

HUMAN CAPITAL AS A PUSHING FACTOR OF EXPORT: THE CASE OF FOUR SOUTH ASIAN ECONOMIES



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ABSTRACT

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This study investigates whether human capital serves as a pushing factor of exports of goods and services. Thus, this study takes four South Asian countries such as Bangladesh, India, Nepal, Pakistan and Sri Lanka into an account to test the relationship between human capital and export performance. The time series data that were extracted from the World Bank and the United Nations Development Program statistical databases, running from 1990 to 2015, used for data analysis. Following the Hausman test, the study employs Fixed Effect model to derive the results. The results suggest that human capital has a positive and significant effect on export performance in these countries, and lead to conclude that focusing on human capital development to enhance the export performance can be seen as one of the strategies to overcome trade deficit.

JEL Classification

F16, F14.

Contribution/ Originality: This study contributes in the existing literature by investigating whether human capital can be a potential to enhance export performance in the South Asian countries. The results derive from this study pass a message to the policy makers to be concentrated over the human capital development to sustain the external sectors in the countries.

1. INTRODUCTION

The South Asian countries are earnestly looking for sound policies for the sustainability of their external sectors. Though the developing countries have been keen and being a success in materializing outcome of trade liberalization, some developing countries, especially the countries in South Asia have not achieved significant success in expanding international trade and lagging behind the performance of East Asian countries (Rana, 2012; Otsuki *et al.*, 2013). As far as the performance of external sectors of South Asian countries is concerned, the countries Nepal, Pakistan, India, Bangladesh and Sri Lanka have been experiencing a trade deficit for past decades. According to the World Bank statistics, India's trade balance after 2000 has been recorded with a dramatic increase in negative terms with a notable degree of volatility. In the case of Pakistan, same as India, the trade balance is recorded as a sharp increase in negative terms after 2002. The trade balance in Bangladesh also increases in

negative terms after 1992 and even worsens after 2004. The case of Sri Lanka indicates that the trade deficit steadily increases in negative terms till 2008 and further increases with major volatility. A steady increase in trade deficit from 2002 to 2016 is also recorded in Nepal. The Figure-1 indicates the trend of trade balance of the countries and noted that a similar pattern in the trend of the trade balances of the countries is captivated.

Anyhow, the South Asian countries have been implementing sound policies with the intention of integrating into the world market and to overcome the trade balance issue. Apart from the ongoing trade liberalization policies such as unilateral and preferential trade liberalization policies and regional integration policies, and concentrating over the traditional pulling and pushing factors of trade, human capital is seen as one of the pushing factors likely to determine export performance. Therefore, this study emphasizes whether human capital development can be seen as one of the strategies to enhance export performances in these countries.

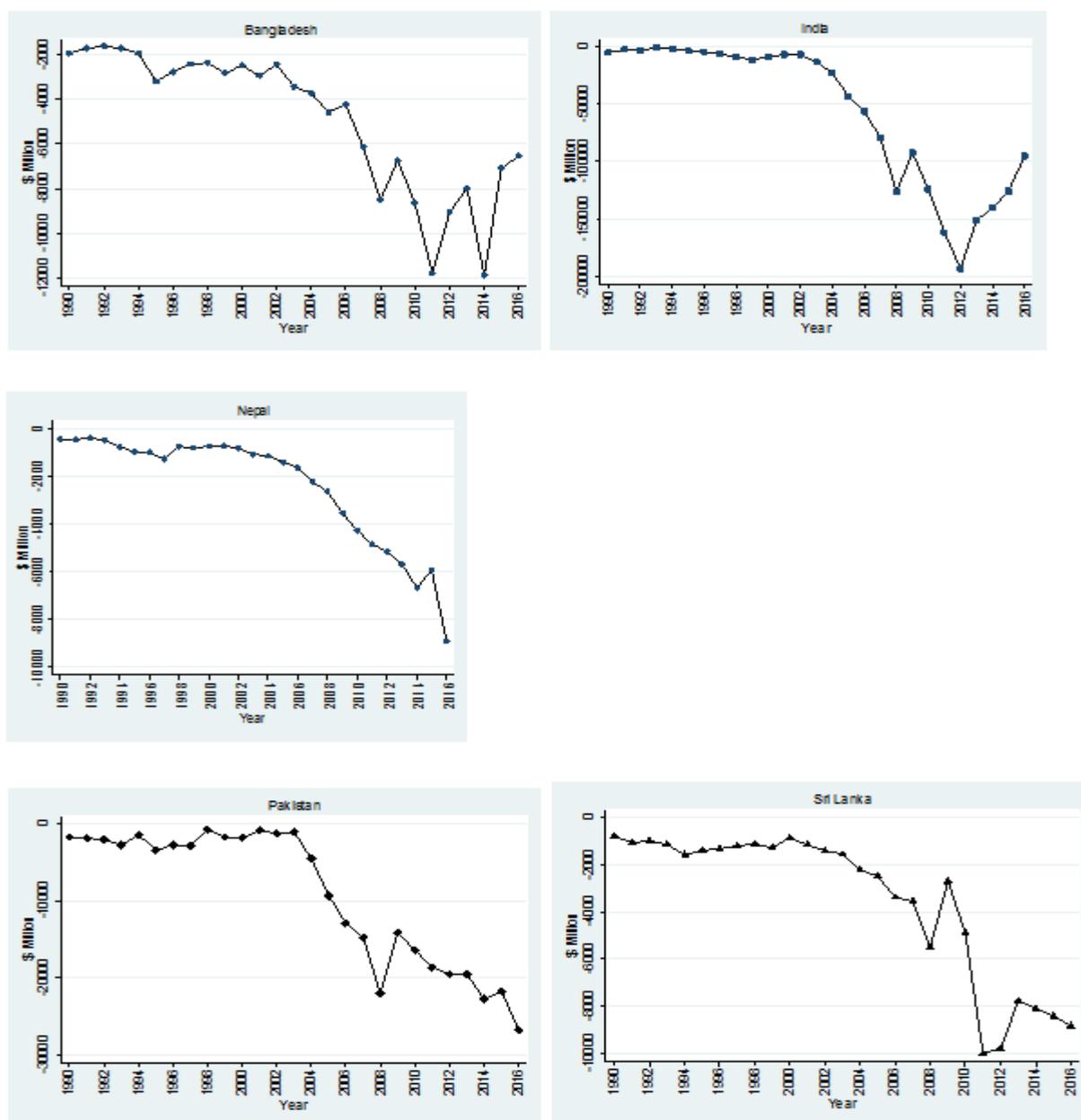


Figure-1. Trend of trade balance of selected South Asian countries

Source: World Bank Statistics-2017

1.1. Why is Human Capital Matter?

Human capital is not a new phenomenon. However, to date, interest and debate over the investment and outcome measures continue. A number of countries have already flavored the success of human capital domination in their economic performance. Until 1950s, economists assumed that labor power was not augmented but increased by its size. The analyses of investments in education and other training by Adam Smith, Alfred Marshall, and Milton Friedman were not integrated into discussions of productivity. Then T. W. Schultz and others began to pioneer the exploration of the implications of human capital investments for economic growth and related economic questions. Gary Becker, in his Nobel lecture in 1992 defined “the human capital approach” as the study of how “the productivity of people in the market and non-market situations is changed by investments in education, skills, and knowledge”. Accordingly, human capital is defined as the stock of knowledge, habits, social and personality attributes, including creativity, embodied in the ability to perform labor so as to produce economic value. Productive human resources can be seen as important resources, than any other factors, that plays a vital role for a long term success of an economy because human capital is critical not only to the productivity of the society, but also the functioning of its political, social and civic institutions, understanding its current state and capacity is valuable to a wide variety of stakeholders ([The Human Capital Report, 2016](#)). Human capital is defined as the human resource with inbuilt characteristics of knowledge, skills, abilities, and competencies acquired throughout their life ([Alexandre et al., 2012](#)). The importance of human capital concepts has been evidenced in a wide range of theoretical and empirical studies, and related policy decisions ([Kenneth, 2006](#)) because investing in human capital to enhance human capital endowment is seen by some developing countries that have either insufficient natural resources or to acquire enough physical resources for their economic development as one of the strategies to become the country with enough competency in the global market. For instance, the Japan has become major industrial complex in the world market because of the investment in human capital. Human capital can basically be classified into two types. First one is to utilize human as a factor of production and the second one considers human as a creator who frames knowledge, skill, experience, and competencies ([Kwon and Dae-Bong, 2009](#)). The second type is seen as one of the vital factors that enhancing trade and then economic growth through various channels. Though a number channels are contributing economic growth, international trade is a crucial factor supported by human capital ([Harris and Boopen, 2016](#)). According to the [United Nations Development Program \(2000\)](#) human development is measured based on three dimensions such as life expectancy, attainment of education and adjusted real income. Apart from education, [Felix and Matthias \(2004\)](#) focused work-related human capital, vocational training, school achievement prior to vocational training and socio-economic background as human capital for the analysis. According to [Barro \(2001\)](#) secondary and higher education in human capital development is complementary with technological capacity. [Grossman and Helpman \(1990\)](#) suggest that investment in human capital and new technologies will lead long-run economic growth. The human capital has a significant effect in Asian countries compared to developed countries ([Farok and Susan, 2008](#)). Hence, the South Asian economies have not only focused on sound policies to overcome trade issues, but have an interest in human capital development as well. Evidently, the trend of Human Development Index of South Asian countries is shown in [Figure 2](#) indicates that there is a long-term progress in three basic dimensions of human development: long and healthy life, access to knowledge and a decent standard of living in these countries.

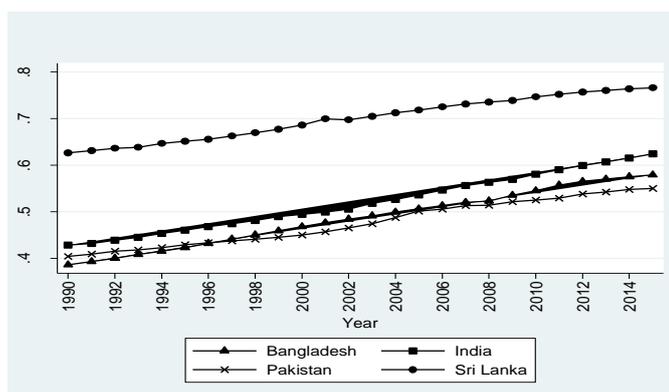


Figure-2. Trend of Human Development Index in South Asian countries
Source: United Nations Development Programme (UNDP) Statistics, 2015

1.2. Importance of Export and Human Capital Requirement

A wide range of literature and the body of international trade have already emphasized high exports not only enhance trade performance but serve as a vehicle for economic growth. Exports can help a process of economic growth through various channels such as the efficient allocation of resources, economies of scale, enhanced capacity of utilization, improved productivity, and diffusion of technological knowledge and innovation (Din, 2004). Export potential human capital is a great requirement in the external sector to meet in a competitive global market. Such a way that a very skilled labor force is required to the external sectors because knowledge in finding markets and to apply market diversification strategies, minimizing transport costs, developing trade network with the rest of the world, timely communication, etc. are the requirement of the dynamic world which is likely entering into the fourth industrial revolution with the digitalized feature. International trade and its competitiveness in coming decades would be extremely challengeable to the late comers like South Asian countries into the development stream. Thus, it is high time for the developing countries make their labor force prepared to meet the requirement of the future global scenario in terms of trade.

Numerous studies have focused investigating the association between human capital and not only macroeconomic indicators, but micro level performance indicators such as the performance of the firms, productivity of women and entrepreneurship, etc. but, a less number of studies have addressed how human capital development impacts the performance of international trade related indicators. Antrew and Lakshmi (1997) emphasized that as various levels of layers of the labor force in the external sector play respective imperative role in the performance of the external sector, the required measures are needed to prepare a potential human capital because learned workforce is required to adopt sophisticated technology and rapid production change to meet competitiveness in the global market. Becker (1994) suggested that the workforce with unique human capital will produce products with distinct characteristics and the firms will develop their competitive advantage. Further, Stevo (2012) investigated that the influence of value added intellectual capital on export performance and concluded that the intellectual capital positively influences on the export growth in the sector of food and beverage, and manufacturing of furniture and wood products. Farok and Susan (2008) concluded that human capital has a significant impact on the export performance of goods and services, and further emphasized that it is more significant on the export of goods rather services. Guangqiang *et al.* (2017) studied how human capital, which is classified as returnee managers and highly educated employees plays role in the relationship between export and innovation in the case of China and concluded that returnee managers have positive moderating and mediating roles whereas highly educated employees have negative moderating effects with no mediating effect. Ahmed *et al.* (2007) analyzed the human capital contribution in terms of the Egyptian software company and emphasized that the organizational performance in terms of export intensity in software firms is influenced by human capital that have a high level of intelligence, creative ideas, initiation, ambition, and inimitability. McGuirk *et al.* (2015) found that

innovative human capital is more valuable for small firms and effects on their innovation capacity and growth. Bruno and Elena (2011) also argue that firm productivity through innovation leads the firms to enter into the global export market. Investments in human capital make exporters knowledgeable then exporters can acquire knowledge of new production methods, input, and product designs from their international contacts (Aw *et al.*, 1999). Further, Andersson and Johansson (2004) argue that a region with educated labor force will specialize in production and export products. Grossman (2004) described an equilibrium in which country can perform exporting of goods that are produced by the talented labor force. Grossman and Maggi (2000) explain diversity in work forces and trade, and emphasize that human capital factor endowment is a matter for the specialization and trade. Ishikawa (1996) pointed out that the externalities generated by human capital in examining patterns of international trade also emphasized the role of human capital endowments in comparative advantage and industrial structure. Bougheas and Riezman (2007) developed a two-country, two-sector model of trade to explain how the distribution of human capital endowments determines the effects of trade on income inequality. Ohnsorge and Trefler (2007) have explained how Japan's abundance of workers with a modest mix of both quantitative and teamwork skills play role in international trade, industrial structure, and domestic income distribution. In this line, this study also adds its findings to the existing literature by studying whether human capital serves as a pushing factor of exports.

2. METHODOLOGY

The data for the variables were extracted from the databases of the World Development Indicators of the World Bank and the United Nation Development Program (UNDP). The balanced time series data ranges from 1990 to 2015 were structured for panel data analysis. Following the Hausman test which is used to distinguish Fixed and Random effects, this study employs Fixed Effect method with an empirical model. In panel setting, the specification of the model is given as follows;

$$\ln Exp_{it} = \beta_0 + \beta_1 \ln HDI_{it} + \beta_2 \ln Tax_{it} + \beta_3 \ln GC_{it} + \beta_4 \ln Gr_{it} + \alpha_i + v_{it}$$

where, $\ln Exp$ is logarithm of export of goods and services as a percentage of Gross Domestic Product represents the value of all goods and other market services provided to the rest of the world. $\ln HDI$ is logarithm of Human Development Index, as per the report of UNDP-2015, which is a summary measure for assessing long-term progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living, considered as a proxy variable for human capital development. $\ln Tax$ denotes tax on international trade. Taxes on international trade include import duties, export duties, profits of export or import monopolies, exchange profits, and exchange taxes. $\ln GC$ is logarithm of gross capital formation consisting of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories, and $\ln Gr$ is economic growth rate. The α , i and t represent country fixed effect, country and time, respectively.

3. RESULTS AND DISCUSSION

Table1. Summary Statistics

Variables	Obs	Mean	Std.Dev.	Min.	Max.
<i>Exp</i>	130	4.2600	9.9400	3.8200	4.7200
<i>HDI</i>	130	0.5290	0.1028	0.378	0.766
<i>Tax</i>	130	1.7600	3.3400	2.7100	1.8700
<i>GC</i>	130	7.0800	1.6100	6.5800	7.2100
<i>Gr</i>	130	5.1671	1.6100	-1.5454	10.2599
Year	130	—	—	1990	2015

Table-2. Estimated Results of Fixed Effect Model

Variables	Model 1	Model 2	Model 3	Model 4
<i>lnHDI</i>	3.5520*** (0.016)			3.5520*** (0.000)
<i>lnHDI*lnGr</i>		2.1170*** (0.001)		
<i>lnHDI*lnGC</i>			0.5073*** (0.000)	
<i>lnTax</i>	-0.0061 (0.446)	-0.0074 (0.235)	-0.0011 (0.829)	-0.0061 (0.299)
<i>lnGC</i>	0.3954*** (0.063)	0.6594*** (0.000)	0.3185*** (0.000)	0.3954*** (0.000)
<i>lnGr</i>	0.0493** (0.101)	0.6767*** (0.001)	0.5581* (0.191)	0.0493 (0.333)
<i>D_India</i>				0.5449*** (0.000)
<i>D_Pakistan</i>				-0.4382*** (0.000)
<i>D_Nepal</i>				0.2533*** (0.000)
<i>D_Sri Lanka</i>				-0.5003*** (0.000)
<i>Cons</i>	7.0195*** (0.015)	3.3140*** (0.000)	8.1945*** (0.000)	7.0475*** (0.000)
R-sq (within)	0.8826	0.8627	0.9053	
R-sq				0.9763
Prob>F	0.0099	0.0000	0.0000	0.0000

***, ** and * denote 1%, 5% and 10 % significant level, respectively whereas p-values are in parenthesis.

Table 1 shows summary statistics of the variables incorporated into the study. The results of Fixed Effect estimation is shown in Table 2. According to the results, the first estimation depicted by model 1 suggest that the variables human development index, gross capital formation, and growth rate are found to have a significant effect on export performance at 1% and 5% significant levels. The second estimation includes an integrated variable where the growth rate integrated with human development index. The interacted variable is significant at the 1% level because, not surprisingly, theoretically there must be a bilateral causality in between economic growth and human development, jointly determine the export performance. In third estimation denoted by model 3, the human development index variable is allowed to interact with gross capital formation because the efficient use of capital depends on the skilled labor force that can jointly determine export performance. A potential human capital endowment attracts private firms to make a physical capital investment, indirectly have an impact on various sectors and finally economic growth (Enrique and Rosina, 2007). Barro (1998) has also noted the importance of the ratio of physical to human capital in the growth model. This variable is also found to have a significant effect at 1% level. These interacted variables have an indirect impact on economic growth through various channels, and one of among which impacts through export performance. In the final model, the estimation includes country dummy variables for Sri Lanka, Pakistan, Nepal, and India to reveal country fixed effect. Dummy for Bangladesh was automatically excluded to avoid perfect collinearity. All coefficients for country dummy variables are found to have a significant effect at the 1% level.

4. CONCLUSION

Since, the South Asian countries have been experiencing a trade deficit for past decades and looking for the strategies to overcome the issues, this study formulated with an objective to investigate whether human capital development is associated with export performance in these countries because the external sector requires very skilled labor force to implement strategies such as product, market, and resource diversification and moreover,

minimizing production and transport costs, developing a trade network and communication skills, etc. Therefore, the study incorporated Human Development Index proxied as human capital development treated as a primary variable whereas gross capital formation, tax on international trade and growth rate were treated as supporting variables. The results derived from the Fixed Effect model estimation suggest that human capital development has positive and significant effect on export performance in South Asian countries. Therefore, the countries that suffer from trade deficit can concentrate on human capital development in the external sector to enhance its performance.

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