



Does the Specific Matrix of Cultural Values and Ethnic- Religious Diversity Hinder Economic Development in African Region?

Muhammad Mahroof Khan ^{a*}, Muhammad Ali Chaudhary ^b, Faheem Ghazanfar ^c, Muhammad Saim Hashmi ^d

^{a*,c} Faculty of Administrative Sciences Kotli, University of Azad Jammu & Kashmir, Pakistan

^b Department of Economics, Quaid-e-Azam University Islamabad, Pakistan

^d Department of Economics, University of Gujrat, Pakistan

^{a*} Email: kanhust@yahoo.com

^b Email: chymali@yahoo.com

^c Email: faheemghazanfar@yahoo.com

^d Email: msaimhashmi@gmail.com

Abstract

This study empirically probes the role of culture in fostering or hindering economic performance in Africa. Our results show that cultural values appear to some extent have statistically significant and operationally meaningful economic effects. We also test the effect of ethnic and religious diversity which discourage economic growth. Using the OLS method, we appraised the baseline endogenous economic growth model to incorporate cultural variables. Cultural attitudes toward trust and self-determination were found to affect economic development significantly. However, respect was associated with unexpected signs of an inverse relationship with economic growth. Further, the cultural motivational index (CMI) was also negatively associated with growth.

* Corresponding author. Tel: +92 345 9389538

E-mail address: kanhust@yahoo.com.

This implies that the traditional values of African culture do not lend support to economic growth. While the ethnic and religious fractionalization may not be harmful to development, ethnic and religious polarization affects the development more adversely.

Keywords: Culture values; Economic Growth; Ethnic Fractionalization; Religious Fractionalization; Africa

1. Introduction

The problem of underdevelopment of the African region has constantly been invoking the attention of researchers and policy makers for its amelioration. Researchers have given different explanations of the development failure in which they have identified the major factors responsible for it. Some researchers put geographical segregation and climate conditions on the top of the factors that hindering the development of this region [1, 2]. Some other researchers have attributed the persistent underdevelopment of the region to colonization which robbed Africans of their self-confidence [3]. Still some other researchers believe that it is the characteristic attitude of the people which grew in the cradle of African culture contributes hesitantly to modern economic development [4]. It is also argued that high cultural diversities like ethnic and linguistic fragmentation [5] render the availability of financial aid awfully inadequate to launch the effective development processes [6]. Further, the international economic and political environment is not considered adequately favourable to the development of poor countries [7].

On the other hand, most of the scholars agree that “indigenous” languages and cultures in the Third World do not encourage modern economic development at best, or hindering development at worst is a misapprehension of the reality. In fact, now the contribution of cultural factors in economic development is increasingly being recognized. This is because the empirical research of the important development-inducing factors likes capital investment, literacy rate, population growth, health expenditure, saving rate, and advancement in technology and innovation has failed to explain performance differences in different countries of the world [8].

It is not necessary or indispensable for poor countries to adapt and catch up the fast growth (the convergence hypothesis) because correlations of economic positions with growth have normally been found to be modest. However, current quantitative investigations no longer hold the historical importance of cultural variables such as ascetic Protestantism [9] and the achievement motivation as factors that contribute to more rapid development [10].

The neo-liberal economists on their own assert that the autonomy to pursue self-interest and rational choices leads to a flourishing economic performance. In fact, they insistently argue that proper and efficient implementation of economic policies independent of cultural values produce the same outcome. Therefore, they recommended that in order to escape the trap of economic underdevelopment and poverty, neo-liberal economic policies should be embraced.

However, the unresolved issue is why the principle of self-interest and rationality led the same performance in different countries. For example why the East Asian region has achieved rapid economic development and there is the failure of economic development in the African region when both the regions have been pleaded the application of same policies. It may be argued that the fact is the “economic” argument alone cannot be taken as a creed: self-interest and rationality do not seem to be the only path to initiate economic growth and development in a given society. The other approach is to examine the link between cultural values and economic growth and development. The key objective of this study is to integrate the “cultural values” into the economic growth framework with a view to exploring the relationship between culture and economic outcome and thereby looking the underdevelopment of African region in the mirror of culture.

To achieve the objective of this study, cultural and economic variables were evaluated with the help of the growth model. To capture the effects of culture on economic growth, we focused on those cultural traits which are more relevant to the economic activities of the countries considered for analysis. The cultural impact on economic growth was measured by the cultural motivational index produced from the data of World Values Surveys. The attributes of level of trust, respect, self-determination, thrift, and obedience are put together in order to create cultural motivational index as done by [11, 12]. Further the attribute of cultural diversity are also incorporate in the model to study their effect on economic growth of the region.

Results of this analysis contribute to the existing literature by highlighting the relationship of culture with the economic growth and development with a greater clarity. The findings of this study further expand the literature which connects the cultural diversity and economic growth (for example, add diversity studies), and contribute to the ongoing discussion on the direct association between economic growth and culture in the exclusive context of African region [13, 11].

For the achievement of these objectives, we created a panel dataset spanning from 1980 to 2010, using five-year averages to minimize short-term business cycle fluctuations and measurement error. It resulted seven time periods across 25 African countries. Economic development was denoted by the growth rate of per capita GDP as a dependent variable. However, individual’s beliefs and traits toward economic exchange and cultural variables and cultural diversity were taken as the main independent variables. We employed multiple regressions using ordinary least squares (OLS) and with a variety of different economic variables depending on the investigation. In addition, we provided specific diagnostics to test that the residuals are well behaved.

This paper proceeds as follows. Section 2 describes African area and cultural background. Section 3 explains the theoretical link of culture and economy. The details of estimation strategy, data, and hypothesis are provided in Section 4. Section 5 focuses on the empirical analysis and results and section 6 concludes the study offers and policy implications.

2. The Relationship between Culture and Development

Culture and economic development received extensive consideration during the 1950s and the 1960s, in development studies that were subjugated by modernization theory. The influential study by Talcott Parsons "formulates five sets of pattern variables", which draw a line between modern and traditional societies. The rational depiction of modernization was a political and economic proposition that came after the World War II. It equated the intellectual, cultural, and technological advances of the victorious nations to some-thing that needed to be emulated by the "poorer, less civilized" peoples of the world.

The concept of "modernity" and its impact on economic activities began with the enlightenment philosophers. By the mid-nineteenth century, the enlightenment shift from a religious to a secular view of human history had become entrenched in scientific models of human evolution, which fostered a definition of culture as the process of social development. Against a background of European technological and industrial advancement and imperial expansion and aggrandizement, the idea of culture as social development drew on scientific models of human evolution to describe a hierarchy of cultural development across societies and social groups. The model of society associated with the modernity project focuses on the autonomy of the individual. Individuals are supposed to defend and maximize their personal interests by being freely involved in contractual relationships and by setting up structures that govern their actions. In contrast, the second model supposes that tradition governs individuals, by ruling their perceptions of the world, their values and their actions. From this perspective, traditional traits were held to be unfavorable to the expansion of the formal, distanced, rule bound, transparent social linkages necessary for achieving a successful market economy and industrial society.

Development in the popular sense is viewed as a single model defined by the values of "Western" societies, and it is based on the assumption that the political economic instruments used to promote economic growth are sufficient for any country to achieve development. This argument tends to assume that culture, viewed as the "essence" of a society, rather than institutions or structural conditions, is responsible for the failure to develop, and that Western cultural values are superior to those of other societies.

The modernization approach of the industrial advanced economies assumes that Third World cultures are a barrier to modernization. In order to experience progress, people in developing countries were urged to embrace modern culture, which, is by definition, Western. What is puzzling here is that, on the one hand, many studies tend to relate culture to tradition and argue that the cultural traditions of non-western societies must change due to the impact of development, which is conceived in terms of a universal modernity. On the other hand, however, this universal modernity clearly has its cultural roots in the European enlightenment and therefore easily slips into the concept of the West or westernization, even if it is not expressly identified in these terms. Some authors argue that economic development brings pervasive cultural change. However, others claim that cultural values are an enduring and exercise autonomous influence on society. In both perspectives, culture is seen as a single factor

explanation of the success or failure of the development process. This also leads to an instrumentalist and essentialist approach to the relationship between culture and development.

Numerous studies have made the connection between cultural values and economic development going from the Weber's Western economies to the Asian miracle economies [14, 15, 16, 17, 18]. It may be argued that African values based on community life, human kinship, hospitality, respect for elders and the authority, inviolability of life and religion among others which encourages obedience culture may affect economic growth negatively. For example if children are taught to obey and individualism is not enviable, this kind of action leads to the children with lower levels of control and autonomy; they may, therefore, be implausible to engage in risky activities to develop the required entrepreneurial spirit [19]. It is also argued that the societies exist where individualism is viewed as "potentially damaging" [20]. It is because of the inverse effect of high level of obedience on individual autonomy and risk-taking that the existing studies argued for high level of obedience to lead to negative impact on economic growth and development.

In order to investigate how culture may affect economic growth, following [12, 20], we constructed the cultural variables by identifying cultural traits that are closely associated with social and economic interaction. These components which we used as cultural variables for analysis are trust, respect, individual self-determination, and obedience.

Generally, trust, respect, and individual self-determination stimulate social and economic interaction, whereas limited economic interaction is associated with obedience and development by decreasing risk-taking, an attribute fundamental to entrepreneurship. The economic importance of trust has been stressed in numerous studies which argued that a high level of trust, which is foundation of business ethics, is positively associated with economic growth and development [21, 22, 23]. It is held that trust is principally vital when transactions involve some unknown counterpart like international business and trade, when the transaction takes place over a period of time rather than being completed on the spot, and when legal protection is lacking.

The other important cultural trait considered is self-determination. It is a quantitative measure that shows how much control has individuals over their choices? A cultural characteristic, often mentioned as a driver of economic development, is the assurance that the effort of an individual is expected to pay off. If success is based on high individual motivation, and economic success associated with their deliberate choices, then individuals are more inclined to work hard, to save and invest for the future and to innovate and launch new economic initiatives. Conversely, if individuals believe that success is based on luck, they are more expected to have a passive, submissive and sluggish attitude towards economic activity [24]. The individuals, who control their choice and also are responsible for the result of their acts, will be more likely to invest in future, to innovate, and work more carefully and attentively [20, 25]. In accordance with these statements and reasoning, the individuals with greater control on their choice will have greater overall level of economic development in their country.

Similarly, respect, is important in that a greater level of respect connotes a greater tolerance for others. It is believed that with greater tolerance comes a more accepting attitude towards trade with outsiders, thus increasing the extent of the market and increasing economic growth and development. If individuals have little respect for other members of their community and for the “res publica”, public good will be inadequate, and public administrators will probably lean toward nepotism or absolute corruption. This too acts as a deterrent to economic development. So it implies that respect is an essential element for economic growth and development.

Obedience is the other cultural characteristic is considered to possibly negatively affect economic growth. If children are taught to obey and individualism is not desirable, they are unlikely to engage in risky behavior to develop the necessary entrepreneurial spirit [19]. It is also argued that obedience has an inverse impact on growth.

It can thus be Inferred from the above discussion that the first three factors are likely to support economic development (trust, control, respect), and last one negate it (obedience). Following [12], we consider in this analysis each of these variables separately. This process extracts the broad variations among all these four cultural variables in order to test the absolute cultural impact on growth, we developed an index of achievement motivation namely the cultural motivational index (CMI) that sums up the percentage in each country emphasizing the first three goals minus the percentage emphasizing the latter one goal. A country with a higher culture index score implies stronger informal norms that support economic outcome, compared to a country with a lower score. As our study is concerned with identifying the impact of overall cultural values on economic growth, these aggregated variables assume the main focus of our empirical analysis with the possible effect of these four measures on economic growth being captured in our culture variables.

In addition to explaining how culture may impact growth, we also examine how cultural diversity affects economic performance. The theoretical underpinning regarding impact of and link of cultural diversity with economic growth and thereby with development is well established in the relevant growth literature.

Today, there is the common consent in economics literature that cultural diversity has potentially negative consequences for economic efficiency. The primary rationale for this argument is that a society with heterogeneous interest groups is more likely to oppose the stipulation of public goods, which leads to meagre public policy decisions [25, 26, 27, 28]. In light of these views of researchers, we add ethnic fractionalization (EF) and religious fractionalization (RF) in the growth model and get the following equation.

Recent work on economic research and ethnic diversity has covered the relationship between religious diversity, democracy, and economic development. For example, [29] includes the proportion of population affiliated to each religious group as explanatory variables for the level of democracy. Theoretically viewed, religion could affect economic development through different mechanisms: the

religious diversity of a country could affect economic outcomes directly as well as via conflict. It is known that religious intensity in populations could vary and thus produce different outcomes. Similarly, the relationship between state and religion could influence the religious market, through either regulation or deregulation of religious activity. Thus, the state could discourage or encourage religious activity. To test the effect of religious diversity, we introduce in our baseline model two variables of religious fractionalization and religious polarization.

3. Data, Hypothesis and Estimation Strategy

This section discusses the methodology used for formulation of cultural values and culture diversity and developed specific hypotheses regarding the culture diversity-growth relationship and the impact of cultural values on economic growth.

3.1 Culture

The required data for measuring the cultural variables were obtained from the World Values Surveys (WVS) was used for the measurement of cultural variables. (These Surveys were developed by [30] with a large international team is an enormous database. Surveys were conducted about values on a number of issues across the world in a series of four multi-year waves since 1981. These surveys expose individual beliefs and values reflecting local norms and customs). We used these survey data to quantify trust, self-determination, respect, and obedience. In order to increase sample size, we pooled all countries surveyed in the five waves from the time periods 1981–84, 1989–1993, 1994–1999, 1999–2004, and 2005–2007. To create the culture variable for each period the survey responses were aggregated.

In order to specific cultural traits, we identified the question from survey which was close related with each trait. For example, we consider the following question in the survey to measure trust: “Generally speaking, would you say that most people can be trusted or that you can’t be too careful in dealing with people”? The trust level in every region was calculated by the percentage of respondents who answered that “Most people can be trusted” from a set including other possible answers like “Can’t be too careful” and “Don’t know”). This variable is denoted as trust.

Similarly we consider the following question to measure the variable respect: “Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important? Please choose up to five qualities”. The variable respect is defined as the percentage of respondents in each region that has mentioned the quality “tolerance and respect for other people” as being vital while the other qualities in the list are: “good manners; independence; obedience; hard work; feeling of responsibility; imagination; thrift, saving money and things; determination and perseverance; religious faith; unselfishness”.

Further, to measure self-determination, the following question is used: “Some people feel they have completely free choice and control over what happens to them. Please use this scale (from 1 to 10), where 1 means none at all and 10 means a great deal,” to indicate how much freedom of choice and control in life you have over the way your life turns out.” Likewise, the variable obedience is defined as the percentage of respondents that mention “obedience” as an important quality that children should be encouraged to learn. The data on cultural diversity variables (ethnic diversity and religious diversity) were taken from [28, 31, 32].

Finally, we aggregate individual responses from each of the four questions for each country were aggregated to develop the cultural motivational index (CMI). The index is normalized with the minimum value of zero to the maximum value of ten. The higher value of index implies a positive norm that supports economic growth relative to countries which have lower value on index. As we intend to investigate the overall impact of culture, this CMI serves as the key focus of our empirical analysis.

In order to maximize our number of periods for the panel data, the culture variable is constructed as follows. The first wave of surveys (1981–84) represents culture in the time period of 1984. The second wave (1989–1993) is used to create the culture variable in the period of 1989. The surveys from 1994–1999 are used to create culture for the period of 1994. The fourth wave, from 1999–2001, represents the culture variable for 1999, and the latest wave is used to create the culture variable for the period 2007.

With the prospective effects on economic growth of these four cultural traits captured in our culture variable, we developed the following hypotheses for empirical verification of their underlying relationships.

Hypothesis 1: High levels of trust, respect, and self-determination and low levels of obedience have a positive impact on economic growth.

Similarly, cultural diversity can reasonably be considered as an exogenous variable, which may be linked with labour productivity and economic growth. For instance, the differences between various groups of the population based on ethnic or religious fractionalization and polarization may possibly result in culturally determined transaction costs, which, in turn, could lead to a lower level of development than in more homogenous countries.

Thus, we suggest following hypothesis for testing the assumed relationships between cultural diversity and economic growth.

Hypothesis 2: Cultural diversity (ethnic and religious diversity) is negatively associated with economic growth.

3.2 Economic Variables

In addition to culture, we also employ in our analysis a variety of economic variables that may affect a country's growth rate. We follow the existing literature on economic culture and growth in selecting our variables [33, 34]. Our standard economic variables include growth rate of percapita GDP growth as a dependent variable, the investment share of real GDP, HDI, education and the population growth rate. Initial GDP per capita and investment share of GDP are taken from Penn World Tables version 6.3. Population growth, primary and secondary education, and HDI from period 1980 to 20012 are collected from World Development Indicators 2013.

3.3 Model

The contemporary economic models based on the neoclassical growth models of [35, 36] have emphasized the role in economic growth of some basic variables. Similarly, there are some cultural attributes as self-improvement and freedom of thought - depend on individual attitudes and are based on a set of beliefs, values, and norms that change very slowly. As such, one can develop with the typical neoclassical growth model in view a series of factors that are influenced by the habitual beliefs, values and norms of the society that have important applicable economic duties. Therefore, we included these cultural factors along with economic factors in our growth model. Final the empirical growth models applied in this study are as following:

$$G_{it(afr)} = \alpha + \beta_1(\log IG)_{it(afr)} + \beta_2(Edu)_{it(afr)} + \beta_3(Inv)_{it(afr)} + \beta_5(Pop. grth)_{it(afr)} \tag{1}$$

$$G_{it(afr)} = \alpha + \beta_1(\log IG)_{it(afr)} + \beta_2(Edu)_{it(afr)} + \beta_3(Inv)_{it(afr)} + \beta_5(Pop. grth)_{it(afr)} + \gamma_1(Trust)_{it(afr)} \tag{2}$$

$$G_{it(afr)} = \alpha + \beta_1(\log IG)_{it(afr)} + \beta_2(Edu)_{it(afr)} + \beta_3(Inv)_{it(afr)} + \beta_5(Pop. grth)_{it(afr)} + \gamma_2(CMI)_{it(afr)} \tag{3}$$

$$G_{it(afr)} = \alpha + \beta_1(\log IG)_{it(afr)} + \beta_2(Edu)_{it(afr)} + \beta_3(Inv)_{it(afr)} + \beta_5(Pop. grth)_{it(afr)} + \Omega_1(EF)_{it(afr)} + \Omega_2(RF)_{it(afr)} \tag{4}$$

$$G_{it(afr)} = \alpha + \beta_1(\log IG)_{it(afr)} + \beta_2(Edu)_{it(afr)} + \beta_3(Inv)_{it(afr)} + \beta_4(Pop. grth)_{it(afr)} + \theta_1(EP)_{it(afr)} + \theta_2(RP)_{it(afr)} \tag{5}$$

$$G_{it(afr)} = \alpha + \beta_1(\log IG)_{it(afr)} + \beta_2(Edu)_{it(afr)} + \beta_3(Inv)_{it(afr)} + \beta_4(Pop. grth)_{it(afr)} + \Omega_1(EP)_{it(afr)} + \Omega_2(RF)_{it(afr)} + \theta_1(EP)_{it(afr)} + \theta_2(RP)_{it(afr)} \tag{6}$$

4. Empirical Analysis and Results

The empirical results of the analysis performed on the correlations among cultural variables of trust, self- determination, respect, obedience, culture motivational index (CMI) and cultural diversity variables such as ethnic fractionalization, religious fractionalization, ethnic polarization and religious polarization, regarded as the main traits of culture, as based on the whole data set with all individual responses are presented in Table 1. The correlation matrix depicted in this table has negative correlation coefficients for obedience, ethnic fractionalization, religious fractionalization, ethnic polarization and religious polarization, and positive ones for trust and self- determination as theoretically expected. However, respect has an unexpected negative sign. We take all these values for calculations of the aspects of culture that support economic growth.

Although our main variables are correlated with each other and with growth, we believe it is important to include these variables in order to substantiate our results. We also computed culture motivational index (CMI), defined as the sum of the three positive believes (trust, self- determination, and respect) minus the negative belief (obedience) as explained above. Similarly, the correlation coefficients of the national rate of economic growth for the period 1980–2010 have also been calculated, and results are presented in Table 2.

The results show that obedience, respect, ethnic fractionalization, religious fractionalization, ethnic polarization, and religious polarization are negatively correlated with economic growth, where the cultural motivational index (CMI) also has an insignificant positive relationship with growth. Respect has a negative sign, which is in conflict contrast with previous studies in which it showed a positive thought not significant relationship with economic growth. Similarly, ethnic fractionalization and religious fractionalization display the expected signs but not statistically significant. On the other hand, the values of correlation coefficients of only two variables of trust and self- determination are significantly positively associated with economic growth. As such, the results of the analysis performed for measuring the impact of different cultural variables on economic growth achieved by the selected

countries from Africa over the above mentioned time period are found to show a weak relationship with prior theoretical expectations.

Table 1. Correlation among Cultural Variables

	Trust	Rest	Ctrl	Obd	CMI	EF	RF	EP	RP
Trust	1								
Respect	0.05**	1							
Control	0.07*	0.08***	1						
Obedience	0.03**	0.13***	-0.21*	1					
CMI	0.53**	0.47*	0.33	-0.61**	1				
EF	-0.02**	-0.03*	-0.07***	0.21*	-0.17	1			
RF	0.14**	-0.01*	-0.03	0.01**	-0.42	0.39**	1		
EP	0.12***	0.03*	-0.08**	-0.14**	0.20	0.22	0.43*	1	
RP	-0.03**	-0.13*	0.13	0.08**	-0.40*	0.06	0.39**	-0.21	1

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

The analysis is further extended by estimating relevant multiple regression functions. Following [33, 37], we begin by estimating (OLS) a baseline endogenous growth model that includes variables identified as having robust partial correlations with economic growth. Using data for 26 African countries, we first tested the endogenous growth specification (Model 1 in Table 3). In accordance with Equation-1, the rate of per capita economic growth is regressed on its initial level of per capita income and investment on human capital (spending on education) as well as on its rate of physical capital accumulation. The estimated results, as expected, are quite compatible with prior expectations of endogenous growth theory.

A perusal of results of model 1 reveals that the initial level of per capita income is associated with a statistically significant negative coefficient, which shows the existence of the evidence of "conditional convergence". Similarly, the coefficient of investment in human capital is statistically significant and has a positive effect on subsequent economic growth, which is again in line with conventional wisdom regarding the potential impact of education on growth as well as development. Finally, it implies from the results that increasing the rate of physical capital accumulation increase a nation's rate of economic growth.

Table 2. Correlations between Cultural Variables and Economic Growth

Cultural Variables	Per capita GDP Growth
Trust	0.175
Respect	-0.18**
Control	0.08*
Obedience	-0.43***
Cultural Motivational Index(CMI)	.088
Ethnic Fractionalization (EF)	-0.124
Religious Fractionalization (RF)	-0.34
Ethnic Polarization (EP)	-0.596***
Religious Polarization (RP)	-0.41**

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

The results depicted in Table 3 of model 2, which regressed the rate of per capita economic growth on a constant and the four cultural variables considered for analysis, conform to the prior expectations. As expected, trust, and self-determination (control) are significant predictors of economic growth and are associated with expected algebraic signs, but respect has an unexpected negative sign in contrast with earlier studies. As shown in earlier estimations, the variable of obedience is accompanied with a negative sign, which is indicative of its inverse impact on growth, and these findings support previous studies.

Finally, we estimated the baseline model with the cultural motivational index, and results presented in table 3 model 5 show that the culture motivational index has a significant and negative relationship with GDP per capita growth rate. These results revealed that the effect of trust and self-determination disappears when respect and obedience are introduced. Results of model 5 reported in Table 3, derived with the multiple combinations of variables show that culture has directly negatively affected economic growth of the sample countries over the period in question. Thus, these results are opposite to the prior studies on culture and economic growth [20, 22, 38, 39]. This negative impact of culture on economic growth may be due to the traditional African cultural values which are based on community life, human kinship, hospitality, respect for elders and the authority, inviolability of life and religion among others which encourages obedience culture may affect economic growth negatively.

The results obtained from estimation of both model 2 and model 3 are satisfactory, even on the basis of additional statistical characteristics of the regression functions estimated for the present analysis. For instance, the explanatory power of the model has improved in Model 3, as reflected by the adjusted value R^2 , which increased from 0.571 (model 2) to 0.61 (model 5). Even though increase in the value of adjusted R^2 from the quantitative point of view may appear to be small, it becomes statistically

significant if the coefficient of partial R^2 is taken into consideration (last row of the Table 3). By partial R^2 we mean the reduction of total unexplained residual variance of the model, induced by the addition of new explanatory variables.

Overall, both the economic and cultural models forms well and give satisfactory goodness-of-fit and show that 61% of the variation in growth rates is explained by both culture and economic factors. Further, these findings are also consistent with earlier studies of the conditional convergence hypothesis [40, 41]. Further still, both these models also pass all analytical tests, signifying that the residuals of the parameters are not serially correlated as shown by (LM test) and are normally distributed (Jarque-Bera test). Finally, white test shows that there is no presence of homoscedastic in these models.

Although both the models have statically significant coefficients of the variables them and provide comparable goodness-of-fit performance which of them has better expiations of the link with economic growth and which model is more superior to other is still to be decided? To this end, the last row of the Table 1 the Schwarz criterion (SC) favours the cultural model 3 and model 5.

Next, we estimated the effect of diversity on per capita GDP growth, using Ethnic Fractionalization, Religious Fractionalization, Ethnic Polarization, and Religious Polarization for culture diversity. The purpose is to examine the effect of different dimensions of ethnic diversity on economic development and to compare the empirical performance of fractionalization indices versus polarization.

To examine the effects of culture diversity on economic growth, we include the variables ethnic fractionalization, religious fractionalization, ethnic polarization and religious polarization in our growth model. First we add two variables to the basic growth regression: Ethnic Fractionalization (EF) and Religious Fractionalization (RF) in Model-2 table 4.

The estimated results are reported in Table 4. Both estimates have expected signs of a negative relationship with economic growth but the relationship is not significant for ethnic fractionalization. Where religious fractionalization is highly significant economic growth is negatively associated with (RF).

Additionally, we include Ethnic Polarization and Religious Polarization in the base line growth model, and drop the (RP) and (EP) from model. The results are presented in model-3 table 4. In Table 4, the estimated results from Equation-5 indicate that both the variables of Ethnic Polarization and Religious Polarization have a significant negative effect on the real GDP growth rate when all the variables are included in the regression. These results are consistent with the previous studies [5, 28, 31, 42] which show that the negative impact of diversity on growth is particularly strong in less democratic countries.

Table 3. Cultures and Growth, OLS Estimates. (Dependent Var: GDP per capita growth)

Variables	Model -1	Model- 2	Model- 3	Model- 4	Model-5
constant	-765.839*	65.839	51.839**	31.839	36.120*
Initial level of gdppcG (log)	.611*	.421**		.373*	.411*
Primary Education	.379*	.313*		.252*	.331**
Secondary Education	-.038	-.026		-.029	-.032
Invest/GDP	0.379*	0.231*		0.212*	0.391*
Pop. Growth	-0.03**	-0.05*		-0.09*	-0.01*
Trust		0.08*	0.06*		
Respect			-0.07***		
Control			0.12**		
Obedience				-0.17***	
CMI					-0.305**
R ²	0.519	0.571	0.577	0.497	0.61
SEE	0.88	0.79	0.73	0.91	0.69
LM test	0.47	0.54	0.62	0.77	0.71
Jarque-Bera test	0.13	0.29	0.21	0.33	0.51
White test	0.21	0.27	0.34	0.19	0.31
Schwarz Criterion (SC)	0.132	0.112	0.131	0.089	0.291

Notes: N is 125 for all models; Significance level: * at 1%, ** at 5%, *** at 10%.

Finally, we estimate in Equation-6 all diversity variables with the baseline model and the results are shown in table 4 model 4. All four variables are now statically significant and have expected signs. There are two interesting points to notice. First, comparing with equation (5) and equation (4) in Table 4 model-4, the coefficient and significant level of (RP) and (EP) is higher than (EF) and (EP). It shows that the impact of polarization in both cases is more harmful in affecting economic development, especially in developing countries like Africa. These results also conform to those of [43] model. Secondly, looking at the results of equation (10) in model 4 (Table 4), the investment becomes insignificant.

This may be due to the fact that with high polarization and fractionalization in a society, uncertainty and instability increases. Therefore, this could lead to a reduction of the investment rate in the country. It can be true for African region because this region is characterized with high cultural diversity which leads to social conflict, Wars and institutional weaknesses. High ethnic and religious diversity may also lead to increased political instability and negative competitions for rents by ethnic and religious factions. In cultural diverse societies corruption is more destructive when competition ensues between different groups for personal gains [26]. It is also hard to make a consensus for better policies for economic achievements in high diverse societies [27]. Furthermore, the prospect of ethnic conflicts

also has a harmful impact on investment and, indirectly, on growth. It is also argued that heterogeneity in a society may cause a high level of corruption, and generates violence and civil war which could discourage investment [31].

Table 4. Ethnic and Religious Diversity and Economic Growth (Dep. Var. GDP per capita growth)

Variables	Model- 1	Model- 2	Model- 3	Mode-4
Constant	-765.839*	65.839	31.839**	36.120*
Initial level of gdppcG (log)	0.611*	0.421*	0.373*	.411*
Primary Education	0.379**	0.313*	0.252*	.331*
Secondary Education	-0.038	-.026	-0.029	-.032
Invest/GDP	0.379*	0.231**	0.212*	0.27
Pop. Growth	- 0.03*	-0.05*	-0.09*	-0.01*
Ethnic Fractionalization		-0.08		-0.06*
Religious Fractionalization		-.13*		-0.17*
Ethnic Polarization			-.319*	-0.23**
Religious Polarization			-0.21***	-0.19*
R^2	0.63	0.67	0.71	0.73

Notes: N is 25 for all models Significance level: * at 1%, ** at 5%, *** at 10%.

5. Conclusions and Suggestions

This paper employs the framework developed by [11, 23, 37] to estimate the role of cultural values and culture diversity in economic growth of African. Results show that only trust and self-determination are significant and support economic growth whereas respect has an inverse sign which contrasts with the results of earlier studies. The cultural motivational index (CMI) also has a significant but negative association with growth, which implies that the African culture based on traditional values does not support economic growth. Another significant finding of this research study is that developing countries like Africa with comparatively low social capital seem more likely to have bad policy outcomes, low investment and slow growth.

The estimated results in this study do not find cultural motivational index to establish positive impact on economic growth in the African region because it African culture based on traditional values does not support economic growth. If this justification of the most traditional societies is true, and self-determinant behavior is important, the role of individual autonomy as an engine of economic outcome should be encouraged. Without strong motivation towards independence it is difficult to break any kind of dependence, either economic or political.

This paper also shows that the culture diversity (ethnic fractionalization and ethnic polarization) and religious diversity (religious fractionalization and religious polarization) may have different results on development. Ethnic fractionalization and religious fractionalization may not be harmful to development, while the effect of ethnic polarization and religious polarization on development is more adverse. These findings are supported by those of earlier research by [5, 42, 44, 45].

The way to investigate the problems of ethnic polarization has been exacerbated by Africa's history of colonization. The significant role played by state to generate desired functions in civil society can be traced to the politicization of ethnic realization during the period of colonization [46].

What is the contribution of this paper in understanding the intricacies of economic growth in African region? On the basis of results, it can be concluded that the African culture values do not support healthy economic activity and hinder economic outcomes. Further, we believe on the basis of our analysis that Africa's high ethnic and religious diversity is likely to have raised uncertainty and political instability, thereby undermining investment opportunities needed for economic growth.

Also, there are a lot of challenges which arise from African cultural values that have not been given sufficient attention. Scholars have largely concentrated their discussion on western values and ideology like democracy, social, and civil equality. Though these are very important to branding Africa in this century, it must also realize the importance of African cultural values that are by-products of the African environment like the clan system and the lineage or Ebi social system. The environment determines people's culture, and to divorce socio-political and economic development of any society from the environment is tantamount to walking on a 'tight rope,' and that has accounted for the problems of underdevelopment and crisis in Africa. Scholars and leaders should concentrate more on the need to align western values with African values consistent with the new world order of globalization, human rights, and gender related issues. Future work on cultural diversity and economic performance needs to take a more penetratingly focused approach, principally to make out the contexts in which diversity matters most and how diversity impact is mediated through the extent of social capital.

References

- [1] Bloom, David E. and Jeffrey D. Sachs. 1998. "Geography, Demography and Economic Growth in Africa". *Brookings Papers on Economic Activity* 1998 (2): 207-295.
- [2] Sachs, G.D. 2005. *The End of Poverty: How Can we Make it Happens in our Life Times*". New York: Penguin.
- [3] Mudimbe, V.Y. 1988. "The Invention of Africa. NEPAP: The New Partnership for Africa's Development 2001". Bloomington: Indiana University Press.

- [4] Nyang, S.S. 1994. “*The Cultural Consequences of Development in Africa. In Culture and Development in Africa*”. Edited by I. Serageldin and J. Taboroff (eds.). Washington DC: World Bank p. 429-446.
- [5] Easterly, W. and R. Levine. 1997. “Africa’s Growth Tragedy: Policies and Ethnic Division”. *Quarterly Journal of Economics* 112 (4): 1203–50.
- [6] Casson, M. 1993. “Cultural Determinants of Economic Performance”. *Journal of Comparative Economics* 17 (2): 418-442.
- [7] Eyoh, D. 1996. “From Economic Crisis to Political Liberalization: Pitfalls of the New Political Sociology for Africa”. *African Studies Review* 39 (3): 43-80.
- [8] Franke, R. H. 1987. ‘Achievement Motivation and National Economic Performance’. *Proceedings of Southern Management Association*: P 31-33.
- [9] Weber, M. 1904. *‘The Protestant Ethic and the Spirit of Capitalism’* 1976 ed. London: Allen & Unwin, UK.
- [10] McClelland, D.C. 1961. “*The Achieving Society*”. Van Nonstrand: Princeton, NJ.
- [11] Tabellini, G. 2008. “Presidential Address: Institutions and Culture”. *Journal of the European Economic Association* 6 (2-3): 255–294.
- [12] Williamson, C. R. and R. L. Mathers. 2011. “Economic Freedom, Culture, and Growth”. *Public Choice*: 148 (3): 313-335.
- [13] Licht, A. N., C. Goldschmidt, et al. 2007. “Culture Rules: The Foundations of the Rule of Law and other Norms of Governance”. *Journal of Comparative Economics* 35(4): 659-688.
- [14] Becker, S., Woessmann, L. 2009. “Was Weber wrong? A Human Capital Theory of Protestant Economic History”. *Quarterly Journal of Economics* 124 (2): 531-596.
- [15] Houle J, et al. 2009. “The Protestant Ethic and the Spirit of Capitalism’ in Context. *Contemporary Sociology: A Journal of Reviews* 38 (6): 602-603.
- [16] Barro, R., Hwang, J., & McCleary, R. 2010. “Religious Conversion in 40 Countries”. *Journal for the Scientific Study of Religion* 49(1): 15-36.
- [17] Gorodnichenko, Y. and G. Roland. 2011. “Which Dimensions of Culture Matter for Long-Run Growth?” *The American Economic Review* 101(3): 492-498.

- [18] Minkov, M. and Hofstede, G. 2010. "Hofstede's Fifth Dimension: New Evidence from the World Values Survey". *Journal of Cross-Cultural Psychology* 20 (10): 1-12.
- [19] Harper, D.A. 2003. "*Foundations of Entrepreneurship and Economic Development*". New York: Routledge.
- [20] Tabellini, G. 2010. "Culture and Institutions: Economic Development in the Regions of Europe". *Journal of European Economic Association* 8 (4): 677-716.
- [21] Knack, S. and P. Keefer. 1997. "Does Social Capital have an Economic payoff?" *The Quarterly Journal of Economics* 112 (4): 1251–1288.
- [22] Francois, P. and J. Zabojnik. 2005. "Trust, Social Capital and Economic Development". *Journal of European Economic Association* 3 (1): 51-94.
- [23] Williamson, C. R. 2009. "Informal Institutions Rule: Institutional Arrangements and Economic Performance". *Public Choice* 139(3): 371–387.
- [24] Banfield, E.C. 1958. "*The Moral Basis of a Backward Society*". New York: The Free Press.
- [25] Collier, P. 2000. "Ethnicity, Politics and Economic Performance". *Economics and Politics* 12 (2): 225-45.
- [26] Shleifer, A., and Vishny, R.W. 1993. "Corruption". *Quarterly Journal of Economics* 108 (3): 599-617.
- [27] Alesina, A., Rodrick, D. 1994. "Distributive Politics and Economic Growth". *Quarterly Journal of Economics* 109 (2): 465-490.
- [28] Alesina, A. and E.A. Ferrara. 2005. "Ethnic Diversity and Economic Performance". *Journal of Economic Literature* 43 (3): 762–800.
- [29] Barro, Robert J. 1997. "*Determinants of Economic Growth: A Cross-Country Empirical Study*". Cambridge: MA, MIT Press.
- [30] Inglehart, R., and Baker, W. E. 2000. "Modernization, Cultural Change and the Persistence of Traditional Values". *American Sociological Review* 65 (1): 19–51.
- [31] Montalvo, Jose G and Marta Reynal-Querol. 2005. "Ethnic Diversity and Economic Development". *Journal of Development Economics* 76 (2): 293-323.

- [32] Fearon, J.D. 2003. "Ethnic and Cultural Diversity by Country". *Journal of Economic Growth* 8 (2): 195–222.
- [33] Levine, Ross, and David Renelt. 1992. "A Sensitivity Analysis of Cross-Country Growth Regressions". *American Economic Review* 82 (4): 942-63.
- [34] Gwartney, James and R.A. Lawson, and S. Norton. (2008). *Economic Freedom of the World: Vancouver, BC, The Fraser Institute (Annual Report 2008)*. Data Retrieved from www.freetheworld.com.
- [35] Ramsey, F. P. 1928. "A Mathematical Theory of Saving". *The Economic Journal* 38(152): 543-559.
- [36] Romer, P. M. 1986. "Increasing Returns and Long-Run Growth". *The Journal of Political Economy* 94 (5): 1002-1037.
- [37] Granato, J., R. Inglehart, et al. 1996. "The Effect of Cultural Values on Economic Development: Theory, Hypotheses, and Some Empirical Tests". *American Journal of Political Science* 40 (3): 607-631.
- [38] Guiso, L., P. Sapienza, et al. 2006. "Does Culture Affect Economic Outcomes?" *The Journal of Economic Perspectives* 20(2): 23-48.
- [39] Zak, P.J., and S. Knack. 2001. "Trust and Growth". *The Economic Journal* 111 (475): 295–321.
- [40] Barro, R. 1990. "Government Spending in a Simple Model of Endogenous Growth". *Journal of Political Economy* 98 (1): 103–117.
- [41] Mankiw, N. Gregory, David Romer, and David Weil. 1992. "A Contribution to the Empirics of Economic Growth". *Quarterly Journal of Economics* 107 (2): 407-37.
- [42] Barro, R.J., X. Sala-i-Martin. 2004. "*Economic Growth*", Second Edition. Cambridge: The MIT Press 2004.
- [43] Lindner I., H. Strulik. "Why not Africa? Growth and Welfare Effects of Secure Property Rights". *Public Choice* 120 (2): 143-167.
- [44] Alesina, A., A. Devleeschauwer, W. Easterly, S. Kurlat and R. Wacziarg. 2003. "Fractionalization". *Journal of Economic Growth* 8 (2): 155–94.

[45] Khan et al., 2010. "Cultural Values and Economic Growth in Asia: An Empirical Analysis". *International Journal of Business and Social Science*, 1 (2): 15-27.

[46] Kaspin, Deborah. 1995. "The Politics of Ethnicity in Malawi's Democratic Transition". *Journal of Modern African Studies* 33 (4): 595-620.