Journal of Economics and Sustainable Development
ISSN 2222-1700 (Paper) ISSN 2222-2855 (Online)
Vol.6, No.13, 2015


# Cultural and Economic Growth: Does the Specific Matrix of Cultural Values Have Dissimilar Impact on Rich and Poor Countries?

Dr. Muhammad Mahroof Khan[1] Dr. Sabahat Akram[2] Arshad Mahmood[3] Dr. Iftikhar But[4]
1. Associate Professor, 2 and 4 Assistant Professor, 3. Research Associate
University of Management Sciences & Information Technology, Kotli, (AJK) Pakistan

**Abstract**
This study signifies an endeavor at measuring the influence of certain cultural features on economic growths. The notion of the role of cultural factors in economic development and growth has come across considerable confrontation. The reason for this opposition is related with understanding of cultural tenets as being broadly subtle and lasting features of societies. While the average economic opinions are obviously enough for explaining global differences in savings and growth rates, supplementary empirical research can help in ascertaining such cultural factors as may be relevant to analyze economic development. Cultural factors are incorporated into baseline endogenous economic growth model applied by using the relevant data from the World Values Survey/European Value Survey (1981-2011) on fifteen cultural variables combined with standard economic variables in developed and developing regions of world economy. The results have shown that cultural attitudes towards trust have a positive and significant impact on economic growth in both regions. Further, the Hofstede component of culture, Schwartz cultural dimensions and Trompenaars egalitarian commitment and utilitarian involvement are found to be significant determinants of regional economic performance in developed countries. Yet, the same cultural variables do not have a significant impact in developing world. The cultural attitudes about religious and ethnic diversity are found to be negatively related with economic growth of the regions chosen for the analysis. The ethnic disintegration and religious fractionalization with ethnic and religious polarization seem to be a better measure to capture the effect of growth. The ethnic fractionalization show a positive effect on economic growth in economically rich region, where the religious polarization has a significant negative impact on growth in developing regions. Ethnic fractionalization index may not be harmful to development, but the effects of religious polarization on development are more adverse. The religious variable (raised religiously at home) is negatively associated with GDP growth in both regions with weak links.
**Keywords:** Economic growth, Cultural values, Ethnic and religious Fractionalization, Ethnic and religious Polarization, Cultural Motivational Index.

## Introduction

Numerous regional and global economic issues have long been the focus of the theorists and practitioners. However, there is no particular single methodology to regulate the role of culture on development, certain investigation works of various main philosophers have been studied cautiously in order to exercise the different ways in which culture has been well thought-out, and to look into poles apart suppositions essential to culture taken into deliberation by advancement approaches. Then, subsequently bearing in mind new ways of discerning about growth and culture that have developed within the context of globalization, it is endeavored to investigate the degree to which they have challenged the earlier replicas related with the ritual/innovation framework. Accordingly, the focus of this research is on whether and in what way culture staples in attaining financial progress of a country. For a short time, the objective is to know what diverse influences are by which different culture-defining conventions can influence the development. It has emphasized in what way the contemporary and traditional incongruity has differentiated views, crucial to disparate commencements of culture as either an optimistic apparatus for growth or a hindrance to overcome.

The most important factor in this concern is the question related with the notion of similarity in natural resources and political contexts, but still some countries are rich and other are poor. Various theories have been developed to counter this issue, unfortunately, the existing theories and models are unable to deal with the issue above mentioned. It is now progressively becoming more orthodox to argue that one of the reasons ultimate to the relative lack of achievement of past economic development efforts are the exclusion of culture from theory and practice. Financial planners and technical problem-solvers have realized the significance of culture that cannot be unnoticed if robust and sustainable growth is to be accomplished. Studies show that culture and economy have long been treated as broadly independent areas of research. It is now progressively becoming more orthodox to argue that one of the reasons ultimate to the relative lack of achievement of past economic growth determinations are the marginalization of culture from development in theory and practice. However, since the late twentieth century, opinions regarding an increasingly close relationship between economy and

culture have got attention. In this concern, (Altman, A. 2012; Barro; Cateora and Graham, 1998; Kockel, 2002; Harrison, 1993, 2000, 2006; Harrison and Huntington, 2001; Hofstede, 2003 [1980]; and Harris et al., 2004; Hofstede, G., Oyserman, D., 2011)A. V. Garibaldi de Hilal, et al. 2010; R., Hwang.J., and R., McCleary, 2010; Caballero, R., P. Aspe, et al., 2011; Gorodnichenko, Y. and G. Roland 2011;) are the researchers focusing on the phenomenon of culture responsible for diversity in economic growth.

Economic dissimilarities between nations and possible explanations of economic growth have gradually caught our attention to investigate the role of culture in economic development. Living in culturally different countries also allows observations about in what way culture interrelates with economic comportment and outcomes at the micro level. This has commended to look into the likelihood that culture could affect economic upshots at national levels. It may be easy to take a broad view about the possible role of culture as an aspect of development but may be astonishingly thought-provoking to back up this declaration with confirmation. This study is different in a sense that it has tested the hypothesis by applying a growth model in developed and developing nations in accordance with the standards developed by World Bank. Further, the above-mentioned model also covers different monetary groups as described by The World Bank. This way of analysis is expected to enable us to isolate the effect of different cultural values on economic growth in different cultural areas and thereby help in identification of which cultural individualities are relatively more advantageous than others in bringing about economic development in economic situations. It also examines at some length how modernization theory and its critics both have shaped the framework within which culture has been deployed and debated in development thinking. Lastly, this study is likely to find the answers of that question, which are now at the center of discussion on culture and economic development.

**Fundamental Questions**

The basic questions that are answered in studying the relationship between culture and economic development are:

1. Do certain cultural values have impact on economic development?
2. Do diverse cultures have the same economic implications for economic development?
3. Whether a culturally diversified society is more efficient than a culturally homogenous one[8].
4. Are culture and economic development independent of each other?

In order to find the answers of the questions, our study observes the inspirations of numerous cultural factors on economic conduct of individuals misconstrued by current economic theories. Therefore, the most imperative job is to explicate circumstances where culture cannot be a source of misconstruction and conflict rather a source of resourcefulness and productivity in diverse cultural collaboration.

**Methodology, Variables and Data**

This section explains the theoretical framework applied to measure the correlation between the cultural and economic variables and the possible impact of cultural variables on economic development. In order to estimate the effect of culture on economic development, one can make use of such a growth model as can combine economic and cultural variable as has earlier been done certain researchers like Barro (1991), Helliwell (1994), Levine and Renelt (1992), Mankiw, Romer, and Weil (1992), and Granato, Inglehart and Leblang (1996). Religious variables have been considered as comprising of religious diversity (religious fractionalization and religious polarization). Following Barro and Martin (1995), we estimate an endogenous growth model in which the relevant cultural variables are also included. We applied Ordinary Least Square (OLS) technique to estimate all models under study.

**Growth Models**

Early empirical work within the exogenous growth paradigm, failed to some extant to connect economic and non-economic aspects of economic growth. It is as if – to quote Fukuyama (1995) – 'the economy is a realm in which individuals satisfy their selfish needs and desires before retreating back into their "real" social lives".

It may, therefore, be argued that a series of factors, which are influenced by the cultural beliefs, values and social norms, which have the important role in economic growth, can be identified and included in the typical neoclassical growth models whose empirical estimation can show their probable effects on economic growth[9].

Some of the above forces - self-control, honesty, cooperation, trust, mutual respect, self-improvement,

[8] The answer is not obvious and equally 'double faced'. On the one hand, cultural diversity creates potential benefits by increasing the variety of goods, services and skills available for consumption, production and innovation (Lazear 1999; O'Reilly Williams and Barsade 1998; Ottaviano and Peri 2005 and 2006a; Berliant and Fujita 2004).

[9] As discussed by Granato et al. (1996), Tabellini (2009) and Coyne and Williamson (2011).

freedom of thought depend on individual attitudes and are based on a set of beliefs, values and norms that change very slowly. As a consequence, underlying the typical neoclassical growth model, one can develop a series of factors that are influenced by the habitual beliefs, values and norms of the society that have important applicable economic duties. Similarly, culture diversity (homogeneity and heterogeneity) of a society also impacts on the economic outcome. Therefore, we included these cultural factors with economic factors in our growth model, and thus the empirical endogenous growth models applied in this study have the following general form:

$$G_{it} = \alpha + \gamma_i(Cultural\ var)_{it} + \beta_i(Economic\ Var)_{it} + \mu_{it} \quad (1)$$

$$G_{it} = \alpha + \delta_i(Relig)_{it} + \beta_i(Economic\ Var)_{it} + \mu_{it} \quad (2)$$

Where, $G_{it}$ is output growth (per capita) for country *i*, *Cultural var* is a set of cultural variables: Cultural Motivational Index, Trust, respect, self-determination and obedience, Hofstede cultural dimensions (*individualism, power distance, uncertainty avoidance, muscularity*), Schwartz cultural dimensions (*Affective Autonomy, Intellectual Autonomy, Egalitarian Commitment*), Trompenaars Cultural dimensions (*Egalitarian Commitment, Utilitarian Involvement*) and four cultural diversity variables (*ethnic fractionalization, ethnic polarization, religious fractionalization, religious polarization*). *Economic var.* is a set of economic variables for country *I,* which includes levels of wealth and investment in human capital, level of per capita income, level of human capital investment, primary and secondary enrollment, population growth, initial level of GDP per capita growth and the investment to GDP ratio. These economic variables are included in the model under consideration because of the strong evidence of their positive correlation with economic growth available in relevant literature (Barro, 1991; Helliwell, 1994; Levine and Renelt, 1992; Mankiw, Romer, and Weil, 1992; Granato, Inglehart and Leblang, 1996). *Relig*, comprised of religious diversity *(religious fractionalization and religious polarization and raised the religiously at home*).

**The Estimated Model for Developing Countries**

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} \quad (3)$$

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} + \curlywedge(Rgst)_{it(Dvlg)} \quad (4)$$

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} + \pi_2(PDI)_{it(Dvlg)} \quad (5)$$

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} + \pi_1(IDV)_{it(Dvlg)} \quad (6)$$

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} + \pi_3(UN)_{it(Dvlg)} \quad (7)$$

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} + \pi_3(MAS)_{it(Dvlg)} \quad (8)$$

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} + \pi_1(IDV)_{it(Dvlg)} + \pi_2(PDI)_{it(Dvlg)} + \pi_3(UN)_{it(Dvlg)} + \pi_4(MAS)_{it(Dvlg)} \quad (9)$$

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} + \gamma_1(Trust)_{it(Dvlg)} \quad (10)$$

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} + \gamma_2(CMI)_{it(Dvlg)} \quad (11)$$

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} + \Omega_1(EF)_{it(Dvlg)} + \theta_1(EP)_{it(Dvlg)} \quad (12)$$

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} + \Omega_2(RF)_{it(Dvlg)} + \theta_2(RP)_{it(Dvlg)} \quad (13)$$

$$G_{it(Dvlg)} = \alpha + \beta_1(logIG)_{it(Dvlg)} + \beta_2(Edu)_{it(Dvlg)} + \beta_3(Inv)_{it(Dvlg)} + \beta_5(Pop.grth)_{it(Dvlg)} + \Omega_1(EF)_{it(Dvlg)} + \Omega_2(RF)_{it(Dvlg)} + \theta_1(EP)_{it(Dvlg)} + \theta_2(RP)_{it(Dvlg)} \quad (14)$$

**Data Sources**

There are 134 countries in the sample in order to have the cross cultural analysis. The Thirty two-year period chosen is from 1980 to 2012 as to make the data as up-to-date as possible. Another reason for choosing this period is because the data is available for this time period for all variables under analysis. Our dependent variable is growth rate of GDP percapita, and independent variables are: the investment share of real GDP, the population growth rate, education and, Initial GDP per capita. The Growth rate of GDP per capita, school enrolment (education) and population growth are taken from World Development Indicators 2011, and government share of GDP is collected from Penn World Tables version 7. Appendix 1 provides a summary description of all data (economic and cultural variables) used in the analysis along with their sources.

**Results and Discussion for Developing Countries**

The correlation coefficients among the all cultural variables are shown in Table 1. We observe that most of the cultural variables have inter-correlation with significant expected coefficients instead of religious variable (Raised religiously at home) which does not have any significant correlation with any variable in the model.

The other variables of our interest, Hofstede's culture dimension, *power distance* have negative and significantly correlation with *individualism*, *masculinity* and *uncertainty avoidance* as expected theoretically and positively correlated with ethnic polarization, religious fractionalization and religious polarization. Power distance has no significant correlation with culture motivational index and trust. Hofstede's individualism is significantly positively correlates with masculinity and significantly negatively correlated with cultural diversity variable, and do not have any significant correlation with other variables in the model. None of the significant correlation found between trust, culture motivational index and cultural diversity variables. In short, not all but reasonable variables of our interest are correlated with each other with expected sign in developing region.

**Table 1: Correlation between Cultural Variables (Developing Countries)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Raised religiously at home | 1 | | | | | | | | | | |
| Power Distance | -.217 | 1 | | | | | | | | | |
| Individualism | .212 | -.738** | 1 | | | | | | | | |
| Masculinity | .157 | -.333** | .474** | 1 | | | | | | | |
| Uncertainty Avoidance | .175 | -.219*** | .147 | .171 | 1 | | | | | | |
| Culture Motivational Index | -.217 | -.173 | .134 | -.004 | .549** | 1 | | | | | |
| Trust | -.185 | -.176 | .168 | -.147 | .279*** | .558** | 1 | | | | |
| Ethnic Fractionalization | .215 | -.097 | .113 | -.038 | -.139 | -.013 | .145 | 1 | | | |
| Ethnic Polarization | -.219 | .260* | -.222*** | .058 | .105 | -.048 | -.109 | .048 | 1 | | |
| Religious Fractionalization | -.187 | .397** | -.443** | -.294* | -.419** | -.197 | -.022 | .082 | .115 | 1 | ** |
| .Religious polarization | -.177 | .362** | -.400** | -.253*** | -.438** | -.291* | -.126 | .067 | .170 | .914** | 1 |

Significance level: * at 1%, ** at 5%, *** at 10%.

The correlation between economic and cultural variables is listed in Table 2. The religious variable (Raised religiously at home) has significant negative correlation with education, positive correlation with population growth and has no correlation with economic growth and investment. Hofsted's dimension *power distance* is significantly negatively correlated with economic growth and education, and positively correlated with population growth. The surprising results come from individualism which shows insignificant correlation with all economic variables includes in the model. The other interesting results are also due to *masculinity* and *uncertainty avoidance* which has unexpected significant and positive correlation with growth and education.

Similarly, cultural variables trust and cultural motivational index also have significant and theoretically expected positive sign for all economic variables instead of trust which has no significant correlation with growth. The other cultural diversity variables, for example, ethnic fractionalization have positive correlation with population growth, negative correlation with economic growth and insignificantly correlated with investment

 

and education.

Ethnic polarization does not have significant correlation with any economic variable. Similarly, religious fractionalization has significant correlation with economic growth and education with expected coefficients. Finally, religious polarization has significant correlation with all economic variables with expected sign (positive for population growth and negative for other economic variables). Not all but most of the correlations among the variables have theoretically expected coefficients.

**Table 2: Correlation between Economic and Cultural Variables (Developing Countries)**

| | Growth | Investment | Pop.grth | Education |
|---|---|---|---|---|
| Raised religiously at home | .002 | -.002 | .387* | -.355*** |
| Power Distance | -.238*** | -.110 | .324* | -.246*** |
| Individualism | .123 | .190 | -.177 | .247 |
| Masculinity | -.004 | .154 | -.228*** | .257* |
| Uncertainty Avoidance | .554** | .304* | -.481** | .562** |
| Culture Motivational Index | .357** | .267* | -.474** | .520** |
| Trust | .051 | .268* | -.275* | .185*** |
| Ethnic Fractionalization1 | -.170*** | -.136 | .255* | -.125 |
| Ethnic Polarization | -.031 | -.039 | .038 | .111 |
| Religious Fractionalization | -.168 | -.242* | .134 | -.272* |
| Religious Polarization | -.243* | -.291* | .230*** | -.358** |

Significance level: * at 1%, ** at 5%, *** at 10%.

To test the effect of religiosity on economic growth, we estimate the religious variable with economic variable and results are presented in Table 3. Although, the religious variable has no strong and significant correlation with economic growth (see table above) the regression result also confirm that religion does not have significant impact on growth in developing region.

**Table 3: Religious Variable and Economic Growth (Developing Countries)**

Dependent Variable: Growth rate of percapita GDP

| | B | Std. Error | t | Sig. |
|---|---|---|---|---|
| (Constant) | -11.739 | 271.467 | -4.042 | .001 |
| Log of per capita GDP in 1980 | .697 | 875.553 | 3.952 | .001 |
| Investment | .046 | 71.930 | -1.70 | .075 |
| School enrollment, secondary | .306 | 18.677 | 2.305 | .007 |
| Population growth | .274 | 409.119 | 1.317 | .203 |
| Raised religiously at home | .061 | 17.083 | .375 | .712 |
| R-square | .641 | | | |

The multiple regressions for Hofsted's dimension with economic variables are reported in Table 4 Model 1 shows that all our economic variables are highly significant with expected sign instead of population growth which has insignificant positive sign. The regression results are also once again surprising as Hofsted's first three dimensions, power distance, individualism and uncertainty avoidance do not have any significant effect on economic growth. These findings do not confirm the previous studies for example (Johnson and Lenartowicz, 1998; Franke, Hofstede's and Bond 1991; Hofstede and Bond, 1988; Hofstede, 1994 and Gorodnichenko and Roland, 2010) which has shown the positive effect of individualism on economic growth. In Model 6 the Masculinity has significant expected results and also supports the earlier studies.

**Table 4: Hofstede Culture Dimensions and Growth (Developing Countries)**

Dependent Variable: Growth rate of percapita GDP

| Variables | Model-1 | Model-2 | Model-3 | Model-4 | Model-5 | Model-6 |
|---|---|---|---|---|---|---|
| Constant | -6.51* | -4.94* | -5.83* | -4.57* | -3.92** | -3.81 |
| Initial level of GDP percapita growth (log) | -0.933* | -.546* | -.554* | -.489* | -.497* | -.512* |
| Invest/GDP | 0.24** | .05** | -.02*** | .014* | .016*** | .009** |
| Secondary Education | 0.42** | .263*** | .250** | .251 | .330** | .248 |
| Pop. Growth | 0.309 | -.021 | -.035 | -.012 | -.067 | -.021** |
| Power Distance | | -.086 | | | | -.021 |
| Individualism | | | .086 | | | .142 |
| Uncertainty avoidance | | | | .139 | | .137 |
| Masculinity | | | | | -.129 | -.192*** |
| $R^2$ | .571 | .632 | .632 | .638 | .640 | .672 |

Significance level: * at 1%, ** at 5%, *** at 10%.

 

The results presented in Model-1 in Table 5 below shows a significant impact of economic variables to dependent variable economic growth with theoretically expected sign. Model 2 represents the insignificant impact of trust on growth in developing region showing that social capital could not be considered as an important factor that positively contributes to economic growth in developing countries and rejects the claim of role of trust for economic growth in this region. The literature argued that the social norm of central significance is trustworthy attitude, and that social capital corresponds with a high incidence of trustworthiness behaviour (Fukuyama 2000); Putnam (1993); Coleman, 1990; and Granovetter, (1985). The people who keep their promises are known as trustworthy; even when it is costly to doing so and may be taking action for this does not require maximizing payoffs. Such honesty is tremendously important when relationships cannot be fully bounded by contracts, but when trade would be advantageous nonetheless. When individuals have confidence that non-contracted contingencies will not be subjugated to one's disadvantage, one could be interested to cooperate in business activities even when promises cannot be assured. A society with many trustworthy members allows people to have that confidence, and is thus rich in social capital[10]. The argument has worth in the economic literature but in this study it proved that social capital could not have significant role for this region.

In Model 3 we estimate the cultural motivational index the results evident again that cultural index also have insignificant effect on growth. The findings also the rejected the claim of earlier study.

**Table 5: Trust, Cultural Motivational Index and Economic Growth (Developing Countries)**

Dependent Variable GDP percapita Growth

| Variables | Model-1 | Model-2 | Model-3 |
|---|---|---|---|
| constant | -6.51* | -5.21 | -4.81* |
| Initial level of GDP percapita growth (log) | -0.933* | -.386* | -.385* |
| Invest/GDP | 0.24** | .254** | .224*** |
| Secondary Education | 0.42** | .589** | .559** |
| Pop. Growth | 0.309 | -.415** | -.380** |
| Trust | | -.005 | |
| Culture Index | | | -.031 |
| $R^2$ | .571 | ..553 | .532 |

Significance level: * at 1%, ** at 5%, *** at 10%.

There is a growing body of literature on the relationship between ethnic diversity, the quality of institutions, and economic growth. It is further argues that diversity implies a lower level of investment Mauro (1995) has a direct negative effect on economic growth Easterly and Levine 1997; La Porta et al. 1999; Bluedorn 2001); Easterly and Levine (1997); Taylor and Hudson, 1972; Barro (1997a, b). Collier and Hoeffler (2002) find that religious fractionalization has no effect on the risk of conflict. With due importance of diversity in contemporary literature, there is still need to test the relationship between diversity and economic growth. Keeping the significant importance of diversity in growth literature, we include the diversity variable in our growth model and results are given in Table 6.

**Table 6: Culture Diversity and Economic Growth (Developing Countries)**

Dependent Variable: Growth rate of percapita GDP

| Variables | Model-1 | Model-2 | Model-3 |
|---|---|---|---|
| Initial level of GDP percapita growth (log) | -.295** | -.318* | .181** |
| Education | . 144* | .162** | .060** |
| Invest/GDP | .227** | .208* | .337** |
| Pop. Growth | -.172* | -.145** | -.136** |
| Ethnic Fractionalization (EF) | .062 | | .550 |
| Ethnic Polarization (EP) | .095 | | .122 |
| Religious Fractionalization (RF) | | -.355** | -.418* |
| Religious Polarization (RP) | | -.267** | -.398* |
| Constant | -9.01** | -6.12** | -7.45** |
| $R^2$ | .491 | .513 | .497 |

Significance level: * at 1%, ** at 5%, *** at 10%.

The variable used for regression is economic variable which already estimated in previous model above and cultural diversity variable includes ethnic fractionalization, ethnic polarization, religious fractionalization and religious polarization. The results presented in Model-1 shows that ethnic fractionalization and ethnic polarization both are insignificant and do not have any significant impact on growth.

[10] The attempts have been made to estimate trustworthiness through surveys data and also relate these to real behavior and economic performance; see Glaeser et. al. (2000a) and La Porta et. al. (1997). Knack and Keefer (1997) also estimated the significant role of social norms, trust to growth across nations.

 

In Model 2 religious fractionalization and religious polarization both have significant negative coefficients which imply that religious diversity matter more than ethnic diversity in determining the level of economic growth in developing countries. So, on the basis of these results; it can be argued that religious diversity is more likely to hinder the economic growth in poor countries. It can be true because of religious diversity; most of poor countries suffer in religious conflicts which lead to increase the government consumption. Finally, we estimate all four diversity variable together with economic variables and result are given in Model 3. The Model 3 has same results as in Model 2. The religious diversity again has significance in the same negative sign as already appeared in Model 2.

**Model Specification for Developed Countries**

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} \quad (13)$$

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} + \curlywedge(Rgst)_{it(Dvld)} \quad (14)$$

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} + \pi_2(PDI)_{it(Dvld)} \quad (15)$$

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} + \pi_1(IDV)_{it(Dvld)} \quad (16)$$

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} + \pi_3(UN)_{it(Dvld)}$$

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} + \pi_3(MAS)_{it(Dvld)} \quad (17)$$

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} + \pi_1(IDV)_{it(Dvld)} + \pi_2(PDI)_{it(Dvld)} + \pi_3(UN)_{it(Dvld)} + \pi_4(MAS)_{it(Dvld)} \quad (18)$$

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} + \gamma_1(Trust)_{it(Dvld)} \quad (19)$$

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} + \gamma_2(CMI)_{it(Dvld)} \quad (20)$$

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} + \Omega_1(EF)_{it(Dvld)} + \theta_1(EP)_{it(Dvld)} \quad (21)$$

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} + \Omega_2(RF)_{it(Dvld)} + \theta_2(RP)_{it(Dvld)} \quad (22)$$

$$G_{it(Dvld)} = \alpha + \beta_1(logIG)_{it(Dvld)} + \beta_2(Edu)_{it(Dvld)} + \beta_3(Inv)_{it(Dvld)} + \beta_5(Pop.grth)_{it(Dvld)} + \Omega_1(EF)_{it(Dvld)} + \Omega_2(RF)_{it(Dvld)} + \theta_1(EP)_{it(Dvld)} + \theta_2(RP)_{it(Dvld)} \quad (23)$$

The correlation coefficients among the all cultural variables are presented in Table7. The religious variable (Raised religiously at home) negatively and significantly correlated with Individualism, trust and culture index and significantly positively correlated with masculinity, uncertainty avoidance, religious fractionalization and religious polarization. These findings do not support to the Weber argument that religion generates the values that support the healthy economic activities.

The other variables of our interest, Hofstede's culture dimension, power distance has negative and significant correlation with Individualism, trust and culture index and has significant positive correlation with cultural diversity variables and insignificant relation with other variables. The individualism is positively correlated with trust and culture index and negatively correlated with cultural diversity variables.

Similarly, masculinity and uncertainly avoidance have inverse correlation with trust and culture index as expected by theory.

The significant negative correlation is also found between trust, culture index with religious fractionalization and religious polarization and insignificant correlation between ethnic fractionalization and ethnic polarization. In short, most of our cultural variables have significant correlation with each other, with theoretically expected sign.

**Table 7: Correlation between Cultural Variables (Developed Countries)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Raised religiously at home | 1 | | | | | | | | | | |
| Power Distance | .268 | 1 | | | | | | | | | |
| Individualism | -.421*** | -.686** | 1 | | | | | | | | |
| Masculinity | .368*** | .080 | -.088 | 1 | | | | | | | |
| Uncertanity avoidance | .566* | .206 | -.053 | .269 | 1 | | | | | | |
| Culture Motv. index | -.383** | -.627** | .481** | -.288*** | -.438* | 1 | | | | | |
| Trust | -.464* | -.506** | .533** | -.345* | -.408* | .879** | 1 | | | | |
| Ethnic Frac. | .004 | .407* | -.183 | .087 | -.011 | -.257 | -.32*** | 1 | | | |
| Ethnic Pol. | .278 | .169 | .066 | .131 | -.018 | -.094 | .041 | .621** | 1 | | |
| Religious Frac. | .222* | .497** | -.571** | .278 | -.191 | -.141 | -.158* | .411* | .31*** | 1 | ** |
| Religious pol. | .092* | .526** | -.529** | .273 | -.077 | -.195 | -.21** | .446** | .375* | .963** | 1 |

Significance level: * at 1%, ** at 5%, *** at 10%.

The correlation between economic and cultural variables is listed in Table 8. The variables of our interest religiosity (Raised religiously at home) has no significant correlation with our main economic variables only a single correlation religiosity has with population growth indicating that religion does not have significant role for economic performance of this region. Hofsted's dimension power distance is significantly negatively correlated with economic growth, investment and education, and insignificantly positively correlated with population growth. The individualism is positively correlated with growth and education and surprisingly unexpected negatively correlated with investment. It may be that individualism leads to less saving which caused low investment.

The others interesting results are also due to masculinity and uncertainty avoidance which have unexpected insignificant correlation with all economic variables. The only significant correlation found between uncertainty and investment is with expected coefficient. Similarly, cultural variables trust and cultural motivational index also have significant positive and theoretically expected signs for economic growth, investment and education and uncorrelated with population growth.

The other cultural diversity variables for example ethnic fractionalization has positive correlation with economic growth uncorrelated with other economic variables. Ethnic polarization does not have significant correlation with any economic variable. Similarly, religious fractionalization and religious polarization both are uncorrelated with economic growth and unexpected positively correlated with investment. These results are interesting and debate able that why and how religious diversity is conducive to raise the volume of investment. Finally, religious polarization and religious fractionalization both have same negative correlation with education with expected sign.

**Table 9: Correlation between Economic and Cultural Variables (Developed Countries)**

| | Growth | Investment | Pop. grth | Education |
|---|---|---|---|---|
| Raised religiously at home | -.147 | .133 | .296*** | -.170 |
| Power Distance | -.413* | .432* | .243 | -.417* |
| Individualism | .463** | .533** | -.147 | .597** |
| Masculinity | -.046 | -.023 | -.025 | -.163 |
| Uncertainty avoidance | -.212 | -.435* | .022 | -.129 |
| Culture Motivational Index | .495** | .053 | -.108 | .322* |
| Trust | .569** | .095 | -.023 | .382* |
| Ethnic Fractionalization | .020** | -.059 | .120 | -.155 |
| Ethnic Polarization | -.018 | .154 | .226 | -.137 |
| Religious Fractionalization | -.011 | .569** | .169 | -.469** |
| Religious polarization | -.037 | .546** | .159 | -.458** |

Significance level: * at 1%, ** at 5%, *** at 10%.

To examine the role of religious variables on economic growth, we estimate the religious variable with economic variable and results are presented in Table 10. The estimated results describe that the religious variable has strong and significant effect on economic growth (see table above) the regression result also confirms that religious have significant impact on growth in developed region but inversely impact on growth as compared to Weber (1904) who argued that religious encouraged the economic performance especially in Protestant region which becomes the cause of development of protestant region during nineteen century.

**Table 10: Religiosity and Economic Growth (Developed Countries)**

Dependent Variable: Growth rate of percapita GDP

| | Coefficient | Std. Error | t | Sig. |
|---|---|---|---|---|
| (Constant) | -9.378 | 713.048 | -13.107 | .000 |
| Log of per capita GDP in 1980 | -.998 | 201.423 | 14.449 | .000 |
| Investment | .099 | 141.984 | 2.631 | .021 |
| School enrollment, secondary | .175 | 39.000 | -2.497 | .023 |
| Population growth | .114 | 83.712 | 1.839 | .084 |
| Raised religiously at home | -.170 | 27.293 | -2.730 | .014 |
| R-Square | .845 | | | |

To test the impact of Hofstede variable on economic growth, we estimate the Hofstede variable with economic variable one by one and results are presented in Table 11. The Model 1 shows that all our economic variables are highly significant with expected sign instead of population growth which is insignificant. The results from model-1 describe that power distance has negative effect on economic growth as expected by theory and some researchers for example (Johnson and Lenartowicz, 1998; Franke, Hofstede's and Bond 1991).

The results from Model 3 also show that individualism has positive and strong impact on growth. These results also confirm the previous studies like Hofstede and Bond, 1988; Hofstede, 1994 and Gorodnichenko and Roland, 2010) all found positive effect of individualism on economic performance. The variables, uncertainty avoidance and masculinity evident that these two variables do not have any significant impact on economic growth see Model 6.

**Table 11: Hofstede Variables and Economic Growth (Developed Countries)**

Dependent Variable: Growth rate of percapita GDP

| Variables | Model-1 | Model-2 | Model-3 | Model-4 | Model-5 | Model-6 |
|---|---|---|---|---|---|---|
| constant | -8.14 | -6.66* | -7.26* | -6.56* | -6.30* | -6.03* |
| Initial level of GDP percapita growth (log) | -1.068* | -.990* | -.948* | -1.047* | -1.041* | -.939* |
| Invest/GDP | .323* | .390* | .455* | .315* | .355** | .452* |
| Secondary Education | .278* | .277** | .370* | .270** | .251 | .367* |
| Pop. Growth | -.020 | -.041 | -.073 | -.107 | -.126 | -.044** |
| Power Distance | | -.194* | | | | -.074** |
| Individualism | | | .339* | | | .301** |
| Uncertainty avoidance | | | | -.119 | | -.015 |
| Masculinity | | | | | -.006 | .012 |
| $R^2$ | .803 | .830 | .863 | .823 | .811 | .862 |

Significance level: * at 1%, ** at 5%, *** at 10%.

The results presented in Model-1 in Table 12 below, explain the significant impact of trust on economic growth which accordance with the literature as Bjornskov (2006b) finds that the macro-level impact of trust on schooling is both positive and significant. Knack and Keefer (1997) also state that a significant relationship exists between human capital and trust. Higher trust levels might produce increases in information sharing and thus conducive the economic growth (Guiso et al. 2004; Calderon et al. 2002); Pritchett 2006; Putnam 2000; Durlauf and Fafchamps 2005); Chan 2007; Butter and Mosch 2003; Beugelsdijk et al. 2004; La Porta et al. 1997; Beugelsdijk et al. 2004; Bjornskov 2006a) finds that trust is the sole component of social capital that determines governance and life satisfaction. Social capital, as embodied in family and community relations, is very important to the accumulation of human capital Coleman 1988; Putnam et al. 1993; Helliwell and Putnam's, 1995).

In Model-2, we estimate the cultural motivational index, the results are evident again that cultural index also has significant effect on growth. The findings also justify the claim of earlier studies, for example, Inglehart (2000) Tabellini (2006); Willisom-2011; Khan et al 2010..

 

**Table 12: Trust, Cultural Motivational Index and Economic Growth (Developed Countries)**

Dependent Variable: Growth rate of percapita GDP

| Variables | Model-1 | Model-2 |
|---|---|---|
| Constant | 3.389* | 4.302** |
| Initial level of GDP percapita growth (log) | 1.054* | 1.064* |
| Invest/GDP | .073** | .091* |
| Secondary Education | -.157* | -.146* |
| Pop. Growth | .004 | .005 |
| Trust | .099* | |
| Culture Index | | .074** |
| $R^2$ | 0.746 | 0.741 |

Significance level: * at 1%, ** at 5%, *** at 10%.

As, it has been discussed in the literature that ethnic diversity plays negative role in determining the level of economic growth in a country. It is also argues that diversity leads a lower level of investment (Mauro, 1995; Levine 1997; La Porta et al. 1999; Bluedorn 2001); Easterly and Levine 1997; Taylor and Hudson, 1972; Barro 1997a, b). Few researchers also argued that diversity measured as a fractionalization index, does not have significant impact on economic growth.

These contemporary views of the researchers force that there is still need to test the relationship between diversity and economic growth. Keeping the significant importance of diversity in growth literature, we include the diversity variable in our growth model and results are given in Table 13.

To examine the relationship between cultural diversity and economic growth, we include diversity variable, ethnic fractionalization, ethnic polarization, religious fractionalization and religious polarization in our baseline model and results are shown in Table 17. The results presented in Model-1 show that ethnic fractionalization and ethnic polarization both are at 10 percent level of significant and describe the ethnic fractionalization has a positive effect on growth where ethnic polarization has a negative effect on growth. The results from ethnic polarization support the previous studies where results from ethnic fractionalization opposite of earlier studies. As discussed in literature that the ethnic diversity leads to a lower level of investment and growth (Mauro 1995; La Porta et al. 1999; Bluedorn 2001); Easterly and Levine 1997); Taylor and Hudson, 1972 ; Barro 1997a, b).

In Model 2, religious fractionalization has significant and positive effect on growth as ethnic fractionalization has in Model 1 but religious polarization has significant negative coefficients which implies that religious diversity matters more than ethnic diversity in determining the level of economic growth. So, on the basis of these results; it can be argued that religious polarization and ethnic polarization are more likely to hinder the economic growth where fractionalization is conducive to the economic growth. Finally, we estimate all four diversity variables together with economic variables and results are given in Model 3. The Model 3, has same results as in Model 2. The ethnic fractionalization and religious fractionalization both are significant with positive sign where ethnic polarization and religious polarization are also significant but with negative sign.

Therefore, it can be concluded on the basis of these results that fractionalization with economic rationality can cause the innovation and then encourage activities that lead to better productivity in a country.

**Table 13: Culture Diversity and Economic Growth (Developed Countries)**

Dependent Variable: Growth rate of percapita GDP

| **Variables** | **Model-1** | **Model-2** | **Model-3** |
|---|---|---|---|
| Initial level of GDP percapita growth (log) | -1.109* | -1.067* | -.242 |
| Secondary Education | .148* | -.094** | -.252 |
| Invest/GDP | .129* | .043 | .197 |
| Pop. Growth | -.010 | -.052 | .056 |
| Ethnic Fractionalization (EF) | .106*** | | .046** |
| Ethnic Polarization (EP) | -.080*** | | -.042* |
| Religious Fractionalization (RF) | | .356** | .243** |
| Religious Polarization (RP) | | -.272*** | -.016*** |
| Constant | .344** | .531* | 5.366** |
| $R^2$ | | | |

Significance level: * at 1%, ** at 5%, *** at 10%.

**Summary and Conclusion**

This study endeavored to identify the indicators of economic growth of the diverse cultural regions. In fact, it has turned out to be a turning point in analysis of economic growth and development where cultural factors along with the conventional set of economic variables are being advised to be included in research studies designed to examine the economic performance of different countries of the world.

It is no more a secret that the standard economic models do not explain the pattern of saving rates and economic growth in different countries. This is why, it is being argued that empirical research incorporating cultural factors with standard economic model can perhaps help to identify specific components of culture that are relevant to economic development.

It is seen that economic theory has been augmented where “social norms" and "cultural" factors could be fitted theoretically in growth models (Cole, Malaith, and Postlewaite 1992; Elster 1989; Fershtman and Weiss 1993). Since savings and investment behavior holds an important place in growth models, we need to study how cultural and motivational factors can be accommodated in these existing economic models. We tested these hypotheses within a growth regression framework by using fourteen cultural variables with standard economic variables in two economic groups[11].

The cultural variables, we used for analysis are: Cultural Motivational Index, Trust, Hofstede cultural dimensions (*individualism, power distance, uncertainty avoidance, muscularity*), and four cultural diversity variable (*ethnic fractionalization, ethnic polarization, religious fractionalization, religious polarization*).

The method of the ordinary least squares was used to test the economic and culture models of growth on respective economic groups. It was found that economic and cultural factors impact on economic growth. The empirical results of this study support this theory, and are consistent with those enunciated by social capital theory which postulates that trust, which is a key factor, makes societies competent to cooperate, reduces transaction costs and creates efficient traditions. At first, general trust is found to be positively associated with real growth. The causality seems to be from trust to growth which matches closely the findings from social capital theory, and is also one of the effective predictor of economic growth in present study.

The Hofstede component of culture explained by individualism and power distance variables are found to be an important determinant of regional economic performance in developed countries. The same cultural variables do not have a significant effect in developing world. The other cultural dimensions of above mentioned scholars do not have robust effect in any region.

In less developed societies, which are characterized by less education, lower life expectancy and income, less urbanization, large income differences between rich and poor, a more authoritarian or hierarchical culture, differences of status and power are more accepted and legitimated. Cultures with larger populations and cultural or ethnic diversity are also characterized by a system with greater hierarchical distance. Hierarchical values are less common in societies with a majority of Protestants, and are more often present in Islamic societies than in others.

It may be further argued that, “individualist” attributes such as personal achievement, success and competitive attitudes were more highly valued in developing countries and collectivist and hierarchical cultures than in post-materialist, developed, more egalitarian and contractual societies. In a complementary way, the differentiation between Success-centered attitudes and Self-reliance shows that Success was clearly related to Collectivism, but Self-reliance was not, and was more common, in contrast to the individualist assumptions, in less developed countries.

In less developed, hierarchical and collectivist societies, the relative scarcity of resources, a hard struggle for social survival, and acceptance of inequalities all impose strong in-group solidarity, generalized competitiveness and an emphasis on personal effort and reward. In developed, egalitarian, individualist and post-materialist societies, material stability, lack of ascribed group membership and expressive individualism deemphasize competition and probably reinforce the importance of social relationships, as suggested by the association between interpersonal trust, individualism and egalitarian values.

The predictable results from Cultural diversity indices "ethnic" diversity and religious diversity compared to the prevailing index of ethnic fragmentation and religious fractionalization with ethnic and religious polarization, fractionalization appears to be better measure that captures the effect of growth. Most of the fractionalization results, especially, ethnic fractionalization show positive effect on economic growth in economically rich region. The religious polarization has a significant negative impact on growth in developing region. These findings are consistent with recent results in economics literature that exogenous religious diversity is negatively and robustly correlated with economic growth. By contrast, our results suggest that an increase in religious polarization has a negative effect on growth because it reduces the rate of investment and increases public consumption and the incidence of civil wars.

The interesting results also appeared for this region as cultural fractionalization show theoretically unexpected positive effect on growth. It could be argued that in the developed countries, people are more individualistic and have utility maximizing behavior that may lead to competition and induce to innovation which further raises the labour productivity. Therefore, it may be the addition in the literature that diversity with rationality creates competition and stimulates innovation and diversity with irrationality causes conflict in a society which further leads to destruction and lower investment in the country.

[11] Economic groups are: high income and low income countries as criteria developed by World Bank

**Important findings**

The critical question raised by Sala -i- Martin that culture is neutral and there is a universal process of economic development due to which culture does not have any significant effect on growth. The results of this study show that there is no cultural neutrality developed and less developed economies.

Most of our fractionalization results show positive impact on growth in economically sound countries. These findings can lead us to say that diversity with rationality brings innovation and increases the production efficiency, whereas, diversity with irrationality causes conflicts, which slows down economic activity of a country.

**References**

Alesina, A. and R. Perotti (1996). Income distribution, political instability, and investment. European Economic Review 40(6): 1203-1228.

Altman, A. (2012). Genocide and Crimes against Humanity: Dispelling the Conceptual Fog. Social Philosophy & Policy 29(1): 280-308.

Barro R J (1997b). Determinants of Economic Growth: A Cross-Country Empirical Study. MIT Press, Cambridge, MA.

Barro, R. J. and X. Sala-i-Martin (2004). Economic growth. Cambridge, Mass., MIT Press.

Barro, R., Hwang, J., & McCleary, R. (2010). Religious conversion in 40 countries. Journal for the Scientific Study of Religion, 49(1), 15-36.

Beugelsdijk, S., H. L. F. de Groot, et al. (2004). Trust and economic growth: a robustness analysis. Oxford Economic Papers-New Series 56(1): 118-134.

Bjørnskov, C. (2006 a). How does social trust affect economic growth? Aarhus, Aarhus School of Business.

Bjørnskov, C. (2006 b). The multiple facets of social capital. European Journal of Political Economy 22(2006): 22 - 40.

Bluedorn, J. C. (2001). Can democracy help? Growth and ethnic divisions. Economics Letters 70(1): 121-126.

Butter, F.A.G. den & R.H.J. Mosch (2003). Trade, trust and transaction costs, Tinbergen Institute Discussion Paper TI 2003-082/3, 26 pp.

Caballero, R., P. Aspe, et al. (2011). Economic Policy Challenges: Macroeconomics and Fiscal Policy. MIT150 Symposia Series.

Cateora and Graham, Eds. (1998). International Marketing, USA:McGraw Hill.

Chan, L. M. and T. Hodges (2007). Cataloging and classification : an introduction. Lanham, Md., Scarecrow Press.

Cole, H., Malaith, G. and Postlewaite, A. (1998). Effcient non-contractible investments in a large economy, Technical report, Caress Working Pape no. 98-13, University of Pennsylvania. to appear in the Quality Rated Journal.

Coleman, J. S. (1988). "Social Capital in the Creation of Human-Capital." American Journal of Sociology 94: S95-S120.

Coleman, J. S. (1990). Foundations of social theory. Cambridge, Mass., Harvard University Press.

Collier, P. (2002). "Social capital and poverty: a microeconomic perspective." The role of social capital in development: An empirical assessment: 19-41.

Coyne C J., (2011). The Political Economy of the Creeping Militarization of U.S. Foreign Policy, Peace Economics, Peace Science and Public Policy, Berkeley Electronic Press, vol. 17(1), pages 4.

Easterly, W. and R. Levine (2003). Tropics, germs, and crops: how endowments influence economic development. Journal of Monetary Economics 50(1): 3-39.

Elster, J. (1989). Nuts and bolts for the social sciences. Cambridge, Cambridge University Press.

Fearon, J. D. (2004). Why do some civil wars last so much longer than others? Journal of Peace Research 41(3): 275-301.

Fearon, J. D. and D. D. Laitin (2003). Ethnicity, insurgency, and civil war. American Political Science Review 97(1): 75-90.

Fershtman, C., & Weiss, Y. (1993). Social status, culture and economic performance. The Economic Journal, 103(419), 946-959.

Franke, R. H., G. Hofstede, et al. (1991). Cultural roots of economic performance: A research noteA. Strategic Management Journal 12(S1): 165-173.

Fukuyama, F. (2000). Social capital and civil society, International Monetary Fund.

Fukuyama, F., (1995), Trust. The Social Virtues and the Creation of Prosperity. Free Press, New York, NY.

Glaeser, E. L. and A. Shleifer (2002). The Curley Effect, National Bureau of Economic Research.

Gorodnichenko, Y. and G. Roland (2010). Culture, institutions and the wealth of nations, National Bureau of Economic Research.

Gorodnichenko, Y. and G. Roland (2011). Understanding the Individualism-Collectivism Cleavage and its

Effects: Lessons from Cultural Psychology.
Granato, J. and R. Inglehart D. Leblang (1996). Cultural Values, Stable Democracy and Economic Development: Reply". American Journal of Political Science 40(3): 680-96.
Granovetter, M. (1985). Economic action and social structure: the problem of embeddedness. Readings in economic sociology: 63-68.
Guiso, L., P. Sapienza, et al. (2004). Cultural biases in economic exchange, National Bureau of Economic Research.
Harrison, L.E., Huntington, S.P. (Eds.), (2000), Culture Matters. How Values Shape Human Progress. Basic Books, New York, NY.
Harrison, A. (2006). Globalization and poverty: National Bureau of Economic Research.
Harrison, D. A., and McLaughlin, M. E. (1993). Cognitive processes in self-report responses: Tests of item context effects in work attitude measures. Journal of Applied Psychology, 78: 129-140.
Harrison, K. (2001). Ourselves, our bodies: Thin-ideal media, self-discrepancies, and eating disorder symptomatology in adolescents. Journal of Social and Clinical Psychology, 20(3), 289-323.
Helliwell, J. F. (1994). Empirical linkages between democracy and economic growth. British Journal of Political Science 24(02): 225-248.
Helliwell, J. F. and R. D. Putnam (1995). Economic growth and social capital in Italy. Eastern Economic Journal 21(3): 295-307.
Hofstede, G. (1988). McGregor in southeast Asia. Social values and development: Asian perspectives: 304-314.
Hofstede, G. (1994). Predicting managers' career success in an international setting: the validity of ratings by training staff versus training peers. MIR: Management International Review 34: 63-70.
Hofstede, G., A. V. Garibaldi de Hilal, et al. (2010). Comparing regional cultures within a country: Lessons from Brazil. Journal of Cross-Cultural Psychology 41(3): 336-352.
Inglehart, R. (1997). Modernization and postmodernization. Cultural, political and economic change in 43 societies, Princeton: Princeton University Press.
Inglehart, R. (2000). Globalization and postmodern values. Washington Quarterly 23(1): 215-228.
Johnson, J. P. and T. Lenartowicz (1998). Culture, freedom and economic growth: Do cultural values explain economic growth? Journal of World Business 33(4): 332-356.
Khan et al., (2012). Cultural Causes of Economic Underdevelopment in the Middle East: An empirical analysis, Middle East Journal of Scientific Research 2012 forthcoming.
Knack S, Keefer P (1997). Does Social Capital Have an Economic Payoff? Q. J. Econ., 112(4): 1251–1288.
Kockel, U. (2002). Culture and economy: contemporary perspectives, Ashgate.
Krishna M M G, Lin Y, Rumbley J N, Englander S W (2003). Cooperative omega loops in cytochrome c: Role in folding and function. J. Mol. Biol., 331: 29–36
La Porta, R., F. Lopez-de-Silanes, et al. (1997). Legal determinants of external finance. Journal of Finance: 1131-1150.
La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (2000). Investor protection and corporate governance. Journal of financial economics, 58(1), 3-27.
Landau, I. (2003). Movement out of control. Linguistic Inquiry, 34(3), 471-498.
Levine, Ross, and David Renelt. (1992). A Sensitivity Analysis of Cross-Country Growth Regressions. American Economic Review 82:942-63.
Mankiw, N. Gregory, David Romer, and David Weil. (1992). A Contribution to the Empirics of Economic Growth. Quarterly Journal of Economics 152:407-37.
Martin, P. (1997). Wound healing--aiming for perfect skin regeneration. Science, 276(5309), 75-81.
Mauro, P. (1995). Corruption and growth. The Quarterly Journal of Economics 110(3): 681-712.
Minkov, M. and G. Hofstede (2011). Is National Culture a Meaningful Concept? Cultural Values Delineate Homogeneous National Clusters of In-Country Regions." Cross-Cultural Research.
Oyserman, D. (2011). Culture as situated cognition: Cultural mindsets, cultural fluency, and meaning making. European Review of Social Psychology 22(1): 164-214.
Pritchett, L. (2006). Let their people come: breaking the gridlock on international labor mobility, Ctr for Global Development.
Putnam, H. (2000). Minds and machines.
Putnam, R. D. (1993). The prosperous community. The american prospect 4(13): 35-42.
Ramsey, F. P. (1928). A mathematical theory of saving. The Economic Journal 38(152): 543-559.
Romer, P. M. (1986). "Increasing returns and long-run growth." The Journal of Political Economy: 1002-1037.
Solow, R. M. (1956). A contribution to the theory of economic growth. The Quarterly Journal of Economics 70(1): 65-94.
Tabellini, G. (2007). Culture and institutions. CEPR Discussion Paper No. DP6589.
Tabellini, G. and M. Harari (2009). The effect of culture on the functioning of institutions: Evidence from

 

European regions. CESifo DICE Report 7(1): 13-19.
Taylor, C. L., Hudson, et al. (1972). World handbook of political and social indicators. 2nd ed., by Charles Lewis Taylor and Michael C. Hudson with the collaboration of Katherine H. Dolan [and others], New Haven, London: Yale University Press.
Williamson, C. R. and R. L. Mathers (2011). Economic freedom, culture, and growth. Public Choice: 1-23.
Zak, P.J., and S. Knack. (2001). Trust and Growth, The Economic Journal, 111: 295–321.

**Apendix-1**

| | | |
|---|---|---|
| **Variable** | **Data Description** | **Data Source** |
| GDP per capita growth | GDP per capita growth (annual %) | World Development Indicators 2010 |
| Motivational Index | We construct motivation index comprised of the sum of four positive beliefs (control, respect, trust, thrift) minus the negative belief (obedience). | European and World Values Surveys, 1990 - 2007 |
| Investment share of GDP | Ratio of total investment to GDP in 2000 constant dollars | Penn World Tables version 6.3 |
| Population Growth | Growth rate of population | World Development Indicators 2010 |
| Education | Total number of pupils enrolled in secondary school | World Development Indicators 2010. |
| HDI | Human Development Index | World Development Report 2011 |
| Cultural Diversity Variables | Social Diversity Index<br>Index for ethnic fractionalization<br>Index for religious fractionalization<br>Index for ethnic polarization<br>Index for religious polarization | Source: Okediji, 2005) (Data Source: World Christian Encyclopedia, 2001; World Fact book, various years; Handbook of Political and Social Indicators.<br>Montalvo and<br>Reynal-Querol (2205)<br>James D. Fearon (2003)<br>Alesina *et al*. (2003). |

The IISTE is a pioneer in the Open-Access hosting service and academic event management. The aim of the firm is Accelerating Global Knowledge Sharing.

More information about the firm can be found on the homepage:
http://www.iiste.org

## CALL FOR JOURNAL PAPERS

There are more than 30 peer-reviewed academic journals hosted under the hosting platform.

**Prospective authors of journals can find the submission instruction on the following page:** http://www.iiste.org/journals/ All the journals articles are available online to the readers all over the world without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. Paper version of the journals is also available upon request of readers and authors.

## MORE RESOURCES

Book publication information: http://www.iiste.org/book/

Academic conference: http://www.iiste.org/conference/upcoming-conferences-call-for-paper/

## IISTE Knowledge Sharing Partners

EBSCO, Index Copernicus, Ulrich's Periodicals Directory, JournalTOCS, PKP Open Archives Harvester, Bielefeld Academic Search Engine, Elektronische Zeitschriftenbibliothek EZB, Open J-Gate, OCLC WorldCat, Universe Digtial Library , NewJour, Google Scholar