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RESEARCH ARTICLE

# Female Employment in Kazakhstan: a Comparative Analysis

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**Abstract**

Women's participation in paid employment is essential for economic and social progress. This article aims to analyze the employment and economic activity of women in Kazakhstan to identify labor market problems. By examining global gender wage gaps and employment rates with a focus on Kazakhstan, the review highlights persistent inequalities and the effectiveness of support programs. The research shows that education significantly enhances women's employment opportunities, with higher educational attainment correlating with increased workforce participation and better pay. However, cultural attitudes often hinder full integration, as traditional gender roles and societal expectations continue to influence career choices and opportunities. Descriptive statistics and histograms illustrate vital trends, such as high employment rates among women over 15 and a significant gender wage gap. Progress in increasing women's wages is evident, yet disparities persist, particularly in high-paying industries where women are underrepresented. The results underscore the need for continued efforts to achieve full gender equality in the labor market. Recommendations include implementing policies to ensure equal pay for equal work, supporting vocational training and career growth for women, and conducting public awareness campaigns to challenge long-held stereotypes. By addressing these issues, the study aims to improve working conditions for women, reduce the gender pay gap, and enhance their economic participation, ultimately contributing to broader economic development.

***Keywords:*** Gender Equality, Women, Employment, Gender Wage Gap, Economic Activity, Kazakhstan

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## 1. INTRODUCTION

The significance of women's participation in paid jobs cannot be overstated, as it is a crucial driver of economic and social progress. The historical dynamics of this employment have witnessed substantial changes in recent decades, mirroring the social, economic, and political transformations across various countries and regions. A comprehensive understanding of the factors influencing women's participation in paid jobs is instrumental in evaluating the efficacy of government programs and policies aimed at bridging the gender gap in employment and enhancing working conditions for women.

According to a UN report, 77 percent of women prefer a paid job, and 66 percent of men support their aspirations. However, most women still need to find their preferred job. This mainly happens due to the inability to combine family responsibilities and work. Also, because of stereotypes, young girls do not go to study for STEM professions, and women prefer to get into "female" professions, the pay for which is lower than for "male" ones. At work, women often encounter gender segregation: in the same position, pay for women and men is different. Women's employment in paid jobs has been an essential topic of study over the past decades [1,2,3].

This literature review will examine the historical dynamics of women's employment in paid jobs and analyze the factors influencing this share. To better understand the topic, a comparison of women's employment rates in different countries will be provided, as will an assessment of the impact of policies and support programs on increasing women's employment. Particular attention will be paid to employment trends among women, the impact of education and skills on their employment, and the role of cultural and social factors. It is essential to understand that as long as workers are underpaid due to gender, all government efforts aimed at reducing inequality become ineffective.

Inequality can reduce motivation and increase dissatisfaction among women. Low economic activity leads to women's financial dependence on men.

This study aims to analyze and evaluate indicators related to women's employment and economic activity. It will also include a comprehensive review of the economic activity of working-age women, the gender wage gap, and the economic status of women in Kazakhstan. By examining these aspects, the review aims to shed light on women's complex problems in the labor market and propose potential solutions. The structure of this work is as follows: a literature review, methodology sections, an analysis of the results obtained, and a conclusion.

## 2. LITERATURE REVIEW

Research shows significant differences in women's employment compared to men's employment. Many factors influence women's participation in paid jobs: educational attainment, cultural attitudes, and government policies. Research shows that higher levels of education increase female employment. Women more often began to choose a job in second place after leaving. Until now, in the consciousness of the central population, the stable role of a woman as a housewife remains. It is the woman who, when employed, is simultaneously engaged in care, which is classified as unpaid work [4].

Another empirical study found that working women have fewer health problems. Government support programs such as paid parental leave and access to preschool education are essential in reducing inequality [5]. A study of the pandemic period showed that women were more often at risk as the most minor in-demand workers. Also, women usually lost their jobs on their initiative, as they chose family during this challenging period [6]. Other authors highlight many new topics, such as workplace leadership, harassment, and gender-sensitive policymaking [7]. The emergence of new issues may be because, previously, such topics could not arise due to the small number of working women. Over the past 30 years, women's participation in the

workforce has increased. This trend is also gaining momentum in developed and developing countries. However, the increase in working women is low in countries with transition economies and lagging countries. There is also a pay gap between men and women across countries (Table 1).

**TABLE 1.** Comparison of pay levels for women and men in workplaces

| Country | Gender Pay Gap | Source |
|---|---|---|
| Estonia | 20 % | [8; 9; 10] |
| Germany | 20 % | [8] |
| Luxembourg | 5 % | [8; 11] |
| Netherlands | 11.5 % | [12] |
| USA | 20-23 % | [13; 14; 15] |
| Great Britain | 18.1 % | [16] |
| South Africa | 27.1-89 % | [17; 18; 19; 20; 21] |
| Nigeria | 77 % | [17] |
| Tanzania | 12% - cities, 83% - rural areas | [19] |
| Russia | 7 % | [22] |
| Armenia | 5.5 % | [22] |

*Note*: compiled by authors

It is crucial to note that the gender pay gap is not a localized issue but a global one. The most significant disparities are observed in African countries, particularly in rural areas where girls' education is alarmingly low. This is further exacerbated by the underrepresentation of women in professions, a trend that is partly due to employers' lack of registration in official structures. Additionally, informal self-employed women's businesses in villages contribute to this disparity [22].

In the United States, pay segregation occurs due to the presence of children, household responsibilities, participation in trade unions, and the presence or absence of specific skills. Scientists have proven that there are a lot of other factors that are not related to gender stereotypes [12,13]. Replacement of female managers occurs more often than male managers. The pay of substitutes has a difference of 20%, which shows horizontal segregation. Other scientists have proven that female managers cope better with company crises, and ethnicity does not matter [14,15].

In Switzerland, there is discrimination against women by employers, as shown by several surveys. Studies in the Netherlands and Switzerland showed a non-significant pay gap [23]. In addition, scientists have found that personal characteristics are more important in employment than gender. The trend towards hiring specialists with high cognitive abilities has been growing recently. Interestingly, a study conducted by Semykina and Linz showed similar results. The authors argue that those workers who consider external circumstances to be the reason for influencing decisions have low earnings. Women and men who had higher earnings showed a tendency towards internal independence in decision-making [22].

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.

While the gender pay gap remains a persistent issue, there is reason for optimism. Women's participation in paid jobs is on the rise, particularly in countries with developed economies and high levels of education. This positive trend is primarily attributed to the role of government policies and support programs, which have been instrumental in increasing women's employment and reducing the gender wage gap. However, it is essential to acknowledge that significant challenges and barriers still exist, and concerted efforts are needed to achieve full gender equality in the labor market.

## 3. METHODOLOGY

Works that include a literature review show the same results as quantitative studies. This is how the author Osundina O. used data on women's health and work. The conclusion was that working women tend to get sick less [5]. Decomposition analysis allows us to identify horizontal segregation using data on women's

and men's wages [7]. Other scientists use cross-sections from the Current Population Survey (CPS) based on survey data [12]. Methods of statistical analysis are in the description (Figure 1).

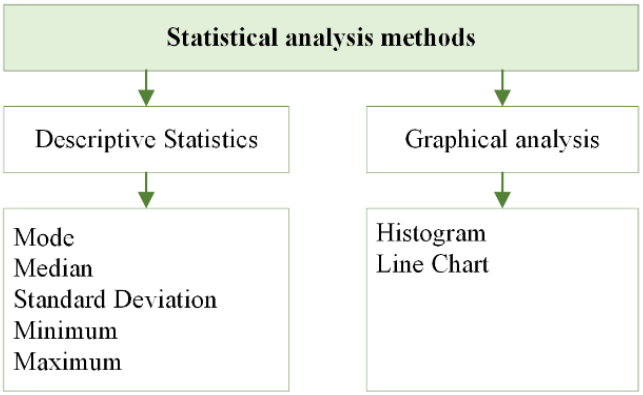


**FIGURE 1**. Research Methodology

*Note:* compiled by authors

Descriptive statistics include the following: mean, median, mode, standard deviation, minimum and maximum values, and the 25th and 75th percentiles. Descriptive statistics involves calculating various statistics to describe the essential characteristics of data. The mean, median, and mode give an idea of the central tendency of the data. The standard deviation shows the degree of spread of the data around the mean, which is essential for understanding the variability of the data.

Mean: Represents the average of all observations for each indicator. The basic calculation formula is presented below:

$$\mu = \frac{\sum_{i=1}^{n} x_i}{n}, \qquad (1)$$

где $\mu$ – Mean;
$x_i$ — every observation,
$n$ — number of observations.

Median - this value divides the data in half so that 50% of the values are below it and 50% are above it. If the number of observations is odd, the median is the average of the two middle observations. The basic calculation formula two is presented below:

$$Median = \begin{cases} x_{\left(\frac{n+1}{2}\right)}, & if\ n\ is\ odd \\ \frac{x\left(\frac{n}{2}\right)+x\left(\frac{n}{2}+1\right)}{2}, & if\ n\ is\ even \end{cases}, \qquad (2)$$

Mode - is the value that occurs most often in the data set. Standard Deviation measures the dispersion of data relative to the mean value.The basic calculation formula 3 is presented below:

$$\sigma = \sqrt{\frac{\sum_{i=1}^{n}(x_i-\mu)^2}{n}}, \qquad (3)$$

где $\sigma$ — Standard Deviation;
$\mu$ — average value;
$xi$ — every observation;
$n$ — number of observations.

The minimum and maximum values (Minimum and Maximum) are calculated — the smallest and largest values in the data set. The 25th and 75th percentiles (25th and 75th Percentiles) are indicators below which 25% and 75% of the data are located, respectively.

A Histogram is a bar graph showing the frequency distribution of data values. It allows us to visually assess the shape of the data distribution and identify the presence of biases,

concentrations, or anomalies. Histograms in this analysis are used to illustrate the distribution of the share of women in paid jobs, the employment rate among women over 15 years of age, and the share of the economically active working-age population among the Line graph is used to display time series, such as the trend in the average monthly salary of women. The horizontal axis represents time (years), and the vertical axis represents the indicator's value (salary in thousands of tenge). A line graph helps identify trends and changes in an indicator over time and allows for assessing the speed and stability of changes. These methods will enable us to gain a comprehensive understanding of the data, identify critical trends and variability, and present the analysis results in a visual form.

## 4. RESULTS AND DISCUSSION

Abbreviations will be introduced to better present the results. The share of women in paid workplaces, % is A, the Level of employment among women over 15 years old, % is B, the Share of the economically active population of working age among w is C. The ratio of the average monthly salary of women to men, % is D. Table 2 provides descriptive statistics for four women's employment and economic activity indicators.

**TABLE 2.** Descriptive Statistics

| Indicator | Location | | Spread | | | | |
|---|---|---|---|---|---|---|---|
| | Mode | Median | Standard Deviation | Minimum | Maximum | 25th percentile | 75th percentile |
| A | 49.8 | 49.9 | 0.456 | 48.9 | 50.6 | 49.5 | 50.1 |
| B | 61.2 | 61.2 | 0.995 | 59.8 | 62.8 | 60.4 | 61.8 |
| C | 78.8 | 78.8 | 0.916 | 76.7 | 80.3 | 78.5 | 79.2 |
| D | 30.06 | 32.2 | 04.01 | 21.06 | 34.2 | 30.05 | 33.0 |
| *Note:* compiled by authors based on [24] | | | | | | | |

The number of observations is 13, and there are all the data. The mean of the first indicator is 49.8%, and the median is 49.9%, indicating that women make up approximately half of the workforce in the study locations. The standard deviation is 0.456, which means little variability in the data. The minimum and maximum values are 48.9% and 50.6%, respectively. Thus, the range of changes is small, as evidenced by the 25th and 75th percentiles of 49.5% and 50.1%.

Further, the average and median for the indicator "employment rate among women over 15 years of age" are equal to 61.2%, which indicates high employment among women in this age group. The standard deviation is 0.995, indicating slightly more significant variability than the first measure. The minimum value is 59.8%, and the maximum is 62.8%. The 25th and 75th percentile values are 60.4% and 61.8%, respectively. This means that half of the observations fall within the narrow range of 60.4% to 61.8%.

For the third indicator, the mean and median are 78.8%, indicating high economic activity of working-age women. The standard deviation is 0.916, indicating little variability. The minimum value is 76.7%, and the maximum is 80.3%. The 25th and 75th percentile values are 78.5% and 79.2%, respectively, confirming the concentration of values in a narrow range.

The average ratio of the monthly average wage of women to men's salary is 30.06%, and the median is 32.2%, indicating a significant wage gap between women and men. The standard deviation is 4.01, indicating more significant variability than other indicators.

Next, Figure 2 shows the distribution of women's share of paid jobs.

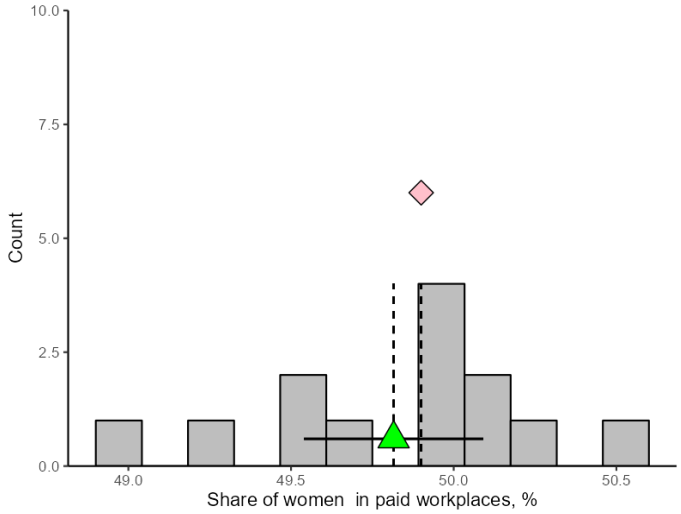


**FIGURE 2**. Distribution of women's share in paid jobs

*Note:* compiled by authors

The histogram shows that most observations are centered around the value of 49.9%, which corresponds to the median and mean. The most common values range from 49.5% to 50.1%. This confirms the previously mentioned low variability in the data, where the percentage of women varies within a narrow range of around 50%. Overall, the histogram clearly illustrates the symmetrical and concentrated distribution of women's share of paid jobs. Figure 3 shows the dynamics of the average monthly salary of women in thousands of tenge from 2010 to 2022.

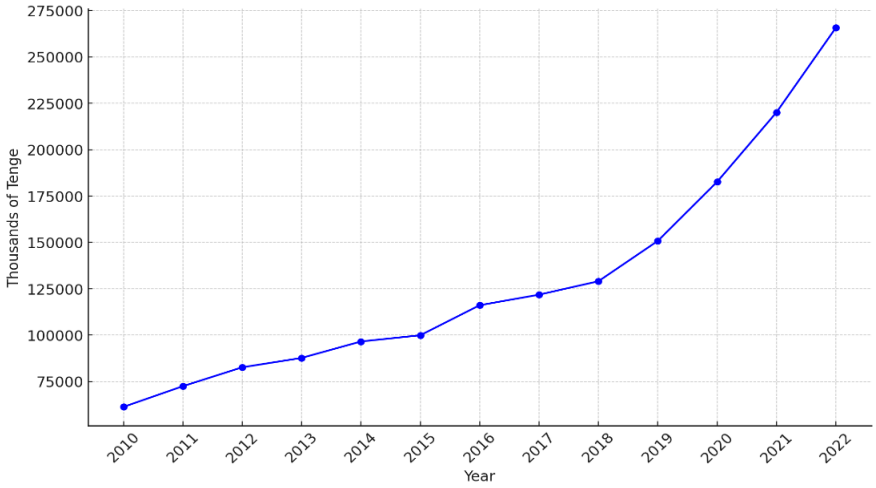


**FIGURE 3**. Dynamics of the average monthly salary among women, in thousands of tenge

*Note:* compiled by authors

The horizontal axis represents years, and the vertical axis represents the average monthly salary in thousands of tenge. The

monthly average wage has steadily increased since 2010. In 2010, the average salary was 61,273 thousand tenge, and by 2022, it increased to 265,762 thousand tenge.

This significant increase is especially noticeable after 2015, when wages began to rise faster. For example, from 2015 to 2016, salaries increased from 99,911 to 116,108 thousand tenge, and from 2020 to 2021 - from 182,679 to 220,160 thousand tenge. The graph illustrates a stable wage increase, which may indicate positive economic trends in Kazakhstan over this period.

Most observations are centered around the value of 61.2%, which corresponds to the mean and median for this indicator. Figure 4 shows the distribution of employment levels among women over 15 years of age.

The graph illustrates the consistent rise in average monthly salaries in Kazakhstan, likely reflecting broader economic growth and improved labor market conditions over the past decade.

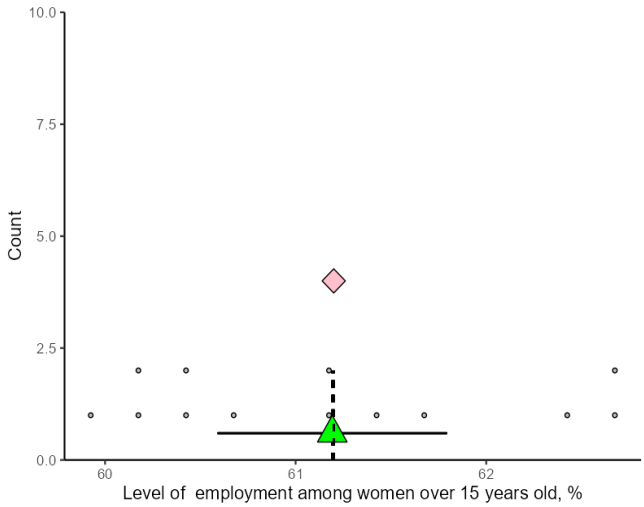


**Figure 4**. Distribution of employment rates among women over 15 years of age, percentage

*Note*: compiled by the authors

The most significant number of observations falls on values of about 61%. This confirms the low variability of the data, with a minimum employment rate of 59.8% and a maximum of 62.8%. The 25th and 75th percentile values are 60.4% and 61.8%, respectively, indicating that the data are concentrated in a narrow range. Visually, the histogram shows that data on the employment rate of women over 15 years of age have a symmetrical distribution around the average value. This visualization confirms the findings from descriptive statistics that the employment rate for women over 15 years of age averages 61.2%, with slight variations from this value.

The horizontal axis shows the percentage of the economically active population, ranging from 76.7% to 80.3%. The vertical axis displays the number of observations for each indicator's value.

Next, Figure 5 shows the distribution of the share of the economically active working-age population among women.

The histogram shows that most observations are concentrated around the value of 78.8%, corresponding to this indicator's mean and median values. The most significant number of observations falls on values of about 78.8%, confirming the data's low variability. The minimum value of the share of the economically active population among women is 76.7%, and the maximum is 80.3%. The 25th and 75th percentile values are 78.5% and

79.2%, respectively, indicating that the data are concentrated in a narrow range. Visually, the histogram shows a symmetrical distribution of values around the average, confirming the high economic activity of working-age women with minor deviations.

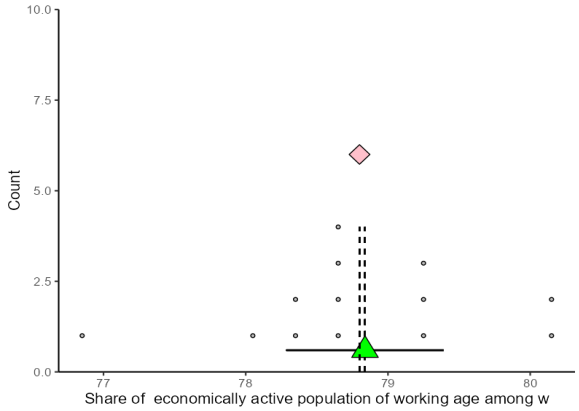


**FIGURE 5**. Distribution of the share of the economically active working-age population among women, percentage

*Note:* compiled by the authors

This visualization reinforces the findings from descriptive statistics that, on average, 78.8% of working-age women are economically active.

The presence of segregation can be determined based on data on the level of wages in Kazakhstan among men and women (Figure 6).

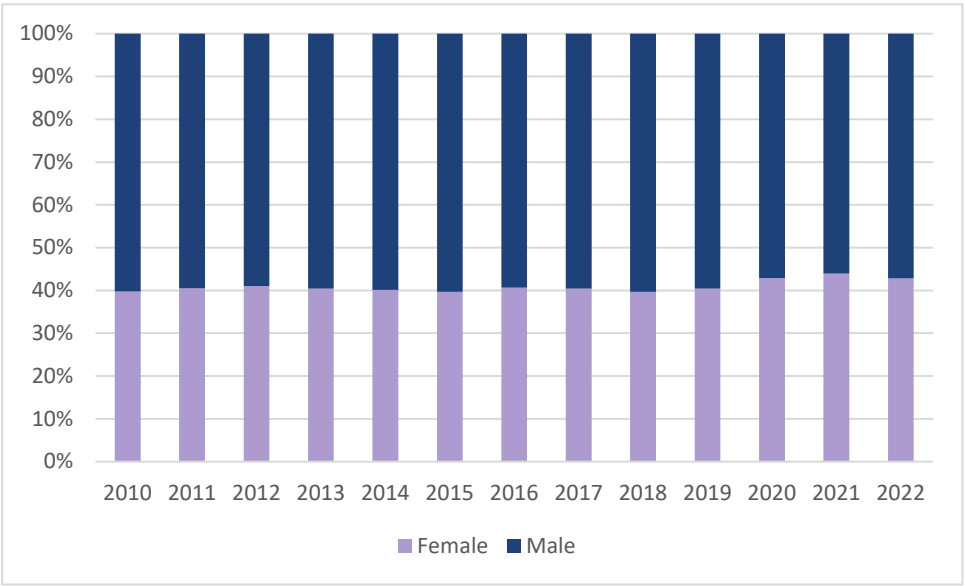


**FIGURE 6**. Distribution of wages of women and men

*Note:* compiled by authors

An analysis of wage data for men and women from 2010 to 2022 shows significant wage increases for both genders. During this period, women's wages increased from 61,273 to 265,762 (approximately 4.3 times), and

men's wages increased from 92,853 to 355,296 (approximately 3.8 times). Despite the overall increase in wages, the gender wage gap remains a stark reality, with men consistently earning more than women. The absolute gap increased from 31,580 in 2010 to 89,534 in 2022. However, the relative gap has narrowed: if in 2010 women earned about 66% of men's wages, then in 2022 - about 75%. This suggests that women's wages are growing faster than men's, but it's important to note that the narrowing gap is still significant. The data underscores the need for continued efforts to reduce the gender pay gap and improve wage equality, as the issue is far from resolved.
Policy interventions and organizational initiatives should accelerate the pace of wage equality to bridge the remaining gender pay gap more effectively.

## 5. CONCLUSIONS

The study aims to identify current trends and challenges in women's employment and provide recommendations to improve their economic status and reduce the gender pay gap. The analysis revealed horizontal segregation in women's wages, consistent with the literature review on the pay gap between women and men [8, 10, 13, 14, 15]. Based on the results of the analysis, the following recommendations:

1. The significant wage gap between women and men requires developing and implementing policies to ensure equal pay for equal work. Recommended measures are increasing wage transparency, regular wage audits, and mandatory compliance with the principles of gender equality when setting wages.

2. Given the high level of employment among women, it is essential to continue to support and encourage their economic activity. This may include vocational training and retraining programs, creating favorable conditions for combining work and family responsibilities.

3. The high economic activity of working-age women indicates the significant potential of this population segment. To maintain and increase this activity, programs should be developed to support women's entrepreneurship, improve working conditions, and provide additional opportunities for career growth.

4. Regular monitoring of women's employment and economic activity indicators will allow timely identification of problem areas and the development of measures to eliminate them.

5. Campaigns and educational programs should be conducted to raise public awareness of the importance of gender equality in the workplace. This will help change long-held stereotypes and create a more inclusive work environment.

These recommendations aim to improve working conditions for women, reduce the gender pay gap, and increase their economic participation, which ultimately contributes to the development of the economy as a whole. Business leaders and entrepreneurs can apply the recommendations to create more inclusive and equitable work environments, increase women's employment rates, and ensure equal pay for equal work.

Academic and research institutions can use the recommendations to conduct further research and educational programs to increase awareness of gender inequality in employment. Thus, future researchers can perform a more detailed analysis to identify hidden disparities. Also, the barriers and obstacles women face in finding jobs and advancing in their careers have yet to be studied. It can also explore different age groups and education levels.

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