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INCLUSIVE GROWTH THROUGH CREATION OF HUMAN AND SOCIAL CAPITAL

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Abstract

This paper analyses *inclusive growth* that focuses on the creation of opportunities for all. Inclusive growth allows people to *contribute to* and *benefit from* economic growth, while *pro-poor growth* approaches focusing on welfare of the poor only to reduce inequality. Recently, economics literature incorporates social capital for explaining regional disparities. Economic development of country depends on the impact of social capital which includes social culture, norms and regulations that promote economic reforms and development activities. Social capital forms with the development of human capital through schooling. Educated individuals are interested in dialogue and conversation. Interaction enables people to build trust, confidence and cooperation, to commit themselves to each other (i.e. *reciprocity*), and thereby to knit the social fabric. This study deals with the formation of social capital through development of human capital that is created through improvement of *schooling* and/or *social inclusion*. Creation of human and social capital is the basis for inclusive growth. The predictions of the model are examined empirically for a cross-section of countries and findings support the model.

JEL Classifications: Z₁₃₀, J₂₄₀, O₁₅₀. I₂₅, I₂₈, O₄, C₂

Key Words: Human Capital, Inclusive Growth, Pro-poor Growth, Social Capital, Social network, Productive Consumption, Schooling, Social Inclusion, Co-operation, Reciprocity, Economic growth, Economic Development.

1. Introduction

This paper focuses on socio-economic factors that determine economic prosperity of a nation. National prosperity includes all; none can be excluded from benefit of economic growth. This study analyses *inclusive growth* that refers to the pace and pattern of growth, and investigates the socio-economic determinants of growth. Policy makers of

developing economy are now much more interested on inclusive growth approach than the earlier pro-poor growth approach. The prime aim of the *inclusive growth approach* is to create opportunities for all and the benefit should reach all sections of the society. *Inclusive growth approach* is a long run perspective focusing on increasing productive employment opportunities for all, not on direct income redistribution as means of increasing income for *excluded groups*. *Inclusive growth* is a broad-based emphasizing on policies that remove constraints to growth and create a level playing field for investment such that it allows people to *contribute to and benefit from economic growth* (Ali (2007), Ali and Son (2007), Ali and Yao (2004), Ali and Zhuang (2007), Fernando (2008), Lin (2004), McKinley (2010), Zhuang (2008)). Inclusive growth is concerned with the overall welfare of the society. Inclusive growth emphasizes the idea of equality of opportunity in terms of access to markets, resources and regulatory bodies for business and individuals.

Inclusive growth approach is different from the earlier *pro-poor growth approach* that is interested in the welfare of the poor only. In the relative definition, growth is *pro-poor* if and only if the incomes of poor people grow faster than the rest of the population, which suggests that inequality declines; provided income growth of the rest remains same or grows lower rate than that of pro-poor (Kakwani and Pernia (2000), Kraay (2004), World Bank (2005), Bird (2008)). *Pro-poor growth literature* has traditionally focused on measuring the impact of growth on poverty reduction by tracking various poverty measures (Eastwood and Lipton (2002), Ravallion and Chen (2003), Ravallion (2004), Lopez ((2010, 2011), McKinley (2010)). Long experiences suggest that pro-poor growth approach is ineffective and has some drawbacks also (Kakwani and Pernia 2000).

Actually *pro-poor growth approach* creates a systematic inequality of opportunity and there is a probability to derail the growth process through possible *social conflicts*.

This analysis focuses on ways to raise the pace of growth by creating productive labour force that fully *excluded from growth process*. In this context few questions arise: Is there any social constraint for economic growth? What are the social determinants of economic growth? What are the micro and macro determinants of growth? Is there any link between micro and macro determinants of growth? This paper identifies and prioritizes the factor of inclusive growth. Paper suggests removing social constraints for inclusive growth, which creates possible opportunities for all groups through relevant social dimension which promotes economic growth and development.

Earlier economic analysis has given less emphasis to the social aspects such as social culture, norms and regulations that promote economic reforms and development. Economic development of country/region depends on the wider impact of social culture. Recently, economists become more and more interested in the role of social culture as an explanation for why some regions/countries are rich and others remain poor though they have nearly same levels of physical and human capital. Several studies have investigated the impact of social culture, which includes social structure based on trust, norms, cooperation and networks. Bourdieu (1980, 1986), Coleman (1988, 1990) and Putnam (1993, 1995) introduced and popularized the concept of social capital¹ in the 1980s and

¹ Bourdieu (1986) introduced social capital to explain how social and economic forces create and maintain capitalist culture. According to Bourdieu (1986) economic, cultural and social capitals together shape the permissible actions in any particular field of operation. Cultural capital knows how to achieve one's goals and social capital knows people who could help one to do so. Coleman (1988) defines social capital by its function. 'It is not a single entity, but a variety of different entities, with two elements in common: they all consist in some aspect of social structures, and they facilitate certain actions of actors within the structure'. Putnam (1993) introduces the idea of social capital in terms of relations or interdependence between individuals: '...social capital refers to connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them.' Social capital is a type of positive group externality

1990s. Social capital is a broad term containing the social norms and networks that generate shared understandings, trust and reciprocity, which underpin co-operation and collective action for mutual benefits, and creates the base for economic prosperity. Social capital refers to the norms and networks that enable collective action which creates the base for inclusive growth and sustainable development.

Social capital contributes to economic growth by focusing the importance of cooperation and trust within firm, industry, market and the state. Heller (1996), Ostrom (2000) and Rose (2000) point out that social capital contributes to economic growth² by facilitating collaboration between individual interests towards achievement of increased output. Several studies (Bertrand and Mullainathan (2000), Beugelsdijk and Smulders (2004), Bjornskov (2006), Glaeser et al. (2000), Alesina and Ferrara (2002), Dinda (2008), Miguel (2003), Knack et al. (1997), Sobel (2002), Tau (2003), Temple and Johnson (1998)) have discussed about the features of social capital and its contribution to economic growth. Social capital³ greases the wheels that allow communities or nations to advance smoothly. In this context, Coleman emphasizes the use of social capital as a precursor of human capital. Bourdieu and Coleman agree that the notion of social capital can be converted into other forms of capital. Social capital appears to be a desirable

that arises from social organization (Coleman 1990), specifically informal forms of social organization such as trust, norms and networks (Putnam et al (1993)). Social capital, in Putnam's view, is the "features of social organization such as networks, norms, and trust that facilitate coordination and cooperation for mutual benefit". Social capital has two important components: (i) it represents resources embedded in social relations rather than individuals, and (ii) access and use of such resources reside with actors. Coleman outlines three aspects of social capital: obligations and expectations, information flow capability, and norms accompanied by sanctions.

²Countries/regions with relatively higher stocks of social capital, in terms of generalized trust and widespread civic engagement seem to achieve higher levels of growth, compared to societies with low trust and low civicness.

³It represents one of the points of interaction between individual and society, since social capital allows the individual to act in certain ways, but only within a collectively defined and supported area of freedom. Interaction enables people to commit themselves to each other and to knit the social fabric. A sense of

object for policy-making. Policy makers can aim to increase social capital with the related ideas of *school improvement* and *social inclusion* that creates employment and other opportunities for the society⁴.

Rupasingha et al (2006) and Dinda (2008) suggest how this social capital generates or what policies stimulate to form this capital. Development economists (Steger 2002, Dasgupta and Marjit 2002) recognize the possibility of productive consumption that enables the satisfaction of current needs and also increases productivity of labour. The productive consumption stimulates to accumulate human capital through which base is created for cooperation, social norms, regulations and institutional formations, and thus, it helps to develop and strengthen social networks and thereby form social capital. This paper is an extension of Dinda (2008). Spending in social sector is a part of inclusive growth strategy that provides basic facilities like health, education and housing. The paper focuses on how productive consumption⁵ improves economic performances in the channel of development of human and social capital and analyses its impact on economic development in the framework of endogenous growth model.

The paper is organized as follows: Section 2 builds up a model in the framework of endogenous growth model. Section 2.1 discusses how productive consumption develops human capital. Section 2.2 analyses how the developed human capital generates and

belonging and the concrete experience of social networks bring benefits to the members. Individuals are engaged in repeated interactions with others and everyday business, so, social transactions are less costly.

⁴An individual has access to resources through social capital that depends on his/her connections, the strength of these connections, and resources available to it. Truly, social capital helps to improve the efficiency of society by facilitating coordinated action. Thus, social capital creates a common platform in which individuals can use membership and networks to secure benefits. Social capital allows individuals to resolve collective problems more easily. Individuals often might be better off if they cooperate, with everybody doing her/his own work.

⁵The expenditure on health and education has positive contribution to the output growth, which is revealed, on macroeconomic level (Hicks 1979, Wheeler 1980). This consumption expenditure (activities) is classified as productive consumption.

accumulates social capital. Section 2.3 provides standard welfare function and optimizes it with respect to constraint. Section 2.4 analyses the results derived from our model. Section 3 provides three cases with policies. Section 3.1 explains possible multiple equilibrium graphically. Section 4 provides empirical support to the model. Section 5 discusses about the possible policies that help to develop social capital and lastly section 6 concludes.

2. Model

The representative household produces output, y , using composite capital, k . The intensive production⁶ functional form is

$$y = f(k), f' > 0, f'' = 0 \text{ and } f(0) = 0. \quad (1)$$

The assumption of diminishing returns is replaced by constant returns, which is crucial for sustainable growth and also a broader interpretation of capital⁷. One part of produced output is used for consumption (c) and other part for investment. The equation of motion of the physical capital (k_p) is

$$\dot{k}_p = f(k) - c - \delta_p k_p \quad (2)$$

Where δ_p is the depreciation rate of physical capital.

2.1 Productive Consumption creates Human Capital

A part of expenditure (consumption) is used for the development of human capital in terms of health and education that improves labour productivity of the economy. This type of consumption expenditure helps to develop human capital and Steger (2002)

⁶ All variables are measured in terms of per capita. Here, we assume that population growth rate is zero.

termed it as productive consumption (see also Steger 2000). Human capital enhancement function, $h(c)$, is strictly concave (such that, $h'(c) > 0$, $h''(c) < 0$ and $\lim_{c \rightarrow \infty} h(c) = \bar{h}(c)$ or $\lim_{c \rightarrow \infty} h'(c) = 0$ and $\lim_{c \rightarrow \infty} h''(c) = 0$). The equation of motion of the human capital (k_h) is

$$\dot{k}_h = h(c) - \delta_h k_h \quad (3)$$

Physical capital⁸, k_p , is produced on the basis of the same technology that is used to produce consumption goods and its accumulation requires, at least in part, the renunciation of consumption, while human capital, k_h , results from productive consumption (Steger 2002).

2.2 Human Capital develops Social Capital

Development of human capital creates the base for social capital formation such as social norms, trust, cooperation, networks etc that forms in the schooling system. Education's longstanding concern with association makes direct and indirect contribution to the development of social networks⁹, trust, tolerance and reciprocity. Educated individuals are interested in dialogue and conversation, and develop cultural environment in which people can work in coordination and trust each other. So, improvement of schooling system creates the platform for interaction between individuals¹⁰, groups and sub groups. Interaction enables people to commit themselves to each other, and thereby to knit the

⁷ Steger (2002) defines capital as the composition of physical and human capital, in this paper social capital is added to it for wider notion of capital that is discussed later.

⁸In this context, k_p could be equally interpreted as physical and human capital that requires the renunciation of consumption for its accumulation (Steger 2002).

⁹Educational achievement is likely to rise significantly, and the quality of day-to-day interaction is likely to be enhanced by a much greater emphasis on the cultivation of extra-curricula activity involving groups and teams. Thus, encouraging the development of associational life can also make a significant difference to the experience of being in different communities.

¹⁰In other word, human capital is capable to create and develop norms, regulations, and social networks that form the social capital, and thereby economic growth and development (Temple and Johnson (1998)).

social fabric. Social capital of an economy definitely depends on the available stock of human capital (that is definitely greater than one, because, at least two individuals are required to form social capital). So, social capital formation is a function of human capital, i.e., $S = \phi(k_h)$, with usual property $\phi' > 0$ and $\phi'' < 0$. The equation of motion of the social capital (k_s) is

$$\dot{k}_s = \phi(k_h) - \delta_s k_s \quad (4)$$

Where, δ_s is the depreciation rate of social capital due to misused or non-used.

Composite Capital formation

Physical, human and social capitals are well connected each other and jointly produce output in the economy. Three capitals (physical, human and social) are taken together to form composite capital, k . The whole stock of composite capital is defined as

$$k = k_p^\alpha k_h^\beta k_s^{1-\alpha-\beta}. \quad (0 < \alpha, \beta < 1) \quad (5)$$

Here, the elasticity of physical, human and social capital are α , β and $1-\alpha-\beta$, respectively.

The equation of the motion of stock of composite capital (k) can be written as:

$$\dot{k} = \eta_1 \dot{k}_p + \eta_2 \dot{k}_h + \eta_3 \dot{k}_s \quad (6)$$

Where $\eta_1 = \frac{\alpha k}{k_p}$, $\eta_2 = \frac{\beta k}{k_h}$, $\eta_3 = \frac{(1-\alpha-\beta)k}{k_s}$; η represents share of individual capital

contributed to composite capital.

Substituting eq.(2) - (4) in eq(6), it can be written as

$$\dot{k} = \eta_1 f(k) + \eta_3 \phi(k_h) - \psi(c) - \delta k \quad (7)$$

Where $\psi(c) = \eta_1 c - \eta_2 h(c)$ is the net consumption and depreciation rate:

$$\delta = \{\alpha \delta_p + \beta \delta_h + (1-\alpha-\beta) \delta_s\}$$

The equation (7) contains two additional terms viz., social capital generating function $\phi(k_h)$ and net consumption $\psi(c)$, which includes productive consumption that creates human capital $h(c)$. Improved human capital has two fold impacts on the economy – directly develops human capital and indirectly creates the pace for wider base for all section of the society in the form of social capital.

2.3 Welfare function

Individuals may form or join groups – whether they are organized around certain (enthusiasms) interests, social activity, economic and/or political aims – can make considerable contribution to the economy. The simple act of joining regularly involved in organized groups has a significant impact on individual well being.

The representative household or central planner maximizes her instantaneous utility through consumption at each moment. The traditional objective of the household is

$$Max_c W = \int_0^{\infty} U(c)e^{-\rho t} dt \quad (8)$$

Subject to the constraint

$$\dot{k} = \eta_1 f(k) + \eta_3 \phi(k_h) - \psi(c) - \delta k \quad (9)$$

$k_p(0) > 1$, $k_h(0) \geq 1$ and $k_s(0) \geq 1$.

2.4 Analysis

F.O.C of the optimization solution is

$$u_c = \lambda \psi_c \quad (10)$$

where λ is the shadow price of k , and $\psi_c = \eta_1 - \eta_2 h_c$. The eq. (10) implies that along the optimal trajectory the marginal utility of consumption equals to marginal net cost of

consumption in utility measured units. It is also clear that the level of consumption is higher compare to productive consumption.

The optimal economic growth rate is

$$\frac{\dot{c}}{c} = (\sigma + \theta)^{-1} \left\{ \eta_1 f_k(k) + \frac{\eta_3}{\eta_2} \phi_{K_h} - (\rho + \delta) \right\} \quad (11)$$

Where $\sigma = \frac{-cu_{cc}}{u_c} > 0$, $\theta = \frac{c\psi_{cc}}{\psi_c} = \frac{-\eta_2 h_{cc} c}{\eta_1 - \eta_2 h_c}$, provided $\eta_1 \neq \eta_2 h_c$

The term σ is inter-temporal elasticity of consumption. The second term, θ , is the elasticity of net consumption. It implies that productive consumption significantly contributes on economic growth through the elasticity of net consumption (θ). Since $\phi_{K_h} > 0$, the marginal productivity of social capital is positive, economic growth rate in eq.(11) is higher than that of Steger (2002). This difference is created due to incorporation of social capital that is reflected in the second term, ϕ_{K_h} , in eq. (11).

Proposition: *Productive consumption and social capital contribute to economic growth.*

The economic growth rate will be more compared to the conventional growth rate because of the contribution of social capital in the economy (i.e., $\phi_{K_h} > 0$). Thus, as long as social capital has definite contribution or return, the economic growth rate will be higher with economic development.

Specific Functions

For the analytical purpose, we specify the following functional forms.

Production function:

$$y = f(k) = Gk \quad (12)$$

Human capital enhancement function:

$$h(c) = \ln(1 + c) \quad (13)$$

Social capital function:

$$\phi(k_h) = \begin{cases} \frac{\underline{S}k_h}{\underline{S} + k_h} & \text{when } \begin{cases} k_h \geq \underline{k}_h \\ k_h < \underline{k}_h \end{cases} \end{cases} \quad (14)$$

Utility function:

$$u(c) = \frac{c^{1-\sigma} - 1}{1 - \sigma} \quad (15)$$

3. Specific Case Studies

Case 1: Consider a situation where people are living at the below subsistence level of consumption (C_0), i.e., $C < C_0$, people are suffering from malnutrition having low quality of health capital, which is below the normal human health capital, i.e., $k_h < \underline{k}_h$. In this situation (economy), enhancing human capital is zero, i.e., $h(c) = 0$, and consequently the society poses only the bonding social capital, i.e., $\phi(k_h) = \underline{S}$. It is mostly the family bonding. It restricts interaction between groups and the mobility of resources, even there is no exchange of culture or any economic activity between groups and/or sub-groups in less developed society/country. This is the situation in several parts of Bihar, Orissa, and MP in India. Each group is confined among themselves and all kinds of interaction within group only. Everything is restricted by their social restrictions in the name of caste, create, religion etc¹¹. This society has a strong bonding relation that forms the bonding social capital but it has no impact on overall economic activity or/and economic development. Thus, the economy becomes stagnant (due to social restrictions that

¹¹ It is observable in Indian states also like Bihar, UP, Rajasthan, MP, Orissa etc.

generate no trust on others, no reciprocity). The economists explain this stagnant economy as a low level poverty trap. Income is very low and unable to provide subsistence and as a result productivity is zero. Using above information and equations, the economic growth rate is

$$\frac{\dot{c}}{c} = \frac{1}{\sigma} \{ \eta_1 G - (\rho + \delta_p) \} \quad (16.1)$$

This is a low level of equilibrium growth rate with the bonding social capital. There are lot of development economics literature explain the low level poverty trap in terms of economic factors but social factors are almost neglected in earlier. Now policymaker focuses on social aspects.

Policy 1: To overcome this stagnation, the government should reach at the door of these excluded groups and provide nutritional intake through food programmes that improve health human capital and create the base for social interaction between groups at distribution centre. It will definitely dislodge the social blocking and help to form the base for bridging social capital that helps to change the social attitude and behaviour.

Case 2: Now consider the situation where the consumption level just crosses the subsistence level (C_0), i.e., $C \geq C_0$, and corresponding to this subsistence level, the society starts to develop human capital, i.e., $h(c) > 0$. Here is the productive consumption [$c = (C - C_0) \geq 0$] that enhances human capital, ($h(c)$), but still in this phase it is at the border or margin line of bonding and bridging social capital. This is the phase of social conflicts arising in the initial motion from bonding to bridging social capital and it is termed as *social mass transition*. With certain social conflicts initial economic development starts marginally and economic growth starts. Still physical capital

determines economic growth but more social conflicts may reduce economic growth at initial stage of development.

$$\frac{\dot{c}}{c} = [\sigma + \theta]^{-1} \{ \eta_1 G - (\rho + \delta) \} \quad (16.2)$$

Policy 2: *School inclusion* is the most important policy through which increase the enrolment in schools. There will be a development in the *feeling of oneness or togetherness* in schooling. This creates the base for social and economic reform and development starts.

Case 3: Consider the situation where the productive consumption enhances human capital, which is productive. Education develops knowledge and cultural capital through schooling that also helps to create friendship, fellow feeling among them. It certainly creates a bridge connecting different groups of society. The process of human capital formation increases the intensity of social interaction within and between groups. The social norms, rules and regulations are created through discussion. Thus, development of human capital creates the base for social capital formation. Interaction enables people to commit themselves to each other and creates the pace for economic reform and development. The productive consumption stimulates to accumulate human capital through which the base is created for cooperation, norms, regulations and institution. It helps to develop the *linking social capital* with productive resources.

Suppose the economy is at $k_h \geq \underline{k}_h$, then $\phi(k_h) = \frac{Sk_h}{\underline{S} + k_h}$, social contacts or networks increases and strengthening the family bonding, bridging and linking social capital and thereby employment opportunity rises. Then the economic growth rate is

$$\frac{\dot{c}}{c} = [\sigma + \theta]^{-1} \left\{ \eta_1 G + \frac{\eta_3}{\eta_2} \frac{\underline{S}^2}{(\underline{S} + k_h)^2} - (\rho + \delta) \right\} \quad (16.3)$$

This is a high level equilibrium growth rate with higher social capital formation compared to eq. (14). Obviously, economic growth rate at $k_h \geq \underline{k}_h$ is higher than that of at $k_h < \underline{k}_h$ only because of the presence of effective social capital in second bracket viz.,

$$\frac{\eta_3}{\eta_2} \frac{\underline{S}^2}{(\underline{S} + k_h)^2} > 0.$$

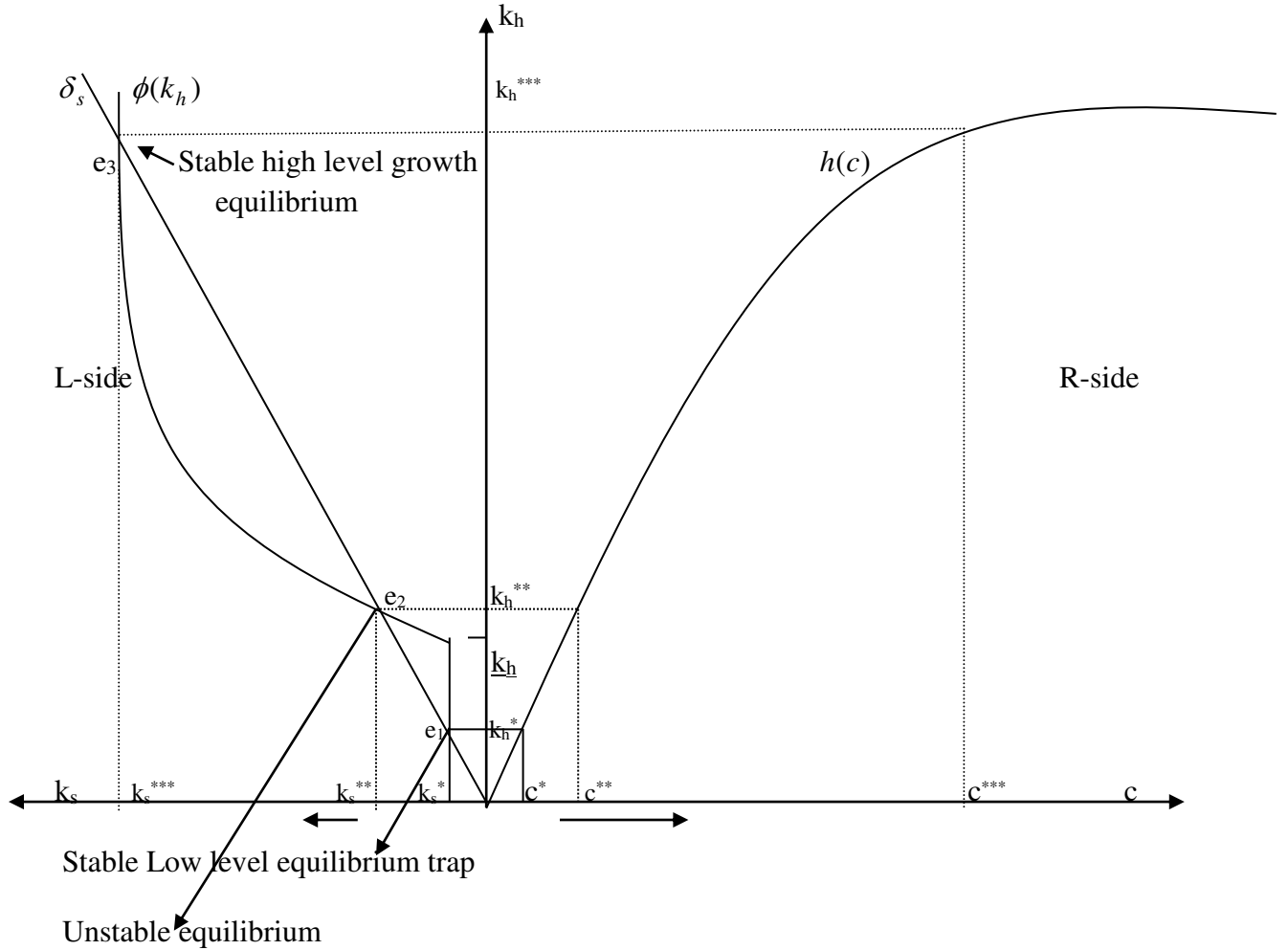
Policy 3: Appropriate *design of school curriculum* is important such that employment opportunity should be matched with available human capital. Watch dog *institutions* will be set up for monitoring and regulating economic activities.

3.1 Analyzing possible multiple equilibrium situation

Now graphically we explain and analyze the economic growth and development at different stages of economic position. The formations of human and social capital are explained graphically in the R-side (c, k_h) plane and L-side (k_h, k_s) plane in figure 1, respectively. Figure 1 shows the possible multiple equilibrium situations. A low-level equilibrium trap exists in less developed economy, which has poor quality human capital in terms of health and education, and social network confines only with family relationship. Social network/capital remains more or less fixed at k_s^* . It is independent of k_h up to a minimum level of human capital \underline{k}_h that does not help to generate sufficient social network in terms of bridging/linking capital¹², which could be productive. In such low level or underdeveloped economy, low level of human capital is insensitive and

ineffective and fails to play a significant role to develop productive social capital. Therefore, less developed economy remains at $e_1 (k_h^*, k_s^*)$ low level equilibrium trap that occurs at low level of social, human and physical capital (Fig .1).

Figure 1: Social Capital Formation and Multiple Equilibrium



The productive consumption is a crucial development policy for improving human capital that helps to generate social capital and thereby economic development. Social capital

¹²It is a productive social capital that is accumulated as a result of simultaneous production and consumption of relational goods taking place in the context of different kinds of social participation, which

formation (in terms of bridging capital) takes shape as soon as human capital exceeds \underline{k}_h as defined in Figure 1 and continues until it reaches its maximum. This situation leads to a stable equilibrium at $e_3 (k_h^{***}, k_s^{***})$ high level of capital (k^{***}) and corresponding high consumption level (c^{***}). In between low and high level equilibrium, an unstable equilibrium exists at $e_2 (k_h^{**}, k_s^{**})$ corresponds to c^{**} . From fig.1, we observe multiple equilibrium (e_1, e_2 and e_3) with two stable equilibrium at (e_1) and (e_3), and one unstable equilibrium (e_2) in between them. If once the economy crosses k_h^{**} , in fig.1, it certainly leads to higher economic growth rate along with higher level of human and social capital. It should be noted that $\underline{k}_h - k_h^{**}$ is very difficult zone for less developed countries (LDC) and comparatively high effort (or big push) is required to achieve considerable social development and economic growth.

Low-level equilibrium trap exists when $k_h < \underline{k}_h$ and the productive consumption is ineffective to develop human capital as well as social networks. It becomes effective and efficient only when $k_h \geq \underline{k}_h$. Thus, effectively productive consumption affects economic growth only after attainment of \underline{k}_h level of human capital that starts to generate social network and thereby social capital.

Economy needs greater efforts for development of human capital particularly for the zone of $\underline{k}_h - k_h^{**}$ (i.e., $\underline{k}_h < k_h < k_h^{**}$). As soon as k_h exceeds k_h^{**} , k_s monotonically increases with k_h that develops from productive consumption. In the context of economic development, productive consumption is effective only in $c^{**} - c^{***}$ zone corresponding

facilitate the learning of cooperative attitudes, behaviours and reciprocity (Sabatini 2006).

to $k_h^{**} - k_h^{***}$ and $k_s^{**} - k_s^{***}$ zones. It should be noted that an unstable equilibrium exists at $e_2(k_h^{**}, k_s^{**})$. A stable equilibrium occurs at $e_3(k_h^{***}, k_s^{***})$ with high social capital. It should be mentioned that developments of infrastructure and communication systems, which are highly depends on the availability of physical and human capital, highly affect the formation of social network/capital. So, in this context, we have to consider that social capital formation depends on both human and physical capital, i.e., $S = \phi(k_p, k_h)$. For simplicity we consider here that only human capital generates social capital, i.e., $S = \phi(k_h)$, and continue our analysis.

4 Empirical Observations

This section provides some empirical support for the above said model based on cross-country study. This paper tries to show that (i) schooling (human capital formation) improves through rising government consumption, (ii) schooling develops trust and (iii) income level increases with rising social capital and improvement of human capital. The government consumption share, trust in people (see Inglehart et al. (2004) for details), and average years of schooling 1990 are mainly considered here as productive consumption, social capital and human capital, respectively.

4.1 Data and Empirical results

In this study the data set is taken from the website: <http://www.nek.uu.se/staffpages/publ/p431.xls>. This data set is a compilation of several data that are taken from different sources (given in details in p431 excel file). Several studies (Zak and Knack (2001), Bengtsson et al. (2005), Berggren and Jordahl (2006), Dinda (2008)) have used these data. Few relevant variables - viz., growth per capita

(annual percentage growth rate of real GDP (chain) per capita 1990-2000), trust¹³ (first value of trust 1990-2000, World Value Surveys), per capita real GDP (Penn World Table 6.1), schoolmean90 (average number of years of schooling in 1990, see Barro and Lee 2000 for details), pol-right90 (political rights 1990, Freedom House), civil-lib90 (civil liberties 1990, Freedom House), school_loggdp90 (product of average years of schooling and log of GDP per capita in 1990), lifeexp1990 (life expectancy 1990) and socinf (index of social infrastructure) are taken for this study (see also Dinda (2008) for details). There are 69 countries but few variables are missing for some countries.

Table 1 provides the impacts of productive consumption on schooling. The empirical findings support that government consumption has direct impact on schooling but it varies with the level of productive consumption (govt consumption share) in different (poor and rich) country groups. Increased productive consumption raises human capital in terms of schooling. Productive consumption increases schooling significantly higher in countries whose productive consumption (government consumption) share is less than 15 percent of gdp (Table 1).

Table 1: Results of School Improvement for Productive Consumption

Variables	Coeff	Std error	t-value	p-value
Govt Consumption	12.611**	5.069	2.49	0.016
Constant	4.322***	0.8548	5.06	0.000
R-squared	0.098		N	59
A: Gov Cons share less than 15 per cent of gdp				
Govt Consumption	32.058***	11.4565	2.8	0.009
Constant	1.533	1.252	1.22	0.23
R-squared	0.207		N	32

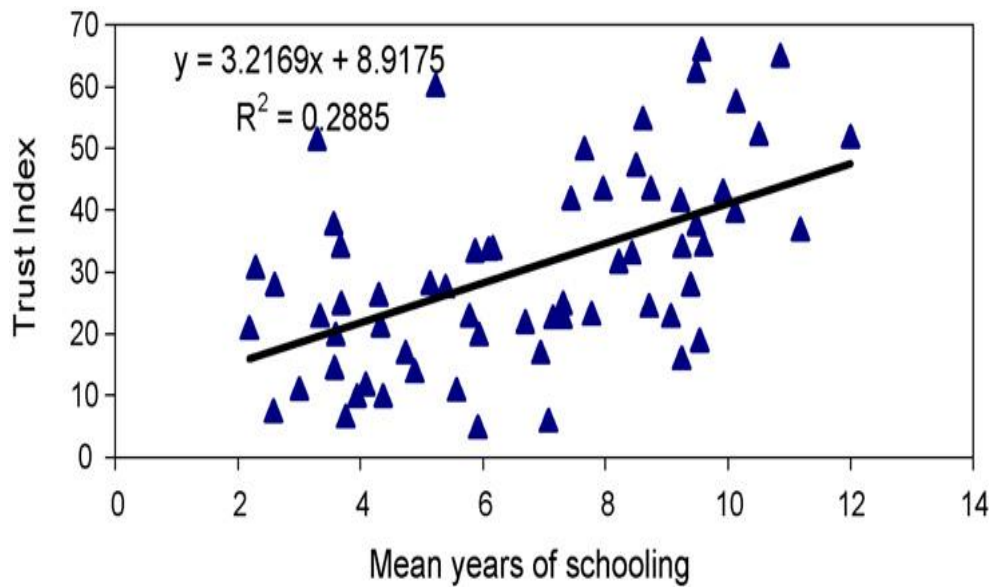
Note: (i) '***' and '**' indicate the level of significance at 1% and 5%, respectively.

(ii) Government Consumption is the share of gdp during 1974-1989.

¹³ First value of trust in people (%) 1990 – 2000 from World Value Surveys plus Newzealand from a government sponsored survey www.worldbank.org/research/growth/pdffiles/trust_data.xls for 1980, 1990-91, 1995-96 (see Zak and Knack 2001).

Figure 2 shows a direct association between average schooling and social trust. This indicates that rising literacy rate improves the trust level among people in the society.

Figure 2: Relationship between Schooling and Trust



Source: Dinda (2008)

Table 2 depicts the empirical results of the impact of schooling on trust. On an average 3.7 trust point increases for each additional year of schooling. Average year of schooling of the sample is 6.45 year. Now sample is divided into two groups – below average (less than 6.45 years) and above average year of schooling (greater than 6.45 years). Marginally 3.2 point trust index improves for each extra one year of schooling at initial stage (below average schooling year) but it is 6.5 in later stage of development (above average school year, (Table 2)). These empirical findings (Table 2) provide evidences that trust is low with less schooling which is associated with under developed countries, and trust is more with higher level of schooling associated with developed countries.

Table 2: Regression results of Schooling on trust

Variables	Coeff	Std err	t-value	p-value
School	3.691***	0.546	6.76	0.000
Constant	5.669	3.864	1.47	0.147
R-squared	0.405		N	69
School mean < 6.45				
School	3.214**	1.46	2.2	0.035
Constant	8.5	6.175	1.38	0.178
R-squared	0.1316		N	34
School mean > 6.45				
School	6.532***	1.544	4.23	0.000
Constant	-20.554	13.92	-1.48	0.149
R-squared	0.3517		N	35

Note: (i) '***' and '**' indicate the level of significance at 1% and 5%, respectively.

Table 3 displays the significant variables that affect trust. Income level, growth rate, year of schooling, political right, people's voice have direct impact on trust but inequality and rule of law are inversely associated with trust. Trust also improves with reducing inequality that is measured by Gini coefficient. In other word, level of trust in the society increases as the gap between rich and poor declines. The rule of law also helps to improve the level of trust in the society/economy. The rule of law might be the pre-condition to build up trust in less developed economies.

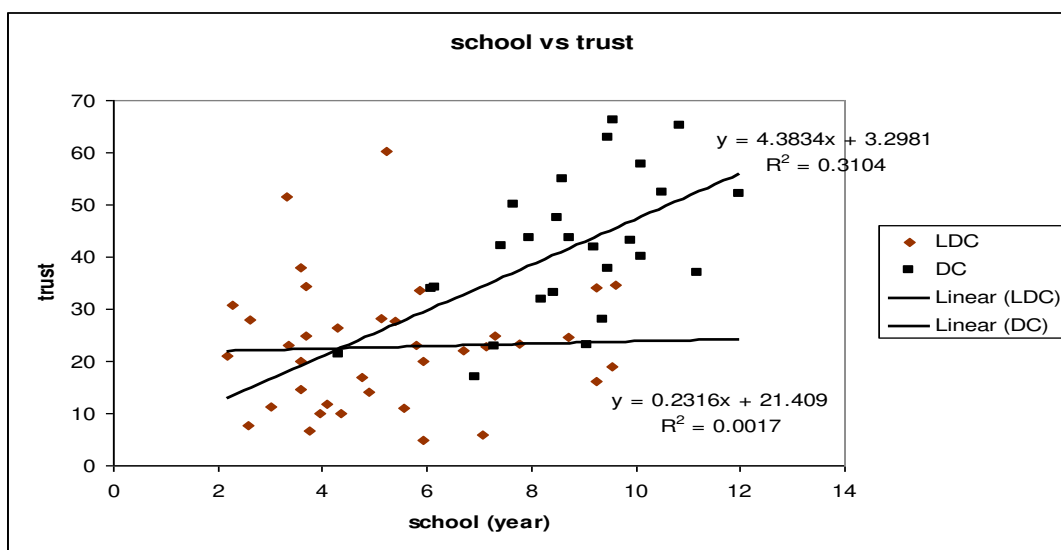
Table 3: Result of Significant variables influences on trust

Variables	Coeff	Std err	t-value	p-value
PCGDP	1.290**	0.568	2.27	0.031
Growth rate	2.766**	1.127	2.45	0.021
School	3.370***	1.161	2.90	0.007
Gini	-1.025***	0.281	-3.64	0.001
Polright	7.821***	2.391	3.27	0.003
Voice	13.67**	6.179	2.21	0.036
Rule of Law	-29.761***	8.94	-3.33	0.003
R-squared	0.8899		N	43

Note: (i) '***' and '**' indicate the level of significance at 1% and 5%, respectively.

Now this paper focuses and highlights on data analysis critically. Considering GDP level, whole sample is divided into two groups – developed countries (DC) and less developed countries (LDC). Now this data analysis helps to understand critically the relationship between schooling and trust in LDC and DC. Figure 3 shows the relationship between schooling and trust for poor (LDC) and rich country (DC) groups. In LDCs, trust is nearly constant (or fixed) and schooling has no impact on it. It is true because the large section of the society in LDCs is excluded from schooling system and ineffective school teaching-learning system prevails in LDCs (Park and Hannum 2001, Glewwe and Kremer 2005, UNESCO 2011). From our data set of LDCs it is clear that majority of poor and marginalised people have no access to school and also deprived from their basic needs, they have no faith on society and can't trust social system. Trust building mechanism is unsuccessful since impact of schooling is little or nil. In DCs schooling improves trust directly (Fig 3).

Figure 3: Relationship between Schooling and Trust in DC and LDCs



After diagnostic tests on residuals of OLS regressions, two sample points are identified as outliers. Removing outliers this paper again re-estimates all the equations but qualitatively results remain same.

Figure 4 shows the relationship between income and trust in LDC and DC. Trust has no significant association with GDP in LDC but has direct and significant relation in DC. This is explained theoretically in earlier section and graphically in Fig 1 in different way.

Figure 4: Relationship between Trust and GDP in LDC and DC.

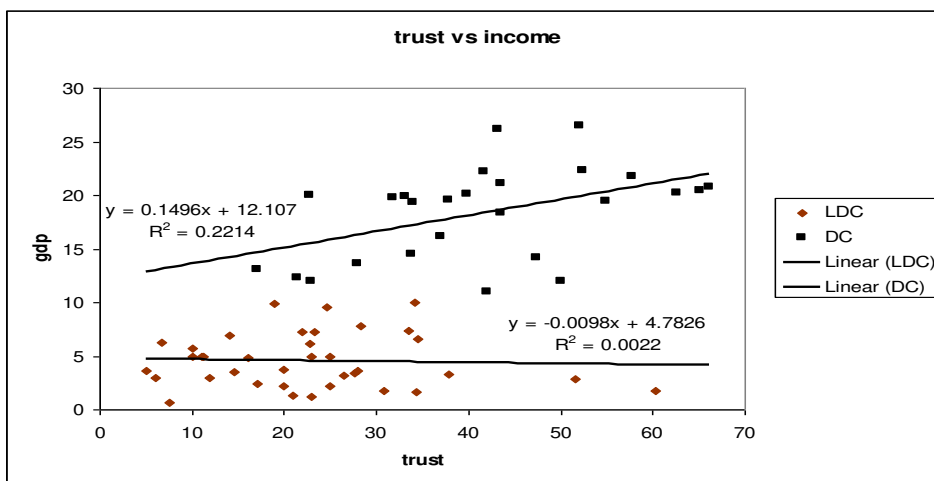


Fig 3 and Fig 4 clearly suggest that schooling built up trust, which generates income (gdp) in developed economies but not in LDCs. In under developed economies, schooling does not built up trust that is indifference of schooling. Trust has no impact on income generation in LDCs.

Our empirical findings suggest that the social trust in people, civil rights, social infrastructure and quality of life improve as human capital develops through schooling.

These social capitals have definite impact on the income level as well as on the economic growth and development. Thus, these empirical results support our model.

5. Policy

Productive consumption should be a good policy for the development of underdeveloped countries if it truly enhances the human capital of that country. In LDCs, productive consumption is a crucial policy for development of human capital that concretizes social capital. The policy makers should focus those forms of social capital, which will noticeably improve the economic prosperity of distressed communities, and the economic inclusion of deprived, disadvantaged and marginalized individuals.

Social capital can be created in a wide variety community based projects like business, sports and cultural development programme, or community networks, work for food programmes etc. Community development programs should be the prime policy to develop face-to-face interaction among individuals and creates a setting of norms for development work that helps to build up trust among themselves (Dowla 2006, Sabatini 2006). This builds a new level of social trust that acts as collateral and solve the collective action problems of poor people (Dowla 2006). The community development projects did raise (i) the confidence levels and feeling of well-being of the vast majority of the participants, (ii) improve the employability and (iii) employment opportunity of the participants. Thus, it also helps to grow a social culture in the community as well as in the economy. Briefly and specific few policies are suggested as given below:

- (i) Improve productive consumption providing nutritional intake to all the excluded people of the society.

(ii) Dismal the social blocking and create the base for bridging social capital formation.

(iii) Improve *school enrolment* and strengthen the *feeling of togetherness*

(iv) *Design school curriculum* as per need base

(v) Develop *institutions* and improve *capacity building*

6. Conclusion

Inclusive growth is concerned with the overall welfare of the society. The paper focuses on the process of expanding social and economic opportunities for all. This paper identifies and prioritizes the factor of inclusive growth and focuses on ways to raise the pace of growth by creating opportunities for all groups through relevant social aspects. This paper explains the formation of social capital through development of human capital which is generated through productive consumption and examines its contribution to economic development. The economic growth rate improves and overcome low level equilibrium trap through inclusive growth process. As a result, social and human capital rises. Overall economic growth rises with accumulation of social and human capital. The prediction of the model is examined empirically for a cross-section of countries and has substantial support in the chosen sample data. More rigorous empirical investigations are needed in future for region/country specific policy formulation.

The lack of clarity on the policy options for inclusive growth needs to be urgently addressed. Policy maker should focus on (i) building a shared understanding on the concept of inclusive growth, (ii) effectively address inclusive growth, especially issues of persistent exclusion and (iii) major policy actions for different stakeholders to promote

growth that is genuinely inclusive. So, the challenge for policy maker or the government is to combine growth-promoting policies with the right policies to assure that the poor or marginalised people also can participate fully in the emerging opportunities. This paper suggests a clear policy for inclusive growth model in less developed regions/countries, and the way to overcome social obstacles and achieve inclusive growth is possible the formation of social and human capital. In this direction, the Government expenditure policy should be focused more on productive consumption that improve *school enrolment* and strengthen the *feeling of togetherness*. The government should concentrate on the development of education and health sectors, and also develop *institutions* and improve *capacity building* in the society. More detail regional levels data are required for empirical findings.

Future research can help to meet this challenge by (i) throwing light on the country-specific and sub-national factors that influence the formation of social and human capital and economic growth, (ii) identifying to what extent those factors are amenable to policy intervention, and (iii) quantifying the trade-offs between alternative policies for promoting inclusive growth.

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