

Global Clustering of Countries By Culture – An Extension of the GLOBE Study

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ABSTRACT

In the “Global Leadership and Organizational Behavior Effectiveness” (GLOBE) Research Program (House et al., 2004; Chokkar et al, 2007), research collaborators around the world studied leadership attributes by first grouping 62 societies around the world into 10 country clusters based on their cultural similarities. Because the groupings were based on empirical cultural dimensions obtained from individuals surveyed from these countries, the extension of their methodology to include additional countries would similarly require such survey data. The difficulty of obtaining such data has hitherto prevented their cultural groupings to be extended to other countries beyond those included initially.

The objective of this study is to derive a statistical model of their country cultural clustering using observable and easily obtained data from the countries included in the original study. We use multivariate discriminant analysis to examine the observable attributes of the countries used in the original GLOBE cluster, using the following factors: (1) racial/ethnic distribution; (2) religious distribution; (3) geographic proximity of the countries; (4) major language distribution; and (5) colonial heritage. Based on the degree of fit of the statistical model (discriminant analysis), we classify all other countries around the globe into the 10 cultural clusters identified in the GLOBE study. Finally, using the results from the statistical analysis, we derive general rules of thumb for classifying countries into the same 10 cultural clusters. This extension enables researchers seeking to apply include global cultural groupings in their study to have a more reliable basis to do so.

Keywords Cultural cluster; Country grouping; GLOBE study; Taxonomy of cultures.

JEL classification D73; K42; N30; N40

Introduction

Studies of cultural differences across countries have a long history, beginning with the pioneering work of Hofstede (1980, 2001) [which covered 53 countries eventually], and continuing with other attempts by Inglehart et al. (1998, 2004) [covering 81 countries], Schwartz and Bardi (2001) [covering 54 countries], and Smith et al (2002) [covering 47 countries]. However, to date, the most comprehensive attempt (in the sense of deliberate international research collaboration) to study cultural differences and their effect on leadership attributes is the GLOBE study eventually published as books by House et al (2004), and Chokkar et al (2006), and also in numerous journal articles.

Although the efforts of most researchers have been focused on using the global clusters to understand differences in cultural dimensions and to explain differences in leadership attributes, work values and work attitudes, the primary interest of this paper is on the taxonomy of the clustering itself. Specifically, we are interested in exploring the possibility of using quantitative data available on the countries of the world to identify clusters into which the countries can be classified, using as the criterion the 10 cultural clusters identified by the GLOBE study using survey data. The 10 cultural clusters were differentiated on the basis of nine cultural dimensions: (1) power distance, (2) uncertainty avoidance, (3) institutional collectivism, (4) in-house collectivism, (5) gender egalitarianism, (6) assertiveness, (7) performance orientation, (8) future orientation, and (9) humane orientation.

Because these dimensions were gleaned from the analysis of survey data painstakingly collected over a long period of time with an international set of collaborators, extending the study to cover more countries than the 62 countries/societies actually included will be difficult and time-consuming. However, to the extent that the countries included in the study are archetypal or representative of all countries around the globe, it should be possible to extend the inferred cultural dimensions to the other countries not included in the study. The ability to do will be immensely useful to other researchers who are interested in the effect on culture on many aspects of research interest, ranging from economic to sociological and political aspects of life.

This is the objective of this study. Our objective is not similar to literature surveys such as by Ronen and Shenkar (1985) who reviewed the work on the cultural clustering of countries done prior to 1985 and synthesized the findings. Instead, we propose to extend the cultural groupings of countries around the globe initiated by the GLOBE study that future researchers using survey techniques can either refute or confirm.

In the sections which follow, we first survey the literature on the global cross-cultural studies with particular emphasis on prior attempts to develop a taxonomy of cultures in specific regions of the world or globally. Subsequently, we present our methodology, including a description of the multivariate discriminant model we developed. We then describe the eventual qualitative model we developed based on the misclassifications that the statistical model generated. Potential extensions of this line of research are discussed in the conclusions of the paper.

I. Literature Review

The view that culture plays a key role in most areas of human endeavor has received widespread support in the literature, ranging from economic endeavors and consumer behavior (Dussanberry, 1949; Clark, 1990), social interactions and workplace motivations (Hall, 1959; Hofstede, 1991), and even to scientific endeavors and achievements (Frame, Narin, and Carpenter, 1977; Inonu, 2003). Although cultural homogeneity and identity apply to distinct societies which do not necessarily (nor even frequently) extend to an entire nation-state, the unit of analysis for most comparative cultural studies has been the nation-state. Among the many reasons for choosing the nation-state as the unit of analysis, nations exert a strong unifying influence on the citizens through education, communication systems, official language policies, and other national policies (Hofstede, 1991). Moreover, many statistical data that enable researchers to study cross-cultural differences are available only at the national level.

One early conclusion derived from international cross-cultural studies was that that most nation-states can be grouped into common cultural clusters, although the cluster-membership tended to differ depending on the

grouping criteria. Exhibit I presents a brief overview of the literature covering this area. We review below the literature on the identification of cultural clusters based on (1) historical, geographical and socio-economic factors, (2) employee workplace attitudes, (3) managerial style preferences, and (4) distinct cultural dimensions.¹

Insert Exhibit I here

2.1 Historical, Geographical and Socio-Economic Factors

Woliver and Cattell (1981) have provided a detailed review of the literature on the use of historical, geographical, and socio-economic factors (including education and religion) to classify countries into cultural clusters. According to their review, one of the earliest attempt to identify cross-country similarity of cultural practices date to the study by Rivers (1901) who approached the issue from an anthropological psychology standpoint. Further advancement along these lines followed in anthropology from researchers such as Benedict (1934) who studied patterns in Native American culture, and assisted in the development of national cultural profiles.

Cattell (1949, 1950) contributed to further advancement in the study of national cultural similarities and differences (and hence cultural clustering) by identifying several socio-economic dimensions on which culture may lead to differences in outcomes. By applying factor analytic methods to the data collected, Cattell was able to identify 12 common factors (out of 72 variables) on which the 69 nations included in the study could be classified. In these studies, Cattell identified the following cultural clusters: (1) Catholic Homeland, (2) Catholic Colonial, (3) East Baltic, (4) Eastern European, (5) Hamitic (including Arabic countries), (6) Islamic, (7) Nordic Europe, and (8) Oriental (including China and India). However, he also classified Great Britain, the United

¹ Another classification criterion which has been applied in the literature is the approach to science and the scientific orientation of countries. See Frame, Narin and Carpenter (1977), and Inonu (2003) for a discussion of this approach.

States, the Soviet Union, France, Germany, and Japan as independent distinct units not classifiable into any clusters.

Rummel (1972, 1979) studied the cultural dimensions of nations and societies that are associated with war. In his 1972 study, he obtained data on 256 variables for 82 nations on which factor analysis was applied. Eight major and seven minor dimensions were identified from the analysis. Overall, in his empirical studies, he found that (1) countries with democratic governments tended not to go to war against each other (known as the “joint freedom proposition”), (2) the heterogeneity in composition of a population is consistently associated with the frequency of wars and military conflicts. More specifically, “countries with many different ethnic groups, language communities, nationality groups and religious and racial groups enter wars more often than homogeneous polities”. (Van der Dingen, 1981, p. 158)

Independently of these efforts, Tonybee (1947) studied the historical evolution of nations and empires, and derived cultural clusters of which five were still in existence: Western, Orthodox Christian, Islamic, Hindu, and Far Eastern.

2.2 Employee Workplace Attitudes and Orientation

Another important criterion that has been used to group countries into cultural clusters is employee workplace attitudes and orientation. Ronen and Shankar (1985) have provided an excellent review of this literature which can be quickly summarized as follows. Haire, Ghiselli and Porter (1966) studies employee work goals, needs deficiency and job satisfaction, and interpersonal orientation (among other factors) in 14 countries. Using factor analysis, they identified four clusters - (1) ANGLO, (2) NORDIC EUROPEAN, (3) LATIN-EUROPEAN, and (4) LATIN-AMERICAN cultural clusters. Notably, India was included in the LATIN-AMERICAN cluster, and Japan was classified as independent.

Independently, Sirota & Greenwood (1971) examined the work goals importance of workers in 25 countries. They identified the cultural clusters as ANGLO, NORDIC, LATIN- EUROPEAN, and

LATIN AMERICAN, but found that six countries (Brazil, Germany, Israel, Japan, Sweden, and Venezuela) could not be fit within any of these clusters. Interestingly, Switzerland and Austria were classified in the ANGLO group (and not GERMANIC). Hofstede (1976), studying the work role and interpersonal relations of employees in 14 countries, identified ANGLO, GERMANIC, NORDIC, and LATIN EUROPEAN cultural clusters. Sweden was classified within the ANGLO cluster and not the NORDIC group (which had only Denmark and Norway). Similarly, Ronen & Kraut (1977) who studies employee work goals in 15 countries, identified ANGLO, GERMANIC, NORDIC, and LATIN EUROPEAN cultural clusters. Israel was identified in this study with the ANGLO cultural cluster.

2.3 Managerial Style Preferences

Ronen and Shankar (1985) also surveyed studies which focused (in part at least) on the managerial style preferences of employees in the workplace. Included among these studies are Haire, Ghiselli, and Porter (1966), Badawy (1979), and Griffeth, Hom, Denisi & Kirchner (1980).

As noted previously, Haire et al (1966) identified four cultural clusters, with India included in the ANGLO cluster. Badawy (1979), who focused on Arabic countries, found the six countries he studied to be an identifiable ARABIC cluster. Griffeth et al. (1980) studied 15 Western countries and identified three clusters: ANGLO, GERMANIC (which included Finland, Norway, Sweden and Denmark), and LATIN EUROPEAN (which included Greece and Netherlands).

2.4. Cultural Dimensions

Hofstede (1980) pioneered the distinctive approach of clustering countries according to four unique cultural dimensions that he derived from a factor analysis of survey data from 66 societies and countries. The seven cultural clusters he identified were ANGLO, GERMANIC, NORDIC, LATIN EUROPEAN, LATIN AMERICAN, NEAR EAST, and FAR EAST. Japan emerged as an independent unit not includable in any of the

above clusters. Interestingly, Argentina and Brazil were included in the LATIN EUROPEAN group, while Portugal was included in the LATIN AMERICAN group. Also, the Netherlands was included in the NORDIC group while Israel was classified in the GERMANUIC group. In subsequent work, Hofstede (1991) extended these four cultural dimensions to five (Power Distance, Uncertainty Avoidance, Individualism-Collectivism, Masculinity-Femininity, and Long-Term versus Short-Term Orientation).²

The latest comprehensive cultural grouping of countries was done in the GLOBE study ((House et al., 2004; Chokkar et al, 2007). A detailed description of the approach used is provided by Gupta, Hanges, and Dorfman (2002). According to the description provided by Gupta et al. (2002), an *a priori* decision was made to group the 61 countries into 10 cultural clusters, based on the previous literature and their analysis of the demographic characteristics of the 61 countries in the study. Subsequently, discriminant analysis was applied to the cultural dimensions obtained from the survey data to examine the empirical validity of the initial grouping. Using a holdout sample methodology, the researchers were able to verify that the a priori cluster membership was justified by the cultural dimensions.

It is important to note that, while the GLOBE study uses the Hofstede (1980) dimensions as the baseline, they researchers extended the original five dimensions in Hofstede (1980) to nine. These are: the following:

1. *Power distance* – the extent to which individuals expect equality in power distribution;
2. *Uncertainty avoidance* – the extent to which social norms, regulations, and procedures are relied on to reduce future uncertainties;
3. *Humane orientation* – the extent to which the society rewards individuals for fairness, altruism, and humane behavior towards others;
4. *Institutional collectivism* – the extent to which institutions encourage collective action and distribution of resources;
5. *In-Group Collectivism* – the extent to which individuals are exclusively loyal to their institutions or families;

² Three additional cross-cultural projects carried out since the Hofstede (1980) study are the World Values Project (Inglehart et al, 1998, 2004), the Survey of Values Project (Schwartz and Bardi, 2001), and a study by Smith et al, 2002 which covered 7,000 managers in 47 countries.

6. *Assertiveness* – the extent to which individuals are aggressive in their relationships with other individuals and institutions;

7. *Gender Egalitarianism* – the extent to which the society minimizes gender inequalities;

8. *Future Orientation* – the extent to which the individuals delay instant gratification activities and invest for the future;

9. *Performance Orientation* – the extent to which the society encourages and rewards excellence in performance or the effort to achieve such excellence.

The validity of this extension has been hotly disputed by Hofstede (2006). Nevertheless, the validity of the study has gained considerable support, and it forms the basis for this study because the countries included in the study had a wider global scope. The GLOBE study itself identified 10 cultural clusters, namely (1) ANGLO, (2) NORDIC, (3) GERMANIC, (4) LATIN EUROPEAN, (5) EASTERN EUROPEAN, (6) a LATIN AMERICAN, (7) AFRICAN, (8) MIDDLE EASTERN, (9) a CONFUCIAN ASIAN, and (10) SOUTH-EAST ASIAN. These are the 10 clusters whose membership this study is designed to cover other countries not included in the original study.

II. Methodology

Data Sources and Sample Selection

As discussed earlier, for a study this type, data on demographics of the individual countries needed to be gathered. The data on religion, official languages, and the ethnic distribution within a country were gathered from the latest CIA World Factbook (<https://www.cia.gov/library/publications/the-world-factbook/index.html>), from Wikipedia.com (if properly sourced), and from individual country's official websites (if needed for cross-checking). Information on the distribution of religion were also gathered from the CIA World Factbook, Pew Foundation, Wikipedia.org, and also from individual country official websites. Finally, data on the relative population of a country speaking a particular language (or language group) were gathered from the Web version of *Ethnologue: Languages of the World* (Lewis, 2009).

Coding of Variables

Although only quantitative measures of five main variables (ethnicity, religion, official languages, world region, and native languages) were perceived to be necessary to define culture in external terms, the coding of these variables themselves is a major challenge. We provide below a description of the justification of the variable and the way we operationalized the concept.

Although there are significant difficulties in defining “race” from both a genetic and anthropological standpoint, there is incontrovertible evidence that major differences in cultural practices are highly correlated with ethnicity. An **ethnic group** has been defined as: “a [group](#) of people whose members identify with each other through a common [heritage](#), consisting of a common [culture](#), including a shared [language](#) or [dialect](#). The group's ethos or ideology may also stress [common ancestry](#) and [religion](#). (http://en.wikipedia.org/wiki/Ethnic_group). In 1950, [UNESCO](#) issued a statement entitled "[The Race Question](#)" which noted that: "National, religious, geographic, linguistic and cultural groups do not necessarily coincide with racial groups: and the cultural traits of such groups have no demonstrated genetic connection with racial traits. Because serious errors of this kind are habitually committed when the term 'race' is used in popular parlance, it would be better when speaking of human races to drop the term 'race' altogether and speak of 'ethnic groups'." (Metraux, 1950)

Given all these difficulties, we defined ethnicity as a blend of race and cultural heritage at a high level consisting of the following 11 categories with sufficient dispersion across the political boundaries of nations states to be of material significance: (1) American Indian, (2) African Black, (3) European Caucasian, (4) Arabic, (5) Other Middle Eastern, (6) Indian (East), (7) Han Chinese, (8) Other Asian (mainland), (9) Pacific Islander, (10) Mixed Race (blend of two or more ethnic groups), (11) Other group not identified in source (including indigenous populations such as Dravidian, etc.)

For religious groups, the following were identified, following the practice adopted in Mensah (2012): (1) Protestant Christian, (2) Catholic and Orthodox Christians, (3) Buddhist, (4) Islam, (5) Hindu, (6) Confucian philosophy, (7) Other Religion not specifically identified or No Religion. The proportion of the population of each country believed to be a member of that faith was identified. Other religious beliefs were not present in sufficient numbers in enough countries of the world to enable a separate identification.

The official languages specifically identified were limited to languages that are spoken widely around the world and/or adopted as official languages in enough countries to justify a separate identification in a cross-country study. These as (1) Arabic, (2) English, (3) French, (4) Spanish, (5) Mandarin Chinese, (6) Russian, (7) Portuguese. These languages have been adopted in many countries around the world, either because of a previous colonial heritage, or because the multiple native languages require a common language (even if foreign) to enable communication both internally and also with the wider world.

The regions of the world were identified based on the original United Nations Statistics Division classifications: Sub-Saharan Africa (consisting of all regions except North Africa), and North Africa which was combined with the Middle East to form the Middle East- North African region. Europe was divided into five regions in order to better align with the Globe country clusters: Western Europe, Northern Europe, Central Europe, South-East Europe, and Southern Europe.

Finally, for the native spoken languages, in order to limit the number of variables that had to be created, only languages (or language groups) that were spoken natively by at least 20 percent of the population were coded. In countries where a dominant language existed (defined as spoken natively by 50 percent or more of the population), only that that language (or language group) was coded. This led to the identification of 20 language or language groups. Some of these language groups were later combined to create a smaller subset of language variables. Ten of the languages are distinct (or near distinct) languages currently spoken, while the rest are language groups. The distinct languages specifically identified are spoken natively by proportions of the citizens of significantly sufficient number of countries to justify their separate identification.

Note that although there were 61 observation points in the GLOBE set, there were actually only 59 distinct countries. Switzerland was represented by both the German-speaking majority and the French-speaking minority populations. Similarly, and South Africa was represented by both the white minority and the black majority. Because of the need to assign a country only to one cultural cluster, we adopted the convention that the culture represented by the majority of the population of a country is the one to which the country is assigned. Thus, Switzerland was assigned to the GERMAN group, while South Africa was assigned to the AFRICA cluster.

Multivariate Discriminant Model Estimated

The multivariate discriminant model that we estimated initially can be written generically as:

$$\text{COUNTRY CLUSTER} = f(\text{ETHNICITY}, \text{RELIGION}, \text{OFF_LANG}, \text{REGIONS}, \text{NAT_LANG})$$

where

ETHNICITY = Percentage of population belonging to major ethnic/racial groups ;

RELIGION = Percentage of population practicing the various major religions;

OFF_LANG = Dummy variables for official languages of the country (consisting of only the major world languages);

REGIONS = Dummy variables for major regions of the world;

NAT_LANG = Percentage of population which speaks the language identified natively.

More formally, the discriminant function estimated can be written as:

$$\begin{aligned}
 Z_{it} = & a_0 + \sum_{m=1}^{M1} b_m \text{ETHNICITY}_{mt} + \sum_{n=1}^{N1} c_n \text{RELIGION}_{nt} + \sum_{p=1}^P d_p \text{OFF_LANG}_{pt} \\
 & + \sum_{q=1}^{Q1} f_q \text{REGIONS}_{qt} + \sum_{s=1}^S g_s \text{NAT_LANG}_{st}
 \end{aligned}
 \tag{1}$$

where Z_{ki} = the i th country assigned by the GLOBE study to the K th cultural cluster. Equation (1) is estimated from the original sample of countries in the GLOBE study in order to derive the discriminant function coefficients ($a_0, b_m, c_n, d_p, f_q,$ and g_s) that are then applied to the holdout sample of countries excluded from the original GLOBE study. The principal objective is to derive cultural cluster membership for the holdout sample and then examine the results for consistency with a priori expectations and qualitative evidence on the likely cluster membership of the candidate countries.

It should be noted from the outset that the original set of countries in the GLOBE study did not include (a) the European Baltic states, (b) the Caribbean island nations or non-Romance language countries in South America, and (c) Pacific Ocean island nations. We therefore expect these countries to pose special classification challenges.

IV. RESULTS OF ANALYSES

Table 1 presents the list of the variables used in this study. The purpose of this table is to present in one location all the variables used in the study. To estimate the model, three additional models were added. The first additional variable was BRIT_REL which was added to allow the Anglo-Saxon group (which happened to be non-regional, unlike all the other groups) to be uniquely identified. We also added two other variables, the latitude and longitude of the capitals of the countries included in the study.

Insert Table 1 here

Table 2 presents the means and standard deviations of the variables used in the study classified by the GLOBE country clusters and the holdout sample. A number of things stand out in this table. First, looking across the rows, it is evident that there are consistent differences across the GLOBE cultural clusters with

regard to ethnicity, religion, official language, regions of the world, and native language groups (for example, Niger-Congo ,Austronesian, and Uralic). However, it is also observable that not all the variables within each major category are represented in the countries in the GLOBE study, whereas they are present in the holdout sample. This suggests that, no matter what techniques are applied, the current set of countries in the GLOBE study does not provide sufficient basis to classify all countries around the globe.

 Insert Table 2 here

Table 3 presents the raw discriminant function coefficients obtained from the training set of 59 distinct countries in the GLOBE study sample. Since the function was linear, the 10 country clusters were assigned to a single continuum. In testing for alternatives to the linear discriminant function, the quadratic function was found to be a poorer fit to the data.

 Insert Table 3 here

An application of the discriminant function coefficients to the data in the training sample resulted in the following pattern:

LAT_EUR	383.51
SE-ASIA	390.22
GERMAN	441.50
MID_EAST	442.76
ANGLO	509.09
CONFUC	562.22
EST_EUR	687.22
LAT_AME	799.44
AFRIC	1,252.14
NORDIC	1,794.48

As the pattern shows, the LAT_EUR countries were at one extreme, with the NORDIC European countries at the other extreme, with the ANGLO and CONFUC clusters in the middle. This pattern

is based only on the quantitative variables used in this study and has no direct correspondence to the nine cultural dimensions along which these same country clusters were differentiated in the GLOBE study.

Insert Table 4 here

Table 4 presents the results of univariate tests of the significance of the individual variables in the original GLOBE data set. Multivariate tests could not be conducted because of the high multicollinearity among the variables. Among the Ethnicity variables, the following three variables were not significant: Other Middle East (OME), Indian (IND), and Pacific-Islander (PAI). Among the Religion set of variables, HIND_PCT was not significant. Among the Official Language variables, FRENCH and PORTUGUE were not significant. Among the World Region set of variables, SE_EUR (South-East Europe) was not significant. Finally, among the Native Language set of variables, FRECH, CREOLE, AFR_AS, ALTAIC and IND_EUR were not significant.

The lack of significance of these variables is not necessarily an indication that they would not be useful in differentiating among all countries in the cultural clustering process. However, the results here indicate a limitation of the GLOBE data set as a training sample. For example, among all the African countries included in the GLOBE set, there was not a single country where French was an official language, even though among all African countries, French is spoken officially in 21 of the 54 independent countries. This total rises to 24 when widespread unofficial use of the language (because of a previous colonial heritage) is counted. Similarly, no Caribbean or Pacific Ocean island nation was included in the sample. The method we adopted to deal with this situation is discussed later in the paper.

Insert Table 5 here

Table 5 presents the results of applying the discriminant function to the holdout sample of 124 countries in the holdout sample. For robustness, we also present the results of applying a non-parametric discriminant function, the “Nearest Neighbor” approach to the same sample. Since the results are identical, our comments below apply to both approaches.

An inspection of the classifications in the holdout sample reveals what would appear immediately as misclassification errors. We list below the ten misclassifications that we think are self-evident:

Azerbaijan	GERMAN
Brunei Darussalam	LAT_EUR
Bangladesh	GERMAN
Cyprus	MID_EAST
Fiji	LAT_EUR
Maldives	GERMAN
Micronesia	LAT_EUR
Papua New Guinea	LAT_EUR
Sri Lanka	GERMAN
Tonga	GERMAN

In addition to these obvious misclassifications, all the Caribbean countries are classified as LAT_AME.

Although we tried different ways to correct these misclassifications, it became evident that reliance on just statistical methods to derive a classification function that can ensure that countries not included in the original GLOBE sample will be properly classified was likely to be futile. The reason is that the original GLOBE sample did not provide sufficient diversity to ensure that countries with similar characteristics to those in the sample but with some other characteristics not present in the included countries. Thus a mechanical extrapolation from the GLOBE sample to the rest of the world was not feasible. Instead, an informed qualitative approach that looked at the key features that

differentiated the countries in the included set and applied those features to the holdout group seemed most likely to yield positive results. Additional qualitative assessments were needed to ensure that sufficient differentiation could be maintained among the countries in the holdout sample.

Insert Table 6 here

Table 6 presents the qualitative criteria that were eventually developed to ensure that all countries of the world can be classified into the 10 cultural clusters identified in the GLOBE study. In examining the criteria, it is worthwhile to note that the first criterion for each cluster is based on the GLOBE study solely and is sufficient to ensure 100 percent classification accuracy in the GLOBE sample. Thus, for example, to identify the NORDIC group in the original sample, a requirement that the population be at least 50 percent Caucasian and that at least 50 percent of the population speak Scandinavian, Baltic, or Finnish language as native speakers is sufficient. Similarly, for the ANGLO cluster, a requirement that the population be at least of 50 percent Caucasian European stock and speak English natively is sufficient for clustering purposes. A similar requirement applies to the GERMAN cluster.

For the other clusters, while the first criterion (or the first two in the case of LAT_EUR) was sufficient to identify the cluster in the GLOBE sample, additional requirements had to be introduced to ensure that the countries with are likely to be most culturally similar to those in the GLOBE sample were classified into that cluster and that cluster alone. Using these set of criteria, all Pacific Island countries whose population were principally Pacific Islanders could be classified into the SE-ASIA cluster, while Caribbean countries with majority black populations were classified into the AFRICA cluster.

Insert Table 7 here

The full list of the countries in the holdout sample and the countries in the GLOBE sample are presented in Table 7. The results presented in Table 7 is designed to be predictive in the sense that we expect future

researchers using value survey data, for example, to confirm that the cultural clusters into which we have grouped the countries of the world are, indeed, fairly representative of the cultural values held by the majority of the people in those countries.

Note, for example, that Mauritius is classified into the SE-ASIA cultural cluster. Although the Indian-descended population there is not in the majority, it is the largest ethnic group which has also held on to its native Hindi language. Thus, we expect that the national culture which has emerged there is closest to the SE-ASIA cluster than to the AFRIC or LAT_AME clusters to which it could be assigned.

Appendix A presents the full list of countries and the summary data on ethnicity, religion, dominant native language, region, last colonial power from whom independence was obtained (if relevant), and the two major official languages used in the classifications in Table 7. These details are provided to provide the bases for possible alternative classifications. For example, the Baltic states of Estonia, Latvia, Lithuania, and Belarus posed special classification difficulties. On the basis of their location in Northern Europe (and the fact that their languages had distinctly neither Germanic nor Slavic roots), all the Baltic states except Belarus were classified in Table 7 as NORDIC. However, Belarus was classified as Eastern-European because the native language is Slavic and thus closely linked to Russia. Admittedly, an alternative classification scheme would be to classify them in a separate cultural cluster.

With regard to the Caribbean and Pacific island nations, a case could be made for classifying them as separate cultural clusters (as in Mensah, 2012). In the case of the Caribbean region, the considerable ethnic mixtures, the development of the Creoles dialects (which are themselves quite different from island to island), and the substantial influence of the colonial powers on the development of their economic and political institutions suggests that they could be classified as a separate cultural cluster. Similarly, for the Pacific Ocean island nations, their distinct ethnographic

III. CONCLUSIONS

In this paper, we have attempted to extend the GLOBE cultural clustering of countries to other countries excluded from the initial sample. Applying initially a multivariate discriminant model, we developed a quantitative model that was only partially successful in classifying the holdout sample. By carefully examining the characteristics of the training (GLOBE) sample and also examining the characteristics of the holdout sample, a qualitative model was developed which enabled us to classify all countries in the holdout to cultural clusters that we believe to be most appropriate. We leave it to future research to confirm if our qualitative judgment is supported by empirical evidence obtained from survey data that measures cultural dimensions in a direct manner.

REFERENCES

- Badawy, M.R., 1979. "Managerial attitudes and need orientations of Mid-Eastern executives: An empirical cross-cultural analysis." Paper presented at the annual meeting of the Academy of Management, Atlanta, GA (August, 1979).
- Benedict, R., 1934. *Patterns of Culture*. Boston: Houghton-Mifflin.
- Cattell, R., 1949. "The dimensions of culture patterns by factorization of national characteristics." *Journal of Abnormal and Social Psychology* 44(4): 443-469.
- Cattell, R., 1950. "The principal culture patterns discoverable in the syntax dimensions of existing nations." *Journal of Social Psychology* 32(2): 215-253.
- Chhokar, J.S., et al (eds.), 2007. *Culture and Leadership across the World: The GLOBE Book of In-Depth Studies of 25 Societies*. Mahwah, NJ: Lawrence Erlbaum.
- Clark, T., 1990. "International Marketing and national character: A review and proposal for an Integrative theory." *Journal of Marketing* 54 (October): 66-79.
- Duesenberry, J., 1949. *Income, Savings, and the Theory of Consumer Behavior*. Cambridge, MA: Harvard University Press.
- Frame, J.D., Narin, F, and Carpenter, M.P., 1977. "The distribution of world science." *Social Studies of Science* 7(4): 501-516.
- Griffeth, R.W., Hom, P.W., Denisi, A., and Kirchner, W. , 1980. "A multivariate, multinational comparison of managerial attitudes." Paper presented at the Annual Meeting of the Academy of Management, Detroit, MI. (August, 1980).
- Gupta, V., Hanges, P.J., and Dorfman, P. 2002. "Cultural clusters: Methodology and findings." *Journal of World Business* 37(1): 11-15.
- Haire, M, Ghiselli, E.E., & Porter, L.W., 1966. *Managerial Thinking: An International Analysis*. New York: Wiley.
- Hall, E.T., 1959. *The Silent Language*. Garden City, NY: Doubleday.
- Hofstede, G. H. 1976. "Nationality and espoused values of managers." *Journal of Applied Psychology* 61(2): 148-155.
- Hofstede, G., 1980. *Culture's Consequences*. Beverly Hills, California: Sage Publications.
- Hofstede, G. H. 1991. *Cultures and Organizations*. New York: McGraw Hill.
- Hofstede, G.H., 2001. *Culture's Consequences: International Differences in Work-Related Values*. Thousand Oaks, CA: Sage.

- Hofstede, G.H., 2006. "What did the GLOBE really measure? Researchers' minds versus respondents' minds." *Journal of International Business* 37(6): 882-896.
- House R.J., P.J. Hanges, M. Javidan, P.. Dorfman, and V. Gupta (eds.), 2004. *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*. Thousand Oaks, CA: Sage, 2004.
- Inglehart, R., 1997. *Modernization and Post-Modernization: Cultural, Economic, and Political Change in 43 Societies*. Princeton, N.J.: Princeton University Press, 1997.
- Inglehart, R, M. Basanez, J.Diez-Medrano, L Halman, and R. Luijkx, 2004. *Human Beliefs and Values: A Cross-Cultural Sourcebook based on the 1999-2002 Values Surveys*. Siglo XXI Editores: Mexico.
- Inglehart, R, M. Basanez, J.Diez-Medrano, and A. Moreno. 1998. *Human Beliefs and Values: A Cross-Cultural Sourcebook*. The University of Michigan Press: Ann Arbor, MI.
- Inonu, E., 2003. "The influence of cultural factors on scientific production." *Scientometrics* 56(1): 137-146.
- Lewis, M. Paul (ed.), 2009. *Ethnologue: Languages of the World*, Sixteenth edition. Dallas, Tex.: SIL International. Online version: <http://www.ethnologue.com/>.
- Mensah, Y.M. 2012. "An Analysis of the Effect of Culture and Religion on Perceived Corruption in a Global Context" Unpublished working paper, CGAER
- Metraux, A., 1950. "United nations Economic and Security Council Statement by Experts on Problems of Race", *American Anthropologist* 53(1): 142-145)
- Rivers, W.H.R., 1901. "Introduction and vision." In A.C. Haddon (ed.), *Reports of the Cambridge Anthropological Expedition to the Torres Strait*, Vol. II, Part I. Cambridge: Cambridge University Press.
- Ronen, S., & Kraut, A.I., 1977. "Similarities among countries based on employee work values and attitudes." *Columbia Journal of World Business*. 12(2): 89-96.
- Ronen, S. and Shenkar, O., 1985. "Clustering Countries on Attitudinal Dimensions: A Review and Synthesis." *Academy of Management Review*, 1985, 10(3), 435-454.
- Rummel, R.J., 1972. *The Dimensions of Nations*. Beverly Hills, CA: Sage Publishing Co.
- Rummel, R.J. (1979) *Understanding Conflict and War; Vol. 4: War, Power, Peace*. Beverly Hills: Sage
- Schwartz, S. H., 1994. "Beyond Individualism/Collectivism: New Cultural Dimensions of Values." In U. Kim et al. (eds.), *Individualism and Collectivism: Theory, Methods, and Applications*. Thousand Oaks, CA: Sage, 1994.
- Schwartz, S.H., 1999. "A Theory of Cultural Values and Some Implications for Work." *Applied Psychology*, 1999, 48(1), 23-47.

- Schwartz, S.H., and A. Barchi. 2001. "Values Hierarchies Across Cultures: Taking a Similarities Perspective." *Journal of Cross-Cultural Psychology* 32(3): 268-290.
- Sirota, D., & Greenwood, J.M., 1971. "Understand your overseas work force." *Harvard Business Review*, 49(1): 53-60.
- Smith, P.B., M.F. Peterson, and S.E. Schwartz. 2002. "Cultural values, Sources of Guidance, and their Relevance to Managerial Behavior." *Journal of Cross-Cultural Psychology* 33(2): 188-202.
- Tonybee, A., 1947. *A Study of History*. England: Oxford University Press.
- Van der Dennen, J.M.G. (1981) "On war: Concepts, definitions, research data - a short literature review and bibliography." In: *UNESCO Yearbook on Peace and Conflict Studies 1980*. Westport CT: Greenwood Press, pp. 128-89.
- Woliver, R.E., & Catell, R.B., 1981. "Reoccurring national patterns from 30 years of multivariate cross-cultural studies." *International Journal of Psychology* 16 (1-4): 171-198.

Exhibit I
Summary of Key Prior Studies of Culture-Based Clustering of Countries By Classification Criteria

Historical, Geographical and Socio-economic Factors	Employee Workplace Attitudes & Orientation	Managerial Style Preferences	Cultural Dimensions	Orientation to science and scientific progress
Rivers (1901)				
Benedict (1934)				
Tonybee (1947)				
Cattell (1949)	Haire, Ghiselli, and Porter (1966)	Haire, Ghiselli, and Porter (1966)		
Cattell (1950)	Sirota and Greenwood (1971)			
Rummel (1972)	Hofstede (1976)			
	Ronen and Kraut (1977)			Frame, Narin, & Carpenter (1977)
	Badawy (1979)	Badawy (1979)		
	Hofstede (1980)	Hofstede (1980)	Hofstede (1980)	
			GLOBE study – Gupta, Hanges and Dorfman (2002)	Inonu (2003)
<u>Literature Survey:</u> Wolver and Cattell (1981)	<u>Literature Survey:</u> Ronen and Shenkar (1985)	<u>Literature Survey:</u> Ronen and Shenkar (1985)		

Table 1
Variables Used In the Study

Variable	
<i>Ethnicity</i>	
AMI	American Indian
AFB	African Black
CAUC	European Caucasian
ARB	Arabic
OME	Other Middle Eastern
IND	Indian (East)
CHI	Chinese
OTA	Other Asian
PAI	Pacific Islander
MIX	Mixed Race (two or more ethnic groups)
OTHER	Not specifically identified in source
<i>Religion</i>	
PROT_PCT	Percent of population classified as Christian Protestant (including Pentacostals)
CHRST_OT	Percent of population classified as Catholic or Orthodox Christian
BUDH_PCT	Percent of population following Buddhist faith
ISLM_PCT	Percent of population following the Islamic faith
HIND_PCT	Percent following Hindi faith
CONFUC	Percent deemed to be following Confucian philosophy
OTHER_REL	Other Religions (including No religion)
<i>Official Languages</i>	
ARABIC	Arabic as official language
ENGLISH	English as official language
FRENCH	French as official language
SPANISH	Spanish as official language
CHINESE	Chinese as official language
RUSSIAN	Russian as official language
PORTUGUE	Portuguese as official language
<i>Regions of the World</i>	
SUB_AFR	Sub-Saharan Africa
MDE_NA	Middle East and North Africa
WESTN_EU	Western Europe
NOR_EUR	Northern Europe
CENT_EUR	Central Europe
SE_EUR	South-Eastern Europe
SOUTH_EU	Southern Europe
CE_ASI	Central Asia
SE_ASI	South-Eastern Asia

Table 1
Variables Used In the Study (Continued)

NOR_AME	North America
CENT_AME	Central America
CARIB	Caribbean Region
CAM_CAR	Central America and Caribbean
SOU_AME	South America
OCEANIA	Oceania
Variable	
<i>Native Languages</i>	
ARBIC	Arabic as native language
ENGL	English as native language
FRECH	French as native language
SPAN	Spanish as native language
SCAND	Scandinavian as native language
GERMIC	Germanic subgroup of languages as native language
SLAV	Slavic subgroup of languages as native language
CREOLE	Creole (all versions) as native language
HINDI	Hindi as native language
CHINESE	Mandarin Chinese as native language
AFR_AS	Afro-Asiatic group of languages
ALTAIC	Altaic group of languages
AME_IND	American Indian group of languages (includes many independent groups)
AUS_NAS	Austronesian group of languages
IND_EUR	Indo-European group of languages (excluding those specifically identified above)
IND_IRN	Indo-Iranian group of languages
IND_DRAV	Indo-Iranian and Dravidian groups of languages
NIG_SAH	Niger-Congo and Nilo-Saharan group of languages
ROMCE	Romance subgroup of languages (excluding French and Spanish listed above already)
SIN_TAI	Sini-Tibetan group of languages
URA_CAU	Uralic and Caucasian groups of languages
<i>Other Variables</i>	
BRIT_REL	Dummy variable for British "special relationship"
LAT	Latitude of country's capital
LONG	Longitude of country's capital

TABLE 2

Summary of Independent Variables By GLOBE Clusters

HOULDOUT

Variable	AFRIC		ANGLO		CONFUC		EAST_EU		GERMAN		LAT_AME		LAT_EUR		MID_EAST		NORDIC		SE_ASIA		SAMPLE		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
AMI	AMI	0	0	0.53	0.86	0	0	0	0	0	0	22.1	31.25	0	0	0	0	0	0	0	0	0.81	4.62
AFB	AFB	92.8	9.25	2.66	5.06	0	0	0	0	0	0	1.98	2.28	0.68	1.28	0	0	1.181	1.693	0	0	35.22	45.49
CAUC	CAUC	3.32	4.30	80.76	16.24	0	0	87.38	25.23	93.73	5.61	34.7	36.08	81.03	35.81	0	0	####	3.463	0	0	21.97	39.07
ARB	ARB	0	0	0	0	0	0	0	0	0	0	0	0	4.72	10.55	63.7	43.07	0.430	0.745	0.33	0.82	8.70	25.76
OME	OME	0	0	0.22	0.53	0	0	0	0	1.65	2.04	0	0	13.09	25.83	21.4	40.23	1.472	1.996	16.33	40.01	6.90	22.39
IND	IND	0.50	1.12	0.30	0.73	1.32	3.23	0	0	0	0	0	0	0	0	3.6	8.05	0	0	17.35	39.12	4.47	17.13
CHI	CHI	0	0	0	0	60.28	47.11	0	0	0	0	0.1	0.32	0.06	0.13	0	0	0	0	6.28	10.21	0.20	1.15
OTA	OTA	0.2	0.45	3.46	3.54	37.38	48.35	9.34	24.04	1.1	2.2	0	0	0.17	0.37	5.4	8.05	0	0	58.40	46.29	8.59	25.90
PAI	PAI	0	0	4.42	10.34	0.33	0.82	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.57	17.79
MIX	MIX	3.1	4.30	6.40	10.28	0	0	0	0	0	0	40.6	32.1	0	0	0	0	0	0	0	0	8.07	22.22
	OTHER	0.1	0.22	1.27	2.41	0.68	0.89	3.29	4.42	3.53	2.86	0.52	0.61	0.26	0.57	5.88	5.53	0.62	1.07	1.30	3.18	1.50	3.02
PROT_PCT	PROT_PCT	46.0	20.26	39.60	20.01	6.57	6.69	3.76	8.22	27.13	18.83	15.47	12.34	1.04	0.72	1.38	1.72	87.33	3.21	3.57	4.64	15.11	22.55
CHRST_OT	CHRST_OT	34.1	25.97	33.53	29.75	6.31	4.57	65.97	24.62	36.00	19.73	77.82	14.03	61.36	35.61	4.56	4.34	1.33	2.31	15.97	31.71	35.70	33.43
BUDH_PCT	BUDH_PCT	0.0	0.05	0.92	0.70	43.41	17.69	0.26	0.38	0.49	0.38	0.35	0.70	0.44	0.45	1.32	2.15	0.27	0.21	20.17	36.62	4.75	18.14
ISLM_PCT	ISLM_PCT	10.2	21.07	1.98	1.50	3.28	5.79	18.96	26.73	5.48	0.33	0.36	0.75	6.14	6.95	89.82	8.93	3.27	2.17	44.98	41.85	30.81	39.07
HIND_PCT	HIND_PCT	0.3	0.54	0.66	0.39	0.90	1.62	0.01	0.02	0.29	0.23	0.00	0.01	0.09	0.07	2.04	3.16	0.06	0.05	14.84	32.26	2.31	9.53
	NO_RELG	9.3	6.58	23.30	12.05	39.54	17.57	11.04	14.84	30.61	15.19	6.00	5.74	30.93	29.18	0.88	0.68	11.00	9.54	0.59	0.39	11.42	15.73
ARABIC	ARABIC	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.45	0.8	0.45	0	0	0	0	0.16	0.37
ENGLISH	ENGLISH	1	0	1	0	0.50	0.55	0.13	0.35	0	0	0	0	0	0	0.2	0.45	0.33	0.58	0.83	0.41	0.32	0.47
FRENCH	FRENCH	0	0	0.33	0.52	0	0	0	0	0.25	0.5	0	0	0.2	0.45	0.2	0.45	0	0	0	0	0.24	0.43
SPANISH	SPANISH	0	0	0	0	0	0	0	0	0	0	0.9	0.32	0.2	0.45	0	0	0	0	0	0	0.09	0.29
CHINESE	CHINESE	0	0	0	0	0.67	0.52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RUSSIAN	RUSSIAN	0	0	0	0	0	0	0.38	0.52	0	0	0	0	0	0	0	0	0	0	0	0	0.09	0.29
PORTUGUE	PORTUGUE	0	0	0	0	0	0	0	0	0	0	0.1	0.32	0.2	0.45	0	0	0	0	0	0	0.05	0.22
SUB_AFR	SUB_AFR	1	0	0	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0	0	0.32	0.47

TABLE 2

Summary of Independent Variables By GLOBE Clusters (Continued)

		Summary of Independent Variables By GLOBE Clusters (Continued)																		HOULDOUT					
		AFRIC		ANGLO		CONFUC		EAST_EU		GERMAN		LAT_AME		LAT_EUR		MID_EAST		NORDIC		SE_ASIA		SAMPLE			
Variable		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
MDE_NA	MDE_NA	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.45	1	0	0	0	0.17	0.41	0.14	0.35		
WESTN_EU	WESTN_EU	0	0	0.33	0.52	0	0	0	0	0.25	0.5	0	0	0.6	0.55	0	0	0	0	0	0	0.02	0.13		
NOR_EUR	NOR_EUR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.04	0.20		
CENT_EUR	CENT_EUR	0	0	0	0	0	0	0.25	0.46	0.75	0.5	0	0	0	0	0	0	0	0	0	0	0.02	0.15		
SE_EUR	SE_EUR	0	0	0	0	0	0	0.25	0.46	0	0	0	0	0	0	0	0	0	0	0	0	0.06	0.25		
SOUTH_EU	SOUTH_EU	0	0	0	0	0	0	0.38	0.52	0	0	0	0	0.2	0.45	0	0	0	0	0	0	0.09	0.29		
CE_ASI	CE_ASI	0	0	0	0	0.83	0.41	0.13	0.35	0	0	0	0	0	0	0	0	0	0	0	0	0.06	0.23		
SE_ASI	SE_ASI	0	0	0	0	0.17	0.41	0	0	0	0	0	0	0	0	0	0	0	0	0.83	0.41	0.09	0.29		
NOR_AME	NOR_AME	0	0	0.33	0.52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
CAM_CAR	CAM_CAR	0	0	0	0	0	0	0	0	0	0	0.40	0.52	0	0	0	0	0	0	0	0	0.11	0.32		
SOU_AME	SOU_AME	0	0	0	0	0	0	0	0	0	0	0.60	0.52	0	0	0	0	0	0	0	0	0.05	0.22		
OCEANIA	OCEANIA	0	0	0.33	0.52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.03	0.18		
ARBIC	ARBIC	0	0	0.00	0.00	0	0	0	0	0	0	0.26	0.82	3.97	8.87	54.11	46.11	0	0	0	0	10.56	27.21		
ENGL	ENGL	0	0	81.18	13.10	3.58	6.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.96	10.60		
FRECH	FRECH	0	0	3.55	8.43	0	0	0	0	5.02	10	0.00	0.00	17.45	39.01	0.05	0.12	0.00	0.00	0	0	0.58	3.83		
SPAN	SPAN	0	0	1.56	3.83	0	0	0	0	0	0	63.55	28.92	18.16	40.60	0.00	0.00	0.00	0.00	0	0	5.89	21.18		
SCAND	SCAND	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	29.62	50.15	0	0	0.81	8.98		
GERMIC	GERMIC	0.89	1.99	0	0	0	0	0.95	2.21	90.15	18.45	0.24	0.76	1.35	1.95	0.00	0.00	1.88	3.26	0	0	2.66	13.13		
SLAV	SLAV	0	0	0	0	0	0	39.20	42.74	0.06	0.13	0.00	0.00	2.15	4.80	0	0	0	0	0	0	6.97	22.55		
CREOLE	CREOLE	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.13	0.40	0.00	0.00	0	0	0	0	0	0	7.43	22.55		
AFR_AS	AFR_AS	2.62	5.85	0	0	0	0	0	0	0	0	0	0	13.89	31.05	4.92	11.00	0	0	0	0	3.75	16.57		
ALTAIC	ALTAIC	0	0	0	0	30.52	47.34	4.95	12.17	0	0	0	0	0.00	0.00	11.75	26.28	0	0	2.77	6.77	4.09	16.40		
AME_IND	AME_IND	0	0	0	0	0	0	0	0	0	0	12.09	16.70	0	0	0	0	0	0	0.00	0.00	0.84	7.17		
AUS_NAS	AUS_NAS	0	0	0.24	0.60	2.30	3.89	0	0	0	0	0	0	0	0	0	0	0	0	28.68	30.09	5.76	20.33		
IND_EUR	IND_EUR	0	0	1.19	2.52	0	0	23.46	43.47	0	0	0	0	0	0	0	0	32.89	56.96	0	0	3.87	16.79		
IND_DRAV	IND_DRAV	0	0	0.38	0.93	0	0	0	0	0	0	0	0	0	0	3.69	4.01	0.00	0.00	22.37	36.02	6.24	19.30		

TABLE 2
Summary of Independent Variables By GLOBE Clusters (Continued)

		HOULDOUT																							
		AFRIC		ANGLO		CONFUC		EAST_EU		GERMAN		LAT_AME		LAT_EUR		MID_EAST		NORDIC		SE_ASIA		SAMPLE			
Variable		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
NIG_SAH	NIG_SAH	80.87	17.94	0	0	0	0	0	0	0	0	0	0	0	0	0.23	0.51	0.00	0.00	0.00	0.00	0.00	14.53	28.05	
ROMCE	ROMCE	0	0	0.35	0.86	0	0	0	0	2.61	5.21	9.33	28.16	40.18	49.55	0	0	0	0	0	0	0	2.35	12.85	
SIN_TAI	SIN_TAI	0	0	0	0	52.61	45.20	0	0	0	0	0	0	0	0	0	0	0	0	14.30	29.02	1.26	8.43		
URA_CAU	URA_CAU	0	0	0	0	0	0	22.66	41.99	0	0	0	0	0	0	0	0	31.18	51.35	0	0	0.76	6.38		
BRIT_REL	BRIT_REL	0	0	0.83	0.41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LAT	LAT	-14.70	14.80	22.83	44.83	25.85	13.63	46.88	6.77	49.46	2.72	1.13	17.25	39.97	5.40	30.57	5.32	60.67	4.16	12.92	13.02	18.27	22.48		
LONG	LONG	22.01	9.62	17.50	113.69	118.24	13.30	38.56	30.54	9.02	3.18	-76.47	14.65	7.52	17.13	31.78	22.35	17.00	8.19	97.42	27.34	19.03	56.54		
Sample Size		5		6		6		8		4		10		5		5		3		6					

TABLE 3

Discriminant Function Coefficients Obtained from Discriminant Analysis on the Training Set of 58 Countries in the GLOBE study

(scaled by dividing coefficients by One Million)

Variable	COUNTRY CLUSTERS									
	AFRIC	ANGLO	CONFUC	EST_EUR	GERMAN	LAT_AME	LAT_EUR	MID_EAST	NORDIC	SE-ASIA
Constant	-1,272.20	-518.13	-567.33	-718.89	-458.52	-814.17	-397.95	-455.26	-1,834.31	-403.61
AMI	2.85	2.44	2.28	1.76	2.56	2.47	2.43	2.32	2.02	2.54
AFB	3.40	2.63	1.45	2.40	3.15	2.85	2.94	3.30	2.11	2.63
CAUC	2.84	2.37	2.38	1.73	2.52	2.40	2.42	2.33	1.98	2.59
ARB	2.42	3.94	0.95	3.25	2.49	2.97	2.91	2.62	2.70	2.74
OME	2.44	5.96	0.71	4.75	3.93	3.39	3.68	1.19	3.62	3.18
IND	6.55	-0.75	0.35	2.50	6.69	6.06	3.19	6.93	3.60	-1.50
CHI	-0.11	0.83	6.15	2.96	0.22	0.77	1.20	1.61	3.29	2.44
OTA	1.45	2.08	3.57	3.25	1.75	2.02	2.17	2.47	3.10	2.41
PAI	2.85	3.35	0.75	0.73	2.01	3.00	2.14	1.65	1.58	2.16
MIX	2.84	2.51	2.25	1.78	2.57	2.48	2.45	2.28	2.02	2.57
OTHER	4.27	5.77	-1.98	4.22	4.75	4.45	4.34	3.51	2.77	2.91
PROT_PCT	4.14	3.68	3.90	3.98	4.08	4.11	3.90	4.18	4.07	3.65
CHRST_OT	4.02	3.83	4.03	4.04	4.02	3.98	3.91	3.98	4.06	3.82
BUDH_PCT	3.92	4.18	3.92	3.88	3.83	3.99	3.87	3.68	4.00	3.95
ISLM_PCT	4.15	3.77	4.11	4.10	4.19	4.04	3.97	4.08	4.11	3.82
HIND_PCT	1.38	5.93	3.26	2.92	-0.49	1.82	3.17	2.67	2.23	6.49
NO_RELG	4.12	4.15	3.81	4.20	4.16	3.96	4.10	3.98	3.99	4.10
ARABIC	-25.89	-7.31	232.12	164.57	121.50	-49.55	45.75	-66.39	109.50	54.70
ENGLISH	-3.83	-25.99	43.04	2.91	1.25	-12.10	-3.89	2.67	5.90	2.10
FRENCH	10.52	-45.31	64.60	12.11	29.30	-8.04	1.42	9.99	16.09	-6.10
SPANISH	-28.53	68.46	-100.16	-44.99	-50.00	45.44	-29.83	-57.31	0.23	-50.26
CHINESE	60.83	-372.30	386.32	-6.39	92.94	-36.10	-39.86	143.84	72.41	-92.60
RUSSIAN	28.21	123.86	55.76	496.89	246.38	-44.31	226.67	182.25	158.92	208.22
PORTUGUE	-9.32	29.73	-10.29	55.10	17.71	14.00	15.84	4.65	33.38	-0.52
SUB_AFR	1,790.95	17.91	17.91	17.91	17.91	17.91	17.91	17.91	17.91	17.91
MDE_NA	93.81	-174.42	-99.24	-70.14	-43.02	-23.29	10.43	275.04	-119.32	10.52
WESTN_EU	21.66	80.60	90.11	440.89	219.13	-58.50	197.54	164.64	139.17	191.25
NOR_EUR	28.76	28.76	28.76	28.76	28.76	28.76	28.76	28.76	2,876.37	28.76
CENT_EUR	22.91	112.17	64.30	469.43	231.26	-48.37	212.39	167.85	149.80	199.41
SE_EUR	-2.13	1.65	6.67	2.79	-2.09	-11.28	3.25	-0.99	-6.06	14.47
SOUTH_EU	17.74	111.34	73.32	492.41	238.27	-44.82	215.90	173.76	166.65	194.87
CE_ASI	53.92	230.53	-207.98	59.44	77.35	51.34	88.61	-43.52	-20.28	86.06

TABLE 3

Discriminant Function Coefficients Obtained from Discriminant Analysis on the Training Set of 58 Countries in the GLOBE study (Continued)

(scaled by dividing coefficients by One Million)

Variable	COUNTRY CLUSTERS									
	AFRIC	ANGLO	CONFUC	EST_EUR	GERMAN	LAT_AME	LAT_EUR	MID_EAST	NORDIC	SE-ASIA
SE_ASI	53.81	188.72	-130.45	138.88	113.96	1.64	119.93	4.02	-7.25	136.99
NOR_AME	-41.65	211.22	-37.59	346.39	110.60	-41.41	151.45	31.24	98.16	179.25
CAM_CAR	17.01	15.72	19.93	19.11	17.44	907.70	17.35	19.23	19.28	16.68
SOU_AME	18.65	19.54	16.62	17.19	18.35	907.96	18.41	17.11	17.08	18.88
OCEANIA	41.70	113.79	15.49	403.35	216.84	-29.92	196.42	156.82	118.18	176.91
ARBIC	0.43	-0.89	0.73	0.27	0.79	0.20	0.08	0.47	0.39	-0.47
ENGL	-1.01	3.85	-4.70	-2.79	-2.38	1.36	-1.09	-3.26	-1.06	-0.94
FRECH	-0.39	0.71	-1.73	-1.04	-1.07	0.64	-0.59	-0.53	-0.27	-0.85
SPAN	0.06	-0.33	0.05	-0.15	-0.04	0.08	-0.11	0.19	0.01	-0.25
SCAND	-1.07	0.18	1.06	3.42	0.84	-0.65	0.70	0.36	1.55	0.42
GERMIC	0.30	-0.69	-0.08	-0.49	0.21	0.62	-0.32	0.22	0.25	-1.07
SLAV	-0.55	0.76	1.32	3.97	1.36	-0.18	1.25	0.88	1.97	0.96
CREOLE	1.47	7.59	-7.82	-0.46	2.85	4.80	0.88	-4.70	1.11	-2.29
AFR_AS	-0.55	0.61	-0.58	0.06	-0.52	0.03	-0.19	-0.54	0.07	-0.14
ALTAIC	0.23	-4.99	5.46	0.64	0.88	-1.15	-0.45	2.03	0.97	-0.71
AME_IND	0.07	-0.35	0.07	-0.17	-0.04	0.04	-0.10	0.21	-0.03	-0.20
AUS_NAS	0.85	0.36	-0.95	0.93	1.13	0.23	0.85	1.02	-0.05	0.47
IND_EUR	-0.50	0.83	0.93	3.45	1.15	-0.09	1.09	0.71	1.72	0.80
IND_DRAV	-2.70	1.44	3.77	2.49	-0.59	-2.37	0.11	-3.10	1.13	2.23
NIG_SAH	0.13	-0.22	-0.10	-0.28	0.03	0.20	-0.12	0.06	-0.01	-0.34
ROMCE	-0.16	0.12	-0.96	-1.28	-0.80	0.43	-0.62	-0.52	-0.37	-0.80
SIN_TAI	1.11	0.09	-1.01	1.01	1.43	0.42	0.91	1.36	0.04	0.23
URA_CAU	-0.57	0.81	1.32	4.04	1.38	-0.15	1.26	0.86	2.03	0.94
BRIT_REL	-0.04	-0.04	0.22	0.25	0.09	-0.09	0.08	0.08	0.11	0.11
LAT	-0.17	-0.29	0.46	-0.29	-0.25	-0.24	-0.20	-0.20	-0.11	0.01
LONG	-0.25	-0.12	0.41	-0.10	-0.22	-0.19	-0.16	-0.28	0.02	0.01

NOTE: The classification accuracy obtained by applying these coefficient within the training sample is 100 percent

Table 4

Univariate Test Statistics of Significant Individual Variables

F Statistics, Num DF=9, Den DF=48

Variable	Total Standard Deviation	Pooled Standard Deviation	Between Standard Deviation	R-Square/ R-Square (1-RSq)	F Value	Pr > F
AMI	14.99	13.53	8.78	0.31	0.46	2.44 0.0224
AFB	26.24	3.32	27.24	0.99	73.16	390.20 <.0001
CAUC	44.51	21.80	41.54	0.80	3.95	21.06 <.0001
ARB	21.45	12.80	18.75	0.70	2.33	12.44 <.0001
OME	18.99	18.91	8.05	0.16	0.20	1.05 0.4146
IND	12.94	12.89	5.49	0.16	0.20	1.05 0.4146
CHI	23.28	15.56	19.22	0.62	1.66	8.85 <.0001
OTA	29.03	23.62	20.17	0.44	0.79	4.23 0.0005
PAI	3.35	3.35	1.41	0.16	0.19	1.03 0.4313
MIX	20.08	14.34	15.86	0.57	1.33	7.09 <.0001
PROT_PCT	24.74	12.00	23.15	0.80	4.04	21.56 <.0001
CHRST_OT	34.56	22.64	28.86	0.64	1.77	9.43 <.0001
BUDH_PCT	18.37	13.15	14.48	0.57	1.32	7.03 <.0001
ISLM_PCT	30.96	18.40	27.12	0.70	2.36	12.61 <.0001
HIND_PCT	10.59	10.47	4.66	0.18	0.22	1.15 0.348
ARABIC	0.28	0.18	0.24	0.65	1.86	9.90 <.0001
ENGLISH	0.49	0.31	0.41	0.66	1.92	10.24 <.0001
FRENCH	0.28	0.28	0.13	0.19	0.24	1.28 0.271
SPANISH	0.38	0.19	0.35	0.79	3.87	20.63 <.0001
CHINESE	0.26	0.17	0.21	0.64	1.79	9.56 <.0001
RUSSIAN	0.22	0.20	0.14	0.34	0.52	2.76 0.011
PORTUGUE	0.18	0.19	0.07	0.12	0.14	0.72 0.6839
SUB_AFR	0.28	0.00	0.30	1.00 Infty	Infty	<.0001
MDE_NA	0.33	0.18	0.29	0.73	2.77	14.77 <.0001
WESTN_EU	0.31	0.26	0.20	0.39	0.64	3.40 0.0026
NOR_EUR	0.22	0.00	0.23	1.00 Infty	Infty	<.0001
CENT_EUR	0.28	0.22	0.21	0.51	1.03	5.50 <.0001
SE_EUR	0.18	0.18	0.09	0.22	0.29	1.53 0.1638
SOUTH_EU	0.26	0.24	0.14	0.28	0.39	2.09 0.0489
CE_ASI	0.31	0.19	0.27	0.68	2.15	11.46 <.0001
SE_ASI	0.31	0.19	0.27	0.69	2.23	11.88 <.0001
NOR_AME	0.18	0.17	0.11	0.31	0.45	2.39 0.0251
CAM_CAR	0.26	0.22	0.16	0.36	0.55	2.94 0.0073
SOU_AME	0.31	0.22	0.24	0.55	1.24	6.62 <.0001
OCEANIA	0.18	0.17	0.11	0.31	0.45	2.39 0.0251
ARBIC	19.67	13.56	15.93	0.60	1.50	8.00 <.0001
ENGL	25.21	4.69	25.95	0.97	33.37	177.97 <.0001
FRECH	11.96	11.85	5.20	0.17	0.21	1.12 0.3698
SPAN	28.69	17.20	25.04	0.70	2.31	12.29 <.0001
SCAND	11.49	10.24	6.91	0.33	0.50	2.65 0.0141
GERMIC	23.35	4.81	23.95	0.96	26.92	143.57 <.0001

Table 4

Univariate Test Statistics of Significant Individual Variables (Continued)

F Statistics, Num DF=9, Den DF=48

Variable	Total Standard Deviation	Pooled Standard Deviation	Between Standard Deviation	R-Square/ R-Square (1-RSq)	F Value	Pr > F	
SLAV	20.25	16.38	14.18	0.45	0.82	4.35	0.0004
CREOLE	0.17	0.17	0.05	0.08	0.09	0.49	0.8738
AFR_AS	9.73	9.66	4.20	0.17	0.21	1.10	0.3824
ALTAIC	18.84	17.82	9.78	0.25	0.33	1.75	0.1041
AME_IND	8.08	7.23	4.81	0.33	0.48	2.57	0.0167
AUS_NAS	12.54	9.79	9.14	0.49	0.95	5.05	<.0001
IND_EUR	21.32	20.28	10.87	0.24	0.31	1.67	0.1234
IND_DRAV	12.71	11.69	7.14	0.29	0.41	2.16	0.0418
NIG_SAH	23.38	5.18	23.92	0.96	23.17	123.56	<.0001
ROMCE	20.69	18.84	11.86	0.30	0.43	2.30	0.0308
SIN_TAI	22.74	17.34	16.98	0.51	1.04	5.57	<.0001
URA_CAU	20.23	19.16	10.47	0.25	0.32	1.73	0.1073
BRIT_REL	0.28	0.13	0.27	0.82	4.48	23.91	<.0001
LAT	27.07	18.25	22.22	0.62	1.61	8.60	<.0001
LONG	69.16	41.19	60.52	0.70	2.35	12.52	<.0001
Average R-Square							
Unweighted	0.507687						
Weighted by Variance	0.638537						

TABLE 5

Results of Applying the Discriminant Scoring Model to the Holdout Sample of Countries

Excluded from the Original GLOBE Study

Country	Linear Discriminant Cluster	
	Assignment	5 Nearest Neighbor Cluster Assignment
Afghanistan	SE-ASIA	SE-ASIA
Algeria	MID_EAST	MID_EAST
Andorra	GERMAN	GERMAN
Angola	AFRIC	AFRIC
Antigua and Barbuda	LAT_AME	LAT_AME
Armenia	EST_EUR	EST_EUR
Azerbaijan	GERMAN	GERMAN
BRUNEI DARUSSALAM	LAT_EUR	LAT_EUR
Bahamas	LAT_AME	LAT_AME
Bahrain	MID_EAST	MID_EAST
Bangladesh	GERMAN	GERMAN
Barbados	LAT_AME	LAT_AME
Belarus	EST_EUR	EST_EUR
Belgium	GERMAN	GERMAN
Belize	LAT_AME	LAT_AME
Benin	AFRIC	AFRIC
Bhutan	SE-ASIA	SE-ASIA
Bosnia and Herzegovina	EST_EUR	EST_EUR
Botswana	AFRIC	AFRIC
Bulgaria	EST_EUR	EST_EUR
Burkina Faso	AFRIC	AFRIC
Burundi	AFRIC	AFRIC
CONGO, Democratic Republic	AFRIC	AFRIC
Cambodia	SE-ASIA	SE-ASIA
Cameroon	AFRIC	AFRIC
Cape Verde	AFRIC	AFRIC
Central African Republic	AFRIC	AFRIC
Chad	AFRIC	AFRIC
Chile	LAT_AME	LAT_AME
Comoros	AFRIC	AFRIC
Congo, Republic of	AFRIC	AFRIC
Cote d'Ivoire	AFRIC	AFRIC
Croatia	EST_EUR	EST_EUR
Cuba	LAT_AME	LAT_AME
Cyprus	MID_EAST	MID_EAST
Czech Republic	EST_EUR	EST_EUR
Djibouti	AFRIC	AFRIC
Dominica	LAT_AME	LAT_AME
Dominican Republic	LAT_AME	LAT_AME
Equatorial Guinea	AFRIC	AFRIC

TABLE 5
Results of Applying the Discriminant Scoring Model to the Holdout Sample of Countries (Continued)

Country	Excluded from the Original GLOBE Study	
	Linear Discriminant Cluster Assignment	5 Nearest Neighbor Cluster Assignment
Eritrea	AFRIC	AFRIC
Estonia	NORDIC	NORDIC
Ethiopia	AFRIC	AFRIC
Fiji	LAT_EUR	LAT_EUR
Gabon	AFRIC	AFRIC
Gambia	AFRIC	AFRIC
Ghana	AFRIC	AFRIC
Grenada	LAT_AME	LAT_AME
Guinea	AFRIC	AFRIC
Guinea-Bissau	AFRIC	AFRIC
Guyana	LAT_AME	LAT_AME
Haiti	LAT_AME	LAT_AME
Honduras	LAT_AME	LAT_AME
Iceland	NORDIC	NORDIC
Iraq	MID_EAST	MID_EAST
Jamaica	LAT_AME	LAT_AME
Jordan	MID_EAST	MID_EAST
KOREA, DEMOCRATIC PEOPLE	CONFUC	CONFUC
Kenya	AFRIC	AFRIC
Kosovo	EST_EUR	EST_EUR
Kyrgyzstan	EST_EUR	EST_EUR
LAO PEOPLE'S DEMOCRATIC	SE-ASIA	SE-ASIA
Latvia	NORDIC	NORDIC
Lebanon	MID_EAST	MID_EAST
Lesotho	AFRIC	AFRIC
Liberia	AFRIC	AFRIC
Libya	MID_EAST	MID_EAST
Liechtenstein	GERMAN	GERMAN
Lithuania	NORDIC	NORDIC
Luxembourg	GERMAN	GERMAN
MOLDOVA, REPUBLIC OF	LAT_EUR	LAT_EUR
Macedonia	EST_EUR	EST_EUR
Madagascar	AFRIC	AFRIC
Malawi	AFRIC	AFRIC
Maldives	GERMAN	GERMAN
Mali	AFRIC	AFRIC
Malta	EST_EUR	EST_EUR
Mauritania	AFRIC	AFRIC
Mauritius	AFRIC	AFRIC
Micronesia, Federated Sta	LAT_EUR	LAT_EUR

TABLE 5

Results of Applying the Discriminant Scoring Model to the Holdout Sample of Countries (Continued)

Country	Excluded from the Original GLOBE Study	
	Linear Discriminant Cluster Assignment	5 Nearest Neighbor Cluster Assignment
Mongolia	CONFUC	CONFUC
Montenegro	EST_EUR	EST_EUR
Mozambique	AFRIC	AFRIC
Myanmar	LAT_EUR	LAT_EUR
Nepal	SE-ASIA	SE-ASIA
Nicaragua	LAT_AME	LAT_AME
Niger	AFRIC	AFRIC
Norway	NORDIC	NORDIC
Oman	MID_EAST	MID_EAST
PALESTINIAN TERRITORY	MID_EAST	MID_EAST
Pakistan	SE-ASIA	SE-ASIA
Panama	LAT_AME	LAT_AME
Papua New Guinea	LAT_EUR	LAT_EUR
Paraguay	LAT_AME	LAT_AME
Peru	LAT_AME	LAT_AME
Romania	LAT_EUR	LAT_EUR
Rwanda	AFRIC	AFRIC
SYRIAN ARAB REPUBLIC	MID_EAST	MID_EAST
San Marino	LAT_EUR	LAT_EUR
Saudi Arabia	MID_EAST	MID_EAST
Senegal	AFRIC	AFRIC
Serbia	EST_EUR	EST_EUR
Seychelles	AFRIC	AFRIC
Sierra Leone	AFRIC	AFRIC
Slovakia	EST_EUR	EST_EUR
Somalia	AFRIC	AFRIC
Sri Lanka	GERMAN	GERMAN
Sudan	MID_EAST	MID_EAST
Suriname	LAT_AME	LAT_AME
Swaziland	AFRIC	AFRIC
Tajikistan	EST_EUR	EST_EUR
Tanzania	AFRIC	AFRIC
Timor-Leste	ANGLO	ANGLO
Tonga	GERMAN	GERMAN
Trinidad and Tobago	LAT_AME	LAT_AME
Tunisia	MID_EAST	MID_EAST
Turkmenistan	EST_EUR	EST_EUR
Uganda	AFRIC	AFRIC

TABLE 6

Qualitative Grouping Criteria Used to Identify Cultural Clusters for Countries Around the Globe

Cultural Groups	Criteria	Religion	Ethnicity	Languages	Region
NORDIC	1		CAUC>50	SCAND+ BALTI+FINNISH >50	
	2	PROT_PCT > 80	AMI+CAUC > 90	DAN = 1	NOR_EUR + NRT_AME > 0
ANGLO			CAUC>50	ENGL>50	
GERMAN			CAUC>50	GERMIC>50	
LATIN-EUROPE	1		CAUC>50	ROM/SPAN/FRCH >50	EUROPE = 1
	2	JUDAISM>50	EU_JEWISH>50	HEBREW>50	
	3	CHRST_OT > 80	OME > 70	AFR_AS > 60 FRCH + ROMCE >	SOUTHN_EUR = 1
	4	CHRST_OT > 80	CAUC > 70	80	EUROPE = 1
LATIN-AMERICA	1	CHRST_OT > 50	CAUC>40	ROM/SPAN >50 (FRECH deleted)	CENT_AME/SOUTH_AM /NRT_AME = 1
	2	CHRST_OT > 50	CAUC>70	SPA = 1	CARIB = 1
	3	CHRST_OT > 40	CAUC + MIX > 75		CARIB = 1 or CENT_AME = 1
EASTERN EUROPE	1		CAUC + OTA + OME > 50	SLAV + ALTAIC + URALIC + IND_EUR + CAUCAS>50	CENT/SE/SOUTH/EAST_EU = 1
	2	CHRST_OT >70	CAUC > 90	IND_EUR > 70	MDE_NA >0
CONFUCIAN		BUDH_PCT + CONF_REL >50 CONFU = 1	CHI + OTA>50	ALTAIC + SIN_TIB + AUS_AS > 50	CENT_ASI + EAST_ASI + MNSE_ASI + OCEAN = 1
SOUTH-EAST ASIA	1	CONFU = 0	OTA + PAI + IND + OME + MIX > 40	IND_IRN + AUS_NAS + DRAVID + TAI_KAD + CREOLE > 40	MNSE_ASI + MID_EAST + OCEAN + SOUTH_AS + SE_ASI + CARIB =1
	2	PROT_PCT > 80	PAI > 80		OCEAN = 1
	3	BUDH_PCT >80 (not CONFU)	OTA > 80		MNSE_ASI =1
	4	PROT_PCT + CHRST_OT > 70	PAI > 60		
	5	HIND_PCT >= 20	IND+MIX > 60	IND_IRN + CREOLE > 40	SOUTH_AME +EAST_AFR >0
	6	ISLM_PCT > 90	OME >70	IND_IRN > 40	CENT_ASI = 1

TABLE 6

Qualitative Grouping Criteria Used to Identify Cultural Clusters for Countries Around the Globe (Continued)

Cultural Groups	Criteria	Religion	Ethnicity	Languages	Region
MIDDLE EAST	1	ISML_PCT>60	ARB + OME + MIX > 50	ARBIC + AFR_AS + ALTAIC > 50	MID_EAST + NOR_AFR + CENT_ASI = 1
	2	ISML_PCT>50	ARB > 90	ARBIC > 90	MDE_NA = 1
	3	ISML_PCT>80	OME > 90	ARBIC > 90	MDE_NA = 1
	4	ISML_PCT>90	OME + MIX > 60	ARBIC > 90	SUB_AFR = 1
	5	ISML_PCT>70	ARB + OTA > 80		MID_EAST = 1
AFRICAN	1		AFB > 50		SUB_AFR = 1 or CARIB = 1
	2		AFB+MIX >=60		SUB_AFR = 1 or CARIB = 1

Table 7

Original GLOBE Cluster versus Additional Countries Grouped in Same Cultural Cluster

Cultural Cluster	Original GLOBE Countries	Additional Countries Grouped In Same Cluster
AFRICAN	Namibia	Angola
	Nigeria	Antigua and Barbuda
	South Africa (black population)	Bahamas
	Zambia	Barbados
	Zimbabwe	Belize
		Benin
		Botswana
		Burkina Faso
		Burundi
		Cameroon
		Cape Verde
		Central African Republic
		Chad
		Comoros
		CONGO, Democratic Republic
		Congo, Republic of
		Cote d'Ivoire
		Djibouti
		Dominica
		Equatorial Guinea
	Eritrea	
	Ethiopia	
	Gabon	
	Gambia	
	Ghana	
	Grenada	
	Guinea	
	Guinea-Bissau	
	Haiti	
	Jamaica	
	Kenya	
	Lesotho	
	Liberia	
	Madagascar	
	Malawi	
	Mali	
	Mozambique	
	Niger	
	Rwanda	
	Senegal	
	Seychelles	
	Sierra Leone	
	Somalia	
	South Sudan	

Table 7

Original GLOBE Cluster versus Additional Countries Grouped in Same Cultural Cluster (Continued)

Cultural Cluster	Original GLOBE Countries	Additional Countries Grouped In Same Cluster
		Swaziland
		Tanzania
		Togo
		Trinidad and Tobago
		Uganda
ANGLO-SAXON	Australia	None
	Canada	
	Ireland	
	New Zealand	
	United Kingdom	
	United States	
CONFUCIAN	China	KOREA, DEMOCRATIC PEOPLE
	Hong Kong	Mongolia
	Japan	Viet Nam
	KOREA, REPUBLIC OF	
	Singapore	
	Taiwan	
EASTERN EUROPEAN	Albania	Armenia
	Georgia	Belarus
	Greece	Bosnia and Herzegovina
	Hungary	Bulgaria
	Kazakhstan	Croatia
	Poland	Cyprus
	RUSSIAN FEDERATION	Czech Republic
	Slovenia	Kosovo
		Kyrgyzstan
		Macedonia
		Montenegro
		Serbia
		Slovakia
		Ukraine
GERMAN	Austria	Belgium
	Germany	Liechtenstein
	Netherlands	Luxembourg
	Switzerland (German-speaking)	
LATIN-AMERICAN	Argentina	Chile
	Bolivia	Cuba
	Brazil	Dominican Republic
	Colombia	Honduras
	Costa Rica	Nicaragua
	Ecuador	Panama
	El Salvador	Paraguay
	Guatemala	Peru
	Mexico	Puerto Rico
	Venezuela	Uruguay

Table 7

Original GLOBE Cluster versus Additional Countries Grouped in Same Cultural Cluster (Continued)

Cultural Cluster	Original GLOBE Countries	Additional Countries Grouped In Same Cluster
LATIN-EUROPEAN	France	Andorra
	Israel	Malta
	Italy	MOLDOVA, REPUBLIC OF
	Portugal	Monaco
	Spain	Romania
MIDDLE EASTERN	Egypt	Algeria
	Kuwait	Azerbaijan
	Morocco	Bahrain
	Qatar	Iraq
	Turkey	Jordan
		Lebanon
		Libya
		Mauritania
		Oman
		PALESTINIAN TERRITORY
		Saudi Arabia
		Sudan
		SYRIAN ARAB REPUBLIC
		Tunisia
		Turkmenistan
		United Arab Emirates
		Uzbekistan
	Yemen	
NORDIC	Denmark	Estonia
	Finland	Faroe Islands
	Sweden	Greenland
		Iceland
		Latvia
		Lithuania
		Norway
SOUTH-EAST ASIAN	India	Afghanistan
	Indonesia	AMERICAN SAMOA
	IRAN (ISLAMIC REPUBLIC OF	Bangladesh
	Malaysia	Bhutan
	Philippines	BRUNEI DARUSSALAM
	Thailand	Cambodia
		Cook Islands
		Fiji
		Guyana
		LAO PEOPLE'S DEMOCRATIC
		Maldives
		Mauritius
		Micronesia, Federated Sta

Table 7

Original GLOBE Cluster versus Additional Countries Grouped in Same Cultural Cluster (Continued)

Cultural Cluster	Original GLOBE Countries	Additional Countries Grouped In Same Cluster
		Myanmar
		Nepal
		Pakistan
		Palau
		Papua New Guinea
		Sri Lanka
		Suriname
		Tajikistan
		Timor-Leste
		Tonga

APPENDIX A

LIST OF COUNTRIES AND BASIS OF COUNTRY CULTURAL CLUSTERING BASED ON GLOBE STUDY

COUNTRY	ORIGINAL GLOBE CLUSTER	ASSIGNED CLUSTER	Basis for Clustering									
			Ethnicity	Ethnicity_PCT	Dominant Religion	Dominant Religion_%	Dominant native language	Dominant native language_%	Region	COLONIZER	Official Language-1	Official Language-2
Namibia	AFRIC	AFRIC_2	AFB	87.50	PROT_PCT	68.00	NIG_CON	62.376	SOUTHN_AFR	GBR	English	Afrikaans
Nigeria	AFRIC	AFRIC_2	AFB	100.00	ISLM_PCT	47.90	NIG_CON	86.104	WEST_AFR	GBR	English	Yoruba
South Africa	AFRIC	AFRIC_2	AFB	79.00	PROT_PCT	68.00	NIG_CON	61.557	SOUTHN_AFR	DUT	English	Afrikaans
Zambia	AFRIC	AFRIC_2	AFB	99.50	CHRST_OT	70.60	NIG_CON	94.372	EAST_AFR	GBR	English	native
Zimbabwe	AFRIC	AFRIC_2	AFB	98.00	CHRST_OT	52.00	NIG_CON	99.931	EAST_AFR	GBR	English	Shona
Angola		AFRIC_2	AFB	97.00	CHRST_OT	75.00	NIG_CON	50.947	CENT_AFR	POR	Portuguese	Native
Antigua and Barbuda		AFRIC_2	AFB	91.00	PROT_PCT	82.00	ENGL	91.566	CARIB	GBR	English	Creole
Bahamas		AFRIC_2	AFB	85.00	PROT_PCT	76.00	CREOLE	69.659	CARIB	GBR	English	Creole
Barbados		AFRIC_2	AFB	93.00	PROT_PCT	67.00	CREOLE	88.699	CARIB	GBR	English	
Belize		AFRIC_2	MIX	73.00	CHRST_OT	46.70	CREOLE	25.362	CARIB	GBR	English	Spanish
Benin		AFRIC_2	AFB	100.00	CHRST_OT	38.80	NIG_CON	27.488	WEST_AFR	FRA	French	native
Botswana		AFRIC_2	AFB	93.00	PROT_PCT	41.00	NIG_CON	66.449	SOUTHN_AFR	GBR	English	Setswana
Burkina Faso		AFRIC_2	AFB	100.00	ISLM_PCT	58.90	NIG_CON	48.446	WEST_AFR	FRA	French	native
Burundi		AFRIC_2	AFB	99.90	CHRST_OT	70.00	NIG_CON	58.613	EAST_AFR	BEL	French	native
Cameroon		AFRIC_2	AFB	99.00	OTHER_RELG	42.00	NIG_CON	99.820	CENT_AFR	FRA	English	French
Cape Verde		AFRIC_2	MIX	71.00	CHRST_OT	91.50	CREOLE	77.712	WEST_AFR	POR	Portuguese	
Central African Republic		AFRIC_2	AFB	100.00	OTHER_RELG	41.10	NIG_CON	98.466	CENT_AFR	FRA	French	native
Chad		AFRIC_2	AFB	87.70	ISLM_PCT	55.70	ARBIC	78.870	CENT_AFR	FRA	Arabic	French
Comoros		AFRIC_2	AFB	100.00	ISLM_PCT	97.00	ARBIC	50.298	EAST_AFR	FRA	Arabic	French
CONGO, Democratic Republic		AFRIC_2	AFB	100.00	CHRST_OT	49.10	NIG_CON	21.876	CENT_AFR	BEL	French	native
Congo, Republic of		AFRIC_2	AFB	97.00	CHRST_OT	85.70	NIG_CON	69.474	CENT_AFR	FRA	French	native
Cote d'Ivoire		AFRIC_2	AFB	97.20	ISLM_PCT	36.90	NIG_CON	18.317	WEST_AFR	FRA	French	native

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LIST OF COUNTRIES AND BASIS OF COUNTRY CULTURAL CLUSTERING BASED ON GLOBE STUDY (Continued)

COUNTRY	ORIGINAL GLOBE CLUSTER	ASSIGNED CLUSTER	Basis for Clustering									Official Language-2
			Ethnicity	Ethnicity_PCT	Dominant Religion	Dominant Religion_%	Dominant native language	Dominant native language_%	Region	COLONIZER	Official Language-1	
Djibouti		AFRIC_2	AFB	95.00	ISLM_PCT	97.00	AFR_AS	49.279	EAST_AFR	FRA	Arabic	French
Dominica		AFRIC_2	AFB	86.80	CHRST_OT	73.70	CREOLE	62.941	CARIB	GBR	English	
Equatorial Guinea		AFRIC_2	AFB	100.00	CHRST_OT	88.50	NIG_CON	61.364	CENT_AFR	SPA	French	native
Eritrea		AFRIC_2	AFB	100.00	CHRST_OT	60.50	AFR_AS	79.302	EAST_AFR	ITA	English	Afar
Ethiopia		AFRIC_2	AFB	100.00	CHRST_OT	44.50	AFR_AS	98.667	EAST_AFR	NONE	Amharic	English
Gabon		AFRIC_2	AFB	93.30	CHRST_OT	52.00	NIG_CON	64.369	CENT_AFR	FRA	French	native
Gambia		AFRIC_2	AFB	99.00	ISLM_PCT	95.30	NIG_CON	61.224	WEST_AFR	GBR	English	Creole
Ghana		AFRIC_2	AFB	100.00	CHRST_OT	35.80	NIG_CON	54.981	WEST_AFR	GBR	English	Native
Grenada		AFRIC_2	AFB	82.00	CHRST_OT	67.30	CREOLE	84.952	CARIB	FRA	English	Creole
Guinea		AFRIC_2	AFB	100.00	ISLM_PCT	84.20	NIG_CON	61.657	WEST_AFR	FRA	French	native
Guinea-Bissau		AFRIC_2	AFB	99.00	OTHER_RELG	47.20	NIG_CON	41.453	WEST_AFR	POR	Portuguese	
Haiti		AFRIC_2	AFB	95.00	CHRST_OT	67.70	CREOLE	74.871	CARIB	FRA	French	Creole
Jamaica		AFRIC_2	AFB	91.20	PROT_PCT	60.00	CREOLE	99.553	CARIB	GBR	English	Creole
Kenya		AFRIC_2	AFB	100.00	CHRST_OT	47.10	NIG_CON	37.247	EAST_AFR	GBR	English	Native
Lesotho		AFRIC_2	AFB	99.70	CHRST_OT	70.00	NIG_CON	100.000	SOUTHN_AFR	GBR	English	Native
Liberia		AFRIC_2	AFB	100.00	OTHER_RELG	47.00	ENGL	68.332	WEST_AFR	NONE	English	Native
Madagascar		AFRIC_2	MIX	98.00	OTHER_RELG	57.70	AUS_NES	80.298	EAST_AFR	FRA	French	Malagasy
Malawi		AFRIC_2	AFB	100.00	CHRST_OT	44.40	NIG_CON	68.048	EAST_AFR	GBR	English	Chichewa
Mali		AFRIC_2	AFB	95.00	ISLM_PCT	92.40	NIG_CON	99.189	WEST_AFR	FRA	French	native
Mauritania		AFRIC_2	MIX	40.00	ISLM_PCT	99.20	ARBIC	92.303	WEST_AFR	FRA	Arabic	
Mozambique		AFRIC_2	AFB	99.66	CHRST_OT	34.10	NIG_CON	55.511	EAST_AFR	POR	Portuguese	native
Niger		AFRIC_2	AFB	100.00	ISLM_PCT	94.00	AFR_AS	41.164	WEST_AFR	FRA	French	Hausa
Rwanda		AFRIC_2	AFB	100.00	CHRST_OT	49.70	NIG_CON	70.284	EAST_AFR	BEL	English	French
Senegal		AFRIC_2	AFB	89.60	ISLM_PCT	90.00	NIG_CON	68.394	WEST_AFR	FRA	French	native
Seychelles		AFRIC_2	MIX	100.00	CHRST_OT	86.70	CREOLE	84.535	EAST_AFR	GBR	English	French
Sierra Leone		AFRIC_2	AFB	100.00	ISLM_PCT	69.00	NIG_CON	48.514	WEST_AFR	GBR	English	Creole
Somalia		AFRIC_2	AFB	100.00	ISLM_PCT	98.60	AFR_AS	100.000	EAST_AFR	GBR	Arabic	Somali

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LIST OF COUNTRIES AND BASIS OF COUNTRY CULTURAL CLUSTERING BASED ON GLOBE STUDY (Continued)

COUNTRY	ORIGINAL GLOBE CLUSTER	ASSIGNED CLUSTER	Basis for Clustering									Official Language-1	Official Language-2
			Ethnicity	Ethnicity_PCT	Dominant Religion	Dominant Religion_%	Dominant native language	Dominant native language_%	Region	COLONIZER			
Swaziland		AFRIC_2	AFB	97.00	PROT_PCT	66.00	NIG_CON	90.315	SOUTHN_AFR	GBR	English	Swati	
Tanzania		AFRIC_2	AFB	99.00	CHRST_OT	48.00	NIG_CON	99.694	EAST_AFR	GBR	English	Swahili	
Togo		AFRIC_2	AFB	99.00	OTHER_RELG	58.80	NIG_CON	28.306	WEST_AFR	FRA	French	Native	
Trinidad and Tobago		AFRIC_2	IND	40.00	CHRST_OT	33.00	CREOLE	93.731	CARIB	GBR	English	French native	
Uganda		AFRIC_2	AFB	100.00	CHRST_OT	53.60	NIG_CON	29.433	EAST_AFR	GBR	English	native	
Australia	ANGLO	ANGLO_2	CAUC	92.00	PROT_PCT	42.00	ENGL	85.672	OCEANIA	GBR	English	Native	
Canada	ANGLO	ANGLO_2	CAUC	66.00	CHRST_OT	48.10	ENGL	61.975	NOR_AME	GBR	English	French	
Ireland	ANGLO	ANGLO_2	CAUC	94.90	CHRST_OT	87.25	ENGL	92.928	CARIB	GBR	English	Gaelic	
New Zealand	ANGLO	ANGLO_2	CAUC	56.80	PROT_PCT	47.00	ENGL	78.350	OCEANIA	GBR	English	native	
United Kingdom	ANGLO	ANGLO_2	CAUC	94.90	PROT_PCT	59.56	ENGL	96.467	CARIB	NONE	English		
United States	ANGLO	ANGLO_2	CAUC	79.96	PROT_PCT	55.00	ENGL	71.703	NOR_AME	GBR	English	Spanish	
China	CONFUC	CONFUC_	CHI	91.50	OTHER_RELG	56.87	SIN_TIB	83.051	EAST_ASI	SPA	Chinese		
Hong Kong	CONFUC	CONFUC_	CHI	95.00	OTHER_RELG	56.89	SIN_TIB	94.000	EAST_ASI	GBR	English	Chinese	
Japan	CONFUC	CONFUC_	OTA	99.00	BUDH_PCT	53.90	ALTAIC ???	95.377	EAST_ASI	NONE	Japanese		
KOREA, REPUBLIC OF	CONFUC	CONFUC_	OTA	100.00	OTHER_RELG	40.20	ALTAIC ???	87.738	EAST_ASI	JAP	Korean	English	
Singapore	CONFUC	CONFUC_	CHI	76.80	BUDH_PCT	51.50	SIN_TIB	41.745	MNSE_ASI	GBR	English	Chinese	
Taiwan	CONFUC	CONFUC_	CHI	98.00	BUDH_PCT	68.33	SIN_TIB	95.341	EAST_ASI	JAP	Chinese	Taiwanese	
KOREA, DEMOCRATIC PEOPLE		CONFUC_	OTA	100.00	OTHER_RELG	91.40	ALTAIC	84.688	EAST_ASI	JAP	Korean		
Mongolia		CONFUC_	OTA	99.90	BUDH_PCT	72.00	ALTAIC	97.327	EAST_ASI	RUS	Mongolian		
Viet Nam		CONFUC_	OTA	100.00	BUDH_PCT	50.33	AUS_AS	78.726	MNSE_ASI	FRA	Vietnamese	English	

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LIST OF COUNTRIES AND BASIS OF COUNTRY CULTURAL CLUSTERING BASED ON GLOBE STUDY (Continued)

COUNTRY	ORIGINAL GLOBE CLUSTER	ASSIGNED CLUSTER	Basis for Clustering									Official Language-2
			Ethnicity	Ethnicity_PCT	Dominant Religion	Dominant Religion_%	Dominant native language	Dominant native language_%	Region	COLONIZER	Official Language-1	
Albania	EST_EUR	EAST_EU	CAUC	100.00	ISLM_PCT	70.00	IND_EUR	91.315	SE_EUR	ITA	Albanian	Greek
Georgia	EST_EUR	EAST_EU	CAUC	100.00	CHRST_OT	86.46	CAUCAS	87.637	EAST_EUR	NONE	Georgian	Russian
Greece	EST_EUR	EAST_EU	CAUC	93.00	CHRST_OT	94.72	IND_EUR	96.396	SE_EUR	NONE	Greek	English
Hungary	EST_EUR	EAST_EU	CAUC	100.00	CHRST_OT	50.40	URALIC	93.643	CENT_EUR	RUS	Magyar	
Kazakhstan	EST_EUR	EAST_EU	OTA	68.60	ISLM_PCT	52.00	SLAV	40.957	CENT_ASI	RUS	Russian	
Poland	EST_EUR	EAST_EU	CAUC	97.30	CHRST_OT	95.36	SLAV	94.754	CENT_EUR	USA	Polish	
RUSSIAN FEDERATION	EST_EUR	EAST_EU	CAUC	81.80	CHRST_OT	70.02	SLAV	80.678	EAST_EUR	NONE	Russian	
Slovenia	EST_EUR	EAST_EU	CAUC	100.00	CHRST_OT	57.00	SLAV	88.535	SOUTHN_EUR	RUS	Slovenian	
Armenia		EAST_EU	CAUC	97.90	CHRST_OT	95.00	IND_EUR	96.914	EAST_EUR	RUS	Armenian	Russian
Belarus		EAST_EU	CAUC	100.00	CHRST_OT	75.00	SLAV	100.000	EAST_EUR	RUS	Russian	
Bosnia and Herzegovina		EAST_EU	CAUC	99.40	CHRST_OT	50.96	SLAV	96.271	SE_EUR	NONE	Bosnian	Croatian
Bulgaria		EAST_EU	CAUC	76.90	CHRST_OT	83.00	SLAV	87.725	SE_EUR	FRA	Bulgarian	Turkish
Croatia		EAST_EU	CAUC	100.00	CHRST_OT	90.60	SLAV	87.910	SE_EUR	NONE	Croatian	
Cyprus		EAST_EU	CAUC	95.00	CHRST_OT	75.00	IND_EUR	79.561	MID_EAST	GBR	Greek	Turkish
Czech Republic		EAST_EU	CAUC	96.00	OTHER_RELG	70.50	SLAV	90.757	CENT_EUR	RUS	Czech	
Kosovo		EAST_EU	OME	92.00	ISLM_PCT	91.70	IND_EUR	91.954	SE_EUR	NONE	Albanian	Serbian
Kyrgyzstan		EAST_EU	OTA	78.70	ISLM_PCT	75.00	ALTAIC	47.079	CENT_ASI	RUS	Russian	
Macedonia		EAST_EU	CAUC	93.90	CHRST_OT	62.10	SLAV	63.470	SE_EUR	NONE	Macedonian	Albanian
Montenegro		EAST_EU	CAUC	88.00	CHRST_OT	77.80	SLAV	40.461	SE_EUR	NONE	Serbian	
Serbia		EAST_EU	CAUC	100.00	CHRST_OT	90.60	SLAV	45.625	SE_EUR	OTO	Serbian	
Slovakia		EAST_EU	CAUC	100.00	CHRST_OT	65.58	SLAV	85.576	CENT_EUR	RUS	Slovak	
Ukraine		EAST_EU	CAUC	100.00	CHRST_OT	90.60	SLAV	93.994	EAST_EUR	RUS	Ukrainian	Russian
Austria	GERMAN	GERMANI	CAUC	97.60	CHRST_OT	65.20	GERMIC	99.748	CENT_EUR	NONE	German	
Germany	GERMAN	GERMANI	CAUC	97.60	OTHER_RELG	33.98	GERMIC	98.364	CENT_EUR	NONE	German	
Netherlands	GERMAN	GERMANI	CAUC	85.70	OTHER_RELG	49.97	GERMIC	100.000	WESTN_EUR	NONE	Dutch	
Switzerland	GERMAN	GERMANI	CAUC	94.00	PROT_PCT	49.00	GERMIC	62.500	CENT_EUR	FRA	French	German
Belgium		GERMANI	CAUC	89.00	CHRST_OT	46.65	GERMIC	62.894	WESTN_EUR	NONE	French	Dutch
Liechtenstein		GERMANI	CAUC	100.00	CHRST_OT	80.80	GERMIC	82.857	CENT_EUR	NONE	German	

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COUNTRY	ORIGINAL GLOBE CLUSTER	ASSIGNED CLUSTER	Basis for Clustering									Official Language-1	Official Language-2
			Ethnicity	Ethnicity_PCT	Dominant Religion	Dominant Religion_%	Dominant native language	Dominant native language_%	Region	COLONIZER			
Luxembourg		GERMANI	CAUC	94.80	CHRST_OT	86.00	GERMIC	57.090	WESTN_EUR	NONE	French		
Argentina	LAT_AME	LATIN_A	CAUC	97.00	CHRST_OT	90.70	SPAN	85.168	SOUTH_AME	SPA	Spanish		
Bolivia	LAT_AME	LATIN_A	AMI	55.00	CHRST_OT	81.00	AME_IND	51.402	SOUTH_AME	SPA	Spanish		
Brazil	LAT_AME	LATIN_A	CAUC	53.80	CHRST_OT	75.40	ROMCE	89.386	SOUTH_AME	SPA	Portuguese	Other	
Colombia	LAT_AME	LATIN_A	MIX	75.00	CHRST_OT	94.10	SPAN	75.646	SOUTH_AME	SPA	Spanish		
Costa Rica	LAT_AME	LATIN_A	CAUC	94.00	CHRST_OT	66.30	SPAN	76.265	CENT_AMER	SPA	Spanish		
Ecuador	LAT_AME	LATIN_A	AMI	90.00	CHRST_OT	95.00	SPAN	72.736	SOUTH_AME	SPA	Spanish		
El Salvador	LAT_AME	LATIN_A	MIX	90.00	CHRST_OT	60.70	SPAN	88.482	CENT_AMER	SPA	Spanish		
Guatemala	LAT_AME	LATIN_A	MIX	59.40	CHRST_OT	57.50	SPAN	36.743	CENT_AMER	SPA	Spanish		
Mexico	LAT_AME	LATIN_A	MIX	60.00	CHRST_OT	88.50	SPAN	82.127	CENT_AMER	SPA	Spanish		
Venezuela	LAT_AME	LATIN_A	MIX	49.90	CHRST_OT	69.00	SPAN	80.446	SOUTH_AME	SPA	Spanish		
Chile		LATIN_A	CAUC	95.40	CHRST_OT	72.20	SPAN	98.470	SOUTH_AME	SPA	Spanish		
Cuba		LATIN_A	CAUC	65.10	CHRST_OT	79.71	SPAN	88.810	CARIB	SPA	Spanish		
Dominican Republic		LATIN_A	MIX	73.00	CHRST_OT	84.20	SPAN	72.756	CARIB	FRA	Spanish		
Honduras		LATIN_A	MIX	90.00	CHRST_OT	60.00	SPAN	81.943	CENT_AMER	SPA	Spanish		
Nicaragua		LATIN_A	MIX	69.00	CHRST_OT	73.50	SPAN	79.627	CENT_AMER	SPA	Spanish		
Panama		LATIN_A	MIX	70.00	CHRST_OT	77.00	SPAN	64.975	CENT_AMER	SPA	Spanish		
Paraguay		LATIN_A	MIX	95.00	CHRST_OT	94.90	AME_IND	78.760	SOUTH_AME	SPA	Spanish		
Peru		LATIN_A	AMI	45.00	CHRST_OT	86.60	SPAN	73.330	SOUTH_AME	SPA	Spanish		
Uruguay		LATIN_A	CAUC	88.00	CHRST_OT	51.01	SPAN	90.198	SOUTH_AME	SPA	Spanish		
France	LAT_EUR	LATIN_E	CAUC	91.83	CHRST_OT	51.50	FREN	87.226	WESTN_EUR	NONE	French	native	
Israel	LAT_EUR	LATIN_E	OME	59.13	OTHER_RELG	78.60	AFR_AS	69.435	MID_EAST	GBR	Arabic	Hebrew	
Italy	LAT_EUR	LATIN_E	CAUC	96.07	CHRST_OT	89.80	ROMCE	93.783	SOUTHN_EUR	NONE	Italian	German	
Portugal	LAT_EUR	LATIN_E	CAUC	100.00	CHRST_OT	85.70	ROMCE	94.985	WESTN_EUR	NONE	Portuguese		
Spain	LAT_EUR	LATIN_E	CAUC	100.00	CHRST_OT	76.33	SPAN	90.790	WESTN_EUR	NONE	Spanish		
Andorra		LATIN_E	CAUC	94.00	CHRST_OT	90.00	SPAN	76.164	SOUTHN_EUR	FRA	Catalan	French	

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COUNTRY	ORIGINAL GLOBE CLUSTER	ASSIGNED CLUSTER	Basis for Clustering									Official Language-1	Official Language-2
			Ethnicity	Ethnicity_PCT	Dominant Religion	Dominant Religion_%	Dominant native language	Dominant native language_%	Region	COLONIZER			
Malta		LATIN_E	OME	100.00	CHRST_OT	98.00	AFR_AS	71.361	SOUTHN_EUR	GBR	English	Maltese	
MOLDOVA, REPUBLIC OF		LATIN_E	CAUC	100.00	CHRST_OT	98.04	ROMCE	68.610	EAST_EUR	RUS	Moldovan	Russian	
Monaco		LATIN_E	CAUC	79.00	CHRST_OT	88.00	FREN	52.727	WESTN_EUR	NONE	French		
Romania		LATIN_E	CAUC	100.00	CHRST_OT	91.50	ROMCE	91.215	SE_EUR	RUS	Romanian	Hungarian	
San Marino		LATIN_E	CAUC	100.00	CHRST_OT	97.00	ROMCE	83.667	SOUTHN_EUR	ITA	Italian	Creole	
Egypt	MID_EAST	MID_EAS	ARB	99.60	ISLM_PCT	90.00	ARBIC	95.852	NOR_AFR	GBR	Arabic		
Kuwait	MID_EAST	MID_EAS	ARB	80.00	ISLM_PCT	85.00	ARBIC	99.815	MID_EAST	GBR	Arabic		
Morocco	MID_EAST	MID_EAS	ARB	99.00	ISLM_PCT	98.00	ARBIC	61.810	NOR_AFR	FRA	Arabic	French	
Qatar	MID_EAST	MID_EAS	ARB	40.00	ISLM_PCT	77.50	ARBIC	40.000	MID_EAST	GBR	Arabic	English	
Turkey	MID_EAST	MID_EAS	OME	93.00	ISLM_PCT	98.60	ALTAIC	58.767	MID_EAST	NONE	Turkish	Kurdish	
Algeria		MID_EAS	MIX	99.00	ISLM_PCT	98.20	ARBIC	62.397	NOR_AFR	FRA	Arabic	French	
Azerbaijan		MID_EAS	OME	90.60	ISLM_PCT	95.00	ALTAIC	73.036	CENT_ASI	RUS	Azerbaijani		
Bahrain		MID_EAS	ARB	46.00	ISLM_PCT	81.20	ARBIC	100.000	MID_EAST	GBR	Arabic		
Iraq		MID_EAS	ARB	78.00	ISLM_PCT	96.00	ARBIC	63.724	MID_EAST	GBR	Arabic	Kurdish	
Jordan		MID_EAS	ARB	98.00	ISLM_PCT	93.00	ARBIC	76.659	MID_EAST	GBR	Arabic		
Lebanon		MID_EAS	ARB	95.00	ISLM_PCT	59.70	ARBIC	92.637	MID_EAST	FRA	Arabic	French	
Libya		MID_EAS	AFB	97.00	ISLM_PCT	96.60	ARBIC	86.414	NOR_AFR	ITA	Arabic	Italian	
Oman		MID_EAS	ARB	70.68	ISLM_PCT	87.70	ARBIC	50.379	MID_EAST	GBR	Arabic	English	
PALESTINIAN TERRITORY		MID_EAS	ARB	83.00	ISLM_PCT	96.00	ARBIC	42.796	MID_EAST	GBR	Arabic	English	
Saudi Arabia		MID_EAS	ARB	90.00	ISLM_PCT	93.00	ARBIC	98.255	MID_EAST	OTO	Arabic		
Sudan		MID_EAS	ARB	70.00	ISLM_PCT	71.40	ARBIC	90.000	NOR_AFR	GBR	Arabic		
SYRIAN ARAB REPUBLIC		MID_EAS	ARB	90.30	ISLM_PCT	90.00	ARBIC	60.707	MID_EAST	FRA	Arabic	Kurdish	
Tunisia		MID_EAS	ARB	98.00	ISLM_PCT	99.80	ARBIC	89.065	NOR_AFR	FRA	Arabic	French	
Turkmenistan		MID_EAS	OME	85.00	ISLM_PCT	90.00	ALTAIC	77.049	CENT_ASI	RUS	Turkmen	Russian	
United Arab Emirates		MID_EAS	OTA	50.00	ISLM_PCT	76.00	ARBIC	95.614	MID_EAST	GBR	Arabic	Persian	
Uzbekistan		MID_EAS	OME	80.00	ISLM_PCT	94.00	ALTAIC	65.085	CENT_ASI	RUS	Uzbek	Russian	
Yemen		MID_EAS	ARB	100.00	ISLM_PCT	99.00	ARBIC	69.544	MID_EAST	OTO	Arabic		

APPENDIX A

LIST OF COUNTRIES AND BASIS OF COUNTRY CULTURAL CLUSTERING BASED ON GLOBE STUDY (Continued)

COUNTRY	ORIGINAL GLOBE CLUSTER	ASSIGNED CLUSTER	Basis for Clustering									Official Language-1	Official Language-2
			Ethnicity	Ethnicity_PCT	Dominant Religion	Dominant Religion_%	Dominant native language	Dominant native language_%	Region	COLONIZER			
Denmark	NORDIC	NORDIC_	CAUC	93.14	PROT_PCT	91.00	GERMIC	98.659	NOR_EUR	ITA	Danish	English	
Finland	NORDIC	NORDIC_	CAUC	100.00	PROT_PCT	85.00	URALIC	90.453	NOR_EUR	NONE	Finnish	Swedish	
Sweden	NORDIC	NORDIC_	CAUC	95.77	PROT_PCT	86.00	GERMIC	87.519	NOR_EUR	NONE	Swedish		
Estonia		NORDIC_	CAUC	100.00	PROT_PCT	52.00	URALIC	70.074	NOR_EUR	RUS	Estonian	Russian	
Greenland		NORDIC_	AMI	89.00	PROT_PCT	96.60	GERMIC	100.000	NOR_AME	NOR	Greenlandic	Danish	
Iceland		NORDIC_	CAUC	94.00	PROT_PCT	87.00	GERMIC	77.703	NOR_EUR	NOR	Icelandic	English	
Latvia		NORDIC_	CAUC	100.00	PROT_PCT	50.00	IND_EUR	60.382	NOR_EUR	RUS	Latvian	Russian	
Lithuania		NORDIC_	CAUC	100.00	CHRST_OT	83.90	IND_EUR	86.423	NOR_EUR	NONE	Lithuanian	Russian	
Norway		NORDIC_	CAUC	100.00	PROT_PCT	90.00	GERMIC	100.000	NOR_EUR	NONE	Norwegian		
India	SE-ASIA	SE_ASIA	IND	97.00	HIND_PCT	80.50	IND_IRN	68.526	SOUTH_ASI	GBR	English	Hindi	
Indonesia	SE-ASIA	SE_ASIA	OTA	100.00	ISLM_PCT	84.00	AUS_NES	56.782	MNSE_ASI	DUT	Bahasa	English	
IRAN (ISLAMIC REPUBLIC OF	SE-ASIA	SE_ASIA	OME	98.00	ISLM_PCT	99.00	IND_IRN	42.368	MID_EAST	NONE	Persian	Turkic	
Malaysia	SE-ASIA	SE_ASIA	OTA	61.40	ISLM_PCT	61.40	AUS_NES	47.259	MNSE_ASI	GBR	English	Malay	
Philippines	SE-ASIA	SE_ASIA	OTA	100.00	CHRST_OT	80.40	AUS_NES	63.170	MNSE_ASI	SPA	English	Tagalog	
Thailand	SE-ASIA	SE_ASIA	OTA	86.00	BUDH_PCT	93.00	TAI_KAD	72.536	MNSE_ASI	NONE	Siamese	English	
Afghanistan		SE_ASIA	OME	96.00	ISLM_PCT	98.00	IND_IRN	65.225	MID_EAST	GBR	Persian	Pashtu	
Bangladesh		SE_ASIA	IND	100.00	ISLM_PCT	90.00	IND_IRN	86.769	SOUTH_ASI	GBR	English	Bangla	
Bhutan		SE_ASIA	OTA	100.00	BUDH_PCT	78.33	SIN_TIB	49.765	SOUTH_ASI	GBR	Dzongkha		
BRUNEI DARUSSALAM		SE_ASIA	OTA	69.70	ISLM_PCT	51.90	AUS_NES	57.487	MNSE_ASI	GBR	Malay	English	
Cambodia		SE_ASIA	OTA	95.00	BUDH_PCT	96.40	AUS_NES	90.212	MNSE_ASI	FRA	Khmer	French	
Fiji		SE_ASIA	PAI	57.30	PROT_PCT	42.50	AUS_NES	46.739	OCEANIA	GBR	English	Fijian	
Guyana		SE_ASIA	IND	43.50	PROT_PCT	38.00	CREOLE	54.691	SOUTH_AME	GBR	English	Creole	
LAO PEOPLE'S DEMOCRATIC		SE_ASIA	OTA	100.00	BUDH_PCT	82.50	TAI_KAD	68.170	MNSE_ASI	FRA	Lao	French	
Maldives		SE_ASIA	IND	100.00	ISLM_PCT	98.40	IND_IRN	99.162	SOUTH_ASI	GBR	Arabic		
Mauritius		SE_ASIA	IND	68.00	HIND_PCT	48.00	CREOLE	62.591	EAST_AFR	GBR	English	Creole	
Micronesia, Federated States		SE_ASIA	PAI	91.80	CHRST_OT	48.40	AUS_NES	44.455	OCEANIA	USA	English	Native	

APPENDIX A

LIST OF COUNTRIES AND BASIS OF COUNTRY CULTURAL CLUSTERING BASED ON GLOBE STUDY (Continued)

COUNTRY	ORIGINAL GLOBE CLUSTER	ASSIGNED CLUSTER	Basis for Clustering									Official Language-1	Official Language-2
			Ethnicity	Ethnicity_PCT	Dominant Religion	Dominant Religion_%	Dominant native language	Dominant native language_%	Region	COLONIZER			
Myanmar		SE_ASIA	OTA	90.00	BUDH_PCT	90.00	SIN_TIB	78.000	MNSE_ASI	GBR	Burmese		
Nepal		SE_ASIA	OTA	100.00	HIND_PCT	80.60	IND_IRN	66.372	SOUTH_ASI	NONE	Nepali	English	
Pakistan		SE_ASIA	OME	93.72	ISLM_PCT	96.40	IND_IRN	61.975	MID_EAST	GBR	English	Pashtu	

Explanatory Notes

- AMI American Indian
- AFB African Black
- CAUC European Caucasian
- ARB Arabic
- OME Other Middle Eastern
- IND Indian (East)
- CHI Chinese
- OTA Other Asian
- PAI Pacific Islander
- MIX Mixed Race (two or more ethnic groups)
- OTHER Not specifically identified in source

- PROT_PCT Percent of population classified as Christian Protestant (including Pentacostals)
- CHRST_OT Percent of population classified as Catholic or Orthodox Christian
- BUDH_PCT Percent of population following Buddhist faith
- ISLM_PCT Percent of population following the Islamic faith
- HIND_PCT Percent following Hindi faith
- CONFUC Percent deemed to be following Confucian philosophy
- OTHER_REL Other Religions (including No religion)

ARABIC Arabic as official language
ENGLISH English as official language
FRENCH French as official language
SPANISH Spanish as official language
CHINESE Chinese as official language
RUSSIAN Russian as official language
PORTUGUE Portuguese as official language

SUB_AFR Sub-Saharan Africa = SOUTHN_AFR+WEST_AFR+EAST_AFR+CENT_AFR
MDE_NA Middle East and North Africa = MID_EAST + NOR_AFR
WESTN_EU Western Europe
NOR_EUR Northern Europe
CENT_EUR Central Europe
SE_EUR South-Eastern Europe
SOUTH_EU Southern Europe
CE_ASI Central Asia
SE_ASI South-Eastern Asia
NOR_AME North America
CENT_AME Central America
CARIB Caribbean Region
SOU_AME South America
OCEANIA Oceania

ARBIC Arabic as native language
ENGL English as native language
FRECH French as native language

**Explanatory
Notes**

SPAN Spanish as native language
SCAND Scandinavian as native language
GERMIC Germanic subgroup of languages as native language

SLAV	Slavic subgroup of languages as native language
CREOLE	Creole (all versions) as native language
HINDI	Hindi as native language
CHINESE	Mandarin Chinese as native language
AFR_AS	Afro-Asiatic group of languages
ALTAIC	Altaic group of languages
AME_IND	American Indian group of languages (includes many independent groups)
AUS_NAS	Austronesian group of languages
IND_EUR	Indo-European group of languages (excluding those specifically identified above)
IND_IRN	Indo-Iranian group of languages
IND_DRAV	Indo-Iranian and Dravidian groups of languages
NIG_SAH	Niger-Congo and Nilo-Saharan group of languages
ROMCE	Romance subgroup of languages (excluding French and Spanish listed above already)
SIN_TAI	Sini-Tibetan group of languages
URA_CAU	Uralic and Caucasian groups of languages

BEL	Belgium
DAN	Denmark
DUT	The Netherlands
FRA	France
GBR	Great Britain
ITA	Italy
JAP	Japan
OTO	Ottoman Empire
POR	Portugal
RUS	Soviet Union/Russia
SPA	Spain
USA	USA
NONE	Not colonized
