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THEME: Sub-theme 1: Human Resource Development

Research Topic: Human Capabilities and Economic Growth.

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Abstract: The paper aims at contributing to the ongoing research of the importance of human development in terms of human capital and capabilities on the economic growth of seven South Asian countries for the period 2006-2016. Firstly, a comparative human capabilities index is calculated to determine the factors influencing human capabilities. Secondly, a cross country, panel data regression analyses is done to determine the impact of human capabilities on economic growth. The results conclude a positive causality between the human capabilities and economic growth.

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"The real wealth of a nation is its people. And, the purpose of development is to create an enabling environment for people to enjoy long, healthy and creative lives. This simple but powerful truth is too often forgotten in the pursuit of material and financial wealth".
Human Development Report (UNDP, 1990).

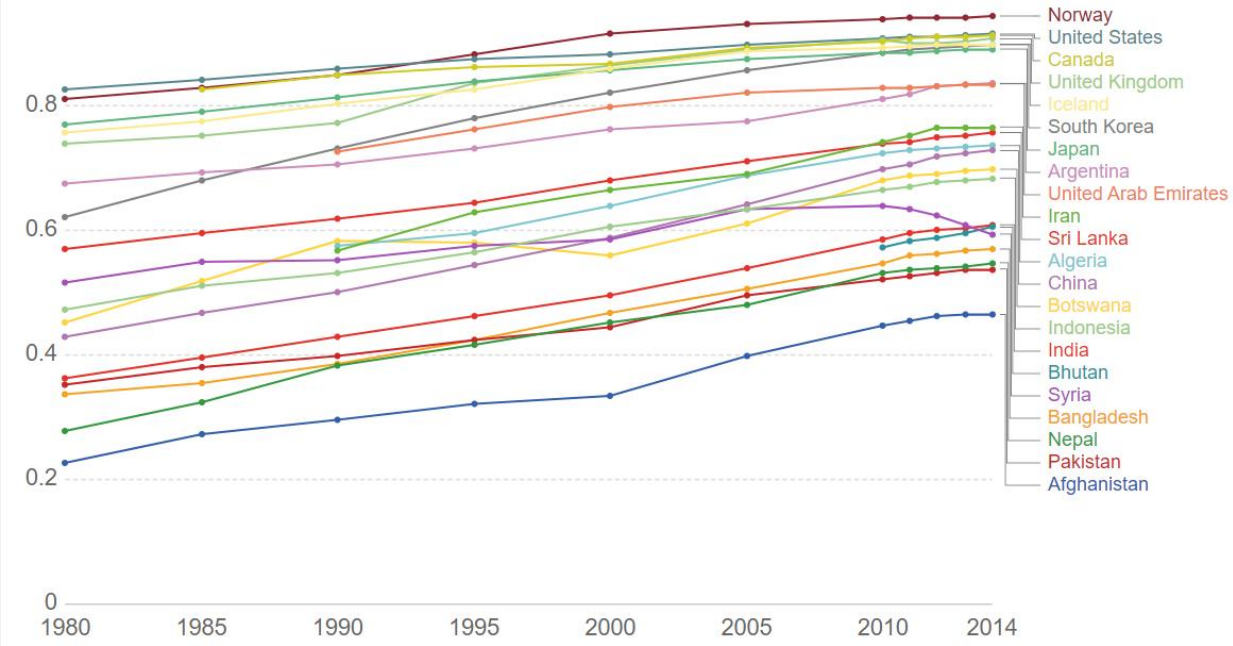
1. INTRODUCTION

The ever-changing paradigm of what development entails has brought us to the debate of how integral is the underlying role of human capital in the growth and development of a nation. Ever since the endogenous growth theory was introduced (Arrow (1962), Benhabib and Spiegel (1994), Romer(1986) the role played by human capital in growth has been vastly discussed empirically and theoretically. Both social and economic factors play an integral role in human capital formation as highlighted by Hanushek and Kimko (2000) and Becker(2000).

In essence, human capital is referred to the resources withheld by individuals in terms of knowledge, skills, aptitudes, attitudes etc. (Goode 1959, Becker 1994). The applicability of this concept has been introduced in the form of the human capabilities approach by Amartya Sen and Martha Nussbaum. The capabilities approach brings a unique dimension to the aspect of growth and development by integrating the idea of human freedom to choose between factors that influence their happiness (functioning's and capabilities) and their ability to pursue their chosen goals. In light of this, it becomes clear that growth is not merely a set of macroeconomic forces but rather is the freedom of opportunity for individuals to apply their skill set .This accumulation of human capital stock is a key determinant of economic growth.

The outcome variable for the study is Economic Growth which is being measured in terms of Gross National Income levels of a country. Economic growth formulates as the most powerful factor driving change within an economy in terms of education, health, employment opportunities, innovation, entrepreneurship, prosperity and much more. At the end of the day it is the differences in economic growth levels that explain the gap between the developing and developed nations of the world. Human capabilities in essence define the very aspect as to why economic growth is needed in the first place. Firstly, it helps for productive allocation of various resources. High levels of income disparity between the richest and poorest nations can be lack of investment in human capital as well as lack of provision of equal opportunities by the latter.

To further exemplify the aforementioned phenomenon, a comparative Human Development Indicator chart showcases how developed countries like that of Canada, Japan, United states enjoy much high levels of human development contrary to the developing nations like that of Pakistan, Afghanistan etc.



Source: Human Development Index (UNDP)

This paper examines the factors that makeup human capabilities and how these capabilities eventually impact economic growth. A comparative human capabilities index has been calculated that covers the dimensions of economic wealth and social infrastructure. The data used to compute the index and formulate the model has been collected from World Development Indicators and World Governance Indicators 2006-2016. A panel data analyses will be conducted in order to study the role of human capabilities on economic growth of seven South Asian countries; Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka across a 10 year time period (2006-2016). Such a rich dataset allows us to have a more comprehensive understanding on the phenomenon being tested. The study being conducted is causal in nature as it looks in to the cause and effect relationship between human capabilities and economic growth. This research methodology uses minimal interference to reduce biasness. The paper uses first-differencing estimation strategy to account for any time invariant biases that pose a threat to the credibility of the study. .

2. LITERATURE REVIEW

2.1. Historical Review

The oxford dictionary defines Human Capital as the concept of investments in people (in terms of The oxford dictionary defines Human Capital as the concept of investments in people (in terms of education, health, training etc.) such that it increases an individual's productivity. While Adam Smith and W.Petty talked about Human capital as to how an individual's talents, education and abilities act as contributing factors for a growing society. Human Capital was formally introduced

as a concept by Irving Fisher (1897) and gained greater popularity during 1950s after Jacob Mincer's, Journal of Political Economy article "Investment in Human Capital and Personal Income Distribution." (1958) and Gary Becker's, Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education, (1964) were published. (C, 2016) The best analysis of Human Capital Theory can be found in the work of Schultz (1961), Becker (1964) and Mincer (1974). The traditional approach limits itself to defining Human Capital only in economic value terms, the more contemporary approach to Human Capital has enhanced the concept to integrate components like knowledge, attributes, skills, and competencies, social and economic well-being. (Chiappero-Martinetti, 2014)

There are several reasons as to why human capital is historically important. Firstly, Human Capital is seen as an integral concept explaining the 'residual' component of the Solow Growth Model(1957). The residual is the part of the economic growth that cannot be explained by increases in capital stock or labor work. However, human capital explained 20% of the residual during the twentieth century. Secondly, it elaborates the idea of 'Knowledge Economy' (Mokyr, 2004) and is fundamental to Galor-Weil model. Denser populations increase knowledge sharing and encourage innovation, the fact that this notion came forward and allowed mankind to escape the Malthusian Trap, helps explain the importance of investment in human capital. In other words greater the investment in human capital, faster the growth rate. [1] Human capital also influences growth through education as it helps decrease unemployment levels and improve quality of political decisions. (Krasniqi, 2016) Lastly, the idea of GDP being a representation of growth and development has been widely criticized by various development economists (Morris, 1979; Sen, 1985; Noorbakhsh, 1996) as they believe that the essence of development lies in improvement of socio-economic indicators and cannot merely be represented by a number that only takes into account macroeconomic variables.

The transition from the concept of human capital to human capabilities is relatively recent and owed to the work of Amartya Sen and Martha Nussbaum. The capability approach takes a broader approach towards human development than human capital. It elaborates that human development is not only a buildup of resource to promote productivity and economic growth rather it also has direct relevance in terms of the individual's growth and grooming. While the human capital aspect elaborates on how to gain economic growth, the capability approach focuses on why we need economic growth in the first place. Ultimately, the purpose of economic growth is to allow for expansion of human freedom so as to aid a pathway for people to lead a longer, freer and valued life and enhancement of human capabilities allows us to achieve this. An instrumental role that the capability approach plays is bringing about social change through social development. For example, reducing gender inequalities and reducing fertility rates through female education (Chiappero-Martinetti, 2014) (Capability., 1997)

2.2. Theoretical Literature

Prior to the concept of the role played by human capital and capabilities, was the idea of measuring development in terms of income levels of various countries. According to the Conditional Convergence Theory (Barro and Sala-i-Martin 1992), greater the gap between the economy's initial income and steady state level, more rapid would be the growth levels of the economy due to capital accumulation and technological diffusion. However, the data of income levels of various South Asian Economies compared to other Asian countries is a representation of how factors other than income, like policy implications impact growth levels. (Chiappero-Martinetti, 2014)

Various growth studies had initially integrated the concept of human capital, some of the growth studies that later integrated the concept of human capabilities include Schultz(1961), Becker(1994), Arrow (1962), Uzawa (1965)- they elaborated on the role of education, skill development, learning by doing and technological knowledge in growth and development. Some of the growth theories that analyzed human capital and economic growth using endogenous growth model include Romer(1986), Lucus(1988), Rebelo(1991). (Anand, 2007)

The integration of a human centered approach towards development is relatively a recent concept. Some of the earlier theories include that of the 'Basic Needs Approach' by Seers (1969), Streeten (1981) and Stewart (1985). The theory is an approach aimed at providing opportunities for complete physical, mental and social development of individuals and tries to derive ways of achieving this objective. (Streeten, et al, 1981, p33)

Amartya Sen and Martha Nussbaum have been the key contributors to the concept of human capabilities playing an integral role in development. According to Sen (1990), human capabilities play an integral role in economic and social development as they aid individuals to lead a healthier life, improve their educational outlook, enjoy greater levels of freedom and attain equal human rights. Sen highlights two main concepts- capabilities and functioning's. He interrelates functioning's with capabilities and utility through his famous bicycle example which states that possession of a bicycle(Resource) would provide mobility (Functioning) , but having the ability to move around on the bicycle(Capability) would ultimately result in a better life(Happiness/Utility). (Mine Yilmazer, 2015) On the contrary, Nussbaum elaborates the concept using ten main capabilities that she believes must be taken as the basis of constitutional changes as they help avoid issues of omission and power (Nussbaum, 1988). The following ten capabilities have been proposed by Nussbaum (2000); life expectancy, bodily health, bodily integrity, senses imagination and thought, emotions, practical reason, affiliation, other species, play and control over the environment. (Anand, 2007)

Integrating the Basic Needs Approach and Sens Capability Approach Qizilbash (1996) and Griffin (1989) further improved the wellbeing concept and formulated the 'living life list' (Mine Yilmazer, 2015)

2.3. Empirical Literature

The research done in the domain of human capabilities in relevance to economic growth has primarily revolved around creating a link between different factors that contribute towards human development and ultimately economic growth. Thus, a positive causal link between the two variables has been created through a multidimensional aspect. Initiating with studies like that of Young (1928), Kaldor (1957), Arrow (1962), Romer(1986) and Lucas (1988) which create a link through the aspect of knowledge that enables improvement of skills of workers thus, inducing overall development. An empirical analysis of these studies was taken up by the likes of Levine and Renelt (1992), Mankiw et al. (1992), Barro and Sala-i-Martin (1995) and Barro (1998) that talked about convergence between economies based on secondary school enrollment levels. High school enrollment rates lead to higher capabilities and thus, greater growth rates (Bils and Klenow, 2000)). Ashtoon et al. (2002) took the approach of how investment in physical capital contributed towards the buildup of human development and ultimately economic growth. Amjad (2005) went on to empirically suggest the direct correlation between institutional quality, human development and economic growth and he was followed by, Akram(2008) who suggested a direct correlation in the health aspect of human development and economic growth. (Ali, 2012)

While the aforementioned studies primarily focus on the aspect of human capital and economic growth relationship, we now transition towards the correlation of human capabilities and economic growth. According to UNDP 1990, human development is a better measure of well-being and thus, contributes positively to overall developmental levels. Barro 1998, elaborates how increased human development leads to better quality of life generating a more skilled labor force that boosts aggregate demand levels and thus, ultimately positively effects economic growth levels. Sen 1999 also introduces the concept of the integral role played by political institutions to encourage investments by firms in worker training and knowledge enhancement which ultimately leads to an enhancement of their capabilities and therefore, economic development. (Ali, 2012)

Pasquale Tridico, PhD (2009) in his paper 'Human Capital and Capabilities as Leading Variables for Growth: a Comparative Analysis among Emerging and Transition Economies', creates a three dimensional link between human capital, capabilities, institutions with economic development. The author concludes that strong institutions (political, social) allow for better buildup of human capital along with higher levels of educational attainment contribute towards the buildup of human capabilities that ultimately lead to greater economic development. (Tridico, 2009)

A more contemporary review of literature also supports the direct correlation of human development and economic growth. Castello and Domenech(2002), Akkoyyunlu-Wigley(2006), Constantini and Monni(2006), Mukherjee and Chakraborty(2010), Suri et al(2011) Fleisher et al (2010), Dias and Tebaldi (2012), Acemoglu et al(2014)- all have done an in depth analysis of the relationship being discussed and their research ranges from Gini Index analysis, educational

attainment, trade openness to institutional quality, regional inequality to a two way relationship between economic growth and human development. (Mine Yilmazer, 2015)

There are various schools of thought when it comes to determining the causality of population on economic growth, Luigi et al (2010) has grouped these in three categories; Negative Impact, Positive Impact and No Impact.

The first theory on population was introduced by Thomas R. Malthus (1798), in which he elaborated how population grew geometrically and food production grew arithmetically thus, to ensure a balance we have to introduce preventive and positive checks on population growth. In simpler words, his theory was based on the assumption that the limited availability of natural resources constrain both population and economic growth. Solow (1956), then introduced two distinct effects of population growth in his theory. One dealt with the aspect that increase in population growth rate would increase labor amount thus, increasing output levels. The other talked about how this increase would lead to lower capital stock per worker, decreasing productivity levels thus, leading to a negative impact on output. Easterlin (1967) and Mason (1988) came to similar conclusions that higher population growth rates would be harmful to economic growth. Thus, these theorists support population control policies (Miller, 2016)

The second school of thought believes that population growth has a positive impact on economic growth levels. Theories from Kuznets (1967), Kelley (1988), and Kelley and McGreevey (1994), Simon (1981, 1989) elaborate how the part people play in production, consumption and savings contribute to economic growth. They suggest that population growth induces technological advancements thus, inducing economic growth in the long run. However, it is also worth mentioning that certain contemporary studies (for example Birdsall and Sinding (2001), Barro and Sala-i-Martin (2004), Sachs (2008), and Headey and Hodge (2009)) suggest that as more data becomes available, rapid increase in population has led to a significant negative impact on economic growth (Dao, 2012)

Ali Sher, Amjad Ali and Amjad Amin (2013), conducted an empirical study for the period of 1975-2008 to understand the impact of population growth on economic development of Pakistan. The results of the study show that population growth has contributed positively and significantly to economic development, but has been negatively impacted by the unemployment rate. What can be concluded is that the direct impacts of population growth on economic development are positive, however, when indirect analysis is carried out it leads to unemployment (Ali Sher, 2013)

The interrelation between governance and economic growth has been studied by various economists to be that of a positive one. The World Bank defines good governance as the management and institutional reforms conducted by state policy that enable delivery of effective public services, accountability of various actors part of an economy driving development policies. The United Nations Development Programme (1997) defines it as an amalgamation of

mechanisms, processes, institutions that allows the various actors/groups to exercise their rights, mediate differences and meet obligations. It is basically the coordination of economic, political and administrative power to manage a nations affairs at various levels. (Rachid Mira, 2017) (Emirullah, 2014)

Historically, two main approaches have been taken to study governance. The first being Market Enhancing governance that highlights the role of governance in reducing transaction costs that would enable the markets to become more efficient. The other approach is growth enhancing governance that focuses on the effectiveness of institutions to accelerate the transfer of resources to more productive sectors and absorption of potentially high productive technologies. (Khan, 2007)

Some of the studies that show a positive relationship include that of Kaufmann and Krayy(2002) which stated that good governance is needed for higher per capita income. Grindle(2004) elaborated how good governance contributes to factors like reducing poverty, combating corruption etc that act as a hindrance to economic development and thus, contributes positively to economic development. Campos and Nugent (2000) conclude that political stability and rule of law are integral for establishing clean systems that allow for foreign investment and thus, economic growth (Zubair, 2014)

Hall and Stones (1999) take a unique approach and elaborate how the differences between productivity, accumulation of capital is explained by differences in social structures that are primarily built upon government policies. Thus, representing a positive relation between governance and economic growth. Acemoglu, Robinson and Jonson (2002) through their empirical study of colonized European countries conclude that those which were wealthier in 16th century are now poorer and these differences are explained through the role of political institutions that formulate their governance levels. Khan(2007) conducted an empirical analysis on inherited market infrastructure that is required to reform governance initiatives to raise production and concluded that good governance increases income per capita and thus, acts as an important factor to economic growth (Pere, 2015)

There are two set of results that are derived in studies regarding the relationship between foreign direct investment and economic growth. While one supports the positive causality, the other focuses on the two having no significant relationship. Lechman and Kaur, 2015 argues that the FDI acts as a vehicle of transfer of positive spillover effects in terms of transferring of assets induces greater productivity and thus, growth. However, studies on FDI like Chakraborty and Basu (2002) that have been conducted for the Indian economy show little contribution of FDI on economic growth levels.

Existence of two models for the study of FDI helps us understand the relationship better. The first of these is the neo-classical model which stats The FDI to have an impact on GDP levels but not

on long term growth levels. On the contrary, the new growth theory models believe FDI to impact long term growth rates through human capital and research development. Study conducted on the Moroccon economy by Baliamoune-Lutz (2004) showed a positive relationship between FDI and economic growth. Using a panel vector autoregressive model, Hsiao T. and Hsiao M. (2006) showed a positive correlation between FDI and growth. Research conducted by Rana and Dowling (1988) shows that FDI influences technology transfer impacting capital efficiency and thus, growth levels.

Alaya(2006) showed a negative relationship between the two when analyzing the Turkey, Tunsia and Morocco showing that growth is being influenced by exports and domestic levels of investments. Based on panel data analyses conducted by Nicet-Chenaf and Rougier (2009) on MENA countries, FDI and growth did not have a significant correlation.

Physical capital has been defined in a wide spectrum and has deemed to be important in economic growth levels by various theories. Various studies have been conducted that elaborate on the impact of these different forms of physical capital on economic growth. Sanchez-Robles (1998) highlights how physical infrastructure positively relates to growth. Looking into panel data analysis conducted by Canning (1999), OECD data analysis by Demetriades and Mamuneas (2000), study of telecommunications infrastructure by Roller and Waverman (2001) we can confirm the significant contribution of infrastructure to output. Estimating infrastructure-intensified regressions in growth and income inequality using data for a sample of 121countries in 1960-2000 and a variety of instrumental variable techniques, (**Calderón, César; Servén, Luis. 2004)** proves that volume of infrastructure stocks has a significant positive effect on long-term economic growth. (“Calderón & Servén, 2004)

3. THEORETICAL FRAMEWORK

3.1. Data

This paper used the World Development Indicators (WDI) and World Governance Indicators (WGI) datasets collected and compiled by the World Bank which uses consistent methodology to conduct surveys across countries. We created a panel of seven South Asian countries including Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka from 2006 to 2016. Such a rich dataset would allow for a more comprehensive analysis of the impact of human capabilities on economic growth. (Appendix 1)

3.2. Data Description

Table 1: Summary statistics

Country	Afghanistan	Bangladesh	Bhutan	India	Nepal	Pakistan	Sri Lanka
GNI	*1.69E+10*	*1.35E+11*	*1.56E+09*	*1.76E+12*	*1.69E+10*	*1.96E+11*	*6.07E+10*
	(4.15E+09)	*(2.62E+10)*	*(2.98E+08)*	*(4.02E+11)*	*(2.41E+09)*	*(2.56E+10)*	*(1.16E+10)*
Comparative Human Capabilities Index	*0.195279*	*0.2710509*	*0.3153335*	*0.2874114*	*0.2510401*	*0.2153075*	*0.3594523*
	(0.0132158)	*(0.0169329)*	*(0.0151065)*	*(0.0104238)*	*(0.0123145)*	*(0.0201402)*	*(0.0133312)*
Population	*3.00E+07*	*1.54E+08*	*738388.4*	*1.25E+09*	*2.74E+07*	*1.75E+08*	*2.04E+07*
	(2964159)	*(5843447)*	*(41725.42)*	*(5.37E+07)*	*(1015389)*	*(1.20E+07)*	*(485802.7)*
Governance (Rule of Law)	*-1.712727*	*-0.7990909*	*0.3090909*	*-0.0027273*	*-0.7427273*	*-0.8418182*	*-0.4505295*
	(0.1753334)	*(0.0791776)*	*(0.1230816)*	*(0.0859175)*	*(0.1176513)*	*(0.069544)*	*(0.1660296)*
Physical Capital	*3.06E+09*	*3.41E+10*	*8.35E+08*	*6.59E+11*	*5.65E+09*	*2.95E+10*	*2.06E+10*
	(5.94E+08)	*(9.15E+09)*	*(2.81E+08)*	*(1.22E+11)*	*(1.88E+09)*	*(2.58E+09)*	*(6.87E+09)*
FDI	*0.8824519*	*1.157439*	*1.776892*	*2.077281*	*0.2820356*	*1.485947*	*1.306514*
	(0.976705)	*(0.3343015)*	*(1.908283)*	*(0.6421015)*	*(0.2213555)*	*(1.221436)*	*(0.3760954)*

Source: Author's own calculations using World Development Indicators and World Governance Indicators

(The table gives the means of each country along with the standard deviations stated in the parenthesis)

The aforementioned summary table gives an overall generalized analysis of the various variables and their average behavior in various countries. India is observed to have the highest average economic growth rates which is owed to the fact that it is also the leading country in FDI levels and physical capital accumulation. Sri Lanka has the highest over human capabilities which is in line with the fact that it is one of the most advanced South Asian countries in terms of social infrastructure development i.e. health, education and employment. India once again tops the population growth spectrum as well with being amongst the top five of the most densely populated countries of the world. Bhutan is observed to have the highest governance levels which is due to the 'Gross National Happiness' policy of Bhutan which focuses on the importance of good governance on overall development. It is also evident that countries with higher overall GNI have higher human capabilities as compared to those who have lower GNI.

On the contrary Afghanistan is observed to have low human capabilities and poor governance due to the ongoing political turmoil. Bhutan and Nepal are observed to have the lowest overall FDI and Physical capital accumulation levels.

3.3. Empirical Estimation

This research empirically analyzes the relationship between human capabilities and economic growth for 7 South Asian countries over the period of 2006 to 2016. The study empirically analyzes the research question using the following estimation:

$$Y_{it} = \beta_o + \beta_1 CHCI_{it} + \beta_2 PG_{it} + \beta_3 G_{it} + \beta_4 FDI_{it} + \beta_5 PC_{it} + u_{it} \quad (1)$$

In the equation (1), economic growth of country *i* and time period *t* (Y_{it}) is a function of comparative human capabilities index of country *i* and time *t* ($CHCI_{it}$), population growth of country *i* and time *t* (PG_{it}), rule of law of country *i* and time *t* (G_{it}), foreign direct investment of country *i* and time *t* (FDI_{it}), physical capital of country *i* and time *t* (PC_{it}), and independent and identically distributed error term (u_{it}). β_o, β_1, β_2, β_3, β_4, β_5 are coefficients to be estimated.

The dependent variable of the model is Economic Growth measured by Gross National Income in constant US dollars. GNI is the aggregate of the value added by the producers within a country and any taxes collected (less subsidies) that have not been incorporated in the calculation of the output along with the net receipts of primary income from abroad. This variable has been taken as a better representative of a country's economic growth as it takes into account income earned by the residents of the country's residents and businesses irrespective of where it is produced. We aim to use a fair approximate measure of economic growth of a country given the data available.

The main variable of interest is comparative human capabilities index. This index has been created to represent a multidimensional aspect of how human development impacts economic growth and development. It has been created by incorporating two different dimensions; economic wealth and social infrastructure. Economic wealth has further been divided into two aspects income capability and foreign currency income while social infrastructure has been sub divided into three-aspect health capability, education capability and economic productivity. The variables used for income capability is GDP per capita and Gross domestic savings (percentage of GDP), for foreign currency income we used Trade (percentage of GDP), for health capability we used Life expectancy at birth, for education capability we used secondary school enrollment (% gross) and for economic productivity we used GDP per person employed (constant 2011 PPP$). Equal weights were assigned to each factor. We expect a positive relationship between economic growth and human capabilities as an increase in human capabilities will allow for human capital formation and overall human development which would lead to efficient utilization of various resources and thus, growth. According to (de la Fuente, 2003a, 2004) human capital importance increases as production becomes more knowledge intensive. Various theories also highlight how it impacts productivity levels and thus, economic growth ((Sianesi and van Reenen, 2003; de la Fuente and Ciccone, 2002). Certain theoretical models highlight the important role human capital plays in development and adoption of new technologies which impact productivity and growth levels.

((Nelson and Phelps, 1966).To measure comparative human capabilities index, we adopted the methodology which is in line with the one used for UNDP's HDI method.

The construction of CHCI is as follows:

Firstly, we calculate component indicators index using the following formula:

$$\text{Component Indicators Index} = \frac{X_i - X_{min}}{X_{max} - X_{min}} \quad (2)$$

In equation (2), $X_i$is the annual indicator value for each country, X_{min} is the minimum value for component worldwide data and X_{max} is the Maximum value for component worldwide data. Followed by, an equation utilized to calculate the overall index. (Appendix 3) The index ranges between 0(low human capabilities) and 1(high human capabilities).

Our other explanatory variables include PG_{it}, population growth, which has been measured as the total population within a country and is expected to have a negative impact on the economic growth of a country. Various studies have been conducted that highlight the negative relationship. A two sector endogenous growth model concluded a negative causality between the two by Bucci and La Torre (2007). Studies by Mapa and Balisacan 2003; Canlas 2004) and Canlas (2004) show how Philippines population levels have hindered growth. (Furuoka, 2010)

G_{it} , stands for governance which is measured using rule of law from world governance indicators. It is an index that rank countries based on the extent to which the citizens and various agents abide by the rules and have confidence in them. The index can range from -2.5 to +2.5 where -2.5 is the lowest value that represents weak governance and +2.5 is the highest value which represents strong governance. Governance is expected to have a positive impact on economic growth. This causality has been backed up by the market-enhancing relationship tested (Kauffman et al, Knack et al 1999) between good governance and economic growth that has come out to be positive.

A similar positive relationship can be expected between foreign direct investment and economic growth. FDI_{it}, stands for Foreign direct investment is measured as net inflows measured as a percentage of GDP. This statement is grounded on the assumption that greater levels of FDI would allow for greater investment levels thus, higher investor confidence in a country which positively impacts growth levels countries. Empirical studies conducted by karbasi et al, 2005 and Lipsey 2000 highlighted a positive impact of FDI on economic growth. Similarly, Bhandari et al 2007 used the panel GLS models to determine the positive causality in European countries.

Lastly, PC_{it} which stands for Physical Capital has been measured in terms of gross capital formation is expected to have a positive impact on economic growth. Studies conducted by the likes of Krugman, 1994; Beddies, 1999; Iwata et.al. 2003; Nachega & Fontaine, 2006 have shown factor accumulation to have a positive impact on growth levels. Kularatne (2006), adapts Barro

(1990) theoretical model and concludes that infrastructure investment has a significantly positive impact on GDP. (Younis, 2014)

The identification strategy used is panel data regression analyses for the years 2006 to 2016 across seven countries.

3.4 Hypothesis

In this paper we are investigating the impact of human capabilities on Economic Growth for eight South Asian countries. The hypothesis being tested states that countries with higher levels of human capabilities will have higher economic growth levels.

3.5 Relevance and Contribution

The aspect that human development plays an integral role in the constantly changing and progressive environment has been inculcated in this research. With the integration of phenomenon like entrepreneurship, innovation and technological advancements it has become vital at this stage that individuals are able to tap on to various resources, develop skills and have the opportunities to showcase and apply their abilities.

The paper contributes by calculating a comparative human capabilities index for seven south Asian countries across the latest time period of 2006-2016. The paper also integrates a multidimensional aspect as to how factors along with human capital and capabilities influence economic growth.

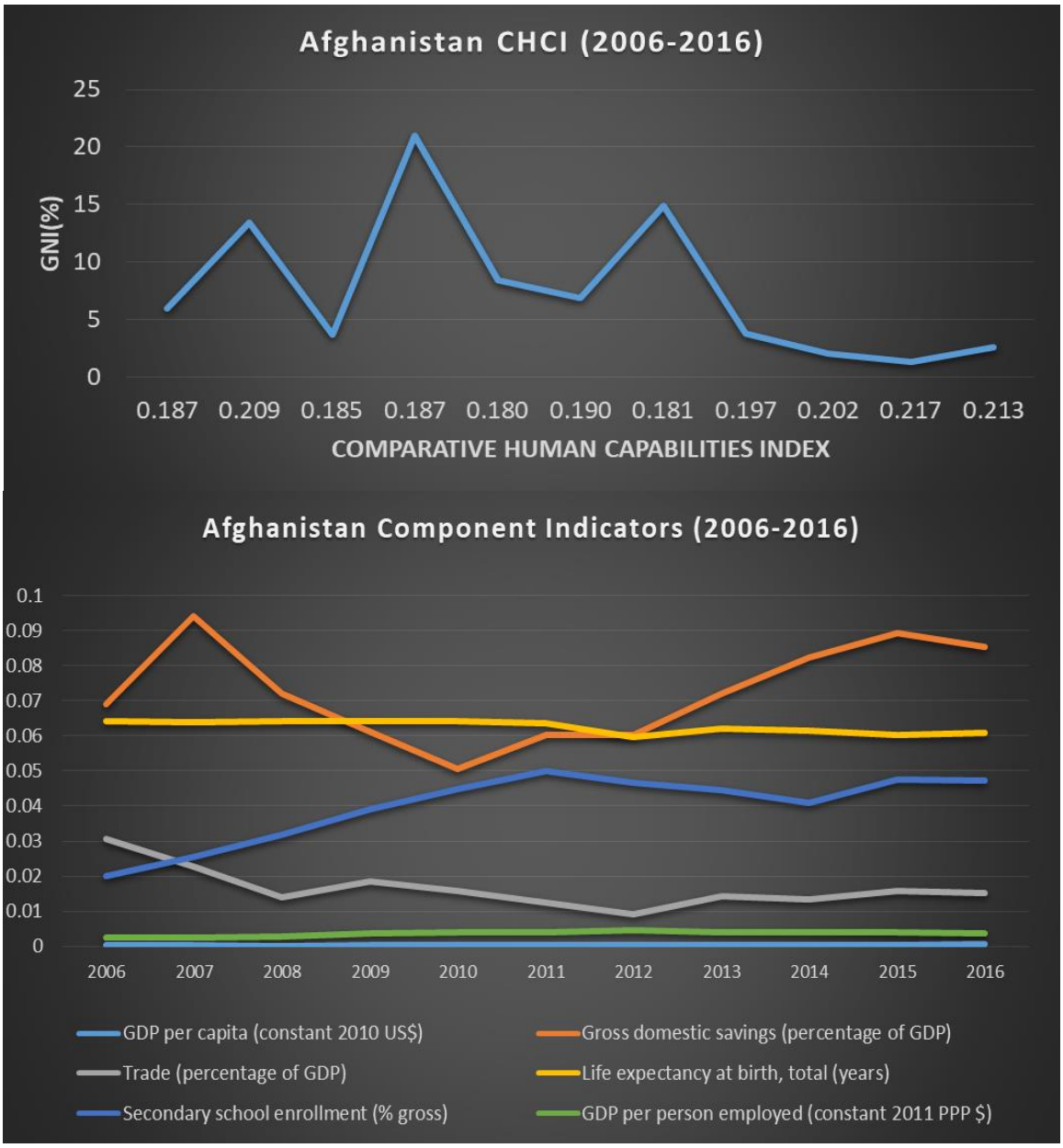
4. ESTIMATION RESULTS

In order to carry out a comprehensive study analysis, the first part highlights a country wise analyses of the computed comparative human capabilities. The second part highlights the panel data, cross country regression.

Section 1: Country Wise Analysis: Comparative Human Capabilities Index

The computed comparative human capabilities index for 2006-2016 show a unique trend for each of the seven South Asian countries

1. Afghanistan

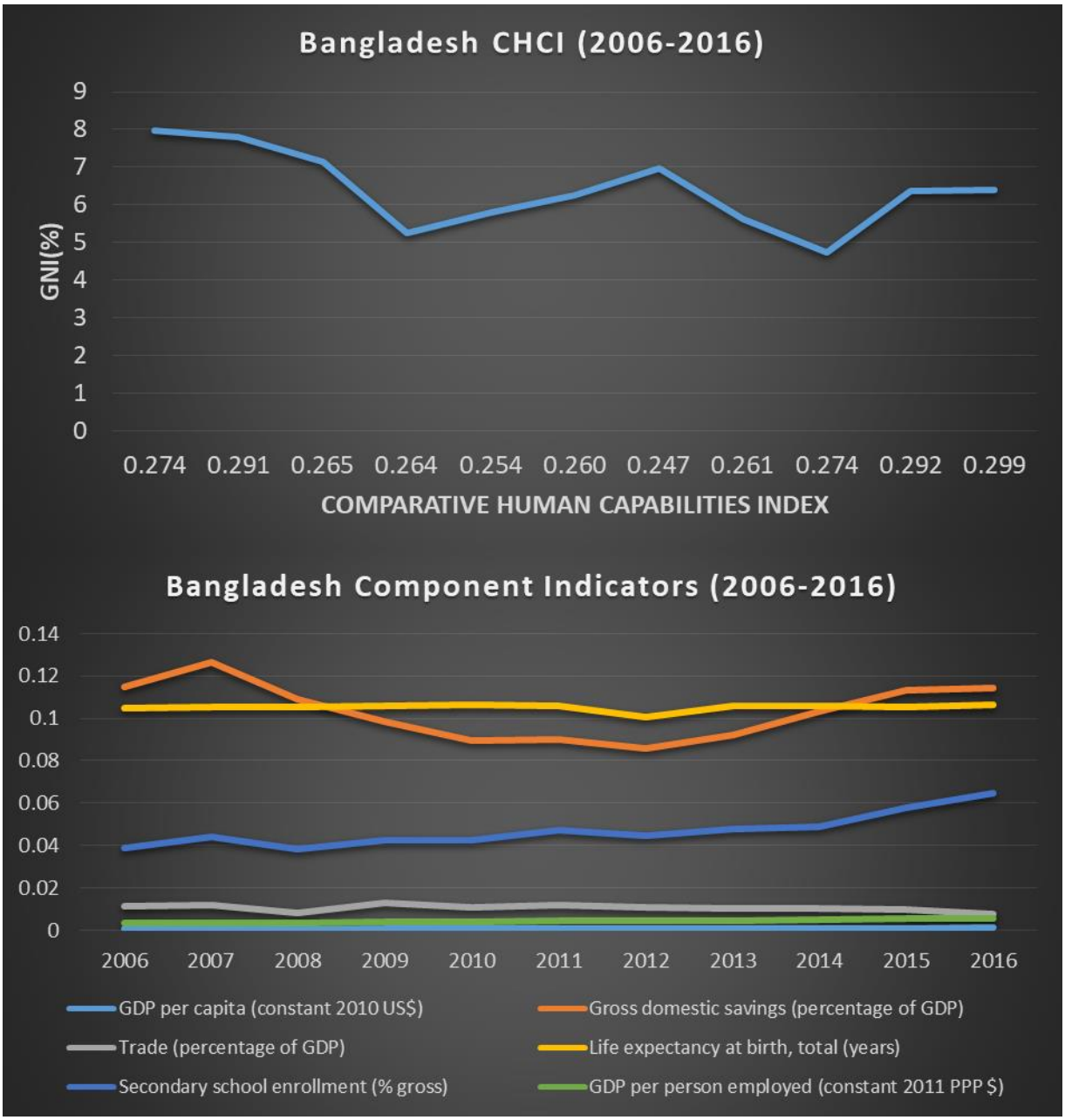


As is evident from the above computed comparative human capabilities index graph that Afghanistan is at the lower end of the spectrum as the values range from 0.1 to 0.2 that represent overall lower human capabilities. However, our hypothesized relationship is evident as when the CHCI goes up the GNI growth rate (economic growth) also increases. A major portion of the CHCI

is made up of Gross domestic savings (income capability), which showcased a declining trend up to 2010 and has been increasing ever since. The second major component is life expectancy at birth rate (health capability) which has been relatively constant throughout. Secondary school enrollment levels (education capability) have experienced a drastic increase over the years.

Two abnormalities in the result are evident between the years 2011-2013. While the CHCI values increase as of 2011, GNI levels experience a fall followed by a decrease CHCI as of 2012 and an increase in GNI levels and finally, an increase in CHCI and a fall in GNI as of 2013. Afghanistan as a country has been struggling in a multidimensional aspect. Owing to its geo strategic location in Asia coupled with a long history of war and conflict, Afghanistan has thus, not been able to employ resources into basic socio-economic dimensions of development. The absence of FDI, low trade levels, low life expectancy, low school enrollment levels have not only limited the development of capabilities within the country but have also contributed towards a stagnation of economic growth.

2. Bangladesh

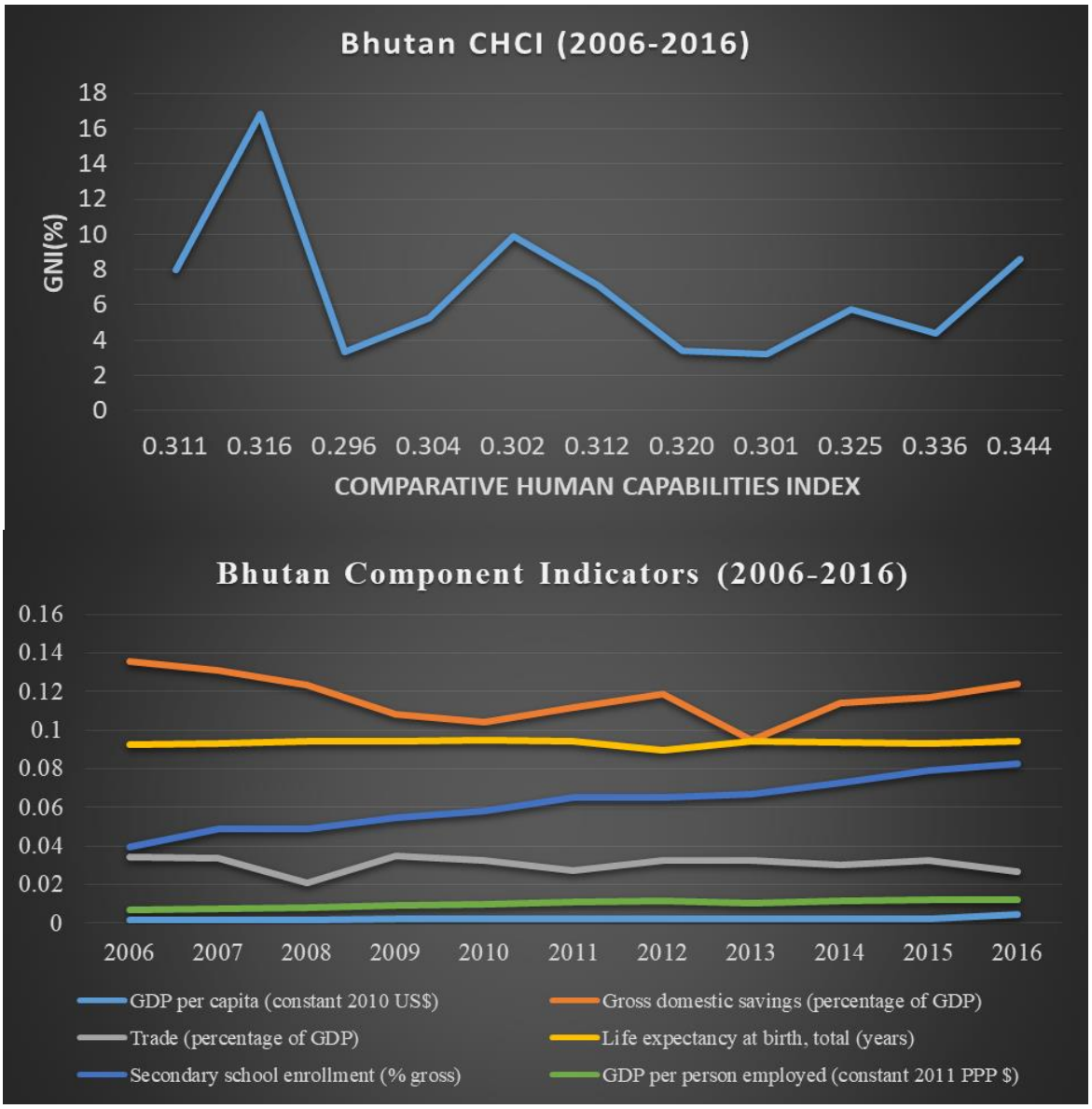


The graph represents that the CHCI levels for Bangladesh are better than that of Afghanistan but remain low at the 0.2-0.3 range. Once again, the hypothesized relationship is supported as a decline in CHCI values are coupled with decline in GNI growth rates and vice versa. A major portion of the CHCI is made up of gross domestic savings (income capability) and life expectancy levels (health capability) followed by secondary school enrollment (education capability).

A number of years represent abnormalities in terms of how the two CHCI and GNI don't follow the same increasing/declining trend. The estimates of growth accounting beyond 1980s showcased

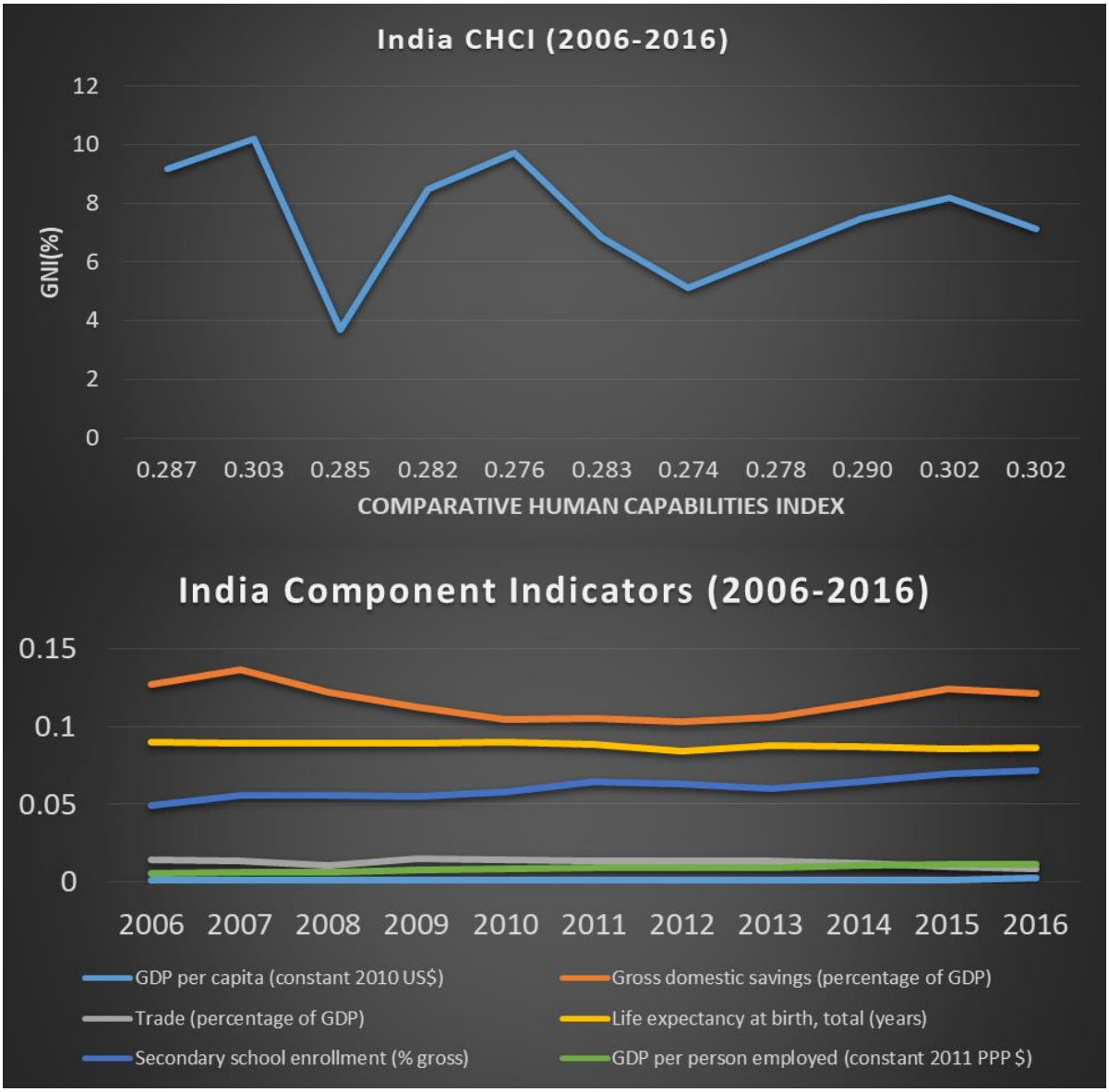
that human capital contributed to about 21% of Bangladesh economic growth levels. It also suggested that this growth induced a decline in poverty levels and the enhancement of employment opportunities. Having the 136th HDI rank, with high gender inequality levels, Bangladesh gender parity in education and employment remain high as women are not given similar opportunities as that of their male counterparts thus, negatively impacting economic growth. However, this phenomenon is experiencing a change as the female labor force participation rates experience a growth in the recent years. Given that the country has a large population base and investment in their skill enhancement has allowed Bangladesh to integrate an effective labor force in its employment sector. A major part of the labor force is employed in the informal economy and the urban areas. As of now the trend of hiring more number of low skilled workers is on the rise as the industrial sector of Bangladesh does not need high skilled employees.

3. Bhutan



Once again Bhutan showcases a direct causal relationship between CHCI and growth rates with abnormalities observed around the years 2011 and 2012. Gross domestic savings (income capability) formulates the largest part of CHCI followed by life expectancy (health capability) and secondary school enrollment (education capability).

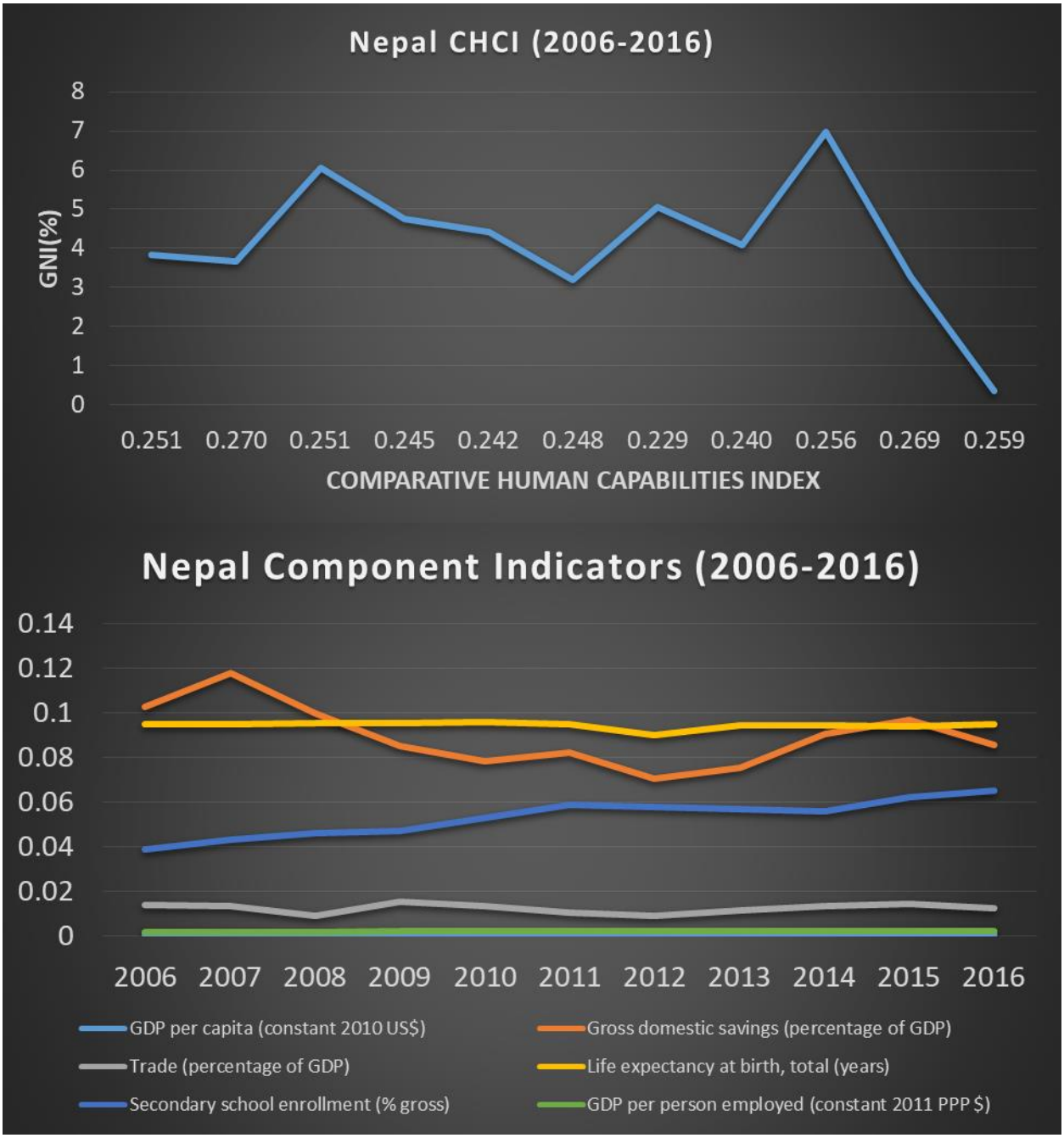
4. India



India's case is perhaps the best representative of the relationship being studied. Similar, to the preceding South Asian countries, India's CHCI is also dominated by income, health and education capability.

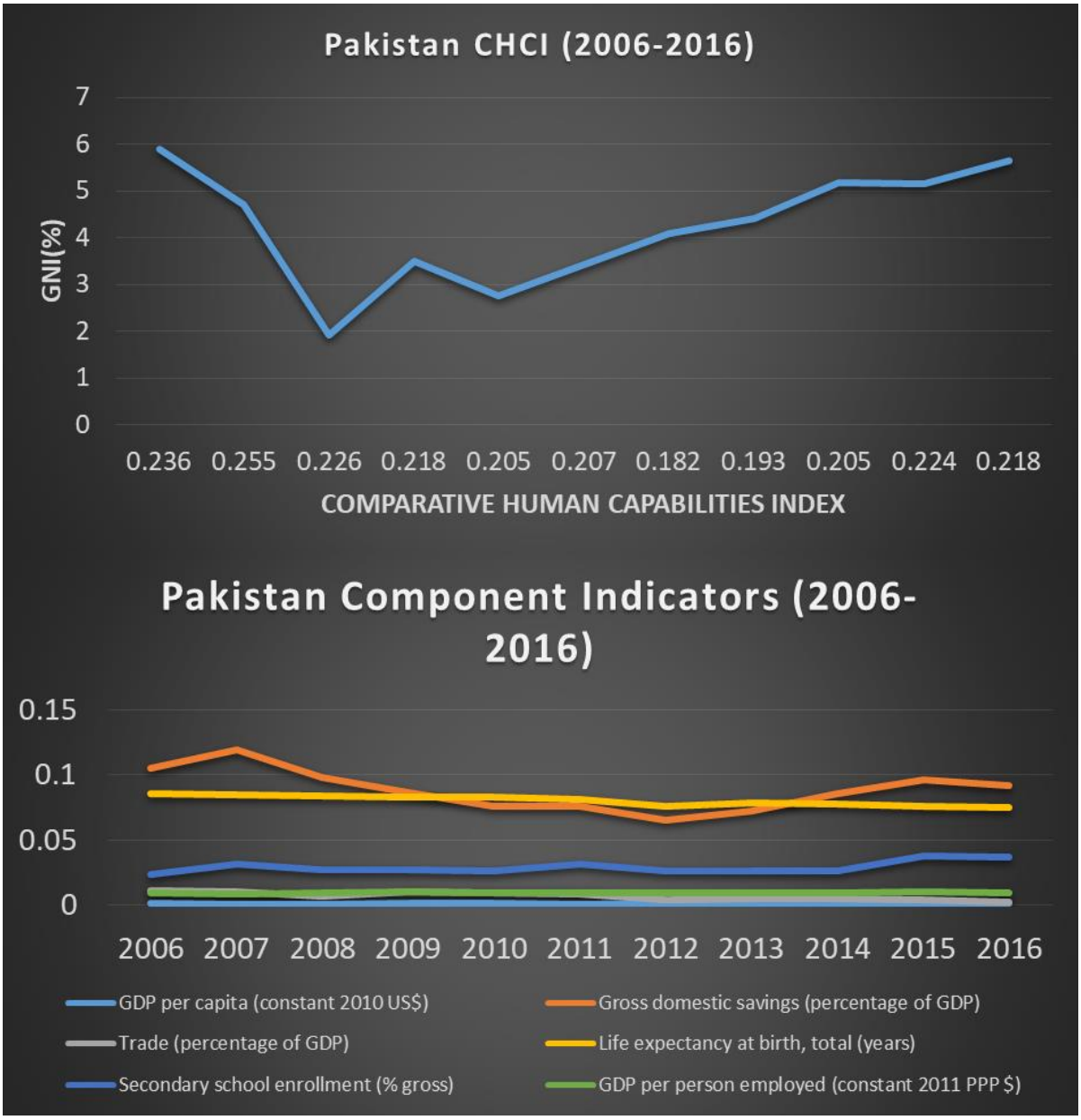
An abnormality is evident between the years of 2009-2010 where the CHCI values and the growth rates are moving in the opposite directions. India is one of the countries to have integrated private sector education to deal with increasing demand for education. The foreign direct investment levels also remain amongst highest in India as compared to other South Asian economies as it raised its FDI limits in various key sectors like banking, insurance, telecommunication etc. It remains one of the most attractive in terms of FDI policies ever since the first and second generation reforms that were introduced.

5. Nepal



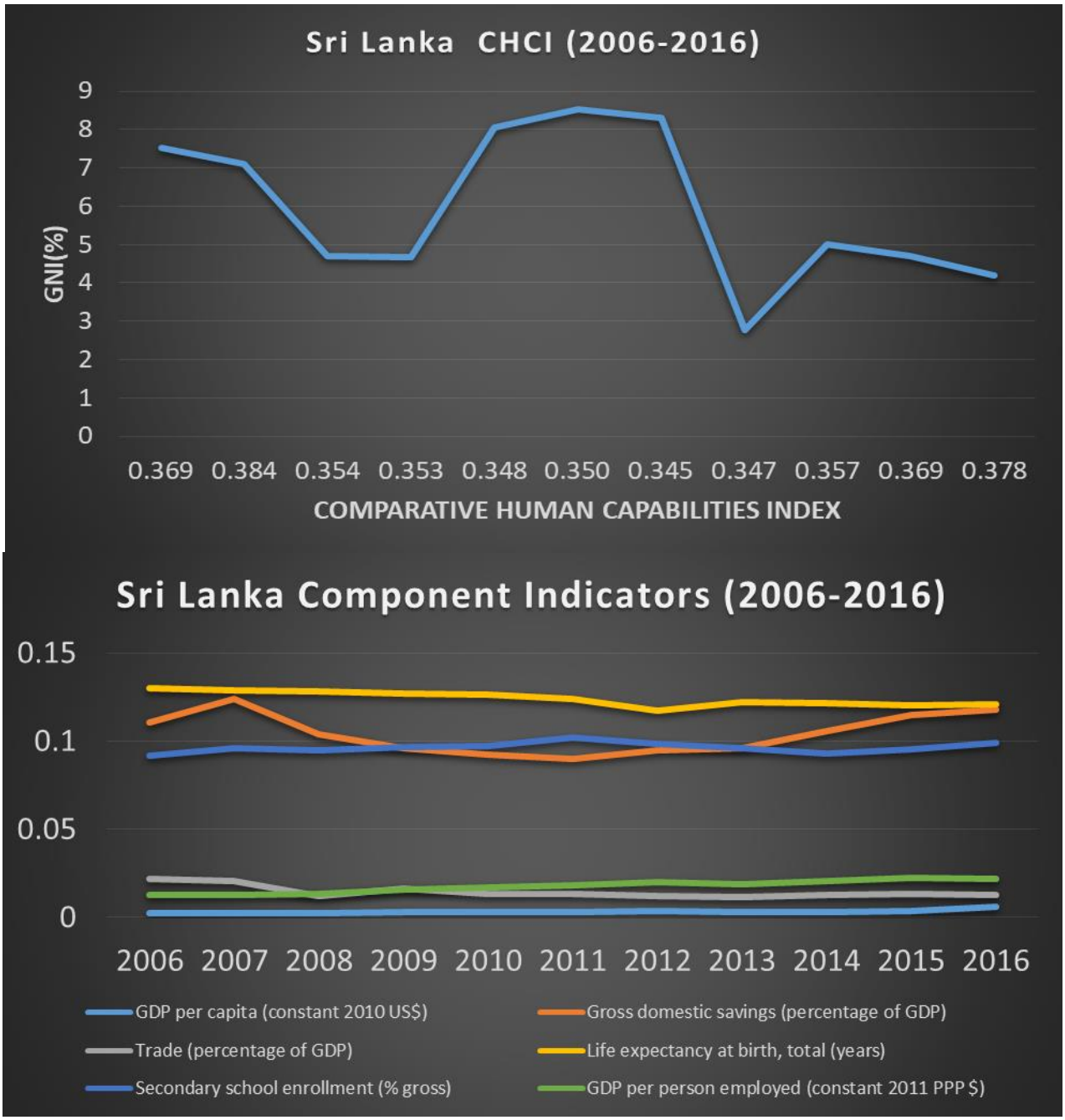
Nepal's case remains unique as it is most weakly representative of the relationship being studied. A drastic decline between 2014 and 2016 is owed to a fall in savings and trade levels. Nepal is one of the low income countries of the region and faces hindrances in the aspect of savings, trade and other socio-economic factors. Based on its market potential, entrepreneurial opportunities Nepal remains the country with the most potential to attract high FDI however, political instability has remained a hindrance in this process.

6. Pakistan



Once again Pakistan remains at the lower end of the spectrum with CHCI ranging from 0.1 to 0.2. Its CHCI is dominated by savings and life expectancy rates. One of the reasons for such drastic abnormalities is due to the fact that Pakistan has been facing political instability, high levels of poverty.

7. Sri Lanka



Sri Lanka has the best human capabilities levels across the seven countries being studied. Even though, there are abnormalities present in the hypothesized relationship we can observe how the overall levels of the components of CHCI are better for Sri Lanka as compared to other South Asian countries.

Sri-lanka, a middle income economy has been one of the economies in the South Asian region to have shown an exceptional performance. The country has shown vast development in education, employment and health sectors. Sri Lanka is the only South Asian economy to have reached the upward part of female LFPR U-curve representing greater women economic participation. In the education sector, students generally perform better than other neighboring countries in nationally administered achievement tests.

All in all it is evident that a majority of the South Asian countries support the fact that higher human development/capability levels lead to better growth rates. However, abnormalities may arise due to data limitations or external factors which are beyond the scope of this paper.

Section 2: Panel Regression Analysis

Table 2: Estimation of the relationship between human capabilities index and economic growth

VARIABLES	Analysis
Comparative Human Capabilities Index	1.307e+11*
	(7.286e+10)
Population Growth	-25,223***
	(2,694)
Governance (Rule of Law)	2.208e+09
	(1.016e+10)
Foreign Direct Investment	3.667e+08
	(7.901e+08)
Physical Capital	0.550***
	(0.0676)
Constant	9.971e+10***
	(8.789e+09)

Source: Author's own calculations using World Development Indicators and World Governance Indicators
Note: Author's own calculations.
*Standard errors are in parenthesis. *** Indicate 1% significance level, ** indicates 5% significance level and * indicates 10%.*

The results above gives a holistic view of how the various factors being tested for have an impact in the South Asian region as a whole.

It is evident that comparative human capabilities index shows a positive and significant impact on the overall economic growth of South Asia. Our hypothesized relationship between the two has been proven by the results. These results further support the causality elaborated by previous studies as stated in the literature review.

According to UNDP's human development statistical update report South Asia was the fastest growing region since 1930s and this owes to the fact that the region has over the years focused on

transforming itself through structural changes in terms of investment in human and physical capital. The region has experienced a shift from farm to non-farm sectors and this has induced greater production and employment in the services, manufacturing and industry sectors of the region as a whole. South Asian economies have also emphasized the integration of open macroeconomic policies and have introduced reforms to open up the economy and inculcate trade and foreign investments.

The significant and positive comparative human capabilities index is a representation of the key role that various human development dimensions play in the overall economic growth levels. The region has been working on improving its educational and employment outlooks. It has particularly increased accessed to schooling and average educational attainment. The primary and secondary level enrollments have seen vast improvements. Along with that countries in the region have also worked towards reducing gender disparities in educational access. South Asia's transformational reforms in the employment sector particularly focus on well-designed government policies that target sectors with promising potential thus, giving a boost to the region's economic outlook.

The South Asian region consists of some of the most densely populated countries of the world like India, Pakistan, Bangladesh and Afghanistan. These economies don't only top the list but also have high population growth rates, with their population ranging from a staggering 34 million to 1296 million people. The average growth rate for South Asia was 1.2724 % in 2016 which was higher than the average world population growth rate. The fact that our analyses highlights a significantly negative impact of population growth on the economic growth of the South Asian region is owed to the fact that the region is primarily made up of low to middle income economies which don't have enough resources to employ towards the needs of the growing population. Thus, such high population levels induce growing poverty levels, high levels of economic and social vulnerability that results in increase in crime rates, political instability and poorer governance.

Physical capital accumulation clearly has a highly positive impact on overall growth levels of the region. The region has been working towards improvement of its physical infrastructure, introduction of new machinery, technology, better road and communication systems. Various studies conducted within the region have highlighted how physical infrastructure has played a key role in growth and development. Straub and Hagiwara (2011) use growth regression and growth accounting frameworks to analyze the relation between infrastructure, productivity and growth of various developing Asian economies and concludes that there is a positive impact of accumulation of infrastructure capital on GDP growth rate. In terms of Pakistan studies have been conducted by Niazi (2011) and Shah (1992), Nadeem et al. (2011), Faridi et al. (2011) which have tapped upon Pakistan's telecommunication, transport, social and physical infrastructure and how all of these have a significantly positive impact on economic growth. (Younis, 2014)

One of the reasons as to why FDI has an insignificant impact is because South Asian countries have not been as successful in attracting FDI as compared to other developing Asian countries.

Even though, the FDI intake rates grew around the time of 2005-2012, South Asia experienced a fall by 1/5th in FDI as of 2016 which has been the highest fall felt since that of 2012. There is a gradual adaptation of the concept of international integration through FDI in the south Asian economies however, greater levels of FDI are needed to induce greater economic growth across the region.

5. CONCLUSION

In this paper, we have tried to test the relationship of human capabilities and economic growth through the study of seven different economies within the South Asian region across a time span of ten years (2006-2016). We calculated a comparative human capabilities index that integrated both social infrastructure and economic wealth factors. The study is conclusive of the fact that human capabilities do have a positive and significant impact on economic growth levels. The economic wealth indicators (GDP Per capita, savings, trade) primarily contribute towards stabilizing the economy. The social infrastructure indicators (health, education, income) help enhance the productive capacity of the individuals. Our results highlight a positive and significant relationship between human capabilities and economic growth. The results also highlight how factors like physical capital accumulation and population growth have a key impact on economic growth. While capital accumulation has positively impacted growth on the contrary, high population growth levels in the South Asian region have negatively impacted the overall development and economic outlook due to the increased constraints on resources. We were also able to conclude that the overall FDI levels remain extremely low in this region.

Moving forward, countries in the South Asian region still need to focus on the enhancement and development of their human capabilities level. In order to do so the region must primarily focus development of its education, employment and health outlooks.

Firstly, the region must shift its focus from increasing school enrollment levels to improving the quality of education. This can be done through several key strategies. Initiate the change by improving quality of teaching via public investments across the region in teacher training programs. Integration of monitoring channels like that of information communication technology (ICT) can help boost evaluation and assessment level of teachers and students. Introduction of social protection policies to reduce the gender parity gap in educational attainment. Another key thing is to connect quality of education to employment outlook. Sri Lanka has adopted a policy in which it trains secondary level students in advanced technological skills which improve their opportunities to land engineering/technical jobs. (Mehrotra, 2017) Creation of this link between education and employment through partnerships would make a lot of difference.

Secondly, integration of technical and vocational education and training (TVET) program allows for overall labor skill development. There can be a public and private partnership in this aspect

where the government primarily regulates to ensure uniformity of skill development while private sector trainers and training methods are deployed.

It is an utmost need at this stage to introduce nationwide family planning campaigns in order to combat the problems associated with increasing population growth in the region. Integration of health programs that evaluate childhood nutrition and deal with deficiencies. These health programs must be accessible to everyone irrespective of geographical area or income levels. The region must focus on further opening its economies to trade and foreign direct investment opportunities.

APPENDIX

APPENDIX 1: Data

Variable	*Description*
Dependent Variable:	
Economic Growth	*Gross National Income (formerly known as Gross National Product) includes the total income earned by residents within the country, remittances and income spent by foreigners within the country. The data representing this variable is GNI, Constant 2010 US $.*
Independent Variables:	
Human Capabilities Index	*The index is made up of six different variables that represent social infrastructure and economic wealth. The data for these variables has been collected from WDI. . Economic wealth has been measured via GDP Per Capita (Constant US$) and Savings (% of GDP) representing income capability, Trade (% of GDP) representing foreign currency income. Social Infrastructure has been measured via Life expectancy at birth representing health capability, Secondary school enrollment (% gross) representing education capability and GDP per person employed (constant 2011 PPP $) representing economic productivity.*
Population Growth	*Population is defined as to count all residents irrespective of their legal status or citizenship. The data representing this is the total population*
Governance	*Measured using the proxy Rule of law, World Government Indicators. The main dimension assessed here is the level of respect and confidence residents have for various social and economic institutions and how these agents abide the rules instated by institutions.*
Foreign Direct Investment	*Is the sum of long-term and short-term capital as shown in the balance of payments. This data represents the net inflows (new investment inflows minus disinvestment) part of the reporting economy from foreign investors, and is divided by GDP.*
Physical Capital	*It has been measured using data from the World Bank Database of Gross capital formation (constant 2010 US$).*

APPENDIX 2: Variables

The following provides an explanation of the variables being used:

Symbol	*Variable*	*Expected Relationship*
Y_{it}	Economic Growth	
$CHCI_{it}$	Comparative Human Capabilities Index	Positive
PG_{it}	Population Growth	Negative
G_{it}	Rule of Law (Governance)	Positive
FDI_{it}	Foreign Direct Investment	Positive
PC_{it}	Physical Capital	Positive
u_{it}	Error Term	

APPENDIX 3: Comparative Human Capabilities Index

The formula used to calculate CHCI:

$$CHCI = \frac{1}{6}(GDP\ per\ capita) + \frac{1}{6}(savings) + \frac{1}{6}(trade) + \frac{1}{6}(life\ expectancy) + \frac{1}{6}(school\ enrollment) + \frac{1}{6}(GDP\ per\ person\ employed)$$

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