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Analysis of the Gender Segregation of Labor in Higher Education of Kazakhstan: Regional Aspect

Anna A. Kredina^{a*}, Laszlo Vasa^b, Kuralay O. Nurgaliyeva^a

^a *Kenzhegali Sagadiyev University of International Business, 8a Abay Ave., 050010, Almaty, Kazakhstan;*

^b *Szent István University, Gödöllő, Hungary*

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ABSTRACT

Gender inequality remains a pressing issue in Kazakhstan, with vertical and horizontal segregation resulting in unequal pay and the representation of men and women in different professions. To achieve equal access to labor, social and institutional resources, the state's economic policy aims to address this problem. Data collected from 2016-2021 from the electronic portal of the Bureau of National Statistics of Kazakhstan showed that women dominate public education schools and higher education institutions. However, there have been minor changes in the percentage of male and female teachers and faculty members. The Duncan index, which measures gender segregation, showed a difference of 17.1 percentage points between the proportion of male and female teachers in general education schools and male and female faculty members in higher education institutions. At the same time, the field of education is one of the lowest paid in Kazakhstan. The article's main results highlight the unequal opportunities for women compared to men. Occupational segregation can also be geographically considered, taking into account the burden of housekeeping. Rural women experience more occupational discrimination than their urban counterparts. Addressing the gender disparity in higher education faculty is essential to promoting diversity, equity, and inclusion in academia and beyond. Gender equality in higher education is critical for social and economic progress, as research and education are the primary drivers of innovation and development.

KEYWORDS: Economics, Education, Gender Segregation of Labor, Women, Gender Gap, Kazakhstan

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Corresponding author: Kredina A.A. – PhD candidate, K.Sagadiyev University of International Business, 8A Abay Ave., 050010, Almaty, Kazakhstan, 87012862176, e-mail: anna.kredina@uib.kz

Қазақстанның жоғары оқу орындарындағы еңбектің гендерлік сегрегациясын талдау: аймақтық аспект

Кредина А.А.^{а*}, Васа Л.^б, Нурғалиева К.О.^а

^аКенжеғали Сағадиев атындағы Халықаралық бизнес университеті, даң. Абай 8А, 050010, Алматы, Қазақстан; ^бӘулие Стивен университеті, Годолло, Венгрия

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ТҮЙІН

Қазақстанда гендерлік теңсіздік өзекті мәселе болып қала береді, тік және көлденең сегрегация нәтижесінде әртүрлі кәсіптердегі ерлер мен әйелдердің жалақысы мен өкілдігі тең емес. Еңбек, әлеуметтік және институционалдық ресурстарға тең қолжетімділікке қол жеткізу үшін мемлекеттің экономикалық саясаты осы мәселені шешуге бағытталған. 2016-2021 жылдар аралығында ҚР Ұлттық статистикалық бюросының электронды порталынан жиналған деректер жалпы білім беретін мектептерде де, жоғары оқу орындарында да әйелдердің басым екенін көрсетті, дегенмен ерлер мен әйелдердің оқытушылар мен оқытушылар құрамының үлес салмағында аздаған өзгерістер болды. жылдар. Гендерлік сегрегацияны өлшейтін Дункан индексі жалпы білім беретін мектептердегі ерлер мен әйелдердің және жоғары оқу орындарындағы ерлер мен әйелдердің оқытушыларының үлесі арасында 17,1 пайыздық тармаққа айырмашылықты көрсетті. Бұл ретте білім беру саласы Қазақстандағы ең төмен жалақы алатын салалардың бірі болып табылады. Мақаланың негізгі нәтижелері ер адамдармен салыстырғанда әйелдердің мүмкіндіктерінің теңсіздігін көрсетеді. Үй шаруашылығының ауыртпалығын ескере отырып, кәсіптік сегрегацияны географиялық тұрғыдан да қарастыруға болады. Ауылдық әйелдер қалалық әйелдерге қарағанда кәсіптік кемсітушілікке көбірек ұшырайды. Жоғары білім беру факультетіндегі гендерлік теңсіздікті шешу академиялық ортада және одан тыс жерлерде әртүрлілікті, теңдікті және инклюзияны ілгерілету үшін маңызды. Жоғары білім берудегі гендерлік теңдік әлеуметтік және экономикалық прогрес үшін де маңызды, өйткені зерттеулер мен білім беру инновациялар мен дамудың негізгі драйверлері болып табылады.

ТҮЙІН СӨЗДЕР: экономика, білім, гендерлік еңбек сегрегациясы, әйелдер, гендерлік алшақтық, Қазақстан

МҮДДЕЛЕР ҚАҚТЫҒЫСЫ: авторлар мүдделер қақтығысының жоқтығын мәлімдейді.

ҚАРЖЫЛАНДЫРУ: мақала Қазақстан Республикасы Ғылым және жоғары білім министрлігі Ғылым комитетінің «Қазақстанның өңірлік әлеуетін дамыту стратегиясы: әлеуметтік-мәдени және экономикалық әлеуетті бағалау» гранттық қаржыландыру жобасы аясында дайындалған. , жол картасын, модельдер мен даму сценарийлерін әзірлеу» BR18574240.

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*Хат-хабаршы авторы: Кредина А.А. – PhD докторанты, Кенжеғали Сағадиев атындағы Халықаралық бизнес университеті, даң. Абай 8А, 050010, Алматы, Қазақстан, 87012862176, e-mail: anna.kredina@uib.kz

Анализ гендерного разделения труда в высшем образовании Казахстана: региональный аспект

Кредина А.А.^{а*}, Васа Л.^б, Нургалиева К.О.^а

^а Университет международного бизнеса имени К.Сагадиева, пр. Абая, 8А, 50010, Алматы, Казахстан; ^б Университет Святого Иштвана, Гёдёллё, Венгрия

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АННОТАЦИЯ

Гендерное неравенство остается актуальной проблемой в Казахстане, при этом вертикальная и горизонтальная сегрегация приводит к неравной оплате и представительству мужчин и женщин в разных профессиях. Для достижения равного доступа к трудовым, социальным и институциональным ресурсам экономическая политика государства направлена на решение этой проблемы. Данные, собранные за 2016-2021 годы с электронного портала Бюро национальной статистики Казахстана, показали, что женщины преобладают как в общеобразовательных школах, так и в высших учебных заведениях, хотя произошли небольшие изменения в процентном соотношении мужчин и женщин среди преподавателей и преподавателей за годы. Индекс Дункана, измеряющий гендерную сегрегацию, показал разницу в 17,1 п.п. между долей учителей-мужчин и женщин-учителей общеобразовательных школ и мужчин и женщин-преподавателей в высших учебных заведениях. При этом сфера образования является одной из самых низкооплачиваемых в Казахстане. Основные результаты статьи подчеркивают неравные возможности женщин по сравнению с мужчинами. Профессиональную сегрегацию также можно рассматривать по географическому признаку, принимая во внимание бремя ведения домашнего хозяйства. Сельские женщины в большей степени подвергаются профессиональной дискриминации, чем их городские коллеги. Решение проблемы гендерного неравенства среди преподавателей высших учебных заведений имеет важное значение для поощрения разнообразия, справедливости и интеграции в академических кругах и за их пределами. Гендерное равенство в высшем образовании также имеет решающее значение для социального и экономического прогресса, поскольку исследования и образование являются основными движущими силами инноваций и развития.

КЛЮЧЕВЫЕ СЛОВА: экономика, образование, гендерная сегрегация труда, женщины, гендерный разрыв, Казахстан

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*Корреспондирующий автор: Кредина А.А. – PhD докторант, Университет международного бизнеса имени К.Сагадиева, пр. Абая, 8А, 50010, Алматы, Казахстан, 87012862176, e-mail: anna.kredina@uib.kz

Introduction

Gender equality is an essential aspect of social progress. Studying gender issues in higher education is part of a broader effort to promote gender equality and combat discrimination in all areas of society. Gender stereotypes can influence career choices and limit both men's and women's career options. By studying gender issues in higher education, we can help to challenge and break down these stereotypes, allowing students to make career choices based on their interests and abilities rather than societal expectations.

The issues of manifestation of gender inequality in the field of education are relevant at present since individual manifestations of gender inequality have not yet been abolished. Gender vertical and horizontal segregation in the form of unequal pay and unequal representation of men and women in various professions is still an acute problem in Kazakhstan. The macroeconomic policy aimed at achieving equal access to labor, social, and institutional resources is one of the state's economic policy goals. As part of the Presidential Address 2022, the state strives to ensure equality of opportunity for all population segments. However, there are still a number of problems associated with the economy's dependence on raw materials, low labor productivity, insufficient innovation, the provision of low-quality jobs, and uneven distribution of income in education and other areas.

Women are underrepresented in leadership positions in academia, including department heads, deans and university presidents. There is a gender pay gap in academia, with women earning less than men in the same positions and experience levels. Women are less likely to get jobs or promotions than their male counterparts, which can have long-term implications for their employment and financial stability. Gender bias in hiring practices may result in fewer women being hired for academic positions, especially in STEM. Gender stereotypes and prejudices can also influence the assessment of the quality of teaching and research, leading to unfair evaluations of women scientists.

Research has shown that when girls and women have access to education, it leads to increased economic growth, poverty reduction, and improved health and well-being (Spankulova et al., 2019). Therefore, addressing gender inequality in education is critical for achieving sustainable development goals. The manifestation of gender inequality in education is relevant because it affects the personal, societal, and

economic development of individuals and nations. Addressing these issues is crucial for achieving gender equality and promoting social and economic progress. The above explains the relevance of the study of the gender gap in professions in various fields, but especially in the field of "education". In addition, the goal of society is to improve the population's well-being, avoid poverty and achieve equal access to resources, regardless of gender.

This study aims to study the professions in the field of "Education", as well as the development of measures and recommendations to reduce occupational segregation in Kazakhstan. In order to achieve the aim of the study, the following steps will be taken:

1. Data collection for six years: 2016-2021 from the electronic portal of the Bureau of National Statistics of Kazakhstan;
2. Identification of problem areas for the remuneration of workers in the field of education in Kazakhstan;
3. Analysis of the level of wages by types of economic activity with emphasis on the field of "education"
4. Calculation index Duncan
5. Development of conclusions and recommendations.

By studying gender issues, any existing barriers or inequalities are identified and eliminated, and work to create a more inclusive and fair system. Gender diversity in higher education is important for developing a diverse and skilled workforce. Studies have shown that companies with more diverse workforces perform better and are more innovative, and this is also likely to be true in the education sector.

Literature review

There are many studies in the world aimed at studying the factors of feminization of certain professions. The role of men and women in professions goes against the ideology of individual economic spheres. For example, studies on the lifestyle of healthcare workers (pharmacists) have proved unfounded the notion that women have to work part-time while they are raising their children (Muzzin et al., 1994). Other studies, on the contrary, have shown that a patriarchal society leaves an imprint on the cultural ethno-thinking of women and men. Hence, women deliberately seek professions combining childcare and work (Chernova, 2012). In Kazakhstan, most women entered the education and healthcare sectors because of the opportunity

to combine these professions with family life, childcare and the elderly (Meurs et al., 2021; Malanyina, 2019).

Despite the progress towards gender equality, women are still underrepresented in specific fields, such as STEM (science, technology, engineering, and math). Studies have shown that societal norms and stereotypes about gender roles and abilities significantly steer girls away from these fields. For example, a study found that parents were more likely to encourage their sons to pursue math and science, while girls were encouraged towards humanities and social sciences (Blickenstaff, 2005).

This gender gap in STEM fields has necessary implications for the economy and society as a whole. These fields are among the fastest-growing and highest-paying, and the lack of diversity can lead to a lack of innovation and creativity. It is therefore essential to encourage and support women's participation in STEM fields through mentorship programs, scholarships, and outreach to schools and communities. In addition to the gender gap in STEM, there are also gender disparities in pay and leadership positions across all professions. Women continue to earn less than men for the same work, and are underrepresented in top positions in the public and private sectors. This is despite evidence showing that diverse leadership teams lead to better decision-making and improved organizational performance (Teasdale et al., 2011). It is clear that there is still much work to be done in achieving gender equality in the workforce. This requires a concerted effort from individuals, organizations, and governments to challenge gender norms and stereotypes and create a more inclusive and equitable workplace for all.

Research also shows that since the beginning of the 20th century, there have been some female medical "semi-professions", such as nursing, nursing professions, which required fewer skill levels, and training time, and had to support male professions (Adams, 2010). There is also an opinion that gender segregation in educational professions, as it exists in the world at the moment, is positive since the social role of an educator suits a woman. The scholar argues that the masculinization of education and the segregation of boys and girls is more worrying than the feminization of teaching staff (Griffiths, 2006).

The researchers also note that men often occupy leadership positions: directors, deans, doctors, dentists, managers, etc. As a result, these types of professions are highly paid, so there is

also vertical segregation. Even when male candidates initially want to enter the teaching profession, they are focused on leadership and career growth in the future, unlike women who are not interested in developing leadership qualities and moving up the career ladder. Interestingly, in some families, parents are opposed to boys choosing to teach but are supportive when they realize that it will be easier to get a job (Bongco & Ancho, 2020; Ariogul & Can, 2010; Lahelma, 2000).

Gender segregation in Kazakhstan is present in various areas of economic activity. Of course, the uneven division of men and women in professions can be explained by the fact that men can more easily cope with heavy physical labor. On the other hand, there are professions in which low wages are combined with part-time work. Women are more likely to work in these professions. The authors revealed not only the presence of segregation but also an increase in the level of segregation in the non-productive sphere towards women and the sphere of production - towards men. Reducing discrimination is one of the main directions of the state macroeconomic policy and opens equal access to resources for women and men (Kireyeva, 2015; Bayuzakova & Isakov, 2019; Malanyina, 2019).

Educational professions continue to be one of the most female professional fields in the world. However, despite the increase in the number of women in these professions, the prestige and social status of teachers and other education workers are still low. State programs to attract women to these professions are often not financially secure, especially for schools in rural areas. Under such conditions, teachers often have to perform additional non-professional work, negatively affecting the quality of their main work. Despite the fact that in recent years women have become more actively and massively involved in the field of education, they still face discrimination and restrictions. In several countries, for example, women are prohibited from teaching certain subjects or working in higher education institutions. These issues greatly affect the professional development of women in education and require additional support and protection measures (Mim, 2020). In addition, women teachers often face problems with work-family balance, as well as low pay and limited career opportunities.

Research Methods

The segregation index is a statistical measure used to quantify the level of segregation in a given population or area. It is usually calculated by examining the distribution of a particular characteristic, such as race or gender, across different geographical units or social spaces, such as neighbourhoods, schools, or workplaces. The index is based on the idea that if a feature is evenly distributed across different groups or spaces, the segregation index will be low. In contrast, if the feature is concentrated in certain groups or spaces, the segregation index will be high. For example, a gender segregation index for higher education can be calculated by examining the proportion of male and female students in different faculties or in different fields of study.

However, the index is not universal or universal. It depends on parameters: the territory of residence of the population (city-village), the level of education of the population, nationality, and most recently on gender. All these calculations show the correct result for one territory but must be corrected in another (Yao, 2019). For example, a gender segregation index for higher education can be calculated by examining the proportion of male and female students in different faculties or in different fields of study.

However, for this study, university and school teachers, female and male, were studied to calculate the segregation index. In addition, the study was carried out in dynamics over several years. This will reveal trends in the degree of change in segregation over time. It should be pointed out that there are several types of segregation indices: the dissimilarity index and its spatial analogues. In this paper, the most widely used index of dissimilation is Duncan's index (DI). It is usually defined as half the sum of the differences (with a positive sign) between the shares of men and women employed in each occupation. This index shows what percentage of workers of one sex would have to change their occupations, assuming that workers of the other sex remain in their jobs so that there is an equal distribution of men and women across occupations. Thus, the segregation indices can calculate by formula (1):

$$DI = \frac{1}{2} * \sum \left| \frac{F_i}{F} - \frac{M_i}{M} \right|, \quad (1)$$

where F is the number of women in the labor force;

M - is the number of men in the labor force;

F_i - is the number of women in the profession i ;

M_i - is the number of men in the profession i ;
 i - changes from one to a number equal to the number of professions.

The index ranges from 0 to 1, with higher values indicating greater levels of occupational segregation. A value of 0 means that men and women are equally represented in all occupations. In contrast, a value of 1 indicates complete segregation where men and women are concentrated in different occupations with no overlap. The Duncan index is a widely used measure of gender segregation in many countries and has been used to study the changing patterns of gender segregation over time. It is important to note that the Duncan index considers the quality of jobs or the pay level in different occupations, only the proportion of men and women in each occupation.

The category of workers in the sphere of "Education" is considered in more detail. In Kazakhstan, there are several problems related to the gender wage gap and the social status of teachers. In 2019, the Law "On the Status of a Teacher" (2019) was adopted, which recognized the "special status of a teacher" and provided conditions for the implementation of his professional activities. According to this law, material and administrative penalties are provided for showing disrespect for a teacher in the performance of his official duties. This measure influenced the increase in the importance of the teaching profession among the population. Also, from that time to the present, the state motivates teachers financially through the growth of wage increases.

Secondary data (data sampling)

The source of secondary data is the Bureau of National Statistics of Kazakhstan. The data on the average monthly nominal salary of one worker in the field of education for 2016-2021 provides insights into the financial compensation earned by teachers and other education professionals in Kazakhstan.

Secondary data The Bureau of National Statistics of Kazakhstan can help you get an idea of the average salary of teachers and other specialists in the field of education in Kazakhstan. These data can be used to identify problem areas in the payment of education workers in Kazakhstan and to compare the wages of education workers in Kazakhstan with wages in other countries. In addition, secondary data can help determine trends in the salary of education specialists over time, providing information for developing

recommendations for improving the financial remuneration of teachers and other education specialists in Kazakhstan.

Analysis and Results

In general, by analyzing wages in various sectors, policymakers and researchers can identify areas where workers are underpaid and take measures to address this problem, for example, enacting minimum wage laws or providing employers with incentives to raise wages. In addition, understanding the economic value of various sectors can help make decisions about investments and resource allocation, affecting employment opportunities and wages in these sectors. Thus, studying various economic spheres can help determine the average monthly salary. This is necessary because different branches of

the economy have different levels of profitability and economic value. Technology and financial sectors tend to be more profitable and have higher wages, while wages tend to be lower in other sectors, such as education, medicine, and social services.

The information can help identify any discrepancies or disparities in pay among education professionals, including potential differences between men and women. It can also help policymakers evaluate the effectiveness of current remuneration policies and take steps to improve the financial compensation of education professionals in the country. If consider in more detail the category of workers in the “Education” sphere, it can be seen that this category in terms of wages is still one of the lowest paid. Figure 1 below presents data on average wages by country in descending order.

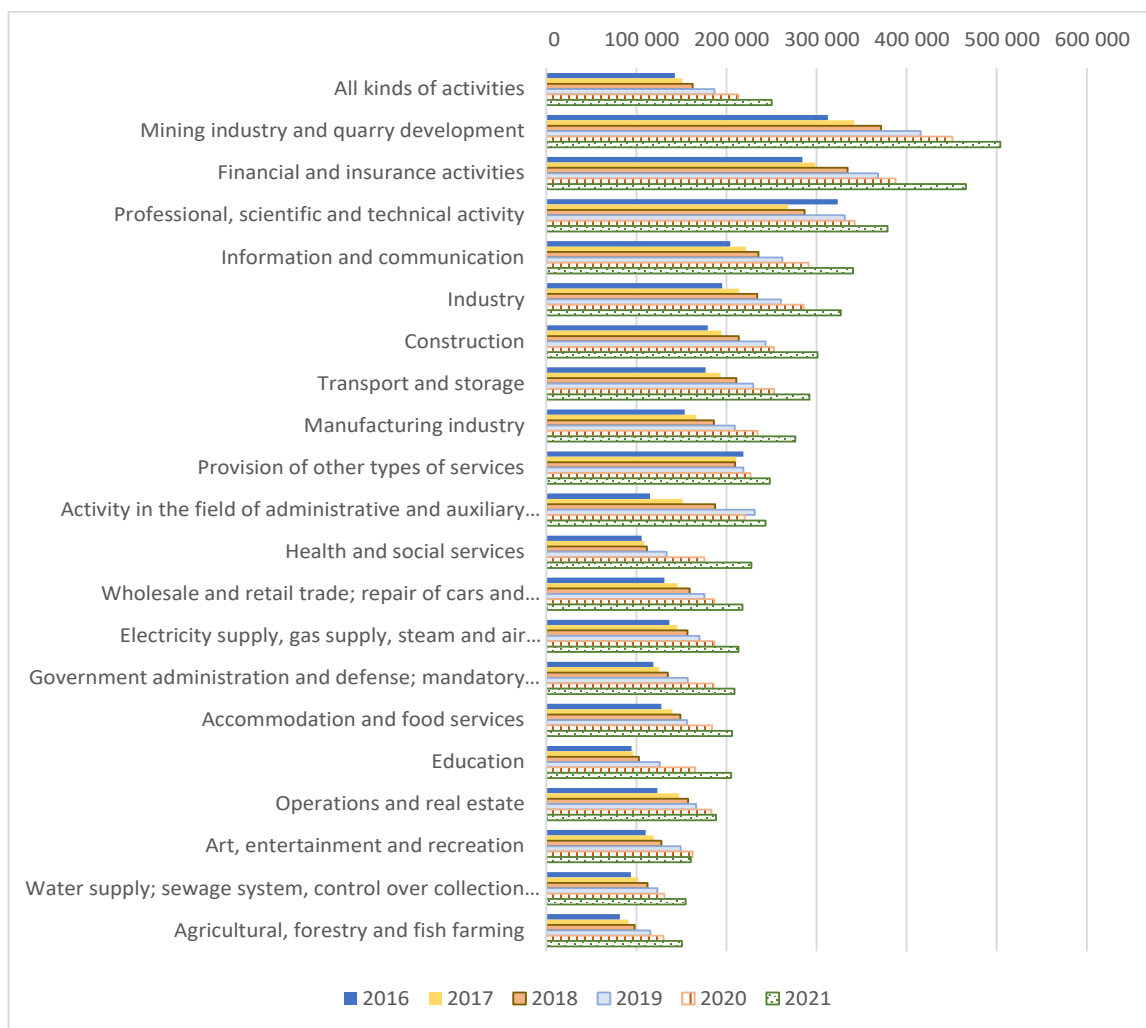


Figure 1 - Average monthly salary by type of economic activity by 2016-2021

Note: compiled by source Bureau of National Statistics (2021)

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According to the data, the average monthly nominal salary of one worker in the field of “education” increased from 94 542 in 2016 to 205 183 in 2021. This represents a significant increase of approximately 117% over six years. The education sector also saw the highest growth in average monthly wages from 2016 to 2021, surpassing all other types of economic activity in terms of growth rates. This indicates that the education sector has been experiencing positive development and growth in recent years, which is reflected in higher employee wages. As you can see, the category of workers in the field of “Education” does not represent the leading positions on salary.

However, it is important to note that this growth is still lower than in many other types of economic activity, such as the mining industry, financial and insurance activities, and professional, scientific and technical activities, which have a higher average monthly salary.

In addition, it should also be noted that the education sector has one of the lowest average monthly salaries among all the listed types of economic activity, which can be considered a negative point. This suggests that higher wages may be needed for those who work in the field of education to attract and retain highly qualified specialists.

In addition, it can also have consequences for the quality of education provided since low wages can lead to a less motivated and less qualified workforce, which ultimately can affect the quality of education students receive. Therefore, it is essential to solving the problem of low wages in the field of education in order to ensure the attraction and retention of highly qualified specialists in this field and, ultimately, to improve the quality of the education provided.

Table 1 provides information on the number of women teachers in general education schools in Kazakhstan, as well as in each region of the country, for the years 2016/17 to 2020/21.

Table 1. Number of women teachers in general education schools, in thousands

Region	2016/17	2017/18	2018/19	2019/20	2020/21
Kazakhstan	259 032	270 578	274 346	281 209	297 280
Akmola	12 644	12 638	12 516	12 544	12 996
Aktobe	13 712	14 619	14 585	14 703	15 620
Almaty	29 875	31 412	32 055	34 092	36 072
Atyrau	9 300	9 702	9 739	10 112	10 787
West Kazakhstan	11 436	11 666	11 936	11 896	12 655
Zhambyl	19 441	19 881	21 060	21 123	22 328
Karaganda	17 547	17 602	17 173	17 343	18 075
Kostanay	11 302	11 482	11 311	11 260	11 576
Kyzylorda	14 805	15 527	16 020	16 595	17 253
Mangistau	8 904	9 671	10 105	10 776	11 891
Pavlodar	10 691	10 706	10 458	10 439	10 860
North Kazakhstan	9 786	9 746	9 427	9 239	9 493
Turkestan	18 838	19 487	19 188	40 898	43 214
East Kazakhstan	35 110	38 393	39 342	19 190	19 716
Astana city	7 169	7 861	8 332	8 999	10 116
Almaty city	16 079	17 361	17 692	17 965	19 399
Shymkent city	12 393	12 824	13 407	14 035	15 229

Note: compiled by source Bureau of National Statistics (2021)

In 2016/17, there were 259 032 female teachers in public education schools nationwide. This number increased to 270 578 in 2017/18 and further to 274 346 in 2018/19. By 2019/20, the number of women teachers had reached 281 209, and by 2020/21, the number had increased to 297 280. The data is also presented for each region of Kazakhstan. Akmola had the lowest number of women teachers in all five years, ranging from 12 516 in 2018/19 to 12 996 in 2020/21.

The region with the highest number of women teachers in all five years was Almaty, with the number increasing from 29 875 in

2016/17 to 36 072 in 2020/21. Turkestan saw a significant increase in the number of women teachers, from 18 838 in 2016/17 to 43 214 in 2020/21. The three major cities of Kazakhstan, Astana, Almaty, and Shymkent, all saw an increase in the number of women teachers over the five years.

Overall, the data provide insight into the representation of women in the teaching profession in Kazakhstan and highlight differences in the numbers across the country's various regions. Table 2 provides the number of female teachers in Kazakhstan's technical, vocational, and post-secondary education organisations from 2016 to 2021.

Table 2. Number of women teachers in technical and vocational, post-secondary education organizations

Region	2016	2017	2018	2019	2020	2021
<i>Kazakhstan</i>	37 063	37 807	37 404	36 881	36 610	36 083
Akmola	1 605	1 606	1 584	1 540	1 556	1 516
Aktobe	1 991	1 982	2 005	1 889	1 859	1 820
Almaty	2 642	2 667	2 674	2 686	2 533	2 497
Atyrau	1 294	1 265	1 288	1 221	1 226	1 213
West Kazakhstan	1 552	1 517	1 530	1 514	1 504	1 466
Zhambyl	2 053	2 056	1 978	1 811	1 700	1 644
Karaganda	3 408	3 160	3 102	3 039	2 993	3 012
Kostanay	1 779	1 795	1 761	1 655	1 603	1 575
Kyzylorda	1 803	1 860	1 796	1 796	1 760	1 717
Mangistau	1 303	1 399	1 423	1 365	1 339	1 345
Pavlodar	1 764	1 814	1 794	1 717	1 787	1 780
North Kazakhstan	1 035	1 017	981	977	1 012	970
Turkestan	2 470	2 626	2 745	2 935	2 587	2 547
East Kazakhstan	3 169	3 105	3 157	3 246	3 134	3 149
Astana city	1 438	1 512	1 433	1 465	1 848	1 823
Almaty city	4 890	5 360	5 105	5 343	5 395	5 192
Shymkent city	2 867	3 066	3 048	2 682	2 774	2 817

Note: compiled by source Bureau of National Statistics (2021)

In 2016, there were 37 063 women teachers in technical and vocational post-secondary education organizations in Kazakhstan, which slightly increased to 37 807 in 2017 before decreasing to 37 404 in 2018. The number further decreased to 36 881 in 2019, 36 610 in 2020, and 36 083 in 2021. The regions with the highest number of women teachers in technical and vocational, post-secondary education organizations in 2021 were

Almaty city (5 192), Shymkent city (2 817), and East Kazakhstan (3 149), while the regions with the lowest number were North Kazakhstan (970), Atyrau (1 213), and Kyzylorda (1 717). The data in Table 3 provides insights into the trends and distribution of women teachers in Kazakhstan's technical and vocational post-secondary education organizations over the past six years.

Table 3 presents data on the number of workers in the field of education in Kazakhstan from 2016 to 2021. The data covers the number of teachers in general education schools and the

number of faculty members in higher education organizations. The numbers are given as a percentage of the total number of workers in Kazakhstan's education field.

Table 3. Number of employees in the Education sector

Year	2016	2017	2018	2019	2020	2021
<i>Number of teachers in general education schools</i>						
Kazakhstan, 100%	319 167	334 205	338 755	347 052	366 666	369 696
Male, %	32,9	27,5	29,9	29,1	26,7	30,4
Female, %	82,9	77,5	79,9	79,1	76,7	80,4
DI	17,1	22,5	20,1	20,9	23,3	19,6
<i>Number of faculty members of higher education organizations</i>						
Kazakhstan, 100%	38 241	38 212	38 275	38 470	36 307	36 378
Male, %	35,9	35,6	34,9	36,0	35,7	34,4
Female, %	64,1	64,4	65,1	64,0	64,3	65,6
DI	14,1	14,4	15,1	14,0	14,3	15,6

Note: compiled by authors

For general education schools, the number of teachers increased steadily from 319 167 in 2016 to 369 696 in 2021. However, there is a gender disparity in the teaching profession, with a higher percentage of female teachers than male teachers. In 2016, 82,9% of teachers were female, while only 32,9% were male. This trend continued throughout the years, with females representing over 76% of teachers yearly. The percentage of male teachers in public education schools decreased from 2016 to 2020, with the lowest percentage recorded in 2020 at 26,7%. However, in 2021, there was a slight increase in the percentage of male teachers to 30,4%.

For higher education organizations, the number of faculty members remained relatively stable from 2016 to 2019, with a slight decrease in 2020 and 2021. Similar to general education schools, there is a gender disparity in the faculty, with a higher percentage of female faculty members than male faculty members. The percentage of female faculty members remained consistently above 64%, while the percentage of male faculty members was below 36%. The percentage of male faculty members in higher education organizations showed a slight increase from 35,9% in 2016 to 36% in 2019, followed by a decrease to 35,7% in 2020 and 34,4% in 2021.

The Duncan Index (DI) measures gender inequality that reflects the percentage point difference between the proportion of males and females in a particular group or category. The

table provided shows the DI for the number of teachers in general education schools and the number of faculty members of higher education organizations.

For example, in 2016, the DI for the number of teachers in general education schools in Kazakhstan was 17,1. This means there is a 17,1-percentage point difference between the proportion of males (32,9%) and females (82,9%) who are teachers in general education schools. Similarly, in 2016, the DI for the number of faculty members of higher education organizations in Kazakhstan was 14,1, indicating a 14,1-percentage point difference between the proportion of males (35,9%) and females (64,1%) who are faculty members in higher education organizations.

The DI is a helpful tool for measuring gender inequality in various fields and can be used to track changes in gender balance over time. Overall, the data shows a gender disparity in the field of education in Kazakhstan, with women being overrepresented in public education schools and higher education organizations. However, there are also slight changes in the percentages of male and female teachers and faculty members over the years.

Conclusions and recommendations

Based on the study results, it can be concluded that care professions in Kazakhstan are gender segregated. Prejudices regarding the division of labor along gender lines exist among both employers and employees. Speaking about professions in the field of “Education”, the word “teacher” and “educator” is more often used, although the official name of the professions is “teacher” and “educator”.

According to social stereotypes, “male professions” are mainly interpreted as professions that require hard physical or intellectual labor. However, “female professions” should be related to motherhood, guardianship, care, etc. Men are more often perceived as leaders, employees of the management team, and women as non-ambitious workers who can adapt. Also, in many countries of Central Asia, men are more likely to hold leadership positions than women, who are more likely to be involved in official work during the economic growth in the country. During crises, women are the first to lose their jobs. It is this segment of the population that is not socially protected.

For example, during the COVID-19 pandemic, some enterprises in Kazakhstan were closed, and those who continued to work switched to online mode. Children did not go to school, they studied online, and accordingly, the burden of care increased on women. Women were forced to combine work for hire, housework and home care for loved ones. At the same time, it was social workers could come to people with disabilities and provide physical and moral assistance.

Following conclusions:

(1) Segregation in higher education among teaching staff is a persistent issue, with a disproportionate representation of men in STEM fields and women in humanities and social sciences.

(2) Gender stereotypes and biases are major factors contributing to this segregation, both at the individual and institutional levels. Discrimination and unequal treatment based on gender negatively affect the career advancement and opportunities of women in higher education.

(3) Diversity and inclusion policies and initiatives in higher education institutions are not always effective in addressing gender segregation.

Following recommendations:

(1) Raise awareness and educate students, faculty, and staff about gender stereotypes and biases and their negative impact on academic and professional success.

(2) Develop and implement diversity and inclusion policies and initiatives that address gender segregation and discrimination in higher education.

(3) Increase the representation of women in STEM fields through targeted recruitment and retention strategies, mentorship programs, and supportive work-life policies.

(4) Provide equal opportunities for career advancement and professional development for women and men in higher education, including access to leadership positions and decision-making roles.

(5) Conduct regular assessments and evaluations of diversity and inclusion policies and initiatives to ensure their effectiveness and identify areas for improvement.

The main results of the article show the situation of unequal opportunities for women compared to men. Considering the burden on housekeeping, the issue of occupational segregation can be considered geographically. In addition, rural women experience more occupational discrimination than urban women. Addressing the gender disparity among higher education faculty is critical to promoting diversity, equity and inclusion in academia. Gender equality in higher education is also essential for achieving social and economic progress, as research and education are the main drivers of innovation and development.

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Information about the authors

***Anna A. Kredina** – PhD candidate, University of International Business named after K. Sagadiev, Almaty, Kazakhstan, e-mail: anna.kredina@uib.kz, ORCID ID: <https://orcid.org/0000-0002-7682-2727>

Laszlo Vasa – PhD, Professor, Senior Lecturer, Szent István University, Faculty of Economics and Social Sciences, Gödöllő, Hungary, e-mail: vasa.laszlo@gtk.szie.hu, ORCID ID: <https://orcid.org/0000-0002-3805-0244>

Kuralay O. Nurgaliyeva – Candidate of Economic Sciences, University of International Business named after K. Sagadiev, Almaty, Kazakhstan, e-mail: nurgaliyeva.k@uib.kz, ORCID ID: <https://orcid.org/0000-0002-8735-667X>

Авторлар туралы мәліметтер

***Кредина А.А.** – PhD докторанты, К. Сағадиев атындағы Халықаралық бизнес университеті, Алматы, Қазақстан, e-mail: anna.kredina@uib.kz, ORCID ID: <https://orcid.org/0000-0002-7682-2727>

Васа Л. – PhD, профессоры, аға оқытушы, Сент Иштван университеті, экономика және әлеуметтік ғылымдар факультеті, Годолло, Венгрия, e-mail: vasa.laszlo@gtk.szie.hu, ORCID ID: <https://orcid.org/0000-0002-3805-0244>

Нурғалиева К.О. – э.ғ.к., К. Сағадиев атындағы Халықаралық бизнес университеті, Алматы, Қазақстан, e-mail: nurgaliyeva.k@uib.kz, ORCID ID: <https://orcid.org/0000-0002-8735-667X>

Сведения об авторах

* **Кредина А.А.** – PhD докторант, Университет международного бизнеса имени К. Сағадиева, Алматы, Казахстан, e-mail: anna.kredina@uib.kz, ORCID ID: <https://orcid.org/0000-0002-7682-2727>

Васа Л. – PhD, профессор, старший преподаватель, Университет Святого Иштвана, факультет экономики и социальных наук, Гёдёллэ, Венгрия, e-mail: vasa.laszlo@gtk.szie.hu, ORCID ID: <https://orcid.org/0000-0002-3805-0244>

Нурғалиева К.О. – к.э.н., Университетт международного бизнеса имени К. Сағадиева, Алматы, Казахстан, e-mail: nurgaliyeva.k@uib.kz, ORCID ID: <https://orcid.org/0000-0002-8735-667X>