



New Challenges of Economic and Business Development – 2012

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HUMAN CAPITAL AND SUSTAINABLE DEVELOPMENT

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Abstract

Human development is both the goal and the means of economic development. But the term “sustainable economic development” is known and used in modern economic literature rather than “sustainable human development”.

Only in recent years, literature on social and economic development has emphasized increasingly the process of human development. Moving away from the identification of development with statistics on economic growth, this approach stresses the necessity to place human beings at the centre of development. The Human Development Index (HDI) is used now as a reliable indicator of human development [1].

Without sustainability, human development is not true human development. If human development means enabling people to lead long, healthy and educated, then sustainable human development is about making sure that future generations can do the same.

The theoretical foundation of human development is the theory of human capital. This theory needs rethink in accordance with current situation. Human capital is the main recourse of the global knowledge-based economy, and it is created by education. Thus, the concept content of education should answer the purposes of development.

Development can be seen, as a process of expanding the real freedoms that people enjoy...

Development requires the removal of major sources of unfreedom: poverty as well as tyranny, poor economic opportunities as well as systematic social deprivation, neglect of public facilities as well as intolerance or over activity of repressive states.

Amartya Sen
Development as Freedom, 1999

Introduction

The problem of sustainability is central to scientific and public discussions of recent years. There are a lot of different aspects of sustainable development need to be discussed.



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Among them they is the interdependence of human capital and sustainable development. The aim of this paper is to analyze features of human capital and numerical measure sustainable human development.

From Sustainable Development to Human Sustainable Development

The term sustainable development was coined in 1980 by the environmental nongovernmental organization International Union for the Conservation of Nature and popularized by the 1987 Brundtland report *Our Common Future*, which defined sustainability in terms on intergenerational equity as follows: “humanity has the ability to make development sustainable – to ensure that it meets the needs of the present without comprising the ability of future generations to meet their own needs. The concept of sustainable development does imply limits – not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effect of human activities” [2].

Following the Brundtland Commission Report, it can be argued, that well-being means not just current well-being, but well-being across generations. “Sustainable development” is an economic program along which average well-being of present and future generations, taken together, does not decline over time.

In recent years sustainable development has been conceptually broken down into economic, environmental and social components. Thus, the achievement of sustainable development requires the integration of its economic, environmental and social components at all levels.

Human capital may be treated as a main part of social component of sustainable development. Initially the idea that investment in education has a long-term economic and social payoff for the individual and society at large goes back to Adam Smith. The formal concept of human capital was developed in the 1960s by a group of economists (G. Becker, J. Mincer etc.).

Human capital is defined as the aggregation of investments in such areas as education, health, on-the-job-training, and migration that enhance an individual’s productivity both in the labor market and in non-market activities.

Some definitions of human capital include the knowledge and skills that individuals acquire throughout their lifetimes. It is argued that since the number of skills individuals acquire through their lifetime depends partly on their initial abilities, this potential is an important aspect of the human capital concept.

Five aspects or characteristics of human capital that merit attention, were identified:

- human capital is a non-tradable good embodied in human beings, although the flow of services generated by human capital is marketed;
- individuals, particularly the young, do not always control the channel or pace by which they acquire human capital;
- human capital has a qualitative as well as a quantitative aspect reflecting the quality of the educational inputs;
- human capital can be either general in nature or specific to a firm or sector;
- human capital generates individual and social externalities [3].



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The indicators of human capital are divided into two basic types, outcome indicators and input indicators. Sustainability in terms of human capital can be defined in terms of the constancy or improvement in outcome indicators. Weak sustainability is defined as a lack of decline in summary human capital indicators (or a composite index of the summary indicators).

Strong sustainability is defined as a lack of decline in all summary and specific human capital outcome indicators.

In education input indicators capture the magnitude and quality of the investments while outcome indicators measure the actual outcome of investments in this type of human capital. Summary input indicators for education human capital can be defined as the total resources devoted by government and/or individuals to all forms of education and training. Information about investment in education (all levels) may be found in the annual OECD Reports Education At a Glance. From 2011 Russia was to double education expenditure and by 2012 this expenditure will double in comparison with 2006-2010.

The most relevant indicator of human capital is the general and specific knowledge and skill sets of the population, although quantification and aggregation in any absolute sense of heterogeneous knowledge bases and skills across the population is difficult. Standardized literacy and numeracy tests are useful for comparisons across countries and over time. Another summary outcome indicator of human capital is the educational attainment of the population, which can be measured by the number of years of formal schooling of the average person. A third outcome measure that would reflect the inadequacy of human capital formation in a country is the appearance of generalized skill shortages, which can lead to migration flows [4].

For many decades in the last century, a country's development was measured by Gross Domestic Product (GDP) per capita. Experience has proven that this indicator does not necessarily reflect the real well-being of a country's population because national wealth is not necessarily channeled to human development areas. It also does not reflect income distribution patterns. Development, however, is a very complex phenomenon which cannot be captured in a single composite index, especially if you agree with Amartya Sen (see epigraph). In other words, a country could have a high GDP per capita while a large segment of its population remained poor, uneducated and unhealthy because money was spent on arms purchases, prestige construction or luxury consumption by the privileged elite.

To obtain more precise human development profiles for countries, UNDP elaborated the Human Development Index (HDI).

The HDI is based in three indicators: longevity, as measured by life expectancy at birth (one-third weight); education attainment, as measured by the combination of adult literacy and combined primary, secondary and tertiary enrollment ratios (one-third weight); and standard of living, as measured by real GDP (Gross Domestic Product) per capita adjusted with Purchasing Power Parity (PPP\$; one-third weight).

Human development means an expanding the choices for all people in society. It also means “protection of the life opportunities of future generations and the natural systems on which all life depends” [6]. This makes the central purpose of development the creation of an enabling environment in which all can enjoy long, healthy and creative lives.



Table 1

Human Development Index (2011) and its components [5]

Country	Human Development Index (HDI) Value	Life expectancy at birth (years)	Mean years of schooling (years)	Expected years of schooling (years)	Gross national income (GNI) per capita (constant 2005 PPP \$)
VERY HIGH HUMAN DEVELOPMENT					
1. Norway	0.943	81.1	12.6	17.3	47,557
2. Australia	0.929	81.9	12.0	18.0	34,431
3. Netherlands	0.910	80.7	11.6	16.8	36,402
43. Latvia	0.805	73.3	11.5	15.0	14,293
HIGH HUMAN DEVELOPMENT					
48. Uruguay	0.783	77.0	8.5	15.5	13,242
65. Belarus	0.756	70.3	9.3	14.6	13,439
66. Russian Federation	0.755	68.8	9.8	14.1	14,561
84. Brazil	0.718	73.5	7.2	13.8	10,162
MEDIUM HUMAN DEVELOPMENT					
101. China	0.687	73.5	7.5	11.6	7,476
113. Egypt	0.644	73.2	6.4	11.0	5,269
123. South Africa	0.619	52.8	8.5	13.1	9,469
141. Bhutan	0.522	67.2	2.3	11.0	5,293
LOW HUMAN DEVELOPMENT					
143 Kenya	0.509	57.1	7.0	11.0	1,492
148. Angola	0.486	51.1	4.4	9.1	4,874
169 Sudan	0.408	61.5	3.1	4.4	1,894
187. Congo, Democratic Republic of the	0.286	48.4	3.5	8.2	280

Economic growth is a means to sustainable human development – not an end in itself. Human Development Report 1996 showed that economic growth does not automatically lead to sustainable human development and the elimination of poverty. For example, countries that do well when ranked by per capita income often slip down the ladder when ranked by the human development index. There are, moreover, marked disparities within countries – rich and poor alike – and these become striking when human development among indigenous peoples and ethnic minorities is evaluated separately.

There are five aspects to sustainable human development:

- *Empowerment* – The expansion people's capabilities and choices increases their ability to exercise those choices free of hunger, want and deprivation. It also increases their opportunity to participate in, or endorse, decision-making affecting their lives.



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- *Cooperation* – With a sense of belonging important for personal fulfillment, well-being and a sense of purpose and meaning, human development is concerned with the ways in which people work together and interact.
- *Equity* – The expansion of capabilities and opportunities means more than income - it also means equity, such as an educational system to which everybody should have access.
- *Sustainability* – The needs of this generation must be met without compromising the right of future generations to be free of poverty and deprivation and to exercise their basic capabilities.
- *Security* – Particularly the security of livelihood. People need to be freed from threats, such as disease or repression and from sudden harmful disruptions in their lives. [7]

Even though the HDI provides a more composite index, incorporating life expectancy, adult literacy and school enrolment, with GDP calculated applying purchasing power parity (PPP) rates, it still leaves out many other factors that have a bearing on human welfare. Thus the UNDP has been working on a Human Poverty Index and a Gender related development index (GDI). There are attempts by other organizations as well, to produce new composite indicators such as Gross National Happiness.

The HDI's simplicity has ensured its endurance. It sets straightforward targets for nations. Its influence should not be underestimated because it has forced nations to look beyond national income as a crude measure of success – a vital step as our global society attempts to live within planetary boundaries. Its effect has seen governments and international organizations set up projects and policies to attempt to increase their HDI rank. Indeed, the foreword of the 2010 report states, “The human development approach has profoundly affected an entire generation of policy-makers and development specialists around the world.”

But the HDI has one major failing: incredibly, it takes no account of the environment. This is a telling omission given that there is overwhelming evidence that human development is not sustainable. The founder of the Human Development Report, Mahbub ul Haq, says “the basic purpose of development is to enlarge people's choices. In principle, these choices can be infinite and can change over time” [8].

Now we see attempts to create a new index – Sustainable Human Development Index or SHDI, which takes into account “sustainability of development”. A fourth parameter has been added to HDI: per capita carbon emissions. If a country has a very high HDI but also high carbon emissions, we can say that the high quality of life enjoyed by this nation comes at a price to the quality of life in other countries, particularly developing nations, and to future generations.

The value of sustainable HDI is twofold. It demonstrates that with the correct policies in place, it is possible to have a remarkably high quality of life and lower emissions. Secondly, it is a step towards linking human development, climate change and sustainable development, at least within the UN [9].

The rapid development and global proliferation of new technologies, the pervasive spread of telecommunications systems, the growing importance of knowledge-based industries and skills – all these have created the foundation for a new age of sustainable human development.



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Table 2

HDI/HSDI ranks 2010 [9]

No.	HDI rank	No.	HSDI rank
1.	Norway	1.	Norway
2.	Australia	2.	New Zealand
3.	New Zealand	3.	Sweden
4.	United States	4.	Switzerland
5.	Ireland	5.	France
6.	Liechtenstein	6.	Ireland
7.	Netherland	7.	Netherland
8.	Canada	8.	Hong Kong, China (SAR)
9.	Sweden	9.	Germany
10.	Germany	10.	Australia
11.	Japan	11.	Japan
12.	Korea (Republic of)	12.	Iceland
13.	Switzerland	13.	Korea (Republic of)
14.	France	14.	Spain
15.	Israel	15.	Israel

Changes in the world's economic, political and social systems have indeed brought unprecedented improvements in human living conditions in both developed and developing countries. But these changes also bring new uncertainties and challenges in the 21st century. Signs of breakdown are everywhere: disintegration of families; destruction of indigenous societies; degradation and annihilation of plant and animal life; pollution of rivers and the atmosphere; higher unemployment; and a widening gap in incomes and capabilities.

During the last few years, sustainable development has represented one of the most important policy goals at global level and how to design specific policy actions, measuring performance and results continues to present a challenge. Scientific research has explored different analysis directions in order to identify a synthetic indicator to evaluate policy planning and achievements that goes beyond traditional income indicators. In consideration of the social dimension of sustainable development, including health, education and employment, the Human Development Index (HDI) of the United Nations Development Program represents a widely accepted methodology to be used as a starting point for building a more sustainable-oriented development index.

Conclusion

The aim of this paper was to identify a numerical measure of what Amartya Sen defined as “sustainable human development” using a human development framework and adapt it taking into account more specific environmental aspects. For this purpose, building a complex Human Sustainable Development Index (HSDI) may be a difficult task because of data availability and



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the European countries – especially the European Union – could be a useful pilot area for testing the methodology. The most recent efforts of the EU to standardize statistical information at country level enable us to build more complex indicators, including those with economic, social and environmental dimensions. Long-term sustainability requires the maintenance of capital stock to guarantee constant or growing welfare levels. In a human development perspective, the sustainability condition has been directly analyzed on the well-being side, assuming that a constant or growing HSDI could be the result of constant growing capital assets. An HSDI represents the core element of a comparative analysis to assess the effectiveness and the distributional effects of European policies, including environmental actions. Finally, a sensitivity analysis of the results will enable us to underline the key factors of effective sustainable human development and, at the same time test the real meaning of such a modified composite index compared with the existing GDP and HDI.

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