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## **Socially Responsible Investment in Human Capital**

*An overview of contemporary economical concepts of sustainable capital, human-resource capitalism, sustainable development, sustainable society, and socially responsible investment is made. The main features of a sustainable society are examined. The problem of measurement of the impact of social investment in human development is analyzed.*

**Key words:** *human-resource capitalism, human capital, sustainable development, sustainable society, sustainable capital, socially responsible investment, labour economics, technical economics.*

*Проведено огляд сучасних економічних концепцій стійкого капіталу, людино-ресурсного капіталізму, стійкого розвитку, стійкого суспільства і соціально відповідального інвестування. Досліджені основні риси стійкого суспільства. Проаналізована проблема вимірювання впливу соціального інвестування у людський розвиток.*

**Ключові слова:** *людино-ресурсний капіталізм, людський капітал, стійкий розвиток, стійке суспільство, стійкий капітал, соціально відповідальне інвестування, економіка праці, технічна економіка.*

*Проведен обзор современных экономических концепций устойчивого капитала, человеко-ресурсного капитализма, устойчивого развития, устойчивого общества и социально ответственного инвестирования. Исследованы основные черты устойчивого общества. Проанализирована проблема измерения влияния социального инвестирования в развитие общества.*

**Ключевые слова:** *человеко-ресурсный капитализм, человеческий капитал, устойчивое развитие, устойчивое общество, устойчивый капитал, социально ответственное инвестирование, экономика труда, техническая экономика.*

**Introduction.** The concept of human capital comes from the economic model of human-resource capitalism, which emphasizes the relationship between improved productivity and the need for long-term investments in the development of human resources. This model can be applied on a broad scale where investments in human capital are viewed as affecting

national and global economic performance or, more narrowly, where investments in people are viewed as crucial to organization performance. That differs from a more traditional approach where human resources are primarily seen as a cost to be contained beyond immediate and short-term needs. This short-term view often addresses change or poor performance by seeking government intervention to offset competition and by using cutback methods for keeping wages down, contracting out, and automating jobs.

A human-resource capitalism model argues that the principal source of productive capacity, whether in an economy or organization, rests in the capacity of people. Therefore, strategies need to be developed to capitalize on the potential of this resource by developing learning systems that will cause the capacity of human capital to grow into the future. For a national economy, this may entail reforming educational institutions to ensure the provision of a quality workforce that fits the needs of industry for high economic productivity and the maintenance or improvement of the national quality of life [1-3].

***Analysis of recent researches.*** Classical and neoclassical economics regard capital as one of the factors of production (alongside the other factors: land and labour). All other inputs to production are called intangibles in classical economics. This includes organization, entrepreneurship, knowledge, goodwill, or management (which some characterize as talent, social capital or instructional capital) [2].

This is what makes it a factor of production:

1) The good is not used up immediately in the process of production unlike raw materials or intermediate goods. (The significant exception to this is depreciation allowance, which like intermediate goods, is treated as a business expense);

2) The good can be produced or increased (in contrast to land and non-renewable resources).

Marxian economics distinguishes between different forms of capital:

1) constant capital, which refers to capital goods,

2) variable capital, which refers to labor-inputs, where the cost is "variable" based on the amount of wages and salaries are paid throughout the duration of an employee's contract/employment,

3) fictitious capital, which refers to intangible representations or abstractions of physical capital, such as stocks, bonds and securities.

Earlier illustrations often described capital as physical items, such as tools, buildings, and vehicles that are used in the production process. Since at least the 1960s economists have increasingly focused on broader forms of capital. For example, investment in skills and education can be viewed as building up human capital or knowledge capital, and investments in intellectual property can be viewed as building up intellectual capital.

Theories of sustainability attempt to prioritize and integrate social responses to environmental and cultural problems. An economic model looks to sustain natural and financial capital.

Sustainable development is the organizing principle for meeting human development goals while at the same time sustaining the ability of natural systems to provide the natural resources and ecosystem services upon which the economy and society depends. The desirable end result is a state of society where living conditions and resource use continue to meet human needs without undermining the integrity and stability of the natural systems. Such a society can be called a sustainable society.

**Unsolved problems.** There is still no commonly accepted definition of sustainable capital. Nevertheless, theoretical essentials of human capital and socially responsible investment in it are the subject for research for many studies. Though, due to its complexity issues of human development are still not examined completely. Taking into consideration the importance of this field for the whole mankind, comprehensive studies of human development should be continued.

**Goal.** The goal of this article is to research a human capital as a form of capital, to make a brief overview of contemporary economical concepts of sustainable capital, human-resource capitalism, sustainable development, sustainable society, and socially responsible investment.

The main features of a sustainable society will be examined in this paper. Also the problem of measurement of the impact of social investment into human development should be considered.

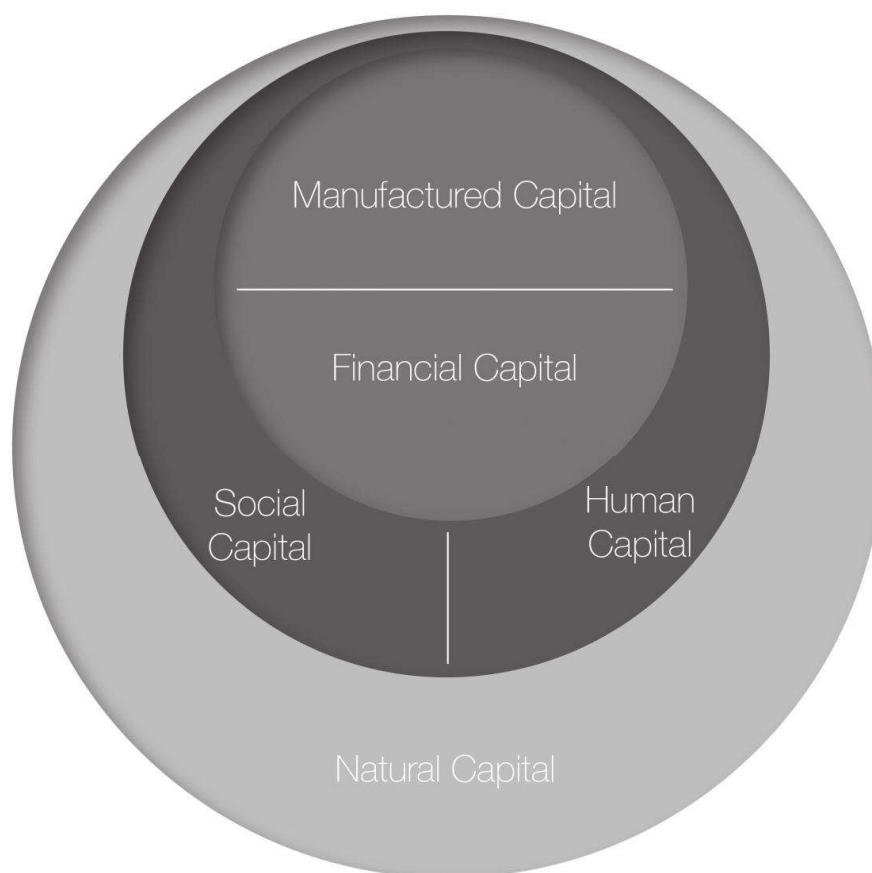
Methods of economical and mathematical analysis can be used to calculate the interdependencies between socially responsible investment and human capital.

***The bulk material.* There are five types of sustainable capital from where we derive the goods and services we need to improve the quality of our lives (Pic. 1).**

*Natural Capital* is any stock or flow of energy and material that produces goods and services [2]. It includes:

- 1) Resources - renewable and non-renewable materials;
- 2) Sinks or treatment plants- that absorb, neutralise or recycle wastes;
- 3) Processes - such as climate regulation.

Natural capital is the basis not only of production but of life itself.



Pic. 1. Five types of sustainable capital.

*Human capital* consists of people's health, skills, education, knowledge, motivation, capacity and attributes of labour which influence their productive capacity and earning potential. All these things are needed for productive work.

According to the Organisation for Economic Co-operation and Development (OECD), human capital is defined as “the knowledge, skills, competencies and other attributes embodied in individuals or groups of individuals acquired during their life and used to produce goods, services or ideas in market circumstances”.

Individual human capital – the skills and abilities of individual workers



Human capital of the economy is the aggregate human capital of an economy [4].

*Social Capital* concerns the institutions that help people maintain and develop human capital in partnership with others; e.g. families, communities, businesses, trade unions, schools, and voluntary organisations.

*Manufactured Capital* comprises material goods or fixed assets which contribute to the production process rather than being the output itself – e.g. tools, machines and buildings.

*Financial Capital* plays an important role in our economy, enabling the other types of Capital to be owned and traded. But unlike the other types, it has no real value itself but is representative of natural, human, social or manufactured capital; e.g. shares, bonds or banknotes.

The world is facing a sustainability crisis because the humanity is consuming its stocks of natural, human and social capital faster than they are being produced. Unless we control the rate of this consumption, we can't sustain these vital stocks in the long-term.

By maintaining and trying to increase stocks of these capital assets, people can live off the income without reducing the capital itself. But for this to happen, it is the responsibility of every country, organisation or otherwise, to manage these capital assets sustainably.

Sustainable development is the best way to manage these capital assets in the long-term. It is a dynamic process through which organisations can begin to achieve a balance between their environmental, social and economic activities.

The features of a sustainable society fit into the separate five capitals. If we invest appropriately in all capital stocks, and achieve the flow of benefits, the following statements would be true. They represent the outcome of a successful

capital investment strategy for sustainable development - that is, a sustainable society.

*A sustainable society is featured by:*

*Natural Capital:*

1) In their extraction and use, substances taken from the earth do not exceed the environment's capacity to disperse, absorb, recycle or otherwise neutralise their harmful effects (to humans and/or the environment);

2) In their manufacture and use, artificial substances do not exceed the environment's capacity to disperse, absorb, recycle or otherwise neutralise their harmful effects (to humans and/or the environment);

3) The capacity of the environment to provide ecological system integrity, biological diversity and productivity is protected or enhanced;

*Human Capital:*

1) At all ages, individuals enjoy a high standard of health;

2) Individuals are adept at relationships and social participation, and throughout life set and achieve high personal standards of their development and learning;

3) There is access to varied and satisfying opportunities for work, personal creativity, and recreation;

*Social Capital:*

1) There are trusted and accessible systems of governance and justice;

2) Communities and society at large share key positive values and a sense of purpose;

3) The structures and institutions of society promote stewardship of natural resources and development of people;

4) Homes, communities and society at large provide safe, supportive living and working environments;



*Manufactured Capital:*

- All infrastructure, technologies and processes make minimum use of natural resources and maximum use of human innovation and skills;

*Financial Capital:*

- Financial capital accurately represents the value of natural, human, social and manufactured capital.

The way to achieve the sustainable society is socially responsible investment.

Socially responsible investing (SRI), or social investment, also known as sustainable, socially conscious, "green" or ethical investing, is any investment strategy which seeks to consider both financial return and social good to bring about a social change.

Recently, it has also become known as "sustainable investing" or "responsible investing". There is also a subset of SRI known as "impact investing", devoted to the conscious creation of social impact through investment.

Social investment is about investing in human capital. It means policies designed to strengthen people's skills and capacities and support them to participate fully in employment and social life. Key policy areas include education, quality childcare, healthcare, training, job-search assistance and rehabilitation [5].

There is a crucial point of all studies about human capital how to measure it, how to quantify the investments needed into its development, how to count the capital flows it produces.

There is a whole industry in the field of labour economics, in which quantifiable proxies are found for some of the more elusive, less quantifiable aspects of human capital – e.g., years of education are used as a proxy for knowledge; years on the job as a proxy for skill; and sometimes age as a proxy for experience. These numbers are then fed into

econometric calculations in order to discover how much of the difference in people's income they can account for [6].

At the same time, it is necessary to recognize that such analysis may also be leaving out important variables for which it has been impossible to find adequate, quantifiable proxies.

Also the methods of technical economics are used in order to measure social investments in human capital. These methods and techniques include econometrics, input-output analysis, linear programming, the economics of energy and other recourses, project feasibility studies, and others.

It is very important to define the indicators that describe precisely the social investments and their impact on human development, the interdependencies between socially responsible investment and human capital.

**Summary.** Further research and comprehensive study of different aspects of human capital within the framework of the theory of sustainable society and sustainable development should be developed. The fact that human capital is a form of capital is substantiated by many contemporary economic studies and concepts.

The next step is to build a system of factors that describe adequately and precisely the main aspects of social investments in human capital. There is a need to quantify the independencies between social investment and human capital in order to determine the economic effect of such investments. Economic and mathematical methods should be used for these purposes.

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### Удосконалення методів обробки та зберігання даних за допомогою інструментів "Big Data" та Map Reduce

*В умовах нового витку технологічного розвитку та переходу до парадигми інформаційного суспільства, де більшість зайняті виробництвом, зберіганням, обробкою та реалізацією даних, особливого значення набуває концепція “Big Data”. У статті проведено дослідження феномену "Big Data", а також розглянуто питання про те, що слід розуміти під цим поняттям, що є основним джерелом даних та які основні властивості та інструменти формують комплексне поняття "Big Data".*

**Ключові слова:** інформаційні технології в економіці, Big Data, Map Reduce.

*В умовах нового витку технологічного розвитку та переходу до парадигми інформаційного*