THE EFFICIENCY INCREASE PROBLEMS IN THE BELARUSSIAN ECONOMY: FINANCIAL MANAGEMENT OF HUMAN CAPITAL

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In the article, we consider the importance of financial management of human capital in the efficiency increase of the Belarussian Economy. The research data confirm a strong relationship between investment in a high-tech industry and the human development index. Literature review on the position of human capital in finance revealed that existing investigations were still unsystematic. In addition, they do not allow us to assess human capital value on all stages of human capital generation: acquisition, maintenance, development and retention. In this article, we consider a new approach to the financial management of human capital on all stages of its generation in order to manage the company's human resources effectively. The improvement of the Belarussian economy efficiency requires proper, yet regular, analyses of the human capital value dynamic and ranking of industries and companies in terms of the human resource quality.

Keywords: human capital, human resources, financial management, factor.

1. Current Trends In the Development of Innovative Economy In Belarus

When countries have an extensive stock of high-quality human capital, they have strong advantages in providing conditions for domestic welfare increase, formation and development of both knowledge economy and information society. The analysis provided by the World bank for 192 countries revealed that 16% of national wealth in average were generated by the physical capital. However, in most countries the main contribution (64 %) in national wealth generation belongs to the human capital. That is why the human capital is globally considered the most powerful resource in contemporary society. As the result, the new knowledge being mastered by the person are accepted as the most powerful resource of the production development. Moreover, the investment into the human capital is a basis of the economic growth and innovative development of any country. For the purpose of depicting economic and social conditions in the countries and forecast development, the experts of the United Nations Development Programme have worked out a composite indicator – Human Development Index (HDI) (Human Development Reports, 2012).

We carried out the HDI analysis for some countries for the 2005 and 2009-2011 periods (figure 1). Data from Figure 1 shows that Belarus is one of the countries with a high level of HDI and has been outperforming some countries of the former Soviet Union. HDI in the considered periods is negligible, but it follows a positive trend. It allows us to express positively on the effectiveness of the economic events carried out in Belarus. The current economic policy plays a crucial role in social and economic development of the Belarusian society. In the Belarussian Social and Economic Development Program for 2011-2015, the first priority is given to a human's development, resulting in welfare and life expectancy increase, as well as in strengthening people's health and education (Программа..., 2012). Therefore, the state investments into the human capital have become the most influential factor of ensuring a stable and long-term economic growth.

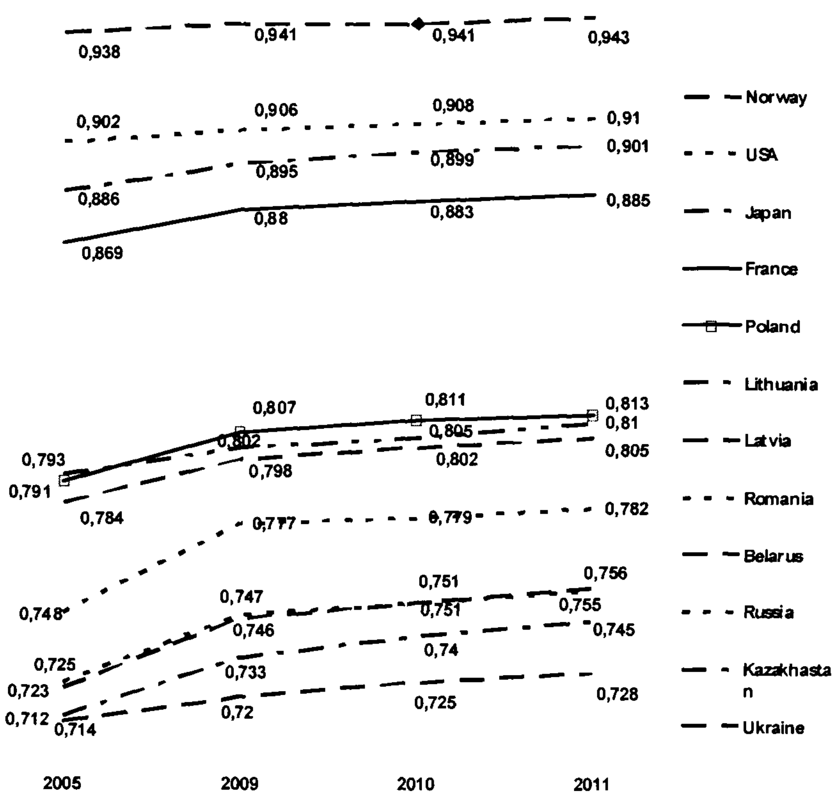

Figure 1. Dynamic of the human development index in countries with its very high level for the 2005 and 2009-2011 periods
(Human Development Reports for 2010 – 2011)

In my opinion, the Belarussian economy overall has insufficient funding of knowledge-intensive branches. They are a cornerstone of formation and growth of high-quality national human capital in the country (Figure 2).

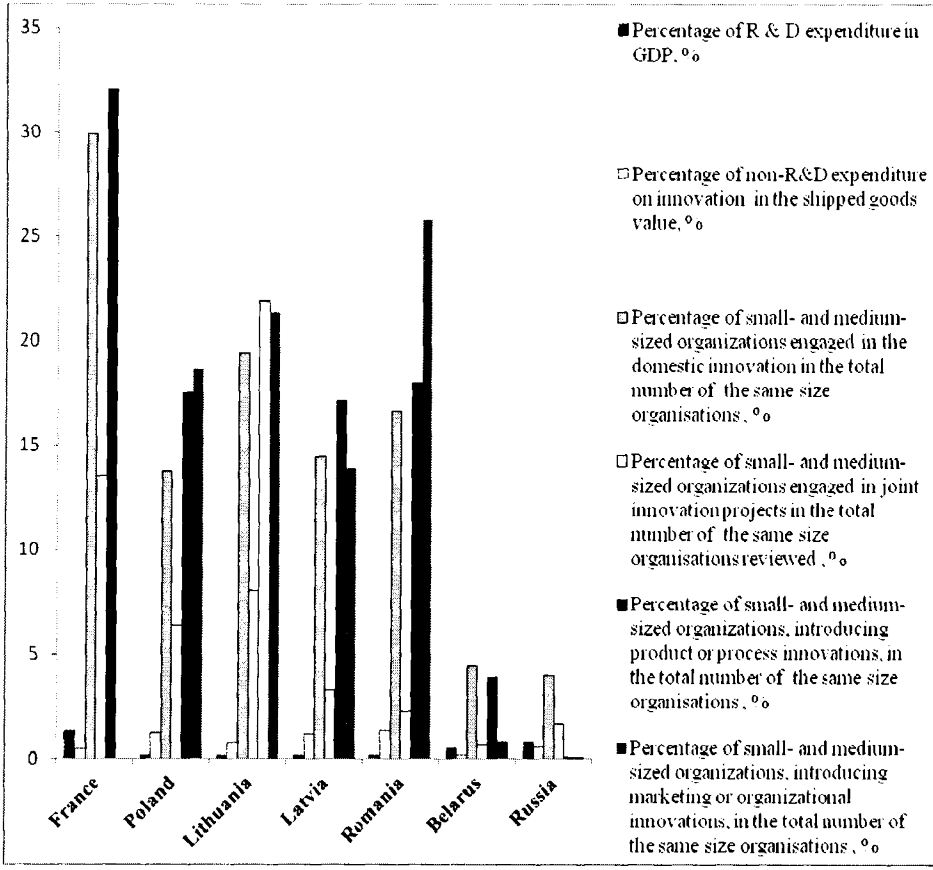

Figure 2 – Part of R&D and innovation expenditures from European innovation scoreboard (EIS-2008-2011)

(Наука и инновационная деятельность в Республике Беларусь, 2012)

Obviously, the level of R&D and innovation funding in both Belarus and Russia are much lower than in Poland, France, Lithuania and other countries with a very high HDI. The information provided confirms the strong connection of the investment in a high-tech industry with the human development level. Therefore, the particular attention should be paid to improvement of the human capital quality through targeted funding, which is possible in case of the creation of an effective management system. To improve the efficiency of the Belarussian economic philosophy, some significant steps should be taken. They need regular analyses of the human capital quality dynamics, ranking of industries and companies within the industry on the quality human resource provision, continual assessment of the effectiveness of the employees' investment activity, both at the state and private household levels.

The critical issues, such as the assessment of investment efficiency, fair income distribution between all participants, require proper study of management methodology and designing its reasonable structure with specific methods. As this questions are the objectives of financial management, the working out of appropriate methodology of the financial management of the human capital seems sensible.

2. Literature Review on the Position of Human Capital in Finance

In this part, we look at different opinions on the position of human capital in finance in order to develop the unified theoretical and methodological basics of financial management of human capital. The human capital theory has already accumulated enough terminology to determine the nature, types and structure of the company's capital, as well as methods of analysis for its management. The problems of the human capital management have been thoroughly discussed in the international literature.

Apart from the famous economists, such as William Petty and Adam Smith, who considered a human with his skills as a capital, there were also Jean Baptiste Say, Nassau Senior, Friedrich List, Johann H. von Thunen, Walter Bagehot, Ernst Engel, Henry Sidgwick, Leon Walras, Irving Fisher, and others. In their research, these economists commonly used only two methods of human capital valuation: production cost and earnings capitalization process. The first method is to evaluate the actual cost of net subsistence use (net of maintenance) for the "human production." The second method involves an assessment of the current (discounted on this moment of time) value of the individual's future income stream (net or gross income).

The development of the existing economic thoughts leads to an increase in the number of works focused on the issues of the expanded labor force reproduction. The neoclassical school developed a consumption activity theory, including the theory of "investing in people" and the theory of "human capital production."

Goylo (1975, p. 56) noted that the authors of the said doctrines paid a lot of attention to the technical and economic developments of the applied character.

Neoclassic scientists were involved in the creation of the individual consumption model on the basis of user functions. These functions depend on the income, interest rates, a ratio of capital funds to income, and other factors relating to consumer tastes and preferences regarding current consumption paid from savings. The theory of a consumer's activity was used to study the "consumer behavior" from the individual capitalist's part. William Petty (1940) estimated amount of human capital stock by capitalizing earnings like a life annuity with a market rate of interest. The amount of earnings was determined by separating the personal income from national income.

Then, William Farr improved Petty's method to define the human capital value. The basis of his method lies in the calculation of the current value of individual's future net earnings (future earnings minus the individual's life cost). Additionally, Farr provided corrections due to the possibility of death in accordance with mortality rates. The scientists Edward A. Woods and Clarence B. Metzger (1927) noticed that the symmetry in the consideration of both human and traditional capital can be achieved by using categories "depreciation," “maintainance," and "disposal". In their view, costs on maintenance are taken into account only when the consumption costs are deducted from earnings. Depreciation and disposal are counted by the method, which estimates average earnings. They considered this factor (depreciation and disposal) by using a calculation of annual average wages of workers. The last point includes the low wages of old workers and high wages of relatively efficient producers. In the first case, older workers receive a somewhat smaller salary than healthy and productive ones in the first half of their life. However, earnings of the second group are diluted with "average" lower earnings of the first group and especially young workers, who are not qualified (Historical review of human capital consepts, 2010). Finally, Woods and Metzger concluded that the monetary value of the population is the greatest asset in the country. Moreover, national citizens, who are interested in the welfare, and students both actively support progress, contribute in maintenance of human life and benefit from being healthy. This is because the productive life of individuals has been extended, and, therefore, added to the well-being of society. Some authors considered the possibility of applying human capital value indicators in terms of assessment of losses in the First World War (Goylo,1975). Yves Guyot suggested that a man is a capital, and the society should be interested in reducing deaths, not only for the humanitarian, but also for the economic reasons (Petty, 1940).

Ernst Bogart noticed that estimation of the monetary value of human lives lost in the war was a method of questionable statistical relevance. However, he believed that only the monetary value of the lives lost in the war might help to realize their enormous economic importance (Orekhovsky: 2000). Harold Boag tried to figure out whether it would be appropriate to include assessment of capital reduction due to a cost of lost life in the war (Boag, 1916).

Scientists had many questions regarding the level of profitability and methods for calculating the monetary value of immigrants. Friedrich Kapp in his developments used Engel’s method of production valuation, but excluding depreciation and maintenance costs for the estimation of the U.S. immigrants’ human capital value. He suggested that if immigration levels remained the same, the country would make million dollars a day in the human capital value (Kapp Fridrich, 1870). Charles L. Brace criticized this approach and pointed out that the capital cost of the project was not determined exclusively by the cost of its production, but also by the demand for it. Therefore, every immigrant has a value to the country that is equal to the capitalized difference between his contribution to the production and the cost of staff expenses for him (Kapp Fridrich, 1870).

In the 1920s, a great number of scientific publications were written with the analytical framework of human capital in order to determine the monetary loss of human capital because of disease and death. All their ideas were in line with the fact that illness and premature death in any case lead to a human capital loss. The effect of its accumulation can be increased through the prevention and delay of disease and death in whatever extent.

Many researchers give priority to the issues of education of the population. John R. Walsh (Lees, 1962, p.68) had a position that since Petty’s days many economists considered human a fixed human capital. Similar to the common capital, people required costs on their establishment and are used to return these costs with a profit. This conclusion, however, appears in general terms, the relationship is established for all people, similar to capital, as well as for the costs on education and training, similar to capital value.

Walsh was primarily interested in issues related to the economic value of higher education. They were also studied in the last decades by T. Schultz, G. Becker, as well as other western economists. He intended to determine whether the costs of education for the people of his professional career were investment capital, produced for profit, with the establishment of the market balance. Additionally, he wondered whether those costs were like a response to the same motives leading to investments in common equity. He argued that they were. In purpose to test this hypothesis, he took data on the earnings of people with different educational levels. Their capital estimation was calculated using the capitalization of earnings for each age level, when education came to an end. Walsh calculated the cost of various educational levels applying the production cost method. Then, he compared this value with the capital value, suggesting that they tend to one another in the course of establishing market equilibrium. In fact, his assumption was correct (Guyot, 1919).

American economists and sociologists Louis Dublin and Alfred Lotka (Dublin, Lotka, 1950) considered another financial aspect. They worked in the life insurance and appreciated Farr and Vitsteyn's value approaches of human capital valuation and applied them for the definition of sums in life insurance (Woods, Metzger, 1927). The individual income capitalization approach, minus the expenses for consumption and living, provides the useful assessment for many purposes. For example, the economic value of a person for his family could be calculated, as Dublin Lotki aimed to do. If the worker died, the family was impoverished by the amount of his contribution into it, which was equal to the employee's income, minus his life expenses. In addition, the same may be determined by the economic value of a person to himself and to the society.

According to the position of the human capital theory followers, the ideas of W. Farr, A. Dublin, and A. Lotka became the starting point for scientists engaged in the development of the methods of estimating the value of human capital or its components (Guyot, 1914).

Thus, investigating financial aspects of the human capital scientists explored different points as the following:

• Investment in the human resource education and the efficiency of this investment;

• Capitalization of wages as the most important concept of financial management - time value of money;

• Human resource assessment in regard to life insurance.

However, foreign scientists assessed the human capital with the only definite aspects: investing in the human resource generation. They viewed it purely in discounted value theory and evaluated it for the purpose of the life insurance, as well as salary capitalization. However, these investigations were not systematic and do not allow us to solve the the above-mentioned problems.

3. Financial Management of Human Capital In Theory and Practice

One of the main objectives of the financial relations, along with the main functions of finance (e.g., distribution and redistribution of income) is the distribution of income between all participants of its generation. There are actually two aspects in the financial relations: the mobilization of resources, and the payment of borrowed resources. In the analysis of the company's human capital, there are also two aspects in the financial relations: a process of human resources hiring and remuneration of human resources. As a result of the financial relationship between these parties - employee and employer, the human resource is converted into income, providing its recovery. This can be considered a "reallocation of the company's capital". The key figure in the financial relations is a human, no matter whether he is a public servant or an entrepreneur, an employee of a financial institution or just a family member.

Throughout the twentieth century, the term "personnel management" was considered as a number of terms related to people's participation in the social production: workforce; stuff; personnel; work resources; human resources. All of these terms reveal the essence of various aspects of human resource management, as well as changes in social attitudes.

In the theory and practice of managing the company's human side, there are four concepts of human capital management:

1) Human Resources Employment;
2) Stuff management;
3) Human resources management;
4) Human management (Staff management consepts, 2011).

Thus, in the course of time the role of a man as a personality is growing and his interests are placed on the same level with those of the companies.

The above-mentioned facts lead to the following conclusion. Both theoretical and managerial aspects of human resource have been changing over time, and so they consider an individual to be the main company's subject, accumulating skills, knowledge, abilities and then using them (the carrier of the human resource) in the labor process. It promotes the growth of labor productivity, production efficiency, increase in profits of employee and employer both.

Prior to indicating the place of human capital in the financial management system, we should consider the relation between the given subject and the most important resource – a human. It seems that the human resources used by the employer in order to achieve the desired result can not be involved entirely. This reason includes the following factors: employee's reluctance to use all its possible potential and (or) the employer's failure to establish the conditions where the employees' potential would be engaged to the full extent. Then, the question arises: what part of human resources is truly involved in the augmentation of the company's capital? The answer looks obvious – the only part that is involved in the company's business activities. Moreover, the capital is the value able to increase.

Analyzing the interaction of human resources and human capital (as part of the company's capital), we have come to the following conclusion: the part of the worker's human resource, which is involved into the achievement of the desired result, affects the value of human capital and assets of the company entirely.

Thus, human resources are a set of employee's knowledge, skills, and abilities, which are involved or not involved in the company's business activities. Human resources are not just the employee's ability to work at the current moment, but also the ability to develop existing capabilities, to increase the experience as well as the willing to expend their own experience. Then, human capital represents combined costs on human resource purchase, the gain in human resource value due to its maintenance, development and retention. It provides the income growth in the company both at present and in the future.

The acquisition of the human resources, in other words, the adoption of an employee with a certain level of knowledge, skills, abilities, and the company's needs, requires spending some funds. Thus, human resources represent an investment in financial resources, regarding acquisition of knowledge, skills, abilities of an employee. Furthermore, acquired human resources, which are partly involved in the company's business activities, create the human capital.

While participating in the company activity, human resources contribute to either increase or decrease in the value of human capital. Then, the human capital, as a part of the company's total capital, takes part in the gaining of the amount of previously invested funds. The foregoing can be represented as follows (Figure 3).

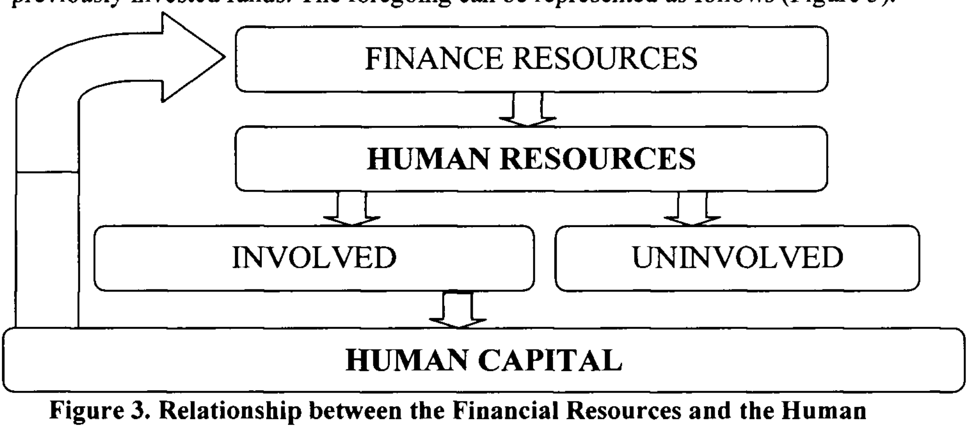

Figure 3. Relationship between the Financial Resources and the Human Capital of the Company
(Created by the author)

Thus, human capital is an integral part of the capital of any company. It is entirely involved in the formation of profits and financing the resources purchased by the company.

In the financial management system, there are two subsystems: managing and managed. Obviously, people are involved with their activities in both subsystems of the financial management system. Let's try to define the place of the human capital in the controlling subsystem of financial management system - on one hand, and in the management subsystem - on the other hand.

In the managing subsystem, human capital – a subject of the system – is represented by a certain category of employees (e.g., personnel and financial services under the administrative directions). Their responsibility is to manage finances and employees. In the managed subsystem, human capital – an object of the system– is considered a carrier of abilities and skills involved in the production and business activities. As a result of capitalization, it brings additional income to the owner. In this case, the employer (the owner) is funding the purchase, maintenance, development and retention of that capital and thus manages the appropriate investment processes.

Keeping in mind the realities and a classically known goal of the financial management, we suggest that the main goal of financial management of human capital lies in the acquisition of the human resources with the maximum value of human capital and the minimum expenses for living, development, retention. In terms of usage, it means the maximization of the contribution of the human resources usage with the improvement of their quality characteristics. Taking into account the current practice of the financial management in terms of various objects, the formulated goals of the financial management of human capital and the nature of the financial management system approach, we have systematized several possible elements of the financial management systems in terms of the studied category. This can be summarized in the Figure 4.

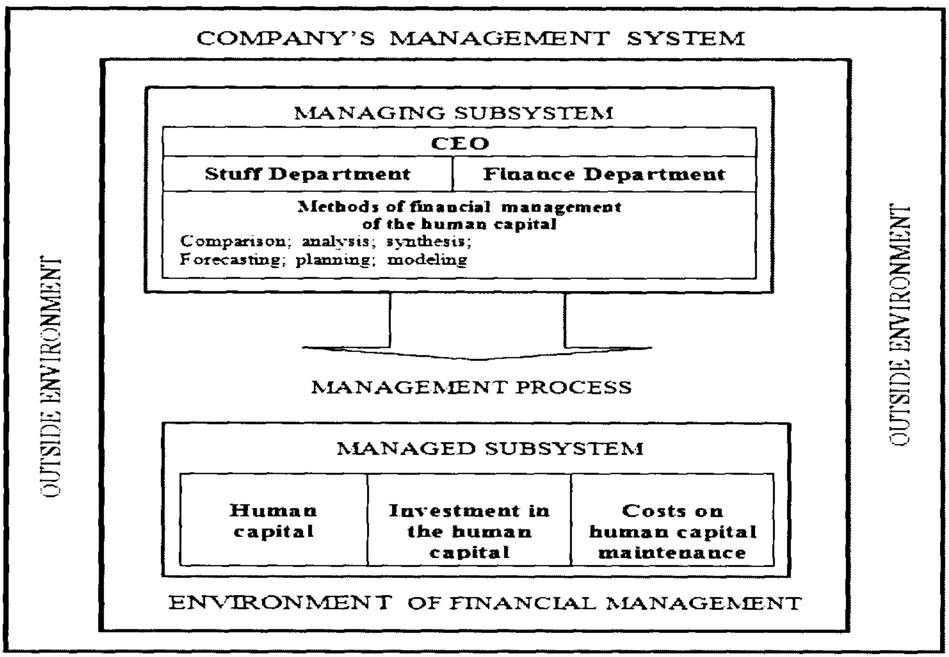

Figure 4. Managerial Model of Financial Management of Human Capital

The above-mentioned presentation of the financial management of human capital can clearly identify the object and methods of influence and can formulate the company's activity in the form of the successive events. To represent the control process (indicated with the arrow in Figure 4), we applied the process and the functional approach to the financial management (Voznesensky, 1985) and developed a cycle of human capital financial management (Figure 5).

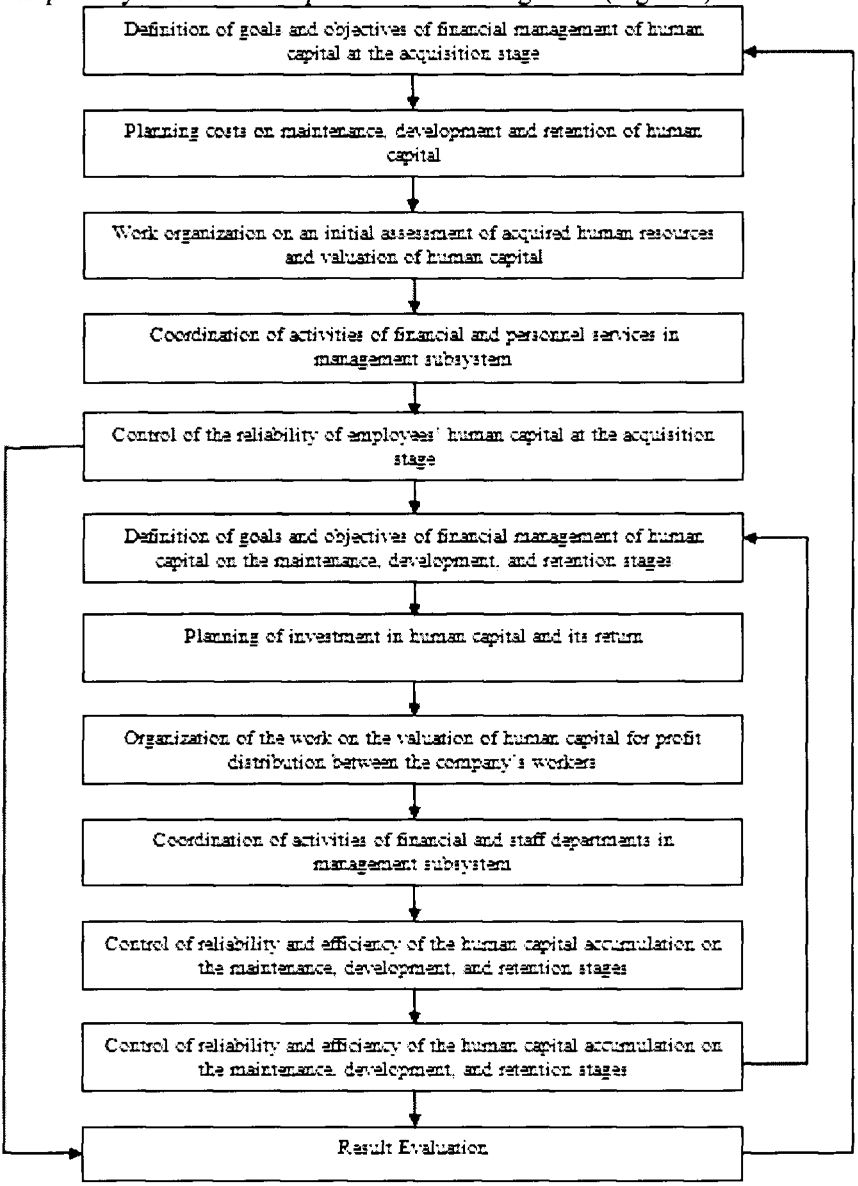

Figure 5. Step-by-step Analysis in Financial Management of Human Capital

Notably, the set of core functions of financial management actually forms a closed-cycle management. On the basis of the productivity assessment, this cycle helps to correct goals and objectives regarding financial management of the human capital. The application of the developed cycle allows to provide analyses of the human capital quality, the timely identification of the human resource availability lack at the required level, the continual assessment of effectiveness regarding a new investment.

Conclusions and Recommendations

In this paper, we investigated the employment of human resources from managerial perspective. Our finds suggest the following points:

1. Investment in human capital is essential for an economic growth and development of Belarus, as well as other country. Human capital is an integral part of the capital of any company. It is entirely involved in the formation of profits and funds of the company. It also contributes to the growth of the company's present and future incomes. We recommend to consider the main goal of financial management of human capital an acquisition of human resources with the maximum human capital value and the minimum costs on their maintenance, development, retention – in terms of human resources buildup; whereas maximization of the impact of the human resources usage at improving their quality characteristics – in terms of human resource employment.
2. The investigation of the relation between the categories "human capital" and "human resources" has revealed the essential difference between these terms. Human capital is the part of the human resource that is actually involved in the company's business activities. As the capital value increases, the employee's human resources get more engaged with the achievement of the company's goal, which affects the human capital value and assets of the company. We recommend to consider human resources as a set of employee's knowledge, skills and abilities. The human capital value can be formed based upon four stages: acquisition, maintenance, development and retention.
3. Human capital takes a place in two subsystems: the managing subsystem and the management subsystem. In the managing subsystem, the human capital is a system subject represented by a certain category of employees (e.g., personnel and financial services under the administrative directions). In the managed subsystem, human capital is a system object that represents employee's abilities and skills involved in the business activities. We recommend to consider the process of investment in human capital, which is managed by the employer (owner), across its main stages: aquisition, maintenance, development and retention of human capital. As a result of its capitalization, human capital generates profit.
4. The core functions of the financial management of human capital are embodied in the closed-cycle management. This process involves the implementation of dynamic goals and objectives regarding the financial management of human capital. These measures allow to increase significantly

the effectiveness of the managerial decisions in terms of the key growth factor: human capital. We recommend to apply the developed management cycle to analyze the human capital quality, to identify the human resources availability and to assess continually the effectiveness of the human capital investment.

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