Central Asian Journal
of Innovations on Tourism Management and Finance

Vol. 5 | **Issue** 6 | **pp.** 404-410 | **ISSN:** 2660-454x
Available online @ https://cajitmf.centralasianstudies.org/index.php

CENTRAL ASIAN STUDIES

Article

The Scientific and Theoretical Foundations of Financing Higher Education

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Abstract: This study explores local and global viewpoints on funding systems and their efficacy while examining the theoretical and scientific underpinnings of higher education financing. Even while a lot of research shows that state and non-state finance is essential for improving the quality, equality, and efficiency of education, there are still unanswered questions about the precise approaches needed to create sustainable financing models in rising countries. The research used a literature review methodology to identify funding model trends and assess their effects on equality, quality, and access to education. According to the findings, creative funding strategies—such as public-private partnerships—are crucial for boosting enrollment and funding studies. According to the findings, specific funding structures are required to address issues of equity in higher education and promote sustainable educational progress.

Keywords: higher education, state budget, human capital, budget funds, financing of higher education

1. Introduction

The study of the scientific and theoretical foundations of organizing and financing higher education has a long history. Since the inception of higher education, the organization and financing of it have been among the most widely discussed topics. However, perspectives on this issue have evolved over the stages of educational development.

In economic literature, there are numerous scientific studies conducted by foreign economists focusing on the financing of higher education institutions. Most of these studies identify the financing of education and the improvement of its quality as the most critical issues.

J. Panigrahi, in his research, explored the challenges of applying innovative methods for financing higher education in developing countries, using India as a case study. He argues that the gradual decrease in government funding for higher education institutions in countries like India, along with the privatization of public higher education institutions, represents new innovative methods for financing them.

In our view, the issue of reducing government financing through the privatization of higher education, which is interpreted as a new innovative funding method by J. Panigrahi, is also very relevant in Uzbekistan, similar to many developing countries. His insights highlight the need to explore specific mechanisms for financing higher education development.

Citation: Turaboyevich, Y. J. The Scientific and Theoretical Foundations of Financing Higher Education. Central Asian Journal of Innovations on Tourism Management and Finance 2024, 5(6), 404–410.

Received: 8th Oct 2024
Revised: 15th Oct 2024
Accepted: 24th Oct 2024
Published: 29th Oct 2024

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Literature Review

T. Gabricidze emphasizes in his research that effective financing of higher education can be the key to not only its development but also to enhancing its quality, efficiency, and equity [2]. We believe that the significance of T. Gabricidze's research lies in linking higher education financing with the quality, efficiency, and provision of equity in education or seeing it as a contributing factor. Indeed, financing methods and mechanisms not only impact educational quality but also offer solutions to pressing social issues, such as ensuring equity in education.

According to Professor A. Lyalin, the development of the financing system for higher education institutions is a necessary condition in providing skilled personnel for an innovative economy [3]. A. Lyalin's conclusion is supported by the practices of developed countries. The experience of countries that have pursued innovative economic development shows that highly qualified personnel have become a primary factor for driving innovation. The financing system for higher education institutions laid the foundation for this.

Analysis of tax administration activity of state tax service bodies were in Uzbekistan made by Tashmukhamedova Y. [13,14] and statistics of competition of small business and private entrepreneurs assessment methods were investigated by Tursunov B. [15] and others.

O. Blanchard argues that innovative developments are a primary factor in the growth of gross domestic product and that the level of expenditures on financing these innovations plays a crucial role in ensuring their effectiveness [4]. This conclusion by O. Blanchard holds significant practical importance. In the current stage of global economic development, innovative advancements have become a crucial factor in ensuring the competitiveness of national economies.

Research by K. Tseykovich shows that the role of public-private partnerships in financing higher education institutions significantly increased in many countries at the end of the last century due to several factors:

- the rising demand for higher education services from the social sector and the development of infrastructure;
- the growing need of private companies and banks for long-term projects [5].

Research conducted by A. Silin and V. Smirnova demonstrates that the role and importance of franchising in financing higher education are defined by the following:

- the opportunity to exchange the entrepreneur's capital for the franchiser's knowledge and experience;
- the potential for the franchisee to penetrate the market quickly by taking advantage of the specific characteristics of the local market;
- the activation of entrepreneurs who consciously accept risks with the franchiser;
- the possibility of expanding entrepreneurial activity in a short period [6].

G.M. Darbishev's research findings indicate that the development of science within higher education institutions is a necessary condition for scientific and technological progress, as well as for the development of modern high-tech production and technology [7]. This conclusion is based on the study and generalization of the experiences of developed countries and has significant practical relevance for developing nations.

According to P. Chubik, universities in the United States create globally significant scientific innovations, with many of their authors receiving Nobel Prizes [8]. In our view, P. Chubik's conclusions demonstrate that the higher education system contributes not only to workforce development but also to scientific research, which generates substantial social and financial capital.

J. Kozlova argues that universities form the foundation of the U.S. national innovation system, where most research in fundamental sciences and applied studies is concentrated [9].

Based on his analysis of the innovative activities of higher education institutions in European countries, I. Ignatov states: "The 'Single European Model' of university education is based on the key role of innovative, practically oriented scientific research" [10].

Each faculty is required to create an annual plan outlining how it intends to allocate its budget for the upcoming year. This plan should reflect the key tasks in various areas and how the faculty plans to use the budget to accomplish these tasks. Additionally, the annual plan should be linked to long-term strategic plans in accordance with the hierarchy of objectives. The most important part of this document is the projection of student numbers and the anticipated number of new admissions. These figures are analyzed at the central level, compared with general statistics, and serve as the basis for the university's proposal to the ministry regarding additional student admissions.

While preparing their plans for the following year, faculties must also submit reports to the university administration on their results from the previous year. All faculties are required to use a set of standardized tables reflecting the main resource allocations and results in all areas, including education, research, and international cooperation. This information is aggregated at the central level and, along with data from the central information system, is submitted to the ministry as an overall annual report.

The views of foreign scholars mentioned above vary, and we believe this diversity stems from their different perspectives on the higher education system and its financing. At this point, analyzing the views of local scholars on the topic can shed light on the current stance on this issue in our country.

D. Rakhmonov's research concludes that linking the funds allocated from the state budget to the scientific potential of higher education institutions, as well as providing low-interest, long-term educational loans from commercial banks for tuition payments, would enhance its social function. Additionally, he emphasizes that implementing partnerships between the state and the private sector through the provision of additional educational services at higher education institutions could increase non-budgetary revenues for these institutions.

We believe that the ideas and recommendations in this study have the potential to shift traditional views on financing the activities of higher education institutions. The successful implementation of these conclusions in current practice suggests that future perspectives on financing higher education may be shaped by this scholar's ideas. His views connect the three primary aspects of higher education—scientific, social, and economic—with their financing.

2. Methodology

Review classical and contemporary theories in public finance, economics of education, and policy studies. Has been identified historical and evolving trends in higher education funding. Also were analyzed research on the implications of different funding models, evaluated studies on the relationship between funding structures and access, quality, and equity in education.

3. Results and Discussion

In the "Uzbekistan – 2030" strategy, approved by Presidential Decree No. PF-158 dated September 11, 2023, the effectiveness indicators of goals to be achieved by 2030 to further develop higher education have been established. Some of these goals are particularly relevant to our research. They include the following [12]:

- increasing the higher education enrollment rate for youth to at least 50%;
- enhancing the effectiveness of scientific research in higher education institutions and raising scientific potential to 70%;
- transforming five higher education institutions into national research universities;
- allocating 3 trillion UZS for fundamental research;
- directing 4 trillion UZS from the state budget toward applied research, with the goal of creating more than 2,500 new scientific developments as a result;
- increasing the proportion of researchers under 40 to at least 60%, and doubling the average salary of scientific organization employees, among other targets.

We believe these targeted indicators are highly significant as they encompass two major directions in the development of the higher education system: training specialists and conducting scientific research.

In our opinion, the approval of these targeted indicators has been influenced by both advanced foreign experience and the current social and demographic situation in our country, as well as a fundamental reform of the current system of organizing and financing higher education.

Today, Uzbekistan is considered a country of youth, with nearly one-third of the population under 19 years of age. Therefore, we believe that an analysis of the organization of higher education should begin with an examination of demographic data and information reflecting the standard of living. This is because the activities of higher education institutions are directly tied to human resources and their status.

Based on the analysis of data from Table 1, several conclusions can be drawn about factors directly influencing the organization of the higher education system in our country.

In Uzbekistan, the population in 2023 has increased by nearly 3 million people, or 8%, compared to 2019. The number of births has risen by 147,000, or 18%, and the population aged 18-19 has grown by 40,000, or 4%, consistently remaining above one million. The proportion of females and males within the 18-19 age group is almost equal.

Table 1. Data on the Demographic Situation and Standard of Living in Uzbekistan

Indicators	2019	2020	2021	2022	2023
1. The total number of permanent residents (in thousands).	33905,2	34558,9	35271,3	36024,9	36799,8
2. The number of newborns.	814960	841817	905211	932217	961962
3. The number of permanent residents aged 18-19, of which:	1010789	1018627	1015964	1025936	1050788
3.1. Women (%)	48,8	48,7	48,6	48,7	48,7
3.2. Men (%)	51,2	51,3	51,4	51,3	51,3
4. The number of permanent residents of working age (in thousands)	19951,6	20135,1	20299,5	20505,3	20746

5. The proportion of permanent residents of working age in the total population (%)	58,8	58,3	57,6	56,9	56,4
6. Average real income per capita (in thousands of sums)	9506	10734,3	13416,8	15948,3	18201,2
7. Average calculated monthly salary (in thousands of sums)	1946,8	2227,1	2662,0	3204,3	3799,6

Source: The table has been compiled by the author based on information from the Statistics Agency under the President of the Republic of Uzbekistan.

In our opinion, the following conclusions can be drawn from these analyses:

- As the birth rate and the overall population continue to grow, the number of people aged 18-19—who are of higher education age—is also increasing. This highlights the need to expand access to higher education. Since one of the primary activities of higher education institutions is to provide education, which is closely linked to the age and gender demographics of the population, the issue of expanding access is directly tied to the funding of higher education institutions, which in turn necessitates the adoption of new financing mechanisms.
- The near equality in the ratio of males and females within the 18-19 age group indicates the need to implement specific systems to ensure access to higher education for women who face relatively limited social conditions in society. This necessitates the development and implementation of distinct financing mechanisms to support their higher education.

The number of the working-age population has increased from 2019 to 2023, yet its share within the total population has decreased from 58% to 56%.

At the same time, the average per capita real income in 2023 has nearly doubled, increasing by 8.7 million sums compared to 2019, with average monthly wages also rising by nearly twofold, reaching 3.8 million sums (an increase of 1.8 million sums). However, the average monthly wage accounts for only 20% of the average per capita real income.

As we see, the analysis of Table 1, which relates to the standard of living, allows us to draw the following conclusions:

- The fact that the working-age population constitutes 56% of the total population or 20.7 million people in 2023 indicates that the remaining 44% of the population is economically dependent on the working-age group. This, in turn, presents complex economic and social challenges, highlighting the need for higher incomes for the working-age population. Additionally, since the working-age population also represents a potential demand for higher education, specialization based on higher education can be economically efficient. Therefore, the overall indicators of the working-age population can serve as important signals for higher education.
- Although average per capita real income is increasing, it stands at approximately 18.2 million sums, with only 20% attributable to calculated wages. This shows that there are significant opportunities to increase the population's income. One of the main mechanisms for achieving this is through expanding access to higher education and promoting specialization. In our opinion, higher education can ultimately increase real income by raising wage levels.

We believe that the analysis of Table 2.1 illustrates that the demographic, economic, and social bases, necessities, and obligations for achieving the key target indicators set for 2030 are evident. Population growth increases the demand for labour resources and higher education, underscoring the need for new, modern, and inclusive financing mechanisms

for the activities of higher education institutions. To achieve this, it is necessary to analyze the current state of higher education based on overall data.

4. Conclusion

Based on the analysis of scientific and theoretical perspectives on the financing of higher education institutions, it can be concluded that financing is directed toward the following expectations:

- Focus on workforce development: Many local and foreign scholars recognize that the primary purpose of financing higher education is to produce a well-educated workforce. This implies that the primary focus should be on the educational function of higher education.
- Entrepreneurial orientation: This approach is effective for economies operating in a market economy context, where higher education institutions function as private sector entities providing educational services for profit. Within this perspective, attributes that appeal to the private sector are considered, such as the privatization of higher education, the establishment of public-private partnerships, the use of franchising, and the opening of specialized credit lines for educational service payments.
- Focus on innovation activity: Scholars in this perspective emphasize that the primary goal of financing higher education is to serve an innovative economy. The main focus is on the research activities of higher education institutions, and financing should primarily support this goal. Some scholars suggest that this direction should receive financial support from the government, while others view it as a major source of off-budget funding for institutions.

There is a view that these three specializations in higher education financing represent evolutionary stages that vary with economic potential and the level of development in countries.

Specifically, the focus on workforce development is characteristic of developing countries, where the main issue is forming a qualified workforce. Here, the primary attention is on preparing “workers” who align with the existing economic infrastructure, which is also relevant to our country.

From our perspective, the reduction or alteration of government financing for higher education indicates that higher education is becoming a “market commodity”. While this directly contributes to expanding access, it also raises questions about the quality of education. Therefore, establishing clear “rules of the game” between all market participants and regulatory structures is essential.

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