Economic Growth and Social Cohesion: Evidence from Developing Countries

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Abstract: **This study contributes in the literature by investigating the growth impact of social cohesion using a panel data of 102 developing countries over the period1986-2010. The study has employed a comprehensive measure of social cohesion that covers a large number of social indicators such as inequality, trust, terrorism, and social conflicts. Our study finds out that the growth effect of social cohesion is positive and significant in the developing world. Finding of the study are shown to be robust to different control variables, different specifications, econometric techniques and outliers.**

Keywords: **Economic Growth; Social Cohesion; Developing Countries; Panel Data.**

I. INTRODUCTION

Why do some economies exhibit high levels of economic growth while others do not and what causes economic growth? These questions have received widespread attention at least since the time of Adam Smith. One important line of research, which has gained momentum in the last decade and so, highlights the role of social capital as an important cause of economic growth. Most of the studies find a positive relationship between social capital and economic growth (see, for example, Whiteley, 2000).

Recently, the relationship between economic growth and social cohesion[1] has been emerged an important area of research. Social cohesion is an important and valuable objective and it contributes remarkably in sustaining long term growth. The high level of social cohesion in societies is connected with positive outcomes such as low crime rates, high economic growth, low unemployment and satisfied citizens (Fenger, 2012). The World Bank (1999) states that 'increasing evidence indicates that social cohesion is critical for sustainable development and for societies to prosperous economical'.

Social cohesion increases economic growth by minimizing social conflicts and riots. It makes the cooperation more predictable, reduces the risk and minimizes the transaction cost thus increases the investment, innovation and creativity and enhances the economic growth (Stanley, 2003). The high level of social cohesion also improves the quality of institutions and these institutions in turn enhance the speed of economic growth (Easterly 2006).

Social cohesion is the ability of a society to guarantee the welfare of all its individuals while reducing disparities and preventing marginalization. Jenson (1998) has identified five dimensions of social cohesion 'belonging, participation, legitimacy, inclusion and recognition'. Berger-Schmitt and Noll (2000)' concept of social cohesion is based on two dimensional goal of society development which are reduction of disparities and accumulation of social capital.

The world has changed markedly since the beginning of the new millennium. The concept of 'Shifting Wealth' describes a phenomenon in which the centre of economic gravity of the world has progressively shifted from West to East and from North to South, resulting in a new geography of growth. The new scenario presents some major opportunities and challenges for the creation of socially cohesive societies. The challenges are increasing income disparities, structural changes and rising expectations of the citizen for high standard of living and more opportunities.

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[1]Social cohesion is a broader concept than social capital. Social capital is one dimension of social cohesion and it is considered at individual level and it gives monetary returns such as physical capital while social cohesion is taken at global level and it is characteristics of the society as a whole (Klein, 2011).

However despite increasing popularity and importance of social cohesion among policy makers, there is no clear definition of this concept among policy makers as well as among academic researchers. Some take this concept equivalent to solidarity and trust and some have defined this concept in the context of social inclusion, poverty and social capital. Maxwell (1996) has defined the social cohesion as building shared values, reducing inequalities in wealth and income and to make people to engage in similar enterprise. Bernard (1999) has criticized that social cohesion is nothing more than a "quasi concept" because it contains vagueness and is able to change according to circumstances.

Though the concept of social cohesion is defined broadly in existing literature but a comprehensive measure of social cohesion has not been used in the empirical literature on growth. We have used the "index of intergroup social cohesion" from the World Bank "Social Development Indicator Project" which is maintained by the Institute of Social Studies (ISS). This data set covers 156 societies. Though the need of social cohesion is also wide spreading in developing countries however, the empirical literature on social cohesion has mainly focused developed countries while there are insufficient empirical studies on developing countries.

This study is an effort to fill this gap. For this purpose we have taken the large sample of 102 developing countries from the years 1986 to 2010. We have used System Generalized Method of Moments (SGMM) to estimate our model. This approach treats the possible endogeniety of social cohesion variable and also controls the heterosecadasticity of the panel data. This work sets out to gauge the importance of social cohesion in developing economies and how it impacts upon economic growth. The objectives of the study are: To develop relationships between different dimensions of social cohesion and economic growth; to test the growth effect of social cohesion in developing countries.

Our study contributes in the existing literature through a number of ways. First, we believe that this is the first empirical study that tests the relationship between social cohesion and economic growth using a comprehensive index of social cohesion. Second, this study uses a large number of countries over a long period of time to have a better empirical examination. Third, this study exclusively focuses on the developing countries to devise policy lessons exclusively for developing countries. Fourth, this study takes care of the reverse causality problems.

The paper is organized as follows. Section 2 describes the literature review. Section 3 discusses the analytical framework of the study. Section 4 documents the data sources and explains construction of the variables. Section 5presents and discusses the empirical results. Section 6 concludes.

II.   LITERATURE REVIEW

Social cohesion is a characteristic of a society which deals with the associations and relations between individuals and groups. The sociologist Emile Durkheim (1893) was the first who used the concept of social cohesion in the nineteenth century. He views solidarity and shared loyalties as two kinds of social cohesion.

Social cohesion has gained importance[2] in the European Union since the Maastricht Treaty 1992. The objective of treaty was to attain sustained economic growth through social development. (Bellani&Ambrosio, 2011).Social cohesion has also gained much importance in Canada due to ethnic and linguistic heterogeneity as a result of increasing immigrants to Canada (Maxwell, 1996).

Social cohesion is defined in the context of divisions within the society. These divisions can be in the form of income, caste, political party, ethnicity, demographic values and language (Easterly, 2006). An alternative way to define social cohesion is in term of building shared values while reducing differences in income and wealth.

Social cohesion elevates economic growth through decreasing income inequality because in societies where wealth is equally distributed people are more able to trust each other and on government, they are more strongly connected and they are willing to cooperate, there is high group membership rate, there will be less social conflicts. Social cohesion also boosts up economic growth by lowering the ethnic and linguistic fractionalizations.

A major literature on social cohesion is based on normative conflicts such as ethnic conflicts. Easterly and Levine (1997) have explained the impact of ethnic divisions on growth tragedies of Africa. Using thirty years data, they find the significant adverse impact of ethnic divisions on public policies which are associated with economic growth, however, the study discovered that direct effect of ethnic divisions on economic growth are ambiguous.

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[2]High unemployment, income inequality, deprivation of rural areas and regional cleavages are the major causes which increased the importance of social cohesion in the Europe.

Following Easterly and Levine (1997), Posner (2004) has constructed a new index of ethnic division (Politically Relevant Ethnic Groups) PREG for 42 African countries and tested the same hypothesis of Easterly and Levine (1997). He found out a negative and significant impact of ethnic divisions on economic growth. Similarly, Alesina and Ferrara (2003) have investigated the impact of ethnic diversity on economic policies and development outcomes using the survey data of cities in developed countries and villages in developing countries. Their findings also indicate the overall negative effect of ethnic diversification on economic growth.

Roderik (1998) points out that during 1960s and 1970s growth rates of all East Asian, Latin America and Middle East countries were remarkable but after 1970s these countries experienced huge growth collapses. He argues that social conflicts were the major reason of growth failure after mid-1970s. Using the cross country data and middle class share of income and linguistic homogeneity as measures of social cohesion, Easterly (2006) support the hypothesis that social cohesion laid the foundation of better institutions and these institutions lead to better economic growth.

Ferroni et al. (2008) has constructed an index for social cohesion using indicators related to social capital and distribution of opportunities for Latin America and analyze its impact on economic growth and institutional development. For social capital they use three indices: compliance with the law, interpersonal trust and trust in public institutions whereas for distribution of opportunities they focus on five indicators: poverty incidence, Income Gini coefficient, size of the middle class, education Gini coefficient and intergenerational mobility. They conclude that social cohesion has a positive linkage with different development indicators such as economic growth, new technologies, and effective development policies.

Heller (2009) has used the ethnic fractionalization, income inequality and adult literacy ratio as measures of social cohesion and concluded that social cohesion is an important indicator of institutional quality and good institutions are essential to improve economic growth in developing countries. Baggio and Papyrakis (2010) assess the effects of fractionalization and polarization on property-rights protection, and thereby on growth. They find that ethnic polarization is more likely to have a direct negative impact on the effectiveness of property rights in a resource-rich context.

Trust is an important indicator of social cohesion and in many empirical studies level of trust is used to measure social cohesion (Neira et al., 2009; Horvath, 2011). Trust increases economic growth in two ways. First, interpersonal trust decreases the transaction cost and thus increases the investment and economic growth. Second, trust on public institutions improves the performance of public institutions through good policies and thus increases economic growth. Nabi and Suliman (2009) investigate the importance of the institutional environment to determine the causal relationship between banking development and economic growth for 22 Middle Eastern and North African countries over the period 1984–2004. They find out a favorable effect of institutions on growth via the channel of banking development.

Klein (2011) has analyzed the impact of social capital and social cohesion on social well-being. Major empirical indicators of social cohesion in this study are marital status, the fact of having children, social contacts, group membership and trust. He concludes that both social capital investment and social cohesion have positive impact on both income and social well-being. Duman (2013) has examined the relationship between economic volatility and beliefs. He finds out that vast fluctuations in economic performance fuel the opinion that economic failure is a result of systemic characteristics, and individuals are not necessarily held fully responsible for their material faiths in such settings. Therefore, government is assigned a greater role in basic provisioning.

Neira et al. (2009) has analyzed the impact of social capital on economic growth using the panel data of 14 OECD countries over the period 1980-2000. The results show that social capital has positive impact on economic growth of OECD countries. Horvath (2011) has examined the effect of trust on economic growth. The data set contains both developed and developing countries. The results show that trust is an important determinant of long term economic growth.

Thus, some researchers have explained the concept of social cohesion using direct measures of social cohesion such as the level of trust, member's group participation and volunteer activities. While some researchers have explained it using indirect measures such as ethnic and linguistic fractionalization, gender inequality, elite dominance, incidence of poverty, income inequality and social inequality.

The above review shows that social cohesion is defined in different dimensions and various studies have used diverse indicators to measure the level of social cohesion. We analyze the impact of social cohesion on economic growth through a more comprehensive measure which contains all the indicators describe in different definitions of social cohesion.

III. METHODOLOGY

There are many measures of social cohesion which are used in the theoretical and empirical literature. These are equality of social outcomes, cooperation, diversity and affinity (Stanely, 2003), level of trust, willingness to cooperate, identity/belonging, inequality, ethnic heterogeneity, social inclusion, social capital and quality of life (Knack, 2003, Chen et al., 2006;Easterly, 2006Manole, 2012), ,voluntary network and organizations reduction of differences & cleavages, inequalities, network and organizations, membership rate of organization & civic participation(Easterly, 2006; Hulse and Stone, 2007), common values, civic culture, social order, social solidarity and sense of membership (Reeskaen et al., 2008), marital status, social contracts, group membership, and trust (Klein, 2011).

Commonly used proxies ethnic fractionalization and religious tradition are weak measures of social institutions while the data on direct measures of social institutions such as trust and civic norms is available for a limited sample of countries. Therefore, in this study we have used the index of inter group social cohesion, which is a rich resource of data for the purpose of cross-country analysis on social cohesion.We have developed the following model.

$\text{Log(RGDP)}_{it} = \beta_o + \beta_1\text{Log(RGDP)}_{it-1} + \beta_2\text{Log(L)}_{it} + \beta_3\text{Log(K)}_{it} + \beta_4\text{Log(edu)}_{it} + \beta_5C_{it} + \beta_6X_{it} + \epsilon_{it}$ 3.1

Where ,RGDP is real per capita income; L is labor force, K is capital stock, edu is human capital, C is index of intergroup cohesion and X is a set of control variables.

IV. DATA SOURCES

This study uses an unbalanced data which includes102 developing countries for the period of 1986-2010. Initially we have selected 146 developing countries but 44 countries are screened due to unavailability of education data set. The data is averaged over five years: 1986-1990, 1991-1995, 1996-2000, 2001-2005 and 2006-2010

The data of economic growth is logarithmic value of GDP per capita adjusted for purchasing power parity 2005 constant prices is drawn from Penn World Tables for 1986-2010. The data on investment share of GDP per capita is also drawn from Penn World Tables which is investment share of purchasing power converted GDP per capita at 2005 constant prices. Data on government consumption is taken from Penn World Tables which is government consumption share of purchasing power converted GDP per capita at 2005 constant prices.

Data on labor force is taken from the World Development Indicators (WDI), which is the proportion of population ages 15 or older that is economically active. Data on education is taken from Barro-Lee dataset, it covers the information of 146 countries by 5 years age, 15 years and 25 years and over five years interval. We have taken the education attainment for population aged 15 and over who have attained the secondary education level. Data on trade openness is taken from Penn World Table (7.01) which is openness at 2005 constant prices of GDP per capita and expenditures shares. Data on inflation rate is taken from IFS which is CPI over corresponding period of previous year.

Our main variable that is an index of intergroup cohesion is taken from the Indices of Social Development (ISD) which is World Bank "Social Development Indicator Project" and maintained by the Institute of Social Studies (ISS). It brings 200 indicators together. The indices is composed from 25 different sources (global, regional) including 200 indicators thus it is reliable and rich data set covering wider countries to compare social institutions role in economic development and growth.

ISD has measured intergroup cohesion by employing data on inter-group disparities, perceptions of being discriminated against, feeling of distrust against members of other groups, terrorist acts, terrorism and social instability, assassinations, strikes, kidnapping, agency ratings on the likelihood of civil disorder, number of reported incidents of riots, reported levels of engagement in violent riots, and confrontations.

V. RESULTS AND DISCUSSION

We estimate equation 3.1with the Ordinary Least Square using robust estimation technique to address the possible problem of cross sectional heteroskedasticity. In first column of Table 1 the coefficient on social cohesion, 0.13, turns out to be positive and significant at 1 % level of significance. It implies that 1 % increase in social cohesion causes 0.13% increase in economic growth. The coefficient of schooling variable is positive and significant at 5 % level of significance. The results indicate that 1 % increase in schooling increases the economic growth by 0 .03 %.It is consistent with the study of Wei and Hao (2011) who find out that human capital has significant and positive effects on the TFP growth of Chinese provinces over 1985-2004.

In column 2 we have incorporated trade openness in original model to assess robustness of the results. In the literature, growth impact of trade is not conclusive (see, for example, Shirazi and Manap, 2005).Our results show that the growth effects of trade openness is positive and significant at 5 % level. In column 3 we have comprised government expenditure and in column 4 we have included inflation rate. The government expenditures have a negative and significant impact on economic growth which implies that an increase in government expenditures crowd out the private investment which in turn decreases the economic growth. The growth impact of inflation rate is negative and significant at 5 % level of significance, exhibiting the fact that uncertainty in price level has harmful impact on economic growth. The results show that 1 % increase in inflation rate causes .03 % decrease in economic growth. The growth impact of social cohesion remains positive and significant.

We estimate our model with the Fixed Effects to determine the relationship between social cohesion and economic growth. The advantage of using Fixed Effects over OLS is that it takes into account the unobserved heterogeneity of the cross sectional units. We have found that social cohesion coefficient remains positive and significant. The parameter estimate on social cohesion, in first column of Table 2, exhibits that 1 % increase in social cohesion causes 0.15 % increase in economic growth. Other findings also remain intact.

We also estimate Random Effects model to check the robustness of our result. The results of Random Effects model are given in Table 3. The coefficient of social cohesion is positive and highly significant and all control variables have anticipated signs according to the theory.

We have estimated our model with GMM to address the potential problems of endogeniety, autocorrelation and cross sectional heterosecadasticity. The results of GMM estimation are given in Table 4. In first column of Table 4 social cohesion coefficient is positive and significant at 1 % level of significance. This finding suggests that 1 % increase in social cohesion raises the economic growth by .20 %.When we have included openness, government expenditures and inflation variables for sensitivity analysis the results remain intact.

Finally, we have used the Arellano-Bond system GMM estimation to improve our results as system GMM is broadly practices in dynamic panel data model to tackle potential endogeniety arising due to the presence of lag dependent variable at right hand side of the equation. The results are given in Table 5. In the first column of Table 5. the coefficient of social cohesion is positive and significant at 1% level of significance revealing that 1 % increase in social cohesion causes economic growth to increase by 0.18%.

The advantage of Arellano-Bond system GMM is that it also reports test-statistics on autocorrelation and on instruments validity. The AR(1) and AR(2) both test statistics are not rejecting the null hypothesis of no autocorrelation showing that there is no serial correlation. The P-statistics of Henson test of over identification restrictions (OIR) is also not rejecting the null hypothesis that "instruments as a group are exogenous". The high F-value is indicating that model as a whole is significant. We have applied Sargan test to check the validity of instruments and the test statistics indicate that our instruments are valid thus we cannot reject the null hypothesis that instruments are exogenous.

Finally we re-estimate our model after removing the outliers in the data. We have treated the outliers values by removing five largest and five smallest values of social cohesion and economic growth gradually to ensure that positive relationship between economic growth and social cohesion is not sensitive to outliers. The coefficient of social cohesion remains positive and significant exhibiting the fact that positive impact of social cohesion is not due to outliers. The results of estimations are given in Tables 6 and 7.The Table 6 explains the outliers treatment after removing the five largest and five smallest values of economic growth and Table 7 explains the outliers treatment after removing the five largest and five smallest values of social cohesion.

TABLE 1

Variables	Dependent variable: Economic Growth			
	1	2	3	4
RGDP(-1)	.9601829*** (0.0151)	.9525287*** (0.0161)	.9535975*** (0.0164)	.9522636*** (0.0172)
Labor	-0.0492681 (0.0811)	-0.0611308 (0.0899)	-0.0536301 (0.0846)	-0.0796721 (0.0951)
Capital	.126121*** (.0278)	.1139837*** (.0289)	.1282592*** (.0285)	.122217*** (.0300)

Education	.0283226** (.0145)	0.0203189 (.0155)	.0273613** (.0143)	.031367** (.0145)
Social Cohesion	.1224501** (.0559)	.0990655* (.0562)	.1263085** (.0597)	.1318021** (.0565)
Trade Openness		.1860269** (.0843)		
Government Spending			-.0394855* (.0213)	
Inflation				-.0234384** (.0101)
F Stat	11088.12	10061.55	10335.66	8987.86
R overall	0.9791	0.9788	0.9791	0.9846
Observations	299	299	299	285
Number of groups	92	92	92	92

(Note: Standard error are given in parenthesis)

(* significant at 10 %)

(** significant at 5 %)

(*** significant at 1%)

TABLE 2

Variables	Dependent variable: Economic Growth			
	1	2	3	4
RGDP(-1)	.4540974*** (.1348)	.436449 *** (.1203)	.436319*** (.1282)	.6528566*** (.0524)
Labor	-0.3627442 (.4168)	0.0450644 (.3108)	-0.324085 (.3229)	-0.2664742 (.3416)
Capital	.2271165*** (.0439)	.1101619*** (.0368)	.2084395*** (.0391)	.1936748*** (.0324)
Education	.2499521*** (.0534)	.1441451 *** (.0431)	.2450425*** (.0550)	.2005521*** (.0341)
Social Cohesion	.1507686* (.0970)	.1554402 * (.0922)	0.1508469 (.1205)	.2086295*** (.0653)
Trade Openness		.6740375 *** (.1821)		
Government Spending			-.2575953*** (.0678)	
Inflation				-.0285312*** (.0108)
F Stat	33.24	35.43	30.68	78.97
R overall	0.896	0.8915	0.8778	0.949
Observations	299	299	299	285
Number of groups	92	92	92	92

(Note: Standard error are given in parenthesis)

(* significant at 10 %)

(** significant at 5 %)

(*** significant at 1%)

TABLE 3

Variables	Dependent variable: Economic Growth			
	1	2	3	4
RGDP(-1)	.9601829*** (.0151)	.9525287*** (.0161)	.9535975*** (.0164)	.9522636*** (.0172)
Labor	-0.0492681 (.0811)	-0.0611308 (.0899)	-0.0536301 (.0846)	-0.0796721 (.0951)
Capital	.126121*** (.0278)	.1139837*** (.0289)	.1282592*** (.0285)	.122217*** (.0300)
Education	.0283226** (.0145)	0.0203189 (.0155)	.0273613** (.0143)	.031367** (.0145)
Social Cohesion	.1224501** (.0559)	.0990655* (.0562)	.1263085** (.0597)	.1318021** (.0565)
Trade Openness		.1860269** (.0843)		
Government Spending			-.0394855* (.0213)	
Inflation				-.0234384** (.0101)
F Stat	11088.12	10061.55	10335.66	8987.86
R overall	0.9791	0.9788	0.9791	0.9846
Observations	299	299	299	285
Number of groups	92	92	92	92

(Note: Standard error are given in parenthesis)

(* significant at 10 %)

(** significant at 5 %)

(*** significant at 1%)

TABLE 4

Variables	Dependent variable: Economic Growth			
	1	2	3	4
RGDP(-1)	.9700775*** (.0144)	.9712919*** (.0144)	.9688682*** (.0149)	.9734535*** (.0146)
Labor	-.128708* (.0729)	-.1246517* (.0728)	-.1289737* (.0732)	-0.0780239 (.0665)
Capital	.0664041** (.0304)	.0708894 ** (.0306)	.0670784 ** (.0302)	.0423624 * (.0324)
Education	.0231246 ** (.0107)	.0254529 *** (.0106)	.0223192 ** (.0106)	.0247899 ** (.0116)
Social Cohesion	.202402*** (.0538)	.2315101 *** (.0581)	.2068999*** (.0549)	.2254225 *** (.0541)
Trade Openness		-.0661121 (.0470)		
Government Spending			-.0104751 (.0160)	
Inflation				0.0040048 (.0065)
F Stat	13913.88	14131.11	14073.58	14914.6
R-squared	0.9881	0.9881	0.988	0.9889
Observations	206	206	206	196

(Note: Standard error are given in parenthesis)

(* significant at 10 %)

(** significant at 5 %)

(*** significant at 1%)

TABLE 5

Variables	Dependent variable: Economic Growth			
	1	2	3	4
RGDP(-1)	.9366425*** (.029654)	.9353241*** (.0294754)	.9376424*** (.0277064)	.9544674*** (.0260831)
Labor	-.0430487* (.0299871)	-.0437628 * (.0311269)	-.0519017 * (.0342373)	-0.082573 (.0664685)
Capital	.1831609*** (.0512113)	.1710935*** (.0539994)	.1498232*** (.0458381)	.1245774*** (.0463106)
Education	.0587776* (.0352367)	.0479748* (.0335896)	.050628* (.0300695)	.0382749* (.0273779)
Social Cohesion	.1758618* (.0954675)	.1328454 * (.0981219)	.2007061** (.1002113)	.1844831** (.0954133)
Trade Openness		.1401698 * (.0836021)		
Government Spending			-.0858628* (.0531315)	
Inflation				-.0216745** (.0095152)
F Stat	1016.06	790	684.23	955.45
OIR Test (P-value)	0.391	0.452	0.387	0.546
AR(1)	0.133	0.131	0.121	0.21
AR(2)	0.781	0.735	0.824	0.839
Observations	268	268	268	254
Number of groups	90	90	90	87

TABLE 6

Variables	Coefficients	Std.Err	Z	P>Z	[95% Conf.Interval]	
RGDP(-1)	0.950706	0.015197	62.56000	0.000	0.920921	0.980492
Labor	-0.094389	0.085782	-1.10000	0.271	-0.262519	0.073741
Capital	0.123951	0.025973	4.770000	0.000	0.073045	0.174857
Education	0.030947	0.014753	2.100000	0.036	0.002032	0.059862
Social Cohesion	0.123758	0.062942	1.970000	0.049	0.000395	0.247122
Cons	0.502264	0.428438	1.170000	0.241	-0.337458	1.341986

TABLE 7

Variables	Coefficients	Std.Err	Z	P>Z	[95% Conf.Interval]	
RGDP(-1)	0.960933	0.014041	68.44	0.000	0.933414	0.988453
Labor	-0.05002	0.082742	-0.6	0.545	-0.21219	0.112152
Capital	0.125029	0.026306	4.75	0.000	0.073471	0.176587
Education	0.027235	0.014829	1.84	0.066	-0.00183	0.0563
Social Cohesion	0.115337	0.064188	1.80	0.072	-0.01047	0.241142
Constant	0.239216	0.40514	0.59	0.555	-0.55484	1.033276

VI.   CONCLUSION

Recently literature is emerging on the role and importance of social indicators in explaining cross-country differences in economic performance. The objective of this study is to establish the relationship between social cohesion and economic growth. For this purpose the panel data set of 102 developing countries from 1986 to 2010 is used.

The results show that the growth impact of social cohesion is positive and significant and 1 % increase in social cohesion causes0.18 % increase in economic growth. We have added three control variables trade openness, government expenditures and inflation rate one by one in the original model to check the robustness of results. The coefficients of all control variables have expected signs and the coefficient of social cohesion remains positive and significant. So under the shadow of these findings it's conducive to invest in social cohesion if developing economies want to achieve high economic growth and development.

Thus the study provides evidence that it's not only physical and human capital which contributes in economic growth butsocial cohesion is an important determinant of economic growth and strengthening social cohesion is not only important for decreasing social and economic inequalities but is very crucial for sustained economic growth.

Though the findings are statistically significant and aligned with theoretical assumptions but still more research is needed in this area to give the answers of policy relevant questions, that how to create cohesiveness in the society and what are the costs and benefits linked with the social modification of the society as cohesiveness of the societies is equally need of all countries.

There are some aspects of the research which can be improved. A comparative analysis between developed and developing countries can be helpful to understand the relative significance of social cohesion in explaining economic growth differences. To have an in-depth understanding some country case studies can be conducted. The sensitivity analysis in this study is based on few selected important variables that can be extended to take account of other important causes of growth.

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APPENDIX

Table A1: List of countries

No	Country	No	Country	No	Country	No	Country	No	Country
1	Afghanistan	22	Costa Rica	43	Kazakhstan	64	Nepal	85	Swaziland
2	Albania	23	Croatia	44	Kenya	65	Nicaragua	86	Syria
3	Algeria	24	Dominica	45	Kuwait	66	Niger	87	Tajikistan
4	Argentina	25	Ecuador	46	Kyrgyzstan	67	Oman	88	Tanzania
5	Armenia	26	Egypt	47	Latvia	68	Pakistan	89	Thailand
6	Bahrain	27	El Salvador	48	Lesotho	69	Panama	90	Togo
7	Bangladesh	28	Fiji	49	Liberia	70	Pap. New Guinea	91	Tonga
8	Barbados	29	Gabon	50	Libya	71	Paraguay	92	Trinid& Tobago
9	Belize	30	Ghana	51	Lithuania	72	Peru	93	Tunisia
10	Benin	31	Guatemala	52	Malawi	73	Philippines	94	Turkey
11	Bolivia	32	Guinea	53	Malaysia	74	Qatar	95	Uganda
12	Botswana	33	Guyana	54	Maldives	75	Romania	96	Ukraine
13	Brazil	34	Haiti	55	Mali	76	Russia	96	United Arab Emir
14	Brunei	35	Honduras	56	Mauritania	77	Rwanda	98	Uruguay
15	Burkina Faso	36	Hungary	57	Mauritius	78	Saudi Arabia	99	Venezuela
16	Burundi	37	India	58	Mexico	79	Senegal	100	Yemen
17	Cambodia	38	Indonesia	59	Moldova	80	Serbia	101	Zambia
18	Cameroon	39	Iran	60	Mongolia	81	Sierra Leone	102	Zimbabwe
19	Cen African Rep	40	Iraq	61	Morocco	82	South Africa		
20	Chile	41	Jamaica	62	Mozambique	83	Sri Lanka		
21	Congo	42	Jordan	63	Namibia	84	Sudan		

Table A2: Variables Description and Data Sources

Variables	Notations	Description	Data sources
Real GDP per capita	log(RGDP)	It is GDP per capita adjusted for purchasing power parity 2005 constant prices.	PWT 7.1 (2012)
Investment	log(K)	It is investment share of purchasing power converted GDP per capita at 2005 constant prices (Inv/GDP %)	PWT 7.1 (2012)
labor force	log(L)	The proportion of population ages 15 or older that is economically active.	WDI (2013)
Education	log(Edu)	education attainment for population aged 15 and over who have attained the secondary education level	Barro-Lee (2011)
Social Cohesion	Cohesion	It is based on trust and cohesion between a particular ethnic, linguistic and religious identity groups.	ISS (2011)
Trade openness	log(trade)	It is the sum of exports and imports as share of GDP.	PWT 7.1 (2012)
Government exp.	log(G)	It is the final government consumption.	PWT 7.1 (2012)
Inflation	Inflation	CPI over corresponding period of previous year (%)	IFS (2013)