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Relationship Between Culture and Logistics Performance

Abstract

Logistics is the backbone of trade where logistics performance can effect trade costs and determine countries capabilities to compete globally. One of the ways to measure logistics performance is using the Logistics Performance Index (LPI). Logistics Performance Index is a benchmarking tool developed by the World Bank to help countries identify the challenges and opportunities they face in their performance on logistics. Understanding the relationship between culture and logistics performance has significant policy and international business implications because it suggests that some nations are culturally inclined to live in an environment that fosters logistics performance more than others. This study explores the relationship between Hofstede's Dimensions of Culture and main indicators of logistics performance index using data from 77 countries. The findings suggest that three of the Hofstede's Dimensions of Culture, individualism, indulgence and long term orientation exhibit a positive relationship while masculinity, power distance and uncertainty avoidance show negative relationship with certain aspects of Logistics Performance Index.

Keywords: *Logistics, Logistics Performance, Culture, Hofstede's Dimensions, Logistics Competence.*

1. Introduction

The collective work of Hofstede (1980, 1983, 1984, 1997, 2011) with his collaborations with Michael Minkov, Michael Harris Bond, and Gert Jan Hofstede on the concept of organizational culture, which can be expressed as the important values, standards, norms, beliefs and understandings shared by the members of the organization, has an important place in the literature. As a result of his studies with more than 100,000 employees in 40 countries, he identified six dimensions as power distance, uncertainty avoidance, individualism/collectivism, masculinity/femininity, indulgence/restraint (Hofstede et al, 2010) and long term/short term orientation (Hofstede and Bond, 1988). Power distance can be defined as how much a society or group accepts that the power is not evenly distributed in an institution. It is about whether or not the power distribution is equal between people in an institution or community (Hofstede, 1984). Uncertainty avoidance is the degree to which the environment people lives in or will live in the future is able to tolerate the degree of uncertainty. The avoidance of uncertainty is a sign of how much people in a society feel uncomfortable in the event of uncertainty, and how much they prefer the environments where harmony is maintained (Hofstede, 1997). Individualism dimension defines the relationship between the individual and the society in which the individual lives. In short, individualism, depending on what the person wants as an individual, is the clash of the interests of the community (Hofstede, 1983). Masculinity/femininity culture dimension is the reference to the role differences between men and women in society or in business. While the masculinity is defined as success, heroism, assertiveness and financial success, femininity is defined as humility and compassion for others (Hofstede and Bond, 1984). Short-term orientation towards long-term orientation expresses whether people's efforts are related to the future or to the present and to the past. Indulgence/restraint dimension of Hofstede explains the choices of people to control or satisfy their natural impulses that enable them to enjoy life (Hofstede, 2011: 8.)

Logistics Performance Index (LPI) is considered as one of the most important indicators in understanding and comparing country-based logistics performance. LPI is further reliable tool for comparing domestic sources as finding data about market size, the number of existing firms, employment and revenue in logistics sector is difficult for researchers in some countries (Civelek et al, 2015: 368). The international LPI analyzes countries in six components (Arvis et al, 2014: 6):

- The efficiency of customs and border clearance (Customs).
- The quality of trade and transport infrastructure (Infrastructure).
- The ease of arranging competitively priced shipments (Ease of Arranging Shipments).

- The competence and quality of logistics services—trucking, forwarding, and customs brokerage (Quality of Logistics Services).
- The ability to track and trace consignments (Tracking and Tracing).
- The frequency with which shipments reach consignees within scheduled or expected delivery times (Timeliness).

These criteria also indicate which areas should be taken into consideration in order for the logistics activities to be carried out effectively in a country. Customs clearance procedures and infrastructure from these criteria are mostly related to state policies and investments, and others are mostly related to the performance of private sector firms. In addition, the traceability criterion is closely related to the efficient use of information technologies in the field of logistics. On the other hand, logistic service quality and timely delivery criteria also indicate the importance of meeting the expectations of the customers in the logistics performance. From the LPI point of view, it is evident that the logistics performance depends on the adoption of an approach that includes state institutions, the private sector and customer expectations, as well as the success in the main logistics activities (Demir, 2013: 9).

Innovation is defined by OECD (2005) as ‘‘new or significantly modified product (goods or services), or process; marketing method; or implementation of a new organizational method in business practices, workplace organization or external relations.’’ It also covers deliberate application of information, imagination and initiative in exploiting greater or different value from resources, and encompasses all processes by which new ideas are generated and converted into useful products. To be called an innovation, an idea must be replicable at an economical cost and satisfy a specific need (Jaafar et al, 2011: 846). Innovations enable firm to decrease production cost, boost the quality of products, capture or build new product markets and minimize the firm’s reliance on unreliable or unstable factors of production. Generally, firm’s profitability is expected to be enhanced as a result of any innovation that provides the firm a sustained cost or demand-side advantage over its competitors (Webster, 2004: 733). Logistics innovation is defined by Fint et al, (2005) as ‘‘any logistics related service from the basic to the complex that is seen as new and helpful to a particular focal audience. The audience could be internal where innovations improve operational efficiency or external where innovations better serve customers.” This definition implies that logistics innovation covers new logistics-related services and a new use of existing logistics-related services (Cui, 2011: 26).

2. Literature Review

The relation between logistics performance and innovation was examined with different variables and samplings with different methodologies and results were scrutinized. Grave et al, (2011) indicate that innovative logistics processes can lead to greater operational

flexibility Torres et al, (2017) indicate that the organizations process improvement performance of logistic service providers is significantly related to their innovation capabilities, and that these capabilities are positively related to collaboration and exchange of relevant information. Yang et al (2009) aimed to examine the relationships among resource, logistics service capability, innovation capability and the performance of Taiwanese container shipping service firms depending on the resource-based view. Results indicated that resource has a significant positive effect on logistics service capabilities and innovation capabilities. Richey et al (2005) stated that resource commitment makes reverse logistics programs more efficient and more effective. However, the resources must be used in such a manner as to develop innovative capabilities/approaches to handling returns. Resource commitment was not found to be significantly related to innovation in reverse logistics at smaller firms. This is likely to be related to the level of resources available. Larger firms can use greater resources, thereby, enjoy superior performance compared with smaller firms in the survey group. A case study on IKEA demonstrates the potential of logistics-driven packaging innovation in retail supply chains and shows the positive sides of the case (Hellström and Nilsson, 2011). Busse and Wallenburg (2016) conducted an exploratory case study design, explored and described numerous facets of logistic service providers' innovation management based on rich case data. Six important context factors are empirically identified: organizational size, level of dispersion, importance of technology, growth potential, customer dependency, and the innovation mentality of personnel.

Researches concerning national culture and innovation have been chronologically tabulated by Strychalska-Rudzewicz (2016):

Table 1 - Research Concerning National Culture and Innovation

Barnett	1953	Cultural change and innovation
Wilkins and Ouchi	1983	The relationship between culture and organizational performance
Jeager and Alfred M.	1986	National culture and organization development
Schneider and DeMeyer	1991	The impact of national culture on strategic issues
Shane	1993	National culture and national rates of innovation
Morris et al	1994	Individualism versus collectivism and entrepreneurship
Shane	1995	Uncertainty avoidance and innovation championing roles
Shane et al	1995	Cultural differences in innovation championing roles
Nakata and Sivakumar	1996	National culture and new product development
Newman and Nollen	1996	Management practices and national culture

Eisenberg	1999	Individualism – collectivism on creativity and innovation
Steensma et al	2000	The influence of national culture on the formation of technology alliances
Jones and Davis	2000	National culture and locating global R&D operations
Yaveroglu, and Donthu	2002	Cultural influences on the diffusion of new products
Yeniyurt and Townsend	2003	Cultural influences on the acceptance of new products in a country
Dwyer et al	2005	The influence of national culture on cross-national product diffusion
Waarts and Everdingen	2005	The influence of national culture on the adaptation status of innovations
Gerhart	2009	The influence of national culture on organizational culture
Kreiser et al	2010	The influence of national culture on risk-taking and proactiveness in SME's
Kalanit Efrat	2014	The impact of national culture on innovation

Source: Strychalska-Rudzewicz, 2016: 130

In the study of Shane (1995) it was evident that national cultural values influence at least one dimension of the innovation process. Martins and Terblanche (2003) revealed that the values, norms and beliefs can support or inhibit innovation. According to Nakata and Sivakumar (1996), four of the five culture factors – individualism, power distance, masculinity and uncertainty avoidance appear to bear positively or negatively on new product development. Eisenberg (1999) suggested that when the organizational practices match the values (or needs of organization members), creative performance will be high. The results of the study of Shane (1992) show that values which have been found to be related to innovation and invention at the organizational level and that make up the individualism and power-distance indices are linked to national rates of invention. Erez and Nouri (2010) emphasized the fact that power distance is an important factor in expressing the unique and novel ideas. Kaasa and Vadi (2008) found that to be successful in patenting, a region should have lower than average power distance, uncertainty avoidance, family-related collectivism (as an opposite to friends-related and organizations-related collectivism) and masculinity.

3. Methodology

In order to investigate the relationship between culture and logistics performance, empirical analysis based on Ordinary Least Squares (OLS) estimation is conducted using cross-section data of Logistics Performance Index and Hofstede's Dimensions of Culture.

3.1. Data

To be able to analyse culture in this manner a proper quantification of culture is required for this study. Achieving this quantification and distinguishing cultural differences, Hofstede's Dimensions of Culture were selected in integration of culture to the study. The scores of these dimensions; Power Distance, Individualism, Masculinity, Uncertainty Avoidance, Long Term Orientation, and Indulgence for 77 countries were obtained from Hofstede Insights official web portal. The data selected for this study to represent the logistics performance are the sub-indicators of Logistics Performance Index. 2018 scores of these sub-indicators; Customs, Infrastructure, International Shipments, Logistics Competence, Tracking & Tracing, and Timeliness of 77 countries were obtained from the World Bank's official LPI web portal. The reason behind the sample size of 77 is that only countries listed in LPI rankings and all six culture dimensions available were included in this study.

Table 2 - Descriptive Statistics of Sub-Indices of Logistics Performance Index

	Customs	Infrastructure	International Shipments	Logistics Competence	Tracking & Tracing	Timeliness
Mean	2.960137	3.117582	3.136560	3.163338	3.567464	3.233046
Median	2.846491	3.012820	3.194444	3.096154	3.646595	3.203612
Maximum	4.092256	4.374447	3.994913	4.310650	4.410293	4.323166
Minimum	1.571429	1.857143	1.989135	1.908431	2.531926	1.635844
Std. Dev.	0.617333	0.656095	0.446056	0.610926	0.519190	0.621578
Skewness	0.020961	0.197779	-0.213215	0.028127	-0.148513	-0.231949
Kurtosis	2.073624	1.951781	2.392117	1.946417	1.982948	2.342559
Jarque-Berra	2.758941	4.027194	1.768963	3.571523	2.077169	3.601741
Probability	0.251712	0.133508	0.412928	0.167669	0.353955	0.165155
Sum Sq. Dev.	28.96357	32.71499	15.12143	28.36549	29.36332	20.48645

Table 3 – Descriptive Statistics of Cultural Dimensions of Hofstede

	Individualism	Indulgence	Long Term Orientation	Masculinity	Power Distance	Uncertainty Avoidance
Mean	43.02597	47.00000	44.48052	48.96104	61.55844	66.57143
Median	37.00000	46.00000	44.00000	50.00000	64.00000	68.00000
Maximum	91.00000	100.0000	100.0000	100.0000	100.0000	100.0000
Minimum	12.00000	0.000000	4.000000	5.000000	11.00000	8.000000
Std. Dev.	22.82599	22.88530	23.83254	19.64048	20.81718	20.93940
Skewness	0.446967	0.155670	0.351438	-0.072774	-0.236805	-0.373502
Kurtosis	1.926847	2.287960	2.157643	3.111230	2.391497	2.487319
Jarque-Berra	6.258736	1.937619	3.861549	0.107660	1.907618	2.633583
Probability	0.043745	0.379535	0.145036	0.947593	0.385271	0.267994
Sum Sq. Dev.	39597.95	39804.00	43167.22	29316.88	32934.99	33322.86

3.2. The Linear Model

Large number of techniques and procedures have been developed for parameter estimation and inference in linear regression analysis. Most of these methods differ in computational simplicity of algorithms, presence of a closed-form solution, robustness with respect to heavy-tailed distributions, and theoretical assumptions needed to validate desirable statistical properties such as consistency and asymptotic efficiency. Being one of them, Ordinary Least Squares method chooses the parameters of a linear function of a set of explanatory variables by the principle of least squares, which minimizes the sum of squares of the differences between the observed dependent variable in the given dataset and those predicted by the linear function.

In this study a Best Linear Unbiased Estimator (BLUE) Robust Ordinary Least Squares model was developed to explain the relationship between culture and logistics performance. According to Gauss-Markov theorem an OLS estimator is BLUE if; it's linear in parameters, homoscedastic, has minimum variance, random in sampling, and the expected values of the estimated parameters equal the true values describing the relationship between variables (Gauss, 1821).

The OLS estimator is considered "Best" if the conditional variance of the variance of the error term is minimum and constant in all variables, in other words homoscedastic. If the

assumptions of " $Var(\hat{\beta}) = \sigma^2(X^TX)^{-1}$ and $Var(\varepsilon_i) = E(\varepsilon_i^2) = \sigma_\varepsilon^2 = constant$ " are fulfilled the estimator will have minimum and constant variance.

The OLS estimator is considered "Linear" if it is a linear function of the sample observations. For example; the equation $y = \beta_0 + \beta_1 x + u$ fulfils the assumption of linearity in parameters because y is a linear function of the x values and a random error component.

The OLS estimator is considered "Unbiased" if expected values of its parameters equal the true values describing the relationship between variables. If the condition of $E(\hat{\beta}_1) = \beta_1$ is met for functions of population $y = \beta_0 + \beta_1 x + u$ and sample $y = \hat{\beta}_0 + \hat{\beta}_1 x + \hat{u}$, the OLS will produce unbiased estimate.

Also in the case of a smaller sample sizes, normality of distribution in the error term is added to the above mentioned assumptions. With the normality assumption based on Central Limit Theorem with enough variables, the OLS estimators of the regression coefficients follow the normal distribution, hence the t-test and F-tests can be used to test various statistical hypotheses regardless of the sample size (Markov, 1908).

3.3. Modelling and Estimation

In order to produce a useful model, several steps have been followed in the scope of this study. First of all, each of the logistics performance variables were estimated separately with the culture variables with both robust and non-robust OLS estimators. After that standard errors of robust and non-robust estimators were compared to determine whether there is a heteroscedasticity problem is present in the models. The OLS models of the study can be represented as;

$$y_i = C + \beta_1 x_{1i} + \beta_2 x_{2i} + \beta_3 x_{3i} + \beta_4 x_{4i} + \beta_5 x_{5i} + \beta_6 x_{6i} + u_i$$
$$min \sum \hat{u}_i^2 = \sum (y_i - \hat{C}_i - \hat{\beta}_1 x_{1i} + \hat{\beta}_2 x_{2i} + \hat{\beta}_3 x_{3i} + \hat{\beta}_4 x_{4i} + \hat{\beta}_5 x_{5i} + \hat{\beta}_6 x_{6i})^2 \quad (1)$$

It can be said by looking the equation above, the robust OLS model fulfils the linearity assumption of BLUE estimation. As for the homoscedasticity assumption, Table 3 below shows the differences between standard errors of robust and non-robust estimations, rejecting the existence of heteroscedasticity and fulfilling the "Best" requirement of BLUE estimation.

Table 4 – Robust and Non-Robust Estimation Standard Errors

	Robust Standard Errors	Non-Robust Standard Errors
$y_{customs}$	0.369425	0.365941
$y_{infrastructure}$	0.379505	0.378696
$y_{international\ shipments}$	0.342471	0.339491
$y_{logistics\ competence}$	0.377976	0.369934
$y_{tracking\&tracing}$	0.411789	0.408652
$y_{timeliness}$	0.352804	0.349099

To check whether there is an omitted variable bias problem in the models, the correlation between independent variables have been checked. With close inspection of Table 4 and Table 5 below, and with the calculation of Variance Inflation Functions (VIF) of each estimation, due to low correlation and VIF values (< 5) one could conclude there are no multicollinearity between regressors (Hair et al, 2010), disproving the existence of omitted variable bias for the models.

Table 5 – Correlation of Regressors

	Individualism	Indulgence	Long Term Orientation	Masculinity	Power Distance	Uncertainty Avoidance
Individualism	1	0.16382	0.19199	0.01720	-0.68282	-0.21266
Indulgence	0.16382	1	-0.39132	-0.00152	-0.30668	-0.16125
Long Term Orientation	0.19199	-0.39132	1	0.02115	-0.08833	0.04964
Masculinity	0.01720	-0.00152	0.02115	1	0.18503	0.03124
Power Distance	-0.68282	-0.30668	-0.08833	0.18503	1	0.25200
Uncertainty Avoidance	-0.21266	-0.16125	0.04964	0.03124	0.25200	1

Table 6 – Variance Inflation Function (VIF) Values

	VIF
$y_{customs}$	2.30127963380608
$y_{infrastructure}$	2.811310005881842
$y_{international\ shipments}$	1.765702630760956
$y_{logistics\ competence}$	2.5467826116721
$y_{tracking\&tracing}$	2.185907622234331
$y_{timeliness}$	2.314543157104922

With the case of homoscedasticity at hand, the parameters estimated via OLS models with robust standard errors are always unbiased (Wooldridge, 2009). Therefore, robust OLS models generated for this study fulfil the $E(\hat{\beta}_1) = \beta_1$ assumption of unbiasedness requirement for BLUE estimation.

4. Results and Discussion

The modelling procedure aforementioned in the previous chapter has resulted in a BLUE OLS model and the estimated parameters are presented in Table 6 below.

Table 6 – Estimation Results

	Individualism	Indulgence	Long Term Orientation	Masculinity	Power Distance	Uncertainty Avoidance
$y_{customs}$	0.009039***	0.005314***	0.012402**	-0.002014	-0.008192**	-0.003090
$y_{infrastructure}$	0.009996***	0.007553***	0.014878***	0.000689	-0.007367**	-0.003274
$y_{international\ shipments}$	0.004796**	0.003923*	0.010133***	0.000987	-0.003542	-0.002752
$y_{logistics\ competence}$	0.009599***	0.006220***	0.015185***	-0.001375	-0.006827**	-0.004054**
$y_{tracking\&tracing}$	0.009422***	0.005120**	0.012360***	0.000475	-0.005675*	-0.003707
$y_{timeliness}$	0.008414***	0.003661*	0.010856***	-0.002149	-0.005830**	-0.000267

Note: *** refers to significance at 1%, ** refers to significance at 5% and * refers to significance at 10%.

The results indicate that individualism, indulgence and long term orientation have positive effect on customs sub-indicator of logistics performance. As long term orientation refers to thinking ahead and long term planning it leads to more structured and thought out customs

operations, therefore has the highest coefficient value. Also power distance is found out to have negative effect on customs performance due to increased power distance might lead to more bureaucratic customs structure, which can hinder the customs efficiency. In terms of infrastructure sub-indicator of logistics performance, the culture dimensions that have positive effect are individualism, indulgence, and long term orientation. In this case long term orientation is again the highest impacting factor and power distance has a negative effect due to aforementioned reasons. International shipments sub-indicator is also effected positively by individualism, indulgence, and long term orientation dimensions of national culture. As this sub-indicator refers to the ease of arranging competitively priced shipments, nations possessing cultures with more forward thinking and individualistic/entrepreneur spirit are found out to be more achieving this criterion. As the logistics competence sub-indicator determines the competence and quality of logistics services, nations with cultures with more forward thinking and individualistic/entrepreneur spirit tend to offer better logistics services, therefore resulting in positive impact of individualism, indulgence, and long term orientation dimensions of culture for this matter. Also the estimation reveals that both power distance and uncertainty avoidance dimensions have negative impact on logistics quality and competence. As uncertainty avoidance trait hinders innovation capability (Shane, 1995) it causes nations with high uncertainty avoidance to refrain from innovations and new technologies which results in lower logistics quality and competence. Power distance also hinders the information stream and employee discussion and participation within a company (Haire et al, 1966), which is essential for higher levels of logistics competence. The timeliness and tracking & tracing sub indicators are also positively affected by individualism, indulgence, and long term orientation dimensions of culture. Both of these indicators are directly connected with forward thinking and planning ahead aspects of logistics operations, therefore long term orientation is the most impacting factor for these indicators. As power distance being a factor which brings more layers and formalities to an organization, it feeds the possibilities of delays and directly conflicts with timeliness performance.

5. Conclusion

This study examined the relationship between national culture and logistics performance by analyzing the International LPI sub-indicator and Hofstede's Dimensions of Culture scores of 77 countries. It showed that countries with higher individualism, indulgence, and long term orientation scores are more likely to have higher logistics performance for all sub-indicators. One could argue that high levels of forward thinking, long term planning, individualistic/entrepreneur oriented behavior, and quality expectance from life results in higher logistics performance in all aspects due to their enforcing role in strategic planning, innovation, and efficiency. Long term orientation has found out to be the most impacting dimension of culture on logistics performance because of its role in strategic planning. The

study also revealed that power distance has a negative effect on all logistics performance sub-indicators with the exception of international shipments. It suggests that high levels of power distance increase the layers, formalities and procedures in an organization, which results in inefficiencies and decreased logistics performance. In addition to that, the results point out to the negative effect of uncertainty avoidance on logistics competence aspect of logistics performance. Therefore, higher levels of uncertainty avoidance hinder the acceptance of innovations and changes, which leads to lower levels of service quality for the companies. The study occupies a unique spot by establishing a direct link between national culture and logistics performance, suggest that a relationship is existent between these two. The results suggest that in order to improve their logistics performances, companies should avoid blindly implementing technical and strategical developments happening overseas without evaluating the cultural receptivity to these techniques and strategies. Understanding the effect of culture on logistics performance is crucial for competitiveness of companies and countries on logistics perspective.

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Appendices

1. Sample Countries' LPI 2018 Global Rankings

	Country	Customs	Infrastructure	Logistics Competence	International Shipments	Timeliness	Tracking & Tracing
1	**Germany**	4.092256	4.374447	4.310650	3.858998	4.392114	4.239401
2	**Sweden**	4.049361	4.239947	3.976896	3.915837	4.284866	3.876315
3	**Belgium**	3.663064	3.984249	4.130972	3.994913	4.410293	4.051289
4	**Austria**	3.714068	4.181584	4.083610	3.877530	4.250803	4.087098
5	**Japan**	3.993990	4.248240	4.088451	3.591916	4.254069	4.049101
6	**Netherlands**	3.917559	4.207611	4.087875	3.682287	4.253336	4.024758
7	**Singapore**	3.887082	4.063787	4.099996	3.580094	4.319944	4.080114
8	**Denmark**	3.918058	3.958730	4.007843	3.530159	4.407843	4.176078
9	**United Kingdom**	3.772005	4.032786	4.049830	3.672469	4.329937	4.107993
10	**Finland**	3.815046	4.003472	3.887269	3.562732	4.279861	4.323166
11	**Switzerland**	3.629262	4.021835	3.966859	3.514933	4.241830	4.096271
12	**United States**	3.775142	4.045132	3.874253	3.506325	4.083623	4.091751
13	**New Zealand**	3.708625	3.990676	4.016317	3.428905	4.255307	3.916317
14	**France**	3.589643	3.996880	3.838338	3.545295	4.152037	3.999365
15	**Spain**	3.620888	3.839870	3.800271	3.829520	4.063369	3.834502
16	**Australia**	3.867186	3.968431	3.709445	3.247206	3.976111	3.816621
17	**Italy**	3.472044	3.852904	3.655042	3.512059	4.126595	3.854946
18	**Canada**	3.603930	3.750496	3.898040	3.381662	3.960503	3.809804
19	**Norway**	3.520000	3.691019	3.688636	3.429029	3.942627	3.944192
20	**Czech Republic**	3.286673	3.464600	3.715632	3.746009	4.133620	3.703427
21	**Portugal**	3.171350	3.247268	3.705938	3.826492	4.125922	3.719307
22	**Luxembourg**	3.527956	3.631442	3.757625	3.371425	3.903863	3.614740
23	**Korea, Rep.**	3.402588	3.725528	3.587763	3.330246	3.919574	3.754119
24	**China**	3.285924	3.753218	3.594975	3.535715	3.840015	3.648469
25	**Taiwan**	3.474167	3.720193	3.565054	3.476875	3.720617	3.670812
26	**Poland**	3.253458	3.208902	3.580044	3.678499	3.954262	3.505663
27	**Ireland**	3.357716	3.293335	3.595856	3.423977	3.756367	3.623034
28	**Hungary**	3.354866	3.270945	3.213207	3.221880	3.785941	3.670508
29	**Thailand**	3.142497	3.138133	3.410726	3.456898	3.813817	3.467161
30	**South Africa**	3.174600	3.186554	3.192726	3.508124	3.742441	3.411336
31	**Chile**	3.274026	3.209678	3.125072	3.271893	3.797014	3.203612
32	**Slovenia**	3.418681	3.261905	3.052381	3.187912	3.695238	3.266667
33	**Estonia**	3.322037	3.098638	3.147851	3.262154	3.798684	3.206675
34	**Vietnam**	2.950154	3.005490	3.399340	3.155490	3.672003	3.449780
35	**Iceland**	2.769231	3.185584	3.605164	2.792351	3.696966	3.353416
36	**Malaysia**	2.898268	3.147186	3.297836	3.347836	3.463814	3.147835
37	**Greece**	2.839182	3.172495	3.055823	3.303071	3.662264	3.175104
38	**India**	2.964512	2.905174	3.128073	3.211983	3.497141	3.319387
39	**Indonesia**	2.672778	2.895000	3.100000	3.228333	3.669556	3.300000
40	**Turkey**	2.713469	3.210029	3.046799	3.060677	3.628118	3.233056
41	**Romania**	2.580718	2.906903	3.073653	3.176497	3.681887	3.264727

42	**Croatia**	2.978555	3.012820	3.096154	2.929487	3.593939	3.012820
43	**Mexico**	2.769794	2.846917	3.019504	3.102816	3.529618	3.004811
44	**Bulgaria**	2.937588	2.762986	2.881315	3.233723	3.313491	3.015289
45	**Slovakia**	2.789011	3.000000	3.139194	3.101099	3.139194	2.985348
46	**Lithuania**	2.846491	2.729618	2.955624	2.78999	3.646595	3.123323
47	**Saudi Arabia**	2.660549	3.107004	2.860055	2.985055	3.300067	3.171576
48	**Brazil**	2.406162	2.926983	3.090163	2.881091	3.510178	3.111438
49	**Colombia**	2.612357	2.666667	2.866024	3.194444	3.17097	3.084774
50	**Philippines**	2.529412	2.725952	2.776028	3.292618	2.983609	3.059174
51	**Argentina**	2.417844	2.773509	2.777043	2.923781	3.368942	3.046989
52	**Iran**	2.625000	2.766704	2.838132	2.756771	3.355769	2.766704
53	**Serbia**	2.597121	2.599877	2.704650	2.971317	3.333418	2.789011
54	**Ukraine**	2.491180	2.221296	2.842631	2.829282	3.422145	3.109298
55	**Egypt**	2.600000	2.817778	2.817778	2.791889	3.194389	2.724389
56	**Malta**	2.697778	2.900000	2.800000	2.700000	3.005445	2.800000
57	**Latvia**	2.796570	2.983000	2.692550	2.744904	2.878851	2.787563
58	**Russia**	2.420382	2.775180	2.749270	2.644032	3.313303	2.646039
59	**Lebanon**	2.384615	2.637081	2.470414	2.803747	3.179649	2.803747
60	**Peru**	2.529412	2.281358	2.421468	2.843858	3.445582	2.554801
61	**Jordan**	2.491395	2.718464	2.545078	2.443329	3.183243	2.772350
62	**Uruguay**	2.514882	2.433240	2.708626	2.734974	2.906435	2.780353
63	**Dominican Republic**	2.405002	2.357383	2.441572	2.770082	2.980595	2.974905
64	**Albania**	2.347126	2.293674	2.558898	2.823862	3.202666	2.665647
65	**Burkina Faso**	2.412879	2.430736	2.459957	2.917749	3.037879	2.401515
66	**Bangladesh**	2.300000	2.388680	2.483444	2.562778	2.923681	2.785000
67	**El Salvador**	2.301136	2.249457	2.560868	2.710675	3.098685	2.471675
68	**Ghana**	2.452214	2.442890	2.506604	2.533799	2.870940	2.570940
69	**Morocco**	2.328104	2.434603	2.489252	2.575211	2.878139	2.512709
70	**Nigeria**	1.966667	2.559722	2.398611	2.522222	3.068333	2.684722
71	**Zambia**	2.180161	2.303431	2.481390	3.052819	3.052819	1.981390
72	**Pakistan**	2.122048	2.197486	2.586880	2.629385	2.663294	2.265452
73	**Trinidad and Tobago**	2.423196	2.382692	2.270751	2.586367	2.531926	2.267067
74	**Venezuela**	1.787384	2.096936	2.206915	2.379562	2.581759	2.294127
75	**Iraq**	1.839437	2.033500	1.908431	2.324812	2.719949	2.191533
76	**Libya**	1.953632	2.248718	2.045299	1.989135	2.770085	1.635844
77	**Angola**	1.571429	1.857143	2.004317	2.202283	2.594983	2.004317

2. Sample Countries' Hofstede's Dimensions of Culture Scores

Country	Individualism	Indulgence	Long-Term Orientation	Masculinity	Power Distance	Uncertainty Avoidance
Germany	67	40	83	66	35	65
Sweden	71	78	53	5	31	29
Belgium	75	57	82	54	65	94
Austria	55	63	60	79	11	70
Japan	46	42	88	95	54	92
Netherlands	80	68	67	14	38	53
Singapore	20	46	72	48	74	8
Denmark	74	70	35	16	18	23
United Kingdom	89	69	51	66	35	35
Finland	63	57	38	26	33	59
Switzerland	68	66	74	70	34	58
United States	91	68	26	62	40	46
New Zealand	79	75	33	58	22	49
France	71	48	63	43	68	86
Spain	51	44	48	42	57	86
Australia	90	71	21	61	36	51
Italy	76	30	61	70	50	75
Canada	80	68	36	52	39	48
Norway	69	55	35	8	31	50
Czech Republic	58	29	70	57	57	74
Portugal	27	33	28	31	63	99
Luxembourg	60	56	64	50	40	70
Korea, Rep.	18	29	100	39	60	85
China	20	24	87	66	80	30
Taiwan	17	49	93	45	58	69
Poland	60	29	38	64	68	93
Ireland	70	65	24	68	28	35
Hungary	80	31	58	88	46	82
Thailand	20	45	32	34	64	64
South Africa	65	63	34	63	49	49
Chile	23	68	31	28	63	86
Slovenia	27	48	49	19	71	88
Estonia	60	16	82	30	40	60
Vietnam	20	35	57	40	70	30
Iceland	60	67	28	10	30	50
Malaysia	26	57	41	50	100	36
Greece	35	50	45	57	60	100
India	48	26	51	56	77	40
Indonesia	14	38	62	46	78	48
Turkey	37	49	46	45	66	85
Romania	30	20	52	42	90	90
Croatia	33	33	58	40	73	80
Mexico	30	97	24	69	81	82
Bulgaria	30	16	69	40	70	85
Slovakia	52	28	77	100	100	51

Lithuania	60	16	82	19	42	65
Saudi Arabia	25	52	36	60	95	80
Brazil	38	59	44	49	69	76
Colombia	13	83	13	64	67	80
Philippines	32	42	27	64	94	44
Argentina	46	62	20	56	49	86
Iran	41	40	14	43	58	59
Serbia	25	28	52	43	86	92
Ukraine	25	18	55	27	92	95
Egypt	25	4	7	45	70	80
Malta	59	66	47	47	56	96
Latvia	70	13	69	9	44	63
Russia	39	20	81	36	93	95
Lebanon	40	25	14	65	75	50
Peru	16	46	25	42	64	87
Jordan	30	43	16	45	70	65
Uruguay	36	53	26	38	61	99
Dominican Republic	30	54	13	65	65	45
Albania	20	15	61	80	90	70
Burkina Faso	15	18	27	50	70	55
Bangladesh	20	20	47	55	80	60
El Salvador	19	89	20	40	66	94
Ghana	15	72	4	40	80	65
Morocco	46	25	14	53	70	68
Nigeria	30	84	13	60	80	55
Zambia	35	42	30	40	60	50
Pakistan	14	0	50	50	55	70
Trinidad and Tobago	16	80	13	58	47	55
Venezuela	12	100	16	73	81	76
Iraq	30	17	25	70	95	85
Libya	38	34	23	52	80	68
Angola	18	83	15	20	83	60