on each of the questions about potential impacts on security (Table 3), we find significant differences between the two samples on most of the questions, with the India responses generally indicating greater agreement with the statements.

Two clear exceptions to the differences between the two samples stand out, one related to Snowden's motivation; the other related to the impact on long-term security for the US. The two samples were in agreement with the statement, "In my view, Snowden is a courageous individual who followed his conscience." For this statement, both the US and India sample means were almost identical, tending toward more agreement than disagreement. Similarly, in response to the statement, "In my view, Snowden's action in the long run will make for a stronger and more secure U.S. society," there was no significant difference in response means. Both samples tended to agree with this statement.

**Table 1. Use of Information Sources; Sample Means**

<i>Rate how much you have used each of the following sources of information to learn about Edward J. Snowden, his disclosure of U.S. surveillance activities, and his legal situation:</i>			
1=not used at all; 2=used rarely in one week; 3=used at least weekly; 4=used daily; 5=used several times per day			
	<b>Country</b>	<b>Phase 1</b>	<b>Phase 2</b>
Blogs	U.S.	M=1.95; s=0.999	M=1.81; s=1.003
	India	M=2.72; s=1.139	M=2.42; s=1.063
	<i>Δ in Means</i>	0.762	0.614
	<i>t-statistic</i>	4.342**	3.755**+
Online social media discussions	U.S.	M=2.09; s=1.127	M=1.96; s=0.982
	India	M=3.33; s=1.307	M=3.25; s=1.156
	<i>Δ in Means</i>	1.236	1.290
	<i>t-statistic</i>	6.294**+	7.466**
Search Engine News	U.S.	M=2.40; s=1.196	M=2.40; s=1.172
	India	M=3.53; s=1.153	M=3.58; s=1.002
	<i>Δ in Means</i>	1.128	1.184
	<i>t-statistic</i>	5.869**+	6.694**+
Online News Services	U.S.	M=2.66; s=1.199	M=2.55; s=1.137
	India	M=3.24; s=1.232	M=3.36; s=1.043
	<i>Δ in Means</i>	0.584	0.814
	<i>t-statistic</i>	2.959**+	4.665**+
Television shows (including online TV sites)	U.S.	M=2.37; s=1.268	M=2.43; s=1.155
	India	M=3.40; s=1.256	M=3.39; s=1.203
	<i>Δ in Means</i>	1.035	0.961
	<i>t-statistic</i>	5.044**+	5.145**+
Personal discussions and email exchanges	U.S.	M=1.62; s=0.991	M=1.76; s=1.031
	India	M=2.72; s=1.265	M=2.66; s=1.241
	<i>Δ in Means</i>	1.096	0.901
	<i>t-statistic</i>	5.842**	4.871**
<b>Newspapers (including online versions)</b>	<b>U.S.</b>	<b>M=2.05; s=1.170</b>	<b>M=2.11; s=0.972</b>
	India	M=3.82; s=0.927	M=3.83; s=0.939
	<i>Δ in Means</i>	1.772	1.719
	<i>t-statistic</i>	10.450**	11.291**+
<p>** Significant at the .01 level (2-tailed) * Significant at the .05 level (2-tailed)            -- Not Significant + Equal variances assumed</p>			

**Table 2. Views on Snowden and Motivation**

<b>In my view, Edward Snowden...</b>	<b>Country</b>	<b>Phase 1</b>	<b>Phase 2</b>
...is a courageous individual who followed his conscience.	U.S.	M=3.71; s=1.140	M=3.59; s=1.191
	India	M=3.72; s=0.997	M=3.71; s=0.941
	<i>Δ in Means</i>	0.004	0.119
	<i>t-statistic</i>	--	--
...broke the laws of the U.S. and thus deserves to be tried in court.	U.S.	M=3.03; s=1.234	M=2.99; s=1.202
	India	M=3.37; s=1.166	M=3.36; s=1.014
	<i>Δ in Means</i>	0.339	0.373
	<i>t-statistic</i>	--	2.085*+
...is a publicity seeker and hopes for personal gain from his actions.	U.S.	M=2.31; s=1.242	M=2.32; s=1.199
	India	M=3.43; s=1.221	M=3.31; s=1.237
	<i>Δ in Means</i>	1.122	0.986
	<i>t-statistic</i>	5.601**+	5.086**+
<p>** Significant at the .01 level (2-tailed)   * Significant at the .05 level (2-tailed)  -- Not Significant   + Equal variances assumed</p>			

Limitations and Discussion

This exploratory study has all of the well-known limitations of surveys: issues of sampling error, sampling bias, measures at a single point in time, etc. The use of MTURK introduces new challenges to these limitations, and these have been widely discussed elsewhere (e.g., Chandler, et al 2013).

The dimensions of culture as articulated by Hofstede have been criticized by many scholars as lacking in theoretical foundation and as subject to misuse. Hofstede himself acknowledges that this framework is empirical and often misused, and addresses some of these critics and criticisms as part of a discussion in *Human Relations* (see McSweeney, 2002, and Hofstede, 2002). We use the construct as a useful framework for comparison and do not seek to ground it in personal or societal theories.

In this study, we treat some of these limitations (e.g., we control for quality, we take measures at two points in time). However, as an exploratory study of differences, we are not seeking to create ratio scales or generalize beyond the samples. Consequently, our findings—as in many exploratory studies—make no claim to be definitive, but they do provoke thought and point the way toward additional studies.

**Table 3. Views on Potential Consequences**

<b>In my view, Snowden's actions...</b>	<b>Country</b>	<b>Phase 1</b>	<b>Phase 2</b>
...make me feel personally more secure.	U.S.	M=2.51; s=1.044	M=2.66; s=1.098
	India	M=3.24; s=1.088	M=3.43; s=0.992
	<i>Δ in Means</i>	0.733	0.779
	<i>t-statistic</i>	4.241**+	4.648**+
...have damaged U.S. national security	U.S.	M=2.78; s=1.261	M=2.68; s=1.270
	India	M=3.36; s=1.215	M=3.26; s=1.208
	<i>Δ in Means</i>	0.577	0.583
	<i>t-statistic</i>	2.858**+	2.952**+
...have damaged all democratic nations' security	U.S.	M=2.15; s=1.153	M=2.30; s=1.159
	India	M=3.14; s=1.226	M=2.75; s=1.156
	<i>Δ in Means</i>	0.985	0.453
	<i>t-statistic</i>	5.078**+	2.461*+
...make me less confident in my government's oversight of our nation's security.	U.S.	M=3.74; s=0.994	M=3.84; s=1.116
	India	M=3.32; s=1.192	M=3.17; s=1.124
	<i>Δ in Means</i>	-0.417	-0.665
	<i>t-statistic</i>	2.303**	3.738**+
...in the long run will make for a stronger and more secure U.S. society	U.S.	M=3.07; s=1.097	M=3.31; s=1.123
	India	M=3.21; s=1.122	M=3.54; s=0.867
	<i>Δ in Means</i>	0.140	0.224
	<i>t-statistic</i>	--	--
...negatively affects all democratic societies, U.S. and others	U.S.	M=2.36; s=1.181	M=2.26; s=1.151
	India	M=3.10; s=1.257	M=3.00; s=1.209
	<i>Δ in Means</i>	0.748	0.742
	<i>t-statistic</i>	3.790**+	3.955**+
...will make little difference in our security as a society	U.S.	M=2.94; s=1.103	M=3.00; s=1.000
	India	M=3.55; s=0.958	M=3.28; s=0.998
	<i>Δ in Means</i>	0.610	0.275
	<i>t-statistic</i>	3.597**+	--
<p>** Significant at the .01 level (2-tailed) * Significant at the .05 level (2-tailed)            -- Not Significant + Equal variances assumed</p>			

The differences we observe between the US and India sample are provocative and worthy of discussion. However, the two statements on which there is agreement (the general tendency to think that Snowden was motivated by conscience and the tendency to agree that his actions will have a long-run positive impact on US society) may be even more interesting. Do these statements tap into some kind of universal attitude or value system?

In terms of surprise value, the reversal of the anticipated difference in the measure of PDI (power distance) surpasses other findings. We find this puzzling and can think of two possible

explanations. One possibility is that the sample is simply faulty—that our controls to assure thoughtful responses failed and the responses are flawed. Another possibility is that MTURK samples are distinct from the general population (at least distinct from the population demographics of samples in prior studies using the Hofstede dimensions).

To explore the first possibility, we went back to the responders to the first two surveys, and we additionally solicited new responders to the survey to see if the results would change. The results were similar. The PDI differences between the U.S. and India samples remained the same, i.e., the reverse of what has been found in other studies.

This leaves us pondering the second possibility: might the MTURK approach to sampling tend to elicit respondents who differ so much from the expected societal values? We'd like to explore this, and other possible explanations further in future research.

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[to be added after blind reviews]

### References

Chandler, J., Mueller, P., & Paolacci, G. (2013). Nonnaïveté Among Amazon Mechanical Turk Workers: Consequences and Solutions for Behavioral Researchers. *Behavior Research Methods* (pp. 1-19); published online July 2013; DOI 10.3758/s13428-013-0365-7

Gidda, M. (2013, July 25). Edward Snowden and the NSA files—timeline. *The Guardian (London)*. Retrieved from <http://www.theguardian.com/world/2013/jun/23/edward-snowden-nsa-files-timeline>

Hofstede, G. (1984). *Culture's consequences: International differences in work-related values* (Vol. 5). Thousand Oaks, CA; Sage Publications.

Hofstede, G. (2001) *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*. Second Edition, Thousand Oaks CA: Sage Publications.

Hofstede, G. (2002) Dimensions Do Not Exist: A Reply to Brendan McSweeney; *Human Relations* November 2002 vol. 55 no. 11 1355-1361

Hofstede, G. (2008). Values Survey Module 2008. Retrieved from <http://www.geerthofstede.com/vsm-08>

Howe, J. (2006). The Rise of Crowdsourcing. *Wired*, 14(6). Retrieved from <http://www.wired.com/wired/archive/14.06/crowds.html>

Ipeirotis, P. G., Provost, F., & Wang, J. (2010). Quality management on Amazon Mechanical Turk. In *Proceedings of the ACM SIGKDD Workshop on Human Computation* (pp. 64–67). Washington DC: ACM.

Kittur, A., Chi, E. H., & Suh, B. (2008). Crowdsourcing user studies with Mechanical Turk. In *Proceedings of the twenty-sixth annual SIGCHI conference on Human factors in computing systems* (pp. 453–456). Florence, Italy: ACM.

Kluckhohn, C. (1951) The Study of Culture, in D. Lerner & H.D. Lasswell (Eds.) *The Policy Sciences*; pp 86-101. Stanford, CA: Stanford University Press.

Mahmoud, M. M., Baltrusaitis, T., & Robinson, P. (2012). Crowdsourcing in emotion studies across time and culture. In *Proceedings of the ACM multimedia 2012 workshop on Crowdsourcing for multimedia* (pp. 15–16). Nara, Japan: ACM.

McSweeney, B. (2002) Hofstede's model of national cultural differences and their consequences: A triumph of faith – a failure of analysis. *Human Relations*; 55, 89–117.

Paolacci, G., Chandler, J., & Ipeirotis, P. (2010). Running experiments on amazon mechanical turk. *Judgment and Decision Making*, 5(5), 411–419.