



Modern Trends and Prospects for The Development of Women's Scientific Potential in New Uzbekistan

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Abstract: This article examines modern trends and prospects for the development of women's scientific potential in Uzbekistan in the context of the ongoing reforms led by the President of the Republic of Uzbekistan, Sh.Mirziyoyev. It analyzes international initiatives aimed at expanding women's participation in scientific research, as well as measures implemented in the country to strengthen their position in the academic environment. The study reviews key legislative and strategic documents that contribute to creating a favorable environment for women's professional growth in science and assesses the impact of these initiatives on the country's socio-economic development.

Keywords: Women in Science, Scientific Potential, Gender Equality, Uzbekistan, Innovation, Strategic Development, Academic Environment

1. Introduction

Today, the global community considers strengthening the scientific potential of women as one of the most important areas in ensuring sustainable development. Gender equality in science is not only a matter of social justice, but also an important factor in improving the quality of scientific research and innovation. Women scientists make significant contributions to science and technology, but still face various barriers, including institutional, cultural and economic limitations. UN Secretary-General A. Guterres notes that in any area, the rights and contributions of women are vital for a future in which technology will serve humanity, and not vice versa [1] [2]. Recently, the role of women in science has increased significantly, and this trend continues to grow in the international arena. Women in science face difficulties in performing tasks that are due to socio-cultural barriers and structural disadvantages in secondary education and scientific institutions. Despite this, a number of countries have achieved significant success in expanding the opportunities for women in science, which allows for their increased participation in scientific research and innovation. Uzbekistan, as a country experiencing significant social and societal changes, is at an important stage of reforms in the field of education and science. An important assessment of how international experience can be used to create equal conditions and support women scientists in Uzbekistan. The article is devoted to the study of current challenges and opportunities for women in science in the fifth international experiment and the prospects for analysis. The relevance of this issue is due to global trends in science and education, which indicate the need to increase women's participation in research activities. International organizations such as the UN, UNESCO and the World Bank are actively working to implement programs aimed at overcoming the gender gap in science.

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Today, women around the world make a significant contribution to the development of science and technology, which promotes progress and innovation in various fields. According to UNESCO, women make up about 30% of the total number of researchers in the world [3]. International organizations are making efforts to support women in science. Since 1998, the L'Oréal-UNESCO For Women in Science program has supported more than 4,400 women researchers from more than 110 countries, providing grants and recognizing their achievements.

Secondly, in the global community, women make a significant contribution to the development of science and technology, which promotes progress and innovation in various fields. Their participation in scientific research not only enriches the scientific community with a variety of approaches and ideas, but also helps solve complex global problems. Thus, women scientists are actively involved in interdisciplinary research, combining knowledge from different fields to create innovative solutions. Their ability to think comprehensively and systematically allows them to find unconventional approaches to solving scientific problems. For example, in the field of nuclear astrophysics, women scientists have made significant contributions to understanding the processes of nucleosynthesis and the evolution of stars. The research conducted by scientists such as Maria Goeppert-Mayer and Cecilia Payne-Gaposchkin has become fundamental to the development of this field of science [4].

Thirdly, women play a key role in the development of medical and biological sciences. Their research in genetics, molecular biology and biomedicine leads to the development of new methods for diagnosing and treating diseases. For example, Rosalind Franklin's research in the field of X-ray structural analysis of DNA [5] became the basis for understanding its structure and functions, which opened up new horizons in genetics and medicine.

2. Materials and Methods

According to the Food and Agriculture Organization of the United Nations (FAO), there are more than 1.1 billion girls under the age of 18 in the world [6], each of whom has the potential to become successful female leaders, entrepreneurs, specialists in innovation and public administration. This demographic indicator demonstrates the importance of strategic investment in the education, training and economic empowerment of women and girls, which is a critical component of sustainable socio-economic development.

Science and equal opportunities for all are important factors in sustainable development, including within the framework of the goals set forth in the UN 2030 Agenda for Sustainable Development [7]. Over the past 15 years, the global community has made significant progress in expanding the participation of women and girls in science, which has contributed to their increased involvement in research processes and innovation. However, despite the successes achieved, certain limitations remain in this area. Issues of equal access to scientific education, career opportunities in the academic environment and overcoming structural barriers remain relevant. International organizations, including UNESCO, emphasize that the full development of science requires the integration of women in research at all levels, which contributes to the expansion of scientific horizons and the acceleration of innovation processes.

In general, the contribution of women to science is an integral part of global scientific progress. Their achievements contribute to the development of various fields of knowledge, improving the quality of life and solving urgent problems of humanity. Recognition and support of this contribution are important steps towards sustainable and inclusive development of the world community. In the context of Uzbekistan, this issue is of particular importance within the framework of the strategic course on improving science and education. Within the framework of the implementation of the Strategy "Uzbekistan - 2030", comprehensive measures are being taken to expand the participation

of women in the political, social and economic life of the country [8]. Particular attention is paid to the protection of motherhood and childhood, strengthening the principles of gender equality, as well as ensuring the rights and interests of women in all spheres of society. Large-scale reforms are being implemented in the country aimed at strengthening the position of women in science, ensuring their academic and professional support, and creating favorable conditions for research activities. Under the leadership of the President of the Republic Sh. Mirziyoyev, important measures have been taken to enhance the role of women in the scientific community, including legislative initiatives, the creation of specialized programs and expanding opportunities for participation in international projects.

3. Results and Discussion

In the modern world, science and technology play a key role in ensuring the sustainable development of society, and the contribution of women to these processes is becoming increasingly significant. In Uzbekistan, as in other countries, strengthening the scientific potential of women is considered not only an important element of educational and innovation policy, but also as a factor contributing to the competitiveness of national science in the international arena. The development of the higher education and scientific research system creates new opportunities for women scientists, allowing them to actively participate in the formation of scientific and technological progress. Considerable attention is paid to creating conditions for advanced training, participation in research projects, as well as integration into the global scientific community. In recent years, the number of women receiving academic degrees, publishing in prestigious international journals and participating in global scientific initiatives has been growing in the country. These processes contribute to the expansion of academic mobility, which has a positive effect on the quality of scientific research.

One of the most important areas is the development of science in priority sectors of the economy, including medicine, engineering and information technology. Women researchers actively contribute to the development of innovative solutions, as evidenced by their participation in start-ups and technology projects. Interaction with international research centers and scientific organizations helps to create new opportunities for professional growth and scientific discoveries. Systemic reforms in the field of science help to expand access to research resources, develop digital technologies and strengthen ties between scientific institutions and industry. Favorable conditions are created to support scientific initiatives, which encourages women to actively participate in research, gain new knowledge and implement innovative developments. These processes are aimed at further developing the country's scientific potential, ensuring sustainable growth of intellectual capital and increasing the contribution of science to economic and technological development.

In recent years, large-scale reforms have been carried out in all areas in Uzbekistan under the leadership of President Sh. Mirziyoyev, in particular, in the field of ensuring women's rights and their comprehensive protection. Favorable conditions are being created for the active participation of women in the socio-economic and political life of the country, important legislative initiatives are being adopted aimed at strengthening their legal status and protecting them from all forms of discrimination. These issues are reflected in the updated version of the Constitution of the Republic of Uzbekistan [9]. It proclaims Uzbekistan a socially oriented state, and also enshrines the key social rights and obligations of the state to citizens. The Constitution not only enshrines the country's status as a socially oriented state, but also expands guarantees for the protection of the rights and freedoms of citizens, including in the sphere of social policy. The state undertakes obligations to ensure a decent standard of living, social justice and equal access to basic benefits, including education, health care, labor rights and social support. In this context,

special attention is paid to strengthening legal mechanisms aimed at achieving gender equality, preventing discrimination and supporting the active participation of women in the economic, social, scientific and political life of the country.

An important aspect of implementing the principles of gender equality in the New Uzbekistan has become the introduction of gender-legal expertise of legislative acts, which allows taking into account the potential risks of gender discrimination when developing new regulatory documents. In addition, the practice of gender audit is actively developing, allowing to assess the impact of already adopted laws and strategies on the situation of women and ensure their effectiveness in the real socio-economic context. Special attention is paid to increasing the role of women in socio-political life. Today, women occupy leadership positions in government bodies, participate in the development and implementation of reforms, and make a significant contribution to lawmaking processes. Their active involvement in governance at the national and local levels contributes to more balanced decision-making focused on the public good.

One of the key areas of reform has become the creation of favorable conditions for women scientists, increasing their involvement in research activities and expanding opportunities for professional growth.

The development of women's scientific potential is an integral part of the strategy for the further development of the scientific sphere and education in the country. Comprehensive measures are being taken in this direction, including improving the legislative framework, funding research projects with the participation of women, and creating specialized educational and scientific programs. An important step was expanding women's access to master's programs and research activities, which made it possible to increase the number of women researchers in various fields of science.

In accordance with the Decree of the President of the Republic of Uzbekistan "On measures to further accelerate the work on systemic support for families and women" dated March 7, 2022 [10], starting from the 2022/2023 academic year, additional mechanisms to support women's education have been introduced. In order to expand their access to vocational training, the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated September 29, 2023 provides that from the 2023/2024 academic year, women enrolled in colleges and technical schools on a fee-paying basis in priority sectors such as construction, transport, utilities and agriculture will be trained at the expense of state grants [11]. These initiatives are aimed at increasing the accessibility of education, strengthening the role of women in the socio-economic development of the country and the formation of sustainable human resources in key sectors of the economy.

The adoption of the Law of the Republic of Uzbekistan "On Science and Scientific Activity" [12], as well as the active implementation of reforms in this area contribute to the creation of conditions for the expanded involvement of women in scientific research activities. The formation of an effective system for training highly qualified personnel and the improvement of academic support mechanisms play an important role in strengthening the scientific potential of women and their integration into the research environment.

Currently, women in Uzbekistan are actively involved in the development of strategically important branches of science and technology. They make a significant contribution to such areas as information technology, agriculture, and also play a key role in improving healthcare, social and humanitarian spheres.

It is important to note that women researchers play an important role in strengthening the scientific potential of the country and actively contribute to the development of socio-economic processes in Uzbekistan. Their contribution to scientific research, innovative developments and educational initiatives contributes to the improvement of the national scientific system, the expansion of interdisciplinary research

and the increase in the competitiveness of domestic scientific achievements in the international arena. Active participation of women in scientific activities contributes to the improvement of educational programs, the integration of best practices into the educational process and the training of a new generation of highly qualified specialists. Creating favorable conditions for the development of women's scientific potential, including through improving the academic support system, expanding opportunities for professional growth and ensuring equal access to research resources, is a strategically important task. State initiatives aimed at strengthening the role of women in science contribute not only to expanding their academic mobility, but also to their integration into the international scientific community, which opens up new prospects for scientific discoveries and technological progress.

Highly qualified specialists, including 5 academicians [13], are actively working in the scientific and educational sphere of Uzbekistan. Over the past seven years, a significant number of women in Uzbekistan have achieved high academic results - 5,791 researchers have received academic degrees [14] of Doctor of Science (DSc) and Doctor of Philosophy (PhD) in various scientific fields. Currently, about 5 thousand women scientists are engaged in scientific activities in the country, which indicates a growing level of their involvement in research processes and the academic environment. In addition, more than 14 thousand [15] women are actively involved in educational and scientific activities in higher education institutions, teaching, conducting research and contributing to the development of national science. These indicators reflect the high level of scientific potential of the country and demonstrate the growing role of women in academic and research activities.

Thus, a consistent policy for the development of science and education in Uzbekistan helps to strengthen the position of women in the scientific field, stimulating their contribution to scientific research and innovative developments. This not only strengthens the scientific potential of the country, but also contributes to the sustainable development of the national economy, strengthening the international scientific image of Uzbekistan.

In general, the development of women's scientific potential is an integral part of further improvement of the scientific sphere and educational system of Uzbekistan. The reforms implemented in this area are aimed at expanding the academic opportunities of women, integrating them into research activities and increasing their contribution to innovative developments. The relationship between scientific progress and gender balance in science is becoming increasingly obvious - the active participation of women in research activities contributes to the expansion of scientific areas and the development of new approaches in various fields.

Firstly, favorable conditions are being created in Uzbekistan to enhance the role of women in science, which is expressed in supporting their professional growth, expanding access to research programs and participation in international scientific initiatives. Such progress not only strengthens the national scientific potential, but also contributes to increasing the international competitiveness of the country's scientific sphere.

Secondly, a comprehensive approach to supporting women scientists includes not only educational and scientific initiatives, but also social and economic mechanisms. Expanding state education funding programs, introducing targeted measures to support women in technological specialties, creating new opportunities for academic mobility - all this strengthens the position of women in science and promotes their active participation in strategically important research. These measures are in line with international standards, which allows Uzbekistan to integrate the country's scientific system into global academic processes. Thirdly, increasing the role of women in science has a positive impact on the country's socio-economic development. The active participation of women scientists in research in the fields of medicine, agriculture, ecology, information technology and

other areas leads to the emergence of new innovative solutions that can be applied in various sectors of the economy. In addition, the development of science taking into account the gender aspect contributes to the creation of a more inclusive academic environment, which, in turn, stimulates further growth of scientific discoveries and technological progress.

4. Conclusion

Women's participation in science is critical to the achievements that make up scientific and technological progress in any country. Research into international experience shows that successful integration into the scientific community requires a comprehensive women's intervention, including changes at the level of public policy, improvement of educational opportunities and creation of an inclusive environment. For Uzbekistan, this process can become a step in developing the scientific environment and strengthening the country's innovative potential. Using successful models from other countries, Uzbekistan can improve the living conditions of women, expand their participation in scientific research, promote their professional growth and increase the level of opportunities. Further work on creating such principles that can remove barriers and open up new prospects for women in science in Uzbekistan is important.

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