

## EXPLORING THE ROLE OF EDUCATION AS A KEY CATALYST FOR ENHANCING GENDER EQUALITY: A MULTIDIMENSIONAL ANALYSIS OF SOCIAL, ECONOMIC, AND INSTITUTIONAL IMPACTS

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### ABSTRACT

This study explores the role of education in ensuring gender equality through a multidimensional approach. Mixed-methods research was conducted from 2020 to 2024 at five major state universities in Uzbekistan (Karakalpakstan, Namangan, Samarkand, Gulistan, and Termez) with the participation of 7,823 respondents. Surveys, focus group discussions, and expert interviews were conducted to analyze Uzbekistan's indicators based on the UNDP's Gender Inequality Index, Gender Development Index, and Gender Social Norms Index.

Findings reveal that the main barriers to higher education for girls include financial difficulties (33.6%), family circumstances (25%), and long distances to educational institutions (19.1%). In distance learning, poor internet quality and speed (78.6%) and a lack of technical resources (38.4%) remain key challenges. The results indicate that achieving gender equality in education requires a holistic approach addressing interconnected factors. These include improving educational infrastructure, enhancing financial support mechanisms, eliminating stereotypes, reshaping parental and societal attitudes toward education, refining curricula, and expanding opportunities for women in technical fields.

**Keywords:** gender equality, higher education, education quality, gender indices, Gender Inequality Index, Gender Development Index, Gender Social Norms Index, women's education, educational infrastructure, institutional mechanisms.

### 1. INTRODUCTION

Gender equality remains a significant barrier to achieving inclusive and sustainable development. Education is recognized worldwide as a powerful tool to address gender inequalities, support individuals, and transform societies. However, despite notable achievements, many countries face difficulties in effectively utilizing education as the main driver of gender equality. The lack of equal access to quality education, deeply rooted social norms, and systemic barriers continue to consistently limit the potential for significant educational changes.

According to the United Nations (UN), "Women are less likely than men to receive research grants, and while they represent 33.3% of all researchers, only 12% of members of national academies of sciences are women." In cutting-edge fields such as artificial intelligence, only one in five specialists (22%) are women. Human development is associated with expanding and enhancing opportunities, and the main goal of the 2030 Sustainable Development Goals is to "ensure a prosperous life for all." From this perspective, the expansion of opportunities for women and the resolution of gender equality issues are of critical importance.

Education, the formation of skills and knowledge, is one of the basic human rights, and its role in addressing social problems and improving people's lives is unique. Education is crucial for human development and plays an essential role in expanding the opportunities for women. On a global scale, the share and quality of women's participation in primary and secondary education have

been steadily improving, showing positive results. However, not all girls have equal access to education. Among those deprived of educational opportunities, girls outnumber boys. Poor family conditions (girls from low-income families) often result in passive participation in various educational levels due to social factors. Moreover, the COVID-19 pandemic seriously affected girls' educational opportunities. Therefore, identifying the indicators, challenges, and opportunities related to women's education in different countries will help to pinpoint existing problems and provide effective solutions.

In many cases, gender inequalities are reinforced by the interplay of social, economic, and institutional factors. These factors influence not only access to education but also its outcomes, including economic participation and the strengthening of social empowerment. Although studies have been conducted on various aspects of education and gender issues, there is still a gap in understanding the multidimensional impact of education on gender equality, especially its broader cultural and institutional consequences.

The content of education is an integral part of gender-related social norms, which often begin from early childhood and continue in schools, religious gatherings, public spaces, and other communities that either reinforce or challenge these norms. Barriers such as poverty, cultural norms, and gender discrimination need to be addressed to ensure that girls can access and complete secondary education. The role of education in achieving gender equality is multifaceted, directly influencing social, economic, and institutional aspects. Through education, women and girls could fully express their potential, actively participate in decision-making processes, and take a rightful place in social life. This, in turn, positively affects economic development, social stability, and innovative progress.

This study focuses on a deep examination of the role of education in ensuring gender equality, with the objective of identifying gender disparities in the education system, analyzing the causes of these disparities, and developing strategies for their elimination. The research will examine the factors that affect gender equality at various levels of education, including social-cultural values, economic opportunities, and institutional mechanisms in a comprehensive manner. The study aims to explore the role of education as a key catalyst in promoting gender equality. It will analyze the interplay between education, social, economic, and institutional elements in shaping gender dynamics within society. This research seeks to deepen understanding of how education, through a multidimensional approach, can strategically contribute to reducing persistent inequalities.

## 2. Literature review

To understand gender equality in education, Ramya Subrahmanian refers to Wilson's conceptual model, which consists of three interconnected dimensions: the right to education, rights within education, and rights through education. The first dimension focuses on guaranteeing equal access to education and participation for all genders. The second dimension highlights the need to create a gender-sensitive and equitable educational environment and processes, including curricula, pedagogical approaches, infrastructure, and teacher-student interactions. The third dimension emphasizes the importance of ensuring that the outcomes of education contribute to gender equality beyond the education system itself.

Subrahmanian convincingly argues that to assess progress toward achieving genuine gender equality in education, both quantitative and qualitative indicators must be carefully integrated. While gender parity indicators in education, such as enrollment and completion rates, are necessary, they cannot fully reflect the complexity of the issue. Additionally, the gender dynamics in schools, the gender sensitivity of teaching and learning processes, and the transformational impact of education in changing gender norms and enhancing women's participation in economic and political spheres are also crucial for a qualitative evaluation of progress.

Chisamya Grace and other scholars, in their study of gender differences and the relationship between real gender equality in education in Bangladesh and Malawi, emphasize that achieving gender parity in school enrollment does not necessarily lead to broader gender equality in both countries. Despite nearly equal enrollment rates for boys and girls in schools, empirical evidence shows that discrimination against girls persists, particularly in terms of teachers' attitudes, investment in family education, and protection from violence. The authors argue that, to achieve true gender equality, it is essential to focus not only on enrollment statistics but also on addressing deeply rooted systemic inequalities within educational institutions and the broader society.

D. Evans, M. Akmal, and P. Jakiella, drawing on data from 126 countries between 1960 and 2010, highlight that many countries are still far from achieving gender equality in education. Their study identifies five key conclusions. First, women worldwide now have a higher level of education compared to 50 years ago. Second, in most countries, women's education levels are still lower than those of men. Third, in countries with low education levels for both genders in 1960, gender gaps initially widened as boys were more likely to attend school, but later, as more girls entered education, these gaps started to close. As a result, gender differences first worsened and then improved. Fourth, in countries where men have higher educational attainment, gender gaps tend to be less persistent over time. Countries with significant gender disparities in educational achievements typically have lower levels of male education, and they also tend to perform poorly in other development indicators such as life expectancy and GDP per capita. Fifth, in some regions of the world, the youngest generation of women now has higher education levels than men.

While gender gaps in education have decreased in many countries, empirical evidence does not confirm that the reduction of gender disparities in education consistently leads to a narrowing of gender differences in the labor market.

S. Aikman, A. Halai, and J. Rubagiza identify four key approaches in the literature for conceptualizing education quality based on gender equality:

1. **Human Capital Theory:** This approach views education as an investment in human capital, focusing on improving the individual's skills and productivity.
2. **Human Rights and Power Theory:** It sees gender equality to challenge and change unjust structures, emphasizing human rights and empowerment.
3. **Postcolonial Critical Approach:** This approach acknowledges and celebrates differences, focusing on the ways in which gender intersects with colonial histories and social inequalities.
4. **Development Perspective:** This perspective frames empowerment as a social movement that intersects gender and other forms of inequality to create broader societal change.

Utilizing these theoretical frameworks, the authors analyzed the EdQual research program on educational quality. They emphasized that, in addition to equitable distribution of educational resources, improving the quality of education in classrooms requires critically addressing gender biases embedded in the educational experiences of both girls and boys.

H. Du, Y. Xiao, and L. Zhao explored how education influences individuals' perspectives on gender roles. Their research examined the temporary and regional effects of the 1986 Compulsory Education Law in China. The law aimed to reduce regional disparities in compulsory education, and the analysis of data from China's general social survey showed that the additional education resulting from this reform contributed to the development of gender-equitable views on gender roles. The liberalizing effect of education was primarily observed among women and urban populations. However, the impact of education on behaviors related to gender equality was notably weaker compared to its effect on gender role perspectives.

R. Rosa and S. Clavero argue that universities have the potential to promote gender equality, diversity, and inclusion. However, they continue to face significant challenges, such as gender inequality, pay gaps, and academic segregation across different fields of study.

M. Marcos, M. Toledo, and C. Escobar conducted a comprehensive quantitative analysis based on data from the *THE Impact Rankings* to examine the implementation of social inclusion in leading universities. The researchers developed an innovative methodological approach that integrates dynamic biplot analysis with stability indicators. This approach assesses the universities' performance in relation to three key Sustainable Development Goals (SDGs): quality education, gender equality, and reducing social inequalities. The analytical framework allowed for both cross-sectional and longitudinal assessments of institutional activities.

The findings revealed a significant gap between sustainability rankings and actual social inclusion. Out of the top 100 universities in sustainability, only 56 provided detailed information on SDG indicators related to inclusion, and fewer than half had active social inclusion policies. Positive achievements in gender equality were observed, with 38% of institutions improving their gender-related indicators. However, significant challenges remained in the areas of quality education and reducing social inequalities, with only 14% of the top 100 universities achieving results in these areas.

P. Tokal, G. Sart, M. Danilina, and M. Taamnah emphasized that gender equality is a crucial component for a healthy society and sustainable development in all its aspects. Thus, initiatives aimed at reducing gender disparities in economic, social, and political sectors are essential for advancing societal economic and social development. The scholars examined the impact of educational attainment and economic freedom on gender disparities in developing markets from 2000 to 2020 using causality and cointegration analyses. The causality test results showed a bidirectional relationship between educational attainment, economic freedom, and gender disparities. Cointegration analysis indicated that in the long term, educational attainment and economic freedom negatively impact gender inequalities; however, in most developing economies, educational attainment exerts a stronger influence on gender inequalities than economic freedom.

L. Kolovich, V. Malta, M. Neviak, and D. Robinson argue that extensive literature links gender equality with improved macroeconomic outcomes. Understanding how gender equality impacts the economy requires a deep examination of the primary constraints within the economic system. The scholars studied the effects of gender equality in education on the development of human capital, which, in turn, leads to improved macroeconomic outcomes, using both theoretical and empirical evidence. They also analyzed the impact of inequalities in the labor market, particularly focusing on the role of the informal sector. The research considers policy options aimed at addressing various gender disparities and proposes theoretical approaches and practical measures for solving these issues.

E. Kane emphasizes that education has a significant positive impact on recognizing gender inequalities, but it may not sufficiently address group-based solutions. This could potentially perpetuate existing inequalities in society, rather than eliminating them. N. Akmatalieva suggests that education is crucial for achieving gender equality, improving conditions for girls facing traditional pressures, and fostering equal opportunities for all genders. A. Godara believes that promoting gender equality in education is not only beneficial for individuals but also improves the overall quality of education and helps create inclusive and equitable societies.

Y. Vu emphasizes that challenges related to ensuring quality education hinder the achievement of gender equality. Implementing targeted educational policies for women's education and increasing funding may help improve this situation. Aman Sahu highlights that technical education significantly contributes to gender equality, as it enhances women's knowledge, skills, and self-confidence, which in turn fosters socio-economic changes in society. J. Novak believes that while gender disparities in education are narrowing, deep-rooted stereotypes, bias, and systemic discrimination still perpetuate existing gender inequality. Rodrigo Rosa and Sara Clavero point out that universities have the potential to promote gender equality, diversity, and inclusion;

however, they still face challenges such as gender imbalances, wage disparities, and academic segregation.

Lewis Davis and Claudia Williamson's findings suggest that individualism promotes gender equality. Values of autonomy and self-definition do not only apply to gender identities but also acknowledge women's goals and decisions. However, collectivism may prioritize social obligations over personal goals, leading to greater acceptance of gender inequality. Analysis based on World Values Surveys shows a significant connection between individualism and views supporting gender equality. This connection spans labor markets, income, education, and political leadership. High levels of individualism are linked to higher female employment, educational attainment, and lower birth rates.

Donna Bobbitt-Zeher argues that education serves as a pathway to success for groups facing social challenges. Today, young women are achieving equal or even higher educational achievements than men in various indicators, yet questions remain about their income equality. Analysis of the National Educational Longitudinal Survey indicates that male college graduates in their mid-20s earn, on average, about \$7,000 more per year than women. The analysis shows that even when women and men have the same educational qualifications, standardized test scores, study fields, and attend similarly selected institutions, the income gap remains substantial — approximately \$4,400 per year. While women's educational achievements have played a crucial role in reducing historical gender income gaps, differences in study fields still place women at a disadvantage economically. Additionally, gender disparities in work-related factors play a more significant role in explaining current income inequality among young workers than educational disparities. This underscores the need for political measures to improve gender equality in the workplace beyond education.

### 3. METHODOLOGY

In this research, the authors studied the conditions and obstacles related to higher education for boys and girls in Uzbekistan during the period of 2020-2024 at five major state universities: the Republic of Karakalpakstan State University, Namangan State University, Samarkand State University, Gulistan State University, and Termez State University. A mixed-method research design was used for the study.

To ensure statistical representativeness, the proportional quota sampling method was applied. The total sample size was 7,823 respondents, with each participant representing 10% of the student body at each university. Participants were selected through random sampling from all courses and programs, ensuring proportional representation from different demographic layers. This approach minimized biases in selection and ensured sufficient representation of various student groups.

A comprehensive data collection strategy that combined both quantitative and qualitative approaches was employed. To delve deeper into personal stories and experiences, face-to-face interviews and online surveys were conducted. Additionally, two focus group discussions were organized at each university to facilitate group dynamics and the formation of collective opinions. Expert interviews were held with university administration and gender specialists to gain institutional perspectives and professional insights.

The collected data were thoroughly analyzed using both quantitative and qualitative analysis methods. Quantitative data from the online surveys were analyzed with statistical software, while qualitative data from the interviews and focus groups were subjected to thematic analysis. The integration of these analyses allowed for a comprehensive understanding of the research objectives.

Although the methodology was designed to be comprehensive and reliable, it is important to acknowledge potential limitations, such as the data collection period and geographic scope being limited to five universities. These limitations were considered during the analysis and

interpretation of the results. Additionally, the authors used the triangulation method to analyze the current situation in Uzbekistan in terms of international gender indices in education.

**4. RESULTS**

A total of 7,823 respondents participated in this study (see Table 1).

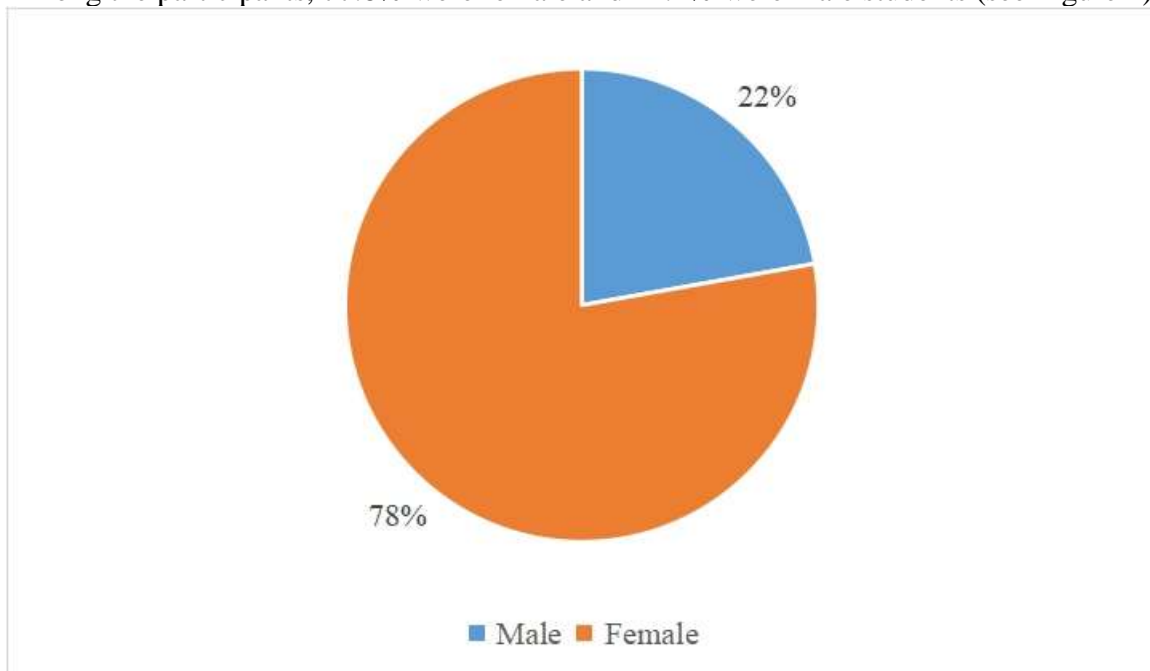
Table 1

**Distribution of Respondents by Region**

<b>№</b>	<b>Name of University</b>	<b>Number students</b>	<b>of Percent</b>
<b>1.</b>	Samarkand State University	1 465	18,7
<b>2.</b>	Gulistan State University	408	4,48
<b>3.</b>	Namangan State University	3 535	45,2
<b>4.</b>	Termez State University	593	8,32
<b>5.</b>	Karakalpakstan State University	1 825	23,3
<b>Total</b>		<b>7 826</b>	<b>100%</b>

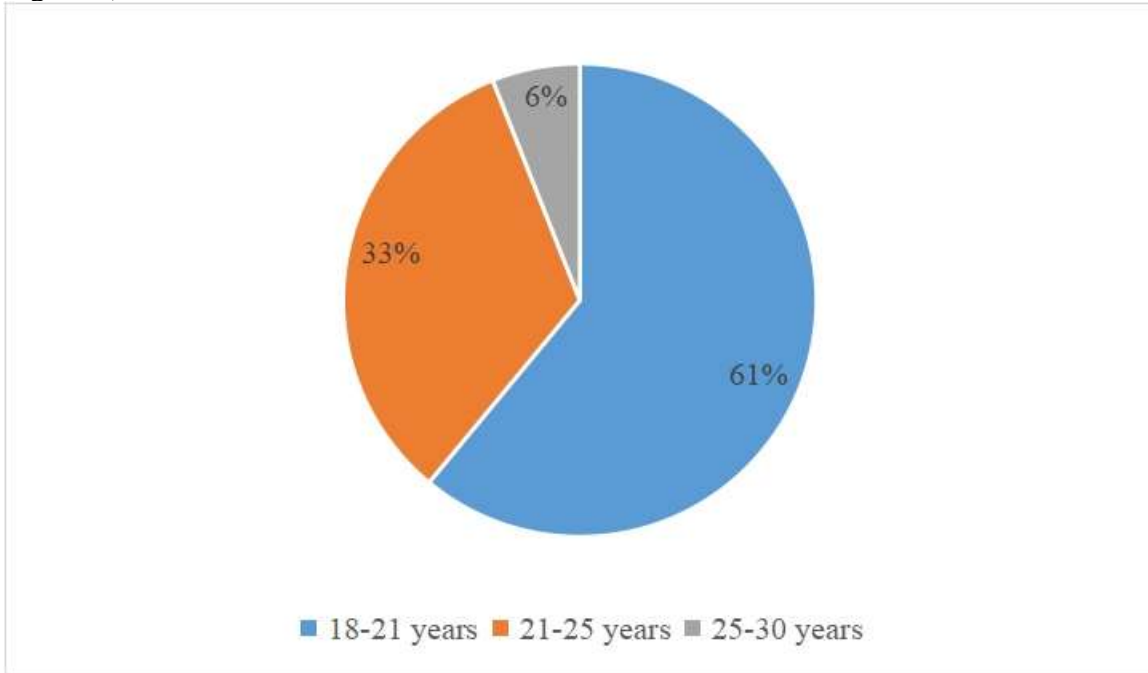
In the research, five major state universities of Uzbekistan participated, with a total of 7,826 respondents. This sample size provides reliable statistical results. Namangan State University had the highest number of respondents, with 3,535 students, or 45.2% of the total respondents. The second place went to Karakalpak State University, with 1,825 students, or 23.3%. Samarkand State University ranked third with 1,465 students, making up 18.7%. Termez State University had 593 students (8.32%), and Gulistan State University had 408 students (4.48%). Looking at the statistical indicators of the study, the average number of respondents per university was 1,565.2 students. The difference between the universities was 3,127 students (the highest difference being 3,535 and the lowest being 408), which is a significant gap.

Among the participants, 77.8% were female and 22.2% were male students (see Figure 1).



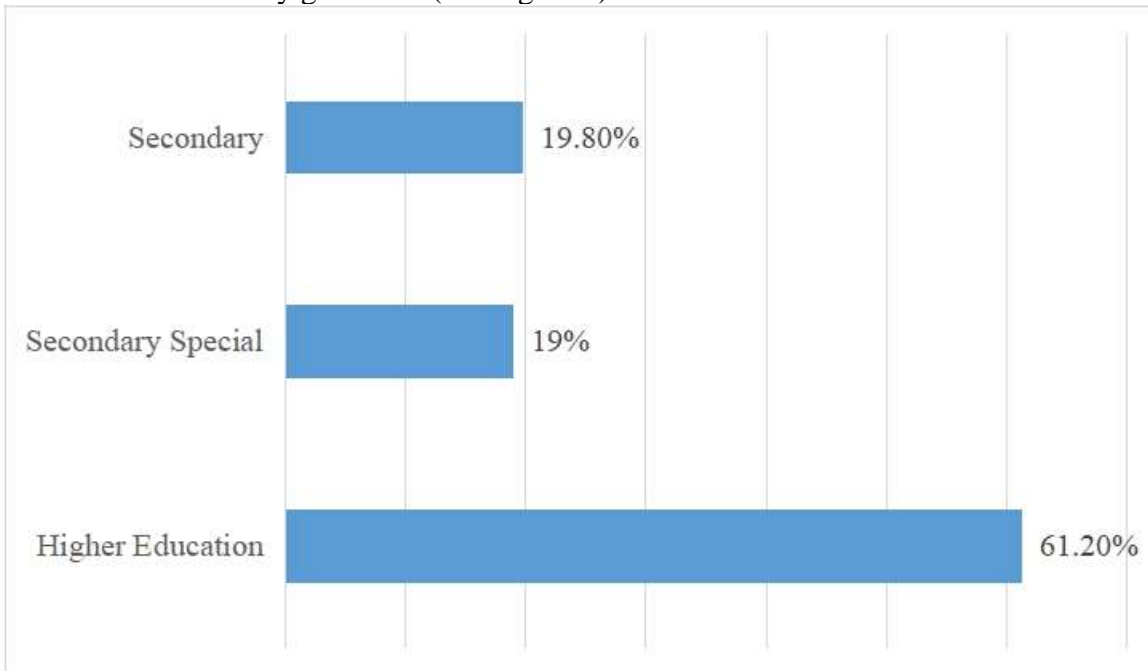
**Figure 1. Gender Distribution of Respondents**

The study involved 60.8% of students aged 18-21, 33% aged 21-25, and 6.2% aged 25-30 (see Figure 2).



**Figure 2. Age distribution of participants in the study.**

In the survey, 19% of participants had secondary education, 19.8% had vocational education, and 61.2% were university graduates (see Figure 3).

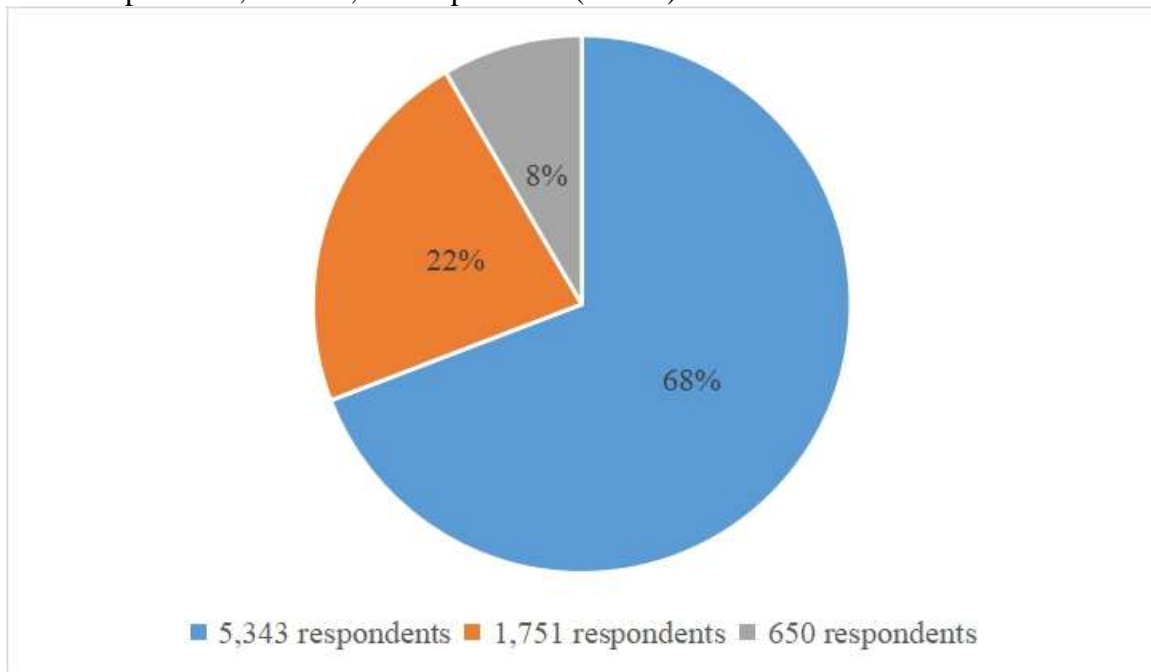


**Figure 3. Indicators by the level of education of the participants in the study.**

During the study, 6,428 participants (82.2%) reported that all the necessary conditions for the education of both male and female students were created in higher education institutions. Additionally, 9.1% of them indicated that the conditions were average, while 8.7% found it difficult to answer. The study revealed that systematic efforts were being carried out to address the issues faced by female students in higher education institutions. Specifically, 5,343 respondents

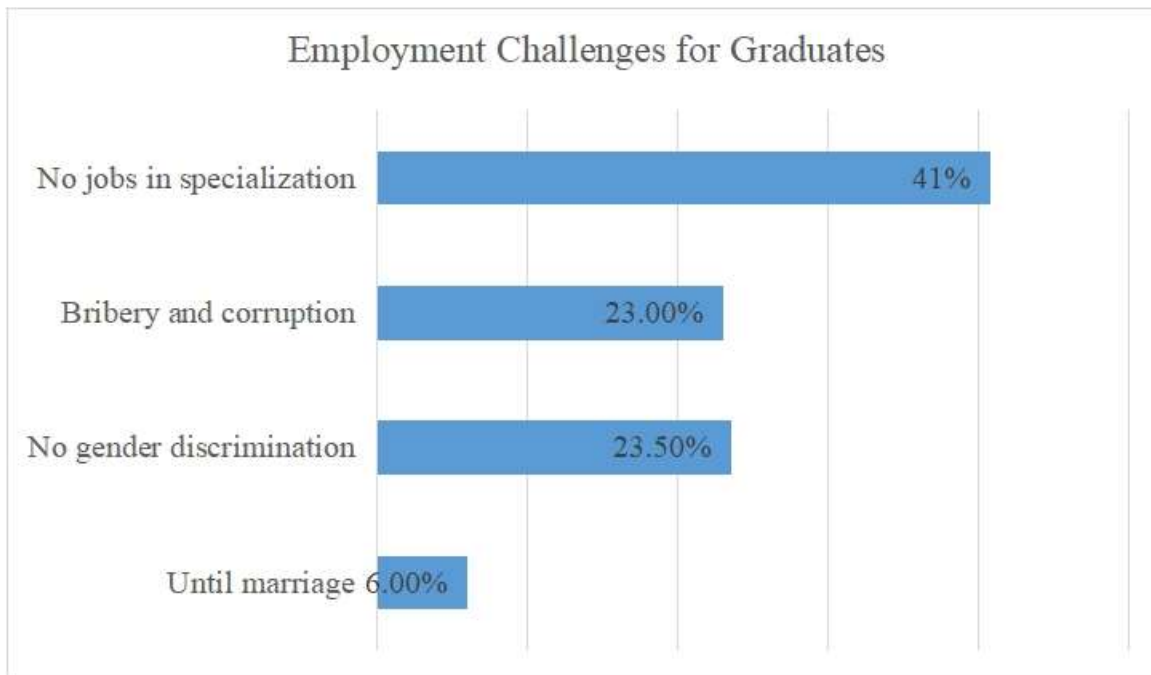
(68.3%) reported regular support, 1,751 respondents (22.4%) mentioned receiving support, and 650 respondents (8.3%) said they found it difficult to provide an answer (see Figure 4).

It was emphasized that effective work is being done to address the problems of female students at Namangan (2,334) and Karakalpak (1,390) State Universities. Furthermore, the majority of respondents indicated that a system for providing psychological and social support to women was established by the gender affairs departments at their educational institutions. According to the research results, systematic efforts to address the issues of female students have been put in place. Among the participants, 4,863 respondents (62.2%) reported that a gender affairs department was actively functioning and providing services. 1,566 respondents (20%) confirmed the presence of such a department, while 1,362 respondents (17.8%) found it difficult to answer.



**Figure 4. Efforts to Address Female Students' Issues in Educational Institutions.**

Although the majority of students expressed that a system has been established in educational institutions to address female students' issues, they acknowledged that the lack of dormitories for girls is a pressing issue today. Additionally, due to the high costs of higher education, there are views that, in many families, it is more necessary for male children to have a higher education than for female children. Specifically, 1,176 students from Namangan State University expressed their agreement with this view. Furthermore, 64.3% of participants in the study mentioned that women who have completed their studies today face issues such as the lack of job opportunities in their field of expertise, as well as challenges related to bribery and corruption in the job placement process. Moreover, 1,832 participants (23.4%) also pointed out the lack of gender differentiation between men and women in job placement (see Figure 5).



**Figure 5. Respondents' opinions on women's employment in their field of expertise.**

Due to traditional socio-cultural roles, gender inequality in higher education is observed in various fields of study: girls are concentrated in traditional "female" areas such as healthcare and pedagogy, while boys are focused on technical fields such as finance, transport, and communication. Construction and engineering are associated with employment in the higher-paying sectors of the economy. In this context, it should be noted that the view of pedagogy as a "female" field has led to a decrease in the number of male teachers in educational institutions. At Samarkand State University (402), Namangan State University (940), Termez State University (126), Karakalpak State University (419), and Gulistan State University (91), there is an opinion that there are educational directions or fields specific to women and men in higher education. Overall, 2,842 participants (36.3%) did not observe such views, 1,974 participants (25.2%) agreed that pedagogy or medicine are fields specifically for women, and 2,225 participants (28.4%) emphasized that dividing specialties by field is a violation of human rights.

When the concept of "Women's" and "Men's" fields arises in higher education, it is necessary to highlight the positive shifts in education in terms of gender equality today. When asked about the reasons for more boys than girls studying at higher education institutions, 3,108 youths (39.7%) emphasized that there are all opportunities for girls to receive higher education, 2,390 youths (30.5%) believed that girls consider marriage more important than higher education, and 733 youths (9.4%) expressed that there are insufficient conditions for women to pursue higher education (see Figure 6).

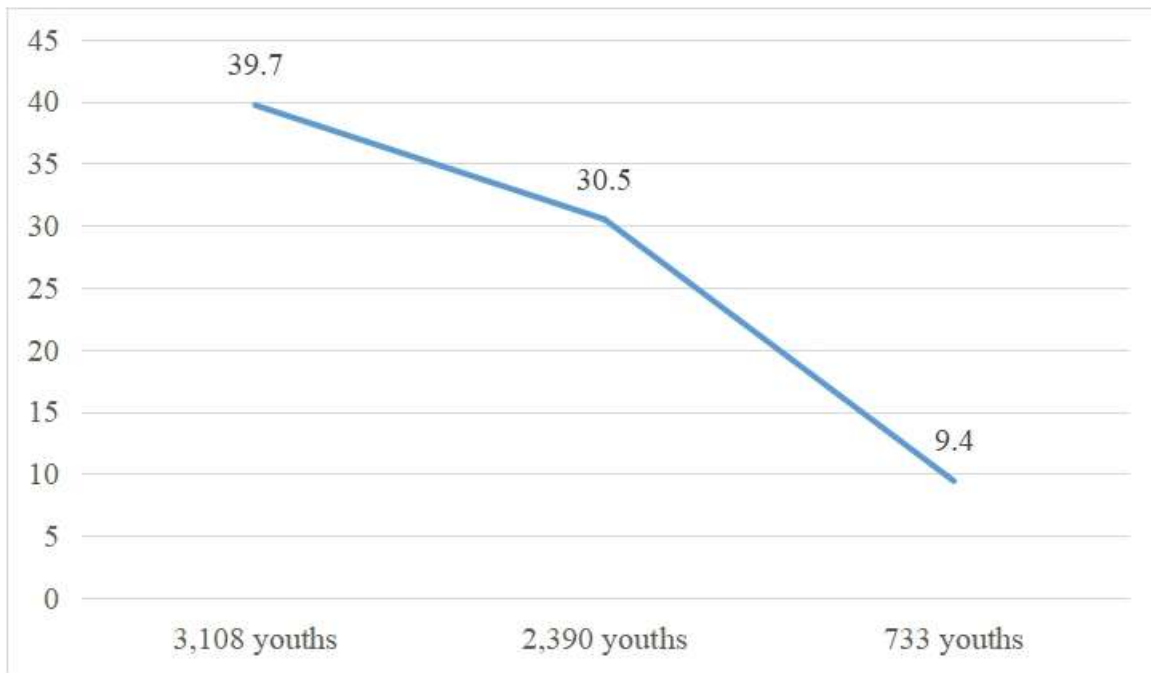
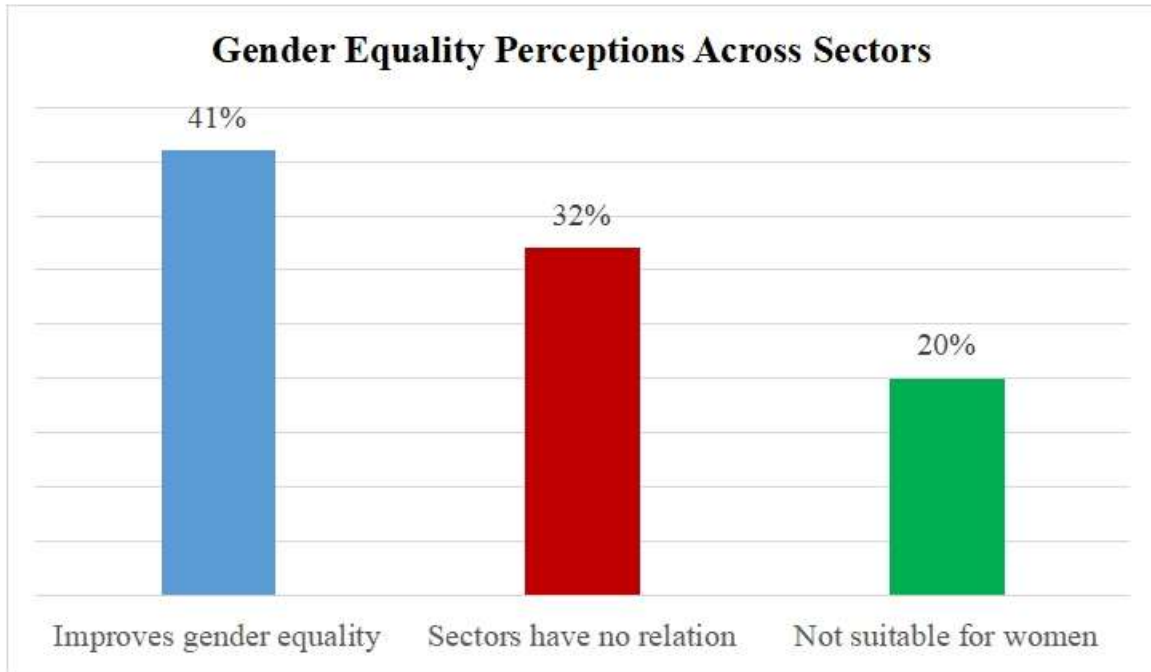


Figure 6. Opinions of youths on the importance of higher education. (%)

Survey participants' views on the increase in women's participation in the fields of transportation, communication, finance, and construction improving gender equality were expressed by 3,207 respondents (41%). Additionally, 2,529 respondents (32%) believed that these sectors have no connection to gender equality. However, despite the practical efforts being made to ensure gender equality in all sectors, including education, 780 young people held the view that these sectors are not suitable for women (see Figure 7).

The highest proportion of respondents (41%) believed that increasing women's participation in various sectors improves gender equality. This shows that a significant portion of the population recognizes the positive impact of women's active participation in different sectors on society. On the other hand, 32% of respondents believed there is no connection between gender equality and sector selection. This indicates that approximately one-third of participants consider job sectors to be gender-neutral, signaling the breakdown of traditional gender-based professional barriers. The lowest percentage (10%) believed that certain sectors are not suitable for women. Although this is a small percentage, it still suggests that gender stereotypes persist in some professional choices. Furthermore, regarding the question of whether increasing quotas for women in non-traditional technical specialties at higher education institutions is appropriate, 2,600 young people (33.2%) expressed the opinion that "equal opportunities should be created in every field," while 1,236 (15.8%) stated that "girls should study in fields that suit them" (see Figure 8).

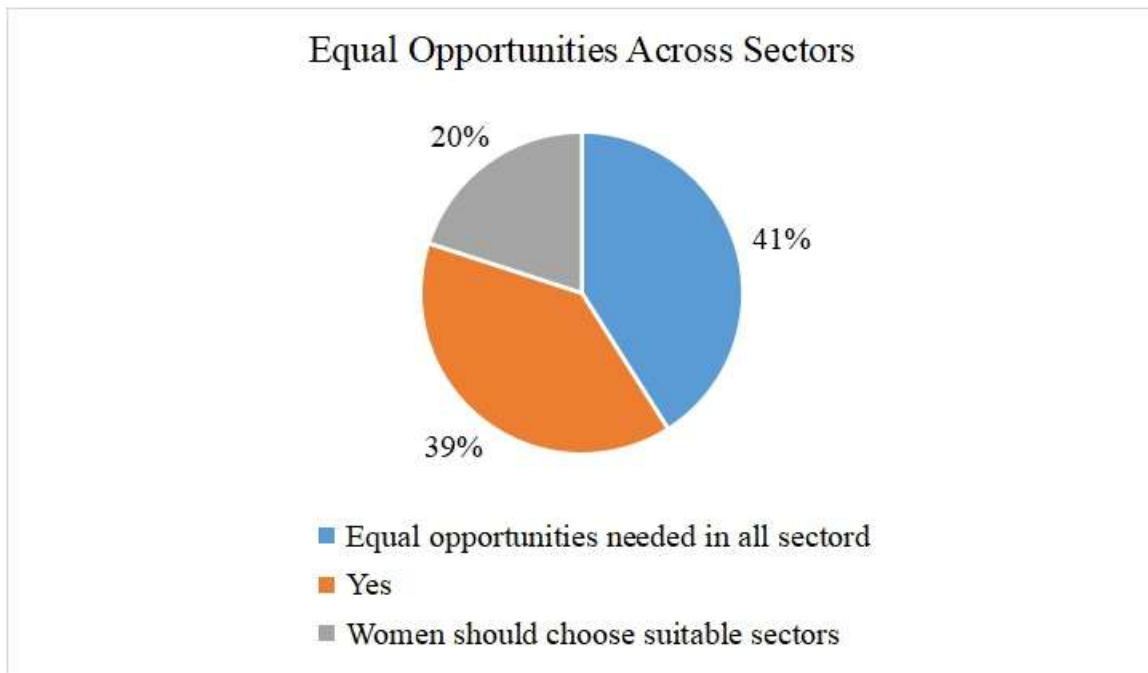


**Figure 7. Information on opinions regarding gender equality in various sectors.**

The survey results reveal a complex spectrum of attitudes toward gender equality in professional environments. Most respondents, 41% (depicted in blue), fully support gender equality across all professional fields. This view reflects a progressive stance that recognizes the importance of eliminating traditional gender barriers in every sector of the workforce. The next largest group, 32% of respondents (depicted in red), supports the principle of equal opportunity but does not explicitly advocate for its universal application across all sectors. This response highlights a varying commitment to workplace equality, distinct from the first group's stance.

The third segment, 20% of respondents (depicted in green), holds traditional views, emphasizing that women should be directed toward "appropriate" or "suitable" sectors. This position reflects the expected continuation of gender roles in professional contexts but constitutes a clear minority in the survey population. When analyzing these results from a broader perspective, it is evident that 80% (the sum of the blue and red segments) support the principle of equal opportunity, although their attitudes toward its universal implementation differ.

This significant majority indicates that there are noticeable societal shifts towards accepting gender equality in professional environments. The distribution illustrates a society in transition, with progressive views on gender equality becoming more prevalent, while traditional perspectives are gradually declining. These conclusions are particularly valuable for policymakers, employers, and organizations promoting equality and professional development opportunities in the workplace.



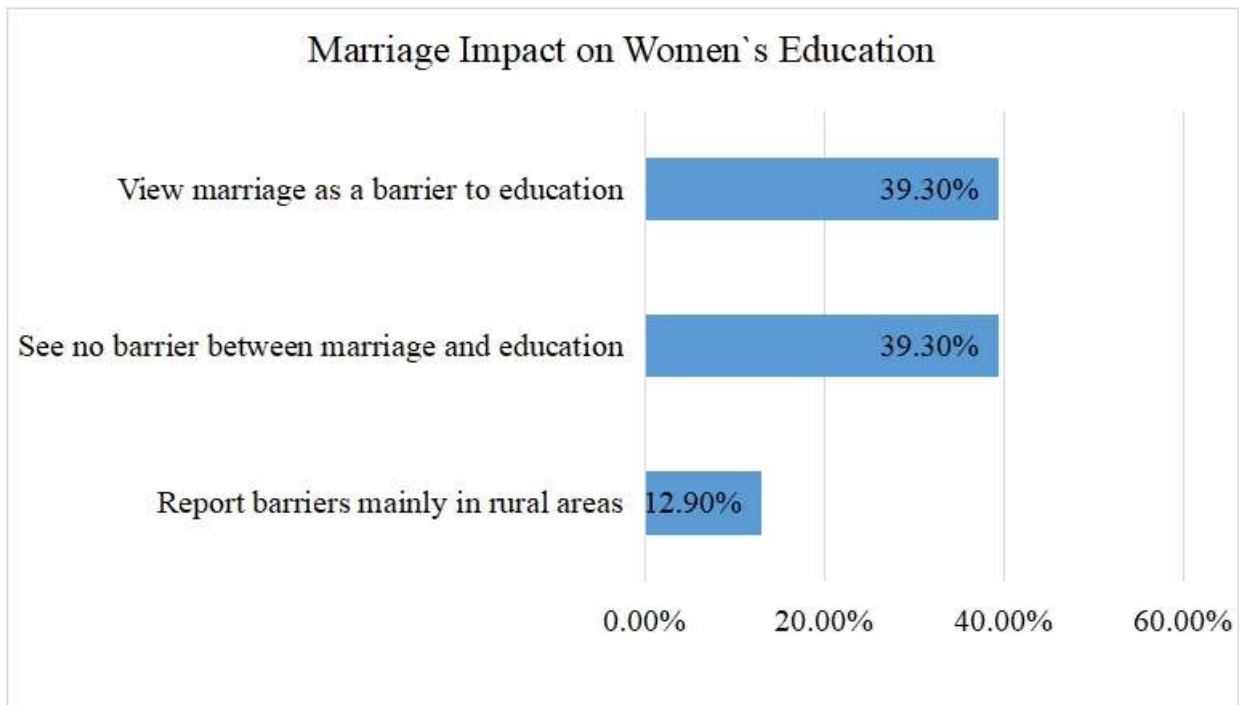
**Figure 8. Opinions of youth on increasing quotas for women in non-traditional technical specialties.**

One of the major reforms currently being carried out in our society is preventing early marriages for girls. At present, 3,074 students (39.3%) from five higher education institutions involved in the study have confirmed that marriage is an obstacle to women's pursuit of higher education, while the same number of students confirmed that marriage does not create such an obstacle. However, 1,011 participants (12.9%) highlighted that this is primarily an issue in rural areas. Looking at the data by educational institution, the highest number of students who considered marriage an obstacle was from Namangan State University (1,274 students), while the lowest were from Gulistan State University (173 students) (see Figure 9).

The survey results show interesting differences in opinions regarding the impact of marriage on women's higher education. The most notable discovery is the clear symmetry between two opposing positions, as exactly 39.30% of respondents (3,074 students from each group) are in opposite views on this issue. This equal distribution shows that society is at a critical turning point in understanding the relationship between women's educational opportunities and marriage.

The first group, 39.30% of respondents, views marriage as a significant obstacle to women's access to higher education. This view may have formed due to the interaction of cultural and socio-economic factors. Additional responsibilities related to marriage, such as household chores and family care, often do not align with the time and energy needed for academic activities. Moreover, social pressures arising from traditional gender roles associated with marriage in certain cultural contexts may lead women to forgo education.

The second major group, also comprising 39.30% of respondents, sees marriage and higher education as compatible and non-conflicting activities. This perspective may be related to changing societal norms, better support systems for married students, or personal experiences. This group's viewpoint suggests that marriage may not necessarily hinder the educational process, and it could indicate that they have encountered successful role models or supportive family structures that help balance both activities.



**Figure 9. Respondents' Opinions on Whether Marriage is an Obstacle to Women's Higher Education.**

The third group, comprising 12.90% of respondents (1,011 students), adds a regional dimension to the issue and introduces a unique subtlety to the discussion. The views of this group emphasize that the relationship between marriage and educational opportunities is not the same in all contexts, highlighting significant differences between urban and rural areas. This insight is important because it identifies specific structural and cultural challenges, such as limited access to educational institutions in rural areas, stronger influences of traditional gender roles, or fewer support systems for married students.

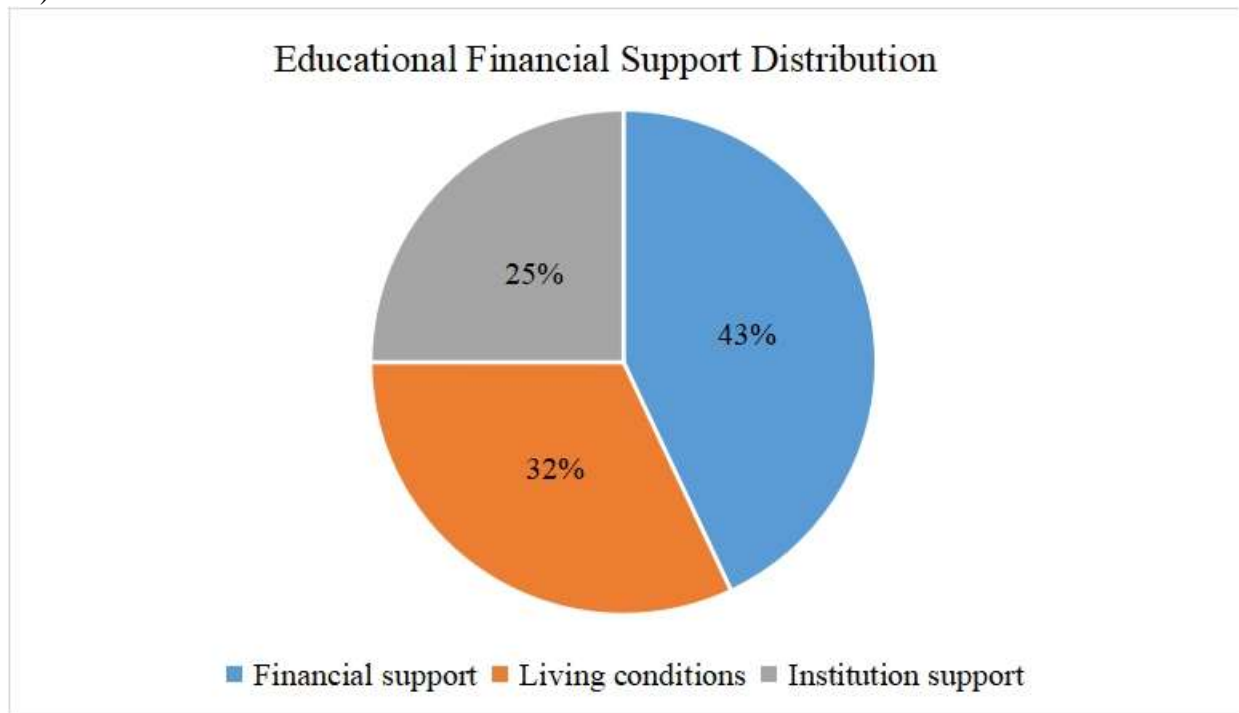
These three perspectives provide valuable insights for policymakers and institutions involved in education. This means that strategies for promoting education for married women should be tailored to urban and rural conditions rather than relying on universal solutions. Moreover, the data calls for the development of approaches that consider both segments of the population, those who perceive marriage as an obstacle and those who do not. This can be achieved by studying the factors that ensure successful educational engagement and exploring ways to apply them on a broader scale.

Furthermore, the equal split between the two main perspectives provides a basis for a deeper investigation into the factors contributing to these differences and how they can be applied to developing effective support systems for married women pursuing higher education. Understanding these key factors can help create a connection between perceptions and realities, leading to the implementation of more targeted and effective measures to encourage all women, regardless of their marital status, to pursue their educational aspirations.

It is well-known that not all regions in our republic have the opportunity to teach in a specific field of study or establish higher education institutions.

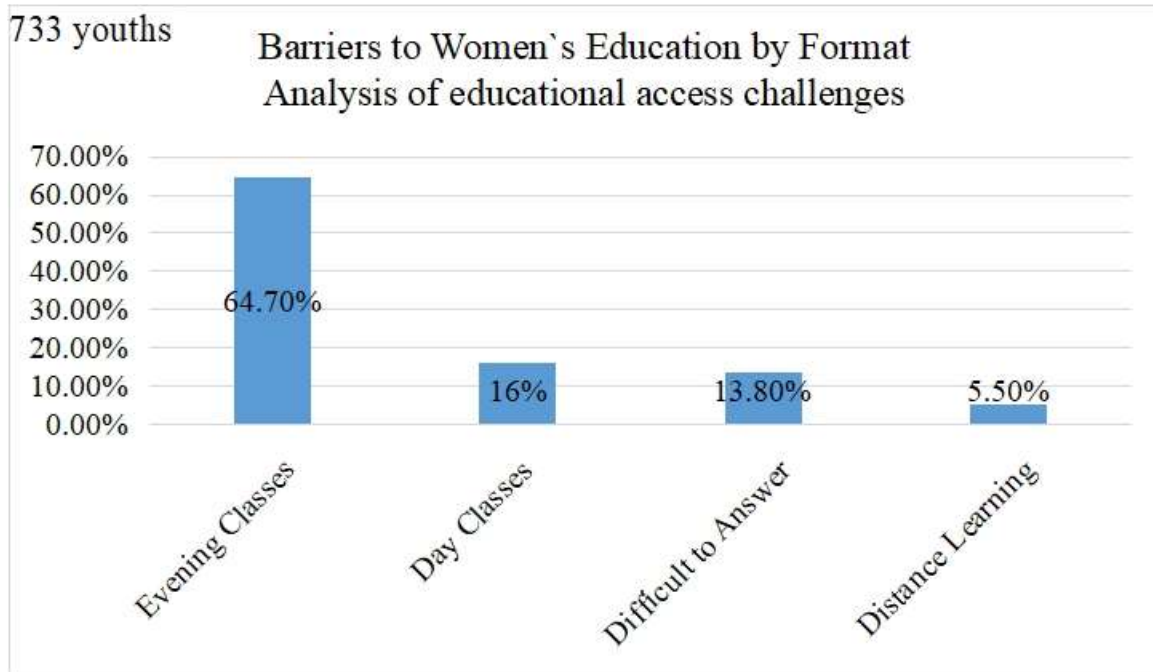
For this reason, in the survey conducted on what the main obstacles are for women in obtaining higher education if there is no institution in their chosen field of study in their place of permanent residence, 2,632 young people (33.6%) cited financial shortage, 1,952 young people (25%) pointed out family living conditions, and 1,491 young people (19.1%) referred to the long distance to the

educational institution. Additionally, 20.9% of the students who participated in the research mentioned parental resistance and difficulties in responding. Therefore, the most significant factor hindering women's access to higher education is considered to be financial shortage. (See Figure 10).



**Figure 10. The main obstacles to women's access to higher education.**

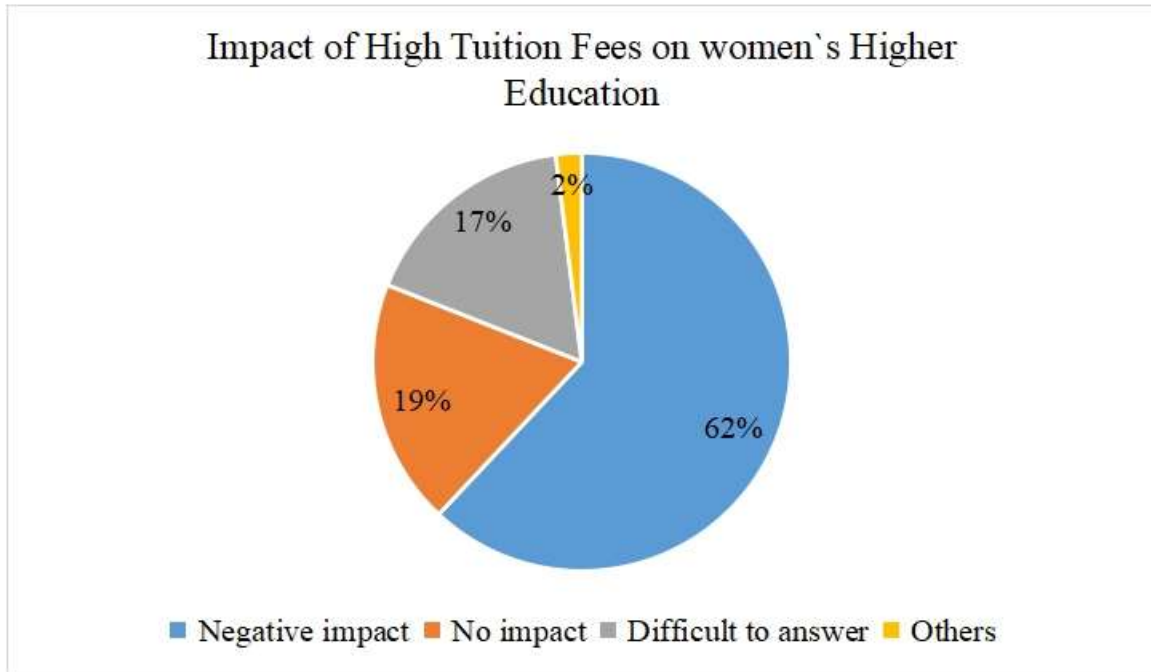
Despite the opportunities and conditions being created, the current forms of education are causing several difficulties for women in accessing higher education. Specifically, 5,059 (64.7%) young people chose evening classes, 1,251 (16%) chose daytime classes, 1,080 (13.8%) found it difficult to respond, and 281 (5.5%) chose external and special external forms of education (see Figure 11). The most significant conclusion is related to night classes, as 64.7% of the respondents acknowledge the serious obstacles women students face. This high percentage indicates the complexity of the combination of social, cultural, and practical problems. While evening classes may be convenient for employed individuals, they pose difficulties for women. Safety concerns are of vital importance, as traveling to and from educational institutions in the evening, especially in areas with inadequate public transport or poorly lit streets, can pose significant risks for women. Furthermore, evening hours often conflict with family responsibilities, such as preparing meals, helping children with lessons, or caring for elderly family members—tasks that remain predominantly the responsibility of women in many countries.



**Figure 11. Barriers in Education Forms to Girls' Access to Education**

Despite the advantages of daytime classes, they still present some challenges, with 16.00% of respondents indicating barriers. Although this format is generally considered more convenient, it still creates certain problems. Women who are employed during working hours may be forced to attend daytime classes at the expense of their work. For mothers with school-age children, daytime classes may conflict with school pick-up schedules or other parental responsibilities. The significantly lower barriers for evening programs suggest that daytime hours are generally a more convenient alternative for female students. The category "hard to answer," which represents 13.80% of responses, highlights the complexity of the issue. This notable percentage shows that the connection between education formats and access opportunities is not always clear-cut. This impact may vary depending on respondents' family support, employment status, or living conditions. This uncertainty shows how personal circumstances may affect the availability of educational methods.

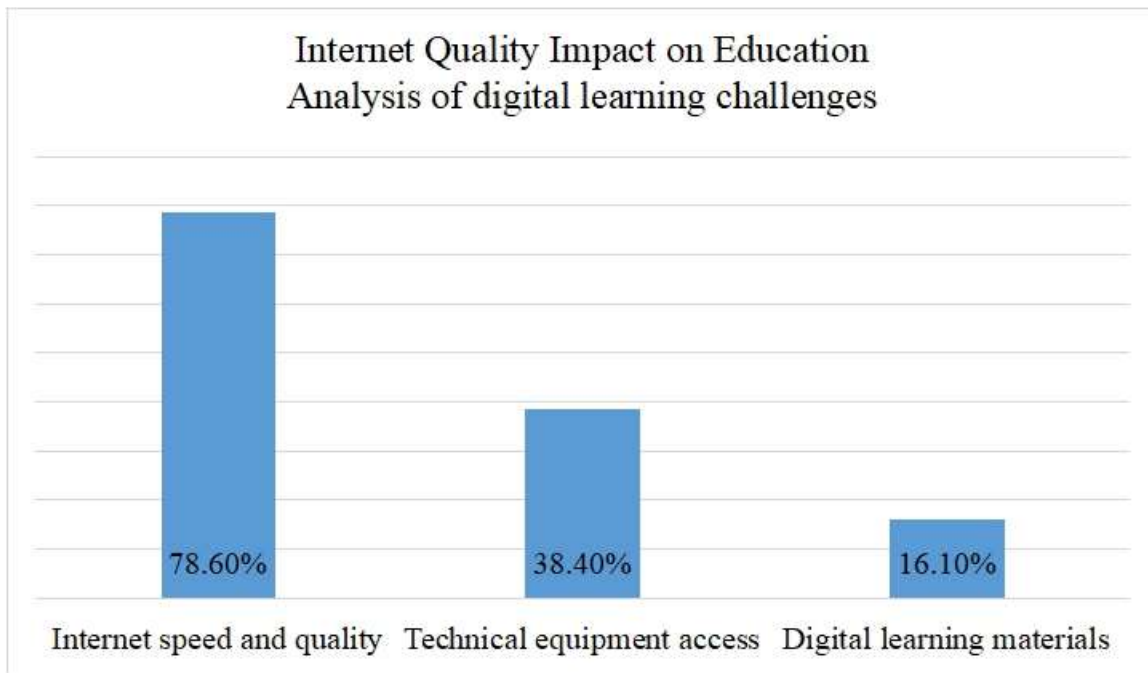
The most important finding is related to distance education, where the barriers are the lowest—5.50%. This structure emerges as one of the most convenient alternatives for expanding access to education for women. The popularity of distance education is tied to its flexibility, allowing students to attend classes at times that fit their schedules, thus overcoming many logistical and cultural barriers associated with traditional classes. Distance education reduces safety concerns, alleviates transportation issues, and makes it easier for women to balance educational activities with other responsibilities. This diagram clearly shows that, currently, evening education is considered the least convenient form of higher education by students.



**Figure 12. The impact of high tuition fees on women's access to higher education.**

In response to the question about the impact of high tuition fees on women's access to higher education, 4,885 students (62.4%) reported a negative impact, 1,480 students (18.9%) stated that the cost is not important, 1,337 students (17.1%) found it difficult to answer, and 121 students (1.6%) provided various answers (see Figure 12). Sixty-two percent of participants emphasized that excessive tuition fees are a serious barrier to women's education, highlighting a deeply rooted and systemic issue in access to education. This predominant view has emerged as a result of the complex interaction between economic and social factors, which significantly affect educational opportunities for women. To fully understand the consequences of this situation, it is necessary to analyze the correlation between tuition fees, existing social structures, and economic conditions. The fact that 62% of respondents reported a negative impact not only indicates the presence of financial barriers but also reveals how economic constraints intensify existing gender inequalities. In households with limited financial resources, decisions about investing in education often align with social goals. In conditions of financial hardship, families may prioritize educational resources for male members, viewing it as a "safer" investment based on traditional professional trends and social expectations. This makes education barriers, especially for women pursuing higher education, more pronounced. The 19% of respondents who stated that tuition fees have no impact highlight the influence of economic incentives on access to education. This group likely includes families with sufficient financial resources, which allows them to pursue educational goals regardless of gender. Their experience shows that when financial barriers are removed, other obstacles to women's education lose their significance. This suggests that improving financial access to education would have a significant positive impact on women's educational prospects. The 17% of respondents who reported difficulty in answering shed light on the complexity of the issue of access to education.

Additionally, two participants confirmed that the high tuition fees not only negatively impact higher education but also affect girls' decisions to marry.



**Figure 13. The Impact of Internet Quality on Education**

It is known that, currently, high-quality and convenient internet services have not yet reached all regions and remote villages of our country. This has had a negative impact on the ability of our youth to access distance learning, which was introduced during the pandemic. In a survey conducted on this topic, 6,148 young people (78.6%) reported issues with poor internet quality and speed (almost 80% of the total), 3,004 young people (38.4%) mentioned the lack of technical devices, and 1,257 young people (16.1%) expressed concerns about the shortage of electronic manuals and textbooks (see Figure 13). The data reveal the hierarchical structure of digital difficulties, with internet connectivity emerging as the most widespread obstacle. The fact that 78.6% of students are facing problems with connection speed and quality indicates a deep crisis in access to digital education. This exceptionally high percentage shows that three out of four students are encountering difficulties related to the fundamental aspects of online learning. The internet connection can be considered the digital equivalent of roads leading to school – if these roads are poorly maintained or impassable, even the most modernly equipped school becomes practically inaccessible. The impact of poor internet connection permeates every aspect of digital education. Students may experience freezing screens during live classes, delays in watching educational videos, or interruptions when submitting assignments. A student's voice in a real-time discussion may be delayed or even completely unheard due to poor connectivity. This not only causes technical frustration but also leads to educational isolation and a decrease in participation. When it comes to secondary issues, 38.4% of students facing the lack of access to technical devices represents another significant barrier. This figure indicates that even if the 'digital roads' (internet) are functional, many students do not have the appropriate 'transportation vehicles' (technical devices) to utilize them. Modern education often relies on specific technical requirements: for instance, cameras for virtual participation, processors capable of running educational programs, and screens suitable for long-term learning and studying. The connection between the first two barriers is of particular importance. Students who have obtained adequate technical equipment may lose the effectiveness of their investment due to poor internet connectivity. Conversely, access

to excellent internet may yield limited benefits without the appropriate equipment. This means that for students to fully participate in digital education, both elements must work together.

The third issue, the limited access to educational materials for 16.1% of students, although lower, represents the crucial final link in the digital education chain. This situation can be compared to having 'roads' (internet) and 'transportation vehicles' (devices), but no 'destination' (educational materials). This lower figure indicates that while educational institutions have achieved certain successes in this area, universal access has not yet been achieved.

For digital education to be effective, reliable internet, suitable devices, and accessible educational materials must work together. Understanding these issues in full context helps not only to identify technical barriers but also to understand how to address inequalities in education. Students encountering these issues are facing not just inconveniences but fundamental barriers to educational opportunities in an increasingly digital world.

At this point, it is appropriate to mention some of the opinions expressed in conversations with experts and specialists in the field. In particular, the insufficient level of internet usage culture among most women and their high trust in information within the vast information space is contributing to the issues in this regard.

The successes and shortcomings observed in the distance learning process were assessed by the respondents who participated in the study. Below is the ranking of the most effective forms of distance education:

- 3,879 young people (49.6%) consider lectures by professors and teachers in the form of video conferences to be the most effective.
- 1,717 young people (21.9%) find online question-and-answer sessions to be effective.
- 1,488 young people (19%) prefer online presentations (images/tables) as the most effective method.
- 617 young people (7.9%) consider web-seminars as the most effective form of training.

Additionally, within the scope of the research, we studied the evaluation methodologies of the United Nations Development Program's "Gender Inequality" index, the "Gender Development" index, the "Gender Social Norms" index, the OECD Development Centre's "Social Institutions and Gender" index, and the "Global Women, Peace, and Security" index, and analyzed Uzbekistan's position based on these indicators.

**1. Education Indicators of the Gender Inequality Index (United Nations Development Program)** In the indicator of the population with at least secondary education, Uzbekistan shows high results for both genders. The share of women aged 25 and older with at least secondary education is 99.9%, while the share for men is 100%. In terms of these two education-related indicators, Uzbekistan ranks 4th among 170 countries. Although the country's indicator for the share of the population with at least secondary education seems to have achieved maximum gender parity, the share of women with higher education is lower than that of men.

**2. Education Indicators of the Gender Development Index (United Nations Development Program)** Education is measured by expected years of schooling and average years of schooling for those aged 25 and older. Uzbekistan's Gender Development Index for the years 2021/2022 is 0.944, which is the same as South Korea, South Africa, and Myanmar. Uzbekistan is classified in the third group, with medium equality between women and men in terms of Human Development Index achievements. In both indicators included in the education index, the results for women are lower than those for men. Specifically, the expected years of schooling for women are 12.4 years, while for men, it is 12.6 years. The average years of schooling for people aged 25 and older are 11.7 years for women and 12.1 years for men.

**3. Education Indicators of the Gender Social Norms Index (United Nations Development Program)** The Gender Social Norms Index aims to show how social norms and gender stereotypes

in countries serve as significant barriers to achieving gender parity. Education is measured based on the social attitudes regarding the importance of higher education for men compared to women. In terms of the Gender Social Norms Index (GSNI), Uzbekistan's score in the 6th wave was 97.93%, while in the 7th wave, it was 98.03%. This means that a significant percentage of respondents (around 97-98%) indicated at least one response reflecting a negative gender stereotype in terms of education. However, in the 6th wave, 2.07% of respondents did not report any negative indicators, and in the 7th wave, this figure was slightly lower, at 1.97%.

The GSNI2 indicator, which represents respondents with at least two negative indicators, was 87.73% in the 6th wave, and it rose to 88.17% in the 7th wave. Breaking it down by gender, the GSNI score in the 6th wave was 97.50% for women and 98.62% for men, while the GSNI2 score was 84.11% for women and 93.46% for men. According to the 2023 analysis, the GSNI score for women was 97.68% and for men was 98.57%, with the GSNI2 score for women at 84.69% and for men at 93.55%. The data does not show a significant gender gap in these indicators.

#### **4. Women's, Peace, and Security Index Education Indicators**

The Women's, Peace, and Security Index includes three main indicators and 11 sub-indicators, one of which is the average duration of women's education. In Uzbekistan, the average number of years of education for women stands at 11.6 years, which is below the maximum threshold of 15 years for education. In countries with higher scores on this index, the education duration for women exceeds 13 years.

#### **Conclusion:**

Based on the analysis, it is concluded that attention should be focused on the education of young men and women aged 18–24. As of the beginning of the 2021–2022 academic year, a total of 404.5 thousand students were enrolled in secondary and vocational educational institutions in Uzbekistan, with 207.8 thousand being girls and 196.7 thousand being boys. In higher education institutions, there are 808.4 thousand students, of which 369 thousand are women and 439.4 thousand are men. This means that there are 70.4 thousand more men than women enrolled in higher education.

While the age limit for higher education is not strict, the majority of students fall within the 18–24 age range. These indicators highlight the need for temporary measures to achieve gender parity. For instance, increasing additional quotas for girls, improving the infrastructure of higher education institutions, expanding dormitory capacities, introducing education loans under favorable conditions, and establishing special higher education institutions for girls should be prioritized.

– The low number of girls enrolled in higher education institutions and the high cost of university education led to families giving more attention to boys rather than girls. Many parents tend to prioritize the education of male children over female children.

– Due to traditional socio-cultural roles, gender inequality is observed in higher education in terms of fields of study. Girls tend to concentrate in traditional “female” fields like healthcare and education, while boys dominate technical fields such as finance, transportation, and communication. Engineering and construction, which are linked to well-paying sectors in the economy, remain predominantly male.

– There is a need for systematic steps to integrate gender education across all levels of education—preschool, general secondary, vocational, and higher education programs. These should be progressively implemented in Master's and Doctoral programs as well.

– Conducting gender expertise on textbooks, educational materials, and other publications is essential to ensure gender sensitivity in the content.

– Special initiatives should be taken to improve gender balance in the choice of academic subjects and specializations, including traditionally male-dominated fields.

- Awareness campaigns should be organized to increase the participation of girls and women in non-traditional technical fields.
- It is also crucial to focus on improving reproductive health education within the educational system to promote gender equality and well-being.

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