



## Analysis of Human Capital Use in Service Enterprises

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**Abstract:** In this article, the company describes the system of formation, development and efficient use of human capital, as well as affecting the formation of human capital values. The main element, which affects human capital at the enterprise, is a system of human capital formation and development. This system has a positive impact on human capital, as insufficient development of its development will lead to low levels of human capital and the result reduces the cost of innovative development of the enterprise.

**Key words:** human capital, human capital value, innovative activity, financial departments of enterprise, enterprise income, enterprise expenses, innovative and active enterprise, human capital assessment.

### Introduction

Income of the enterprise also poses a positive impact on the innovative activity of the enterprise and its human capital, as the growth of the income of the enterprise provides an investment in innovative activity and human capital, and vice versa.

Determination of all elements of this system at the enterprise in the enterprise and human capital at the enterprise to identify the entire elements of innovative activities, due to all factors influential innovative activity of the enterprise. To create functional schedules for the impact, the company is elegance to the formation of human capital formulation, development and use.

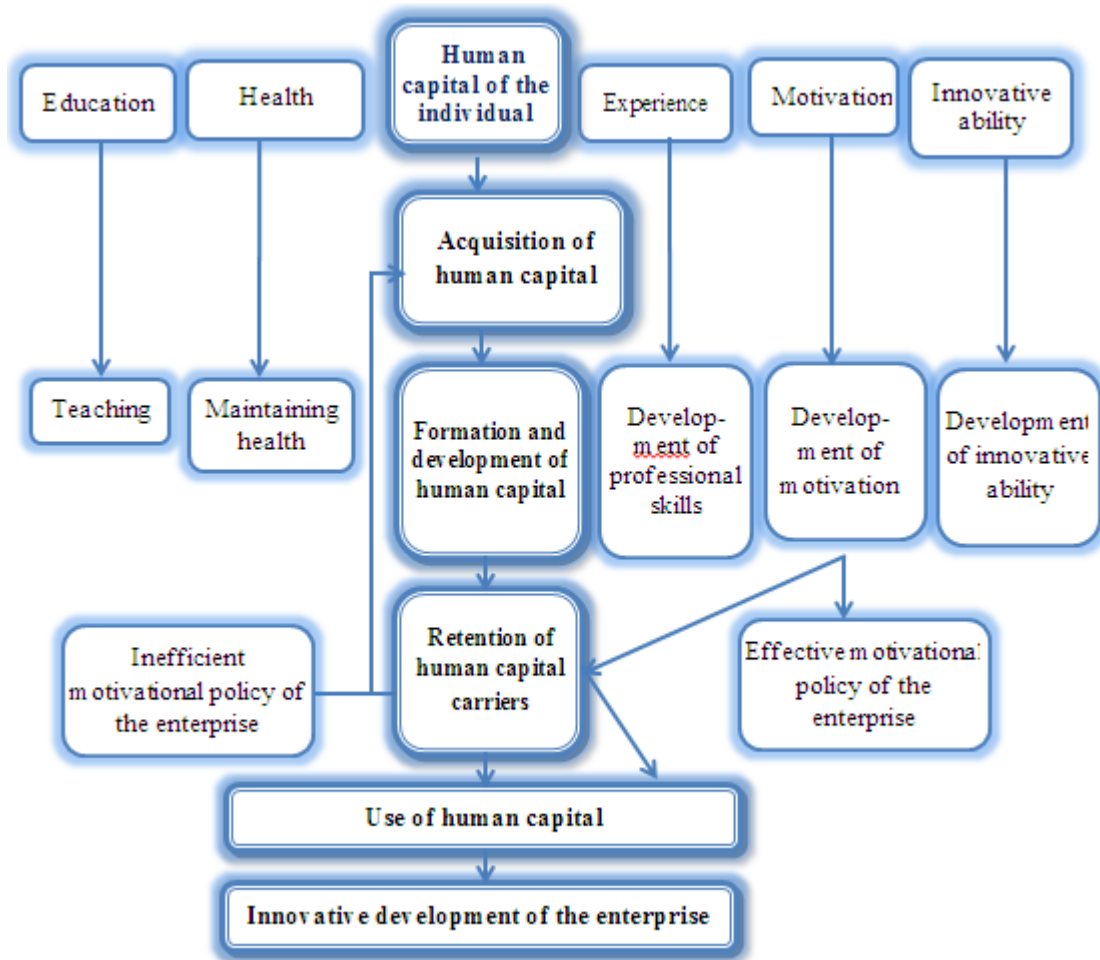
### Materials

The cost of human capital will be associated with its formation, development and operation at the enterprise. But the company is partly buys human capital formed by other entities, resulting in the enterprise's main function, it will be to further form it, fully develop and use it effectively.

Figure 1 shows that the first stage of the system of formation and development of human capital is its formation before employment, and the second stage is the acquisition (purchase) of human capital in the enterprise. The importance of this stage is that it shows that the potential worker (carrier of human capital) has enough human capital. This stage begins with choosing the best candidate for a certain position and ends with signing an employment contract with him. The third stage of the system in relation to innovative-active enterprises consists of several elements: training, health care, development of professional skills, development of motivation and development of innovative ability. The implementation of these elements of the system in the enterprise requires significant costs. The next task of the enterprise is to preserve the human capital, because without it it will not be possible to use it effectively, because there is a risk in every enterprise - to lose the invested employees.

Minimization of risks is the implementation of a number of measures, including motivational policy, to retain employees and develop their involvement in the work process. It is a mistake to believe that

the implementation of these activities is possible only on a material basis, an important element of any enterprise is the collective spirit and moral-psychological climate. In the system of formation and development of human capital, the ineffectiveness of the motivational policy of the enterprise returns the process to the second stage - acquisition of human capital, and at the same time leads to large financial losses.

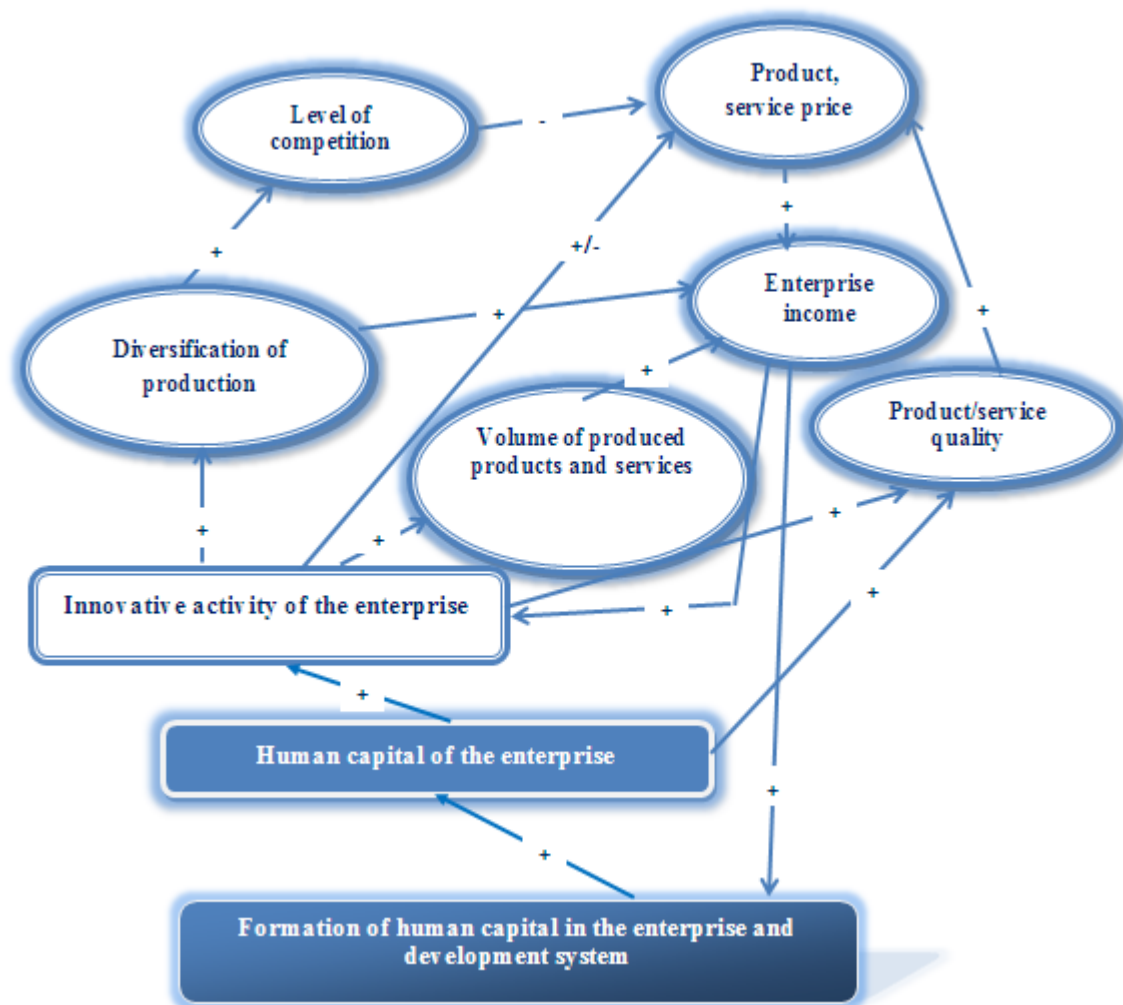


**Figure 1. The system of formation, development and effective use of human capital in an innovative-active enterprise<sup>1</sup>**

An effective motivational policy helps to fully and effectively use human capital in the interests of innovative development of the enterprise. In order to determine the impact of human capital on the development and competitiveness of the enterprise, a cognitive model of the impact of human capital on the financial result of the enterprise was built in the research process.

At the first stage of the formation of this model, a cognitive map is created. Due to the fact that many factors affect the financial result of the enterprise, it is appropriate to create an appropriate cognitive map. Figure 2 clearly shows the impact of each factor on the company's income, while it should be noted that the impact can be positive or negative.

<sup>1</sup> Developed by the author



**Figure 2. Cognitive map of the influence of factors on the financial result of the enterprise (directed graph)<sup>2</sup>**

A cognitive map is a representation of a familiar spatial environment. The cognitive map (directed graph) shown in Figure 2 shows the causal relationship between economic factors and the financial result of the enterprise. At the same time, as a financial result, not the profit of the enterprise, but its income is considered, because the profit indicator is not formed independently for all enterprises, for some of them it is brought from the central management, so it can be negative. which may distort the assessment of the activities of such enterprises. The presented picture shows that the following economic factors have a positive effect on the company's income: diversification of production, the volume of products (services) produced, prices of products (services), because the increase (decrease) of one factor causes the increase (decrease) of another factor. leads to an increase (decrease). In turn, the prices of products (services) are a positive/negative effect of the innovative activity of the enterprise, a positive effect of the quality of products (services) and a negative effect of the level of competition (increase (decrease) of one factor, decrease of another factor (leads to growth), and the level of competition is the result of the positive effect of diversification of production in the enterprise. Diversification of production and the positive effect of the volume of produced products (services) are the result of the positive effect of the innovative activity of the enterprise, and the innovative activity is the result of the positive effect of human capital. The innovative activity and human capital of the enterprise have a positive effect on the quality of products (services), and the quality of products (services) has a positive effect on their (products/services) price. The main element affecting the level of human capital in the enterprise is the system of formation and development of human capital. This system has a positive effect on human capital, because its insufficient development leads to a low level of human capital and, as a result, reduces the possibilities of innovative development of the enterprise. At the same time, the

<sup>2</sup> Developed by the author.

income of the enterprise has a positive effect on the innovative activity of the enterprise and the system of formation and development of its human capital, because the growth of the income of the enterprise provides an opportunity to invest in innovative activity and development of human capital, and vice versa.

Since all factors affecting the enterprise's income have a causal relationship with the innovative activity of the enterprise, it is necessary to determine another key element of the previously proven relationship of innovative activity to the state of human capital - to identify all the elements of this system in the enterprise and to determine the relationship of human capital to the enterprise's income it is appropriate to consider the system of formation, development and use of human capital in the enterprise in order to create a functional graph of its influence. As elements of the system, the specific statistical and socio-economic indicators of three service enterprises, which differ in terms of scope of activity and affiliation to the network, are taken into account: as a large enterprise - Karakalpak State University, as small enterprises - "Uzagrolizing" joint-stock leasing company branch of the Republic of Karakalpakstan, JSC "GROSS insurance company" branch of the Republic of Karakalpakstan.

Karakalpak State University named after Berdak is one of the largest service institutions in the Republic of Karakalpakstan. As one of the centers of education, spirituality, sports and culture of our republic, the university makes a worthy contribution to the development of our country. In particular, it takes one of the main places in training the intellectual potential, faith and worldview of the main link of society - young people, actively reacting to the political and economic changes taking place in the world community, and training mature personnel with a rich spiritual world. The number of university employees protected in the last 4 years was 19 in 2018, 39 in 2019, 41 in 2020, and 47 in 2021. In 2022, a total of 50 professors (including 7 doctors of science (DSc) and 43 doctors of philosophy (PhD)) will defend their doctoral theses. In this regard, the university can be considered an active innovative enterprise.

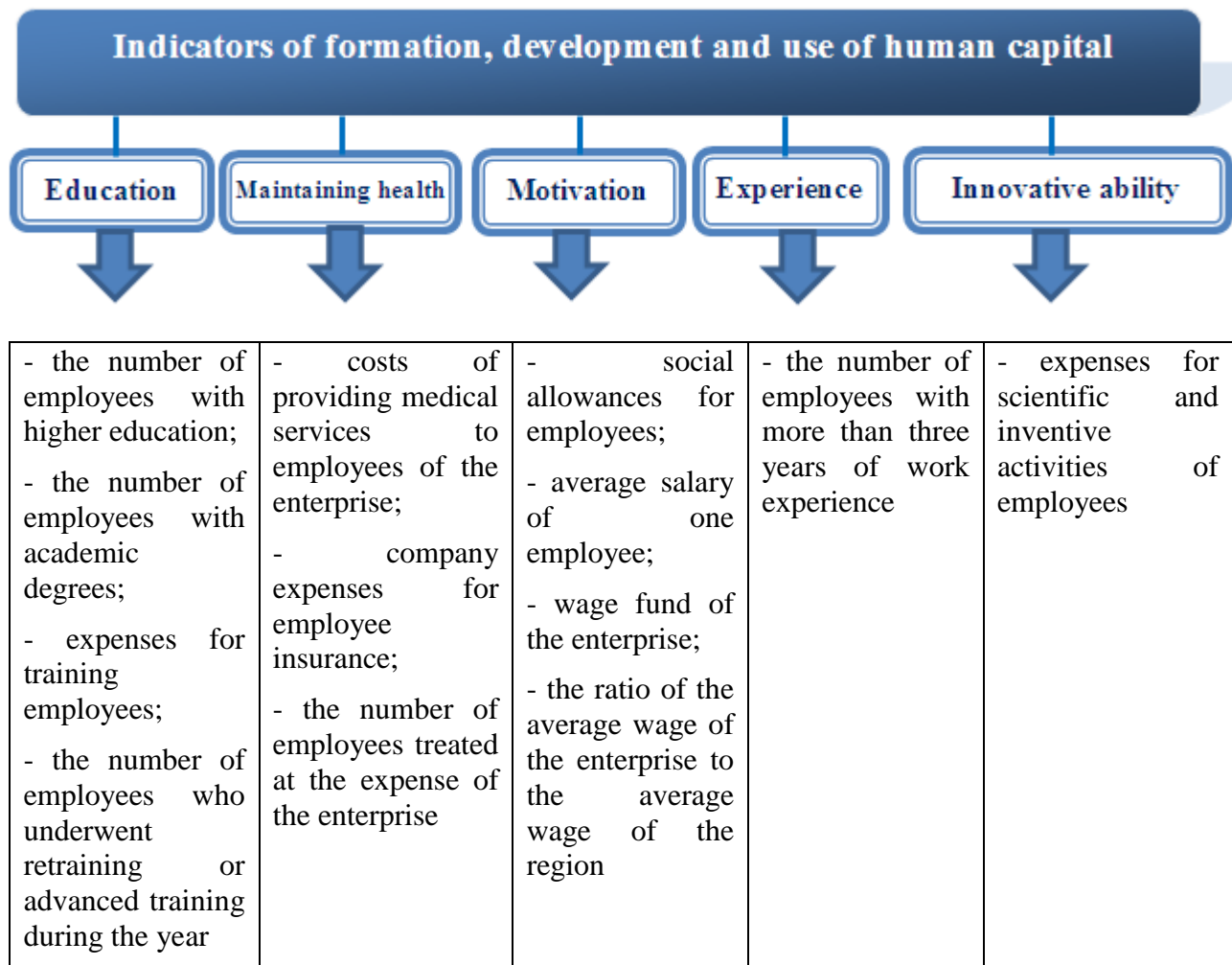
Joint-stock leasing company "Uzagrolizing", branch of the Republic of Karakalpakstan, is considered one of the leading companies in the financial market of our republic, supplying agricultural enterprises and farms with modern agricultural machinery produced in local and joint enterprises of our republic on a lease basis. deals with. The company was established by the decision of the Cabinet of Ministers of the Republic of Uzbekistan No. 486 dated October 30, 1999. The main buyers of the company are farms, tractor fleets, "Kishlokhhojalikimyo" enterprises, "Agroservis MTP" LLC and other agricultural enterprises. E-mail addresses of the company: E-mail: [nukus@agroleasing.uz](mailto:nukus@agroleasing.uz), [uzqxml-qrf@inbox.uz](mailto:uzqxml-qrf@inbox.uz), site: [www.agroleasing.uz](http://www.agroleasing.uz).

The branch of the Republic of Karakalpakstan of the JSC "GROSS Insurance Company" was established in November 2011, the company's office is at 30 Karakalpakstan Street, Nukus, Republic of Karakalpakstan. "GROSS Insurance Company" provides insurance services to residents and legal entities. The main task of the company is to organize special funds for the compensation of damages, compensations and other payments in the event of a certain incident (incident), as well as to protect the interests of individuals and legal entities related to their use. to protect "GROSS Insurance Company" takes the 3rd place in the rating of the insurance market of Uzbekistan in terms of collecting insurance premiums, the company's market share is 8.6%, confirming the high level of financial stability of the company. Uza++" has the highest financial reliability rating, as well as the "Golden Umbrella" team award. The main goal of the company is to become a leader in the insurance market of Uzbekistan and provide modern insurance services to residents and legal entities.

Thus, service industry enterprises that differ in terms of scale, volume of services provided, number of employees and income are united by the innovative direction of their activity.

Figure 3 clearly shows the indicators of the formation, development and effective use of human capital of an innovative active service enterprise in the section of its elements: education, health care, motivation, experience and innovative ability.

In order to draw a functional diagram reflecting the level of influence of human capital on the company's income in the future, it will be appropriate to conduct a separate correlation-regression analysis for each company. The main indicator was "the contribution of human capital to the company's income", and the growth indicators of the decision tree were taken as secondary indicators. These indicators create the necessary conditions for comprehensive development of human capital and its participation in innovative activities. Due to the fact that various factors affect the income of the enterprise, in order to ensure the consistency of the results obtained during the analysis, the data arrays were changed in terms of distinguishing the periods that did not significantly affect the income of the enterprise from other specific factors, e.g., changes in the price of services, pandemic period, political influence, etc.



**Figure 3. Indicators of formation, development and effective use of human capital of an innovative active service enterprise<sup>3</sup>**

The indicator "number of employees with more than three years of work experience" is included in this analysis, because modern economic realities show that the adaptation period of a newly hired employee in an enterprise lasts from three months to three years on average, and only after going through the process of adaptation, the employee will be more inclined to create innovations in the enterprise. Costs related to innovative activities in a small enterprise were combined into one indicator.

**Methods**

Methods such as logic, induction and deduction, analysis and synthesis, comparative analysis, statistical and comparative analysis, correlational and regression analysis, scientific abstraction, complex evaluation were used in the research.

<sup>3</sup> Developed by the author



**Results**

The contribution of human capital to the company's income should be understood as the ratio of the growth rate of income to the change in the growth rate of human capital costs:

$$\text{HC contribution} = \frac{\Delta TR}{\Delta TC_{HC}}$$

here, HC contribution is the contribution of human capital to the company's income;

$\Delta TR$  is the growth rate of the company's income for a certain period;

$\Delta TCHC$  is the growth rate of the enterprise's costs for human capital.

Thus, the correlation-regression analysis of the contribution of human capital to the company's income should show which indicators of the system of formation, development and effective use of human capital show the contribution of human capital to the company's income and the level of their influence.

The analyzes conducted between the three service enterprises under consideration show similar results, so it is recommended to show them only for one enterprise.

Thus, the correlation-regression analysis of the contribution of human capital to the income of KSU shows that it is closely related to the same indicators as in large service enterprises, in particular: expenses for scientific and inventive activities, training during the year, from retraining courses number of past employees and number of employees with more than three years of experience.

A regression analysis was conducted on these three indicators (Table 1).

**Table 1. Regression analysis of the growth indicators of the contribution of human capital to the income of KSU<sup>4</sup>**

Results

Regression statistics	
R plural	0,9
R-square (R <sup>2</sup> )	0,9
Standardized R-square (R <sup>2</sup> )	0,6
Standard error	1,7

**Analysis of depression**

	df
Regression	3
The rest	1
Total	4

Based on the data in the table, it can be said that the correlation coefficient (correlation coefficient  $r_{xy}$  qualitatively describes the relationship between the factors: if  $r_{xy}$  is in the range from  $\pm 0.7$  to  $\pm 1.0$ , the factors the correlation between is considered strong)  $R = 0.9 > 0.7$ , so the correlation between the studied characteristics in this set is strong.  $R^2$  is a multifactor determination coefficient equal to 0.9 (this coefficient is used to evaluate the quality of multifactor regression models, the closer the determination coefficient  $R^2$  is to one, the higher the quality of the model), shows that the change in the contribution of capital to the company's income depends on 90% of the expenses spent on scientific and inventive activities, the number of employees who have undergone retraining and advanced training courses during the year, and the number of employees with more than three years of work experience, and the effect of factors not taken into account is 10 percent.

<sup>4</sup> Calculated by the author

**Table 2. Regression analysis of the increasing (increasing) indicators of the contribution of human capital to the income of KSU<sup>5</sup>**

Increasing indicators of elements of formation and development of human capital in the enterprise	Coefficients
Y – intersection	-0,2
The number of employees who have undergone retraining and advanced training courses during the year	2,3
Employees with more than three years of work experience soni	15,3
Expenditures for scientific and inventive activities	2,4

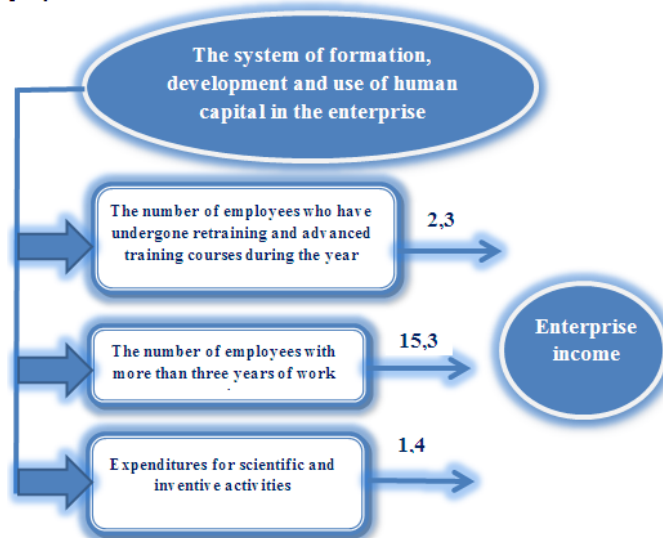
Based on the data in the table, the regression equation will look like this:

$$y = -0.2 + 2.3x_1 + 15.3x_2 + 2.4x_3$$

here the independent variable is equal to 0.2, that is, if three factors (coefficients  $x_1$ ,  $x_2$ ,  $x_3$ ) remain unchanged, the contribution of human capital to the company's income will decrease by 0.2 every year. The regression coefficient  $x_1 = 2.3$  means that with a 1% increase in the number of employees who have undergone retraining and advanced training courses during the year, the contribution of human capital to the company's revenue increases by 2.3%, regression coefficient  $x_2 = 15.3$  shows that with a 1% increase in the number of employees with more than three years of work experience, the contribution of human capital to the company's income increases by 15.3%, the regression coefficient  $x_3 = 1.4$  shows that, with a 1% increase in the costs of scientific and inventive activities, the contribution of human capital to the company's income increases by 1.4% - all this is due to the increase in the innovative activity of the employees of KSU as a result of these costs.

**Discussion**

Correlation-regression analysis of the contribution of human capital to the income of small enterprises shows that the indicators found in large enterprises, for example, expenses for scientific and inventive activities, the number of employees who have undergone retraining and advanced training courses during the year, three years in addition to the constant close relationship with the number of employees with more work experience, other indicators, in particular, with the number of employees with higher professional education, with the number of highly qualified managers, specialists and employees with academic degrees a close relationship is observed. However, the regression analysis of these indicators does not confirm the significant impact of human capital on the contribution to the company's income.



**Figure 4. Functional diagram of the influence of the system of formation, development and use of human capital of an innovative active service enterprise on income<sup>6</sup>**

<sup>5</sup> It was calculated by the author based on the analysis

Thus, the results of the correlation-regression analysis conducted in three enterprises with different size, income and number of employees show that the contribution of human capital to the income of a service enterprise is related to the costs of innovative activities, the number of experienced and trained employees, also allows us to conclude that depending on the change in the value of services, the change in the value of these services is reflected in the company's income. The results of the QUU are taken as a basis for drawing up a functional diagram of the impact of human capital on the company's income (Figure 4).

At the same time, it should be noted that the impact of expenses on scientific and inventive activities, which are the basis of the innovative development of the enterprise, on the contribution of human capital to the enterprise's income is somewhat more significant in large enterprises, and in small enterprises, it is undoubtedly more reasonable and more reasonable than human capital. related to effective use. Since all analyzed enterprises are innovatively active, and the greatest impact on the contribution to income comes from the expenses spent on scientific and inventive activities that contribute to the discovery and implementation of the innovative capabilities of human capital, it can be said that innovative capabilities development is a priority for the development of innovative active enterprises.

### Conclusion

Thus, the determined and confirmed dependence of the innovative activity of enterprises on the state of human capital and the level of its use, on the one hand, in the cyclical nature of the formation and development of the innovative potential of the service sector, on the other hand, "idea - service (product) - technology" It is manifested in the activation of innovative activity through complex participation in the implementation of the "management" chain.

In order to determine the effectiveness of the use of human capital in innovative active enterprises, regardless of the scale of the enterprise and other factors, it is necessary to develop a unified model for evaluating the value of human capital and a model for the use of human capital.

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<sup>6</sup> Developed by the author