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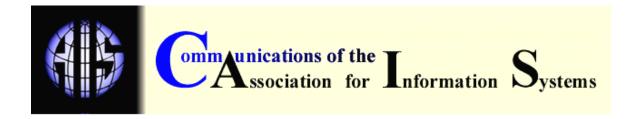*University of Pittsburgh*, billking@katz.pitt.edu

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INTEGRATING NATIONAL CULTURE INTO IS RESEARCH: THE NEED FOR CURRENT INDIVIDUAL-LEVEL MEASURES

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ABSTRACT

Cross-cultural IS research is beginning to mature; however, much is left to do. This article reviews the most popular conceptualization of National Culture and offers suggestions for improvements in measurement. While Hofstede's culture dimensions ─ uncertainty avoidance, power distance, masculinity/femininity, and individualism/collectivism ─ are still widely used in many disciplines, it is not guaranteed that the measures still hold after over 30 years. Empirical evidence is presented from two studies that indicate that shifts might have occurred. Because the usual national culture constructs are measured at the national level, they also should not be used in individual models of behavior or technology acceptance.

KEYWORDS: cross cultural IS research, measurement, national culture

I.   INTRODUCTION

Most previous research on information systems was conducted in North America in the context of North American cultures. As globalization of businesses and systems continues to increase, our understanding about the adoption and use of IT needs to apply to other cultures. Any research model that is to be applied in a multi-cultural context needs to be evaluated by making theoretical connections between the behavioral model and national culture constructs, and testing those connections.

Our focus in this paper is on assessing whether the usual "comparative" studies that relate IS models to various cultural contexts are adequate, or whether newer, individual-level culture measures that are more commensurate with the measures in common use in IS models, such as TAM [Davis, 1989], are required. We examine the current relevance of national-level measures of culture that have been relied upon for over two decades.

This article begins by discussing Hofstede's dimensions of National Culture [1980] and the limitations of prior IS cross-cultural research. Updated country rankings obtained from two independent samples by the authors are examined and compared against those obtained by Hofstede. The article then addresses problems that occur when using Hofstede's original instrument and outlines how researchers may incorporate individual-level measures of culture that are likely to be more appropriate than the national measures in common use.

II. HOFSTEDE'S CONCEPTUALIZATION OF CULTURE

Hofstede developed the original four dimensions of culture while working for IBM Corporation between 1967 and 1973. He factor-analyzed over 116,000 responses to a survey instrument from 66 countries, resulting in the four dimensions:

- uncertainty avoidance,
- power distance,
- masculinity/femininity, and
- individualism/collectivism.

Hofstede's work represents the largest study attempting to classify nations based on broad value differences. His work still impacts research; in fact, most research on culture uses his work. Even researchers who disagree with his dimensions and attempt to create other scales, compare their findings to his (e.g., Maznevski et al., [2002]).

UNCERTAINTY AVOIDANCE (UA)

Uncertainty avoidance determines the degree to which individuals feel threatened by, and try to avoid, ambiguous situations by establishing more formal rules and rejecting deviant ideas and behaviors. People scoring high on this dimension attempt to avoid uncertainty in all forms. Individuals from cultures scoring high on this dimension – for example, Greece, Portugal, Guatemala, Uruguay, and Belgium [Hofstede, 1980] - would tend to seek ways to reduce uncertainty. The opposite is true of individuals from countries scoring low on this dimension – for example, Singapore, Jamaica, Denmark, Sweden, and Hong Kong [Hofstede, 1980].

POWER DISTANCE (PD)

Power distance is "a measure of the interpersonal power or influence between (a superior) and (a subordinate) as perceived by the (subordinate)" [Hofstede, 1991, p.71]. The PD dimension refers to the extent to which inequality, often as in a hierarchy or other "pecking order," is seen as significant, salient, and real. Essentially, it is the degree to which individuals accept that their boss enjoys more power than they do. Superiors are seen as correct just because of their position. For cultures scoring high on this dimension – for example, Malaysia, Guatemala, Panama, Philippines, and Mexico [Hofstede, 1980] - employees would be likely to complete a task given by superiors even if they were unsure of its merit or ethical values. The opposite would be true of those countries scoring low on this dimension – for example, Austria, Israel, Denmark, New Zealand, and Ireland [Hofstede, 1980], where employees who do not agree with a directive might more easily question or even refuse to carry it out.

MASCULINITY/FEMININITY

According to Hofstede's [1980; 1984; 1991; 2001] definition, masculinity/feminity is not related to the gender of subjects examined, but is a characteristics of the culture itself. A culture that ranks high on masculinity – for example, Japan, Austria, Venezuela, Italy, and Switzerland - emphasizes and values assertiveness and work goals such as earnings and promotions. On the other hand, cultures that rank low on masculinity (high on femininity) – for example, Sweden, Norway, the Netherlands, Denmark, and Costa Rica - stress personal goals, such as nurturing of others, and creating a friendly, congenial environment. People scoring high on masculinity believe in independent decisions, are more strongly motivated to achieve, and experience higher job stress. They excel by trying their best and are focused on money and other material things. People from countries scoring low on masculinity believe in group decisions, are less motivated to achieve, and suffer lower job stress. In general, people in these countries focus less on money and material objects, but relish their relationships with other people [Hofstede, 1991].

INDIVIDUALISM/COLLECTIVISM (IC)

Individualism/Collectivism describes the interactions between individuals and a group. It refers to the extent to which individuals' self-interests are prioritized over the concerns of a group. In cultures that rank low on individualism (high on collectivism) – for example, Guatemala, Ecuador, Panama, Venezuela, and Colombia [Hofstede, 1980] - individuals tend to see themselves as members of a group. Their group is a main source of their identity and the unit to which they owe lifelong loyalty [Hoecklin, 1995]. In a high collectivist culture, the last thing one wants to do is stand out from the crowd. The opposite is true for cultures scoring high on individualism (low on collectivism) – for example, the United States, Australia, the United Kingdom, Canada, and the Netherlands. In individualistic cultures, people are more self-oriented; individual initiative is encouraged and people believe in individual decisions.

The four cultural dimensions are summarized in Table 1.

Table 1. Cultural Dimensions

Hofstede's Dimension	Definition
Uncertainty Avoidance (UA)	Degree to which people in a country prefer structured over unstructured situations: from relatively flexible to extremely rigid.
Power Distance (PD)	Degree of inequality among people, which the population of a country considers as normal: from relatively equal to extremely unequal.
Masculinity/femininity (MF) (not related to gender)	Degree to which "masculine" values like assertiveness, performance, and success prevail over "feminine" values like the quality of life, maintaining warm personal relationships, service, and solidarity: from tender to tough.
Individualism/collectivism (IC)	Degree to which people in a country act as individuals rather than as members of cohesive groups: from collectivist to individualist.

Adapted from Hofstede, [1980]

III.LIMITATIONS TO CURRENT CROSS CULTURAL IS RESEARCH

The bulk of research about IS in multiple countries can be labeled "comparative" research. These studies compared systems and their use in different countries to discover similarities and differences. The few studies that introduced national culture at more than a cursory level [for example, Rose and Straub, 1998; Straub, et al., 1997] used Hofstede's "country scores" [1980] to explain differences.

CURRENCY

Given the number of years that elapsed since Hofstede's work, it might not be appropriate to assume that Hofstede's cultural scores still hold after over three decades. The world changed significantly over that period and it is likely that national cultures also changed. This argument suggests the need to continuously update data, and if desired, "country scores."

INDIVIDUAL-LEVEL MEASURES

The assumption that is implicit in the use of "country scores" is that the scores of each country reflect the collective culture of all individuals from that nation. Clearly, there is variability across individuals in, or from any given nation. The assumption of homogeneity is not appropriate, particularly if the national culture construct are to be integrated into IS models that reflect individual behavior, such as the Technology Acceptance Model (TAM) [Davis, 1989].

> *"Irrespective of their cultural background, people have complex selves that contain qualitatively different cognitions"* [Bochner, 1994, p. 274]*.*

Because people from the same country can score differently on cultural dimensions, a trait-based approach that assesses each individual's score might explain more variance in culture studies.

IV. EMPIRICAL ANALYSES RELATED TO PROBLEMS WITH USING HOFSTEDE'S INTRUMENT

The authors conducted two independent data-collection studies that may be used in assessing empirically the potential flaws in current cross-cultural IS research. The first focuses on comparing current assessments with the commonly-used Hofstede "country scores." The second focuses on individual differences within countries.

Hofstede's dimensions of culture are used in research studies because they are widely cited and because they are based on estimates from a very large sample. Although the formula used to calculate country scores is described in previous research, it is not completely understood. Hofstede [1980] constructed his formula to force the country scores to fall between zero and 100. However, some countries score higher than 100. It is also possible for scores to be negative.

STUDY 1 – AN EXAMINATION OF HOFSTEDE'S INSTRUMENT IN THE US AND URUGUAY

The first study involved data collected in the U.S. and Uruguay [McCoy, et al., forthcoming]. An English version of Hofstede's original instrument was distributed to 200 business students at a large northeastern university. One hundred and seventy-one were returned for an 85.5% response rate. The English version of the instrument was translated into Spanish by a native speaker, and then back-translated by a separate translator to ensure no loss of meaning. A Spanish version of the survey was then distributed to 100 business students at a large university in Uruguay. Ninety-two were returned for a 92% response rate. Demographic information was collected and only students from these respective countries were included in the analysis.

Table 2 outlines the results along with the results of Hofstede's original work. The columns labeled "Hofstede" refer to data collected during his initial study [1980]. The columns labeled "Recent Study" refer to data collected by McCoy, et al. [forthcoming] with students in the US and Uruguay.

The results suggest strongly that differences do exist between recently-calculated country scores and those calculated by Hofstede [1980] using the same formula. Most striking is the Uncertainty Avoidance score for Uruguay, by far the lowest attribute of the current sample and by far the highest in Hofstede's original sample. Power distance seems to be the most prevalent attribute in the current Uruguay sample. No less interesting is the finding that Power Distance and

Masculinity are the most prevalent attributes in the current United States sample, but in Hofstede's data, the most prevalent attribute was, by a wide margin, Individualism.

Caution is warranted, however, because these scores are based on a small sample of students and not on workers in a large multinational company as in Hofstede's original study. Although the use of one company in data collection is the focus of most criticism of Hofstede's country scores, it is possible that his scales could have produced significantly different country scores because of population differences. [1]

Table 2. Country Scores for the US and Uruguay

Cultural Dimension	United States		Uruguay	
	Hofstede [1980]	McCoy, et al. [forthcoming]	Hofstede [1980]	McCoy, et al. [forthcoming]
Uncertainty Avoidance	46	-32.5	100	4.2
Power Distance	40	63.3	61	76.8
Masculinity	62	61.3	38	53.3
Individualism	91	50.55	36	36.6

The difference in the UA score might be attributed to gender; Hofstede's sample was composed mostly of males, while the current study was more gender-balanced. However, even if the two studies are different in this regard, the more recent McCoy study may be more reflective of the contemporary workplace in both countries than is Hofstede's.

Most of the dimensions in the McCoy study differed from Hofstede's original findings. This outcome does not necessarily mean that the cultures in these countries are shifting, although it is a possibility. Significant innovations in communication across borders occurred in the past 30 years; the Internet, in general, and email, in particular, could be responsible for shifts.

STUDY 2 — AN INDIVIDUAL APPROACH TO IS CROSS CULTURAL RESEARCH

Because individual experiences affect behavior and the cultural "scores" of these countries could have changed since Hofstede first collected his data, we believe it is important for researchers to begin considering collecting contemporary cultural data from individual subjects. Unfortunately, Hofstede specifies that the original instrument [1980] cannot be used to test individual-level relationships, and should be used only at the national level [Hofstede, 2000]. One reason is that the items address issues from the standpoint of how the respondents believe most people think, not how they think as individuals.

Many researchers in information systems investigated cultural variables [for example, Ho et al., 1989; Lim et al., 1990; Raman and Wei, 1992; Robey and Rodriguez-Diaz, 1989; Straub, 1994; Straub et al., 1997]. As might be expected in early work in an area, most of the studies taking culture into account used Hofstede's scores without collecting additional data, or attributed differences among groups to culture *post-hoc.*

To extend these studies, it is important to make use of IS theoretical models and to provide connections among culture variables and constructs in those models. For example, TAM is one individual-level model that is ready for connecting to individual-level culture variables, because

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[1] It should be noted that Hofstede's sample consisted of business people working for IBM, whereas our samples used students. The use of students is supported by several studies. In addition, Voich (1995) found students represent well the values and beliefs of individuals in a variety of occupations.

nearly all TAM studies were conducted in North America, without consideration of culture variables.

Dorfman and Howell provided a promising individual-level instrument based on the original Hofstede dimensions, using rigorous instrument development procedures [Churchill, 1979]. In our second study based, in part, on McCoy [2002], the psychometric properties of the Dorfman and Howell [1988] scales were tested. Table 3 outlines the reliabilities of these scales; all are above the recommended level of .70 [Nunnally, 1978]. The factor analysis performed on these data explained 55.1% of the variance with four factors (Table 4). Although two scale items, IC3 and PD2, failed to load on any factor, in general the measurement properties of the scales were acceptable. Dorfman and Howell's measures exhibit convergent and discriminant validity.

Table 3. Reliabilities of Dorfman and Howell's Culture Items

Construct	Reliability
Individualist/Collectivist	.7100
Uncertainty Avoidance	.8100
Masculinity/Femininity	.8584
Power Distance	.7188

Source: McCoy [2002]

Table 4. Factor Analysis of Dorfman and Howell's Culture Items

Principal Components with Oblique Rotation 55.126% Explained Variance Absolute Value Factor Loadings < .45 suppressed				
	Component Number			
Scale Items	1	2	3	4
IC1			.740	
IC2			.801	
IC4			.625	
IC5			.624	
IC6			.614	
UA1		.774		
UA2		.700		
UA3		.761		
UA4		.737		
UA5		.790		
MF1	.827			
MF2	.778			
MF3	.764			
MF4	.683			
MF5	.834			
PD1				.713
PD3				.612
PD4				.750
PD5				.625
PD6				.582

Source: McCoy [2002]

In this study, data were collected in several countries. Respondents represent students at various colleges and universities within the US and abroad. To recruit students, faculty colleagues who were identified to be using online teaching tools (the main focus of that study) were contacted and asked to solicit responses from their students. A total of 108 professors agreed to ask their students to participate, and their 10,359 students were, in turn, contacted and asked to participate in the web survey. The response rate was 42.8%, inasmuch as 4434 responses were received.

These responses represent students born in 78 different countries currently studying at 39 universities in 24 different countries. We removed several subjects so that the sample could include the most meaningful data points. First, we removed respondents from under-represented countries (those with fewer than 25 responses) so that statistical power was not impaired. Second, we removed respondents who did not live in their native country to prevent confounding of data within and among treatments. The resultant sample included 3181 subjects representing 8 countries, as summarized in Table 5.

Table 5. Sample Size by Country

Country	N
Australia	171
Canada	72
Hong Kong	122
Mexico	27
Netherlands	42
Singapore	173
South Africa	66
United States	2508
Total	3181

Source: McCoy [2002]

Table 6 provides the measures obtained by Hofstede [1980] and by McCoy [2002] using Dorfman and Howell's instrument [1989] for those countries for each dimension.

Table 6. Measures for Each Dimension from Measures by
Dorfman and Howell and by Hofstede

Country	Individualism/ Collectivism		Uncertainty Avoidance		Masculinity/ Femininity		Power Distance	
	McCoy	Hof	McCoy	Hof	McCoy	Hof	McCoy	Hof
Australia	4.61	90	5.36	51	2.92	61	3.16	36
Canada	4.47	80	5.44	48	2.39	52	2.64	39
Hong Kong	4.96	25	5.24	29	3.90	57	3.42	68
Mexico	4.98	30	5.91	82	2.96	69	3.43	81
Netherlands	4.91	80	5	53	3.41	14	2.92	38
Singapore	5.04	20	5.20	8	3.51	48	2.83	74
South Africa	4.49	65	5.32	49	3	63	2.95	49
United States	4.59	91	5.65	46	2.58	62	2.93	40

Note: Data labeled McCoy come from McCoy [2002] using Dorfman and Howell's [1989] instrument. Data labeled Hof comes from Hofstede [1980] using Hofstede's original instrument.

Comparing Hofstede's country-level measures from 1980 and Dorfman and Howell's individual-level measures today is not straightforward because the scales are quite different and cannot be compared directly. However, to gain whatever insight might be possible two approaches were attempted: (1) a conventional ranking test and (2) comparing standardized measures between the two approaches.

A Ranking Approach to Comparison
Ranks were obtained for each approach, as shown in Table 7.

Table 7. Ranks for Each Approach

Country	Individualism/ Collectivism		Uncertainty Avoidance		Masculinity/ Femininity		Power Distance	
	McCoy	Hof	McCoy	Hof	McCoy	Hof	McCoy	Hof
Australia	5	7	4	3	6	4	3	8
Canada	8	5	3	5	8	6	8	6
Hong Kong	3	2	6	7	1	5	2	3
Mexico	2	3	1	1	5	1	1	1
Netherlands	4	5	8	2	3	8	6	7
Singapore	1	1	7	8	2	7	7	2
South Africa	7	4	5	4	4	2	4	4
United States	6	8	2	6	7	3	5	5

Note: Data represented by Dorf comes from McCoy [2002] using Dorfman and Howell's [1989] instrument. Data represented by Hof comes from Hofstede [1980] using Hofstede's original instrument.

The ranks appear to be quite different when comparing Hofstede's measure in 1980 against more current individual-level measures. To test for significance in these apparent differences, the ranks were compared using the SPSS version 12 Wilcoxon Signed Ranks Test. The results of the comparisons are described in Table 8.

Table 8. Comparisons of Ranks Using Dorfman and Howell and Using Hofstede

Dimension	Negative Ranks	Positive Ranks	Ties
Individualism/Collectivism	3	4	1
Uncertainty Avoidance	3	4	1
Masculinity/Femininity	5	3	0
Power Distance	2	3	3

Unfortunately, none of the dimensions showed significance when comparing the ranks of the eight countries. The lack of significance is likely due to the small sample size, which is artificially low due to this approach.

A Normalization Approach to Comparison

The sample size and distance between observations were preserved in this second approach, where all scores were normalized, and z-scores of 3181 subjects in the McCoy [2002] study were compared against the z-scores obtained for the eight Hofstede measures [1980] reported in Table 6. The results of the on-sample t-tests, obtained using SPSS version 12, are shown in Table 9.

Table 9: Results of the Normalization Approach

Country	Individualism/ Collectivism	Uncertainty Avoidance	Masculinity/ Femininity	Power Distance
Australia	p=.000 ***	p=.000 ***	p=.000 ***	p=.000 ***
Canada	p=.000 ***	p=.039 *	p=.128	p=.000 ***
Hong Kong	p=.000 ***	p=.000 ***	p=.000 ***	p=.000 ***
Mexico	p=.000 ***	p=.000 ***	p=.000 ***	p=.001 **
Netherlands	p=.009 **	p=.000 ***	p=.000 ***	p=.000 ***
Singapore	p=.000 ***	p=.000 ***	p=.000 ***	p=.000 ***
South Africa	p=.026 *	p=.004 **	p=.006 **	p=.086
United States	p=.000 ***	p=.000 ***	p=.000 ***	p=.000 ***

*** = p<.001   ** = p<.01 * = p<.05

Thirty of the 32 Hofstede scores fall outside of a 95% confidence interval[2] reflected by the current data. However, due to the large number of tests (32), it would be more conservative to apply the Bonferroni procedure and divide the hurdle rate for the p values by 8 (the number of countries), testing each of the four dimensions in a separate analysis. Using the resulting 0.00625 as the hurdle rate, 27 of the 32 Hofstede scores still fall outside the confidence intervals. An even more conservative approach would be to divide the target p value by 32 (the total number of tests in all columns), which would reduce the hurdle rate to 0.0016. Such a change reduces the number of Hofstede scores falling outside the 95% confidence interval only slightly, to 25 of the 32 comparisons.

Regardless of the approach chosen, the Hofstede scores from 1980 appear to be quite different from the scores obtained by McCoy in 2002 using the Dorfman and Howell instrument. Therefore, the evidence is strong that either culture shifted since 1980 or that taking the individual approach by Dorfman and Howell makes a difference in the results.

Unfortunately, with these data it is impossible to determine what causes the differences in the country scores for each dimension. Further research is needed to isolate the cause. For the purposes of this paper, however, it is important to note that differences indeed appear and the researcher's approach can color the results.

V. IMPLICATIONS AND CONCLUSIONS

As IT becomes an increasingly important part of business, firms involved in selling or producing outside their own country can benefit from understanding the host country's nationals and their culture. The ability to predict such behaviors as the acceptance of technology based on culture can make a difference in the systems developed, implemented and used in this global economy. In addition to the importance to practitioners of multinational companies working abroad, it can be argued that this research is also important to companies established in one country, where, like the US, the workforce is culturally diverse.

The use of Hofstede's country scores, now over 30 years old, can no longer be assumed to be representative of the views of all (or perhaps even most) individuals from a given country. Either shifts occurred over time or homogeneity of Hofstede's sample limits the usefulness of those scores.

Although most researchers casually and imprecisely speak of people in different countries as scoring high or low on culture dimensions, it should be noted that people from the same country can (and do) score differently on those dimensions. An individual approach is likely to be more useful in pinpointing cultural characteristics as antecedents to outcomes in culture-based models because heterogeneous samples from each country are likely to shrink the levels of explained variance in those models.

It should be noted, however, that we are not arguing that national culture does not exist. We conducted a simple ANOVA that covered all eight countries listed in Table 6. The F scores determine if the variance between groups (explained) is larger than the variance within groups (unexplained). All eight tests were significant at the p=.000 level which strongly argues that national culture still exists. However, as our other statistical tests show, differences also exist in individual level cultural orientations within the overall national culture.

Newer instruments than Hofstede's are available that reflect the individual level of analysis such as that offered by Dorfman and Howell [1989], as well as others. Therefore, researchers need to choose among a menu of alternatives, including Hofstede's original instrument (Appendix I), an

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[2] That is, 30 of the 32 normalized Hofstede scores were significantly different at the .05 level from the normalized Dorfman and Howell scores we measured.

individual-level version of Hofstede's instrument ([Dorfman and Howell, 1988] in Appendix II), or a completely different measure of culture [e.g., Maznevski et al., 2002].

In the future, perhaps Hofstede's original large-scale field study can be replicated. If large samples from many countries are obtained, new indices may be derived to represent the central tendencies of those samples. We would warn, however, that even if such indices are developed, studies addressing individual-level models such as TAM should be used with individual-level culture measures so that future studies can provide more useful guidance in how culture influences behavior.

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APPENDIX I: HOFSTEDE'S 1980 INTRUMENT

The descriptions below apply to four different types of managers. First, please read through these descriptions:

Manager 1:

Usually makes his/her decisions promptly and communicates them to his/her subordinates clearly and firmly. He/She expects them to carry out the decisions loyally and without raising difficulties.
Manager 2:
Usually makes his/her decisions promptly, but, before going ahead, tries to explain them fully to his/her subordinates. He/She gives them the reasons for the decisions and answers whatever questions they may have.

Manager 3:
Usually consults with his/her subordinates before he/she reaches his/her decisions. He/She listens to their advice, considers it and then announces his/her decisions. He/She then expects all to work loyally to implement it whether or not it is in accordance with the advice they gave.

Manager 4:

Usually calls a meeting of his/her subordinates when there is an important decision to be made. He/She puts the problem before the group and invites discussion. He/She accepts the majority viewpoint as the decision.

1. For the above types of manager, please mark the *one* under which you would prefer to work (circle one number answer only):

Manager	Manager	Manager	Manager
1	2	3	4

2. To which one of the above four types of managers would you say your own superior most closely corresponds?

Manager	Manager	Manager	Manager
1	2	3	4

3. How frequently in your work environment are subordinates afraid to express disagreement with their superiors?

Very frequently	Frequently	Sometimes	Seldom	Very Seldom
1	2	3	4	5

4. How often do you feel nervous or tense at work?

I always feel this way	Usually	Sometimes	Seldom	I never feel this way
1	2	3	4	5

5. How long do you think you will continue working for the organization or company you work for now?

Two years at the most	From two to five years	More than five years (but before retirement)	Until I retire
1	2	3	4

6. Please indicate your degree of agreement or disagreement with the following statement:	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
A company or organization's rules should not be broken – not even when the employee thinks it is in the company's best interest.	1	2	3	4	5

IN CHOOSING AN IDEAL JOB, HOW IMPORTANT IS IT TO…	Of Utmost Importance	Very Important	Of Moderate Importance	Of Little Importance	Of Very Little or No Importance
7. Have sufficient time left for your personal or family life?	1	2	3	4	5
8. Have good physical working conditions (i.e., good lighting)?	1	2	3	4	5
9. Work with people who cooperate well with one another?	1	2	3	4	5
10. Live in an area desirable to you and your family?	1	2	3	4	5
11. Have security of employment?	1	2	3	4	5
12. Have an opportunity for high earnings?	1	2	3	4	5
13. Have an opportunity for advancement to higher level jobs?	1	2	3	4	5

Note: Formulas calculating the culture scores are available from Hofstede (1980).

APPENDIX II: DORFMAN AND HOWELL'S 1989 INSTRUMENT

PLEASE INDICATE THE DEGREE TO WHICH YOU AGREE OR DISAGREE
WITH THE FOLLOWING STATEMENTS ABOUT GENERAL CHARACTERISTICS

Individualism/Collectivism   –   Agree   is   collectivist,   disagree   is   individualistic

1. Group welfare is more important than individual rewards
2. Group success is more important than individual success
3. Being accepted by the members of your work group is very important
4. Employees should only pursue their goals after considering the welfare of the group
5. Managers should encourage group loyalty even if individual goals suffer
6. Individuals may be expected to give up their goals in order to benefit group success

Uncertainty Avoidance – Agree is High UA, disagree is low UA.

7. It is important to have job requirements and instructions spelled out in detail so that employees always know what they are expected to do
8. Managers expect employees to closely follow instructions and procedures
9. Rules and regulations are important because they inform employees what the organization expects of them
10. Standard operating procedures are helpful to employees on the job
11. Instructions for operations are important for employees on the job

Masculinity/Femininity – Agree is masculine, disagree is feminine.

12. Meetings are usually run more effectively when they are chaired by a man
13. It is more important for men to have a professional career than it is for women to have a professional career
14. Men usually solve problems with logical analysis; women usually solve problems with intuition
15. Solving organizational problems usually requires an active forcible approach which is typical of men
16. It is preferable to have a man in a high level position rather than a woman

Power Distance: Agree is High Power Distance; disagree is low PD.

17. Managers should make most decisions without consulting subordinates
18. It is frequently necessary for a manager to use authority and power when dealing with subordinates
19. Managers should seldom ask for the opinions of employees
20. Managers should avoid off-the-job social contacts with employees
21. Employees should not disagree with management decisions
22. Managers should not delegate important tasks to employees
These items used a 7 pt Likert Scale.

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