

Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaopenaccess.com/index.php/6>

GENDER DYNAMICS IN CENTRAL ASIAN SCIENCE: INSTITUTIONAL BARRIERS AND SOCIO-CULTURAL FACTORS

Egamkulova Iroda Safar kizi

Researcher of Scientific Research Institute of Family and Gender

abduazimovairoda@gmail.com

Abstract

This article provides a comprehensive analysis of gender dynamics in the scientific sphere of Central Asia (Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, and Turkmenistan). The study focuses on institutional constraints and sociocultural factors that hinder the professional development of women researchers. It examines the phenomenon of the “double burden” and explores cross-country comparative differences. The article also discusses the dynamics of reforms implemented within the framework of international conventions (CEDAW) and national strategies. The research draws on data from the World Bank, UNICEF, DataReportal, official national statistical sources, as well as comparative findings from diverse scholarly literature.

Keywords Socialization, gender equality, family stability, Central Asia, Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, gender policy, economic opportunities, social development, educational environment, innovation.

Introduction

Central Asia, encompassing Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan, is a region where cultural continuity and rapid modernization intersect. Historically, the area has been characterized by a stable patriarchal

Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaopenaccess.com/index.php/6>

framework in which women's traditional roles were primarily oriented toward family, community, and domestic responsibilities. Nevertheless, globalization, technological advancement, and political reforms have begun to reshape these roles, challenging established norms and opening space for new approaches.

In traditional Central Asian civilizations, women held significant responsibilities as custodians of cultural heritage, educators within the family, and active participants in agriculture and local economies. However, these responsibilities were often circumscribed by patriarchal ideologies that limited women's autonomy in broader social and political contexts. The modernization policies of the Soviet era introduced gender equality programs that expanded women's access to education and increased their participation in the labor force. While these transformations marked substantial progress, they also generated tensions between modernization initiatives and deeply rooted traditions. This principle is equally relevant for adults. Breaking away from stereotypes formed over many years and abandoning traditional views is therefore a complex process. In Central Asia, women are expected not only to become successful scholars but also to embody the roles of the "ideal bride," "exemplary mother," and "homemaker." In this context, women are compelled to divide their time and intellectual resources between two unequal spheres:

- **Academic burden:** writing articles, conducting laboratory research, attending conferences, and engaging in teaching activities.
- **Domestic burden:** household responsibilities, child-rearing, and kinship obligations (hospitality, ceremonies).

In Western countries, women often have the opportunity to make a conscious choice between career and family. In contrast, in Central Asia, family and domestic obligations are perceived as mandatory. Even when a woman chooses science, society continues to demand that she fulfill the duties of the "ideal bride." As a result, women pursuing academic careers frequently face informal

Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/6>

accusations of being “not a good woman or mother,” or struggle with an internalized sense of guilt.

Prolonged guilt can intensify depression, anxiety, and low self-esteem. When women experience guilt, they may withdraw from social interactions, thereby weakening their support networks. Guilt also increases stress, which in turn elevates the risk of cardiovascular diseases.

Scientific activity requires continuity. Writing articles, conducting laboratory work, or participating in international grants demands full dedication to the field. In Central Asia, numerous cultural ceremonies (weddings, funerals, hospitality gatherings) characteristic of the regional mentality consume one of the researcher’s most valuable resources—time. For a female scholar, spending the entire day in the laboratory and then returning home to several hours of demanding household chores significantly reduces her intellectual productivity. Invisible resistance from male-dominated environments toward women’s advancement into higher positions and scientific careers, combined with the primary responsibility for child-rearing, places women under constant pressure. Today, women facing such pressures in Central Asia are often compelled to choose one of three paths:

1. **Academic withdrawal:** Women may suspend their scientific careers or reduce them to “mere employment” in order to preserve family stability and avoid conflict (e.g., not defending their dissertation, limiting themselves to teaching).
2. **Maximalist struggle:** Women strive to excel simultaneously in both spheres, which often leads to psychological burnout and health problems.
3. **Delayed science:** Many women return to academic work only after raising their children, typically at the age of 40–45. This delay results in lost opportunities for participation in international scientific competition.

In recent years, the rapid pace of globalization has also left its mark on this region. Over the past decade, the share of women across various sectors has increased significantly, including in scientific research. For instance, in Uzbekistan, the

Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/6>

number of female specialists engaged in research activities reached 13,336 in 2023¹, accounting for 40%; in Kazakhstan², 12,893 in 2026, or 56%; in Kyrgyzstan³, 684 in 2024, or 52%; and in Tajikistan⁴, 1,178 in 2020, or 38%.

This article aims to provide a comprehensive analysis of the conflicting realities faced by women in contemporary Central Asia, highlighting the persistence of traditional roles alongside the emergence of modern identities. By examining historical legacies, current challenges, and potential transformations, the study seeks to illuminate the socialization of female researchers in the region. Using the cases of Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, and Turkmenistan, the research undertakes a comparative analysis of gender issues in scientific activity and the relationship between women's socialization and their research careers.

The primary focus of the study is on the proportion of women in scientific research across the region and the impact of research activity on their social lives. Statistical data were drawn from reliable sources such as the World Bank, the United Nations, DataReportal, UNESCO, and official national reports. These sources provided a solid empirical foundation for the analysis. Methodologically, the study employs comparative analysis and literature review, supplemented by comparative-statistical methods to identify similarities and differences across countries. In particular, international gender indices and indicators related to women's research activity were utilized to assess the state of gender equality.

To promote gender equality and enhance women's participation across all sectors, Central Asian countries have adopted legal and regulatory frameworks. For example, Uzbekistan's 2019 Law "On guarantees of equal rights and opportunities for women and men"⁵ seeks to strengthen women's social and

¹ <https://Gender.stat.uz>

² <https://Gender.stat.kz>

³ <https://Stat.kg>

⁴ <https://Stat.tj>

⁵ <https://lex.uz/docs/4481157>

Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/6>

economic rights. Kazakhstan's "Gender equality strategy"⁶ outlines measures to ensure equal rights and opportunities for women in political, economic, and social spheres. Kyrgyzstan's Law "On state guarantees of equal rights and opportunities for men and women"⁷ serves as another example. Furthermore, Central Asian states are developing effective strategic directions within the framework of the United Nations' 2030 Agenda for Sustainable Development, with a particular emphasis on advancing gender equality⁸.

Scientific research activity is not only a process of knowledge production but also a complex pathway of social and professional formation for the researcher. From a gender perspective, this process presents particular challenges for women, who must not only assimilate universal scientific norms but also negotiate gender stereotypes, social expectations, and historically male-dominated academic environments. The study of this process has become one of the priority themes in contemporary scholarship.

Modern research has examined the relationship between scientific activity and gender across different countries and regions. Numerous scholars have investigated women in research, gender disparities, and the implications for socio-economic stability. For example, Almira Tabaeva and Naureen Durrani analyzed the experiences of doctoral mothers in Kazakhstan and Uzbekistan, focusing on the socio-economic difficulties they encounter, the struggle against historical and regional stereotypes, challenges of time management, and sources of support, as well as the impact of these factors on their research careers⁹. Similarly, Parvina Yakubova, Christopher M. Whitsel, Aliya Kuzhabekova, and Zumrad Kataeva studied the influence of marriage and pre-marital processes on

⁶ <https://www.ndi.org/sites/default/files/Kazakhstan-Gender-Strategy-2006-2016.pdf?utm>

⁷ About the state guarantees of the equal rights and equal opportunities for men and women Accepted by Jogorku Kenesh of the Kyrgyz Republic on June 5, 2008

⁸ "Barqaror taraqqiyot-2030" dasturi va uning yangi maqsadlari, barqaror rivojlanish omillar Shamsidinova Gulchexra Do'stmurodovna

⁹ Exploring the Experiences of Doctoral Student Mothers: A Comparative Study of Kazakhstan and Uzbekistan Almira Tabaeva and Naureen Durrani

Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/6>

girls' education in Tajikistan. Their findings highlight how entrenched "social" norms—such as living with the husband's parents after marriage, fulfilling traditional bridal duties, or the absence of family planning—often prevent girls from completing their education¹⁰. In another study, Sholpan Abdreyeva and colleagues conducted a comparative analysis of trends in gender research in Central Asian countries using the Scopus database¹¹. Aida Yerimpasheva, in her research, examined how gender stereotypes and economic disparities contribute to gender inequality in developing economies. Her study focused on gender imbalances in Central Asia and Central Europe, both regions with long socialist histories. From a theoretical standpoint, the problem was explored through sociological, economic, and educational literature on gender and the formation of gender stereotypes, drawing on databases such as Web of Science and Scopus, as well as academic networking platforms like Mendeley and ResearchGate. Secondary quantitative data were comparatively analyzed, particularly using statistics from Central Asian countries (Kazakhstan and Kyrgyzstan)¹². Issues of doctoral student socialization have been studied by Susan K. Gardner and Pilar Mendoza. They critically examine existing models and perspectives on doctoral socialization and propose a new model that integrates concepts of personality development, adult learning, and epistemological growth¹³. John C. Weidman and Elizabeth L. Stein, in turn, explored doctoral students' socialization into the academic norms of research and scholarship. They emphasize the

¹⁰ The Impact of Marriage and Marriage Expectations on Girls' Education in Tajikistan 103 Parvina Yakubova, Christopher M. Whitsel, Aliya Kuzhabekova, and Zumrad Kataeva

¹¹ Trends in the Study of Gender Issues in Central Asian Countries: A Comparative Bibliometric Analysis Using the Scopus Database Sholpan Abdreyeva, Stalifa Bektursyn, Imanaly Akbar, Alexandr Artemyev, Bauyrzhan Pazykhayr and Inkar Kartanova

¹² Yerimpasheva A., Lipovka A., Zakirova A. Cross-Country Study of Central Asia and Central Europe: Gender Equality Issues. *Eurasian Journal of Economic and Business Studies*. 2023;67(1):125-138.

<https://doi.org/10.47703/ejeb.v1i67.210>

¹³ On Becoming a Scholar: Socialization and Development in Doctoral Education Susan K. Gardner va Pilar Mendoza <https://www.barnesandnoble.com/w/on-becoming-a-scholar-susan-k-gardner/1116794972?ean=9781579225445>



Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/6>

importance of social collaboration between students and faculty, as well as collegial cooperation among professors, in creating a supportive environment for doctoral education¹⁴. Aleksandr Olegovich Karpov investigated the issues of socialization and research-oriented behavioral patterns. According to Karpov, a new type of socialization is emerging in modern society—research-oriented socialization—which requires individuals to engage with the world as a dynamic source of innovation. This process is realized through cognitive roles and a culture of working with knowledge. In his study, Karpov argues that traditional values instilled by family and school (such as living well and being happy) often conflict with the values of research-oriented behavior (such as the pursuit of truth and devotion to knowledge)¹⁵.

As women actively participate in scientific research, they undergo processes of defining their place in society, shaping their professional identity, and assimilating social roles within pedagogical environments. Women's entry into scientific activity is closely linked to their stages of socialization. Socialization theories—particularly Berger and Luckmann's constructivist approach—explain that individuals internalize “reality,” i.e., social roles, in two stages: primary and secondary socialization. Before entering scientific activity, women acquire social roles during the primary stage of socialization through values shaped in the family, school, and community. This process determines their subsequent opportunities for engaging in scientific careers. Socialization is the process by which individuals adapt to society, internalizing its norms, values, culture, and social roles. Primary socialization begins at birth, when children acquire fundamental values, language, and gender roles within the family. Ann Oakley (2005), in her research, demonstrated differences in the upbringing of boys and girls, emphasizing that gender stereotypes are formed from early childhood. For

¹⁴ Socialization of Doctoral Students to Academic Norms John C. Weidman and Elizabeth L. Stein
<https://link.springer.com/article/10.1023/A:1026123508335>

¹⁵ Социализация и исследовательское поведение научного типа Александр Олегович Карпов
<https://cyberleninka.ru/article/n/sotsializatsiya-i-issledovatelskoe-povedenie-nauchnogo-tipa>

Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



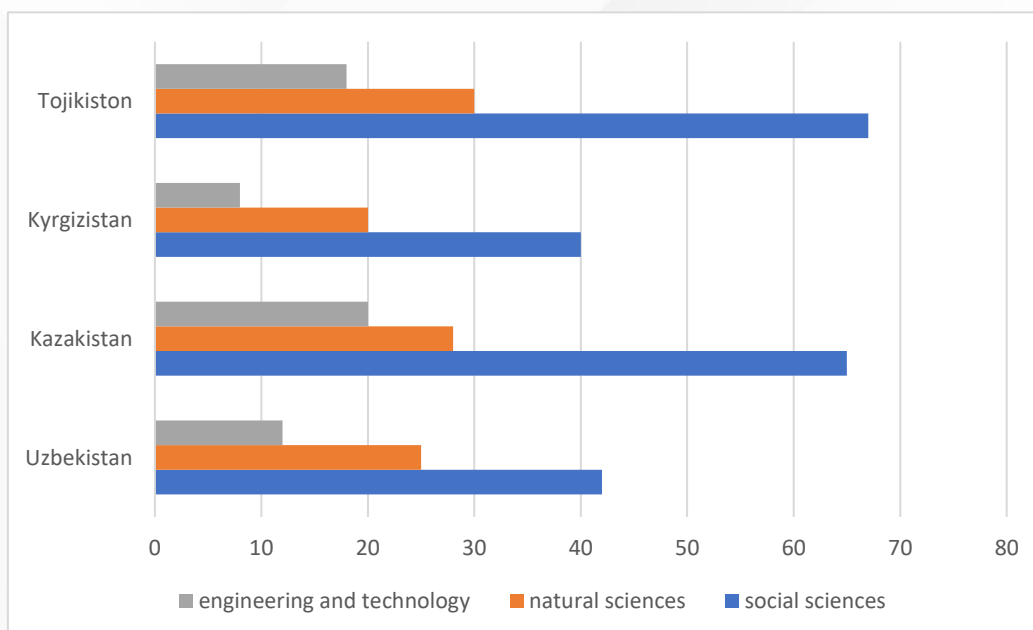
This article/work is licensed under CC by 4.0 Attribution

<https://eureka.com/index.php/6>

example, girls are often socialized into values of domestic work, caregiving, and obedience, while boys are encouraged toward initiative, leadership, and independence. This differentiation later influences women to gravitate toward “soft” fields of study, while men dominate in “hard” sciences.

Adding to this perspective, Nancy Chodorow (1999) argued from a psychoanalytic standpoint that gender identity is shaped through childhood socialization. Girls, being closer to their mothers, internalize values of care and emotionality, whereas boys, identifying more with their fathers, assimilate initiative and independence.

During primary socialization, girls adopt roles as daughters, women, future spouses, and mothers. This process also manifests in academic trajectories: women are more active in fields such as pedagogy, linguistics, and the arts, while men tend to dominate in physics, engineering, and mathematics. This disparity is also reflected in statistical data (see Diagram 1).¹⁶



¹⁶ Diagram developed by the author

Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaopenaccess.com/index.php/6>

In Berger and Luckmann's theory, secondary socialization is interpreted as the process through which individuals acquire new roles in society and rediscover themselves within institutional environments. When women enter scientific activity, they assimilate not only the role of researcher but also those of teacher, leader, collaborator, and innovator. This process contributes to the shaping of their professional identity. Within higher education institutions and research centers, women assume multiple social roles simultaneously. For instance, a female researcher may act as a scientific supervisor, project coordinator, mentor for students, and participant in international collaborations, thereby rendering her professional identity multifaceted.

Numerous factors influence women's participation in scientific activity. Gender stereotypes, social expectations, and systemic challenges within education are among the constraints that limit women's involvement in research. Judith Butler's (1990)¹⁷ gender theory provides a useful lens for analyzing gender inequality in scientific activity. Butler emphasizes that gender is socially constructed, which may hinder women's ability to establish their place within academic environments.

According to Emile Durkheim's concept of socialization (1895)¹⁸, the stability of society depends on individuals' internalization of shared values, norms, and rules. Albert Bandura's Social Learning Theory (1977)¹⁹ is also significant for understanding the socialization of female researchers. Bandura argues that individuals learn through observation. In academic contexts, this means that young female researchers acquire academic behavior, modes of scientific communication, and status-related interactions by observing experienced scholars, particularly female supervisors.

¹⁷ Gender trouble. Feminism and the supervision of identity Judith Butler 1990

¹⁸ Durkheim's Conception of Society as a Subject and Social Fact as a Thing Abdülkerim Sönmez

¹⁹ Social learning theory Albert bandura 1977 https://marcr.net/for-career-professionals-and-learners/career_theories_a_to_z/social-learning-theory/

Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/6>

The academic environment itself is characterized by a normative system that includes objectivity, critical thinking, intellectual ethics, reliance on empirical evidence, academic freedom, and commitment to knowledge. By internalizing these norms, female researchers integrate into the scientific community.

However, norms that appear gender-neutral often subtly privilege qualities traditionally associated with masculinity, such as assertiveness, competitiveness, and emotional detachment. For example, in scientific debates, strong and passionate argumentation may be perceived as a sign of a “male researcher,” whereas the same behavior by a female researcher may be judged as “aggressiveness.” This dynamic forces women to undergo additional stages of adaptation and often results in the “prove-it-twice” syndrome, whereby female researchers must demonstrate their competence more rigorously than their male colleagues.

According to George Herbert Mead’s theory of symbolic interactionism (1930), socialization is the process of self and other recognition through symbols, signs, and meaningful interactions. In academic contexts, professional identity is shaped through scientific discussions, conferences, seminars, and collaborative projects. For women, this process is more complex, as societal perceptions and gender stereotypes influence their self-confidence and scientific identification.

Historically, science has been a male-dominated domain, producing structural inequalities. Female researchers therefore socialize not only through knowledge production but also by navigating and resisting these structural barriers. This struggle often shapes their pedagogical and research styles, leading them to adopt more collaborative, inclusive, and community-oriented approaches.

All Central Asian countries have ratified the United Nations Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW). Nevertheless, indirect discrimination persists in practice. One missing element in the region is a “woman-to-woman mentorship” system, which could help reduce the sense of guilt that suppresses women’s scientific ambitions. Experienced

Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/6>

female scholars who balance motherhood and academic careers could guide younger women, preventing psychological burnout.

To ensure that women in Central Asia are not forced into a binary choice of “family or science,” states must not only reform legislation but also adapt social infrastructure (such as childcare facilities, children’s rooms in research centers, and flexible schedules) to meet the needs of female researchers. In conclusion, the socialization of women researchers in Central Asia cannot be resolved solely through legal measures. It is a complex process involving state reforms, transformations in family relations, and women’s own self-realization. Whether through Kazakhstan’s technocratic approach or Uzbekistan’s social support measures, the ultimate goal should be to provide women with the possibility of choosing “family and science,” rather than “family or science.”

If women—who constitute half of the region’s intellectual potential—are able to fully realize themselves scientifically, this will represent the greatest investment in the overall development of Central Asia.

References

1. Republic of Uzbekistan. Digital Uzbekistan – 2030 Strategy. Presidential Decree No. PQ–6079. Available at: <https://lex.uz/docs/-5030957>
2. Republic of Uzbekistan. Law on Guarantees of Equal Rights and Opportunities for Women and Men. Law No. O‘RQ–561. Available at: <https://lex.uz/docs/4481157>
3. Republic of Kazakhstan. Strategy for Gender Equality in the Republic of Kazakhstan for 2006–2016. Available at: <https://www.ndi.org/sites/default/files/Kazakhstan-Gender-Strategy-2006-2016.pdf>
4. Kyrgyz Republic. Law on State Guarantees of Equal Rights and Equal Opportunities for Men and Women. Adopted by Jogorku Kenesh, June 5, 2008.

Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/6>

5. Shamsidinova, G. D. Sustainable Development–2030 Program and Its New Goals.
6. Tabaeva, A., & Durrani, N. Exploring the Experiences of Doctoral Student Mothers: A Comparative Study of Kazakhstan and Uzbekistan.
7. Yakubova, P., Whitsel, C. M., Kuzhabekova, A., & Kataeva, Z. The Impact of Marriage and Marriage Expectations on Girls' Education in Tajikistan.
8. Abdreyeva, S., Bektursyn, S., Akbar, I., Artemyev, A., Pazylkhaiyr, B., & Kartanova, I. Trends in the Study of Gender Issues in Central Asian Countries: A Comparative Bibliometric Analysis Using the Scopus Database.
9. Yerimpasheva, A., Lipovka, A., & Zakirova, A. Cross-Country Study of Central Asia and Central Europe: Gender Equality Issues. *Eurasian Journal of Economic and Business Studies*, 2023, 67(1), 125–138. <https://doi.org/10.47703/ejeb.v1i67.210>
10. Gardner, S. K., & Mendoza, P. *On Becoming a Scholar: Socialization and Development in Doctoral Education*. Sterling, VA: Stylus Publishing, 2010.
11. Weidman, J. C., & Stein, E. L. Socialization of Doctoral Students to Academic Norms. *Research in Higher Education*, 2003. <https://link.springer.com/article/10.1023/A:1026123508335>
12. Karpov, A. O. Socialization and Research-Oriented Behavior. CyberLeninka. Available at: <https://cyberleninka.ru/article/n/sotsializatsiya-i-issledovatel'skoe-povedenie-nauchnogo-tipa>
13. Butler, J. *Gender Trouble: Feminism and the Subversion of Identity*. New York: Routledge, 1990.
14. Sönmez, A. Durkheim's Conception of Society as a Subject and Social Fact as a Thing.
15. Bandura, A. *Social Learning Theory*. Englewood Cliffs, NJ: Prentice Hall, 1977. Available at: https://marcr.net/for-career-professionals-and-learners/career_theories_a_to_z/social-learning-theory/
16. Gender Statistics of Uzbekistan. Available at: <https://gender.stat.uz>



Eureka Journal of Business, Economics & Innovation Studies (EJBEIS)

ISSN 2760-4950 (Online) Volume 2, Issue 4, April 2026



This article/work is licensed under CC by 4.0 Attribution

<https://eurekaoa.com/index.php/6>

17. Gender Statistics of Kazakhstan. Available at: <https://gender.stat.kz>
18. National Statistics Committee of Kyrgyzstan. Available at: <https://stat.kg>
19. Agency on Statistics of Tajikistan. Available at: <https://stat.tj>