Gender Inequality and Economic Efficiency: The Case of Kazakhstan

Gulbakhyt Olzhebayeva[1]

[1] Almaty Management University, Almaty, Kazakhstan

Corresponding author:
* Gulbakhyt Olzhebayeva – PhD candidate, Almaty Management University, Almaty, Kazakhstan, Email:
g.olzhebayeva@gmail.com

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Abstract

Gender inequality is a pervasive social issue affecting economies worldwide, including Kazakhstan. This paper aims to analyze and explore how gender inequality affects economic growth in Kazakhstan. The study examines the economic implications of gender inequality in Kazakhstan, focusing on the wage gap, the economic role of married women, and the underrepresentation of women in leadership positions. The data was meticulously selected to capture the multi-dimensional aspects of gender inequality and its potential impact on economic performance. The primary dependent variable in this study is GDP per capita, which indicates economic performance. Employing a quantitative approach, specifically regression analysis, the research tests several hypotheses related to the economic effect of gender inequality. Key findings indicate that the gender pay gap significantly contributes to economic inefficiencies. In contrast, the impact of the economic role of married women on economic growth is not supported by the regression analysis, as the coefficient is 255.30 (p-value = 0.1611), indicating statistical insignificance. The presence of women in management positions positively impacts economic growth, though the study results are only marginally significant, with a coefficient of 3033560.73 (p-value = 0.0682). These findings underscore the importance of addressing gender disparities to enhance economic performance. Policymakers in Kazakhstan should prioritize strategies to close the gender pay gap and support women in leadership roles to stimulate economic growth.

Keywords: Gender, Gender Inequality, Economic Growth, Gender Pay Gap, Women, Managerial Positions

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1. INTRODUCTION

Gender inequality is a social issue that exists in every country in different dimensions and affects the economy and social life of the population. In Kazakhstan, as in many other countries, gender inequality manifests in various forms, such as the wage gap between men and women, limited career opportunities for women, and the low representation of women in managerial and leadership positions, which undermines the principles of social justice. Women are more likely to work in low-paying sectors of the economy and less likely to hold leadership positions, negatively impacting the labor market.

Economic growth has not been uniformly distributed, and social disparities, including gender inequality, continue to pose challenges. In Kazakhstan, gender inequality is reflected in various economic dimensions, including labor market participation, wage disparities, the glass ceiling, and representation in decision-making. These disparities undermine social justice principles and potentially hinder human capital's utilization, impacting overall economic performance.

Despite progressive policies and legal frameworks promoting gender equality, significant gaps remain. Women in Kazakhstan often face barriers to economic participation, including wage gaps, limited access to high-paying sectors, and underrepresentation in leadership positions. These issues are compounded by traditional gender roles that assign women the primary responsibility for unpaid care work (children, elderly), limiting their opportunities for career advancement. Societal expectation significantly restricts women's ability to pursue career advancement, as the time and energy required for unpaid care work limit their availability and opportunities for professional growth. While governments have tried to address these issues through individual policies aimed at closing the wage gap, promoting female entrepreneurship, or encouraging women's participation in STEM fields, these measures often fall short because they address the symptoms rather than the root causes of gender inequality. To effectively eliminate these gaps, there is a need for comprehensive, integrated approaches that consider the complex interplay of social, cultural, and economic factors that contribute to gender inequality. Policies that promote shared responsibility for unpaid care work, initiatives that challenge and change societal norms around gender roles, and targeted support for women in transitioning to higher-paying sectors should considered. Only by addressing these issues holistically can we hope to achieve true gender equality in the workforce.

According to the Agency for Statistics of the Republic of Kazakhstan (2022), women earn 25,2% less than men in the same industries and similar positions in 2022. Eliminating gender inequality can contribute to increased labor productivity and economic growth. For instance, according to a McKinsey Global Institute report (2015), if women had the same financial opportunities as men, global GDP could increase by 26% by 2025.

While there is expanding research on gender inequality and its economic impacts globally, studies specific to Kazakhstan are limited. Existing literature often focuses on the broader Central Asian region, which, while informative, may not capture Kazakhstan's unique socio-economic dynamics.

This paper analyzes and explores how gender inequality affects economic growth in Kazakhstan. The article seeks to identify how disparities between men and women in terms of wages, family status, and representation in leadership positions contribute to economic inefficiencies.

This research is significant for several reasons. First, it contributes to the limited literature on gender inequality in Kazakhstan, offering insights specific to the country's socio-economic context. Second, by linking gender inequality to economic outcomes, the study underscores the importance of gender equity as a social justice issue. Third, this research's findings can potentially inform policymakers that can enhance economic growth by addressing gender disparities.

Finally, the study adds to the global discourse on gender and development by providing a case study from Central Asia, a region often underrepresented in international research.

The following hypotheses guide the research:

Hypothesis H1: The gender pay gap negatively impacts the economic growth of Kazakhstan.

Hypothesis H2: Women in management negatively impact the economic growth of Kazakhstan.

Hypothesis H3: Married women negatively impact on the economic productivity.

This research paper uses quantitative methods, such as regression analysis, to understand the impact of gender inequality on Kazakhstan's economy.

The paper's structure is organized into the following sections: Introduction, Theoretical Framework, Methods, Results and Discussion, and Conclusion.

The theoretical framework section provides a comprehensive analysis of gender inequality, emphasizing its manifestation in the workplace and its implications for women's career advancement. The discussion centers on two primary categories of factors that influence women's career progression: micro-level factors, which include individual characteristics such as perceptions and behaviors, and macro-level factors, encompassing systemic issues like cultural norms, organizational policies, and societal perceptions. Additionally, the section examines relevant theories, including social constructionism and the theory of the gender pay gap.

The methods section details the systematic approach employed to investigate the research questions. The study utilizes a quantitative research design, specifically regression analysis, to explore the relationship between gender inequality and economic outcomes. Data collection involved sourcing relevant economic indicators and gender inequality metrics from national databases. The independent variables include gender wage disparities, representation in leadership positions, and number of marriages. In contrast, the dependent variable is GDP per capita, which is economic performance. The Methods section outlines the procedural steps undertaken in the analysis.

The Results and Discussion section presents the regression analysis findings and offers an interpretation. The discussion interprets the results within the broader context of existing literature and theoretical frameworks. It explores how the findings align or contrast with previous studies.

The conclusion synthesizes the study's key findings, emphasizing the significant impact of gender inequality on economic outcomes. Moreover, the study highlights the importance of exploring the complex interactions between gender inequality and economic performance.

2. LITERATURE REVIEW

As a result, a reasonably broad topic for studying the representation of women of different ages in the labor market shows the problems of women's employment depending on the country and region of residence. This issue is still poorly understood in Kazakhstan.

Gender inequality is based on the understanding that inequality between men and women is one of the main types of social inequality. Gender inequality can manifest in all areas of life, from economic to political and cultural, and is associated with the unequal distribution of resources, opportunities, and power between men and women.

According to Ud Din et al. (2018), women's career progression is influenced by two main types of factors: micro and macro. Micro factors are internal and pertain to individual characteristics such as perceptions, emotions, and behaviors that can impede career advancement. These internal barriers, however, can be addressed through targeted interventions like coaching, training, and professional development programs. Macro factors, in contrast, are external and more systemic, encompassing broader societal and organizational elements. These include cultural norms, organizational policies,

recruitment and promotion practices, marital status, motherhood, caregiving responsibilities for parents and partners, societal perceptions of women's careers, gender pay disparities, and reward structures. These external factors tend to have a more enduring impact on women's career trajectories.

Horizontal segregation is the uneven representation of men and women at various levels of the career hierarchy. As a result, the critical decisions and resource allocations are predominantly made by men, manifesting as a "glass ceiling" that hinders women's advancement to higher career levels due to limited opportunities or workplace discrimination (European Commission, 2021). Women work in lower-income spheres, such as education or medicine, while men traditionally associate with "men's professions" as engineers (Llorens et al., 2021; Lippa et al., 2014). Occupational segregation intensifies gender inequality by discouraging women from entering male-dominated fields. Such roles are often perceived to require physical strength or the ability to work uninterrupted hours, which is traditionally associated with male workers. Conversely, roles in female-dominated fields are usually viewed as "feminized" and undervalued, further perpetuating gender disparities in the workplace (Ud Din et al., 2018).

Vertical segregation of gender inequality is an issue in terms of both fairness and efficiency, as it prevents the optimal utilization of the potential of all individuals in society and restricts women's access to essential resources and opportunities (Bettio et al., 2009). Addressing this problem requires a broad set of measures, including active support for women, which includes creating equal opportunities for education and access to professional development and eliminating discriminatory practices and stereotypes.

In addition, women often face discrimination in hiring and promotions, which limits their career opportunities and professional growth (Hsieh et al., 2019). Younger women are particularly vulnerable to this bias, as employers may anticipate that they

will marry and potentially become pregnant, leading to assumptions about future absences or reduced commitment to their careers. Well-established companies avoid hiring women for managerial positions because of stereotypes(Araújo-Pinzón et al., 2017). On the other hand, married women with children are more likely to experience health-related issues, which can further impact their career progression. This type of discrimination is particularly pronounced in high-skill occupations, where the stakes and expectations are higher. However, when discrimination is reduced, competent women are more likely to invest in their education and professional development, increasing labor market participation (Santos Silva & Klasen, 2021). Even after women achieve executive positions, they often face pervasive stereotypes undermining their authority and capabilities (Mihalcová et al., 2015).

Additionally, women often lack the "time resources" necessary for career advancement due to the unequal distribution of domestic labor between males and females at home, where women spend an average of 4-5 hours daily on household responsibilities (Liani et al., 2021; Hong, 2023). This imbalance not only limits their availability for professional development opportunities but also hinders their chances of being promoted. The level of education attained by mothers also plays a significant role in their employment status and the number of hours they can work, further influencing their career outcomes (Dolan & Stancanelli, 2021).

According to Hegewisch and Gornick (2011), employed women who take extended leaves or engage in part-time work often self-select into less competitive and lower-paying positions, which may indirectly diminish their focus on career advancement. This pattern is closely related to the fact that women tend to make more substantial compromises in their job performance to accommodate family responsibilities than men. Iglesias and Llorente (2008) noted that women might reduce their working hours, decline promotions, or choose more flexible but less demanding roles to

balance their work and family obligations better. These decisions, while necessary for managing family life, can further hinder their career progression and contribute to ongoing gender disparities in the workplace.

The research focuses on exploring other concepts of gender imbalance: social constructionism theory and the theory of the gender Pay Gap. Each of these definitions will be examined in more detail below.

The theory of social constructionism posits that gender differences are not merely a result of biological factors but are primarily shaped by social constructions, norms, and stereotypes ingrained within society (Berger & Luckmann, 1966). According to this theory, gender and social roles are constructed and continuously reinforced through interactions with societal and cultural forces, influencing individuals' perceptions and behaviors. For instance, societal expectations often dictate appropriate behavior, interests, and career paths for men and women. This socialization process begins early in life and is perpetuated through various institutions, including family, education, and media.

Research by Tellhed et al. (2023) illustrates this concept by showing that girls tend to exhibit less interest in technology when they internalize implicit gender associations that link technology with males and caregiving with females. Furthermore, this disinterest is exacerbated when girls perceive that society endorses the belief that males are inherently more skilled in technology. These societal influences steer women towards traditionally considered more "feminine", such as the humanities or social sciences, often lower-paying than technical and IT fields. The latter tend to attract fewer women, not because of a lack of ability or interest, but largely due to entrenched stereotypes that associate these fields with men. This divergence in career choices contributes to the persistent gender wage gap and limits opportunities for women in higher-paying industries.

The concept of the gender pay gap is traced back to the early 20th century as part of broader discussions on labor rights and gender equality.

However, it gained significant attention in the mid-20th century, particularly during the 1960s and 1970s, as the women's rights movement brought workplace equality issues, including equal pay, to the forefront. Various factors contribute to the gender pay gap, including vertical and horizontal labor market segregation, differences in education and professional experience levels, and existing stereotypes and biases regarding female employment. The human capital model suggests that women with less work experience and lower levels of education would understandably earn lower wages (Minasyan, 2019). Although it is increasingly common for women to attain advanced educational degrees, surpassing men in some fields, fertility and family responsibilities continue to impact their career trajectories and outcomes significantly. This often leads women to take extended leaves, reduce working hours, or choose more flexible but lower-paying roles, hindering their career progression and earnings potential. Despite the importance of education, research indicates that women's work experience plays a more critical role in reducing the pay gap. Continuous and uninterrupted work experience allows women to gain the necessary skills, knowledge, and promotions that contribute to higher wages, making it a more decisive factor than educational attainment in closing the gender pay gap (Blau & Kahn, 2017).

Mothers are often perceived as less competent and committed to their jobs compared to women without children, which leads to discrimination in hiring practices and salary decisions (Correll et al., 2007). Transitioning into motherhood has a well-documented detrimental effect on women's earnings and career advancement, unlike men, who often experience a "marriage premium" that enhances their earnings and career progression following marriage (Blau & Kahn, 2017; Correll et al., 2007). Despite efforts to reduce the gender wage gap, which has increased working hours among married women (Jones et al., 2021), childbearing remains a significant factor that forces many

women to reduce their work hours. This reduction in labor market participation substantially widens the gender wage gap (Erosa, 2016). Parenthood inevitably introduces additional domestic responsibilities for both partners; however, when the mother assumes most of these duties, her diminished availability and focus on the labor market exacerbate the gender gap in career advancement (Hardoy et al., 2017). This imbalance in responsibilities affects women's immediate career trajectories and has long-term implications for their overall earning potential and professional growth. The compounded effects of societal expectations, workplace discrimination, and the unequal distribution of domestic labor all contribute to a persistent gender gap that continues to disadvantage women in both earnings and career opportunities.

In conclusion, addressing gender inequality requires a multifaceted approach that includes dismantling systemic barriers, challenging societal norms, and implementing policies that promote gender equity in all spheres of life. By addressing the micro and macro factors, we can only create a more equitable and inclusive society where women can fully realize their potential.

3. METHODOLOGY

This study employs a quantitative research methodology to assess the impact of gender inequality on Kazakhstan's economy, with a specific focus on GDP per capita. The analysis utilizes secondary data from the Bureau of National Statistics of the Republic of Kazakhstan, covering the period from 2001 to 2022. The key gender-related variables analyzed in this study include the gender pay gap, the number of marriages, the share of women in management positions, gross enrollment in preschool education, and the long-term unemployment rate among women.

Data Collection and Variables

The data was meticulously selected to capture the multi-dimensional aspects of gender inequality and its potential impact on economic performance. The primary dependent variable in this study is GDP per capita, which indicates economic performance. The independent variables, representing different facets of gender inequality, include:

Gender Pay Gap: The difference in average earnings between men and women.

Marriages (Quantity): The total number of marriages registered each year.

Share of Women in Management Positions: The proportion of women holding leadership roles in various sectors.

Gross Enrollment in Preschool Education: Initially considered as a variable, representing early childhood education opportunities.

Long-Term Unemployment Rate: The proportion of women unemployed for an extended period, reflecting economic participation challenges.

Multicollinearity Assessment

Before conducting the regression analysis, multicollinearity among the independent variables was assessed to ensure the reliability of the regression model coefficients. Multicollinearity occurs when two or more independent variables in a regression model are highly correlated, leading to unstable estimates of the regression coefficients. The Variance Inflation Factor (VIF) was calculated for each variable to quantify the level of multicollinearity. The VIF analysis revealed that the variables 'Long-Term Unemployment Rate' and 'Gross Enrollment in Preschool Education' exhibited extremely high VIF values, indicating severe multicollinearity. Therefore, these variables were excluded from the final model to avoid misleading results and to ensure the analysis's accuracy.

Regression Analysis

The final independent variables included in the regression analysis were those with acceptable VIF levels, thus ensuring multicollinearity did not significantly bias the results. The selected variables were subjected to a multiple linear regression analysis using

the Ordinary Least Squares (OLS) method. The regression model used is as follows:

$$GDP \ per \ capita = \beta_0 + \beta_1 Gender \ pay \ gap + \beta_2 Marriages \ (quantity) + \beta_3 Share \ of \ women \ in \ management \ positions$$

where,

β_0 - constant;

β_1 - β_3 - regression coefficient that shows the change in GDP per capita for every unit change in the gender gap, marriages, and women in management positions.

Model Evaluation

The quality of the regression model was evaluated using several statistical tests. The coefficient of determination (R^2) was used to assess how well the independent variables explain the variability in GDP per capita. A higher R^2 value indicates a better fit of the model. The significance of the overall model was tested using the F-test, which determines whether the model provides a better fit than a model with no independent variables. Additionally, the significance of individual regression coefficients was tested using t-tests, which assess whether each independent variable significantly contributes to the prediction of GDP per capita.

This methodology ensures a robust analysis of the relationship between gender inequality and economic performance in Kazakhstan, providing insights grounded in empirical data and statistical significance.

4. RESULTS AND DISCUSSION

Regression analysis was conducted to determine the relationship between GDP per capita and the gender pay gap (Table 1).

TABLE 1. Regression statistics

Multiple R	0,8970756
R-square	0,80474464
Adjusted R-square	0,77220208
Standard error	13743729,6
Observations	22

Note: compiled by author

The multiple R-value is 0.8971, representing the correlation coefficient between the observed and predicted values with a strong positive correlation. Also, it indicates that the regression model fits well with the data. The R-square value (0.8047) indicates that approximately 80.47% of the variance in the dependent variable is explained by the independent variables in the model. The Standard Error value is 13,743,729.6, which measures the average distance the observed values fall from the regression line.

Table 2 shows the results of an analysis of variance (ANOVA) for the regression model.

TABLE 2. Analysis of variance

Item	df	SS	MS	F	F significance
Regression	3	1,4013E+16	4,6711E+15	24,7289896	1,3197E-06
Residual	18	3,4E+15	1,8889E+14		
Total	21	1,7413E+16			

Note: compiled by author

The ANOVA is statistically significant (p-value = 1.3197E-06), suggesting that the independent variables used in the model explain a substantial portion of the variance in the dependent variable (GDP per capita).

The F-statistic of 24.7289896 indicates a

robust model fit, and the sum of squares values shows how much of the total variability is explained by the model versus what remains unexplained.

The degrees of freedom for the regression and residuals are 3 and 18, respectively, based on 22 total observations.

Table 3 presents the regression coefficients and related statistics for the independent variables included in the regression model.

TABLE 3. Regression coefficients

Predictor	Coef.	Stnd.Err.	t-stat	P-value	<95%	>95%
Y-intersection	107629643	81630366,2	1,31850007	0,20386777	-63869392	279128679
Gender pay gap	-4548462,8	853292,707	-5,3304837	4,5661E-05	-6341164,3	-2755761,4
Marriage number	-255,29661	174,673464	-1,4615649	0,16109914	-622,27194	111,678723
Share of women in management positions	3033560,73	1563457,66	1,94028966	0,06817465	-251141,92	6318263,38

Note: compiled by author

The intercept has a coefficient of 107,629,643 with a standard error of 81,630,366.2. The t-statistic is 1.32, with a p-value of 0.2039, indicating that the intercept is not statistically significant at the 5% level. The 95% confidence interval for the intercept ranges from -63,869,392 to 279,128,679, showing a wide range of uncertainty around this estimate.

A negative coefficient suggests that an increase in the Gender Pay Gap (Coefficient = -4,548,462.8, p-value = 4.5661E-05)is associated with a decrease in GDP. The analysis supports the hypothesis (H1) that the gender pay gap significantly negatively impacts GDP per capita. The finding underscores the need to address wage inequality as a strategic means to bolster economic growth. According to a report by Moody's Analytics, reducing wage inequality could potentially increase the global economy by approximately 7%, or $7 trillion. This suggests that narrowing the gender pay gap could benefit Kazakhstan and globally economically. Policymakers in Kazakhstan should prioritize strategies to close the gender pay gap, such as enforcing equal pay legislation, promoting transparent pay practices, and supporting initiatives that facilitate the entry and retention of women in high-paying industries. Such measures would not only advance gender equality but also enhance the country's economic performance.

Marriages Number (Coefficient = -255.30, p-value = 0.1611): The p-value is more significant than 0.05, indicating that this relationship is not statistically significant. The regression analysis does not support the hypothesis (H3)regarding the impact of the number of marriages on economic growth, as the variable was statistically insignificant. This indicates that, in the context of this study, marriage rates do not have a measurable direct effect on GDP per capita. The economic implications of marriage may be more complex and intertwined with other social factors not captured in this analysis. Contrary to the findings of Díaz and Sánchez, where married women have lower income (Díaz & Sánchez, 2013), our results of the impact of married women on economic performance are not rigorous statistically.

The positive coefficient suggests that an increase in the share of women in management positions (Coefficient = 3,033,560.73, p-value = 0.0682) is associated with an increase in the dependent variable. The p-value is slightly above 0.05, which means it is marginally significant (often considered borderline). The hypothesis (H2) that the presence of women in management positions positively impacts economic growth is supported by the data, though the variable is only marginally significant. This marginal significance

suggests that while there is a positive trend, the effect may not be strong enough to be considered robust without further investigation. Nevertheless, this finding highlights the potential economic benefits of gender diversity in leadership. A similar conclusion was reached by de Castro Romero et al., revealing that the relationship between gender equality in management positions and wages is complex (de Castro Romero et al., 2023).

In line with previous studies by Hiller (2014), Cerioli and Formozov (2024), gender differences strongly correlate with economic performance. Reducing the gender pay gap can positively impact a country's economic development, highlighting the need for policies and measures to achieve gender equality.

Policies aimed at supporting the advancement of women in the workforce – such as mentorship programs, leadership training, and family-friendly workplace policies – could not only promote gender equality but also contribute to stimulating economic growth.

5. CONCLUSIONS

In many developing countries, gender gaps have been steadily narrowing (Grybaite, 2006; Blau & Kahn, 2000), particularly in education, where significant progress has been made in reducing disparities at all levels of enrollment by implementing non-discrimination laws and, in some cases, affirmative action policies that have been legally enshrined in many regions. Over time, the representation of women in executive and managerial positions has increased, while their presence in laborer roles has diminished (Li, 2023). However, the effectiveness and relevance of policies and laws in many developing countries remain uncertain (Klasen, 2019). In many areas, deeply ingrained cultural norms and stereotypes continue to influence societal expectations and limit the impact of these policies. Economic barriers, such as poverty and lack of access to resources, further hinder the ability of women and girls to take full advantage of educational opportunities.

While the model explained a significant portion of the variance in GDP per capita, several limitations should be acknowledged. The analysis was based on a relatively small sample size, which may limit the generalizability of the findings. Additionally, the marginal significance of some variables suggests that the results should be interpreted cautiously.

The persistent wage gap, occupational segregation, and barriers to leadership for women indicate that structural and cultural factors continue to hinder progress. Gender disparities not only affect individual women but also have broader economic consequences, limiting the full utilization of human capital and slowing economic growth. An increase in gender equality within the workplace is associated with a corresponding increase in employees' perceived job opportunities, subsequently enhancing their overall life satisfaction (Stelmokienė, 2023).

The study highlights the need for targeted policy interventions to address these issues, including measures to promote equal pay, increase women's access to high-paying sectors, and support women's advancement into leadership roles. Addressing traditional gender roles and ensuring equitable distribution of unpaid care work is crucial to creating a more inclusive and productive economy.

In conclusion, gender inequality is a social justice issue and an economic imperative. By addressing gender disparities, Kazakhstan can unlock significant economic potential and move toward a more equitable and prosperous society. The insights from this research provide a foundation for further studies and policy development aimed at achieving gender equity and enhancing economic growth in Kazakhstan.

Future research should consider expanding the dataset to include more observations and additional variables that may influence GDP per capita. For instance, incorporating variables such as educational attainment, labor force participation rates, and access to

childcare could provide a more comprehensive understanding of economic growth factors. Additionally, exploring the impact of specific policies aimed at reducing the gender pay gap and promoting women in leadership roles would be valuable for informing future policy decisions. These additional insights could help craft more effective strategies to enhance economic growth by promoting gender equality.

Addressing gender disparities requires robust legal frameworks, affirmative action policies, and adaptive strategies that can respond to the changing technological and economic landscape. As globalization continues to reshape labor markets, there is a pressing need for policies that ensure both men and women benefit equitably from these changes, thereby supporting long-term economic growth and gender equality.

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AUTHOR BIOGRAPHIES

*Gulbakhyt Olzhebayeva – PhD candidate, Almaty Management University, Almaty, Kazakhstan. Email: g.olzhebayeva@gmail.com, ORCID ID: https://orcid.org/0000-0002-4964-2747