

THE ROLE OF WOMEN OF CENTRAL ASIA IN POLITICAL SCIENCE: THE CASE OF KAZAKHSTAN

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ABSTRACT

This project presents a study of “female presence” in academic circles, particularly, in political science, at research centers or ‘think tanks’ of five Central Asian countries: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan in the last decade of the Soviet period (1980-1992), and in the period of independence. It investigates the origins and consequences of the third wave of feminization in Soviet science in the late 20th, as well as issues of gender asymmetry in the political science research institutes. Women are still underrepresented in a number of political science research spheres, particularly in senior positions. The project analyzes problems and prospects for the advancement of women researchers, and expansion of their women participation in the ‘think tanks’, research institutes/centers, policy groups, and panels of experts. The project is directed to help address this issue, understand what obstacles remain and how they can be overcome. The project aims to share knowledge and tools about how to create better access to and accelerate women’s representation in the national and international scientific organizations. It also examines how to more effectively integrate a gender-lens into government action and policy-making. The paper examines the historical background, social and professional environment, institutional barriers facing women researchers, as well as current trends in women's participation in shaping the science of the region's states. The project is based on a comparative analysis of the legal framework, national and international statistics, including UN reports, academic research, interviews, and public speeches. There is also an overview of women's representation in the research centers and political activity based on the Women in science indicators, which reflects the proportion of women researchers, senior executive officers. Particular attention is paid to the practical aspects of women's participation in researches: career mobility, representation at the international and regional levels, as well as state policies to advance women in science. The study identifies both positive trends in gender empowering and persistent challenges related to cultural stereotypes, limited institutional support, and social barriers. The study offers recommendations for strengthening women's role in science through legislative reform, training, and strengthening regional and international cooperation.

Keywords: gender equality, think tank, scientific research, women empowering.

1.0 INTRODUCTION

The role of women in political science and research is becoming an increasingly important issue in the context of globalization and the broader pursuit of sustainable development. The

advancement of women in science has been much slower and more uncertain than progress toward gender equality in legal rights. Gender equality remains one of the key challenges of our time, as reflected in Sustainable Development Goal 5, which calls for achieving gender equality and empowering all women and girls by 2030 (UNDP, 2015). Women still remain a minority in science and continue to face obstacles on the path toward gender equality in research, particularly in political science.

According to UNESCO, only 30% of researchers worldwide are women, and the proportion is even lower in senior scientific leadership positions. In Central Asia, women account for less than 20% of leadership positions compared to men. In the countries of Central Asia, despite some positive trends, for example in Kazakhstan and Kyrgyzstan, where women researchers account for 54% and 52% respectively, women's participation in scientific and political research remains limited. This trend is especially visible in Uzbekistan, Tajikistan, and Turkmenistan.

Deeply rooted patriarchal attitudes, regional political culture, and institutional characteristics continue to constrain the full realization of women's potential in national and international political science. Women remain significantly underrepresented in leadership positions and among experts in think tanks, especially in the fields of foreign policy, security, and economics. Research shows that approximately 68 to 78% of top positions in scientific institutions worldwide are held by men, despite the stronger presence of women among regular staff. In Central Asia, this figure reaches 90%. This gender gap is shaped by barriers within professional networks, limited mentoring opportunities, and slower career advancement. Among the main reasons are cultural norms, family responsibilities, and persistent discrimination against women, all of which hinder women's progress in science and other professions.

Diversity is both important and necessary in academia because it broadens perspectives and encourages greater sensitivity and respect for different points of view. Policies that encourage women's participation in leadership positions are essential, because the more women occupy strategic and decision-making roles, the greater their representation in the field will become.

In recent decades, Central Asia has faced the need to reform its research structures, including in relation to gender issues. In a context of growing international competition, geopolitical pressure, and demands for inclusiveness, the issue of women's representation in science has gained strategic significance. Women researchers possess important soft power potential, can serve as mediators in conflict settings, and are just as capable as their male colleagues of representing state interests on the international stage.

This project aims to analyze how historical, cultural, and institutional factors have shaped the emergence of a female scholarly voice in the countries of Central Asia, and to assess the current state of women's participation in the region's political science research institutions.

2.0 LITERATURE REVIEW AND METHODS

The study of women's participation in science at both the global and regional levels embraces a wide range of disciplines, from political science and international relations to gender studies. This research includes a review of international documents issued by the UN, UNESCO, and the OSCE, as well as a survey of Central Asian and international scholarship based on legal

analysis and national and international statistics, including UN reports, academic studies, interviews, and public speeches. It also draws on a broad methodological framework that combines general and specialized research methods, including historical, systemic, comparative, institutional, statistical, and analytical approaches.

The lack of empirical studies focused specifically on the political science research sphere highlights the relevance of the present analysis. This study applies a mixed qualitative and quantitative approach using comparative analysis, content analysis, and case study methods. The comparative method was used to identify differences and similarities in approaches to women's participation in the political science sphere in the five Central Asian countries: Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, and Turkmenistan. Content analysis made it possible to identify the rhetoric and discursive practices associated with women political scientists in official documents, speeches, government publications, and media materials.

The empirical basis of the study includes:

- official reports and legal documents, such as national gender equality strategies
- statistics from international organizations such as UN Women, the OSCE, and the ADB
- scholarly articles, reviews, and reports
- interviews and public statements by women scholars and researchers available in open sources

Case studies of women from Central Asia participating in international platforms such as the UN and UNESCO were also examined, which made it possible to formulate grounded conclusions and recommendations.

The analysis confirmed the persistence of gender inequality in the academic environment across the region, with especially visible differences in low- and middle-income countries. Gender inequality, present across all social classes and economic sectors, is reflected in the fact that most senior academic positions are held by men. According to UNESCO, women account for less than 30% of researchers worldwide, while in South and West Asia their share is even lower at 19%, and in East Asia and the Pacific it stands at 24%. This inequality hinders progress toward Sustainable Development Goals 4 and 5, namely quality education and gender equality (UN, 2025).

From the perspective of the OECD, women's participation in science and research is not only a gender issue but also an economic one: "Leaving women behind means not only ignoring the important contribution women make to the economy, but also wasting years of investment in the education of girls and young women" (OECD, 2019).

Studies in the philosophy of science from a feminist perspective note that the historical exclusion of women from academia has led to sexist and androcentric biases in science (Arnaboldi, 2025). In a culture where women's abilities are not respected, women cannot effectively learn, develop, lead, or participate fully in society (Barress, 2006).

Recent UN and UNESCO reports point to gradual changes in the gender composition of the scientific workforce. More women are earning academic qualifications and working in science, a sphere that long remained dominated by men. According to UNESCO, women now make up

about 30% of researchers worldwide. Particularly strong progress can be seen in certain subsectors, such as the life sciences industry, where women account for 49% of the global workforce (UNESCO, 2025).

It is well known that STEM plays a key role in achieving the Sustainable Development Goals included in the UN 2030 Agenda. These 17 interconnected goals, focused on addressing social, economic, and environmental problems, aim to improve people's quality of life. The development of STEM education and STEM employment contributes to the creation of sustainable and inclusive communities and supports the goals of quality education, gender equality, industry and innovation, and reduced inequalities. STEM remains a major focus of international organizations and governments, not only because of its transformative potential but also because of the persistent gender gap in the field.

Women played a significant role in Soviet science, making up a substantial share of research personnel thanks to policies of formal equality. Their active involvement began in the 1920s, and by the 1960s and 1970s women held important positions in medicine, biology, chemistry, and technical sciences, often overcoming entrenched gender stereotypes. The inclusion of women historians in the institutions of the Academy of Sciences began in the 1930s, when transformations in the academic sector gave women more stable positions in the Institute of History of the USSR Academy of Sciences and a number of other research institutes. Reviews of the origins and consequences of the third wave of feminization in Soviet science at the end of the twentieth and beginning of the twenty-first centuries reveal the persistence of gender asymmetry in both Soviet and contemporary science. The three waves of feminization in Soviet science described by Agamova and Allakhverdyan reflect women's entry into science through social upheavals and official equality policies (Agamova and Allakhverdyan, 2000).

The first wave, in the 1910s and 1920s, was linked to the 1917 Revolution, the removal of restrictions on women's access to higher education, and the beginning of their active involvement in research. The second wave, in the 1930s to 1950s, was driven by industrialization and wartime labor needs, when women replaced men in laboratories and research institutes on a mass scale. The third wave, in the 1960s to 1980s, coincided with the scientific and technological revolution and the rapid growth of knowledge-intensive industries. This led to a high proportion of women researchers and the peak of quantitative growth in women's participation in science, even though they remained weakly represented in leadership positions and concentrated in less prestigious fields. Analysis of women's presence in Soviet academic institutions in the field of history shows that women historians entered academic science through a difficult process that was initially connected to the communist sector. Their active inclusion in Academy of Sciences institutes began in the 1930s, when women secured more stable positions in the Institute of History of the USSR Academy of Sciences. This process was accompanied by a contradictory trend: although women entered science in large numbers, they were disproportionately concentrated in the social sciences, humanities, and biological sciences, and much less represented in technical fields and physics and mathematics (Metel, 2021).

In the 1980s, the Soviet Union witnessed a peak in women's involvement in science. At that time, the image of the woman scientist had become familiar, providing a solid foundation for scientific and technological progress. The proportion of women researchers had grown steadily

since the 1960s, reaching parity with and eventually surpassing men by the 1980s. In 1985, women accounted for about 52% of all scientific workers in the country. The share of Soviet women among scientists was one of the highest in the world, reaching about 40% in certain periods. Women scientists worked actively in closed cities and research centers despite the difficulties of combining professional work with domestic responsibilities. Soviet women scientists made major contributions, especially in medicine, geology, and theoretical physics. Soviet policy strongly encouraged women to pursue technical and scientific education.

State support and the creation of new Soviet science cities made it possible to form a unique sociocultural urban environment in which women scientists could realize their professional potential, discover their vocation, and pursue family life, although at the level of everyday practice these science cities did not create special advantages specifically for women. The Soviet system promoted women's education and career growth, but combining research with household responsibilities remained a serious challenge (Pushkareva, 2025).

By the time of the Soviet collapse, the post-Soviet states had more than 600,000 women scientists, many of whom held candidate and doctoral degrees. Women were widely represented in biology, chemistry, medicine, pedagogy, and technical fields such as engineering and computing. During this period, Soviet women scientists made a major contribution to the development of both fundamental and applied science, although their representation in the highest levels of the academies of sciences remained lower. At the same time, international relations, security, and political science largely remained male-dominated fields.

In the republics of Central Asia during the Soviet period, women made significant contributions to science in Kazakhstan, Kyrgyzstan, and Uzbekistan, achieving distinction in archaeology, medicine, seismology, biology, and botany. However, despite the notable achievements of Central Asian women scientists during the Soviet era, their counterparts in the independence period continue to face problems common to women scientists worldwide. Gender stereotypes, cultural expectations, and the historical lack of representation in certain scientific disciplines continue to create obstacles.

Gender inequality in STEM is a complex issue whose many causes are rooted in the distant past. At early stages in the development of scientific disciplines, women were often denied access to education and professional opportunities, and their contributions were frequently ignored. These long-standing patterns of underrepresentation produced a male-dominated culture in STEM that persists to this day. Young women often lack female role models and are less likely to choose careers in STEM, which perpetuates the gender gap and limits women's influence and visibility in these fields. Among the key theoretical contributions are also the works of Feldman (2023), which emphasize that the inclusion of women in foreign policy decision-making contributes to more inclusive and sustainable international engagement. Particular attention has also been given to institutional barriers and gender quotas, as shown in the works of Holman (2018) and the publications of UN Women and the OSCE.

In the post-Soviet context, studies of gender transformation and political culture by Pobedonostseva-Kaya (2024) are especially important, as they analyze the consequences of the Soviet legacy and patriarchal norms in the countries of Central Asia. Research from a specifically regional perspective remains more limited. Some works, such as those by

Karabaeva (2023), address the historical role of women in Central Asia, including their participation in socio-political processes. Valieva (2024) emphasizes the key role of women scholars in the social sciences and humanities in Uzbekistan, arguing that their work helps build the intellectual foundation for the country's "third renaissance." The support and development of women's research activities is presented as a key factor in Uzbekistan's sustainable development and its aspiration toward new achievements and discoveries (Kasimova, 2024). Studies by the ADB (2020), UNDP (2022), and Central Asia Barometer (2025) provide important statistical data on women's political representation and public perceptions of their participation in governance and politics. Women's presence in science produces mutual benefits, both for women's own educational advancement and for broader global progress and transformation (UNESCO, 2018).

3.0 RESULTS

A comparative analysis of women researchers' representation in the countries of Central Asia during the late Soviet period, particularly in the 1980s, and over 30 years of independent development shows that women's entry into Soviet academic science was not straightforward and was initially linked to its communist sector. The data are based on open sources, official statements by ministries of science, and publications by international organizations. This material made it possible to assess the degree of women's involvement in shaping the scientific direction of the region.

During the Soviet period, women from Central Asian countries were actively involved in research, administration, and foreign policy activity, although within a strictly limited range of responsibilities. After the countries of the region gained independence in the 1990s, the number of women in senior scientific and foreign policy positions declined sharply as societies returned to more patriarchal structures. At the present stage, in 2025, women occupy about 10 to 20% of leadership positions in research institutes in Central Asia. The highest levels of representation are found in Kazakhstan and Kyrgyzstan, where reforms aimed at increasing gender inclusiveness have been introduced.

Kazakhstan is among the world's top three countries in terms of the number of women researchers: women account for 54% of all scientists, which is above the global average of 40%. According to the National Science Report (2023), more than half of all master's degree holders, Candidates of Science, and PhD holders in Kazakhstan are women. The proportion of women scientists is especially high in medicine, biology, and the humanities. Their presence remains lower in engineering and IT, but government STEM education programs are gradually changing this picture. Women scientists in Kazakhstan make a significant contribution to the country's development by producing innovation and addressing major scientific challenges. Despite these achievements, women working in political science remain underrepresented and account for less than 20% of all political scientists in comparison to men (Kurishbayev, 2023) (Agency for Strategic Planning and Reforms of the Republic of Kazakhstan, 2025)

In Kyrgyzstan, women make up more than 52% of the country's more than 6,500 scientists. Women are especially active in the non-governmental research sector and in international projects (National Statistical Committee of the Kyrgyz Republic, 2025).

At present, more than 700 women Doctors of Science and 5 women academicians are active in research and education institutions in Uzbekistan. The intellectual work of these scholars, especially in areas such as chemistry, biotechnology, and agriculture, has received both national and international recognition. Around 3,000 women are actively engaged in research within the institutes of the Academy of Sciences of Uzbekistan. Despite these achievements, the UNESCO Science Report (2025) shows that women in Uzbekistan account for only 28% of graduates in technical fields and 40% of graduates in computer science and information technology worldwide, pointing to continuing gender inequality in science and technology (UNESCO, 2025). In the Academy of Sciences of Uzbekistan, women account for only 5%. Overall, women make up 31.1% of the scientific workforce in Uzbekistan, but within the Academy of Sciences their share remains only 5%. This is one of the lowest figures among 136 scientific organizations worldwide (National Committee of the Republic of Uzbekistan on Statistics, 2025). According to a global study by the International Science Council, the InterAcademy Partnership, and the Standing Committee for Gender Equality in Science, Uzbekistan belongs to the group of countries with extremely low levels of female representation. (National Committee of the Republic of Uzbekistan for Statistics, 2025).

In Tajikistan and Turkmenistan, a more conservative trend continues to limit women's advancement. Low representation of women in science is also reflected in publications, salaries, rankings, annual productivity, and therefore in the allocation of resources (International Science Council, 2025).

Taken together, these data show that the late Soviet period saw the greatest progress toward gender equality in science across all the republics of Central Asia, especially in Kazakhstan, Kyrgyzstan, and Uzbekistan, where women made up around half of all scientific personnel. During the independence period from 1992 to 2025, however, the overall scientific potential of the region declined sharply, almost by half, and this also affected women's representation, which likewise fell substantially. State measures aimed at supporting science have since helped rebuild the number of researchers, and Kazakhstan and Kyrgyzstan have come closest to gender parity in science. In Uzbekistan, Tajikistan, and Turkmenistan, women's participation in science remains comparatively low. Overall, the process of restoring gender equality in science across the region is under way, but it remains slow and uneven.

Table 1. Women's representation in science

Country	Share of women scientists and researchers, % (2025)	Women in leadership positions (2025)	Gender strategy in place
Kazakhstan	54%	20%	Yes, since 2021
Kyrgyzstan	52%	7%	Yes
Uzbekistan	31%	2%	In the process of implementation
Tajikistan	18%	5%	No
Turkmenistan	No data	3%	No

Source: UN Women Central Asia Report 2025, OSCE Gender Equality Review 2025, ADB Gender Strategy Report 2025.

At the same time, fields such as political science, history, economics, and military-political studies are still considered overwhelmingly male, with women represented in very small numbers, usually below 10%. UN and UNESCO reports show that women in the region tend to be better represented in the humanities, biological sciences, and social sciences, and less represented in engineering, mathematics, and physics (Alexander et al., 2016), as well as in political science. Women remain a minority, ranging from 9.3 to 29.4%, among authors of scientific articles and also have limited representation on leadership and executive committees.

This is linked to the high level of expertise and responsibility associated with such positions. In political science, history, and economics, influential and authoritative scholars often lead major think tanks, carry responsibility for reports and forecasts, conduct applied research, maintain a visible public profile, publish articles, reports, and books, comment in the media, prepare recommendations for government or business, and influence public policy formation. In other words, these are not simply researchers but actors who directly shape both domestic and foreign policy.

By contrast, some areas within the humanities and social sciences, particularly sociology, have traditionally been seen as women's professions. In Kazakhstan, women sociologists account for 65% of the total. They work in social and political research and carry out marketing studies. Other fields in which women are relatively well represented in Kazakhstan include Oriental studies at 60%, demography at 50%, international relations at 41%, and religious studies at 20%. A similar pattern can be seen in Kyrgyzstan, Uzbekistan, and Tajikistan, where women are well represented in sociology and demography.

The analysis also shows that on international platforms, women from Central Asia tend to be represented mainly in humanitarian, cultural, and educational issues. At the same time, their participation is growing in projects related to sustainable development, water diplomacy, and climate change. Despite increasing attention to gender equality, women's participation in political science across Central Asia remains relatively low. Still, recent years have seen some positive changes in women's representation in senior positions within political science institutions.

Thus, the table clearly demonstrates the need for a more unified approach to promoting gender equality in the region's academic and political science sphere, along with stronger institutional support and comprehensive strategies for involving women in international processes.

4.0 DISCUSSION

In the late Soviet period, especially in the 1980s, substantial resources were directed toward the development of science in all the Central Asian republics. A strong scientific base was established, new research and design organizations were created, including institutes within the Academies of Sciences, and scientific and technical personnel were trained. By the early 1980s, Kazakhstan alone had 140 scientific institutions employing 21,100 people. The number of employees engaged in core scientific and technical activity reached 50,600, more than half of whom were women.

During the independence period, however, science in the Central Asian republics went through difficult times. The powerful scientific potential inherited from the Soviet period, represented

by major scientific schools in various fields, steadily lost ground from the 1990s onward and encountered serious problems. This was followed by years of decline across all aspects of scientific activity: reduced or absent funding for research, low demand for both research results and scientific labor in general, and the closure of many scientific institutes. In those institutions that remained open, material and technical conditions were often poor. All of this led to a general decline in scientific productivity and, above all, to heavy staff turnover. In Kazakhstan, for example, the number of researchers fell almost by half between 1991 and 2000, from 27,600 to 14,800.

Between 1992 and 2026, the Central Asian republics began to develop new approaches to science and the management of scientific and technological progress in line with the needs of newly sovereign states. The creation of independent science policy and systems of science governance became central to laws on science and state science policy, state programs for scientific development, and the establishment of ministries responsible for science, education, and new technologies. In Kazakhstan, programs such as Bolashak, Nazarbayev University, and the Young Scientist initiative were implemented to rebuild scientific capacity, alongside measures to stimulate research activity through higher salaries, social benefits, and support packages.

These state measures in Kazakhstan were aimed at broadly encouraging research activity. They included increased funding for science, the introduction of three types of funding, namely basic, grant-based, and program-targeted funding, expanded international cooperation and joint research with global scientific centers, and the opening of research universities. To train new research personnel under PhD programs, the number of grants and overseas research internships was also increased. Funding for science in Kazakhstan doubled for the 2020-2022 period, and there are plans to raise it to 1% of GDP by 2027, from the current 0.12%. These programs did not include specific measures aimed directly at bringing more women into science. Nevertheless, by the beginning of 2026 more than 25,000 people were working in science in Kazakhstan, and more than half were women. In fact, the gender gap in favor of women has widened over the past decade. According to statistics, the female-to-male ratio among researchers in 2013 was 51.5% to 48.5%, while in 2025 it reached 54.5% to 45.5%.

At the same time, although this suggests that the gender distribution within research fields can change, the positions occupied by women still tend to be lower than those held by men. An important symbolic step was the appointment by presidential order of a woman as President of the National Academy of Sciences under the President of the Republic of Kazakhstan in 2023-2024. In the history of the Academy, this was only the second time a woman had been appointed to that post. At present, women make up only 10% of full members of the National Academy of Sciences of Kazakhstan, while their share among corresponding members is slightly higher at 22.4%. These figures align with broader global trends. According to UNESCO, only 12% of members of national academies of science worldwide are women, and the proportion is even lower in low-income countries.

It is also important to consider positive examples of women scholars who lead scientific centers and institutes, including the Institute of Philosophy, Political Science and Religious Studies of Kazakhstan and KISI, whose public roles and active engagement in foreign policy create role models for young women in the region. Such figures contribute not only to the advancement

of women in political science, but also to changing public perceptions of women's capabilities in conducting research projects related to foreign policy. Taking these facts into account, and recognizing the value of science and scientific knowledge, the republics should strive for equal opportunity and broader inclusion of different social groups in research.

In recent years, Uzbekistan has moved along a path of reform aimed at promoting gender equality and expanding women's rights and opportunities across all sectors of society. Building on progressive legislative reforms and renewed national commitment, the country amended its Constitution to reaffirm equal rights and opportunities for women and men in public and state affairs, adopted the Law on Guarantees of Equal Rights and Opportunities for Women and Men in 2019, and launched the National Gender Strategy for 2021-2030. These achievements reflect Uzbekistan's determination to ensure equal representation of women in politics, leadership, and decision-making, paving the way for a more inclusive and equitable future. At the same time, despite these efforts, women continue to face structural barriers and remain widely underrepresented, especially in executive, judicial, and state institutions. Overcoming these obstacles and accelerating progress will require systemic change, institutional commitment, and collective action.

In Kyrgyzstan today, women make up more than 52% of the country's 6,500 scientists. In 2023, out of 31 Doctors of Science, 18 were women and 13 were men, while among 139 Candidates of Science, 82 were women and 57 were men. At present, Kyrgyzpatent has registered 38 women scientists and inventors. Projects such as "The Role of Women in Science" have been introduced to encourage girls to enter science, and the International Day of Women and Girls in Science is celebrated annually. Nonetheless, the country still faces serious obstacles to the broader advancement of women in science, including poverty, unemployment, and declining access to education, especially in rural areas. Economic reforms have increased poverty, particularly among women. Rising unemployment and poverty under market conditions have had a negative effect on women's social position. In order to participate fully in public life, women need access to continuous education at different levels. In addition, traditional stereotypes in Kyrgyz society continue to define pedagogy and medicine as women's work, while engineering remains a male-dominated field. The professional sectors most accessible to women do not provide adequate pay or guarantee social status. Opportunities that should have emerged from socioeconomic and cultural change, including advances in medicine and public health, have not been fully realized. Poverty and the breakdown of the earlier social protection system have worsened women's position amid a long-term decline in living standards (Karabaeva, 2023).

The results of the analysis point to real progress in attracting women into political science research in Central Asia, but that progress remains uneven and is accompanied by a number of persistent problems. The main barrier is gender stereotypes deeply rooted in public consciousness and institutional practice. Despite international obligations and national programs, such as gender equality strategies in Kazakhstan and Kyrgyzstan, women's participation in political science remains limited both quantitatively and qualitatively. A comparative analysis of the countries of the region shows that more open political systems and states more oriented toward integration with international structures, such as Kazakhstan, Kyrgyzstan, and Uzbekistan, provide more opportunities for the career advancement of women political scientists. This is reflected in their appointment to leadership positions in national,

regional, and international institutions and in their participation in international conferences, forums, and intergovernmental negotiations. By contrast, in Turkmenistan and Tajikistan women's participation in political science is more often limited to auxiliary or administrative roles, which is linked to the closed nature of political systems and weak institutional support for gender initiatives.

Across the region, women also face additional obstacles, including limited professional mobility, low representation in the leadership of academic institutions, and insufficient support in personnel policy. Unequal access to educational opportunities and overseas internships also reduces women's chances of entering global political science networks.

For decades, foundations, nonprofit organizations, government institutions, and other actors have invested in efforts to improve the representation of girls and women in science, technology, engineering, mathematics, and medicine. Why these efforts to improve recruitment, retention, and promotion have produced only modest gains in gender representation across many STEMM fields remains an open question. Although conditions have improved in many areas, many observers remain concerned that progress has been too slow and, in some cases, has stalled or even reversed.

Studies by international scholars likewise show that low female representation in science is driven by discrimination, including gender, racial, and class-based discrimination, as well as sociocultural factors, institutional patterns of bias, and underexamined cultural norms embedded in social systems. As a result, only a minority of women in STEMM fields, on average 25%, advance to leadership positions, where only 5% hold senior roles (Gupta, 2020). Research points to many causes of gender inequality in science, although the degree of women's underrepresentation varies across countries, regions, fields of knowledge, age groups, and cultures (Avolio et al., 2020). The reasons are numerous, ranging from cultural norms and family responsibilities, including the double burden of paid work and family care, to persistent discrimination against women. Together, these factors can create a hostile environment that pushes women out of the scientific community (Saunders, 2020). Researchers have also concluded that women's productivity declines because of childcare responsibilities, daycare closures, and increased domestic work. A UNESCO report from 2024 notes that women's participation in science as researchers worldwide ranges from 8 to 63%, with an average of 30%. The report also highlights the conflict many women experience between academic ambition, such as entering doctoral study, and family obligations (UNESCO, 2024).

Research on 22 foreign policy think tanks in Washington, DC, confirmed several causes of gender inequality in think tanks: a leadership gap, with 68% of leaders and 78% of board members being men; sectoral disparities, with lower female representation in think tanks specializing in economics and security; visibility problems, with women less likely to appear as expert panelists and more likely to serve as moderators; networking practices and "old boys' clubs," which rely on informal and predominantly male networks for promotion and invitations to expert panels; stereotypes and bias, including cultural, structural, and institutional prejudice that hinders women's advancement; and a shortage of mentorship, since fewer women in senior positions means fewer mentoring opportunities for junior staff.

Even today, despite women's ongoing efforts to integrate into the scientific community, those efforts often remain insufficient because women's underrepresentation continues to define

many professional environments. As UNESCO IESALC Director Francesc Pedró has stated, young people must be educated in institutions where gender equality is encouraged and welcomed, and universities should lead by example (UNESCO, 2020).

Measures to increase diversity in leadership positions in academic and research institutions are essential for reducing the unfriendly working environment often faced by young scholars. Women should be encouraged to take on leadership roles through policies that actively support their participation, because the competence is clearly there, and the more women occupy strategic and senior positions, the greater the representation in the field and the stronger the debate and struggle for equal opportunities (Howe-Walsh and Turnbull, 2016).

Strategies that help professors and researchers manage family responsibilities, such as subsidized childcare and maternity leave for academic staff, can also help prevent women from leaving academia. As with discrimination more generally, silence around these issues must be reduced. Academic leadership bears particular responsibility to speak out, although this responsibility is shared by everyone. Relevant authorities should be informed of discrimination in any working environment.

There are several steps that can be taken to improve gender equality in science, beginning with basic education. Culture and family traditions often discourage girls from pursuing scientific careers from an early age. Primary schools can help break this pattern by showing children a wide range of career possibilities and introducing examples of successful women scientists.

Governments should promote initiatives that encourage girls still in secondary school to consider scientific careers. Universities should develop joint projects with schools aimed at encouraging women to pursue careers in STEM fields (CNPq, 2018). In this sense, the discussion once again points to the need for a comprehensive approach to gender balance in political science. Such an approach must include not only institutional reform but also changes in the educational, media, and political environment. Only then will sustainable and equal participation of women in the scientific and research processes of Central Asia become possible.

5.0 CONCLUSION

This study makes it possible to draw several important conclusions about the role of women in the political science sphere in the countries of Central Asia. Historical analysis shows that women's participation in shaping the region's research processes was episodic for much of the past, and that more active involvement began only toward the end of the twentieth century. Despite the positive changes achieved in recent decades, women's participation in political science remains limited and uneven across the countries of the region.

The most favorable situation can be observed in Kazakhstan and Uzbekistan, where measures have been introduced to strengthen gender equality institutionally within academia, including in political science. Kyrgyzstan also demonstrates a relatively open political system that allows women to participate in international academic activity. At the same time, Tajikistan and Turkmenistan continue to face structural constraints linked to political closure, the lack of programs to promote women, and weak civil society engagement.

The main challenges therefore include:

- the persistence of gender stereotypes in the professional academic environment
- limited mobility and career prospects for women
- an insufficient number of women in senior academic positions
- weak integration of women into international scientific processes and organizations

6.0 RECOMMENDATIONS

1. Develop national strategies to promote women in science and political science. Gender indicators should be incorporated into the personnel policies of research institutes, and equal conditions should be ensured in the recruitment, training, and promotion of academic staff.
2. Expand educational and career opportunities. Policies should support women's education in STEM and create more opportunities for international internships in order to broaden the outlook and experience of young scholars. Specialized training programs, scholarships, internships, and exchanges with leading research schools around the world should also be developed for women political scientists.
3. Increase public recognition. Women leaders in science and political science should receive greater support in the media, positive role models should be promoted, and public demand for gender balance should be strengthened.
4. Promote regional cooperation. Platforms should be created for exchanging experience among Central Asian countries in advancing women in science and political science, including forums, round tables, and joint programs.
5. Strengthen monitoring and reporting. Indicators and evaluation mechanisms should be developed to track progress in women's participation in science, with regular reporting at both the national and regional levels.
6. Integrate gender analysis into research strategy development. Women experts should be involved in shaping broader policy agendas, including peacebuilding missions, environmental diplomacy, human rights, and sustainable development. Implementing these recommendations would help create a more just, inclusive, and sustainable political science community in Central Asia and would represent an important step toward achieving gender equality in global politics.
7. Create more diverse panels and expand women's participation in expert discussions and political debate. Tools should be developed and promoted to strengthen gender equality in research and governance.
8. Introduce formalized and transparent recruitment and promotion procedures. This would help reduce bias and make academic institutions more open and inclusive.

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