Hofstede's Measure of Cultural Values in a National Forest Recreation Context

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Abstract: Hofstede's measure of cultural values is one of the most widely used among international management and marketing scholars. However, there is no research that employed Hofstede's measure in a National Forest recreation context. This study examined the validity and reliability of Hofstede's cultural measure from an ethnically diverse sample in a National Forest recreation context. We used confirmatory factor analysis, exploratory factor analysis, correlations, one-way analysis of variance, and multiple regression to test Hofstede's measure of cultural values. The results suggested that seven items, two items from Hofstede's original Power Distance dimension, one item from the Individualism dimension, two items from the Masculinity dimension, and two items from the Uncertainty Avoidance dimension, best represent the measure of cultural values in a National Forest recreation context. Discussion of the results and future research were suggested.

Introduction

Current demographic trends indicate population growth for ethnic minority groups is increasing considerably faster than the overall rate of the U.S. population (U.S. Bureau of the Census [USBC] 2000). According to current projections, non-Hispanic Whites will make up barely one-half of the total population by 2050 and will lose their majority status by 2060 (Riche 2000). To better understand the current demographic change, we will present a study of cultural values that promise to impact the diverse population (Chick 2000).

A culture can be defined as shared information and the behaviors and artifacts that are manifestations of that information (Chick 1997). The distinctive patterns of recreation behaviors result from differences in cultural value systems, norms, and leisure socialization patterns between racial and ethnic groups. Studies investigating recreational patterns among different ethnic groups suggest that cultural factors result in different styles of leisure behaviors among ethnic groups (Floyd et al. 1993). In the most exhaustive cross-cultural study to date, Hofstede (1980) surveyed 117,000 questionnaires, translated into 20 languages. The data from 80,000 IBM employees in 66 countries allowed him to establish four dimensions of national cultural values: power distance, individualism, masculinity, and uncertainty avoidance. Hofstede's study is now one of the widely used among international management and marketing scholars. Hofstede is among the 20 most cited Europeans in the 2000 Social Science Citation Index, at 57th in the world. Sodergaard (1994) found 1, 036 quotations from *Culture's Consequences* (Hofstede 1980) in journals during the period from 1980 to 1993. Additional studies have shown Hofstede's cultural measure to be generalizable across multiple contexts and societies (e.g., Furrer et al. 2000, Mattila 1999). Moreover, Clark (1990) argued that Hofstede's measure might account for many cultural differences among individuals, suggesting that such measure might also prove useful for assessing ethnic differences related to perceived service quality in forest recreation settings (Donthu & Yoo 1998, Li et al. 2003).

While Hofstede's measure of cultural values has been widely used, several researchers (e.g., Horton et al. 2001, McSweeney 2002) also questioned the validity of these cultural measures. For example, IBM employed mostly males at the time of the survey. More differences were likely to exist between men and women than from country to country, especially when analyzing things like masculinity/femininity, and power distance (Horton et al. 2001). As Hofstede

suggested that "….. *my theory of cultural differentiation is like a product of research laboratory, which awaits the efforts of development technicians to elaborate it into something of particular use*" (2001, p. 462). Further analyses of these cultural measures are needed to determine their validity and reliability in a forest recreation context. Thus, the purpose of this study is to examine Hofstede's measure of cultural values in a National Forest recreation context. In other words, we intend to evaluate Hofstede's measure of cultural values to see whether they are applicable to another context.

Method

During the summer of 2002, purposive sampling was used at 14 sites on the Angeles National Forest (ANF) known to be heavily used by visitors of particular ethnic backgrounds (Hispanic, Asian and White). Each person that agreed to participate was asked to fill out a short survey and return it to the field researcher onsite. A total of 1,332 subjects were approached and 1,172 completed the survey for an 88 percent response rate. Overall, we obtained a sample of 38% Anglo-Americans (n=444), 27% Hispanic-Americans (n=312), 27% Asian-Americans (n=319), and 8% others including African-American, American-Indian, others, and missing values (n=97). See Table 1.

Result

Socio–demographic Profile. Participants were more likely to be male (60%) than female (40%). They were likely to be young adults (mean age = 36), with only 5 percent reporting that they were 60 years old or older. Forty–seven percent were married, and 46 percent were single. The remainder were divorced or widowed. Mean number of children (21 or under)

living in the household was one, but 53 percent of the participants had no children in their household. More than 70 percent were employed outside the home; 12 percent were full–time students; and 14 percent were full–time homemakers, retired, or other. Over 80 percent of the participants had attended some school beyond high school, and 58 percent had earned a four–year college degree or graduate degree. Fifty–four percent (n = 501) of the participants had household incomes over $50,000 and 26 percent (n = 246) had household income over $80,000.

We used confirmatory factor analysis (CFA), exploratory factor analysis (EFA), correlations, one-way analysis of variance (ANOVA), and multiple regressions to test Hofstede's original cultural values measure in a forest recreation context. Our initial intention was to use CFA to confirm Hofstede's four dimensions, Power Distance, Individualism, Masculinity, and Uncertainty Avoidance. Our test (with four items per dimension) revealed a poor fit according to several indicators, such as Normed Fit Index (NFI) = 0.695, Root Mean Square Residual (RMR) = 0.134 (Table 2) via the LISREL 8.50 program. Given the poor fit of the original four-dimension cultural value model, we used EFA to explore the dimensionality of the items in the National Forest recreation context. We considered both orthogonal (uncorrelated factors) and oblique (correlated factors) solutions, via Varimax and Direct Oblimin rotation. The results of both the orthogonal and the oblique solutions were very similar and suggested no interpretable patterns of dimensionality.

By examining the correlation matrix of Hofstede's 16 cultural value items, we found the items within Hofstede's original dimensions were almost uncorrelated. Items were as likely to correlate across dimensions as they were within dimensions, suggesting that the responses of participants in this study

Table 1. Ethnic groups.

Ethnicity	Frequency	Percent
Anglo American	444	37.9
Hispanic American		
Hispanic American	183	15.6
Mexican American	111	9.5
Central American	18	1.5
Asian American		
Chinese American	123	10.5
Taiwanese American	69	5.9
Filipino American	32	2.7
Korean American	70	6.0
Vietnamese American	14	1.2
Japanese American	11	.9
African American	17	1.5
American Indian	7	.6
Other	49	4.2
Missing	24	2.0
Total	1,172	100.0

did not reflect the pattern found in workplace and consumer studies. Because we found no interpretable dimensions among Hofstede's items, we used One-way ANOVA to test the relationship between the 16 items and ethnic group membership. We found that eight cultural value items differed significantly among ethnic groups and tested their power to represent cultural differences. Reliability analysis revealed that seven of the eight items should be retained and one item dropped, yielding a Cronbach's alpha of 0.779 (Table 3).

Since perceived service quality is related to cultural differences (Donthu & Yoo 1998, Furrer et al. 2000, Iacobucci et al. 2003, Li et al. 2003, Liu et al. 2001, Mattila 1999, Tsikriktsis 2002), we sought further verification of these cultural measures. Use customer service measures (facility, service, information, and experience dimensions) previously developed for outdoor recreation management (Graefe et al. 2000) as dependent variables, respectively, and seven cultural items as independent variables.

The results show that all four multiple regression models are significant at the 0.001 level (Table 4), suggesting these seven cultural items possess the predictive power of perceived service quality[1].

Therefore, our final cultural values measure was comprised of two items from Hofstede's original Power Distance dimension (Inequalities among people are both expected and desired; Less powerful people should be dependent on more powerful), one

Table 2. Goodness of fit statistics for Hofstede's cultural value model.

Model	χ^2	χ^2/df	GFI[a]	NFI[b]	CFI[c]	RMR[d]
4 items per dimension	1367.164	13.950	0.797	0.695	0.709	0.134

Note: [a] GFI: Goodness of Fit Index.
[b] NFI: Normed Fit Index.
[c] CFI: Comparative Fit Index.
[d] RMR: Root Mean Square Residual.
Acceptable fit: Rule of thumb, when χ^2/df = 2 to 5; GFI ≥ 0.90; NFI > 0.90; CFI > 0.90; RMR = 0.05 to 0.10.

Table 3. One-way ANOVA result of cultural value item by ethnic group[a].

Cultural value dimension and item	F-value	P-value
Power Distance dimension		
1. *Inequalities among people are both expected and desired.[b]*	*11.433*	*< 0.001*
2. *Less powerful people should be dependent on the more powerful.*	*28.389*	*< 0.001*
3. Inequalities among people should be minimized.	3.005	0.050
4. There should be, and there is to some extent, interdependencies between less and more powerful people.	1.391	0.249
Individualism dimension		
5. *Everyone grows up to look after him/herself and his/her immediate family only.*	*21.996*	*< 0.001*
6. People are identified independently of the groups they belong to.	3.912	0.020
7. An extended family member should be protected by other member in exchange for loyalty.[c]	11.748	< 0.001
8. People are identified by their position in the social networks to which they belong.	2.107	0.122
Masculinity dimension		
9. *Money and material things are important.*	*12.737*	*< 0.001*
10. *Men are supposed to be assertive, ambitious, and tough.*	*12.905*	*< 0.001*
11. Dominant values in society are the caring for others and preservation.	1.829	0.161
12. Both men and woman are allowed to be tender and to be concerned with relationships.	0.296	0.744
Uncertainty Avoidance dimension		
13. High stress and subjective feeling of anxiety are frequent among people.	2.471	0.085
14. Fear of ambiguous situations and of unfamiliar risks is normal.	0.952	0.386
15. *Uncertainty is a normal feature of life and each day is accepted as it comes.*	*6.003*	*0.003*
16. *Emotions should not be shown.*	*23.961*	*< 0.001*

Note: [a] The ethnic group was represented by a 3-level (Anglo American, Hispanic American, and Asian American) nominal variable.
[b] The Bold and Italic items represented the items used in the final cultural value measure.
[c] Item dropped after the reliability analysis.

item from the Individualism dimension (Everyone grows up to look after him/herself and his/her immediate family only), two items from the Masculinity dimension (Money and material things are important; Men are supposed to be assertive, ambitious, and tough), and two items from Uncertainty Avoidance dimension (Uncertainty is a normal feature of life and each day is accepted as it comes; Emotions should not be shown). The higher scores of the items implied more power distance, more individual, more masculine, and more uncertainty *acceptance*.

Since the final seven items actually covered Hofstede's original four dimensions, we intended to use these items to find conceptually interpretable dimensions. With the final seven cultural items selected, we were able to create only two dimensions

Table 4. Multiple regression of service quality dimensions on the final seven cultural value items.

Seven cultural value items[b]	Service quality dimension[a]			
	Facility[a]			
	Beta	P-value	R-square	P-value
1. Inequalities among people are both expected and desired.	0.048	0.231		
2. Less powerful people should be dependent on the more powerful.	-0.056	0.209		
5. Everyone grows up to look after him/herself and his/her immediate family only.	0.015	0.709		
9. Money and material things are important.	0.040	0.325	0.068	$< .001$
10. Men are supposed to be assertive, ambitious, and tough.	0.121	0.007		
15. Uncertainty is a normal feature of life and each day is accepted as it comes.	0.166	$< .001$		
16. Emotions should not be shown.	0.043	0.280		
Seven cultural value items[b]	Service[a]			
	Beta	P-value	R-square	P-value
1. Inequalities among people are both expected and desired.	0.098	0.015		
2. Less powerful people should be dependent on the more powerful.	-0.065	0.145		
5. Everyone grows up to look after him/herself and his/her immediate family only.	0.034	0.409		
9. Money and material things are important.	0.009	0.830	0.065	$< .001$
10. Men are supposed to be assertive, ambitious, and tough.	0.057	0.201		
15. Uncertainty is a normal feature of life and each day is accepted as it comes.	0.175	$< .001$		
16. Emotions should not be shown.	0.067	0.096		
Seven cultural value items[b]	Information[a]			
	Beta	P-value	R-square	P-value
1. Inequalities among people are both expected and desired.	0.064	0.108		
2. Less powerful people should be dependent on the more powerful.	0.003	0.954		
5. Everyone grows up to look after him/herself and his/her immediate family only.	0.052	0.193		
9. Money and material things are important.	0.031	0.449	0.087	$< .001$
10. Men are supposed to be assertive, ambitious, and tough.	0.069	0.120		
15. Uncertainty is a normal feature of life and each day is accepted as it comes.	0.136	$< .001$		
16. Emotions should not be shown.	0.117	0.003		
Seven cultural value items[b]	Experience[a]			
	Beta	P-value	R-square	P-value
1. Inequalities among people are both expected and desired.	0.101	0.011		
2. Less powerful people should be dependent on the more powerful.	-0.056	0.208		
5. Everyone grows up to look after him/herself and his/her immediate family only.	0.036	0.370		
9. Money and material things are important.	0.013	0.752	0.080	$< .001$
10. Men are supposed to be assertive, ambitious, and tough.	0.094	0.035		
15. Uncertainty is a normal feature of life and each day is accepted as it comes.	0.196	$< .001$		
16. Emotions should not be shown.	0.026	0.516		

Note: [a] Service dimensions: Facility, service, information, and experience served as dependent variable, respectively.
[b] Seven cultural items served as independent variables.

of cultural values with good internal consistency. For the two cultural items from the power distance dimension, Cronbach's alpha equals 0.678 (marginally acceptable). For two items from masculinity dimension, alpha equals 0.704.

We examine the convergent validity and discriminant validity of the power distance and masculinity dimensions derived above. The concept of convergent validity and discriminant validity refers to the evaluation of measures against one another instead of against an external criterion. Convergent validity refers to the extent to which different items measure the same trait or dimension. Discriminant validity refers to the distinctiveness of the dimensions (indices) measured by different sets of items (Trochim 2004). By examining the correlations among these four items, we found the items were likely to correlate more strongly with their individual dimensions (indices) than to correlate with the 7-item index (mean of the final seven cultural items). On the other hand, we also found dimensions were likely to correlate more strongly with the 7-item index than to correlate between dimensions. Therefore, we may conclude that the power distance and masculinity dimensions possess convergent and discriminant validity (Zinn & Pierce 2002).

Discussion

Originally, Hofstede's cultural dimensions (1980, 1984, 1991, 2001) were used to measure work-related values and were based on national cultural differences. Since Hofstede's dimensions have been adopted across various contexts and societies, they are, to some degree, generalizable. However, in this study, responses to Hofstede's four cultural dimensions did not follow the same patterns found in other studies. One reason may lie in the limitations of Hofstede's study; he only sampled IBM employees. The relatively homogenous sampling of his study was challenged by the heterogeneity of the National Forest visitor sample (Appendix A: Table 5 shows socio-demographic differences among ethnic groups). Moreover, this study measured the multi-ethnic rather than multi-national cultural differences. Socio-demographic differences among forest visitors, as well as intra-cultural and inter-cultural differences, might account for the internal inconsistency of dimensions (indices) in this study.

Another reason that responses did not follow the same patterns found in other studies might be because societal norms were not clear regarding cultural differences in the sample (Hofstede 1984). Cultural values are regarded as the most abstract type of social cognition that helps to understand the interpersonal world (Kahle 1983). In this study, we found the goodness of fit statistics for the four-dimension model showed a poor fit according to several indicators, such as Goodness of Fit Index (GFI) = 0.797, Normed Fit Index (NFI) = 0.695, via confirmatory factor analysis. Norms are activated when certain conditions are met

(Hofstede 2001, Schwartz 1975). However, when our respondents were asked cultural questions, many objected, saying that those cultural questions were too abstract and unrelated to their forest trip.

Furthermore, Hofstede originally identified four cultural dimensions that were supposed to be largely independent of each other. However, our results often were more highly interrelated across dimensions than within dimensions. This implies that our sample of multi-ethnic National Forest visitors understood the underlying cultural concepts in Hofstede's items (e.g., inequity, interdependency) differently from respondents in other studies. Although they came from different ethnic groups, the National Forest recreation visitors seemed to engage cultural issues in quite different ways. Therefore, these four dimensions need further analyses to determine their validity and reliability in a park and recreation context. Our findings are consistent with Hofstede's suggestion that

> "… the concepts of four dimensions of national culture should be further under-pinned, criticized, and complemented by reference to additional literature, in particular to literature of non-Anglo-Saxon origins. And by exposure to the comments of scholars and practitioners from a variety of backgrounds…" (Hofstede 2001, p. 462).

The failure of exploratory factor analysis to identify interpretable cultural dimensions in this study also suggest that additional studies are needed. Rather than simply adopt Hofstede's cultural items to measure forest visitors' cultural differences, further studies should include more multiethnic and multidisciplinary approaches (e.g., use Rokeach Value Survey [RVS]), to avoid ethnocentrism and bias, or include focus groups to develop a common pool of useful items (Hofstede & Bond 1984). When factor analyzed, these items might provide more meaningful measures that better fit the specific context.

The results of our test of Hofstede's cultural measure suggest that measuring cultural values in the forest recreation context differs substantially from those in workplace and consumer contexts. Developing a more complete understanding of the structure of cultural values as they apply to forest recreation will require additional research with multiple forest recreation populations.

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[1] Note that Table 4 reflects weak relationship between culture and perceived service quality despite all four multiple regression models being significant at the 0.001 level. The cultural item, "Uncertainty is a normal feature of life and each day is accepted as it comes," continues to be significant across four multiple regression models. This implies "expectation" might play an important role to predict perceived service quality.