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RESEARCH ARTICLE
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# Motherhood, Part-Time Work, and Gender Pay Gap in Kazakhstan

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**Abstract**

Gender inequality in the labour market remains a persistent issue in Kazakhstan despite legislative progress and improved educational attainment among women. This study aims to assess the impact of motherhood, part-time employment, and access to preschool education on women's economic participation and the gender pay gap. The research applies a quantitative methodology based on official data from the Bureau of National Statistics of Kazakhstan for the period 2001–2023. Descriptive statistics, growth rate analysis, and Pearson's correlation analysis were used to examine key structural, institutional, and demographic indicators. The analysis reveals a strong negative correlation between the share of children under age three enrolled in preschool and the gender pay gap ($r = –0.878$), as well as a strong positive correlation between part-time employment and the gender pay gap ($r = 0.811$). Over two decades, preschool coverage increased from 4.3% to 47.8%, while the share of women working part-time dropped from 41% to 6%. Additionally, a negative correlation was found between the number of women applying to employment services and the gender pay gap ($r = –0.769$), indicating the importance of active labour market policies. The findings confirm that expanding preschool infrastructure, promoting formal employment, and supporting women's return to work can reduce gender disparities. Policy recommendations are proposed to strengthen gender equity and female economic empowerment in alignment with SDG 5.

**Keywords:** Gender, Gender Inequality, Gender Pay Gap, Maternity Penalty, Part-Time Employment, Preschool Education

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**JEL Code:** J12, J13, J16

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## 1. INTRODUCTION

Gender equity is a significant component of sustainable development and economic growth. Despite improvements in legislation and the achievement of gender equality in education and political representation through gender quotas, economic inequality between men and women persists. Women remain underrepresented in managerial positions and face both cultural and structural barriers that limit their participation in the labour market. Achieving work–family balance is also essential; however, according to the Bureau of National Statistics (2025), women spend an average of 3.5 hours per day on unpaid domestic labour, while men spend only 1.1 hours.

Gender equity is a significant component of sustainable development and economic growth. Despite improvements in legislation and the achievement of gender equality in education and politics, the gender pay gap remains substantial, especially in Kazakhstan. It is driven by occupational and sectoral segregation, unequal distribution of care responsibilities, and limited access to leadership positions (Tomaskovic-Devey & Skaggs, 2002). Women are more likely to work part-time or in informal jobs due to family obligations, which deepens inequality (Ghilarducci & Lee, 2005).

Motherhood significantly affects women's career prospects through what is known as the "motherhood penalty," characterised by lower wages, employment interruptions, and limited advancement opportunities (Manning & Robinson, 2004). Studies show that access to childcare and preschool education can mitigate these effects by supporting mothers' return to full-time, formal employment (Berlinski & Galiani, 2007). However, responses to childcare availability vary depending on education, region, and traditional gender norms (Abe, 2013; Akgunduz & Plantenga, 2018).

In Kazakhstan, gender inequality remains persistent despite progress in legal frameworks. Women are concentrated in low-paid sectors (Buribayev & Khamzina, 2019), face barriers to managerial roles (Kenzheali et al., 2024), and often leave the labor market due to insufficient access to childcare for children under three (Nugmanova et al., 2025). These patterns illustrate the continuing need effective institutional policies that promote gender equity and economic inclusion.

Nevertheless, a research gap remains regarding the impact of institutional measures on women's employment, including the effects of preschool infrastructure on the motherhood penalty, the level of formal employment, and the development of women-led enterprises in Kazakhstan.

Therefore, this research aims to analyse the relationship between key social and economic indicators affecting women's employment and to develop policy recommendations for reducing women's economic vulnerability in Kazakhstan. This research uses a quantitative research design based on data from the National Bureau of Statistics. Descriptive statistics and growth rates were calculated for key indicators of women's employment across five time points (2003–2023). In addition, Pearson's correlation analysis was conducted to assess the relationships between gender-related labour market variables.

To address this aim, the research is guided by the following research questions:

RQ1 – Does the maternity penalty impact female employment in Kazakhstan?

RQ2 – How does part-time employment among women relate to gender income inequality?

RQ3 – Do employment services reduce the gender pay gap?

The research is particularly relevant in the context of Kazakhstan's strategic commitments to the Sustainable Development Goals (SDG 5) and ongoing national efforts to strengthen female economic empowerment.

The paper is structured as follows: Section 2 presents the literature review. Section 3 outlines the methodology and data sources. Section 4 presents the descriptive and correlational findings. Section 5 discusses the policy implications and concludes with recommendations.

## 2. LITERATURE REVIEW

The gender pay gap remains significant in Central Asian countries. It is caused by sectoral and occupational segregation, which reflects both horizontal and vertical inequalities, as well as by the unequal distribution of care responsibilities and limited access to management positions, recruitment, and career promotion (Dickens & Lang, 1993; Tomaskovic-Devey & Skaggs, 2002).

In addition, a persistent gender gap is also driven by part-time jobs, informal employment, and horizontal segregation. Part-time employment affects men and women differently. According to Hirsch (2005), the income loss for women in part-time roles is smaller than for men. Women more often work part-time than men and are employed in lower-paid sectors (Ghilarducci & Lee, 2005). Furthermore, another factor contributing to the gender gap is the number of hours worked: women work 3-4 hours less per week than men (Baker & Drolet, 2010).

Family-related responsibilities also influence these patterns. Polachek (2014) found that the gender pay gap increases significantly after marriage, especially after childbirth. According to Antonie et al. (2020), women often opt for part-time employment due to family responsibilities. As a result, a persistent gender pay gap is also linked to marital status. Moreover, women usually consciously expect lower earnings when switching to part-time employment (Schrenker, 2023).

The link between motherhood and career outcomes has been thoroughly established in the literature. According to Manning and Robinson (2004), the pay gap between men and women increases after exiting paid employment and further widens with the accumulation of career breaks. Women with children face a maternity penalty that reduces their employment prospects, lowers income, and limits career growth opportunities (Rzhanitsyna, 2000). Additionally, Blau and Currie (2006) argued that labor market sorting expands pay inequality, especially in transitional economies.

In this context, access to early childhood education becomes crucial. Berlinski and Galiani (2007) found that the expansion of preschool organisations increases mothers' participation in the labour market. Furthermore, kindergartens reduce the motherhood penalty and promote full-time, formal employment for women (Loughran & Zissimopoulos, 2009). In line with this, Mourao (2013) emphasises that access to preschool education plays a crucial role in facilitating women's return to the labour market and reducing the negative impact of career breaks.

However, responses to improved childcare access are not uniform. Women's responses to improved access to childcare depend on regional female employment levels and cultural aspects, including traditional family roles (Abe, 2013; Akgunduz & Plantenga, 2018). A decline in the motherhood penalty is reflected not only in increased employment but also in improved job quality. According to Berthelon et al. (2024), there is a clear income gap between women with children and those without, which persists for years after childbirth. Their research shows that low-educated women are more likely to start full-time jobs and sign short-term contracts, while women with higher education gain access to more stable employment and higher income.

At the same time, maternity-related policies may have unintended consequences. The maternity penalty is higher in countries with high female labour force participation and strong institutional support for maternity leave (Kleven et al., 2019). Women invest less in skills and choose lower-paid jobs in anticipation of future career breaks (Meara et al., 2020). However, as Kolesnik et al. (2021) noted, risks remain. Extended parental leave reduces women's employment levels and limits their career advancement. Employment breaks lead to a partial loss of human capital and reduced labour efficiency. Moreover, employers tend to prefer hiring and promoting women who are unlikely to take long-term leave.

Finally, family structure also shapes women's career trajectories. There are mixed findings regarding the impact of marital status on careers. In families where the husband's career is prioritised, women's promotions increase the likelihood of divorce. In contrast, this effect is absent in egalitarian families (Folke & Rickne, 2020). At the same time, the presence of marriage and children negatively affects women's participation in entrepreneurship, with many women leaving business after marriage or childbirth (Ojong et al., 2021).

The situation with gender equality in Kazakhstan is improving; however, gender segregation still persists in low-paid sectors (Buribayev & Khamzina, 2019). The gender pay gap and the limited presence of women in management positions influence females in the labour market (Kenzheali et al., 2024). Preschool education for children under the age of three is limited in Kazakhstan (Nugmanova et al., 2025). As a result, many women leave the labour market or work part-time or in informal jobs, which increases social and economic inequality.

## 3. RESEARCH METHODS

This research employs a quantitative research design to examine the structural, institutional, and demographic factors that influence gender inequality in employment in Kazakhstan. The approach is based on secondary data analysis using official statistical indicators from the National Bureau of Statistics for the period 2001–2023. The research focuses on a set of indicators that capture key aspects of women's economic participation as presented in Table 1.

**Table 1.** Descriptive statistics

| Code | Variable | Mean | Standard Error | Standard Deviation | Min | Max | Confidence Level (95.0%) |
|---|---|---|---|---|---|---|---|
| GPG | Gender pay gap | 33,09 | 1,044 | 5,008 | 21,7 | 41,3 | 2,16 |
| PRE3 | Share of children under 3 in preschool | 20,12 | 3,55 | 17,04 | 4,10 | 56,3 | 7,37 |
| WLF | Share of women in labor force | 78,487 | 0,204 | 0,978 | 76,4 | 80,3 | 0,42 |
| WPT | Women working part-time | 17,643 | 2,398 | 11,499 | 5,8 | 40,7 | 4,97 |
| MAR | Number of marriages | 135951,78 | 4067,51 | 19507,12 | 92852 | 168447 | 8435,51 |
| DIV | Number of divorces | 43405,08 | 1915,32 | 9185,56 | 29599 | 59796 | 3972,13 |
| WES | Women applying to employment services | 235408,95 | 22597,01 | 108371,47 | 125309 | 544459 | 46863,33 |
| ISR | Income-to-subsistence ratio | 180,07 | 4,949 | 23,73 | 124,65 | 207 | 10,26 |

*Note*: compiled by the author

The dataset comprises of observations spanning the period 2001-2023, covering women's participation in the labour market, demographics, and the social and economic sustainability of Kazakhstan. The chosen variables cover key structural, institutional, and demographic aspects that influence women's employment and income. These variables allow the gender pay gap to be analysed concerning access to preschool infrastructure, types of employment, marital status, and applications to employment services. The research structure is illustrated in Figure 1.

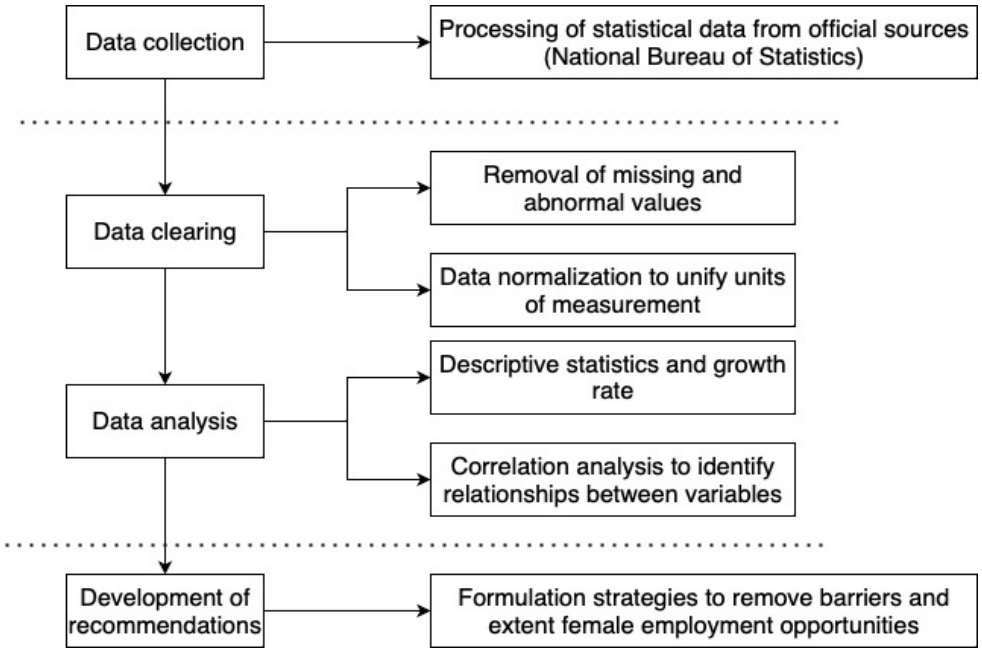


**Figure 1.** The stages of research implementation

The research consists of 4 stages. The first stage is data collection from Bureau of National Statistics for the period 2001-2023. The second stage is data cleaning, where missing data was removed for analysis. The third stage is data analysis, where descriptive statistics are provided, and correlation analysis is computed to identify relationships between variables. The fourth stage involves developing recommendations based on analysis and identifying barriers.

*Statistical method*

The analysis consists of three main stages. First, descriptive statistics were calculated to explore the distribution, central tendencies (mean), and dispersion (standard deviation, minimum, maximum) of the selected variables. This step helped to identify trends in the gender pay gap, part-time employment, preschool access, and women's participation in the labour market over time.

Second, growth rates of key indicators were calculated using a time-series approach, with 2003 selected as the base year. These growth rates enabled the assessment of long-term structural changes in women's employment and related socio-economic indicators across five observation points: 2003, 2008, 2013, 2018, and 2023.

Third, Pearson's correlation analysis was employed to assess the strength and direction of linear relationships between selected quantitative variables. This method is appropriate for identifying statistically significant associations between continuous variables such as the gender pay gap, preschool coverage, women's labour force participation, marital statistics, and applications for employment services. Pearson's correlation coefficient (r) is calculated using the following formula (1):

$$r = \frac{\sum xy - \frac{\sum x \sum y}{n}}{\sqrt{\left(\sum x^2 - \frac{(\sum x)^2}{n}\right)\left(\sum y^2 - \frac{(y)^2}{n}\right)}} \qquad (1)$$

where:

n – number of paired observations;

$\sum xy$ – sum of the product of paired scores;

$\sum x, \sum y$ – sum of x-values and y-values;

$\sum x^2, \sum y^2$ – sum of squared x-values and y-values.

The correlation coefficients were interpreted according to the following criteria: $|r| \geq 0.90$ – very strong correlation, $0.70 \leq |r| < 0.90$ – strong correlation, $0.50 \leq |r| < 0.70$ — moderate correlation, and $|r| < 0.50$ – weak correlation.

The choice of the quantitative method is explained by the possibility of conducting a systematic and empirical analysis of the relationship between gender inequality in the labour market and social, economic, and institutional factors in Kazakhstan. The availability of data for the years 2003, 2008, 2013, 2018, and 2023 allows for the consideration of long-term changes in women's employment by economic activity, the share of children under the age of three in preschool, the number of women applying to employment services, and the level of women's unemployment.

Pearson's correlation analysis enables the interpretation of linear relationships between variables and the understanding of their strength. To develop effective policies, evidence-based and quantitative data are essential.

## 4. RESULTS

Kazakhstan has made significant progress in achieving gender equality. In particular, equality in the education system, the introduction of gender quotas for political representation in 2020 (Constitutional Law of the Republic of Kazakhstan, 2024), laws against violence toward women, and the expansion of women's presence in business. However, despite all legislative efforts, the position of women in the labour market remains uneven. Figure 2 illustrates the gender pay gap in Kazakhstan from 2000 to 2023.

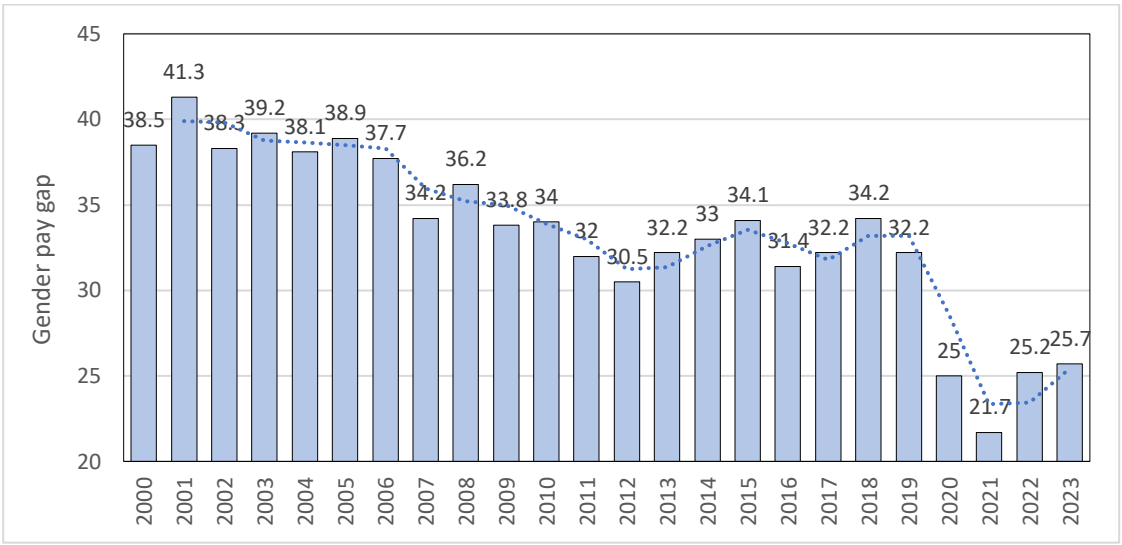


**Figure 2.** The gender pay gap in Kazakhstan from 2000 to 2023

Analysis reveals the changes in the gender pay gap in Kazakhstan from 2000 to 2023. In the early 2000s, the pay gap was approximately 39–40%, then began to steadily decline, reaching 34% in 2010 and 25% a decade later. A significant decrease occurred after 2019, likely in response to social, economic, and political changes. Despite the long-term positive trend in reducing the gender pay gap, the data also highlight the instability of these outcomes, which requires continued attention from state policy and the employment system. For a more detailed understanding of the underlying causes of the gender pay gap, the dynamics of women's participation in the labour market are presented in Table 2.

**Table 2.** Main indicators of women's labour market participation for 2003–2023

| Year | Share of women employed by economic activity | Share of children under 3 in preschool | Women applied to employment services | Level of women unemployment | Change in women employment share (%) | Change in preschool coverage (%) | Change in women employment services (%) | Change in women unemployment % |
|---|---|---|---|---|---|---|---|---|
| 2003 | 46,5 | 4,3 | 135586 | 10,4 | 0 | 0 | 0 | |
| 2008 | 47,3 | 5,6 | 129663 | 7,9 | 1,720 | 30,233 | -4,368 | -24,038 |
| 2013 | 46,9 | 15,6 | 180818 | 5,9 | 0,860 | 262,791 | 33,360 | -25,316 |
| 2018 | 43,1 | 31,7 | 307567 | 5,4 | -7,312 | 637,209 | 126,843 | -8,475 |
| 2023 | 40,9 | 47,79 | 544459 | 5,3 | -12,043 | 1011,395 | 301,560 | -1,851 |

*Note*: compiled by the author based on Bureau of National Statistics (2024)

Analysis reveals the dynamics of key indicators, including the number of children in preschool, unemployment rates, and applications for employment services, concerning women's participation in the labour market between 2003 and 2023. Coverage of children under the age of 3 in preschool increased from 4.3% in 2003 to 47.8% in 2023, an almost elevenfold rise. This significant growth reflects the scale of institutional transformation in the early childhood sector and can be attributed to state policies promoting work–family balance. On the other hand, it may also indicate cultural shifts, such as a decline in the traditional role of grandparents in caregiving.

At the same time, the participation of women shrank from 46.5% to 40.9%, and 12% decrease, which could indicate structural changes in the economy, shifts in women's employment, or an increase in informal employment among women. The number of women applying for employment services increased by approximately 300%, indicating an expansion of institutional coverage, improved access to employment services, as well as growing social vulnerability and instability in the labour market.

By the decline in women's unemployment, there has also been a decrease in the share of women involved in part-time jobs and informal employment (see Figure 3).

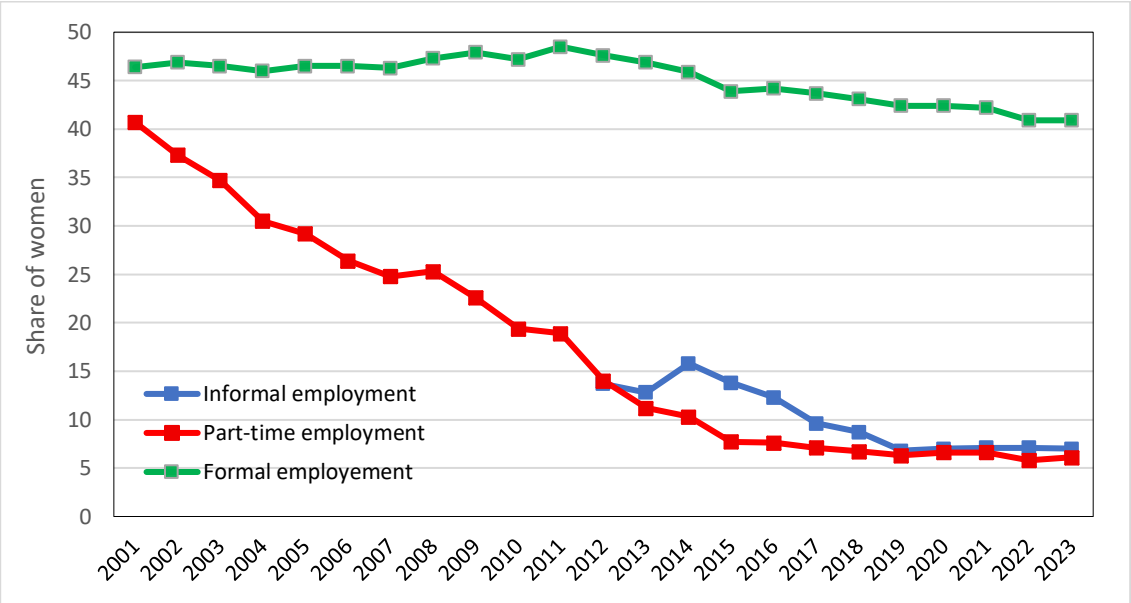


**Figure 3.** Trends of women employment in Kazakhstan for 2000–2022

The level of women's unemployment in Kazakhstan has shown a steady downward trend over the past two decades. In 2003, the unemployment rate among women stood at 10.4%, reflecting both the structural challenges of the post-Soviet labour market and the limited integration of women into formal employment sectors. By 2008, this figure had dropped to 7.9%, and continued to decline, reaching 5.9% in 2013, 5.4% in 2018, and 5.3% in 2023.

Analysis of female formal employment has shown a gradual downward trend. Specifically, the share of women in formal jobs decreased from approximately 46% in 2001 to around 41% in 2023. Analysis reveals that about 41% of women worked part-time in 2000; however, this figure shrank significantly over the following two decades. By 2023, the indicator had decreased to 6%, reflecting changes in the labour market structure or a transition of women to other types of employment. Additionally, the development of kindergarten infrastructure has helped women balance work and family life, enabling them to work full-time.

The share of women involved in informal employment fluctuated between 2012 and 2016. The reduction in informal employment may reflect improved labour market regulation and a decline in the shadow economy. This trend could also be linked to the legalisation of employment and the formal registration of businesses as sole proprietorships or limited liability partnerships (LLPs). Therefore, the percentage of enterprises led by women is presented in Figure 3.

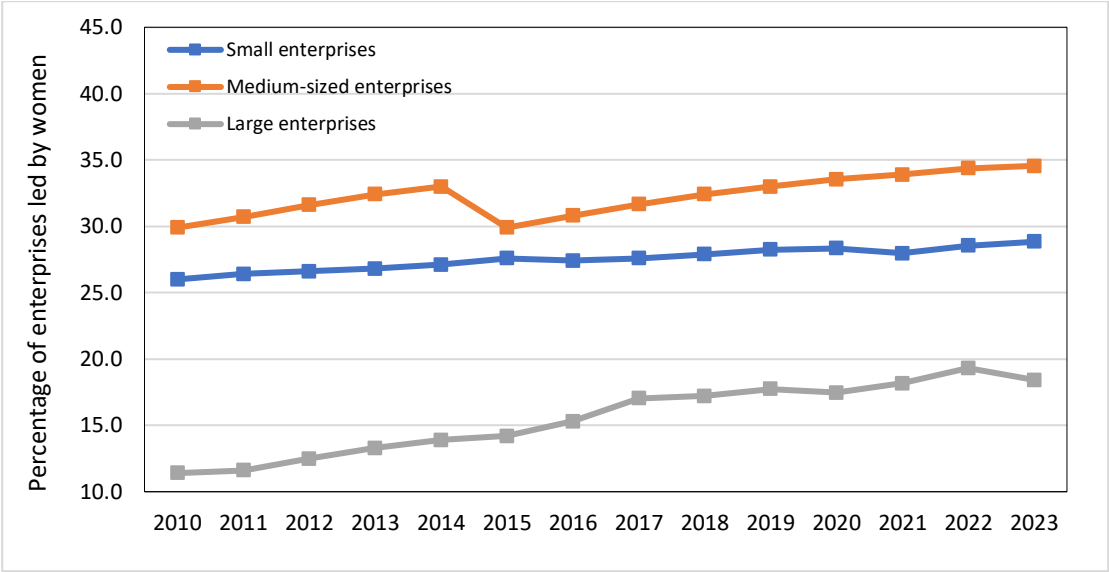


**Figure 3.** Percentage of enterprises led by women in Kazakhstan by enterprise type for 2010-2023

Analysis reveals the share of enterprises led by women in the period 2010–2023 by type. Small enterprises demonstrate gradual growth, increasing from 26% to 28.5%, which indicates a sustainable rise. Medium enterprises increased by 5% during the period, despite a temporary decline in 2015. While large enterprises have the smallest share of women bosses, they still showed 7% growth, with an insignificant decrease in 2023.

In general, the results show positive dynamics in the expansion of women's participation in business leadership. This trend is particularly evident in the steady growth of women-led small and medium-sized enterprises, as well as in the gradual increase in female representation within large enterprises.

These developments may reflect the cumulative impact of state policies aimed at supporting female entrepreneurship, improved access to financial and educational resources, and shifting societal attitudes toward gender roles in the business sector.

To identify the relationships between key social and economic indicators reflecting gender equality in the labour sphere, a correlation analysis was conducted in Table 3.

Table 3. Correlation matrix

| Variable | GPG | PRE3 | WLF | WPT | MAR | DIV | WES | ISR |
|---|---|---|---|---|---|---|---|---|
| GPG | 1 | -0,878 | -0,359 | 0,811 | -0,377 | -0,553 | -0,769 | -0,588 |
| PRE3 | -0,878 | 1 | 0,502 | -0,815 | 0,128 | 0,621 | 0,871 | 0,514 |
| WLF | -0,359 | 0,502 | 1 | -0,470 | 0,139 | 0,550 | 0,462 | 0,330 |
| WPT | 0,811 | -0,815 | -0,470 | 1 | -0,592 | -0,890 | -0,702 | -0,891 |
| MAR | -0,377 | 0,128 | 0,139 | -0,592 | 1 | 0,667 | -0,035 | 0,836 |
| DIV | -0,553 | 0,621 | 0,550 | -0,890 | 0,667 | 1 | 0,440 | 0,898 |
| WES | -0,769 | 0,871 | 0,462 | -0,702 | -0,035 | 0,440 | 1 | 0,375 |
| ISR | -0,588 | 0,514 | 0,330 | -0,891 | 0,836 | 0,898 | 0,375 | 1 |

*Note*: compiled by the author

Based on the presented results, the following conclusions were drawn.

*Kindergarten (PRE3)*

There is a strong negative correlation (r = -0.878) between the share of children under 3 who attend kindergarten and the gender pay gap. It suggests that extending access to preschool education provides women with the opportunity for full-time employment and career growth, and as a result, reduces the gender pay gap. Additionally, it demonstrates an improvement in work-family balance. Moreover, the strong negative relationship with part-time employment (r = -0.815) may shrink the necessity for women to work part-time and involve women in full employment. Thus, the expansion of preschool infrastructure is a crucial factor in overcoming structural barriers to women's employment.

*Part-time employment (WPT)*

The revealed positive correlation between the share of women working part-time and the gender pay gap (r = 0.811) suggests that it contributes to an increase in the pay gap. A strong negative correlation between part-time employment of women and the number of divorces (r = -0.890) shows that as the proportion of women working part-time decreases, the divorce rate increases. Increases in women's full-time employment may be accompanied by increased economic independence, which in turn reduces financial dependence on a partner and makes divorce more socially and financially feasible. Changing gender roles in the family and the redistribution of responsibilities between spouses can create additional stress in households where both partners work full-time.

*Women applying to employment services (WES)*

There is a negative correlation (r = -0.769) between the number of women applying to employment services and the gender pay gap. As the number of women applying to employment agencies increases, the gender wage gap decreases. The increase in women's requests for employment support may indicate a more active integration of women into the formal labour market, which contributes to the improvement of their economic situation. Employment agencies, especially those with retraining and vocational development programmes, can reduce barriers to high-paying or skilled employment, thereby helping to narrow the gender income gap. In addition, it may reflect increased awareness and activity among women in seeking equal opportunities, which also affects the overall wage structure between the sexes.

*Income-to-Subsistence Ratio (ISR)*

There is a moderate negative correlation with the gender pay gap (r = –0.588), indicating that an increase in women's income is associated with a reduction in the gender gap. A strong negative correlation is observed with women working part-time (r = –0.891). As women's income grows, the share of those working part-time decreases, likely because they transition to full-time employment.

The observed correlations support the need for increased investment in the preschool education system, the expansion of retraining programs, and the promotion of full-time employment for women as strategic measures to reduce gender inequality in the labour market. These findings highlight the importance of addressing both structural and institutional factors to ensure women's equal access to economic opportunities and long-term financial security.

## 5. CONCLUSIONS

The research examined the impact of maternity leave, part-time employment, and access to preschool education on the gender pay gap and gender inequality in the labour market in Kazakhstan. It was revealed that structural and cultural barriers limit the economic activity of women.

Maternity is a key factor that strengthens women's economic vulnerability. Insufficient access to kindergartens leads to career breaks, an increase in the share of part-time and informal employment, and, consequently, the accumulation of the motherhood penalty (Mourao, 2013). Part-time employment, despite its flexibility, limits career development opportunities and is associated with lower income, thereby exacerbating gender inequality (Hirsch, 2005).

Despite achievements in legislation and parity in education, economic inequality between women and men persists. The gender pay gap in Kazakhstan is decreasing; however, it remains significant. The correlation matrix revealed the factors that most influence inequality.

Regarding RQ1, it confirms that the maternity penalty significantly impacts female employment in Kazakhstan. The correlation analysis reveals a strong negative relationship between the availability of preschool education for children under the age of 3 and the gender pay gap (r = –0.878), as well as with the rate of women working part-time (r = –0.815). Access to preschool education for children under the age of 3 significantly reduces the gender income gap and decreases the share of women working part-time. Preschool infrastructure is essential for women's participation in the labour market. It also helps women return to employment more quickly and reduces the motherhood penalty (Berlinski & Galiani, 2007). Affordable and accessible preschool services for children under 3 are especially relevant for women with low and medium income levels, who cannot afford private kindergartens or nannies. Consequently, the lack of early childcare options acts as a structural barrier to women's sustained economic engagement and career progression. Therefore, the expansion of preschool education is both a social and economic measure to reduce gender inequality, increase employment, and support women's economic empowerment.

Regarding RQ2, the results confirm that part-time employment among women relates to gender income inequality. The analysis reveals a strong positive correlation between part-time jobs and the gender pay gap (r = 0.811). Women working part-time face limited career growth opportunities and lower income, which makes them economically vulnerable (Antonie et al., 2020). While flexible schedules help achieve work–family balance, they often come at the cost of social protections, limited access to professional development, and reduced long-term security. In the long run, this leads to lower pension savings, accumulated economic loss, and growing inequality both during working age and into retirement. Therefore, reducing involuntary part-time employment should be a priority in gender-sensitive employment policy.

Regarding RQ3, the results confirm that

employment services reduce the gender pay gap. A negative correlation was found between the number of women applying to employment services and the gender pay gap ($r = –0.769$). The application of women to employment services can be interpreted as a positive factor contributing to increased formal employment and enhanced opportunities for women's professional development. The support provided by employment centres such as retraining programs, career consulting, and job placement assistance fosters women's active participation in the formal economy and helps reduce economic inequality between the sexes.

An increase in women's income relative to the cost of living is accompanied by a decrease in the share of part-time employment and a reduction in the gender pay gap. Economic stability enables women to transition into more sustainable, full-time, and socially protected forms of employment, decreasing their reliance on unstable and low-paid jobs. In the long term, this also strengthens their economic autonomy and reduces the risks of social vulnerability.

Moreover, there is an evident expansion of women's participation in business. The share of enterprises led by women has shown a steady increase. This trend may indicate adequate state support for female entrepreneurship, improved access to financial and educational resources, and changing public perceptions of gender roles in business.

Addressing gender inequality requires a systematic and intersectoral policy approach aimed at eliminating institutional and cultural barriers. The following measures should be prioritised:

(1) Development of infrastructure for preschool education, especially for children under the age of three;

(2) Promotion of formal and flexible employment (including remote work and part-time jobs with social protection);

(3) Expansion of professional development, retraining programs, and support for women's reintegration into the labour market;

(4) Reduction of gender segregation in employment sectors.

In general, the implementation of these measures would contribute to narrowing the gender pay gap, strengthening women's economic independence, increasing formal employment, and ensuring sustainable, inclusive growth aligned with the Sustainable Development Goals (SDG 5).

## AUTHOR CONTRIBUTION

Writing – original draft: Kuralay Nurgaliyeva.
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Development of research methodology: Kuralay Nurgaliyeva.
Resources: Kuralay Nurgaliyeva.
Software and supervisions: Kuralay Nurgaliyeva.
Data collection, analysis and interpretation: Kuralay Nurgaliyeva.
Visualization: Kuralay Nurgaliyeva.
Writing review and editing research: Kuralay Nurgaliyeva.

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