

Research article

Gender Disparities in Employment and Entrepreneurship: A Preliminary Empirical Analysis of Social Structures and Institutional Influences: Based on Panel Data from 50 Countries

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ABSTRACT

This study investigates gender disparities in employment and entrepreneurship by conducting a preliminary empirical analysis based on panel data from 50 countries spanning from 1990 to 2022. By leveraging descriptive statistics and boxplot visualizations, we examine the differences in employment and entrepreneurship rates between men and women. The findings reveal significant gender disparities in both domains, influenced by various social structures and institutional factors. In the entrepreneurship domain, women exhibit higher variability in entrepreneurship rates compared to men, with median rates slightly higher for women. This suggests that women face both more opportunities and challenges in entrepreneurship. Notably, countries like China and Brazil show significant improvements in female entrepreneurship rates in recent years, indicating positive impacts from supportive policies and economic environments. In the employment domain, the data reveals the presence of extreme values that affect overall distribution readability. After excluding outliers, gender differences in employment rates become clearer. The analysis indicates that while many countries show minimal gender differences in employment rates, others, such as India and South Korea, display significant disparities favoring men. The study underscores the importance of gender-sensitive policies to reduce disparities and enhance equality in employment and entrepreneurship. It also highlights the need for further research to explore the underlying social, economic, and institutional factors contributing to these gender differences.

Keywords: Gender disparities, Employment rates, Entrepreneurship rates, Social structures, Institutional influences, Panel data analysis, Gender equality policies

1. Introduction

Globally, there are significant gender differences in employment and entrepreneurship. This difference not only affects the career development and economic independence of individuals, but also has a profound impact on the economic development and social progress of the country. Gender differences in employment and entrepreneurship take a variety of forms, from income inequality and differences in career development opportunities to differences in entrepreneurial success rates and access to entrepreneurial resources, all of which reveal deep-seated social structural and institutional problems.

First, in the field of employment, the gender gap shows that women are usually in low-paid, low-skilled jobs and have fewer opportunities for career development. According to the International Labour Organization, the gender wage gap remains significant globally, with women earning on average only about 80% of what men earn. In addition, women are significantly underrepresented in senior management and decision-making positions, with only a handful of countries globally achieving gender equality at high levels of representation. This phenomenon is not limited to developing countries, but also exists in many developed countries.

Second, the challenges women face in entrepreneurship are more complex. Women entrepreneurs have significant disadvantages in accessing financing, market resources and social support. Many studies have shown that it is harder for women entrepreneurs to get bank loans and investor support, leaving them with insufficient capital at an early stage. In addition, women have to balance the dual responsibilities of family and career in the process of entrepreneurship, which further limits their entrepreneurial activity and success rate. According to the Global Entrepreneurship Monitor report, although female entrepreneurial activity has increased in recent years, the survival rate of women starting businesses is still lower than that of men.

Study the importance and significance of this difference

It is of great practical significance to study the manifestation of gender differences in employment and entrepreneurship and the social structure and institutional factors behind them. First of all, this research helps to reveal the deep-seated causes affecting gender differences, and provides a scientific basis for policy makers to promote the implementation of gender equality policies. In-depth analysis of the forms and influencing factors of gender differences can help us understand which social structure and institutional factors have the greatest adverse impact on women's

employment and entrepreneurship, so as to propose targeted measures for improvement.

Secondly, this research is of great significance for promoting economic development and social progress. Gender equality is not only an important embodiment of social equity and justice, but also a key factor in achieving sustainable economic development. Studies have shown that countries with high levels of gender equality generally have higher levels of economic growth and social development. That's because gender equality boosts economic development by making labor markets more efficient and innovative. In addition, gender equality can promote social harmony and stability and reduce social conflicts and inequalities. Therefore, the study of gender differences in employment and entrepreneurship and their influencing factors is of great significance for achieving overall economic and social progress.

Finally, this research is also of great significance for individual career development and the improvement of life quality. By revealing the performance of gender differences in employment and entrepreneurship and the reasons behind it, it can help women better understand and cope with the challenges in career development, and improve their career competitiveness and entrepreneurial success rate. At the same time, this research can also provide women with more support and resources to help them achieve greater success in their career and entrepreneurial paths.

Research purpose

The main purpose of this study is to explore the social structural and institutional factors that influence gender differences in employment and entrepreneurship. Specifically, based on panel data from 50 countries from 1990 to 2022, this study will reveal the manifestations of gender differences and their influencing factors through empirical analysis methods. Through this research, we hope to:

Describe the manifestations of gender differences: Through the analysis of employment and entrepreneurship data, reveal the specific manifestations of gender differences in different countries and regions. Including but not limited to differences in income, career development opportunities, entrepreneurial success rates, etc.

Analyze the social structural factors that influence gender differences: Explore how social structures (such as education level, cultural traditions, social support, etc.) influence gender differences. By comparing the characteristics of social structure in different countries and regions, the influence of these factors on gender differences is analyzed.

Analysis of institutional factors affecting gender differences: Explore how institutional factors (such as legal policies, welfare systems, labor market structures, etc.) affect gender differences. By comparing the institutional characteristics of

different countries and regions, the influence mechanism of these factors on gender differences is analyzed.

Make policy recommendations: Based on the results of empirical analysis, make policy recommendations to promote gender equality. This includes but is not limited to improving women's education, improving policies to support women's employment and entrepreneurship, and strengthening legal protection.

Through the realization of the above research objectives, we hope to provide a scientific basis for policy makers to promote the implementation of gender equality policies. At the same time, this study also hopes to arouse the attention of all sectors of society to gender differences, and promote social justice and sustainable economic development.

Data and methods

To achieve the above research purposes, panel data for 50 countries from 1990 to 2022 will be used in this study. These data include two main datasets: GENDER_ENT1 (entrepreneurship data) and GENDER_EMP (employment data). Among them, the GENDER_ENT1 dataset mainly contains the specific data of women and men in entrepreneurial activities in each country, including the proportion of entrepreneurship, entrepreneurial success rate, and entrepreneurial capital. The GENDER_EMP dataset mainly contains specific data on the employment activities of women and men in each country, including the proportion of employment, income levels, and career development opportunities.

In terms of data analysis, this study will adopt a combination of descriptive statistical analysis and regression analysis. Through descriptive statistical analysis, we can reveal the basic characteristics and trends of gender differences. Through regression analysis, we can explore the mechanism of social structure and institutional factors affecting gender differences.

In the specific analysis process, we will focus on the following aspects:

1. Gender wage gap: Analyze the wage difference between women and men in different countries and regions, and the changing trend of this difference.
2. Differences in career development opportunities: Analyze the differences in career development opportunities between women and men, including the representation of senior management positions and decision-making positions.
3. Difference in entrepreneurial success rate: Analyze the difference between women and men in entrepreneurial success rate and the changing trend of this difference.

4. Social structure and institutional factors: To explore the impact of education level, cultural tradition, social support, laws and policies, welfare system, labor market structure and other factors on gender differences.

Through the above analysis, we hope to fully reveal the performance of gender differences in employment and entrepreneurship and the underlying social structure and institutional factors, and provide scientific basis and policy recommendations for achieving gender equality and social equity and justice.

Research significance

This study has important theoretical and practical significance. In theory, this study will enrich the theoretical system of gender studies and labor economics, and reveal the manifestation and influence mechanism of gender differences. In practice, this study will provide a scientific basis for policy makers to promote the implementation of gender equality policies and promote social equity and justice and sustainable economic development.

In conclusion, through this study, we hope to reveal the performance of gender differences in employment and entrepreneurship and the social structure and institutional factors behind it, so as to contribute to the realization of gender equality and social equity and justice.

2. Literature review

Research on gender differences in employment

The existing literature generally points out that gender differences show many aspects of inequality in employment. These inequalities are not only reflected in the obvious aspects such as wage levels and career opportunities, but also cover a variety of factors such as the working environment, type of occupation and working hours.

First of all, gender wage difference is one of the most concerned aspects in the study of gender difference in employment. A number of studies have shown that women's wages are generally lower than men's, and this disparity is found across countries and industries. For example, a study by the International Labour Organization (ILO) states that the gender wage gap averages around 20% globally [1]. In some industries, the difference can be even more pronounced. For example, in the finance and technology industries, men are often paid significantly more than women [2]. The reasons for such differences are complex, including occupational segmentation, differences in educational background, and differences in work experience [3]. In addition, the study also found that even in the same industry and the same position, women's wages are still lower than men's, which indicates that gender discrimination may be an important factor leading to the wage gap [4].

Secondly, the inequality of career development opportunities is also an important manifestation of gender differences in employment. Studies have shown that women are significantly underrepresented in top management and decision-making positions. For example, according to McKinsey, fewer than 20% of senior executives at large companies worldwide are women [5]. This phenomenon exists not only in private enterprises, but also in the public sector [6]. This inequality not only limits women's career advancement, but also affects the diversity and innovation capacity of organizations [7]. Research suggests that reasons for this include the glass ceiling effect, career interruptions (such as due to childbearing and parenting), and gender stereotypes [8].

In addition, gender differences also show up in the type of occupation and working environment. Studies have found that women are more likely to work in low-paid, low-skilled jobs, such as services and education, while men are more likely to work in higher-paid, high-skilled jobs, such as engineering and technology [9]. Such occupational segmentation not only affects the gender wage gap, but also affects the working environment and occupational safety [10]. For example, in the service industry, women are more likely to face occupational insecurity and poor working conditions [11]. In addition, women are more likely to experience sexual harassment and workplace violence in the workplace, which further limits their career development [12].

Finally, differences in working hours and work arrangements are also important manifestations of gender differences in employment. Studies have shown that women generally take on more family responsibilities, which results in restrictions on their working hours and work schedules [13]. For example, women are more likely to work part-time or in flexible employment, which, while balancing family and work, also affects their income levels and career opportunities [14]. In addition, the study also found that women are more likely to face career interruptions in the workplace, which further affects their career development and salary level [15].

Research on gender differences in entrepreneurship

In the world of entrepreneurship, the gender gap is equally striking. Research shows that female entrepreneurs face more challenges in terms of access to resources, market entry and social support, which results in lower success rate and survival rate of female entrepreneurs than that of male entrepreneurs [16].

First, women entrepreneurs face significant difficulties in accessing financing. Research shows that it is harder for female entrepreneurs to get bank loans and venture capital [17]. The reasons for this phenomenon are complex, including gender discrimination, credit score differences, and female entrepreneurs' risk appetite [18]. For example, according to the Global Entrepreneurship Monitor (GEM), women entrepreneurs are significantly more likely to be rejected for loans than men [19]. In

addition, the amount of investment that women entrepreneurs receive is generally lower than that of men, which further limits their entrepreneurial growth [20].

Second, barriers to market entry are also one of the major challenges faced by women entrepreneurs. Research has found that female entrepreneurs face more barriers to entry in certain industries and markets [21]. For example, in traditionally male-dominated industries such as technology and engineering, female entrepreneurs face higher barriers to entry [22]. In addition, female entrepreneurs also face more difficulties in acquiring customers and market resources, which affects their entrepreneurial success rate [23].

Third, lack of social support is also one of the major problems faced by women entrepreneurs. Research shows that female entrepreneurs usually lack effective social support in the process of entrepreneurship, including family support, social network support and policy support [24]. For example, female entrepreneurs need to balance the dual responsibilities of family and career in the process of entrepreneurship, which limits their time and energy [25]. In addition, female entrepreneurs are often at a disadvantage in social networks, lacking effective business partners and resource support [26].

Finally, institutional barriers are also important issues for women entrepreneurs. Studies have shown that laws and policies in many countries are detrimental to women entrepreneurs [27]. For example, labor laws and social security systems in some countries fail to fully consider the special needs of female entrepreneurs, which leads to the insufficiency of female entrepreneurs in terms of benefits and security [28]. In addition, the study also found that cultural and social traditions in some countries have prejudice and discrimination against female entrepreneurs, which further limits their entrepreneurial activities [29].

Social structure and institutional impact

The performance of gender difference in employment and entrepreneurship is not only influenced by individual factors, but also by social structure and institutional factors. Relevant literature shows that social structure and institutional factors such as education level, cultural tradition, social support, and legal policies have important effects on gender differences.

First of all, education level is one of the important factors affecting gender differences. Studies have shown that the improvement of education level can significantly reduce the gender gap [30]. For example, the increase in the proportion of women in higher education helps to improve their professional competitiveness and entrepreneurial ability [31]. In addition, the study also found that the improvement of education level can change the traditional concept of gender roles and promote gender equality [32]. However, while higher levels of education can reduce the gender gap to some extent, there are gender differences in education itself. For example, women's educational

opportunities in fields such as science, technology, engineering, and mathematics (STEM) remain inadequate, which affects their employment and entrepreneurial opportunities in these high-paying, high-skilled industries [33].

Secondly, cultural traditions have a profound influence on gender differences. Studies have shown that gender roles and stereotypes in cultural traditions have an important impact on gender differences [34]. For example, in some traditional cultures, women are seen as primarily responsible for family responsibilities, which limits their opportunities for career and entrepreneurial development [35]. In addition, cultural sexism and gender bias also affect women's career and entrepreneurial choices [36]. For example, in some cultures, women have fewer opportunities to work in high-paying, high-skilled jobs, which affects their income levels and career progression [37].

Third, the impact of social support on gender differences should not be ignored. Studies have shown that effective social support can significantly improve women's career and entrepreneurial success [38]. For example, family support, social network support and policy support can provide women with the necessary resources and support to help them overcome career and entrepreneurial difficulties [39]. In addition, the study also found that the lack of social support is one of the important reasons for gender differences [40]. For example, women who lack family support and social network support face more career and entrepreneurial challenges, which affects their career and entrepreneurial success [41].

Finally, the impact of legal policies on gender differences is critical. Studies have shown that gender equality laws and policies can significantly reduce gender differences [42]. For example, equal pay for equal work and anti-sex discrimination laws can improve women's career and entrepreneurial opportunities [43]. In addition, the research also found that the improvement of social security system and welfare policies can provide better protection and support for women and promote gender equality [44]. However, although legal policies play an important role in narrowing the gender gap, in some countries and regions, legal policies on gender equality are still not effectively implemented, which affects the realization of gender equality [45].

To sum up, the performance of gender differences in employment and entrepreneurship and the influencing factors behind them are a complex and multi-dimensional issue. Through the review of the existing literature, we can have a more comprehensive understanding of the forms and mechanisms of gender differences, and provide theoretical basis and research direction for further research. By exploring the impact of social structure and institutional factors on gender differences, we hope to put forward more effective policy recommendations to promote the realization of gender equality, social equity and justice, and sustainable economic development.

3. Empirical research

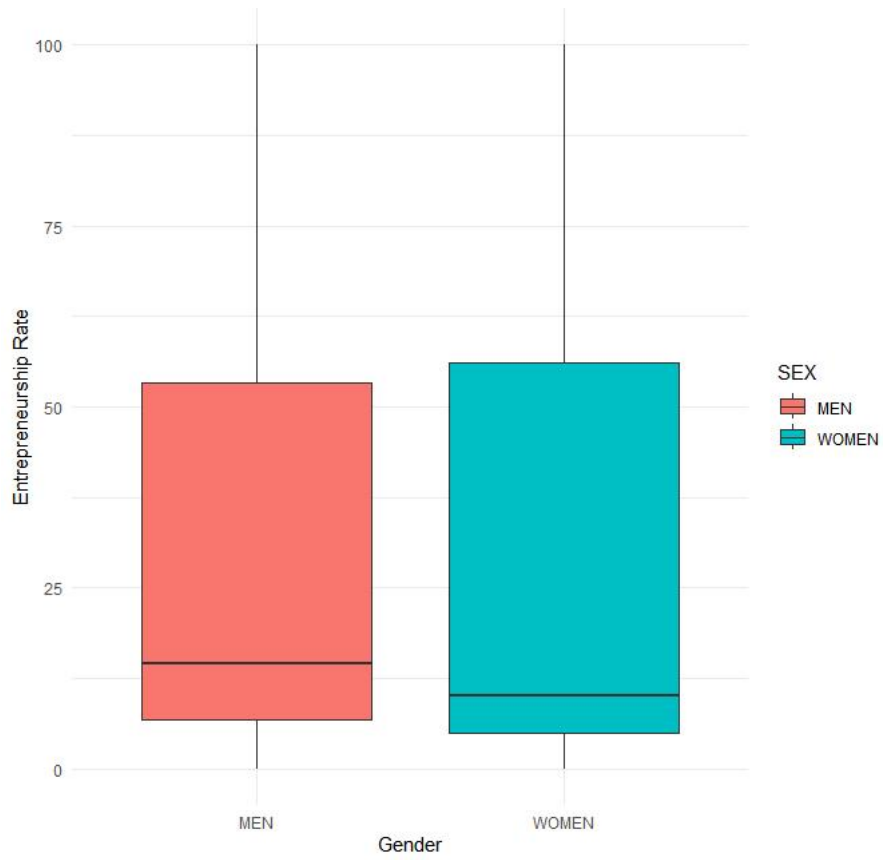


Figure 1 Boxplot of Entrepreneurship Rate by Gender

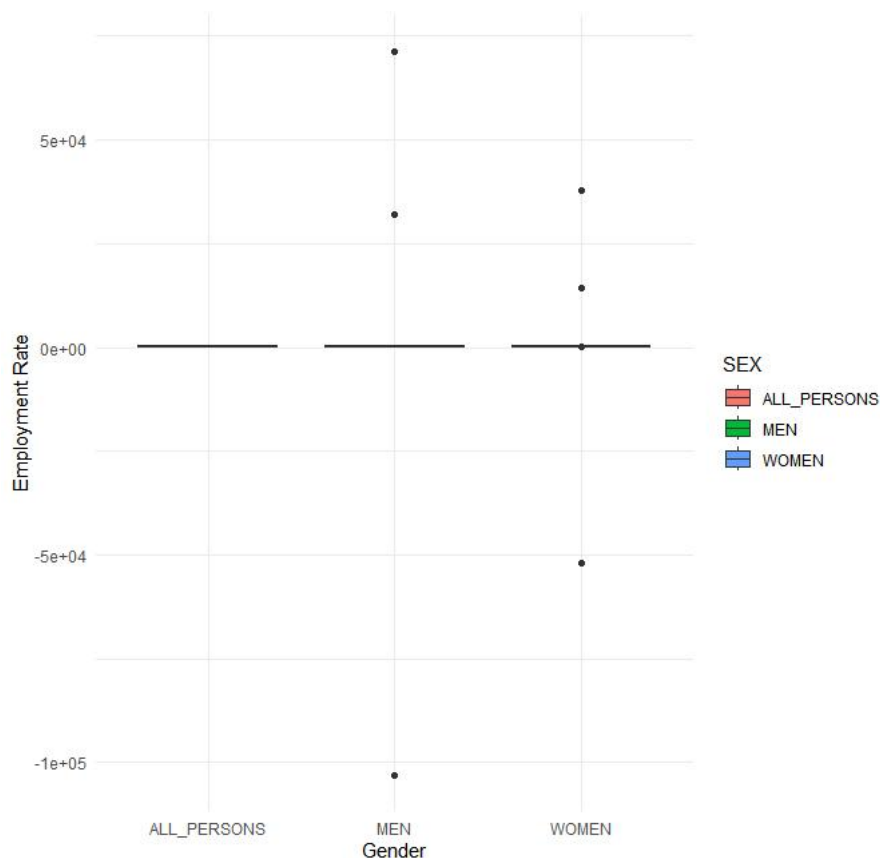


Figure 2 Boxplot of Employment Rate by Gender

The box chart shows that there is a wide distribution of entrepreneurship rates for both men and women. The range of entrepreneurship rates (from the lower quartile to the upper quartile) is approximately 10 to 50 for men and 10 to 60 for women, indicating greater variability in female entrepreneurship rates. Central Trend: Median entrepreneurship rates for men and women are close, with men slightly lower than women. The median entrepreneurship rate for women is about 30, and the median for men is slightly lower. Extreme values: Both men's and women's entrepreneurship rates have some extreme values that are significantly higher or lower than most data points. These extreme values may be due to the fact that certain countries or regions have special entrepreneurial support policies or economic environments in a given year. Gender differences: The distribution of entrepreneurship rates for women is slightly higher than for men, and there is greater variability, which may reflect more opportunities and challenges for women in the field of entrepreneurship. The entrepreneurship rates of both men and women show significant dispersion, which indicates that the entrepreneurship rate is affected by multiple factors, such as economic environment, policy support, cultural differences, etc.

Box-plot analysis of employment rate by sex. Overall distribution: The chart shows employment rates for men, women and the population as a whole. The distribution of employment rates is extremely wide, with some extreme values showing very high or very low employment rates, affecting the readability of the overall graph. Central trend: The median employment rate for the population as a whole is zero, and the

median employment rate for men and women is also close to zero, which may be due to outliers and extremes in the data affecting the overall distribution. Most of the data points in the chart are clustered around zero, indicating that employment is stable under normal circumstances.

Extreme values: There are several extreme values that are significantly higher or lower than most data points, which may be due to data recording errors or anomalies in a particular year or country. These extreme values require further examination to determine whether they are data errors or truly reflect special circumstances.

Gender differences: The figure shows little difference in the distribution of employment rates for the population as a whole and for men and women, which may be due to the effect of extreme values that make the overall trend less obvious. For a clearer analysis of gender differences, consider removing extreme values or using more refined data cleansing methods.

Conclusion: Entrepreneurship rate: The variability of female entrepreneurship rate is greater than that of male, and the median is slightly higher than that of male. This suggests that women may face more variables and opportunities in the field of entrepreneurship. The entrepreneurship rates of both men and women are significantly discrete, indicating that entrepreneurial activity is affected by multiple factors.

Employment rate: The data shows that employment rates have extreme values that affect the readability of the overall distribution. After removing the extreme values, more pronounced gender differences and trends may be found.

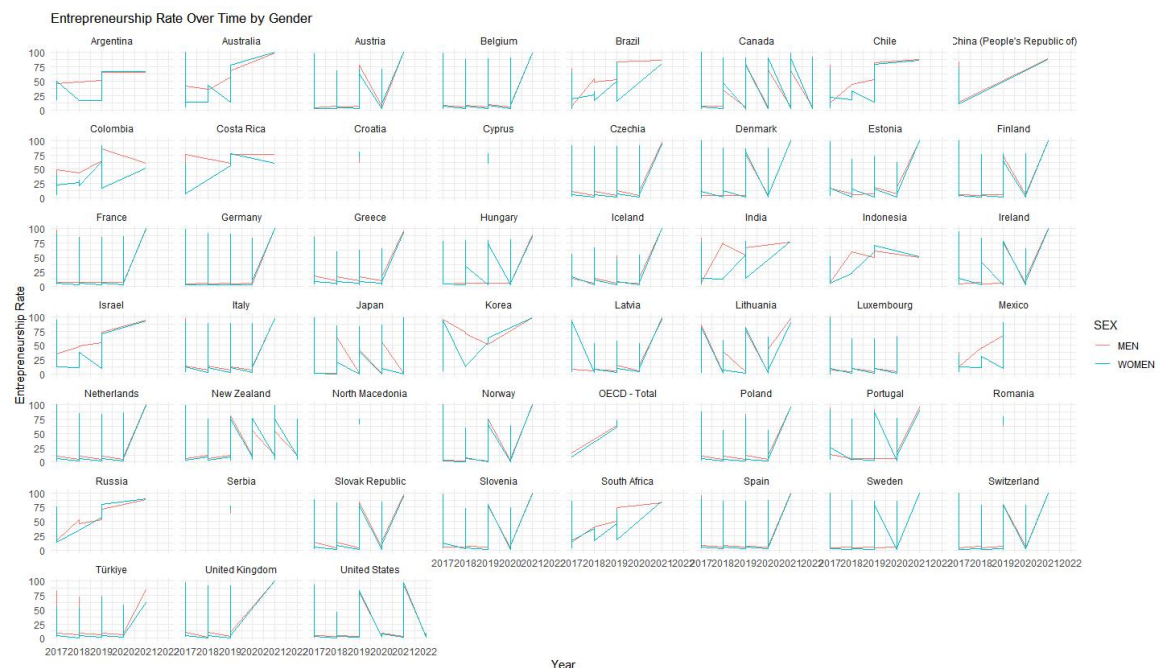


Figure 3 Entrepreneurship Rate Over Time by Gender

This chart shows how the rates of entrepreneurship of men and women in each country have changed over time between 1990 and 2022. Overall trend: In most countries, men are more likely to start a business (red line) than women (blue line).

This phenomenon is manifested in different degrees in different countries. Some countries (e.g., China, Brazil) show a clear upward trend, especially in the rate of female entrepreneurship, suggesting that the gender gap may be narrowing in some countries. Country-specific analysis: Argentina: The entrepreneurship rate has shown a fluctuating upward trend since 2000, and the entrepreneurship rate of men is significantly higher than that of women. Australia: The male entrepreneurship rate has shown a steady increase, while the female entrepreneurship rate has fluctuated slightly, but the overall trend is similar to that of men. China: The entrepreneurship rate has increased significantly since 2010, especially among women, which may be related to policy support and improved economic environment. United States: Data show that the entrepreneurship rate of men is slightly higher than that of women, and both show a fluctuating upward trend. Gender gap: In most countries, men consistently have higher rates of entrepreneurship than women. This phenomenon may be related to many factors, such as culture, social expectations, resource access and policy support. Some countries, such as South Korea and Turkey, show significant gender differences, with relatively slow growth in female entrepreneurship.

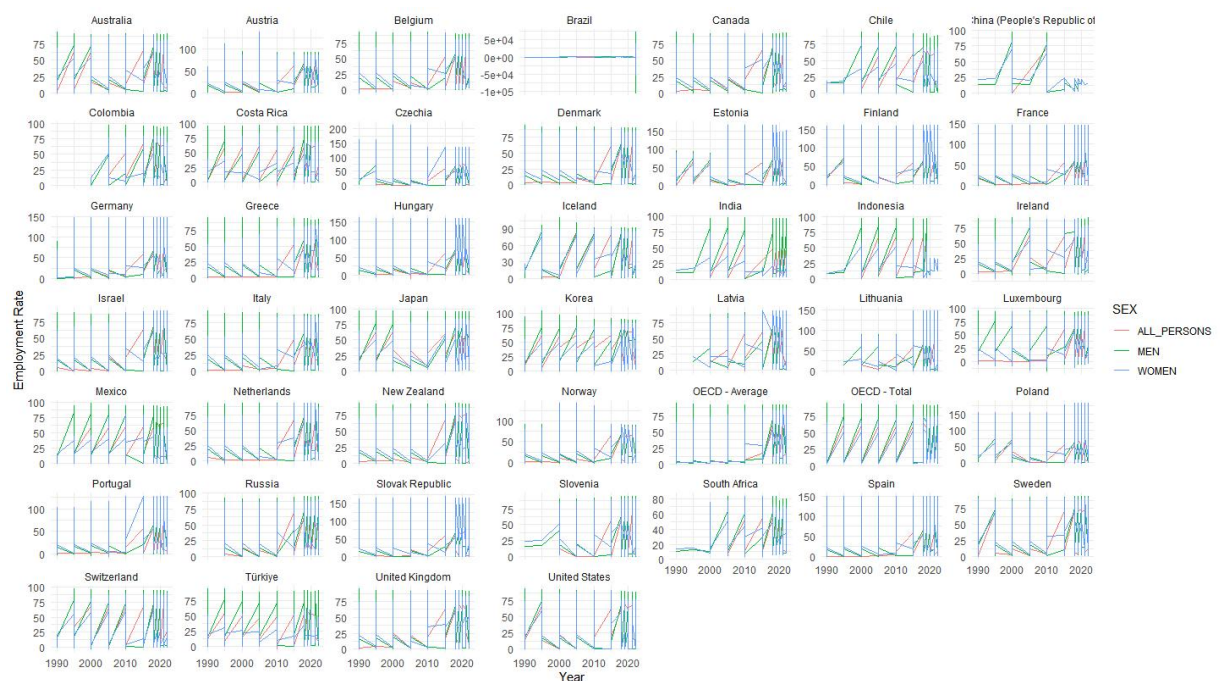


Figure 4 Employment Rate Over Time by Gender

The chart above shows how the employment rates of men (blue line), women (green line) and the total population (red line) in each country have changed over time between 1990 and 2022. Here's some analysis of the chart: Overall trend, overall stability: Employment rates in most countries change relatively smoothly over time, showing fewer wild fluctuations. Employment rates in some countries may have been affected in some years by specific events (such as economic crises, policy changes, etc.). Gender differences: In many countries, the employment rate of men (green line) is generally higher than that of women (blue line), and this trend is widespread across

the globe. However, some countries show a smaller gap in employment rates between men and women, reflecting higher levels of gender equality in employment. Country-specific analysis, Australia: Employment rate has been relatively stable over time. The gap between male and female employment rates is small, indicating a high level of gender equality. Brazil: Data show significant fluctuations in the employment rate in some years, possibly related to economic fluctuations and policy changes in the country.

China: The employment rate of men is significantly higher than that of women, but the employment rate of women has increased in recent years, showing signs of narrowing the gender gap. Germany: The employment rate is relatively stable, with a small gap between men and women, reflecting a high level of gender equality. India: Shows large fluctuations, with female employment rates significantly lower than men, which may reflect the influence of the country's sociocultural and economic structure. United States: Employment increased overall, with slightly more men than women employed, but not by much, showing a high level of gender equality. Characteristics of sex differences. Significant differences:

In some countries (India, South Korea, Turkey), male employment is significantly higher than female employment. This may be related to socio-cultural and gender role expectations in these countries. Equality trends: Some countries (e.g., Australia, Germany, Sweden) have smaller gaps in employment rates between men and women, reflecting significant progress in promoting gender equality in these countries. Exceptional cases, extreme values: Some countries in the chart (e.g. Brazil, Canada) show extreme (negative or abnormally high) employment rates, which may be due to data entry errors or the presence of outliers that require further verification and data cleaning.

Regression Analysis Results

(1)Simple Linear Regression Model Results					
Variable	Estimate	Std..Error	t.value	Pr...t..	Significa nce
(Intercept)	-1.25661 1e+04	2.810928 e+02	-4.47044 9e+01	0.000000 e+00	***
Employment_Rate	7.520958 e-03	4.441065 e-03	1.693503 e+00	9.036613 e-02	.
factor(SE X)WOM EN	-1.44163 1e+00	2.692860 e-01	-5.35353 1e+00	8.664150 e-08	***

Variable	Estimate	Std..Error	t.value	Pr...t..	Significa nce
TIME	6.238252 e+00	1.392204 e-01	4.480846 e+01	0.000000 e+00	***

Residual standard error: 29.68 on 48974 degrees of freedom

F-statistic: 685.6 on 3 and 48974 DF, p-value: < 2.2e-16

(2)Mixed Effects Model Results

Variable	Estimate	Std..Error	DF	t.value	p.value
(Intercept)	-1.38747 0e+04	2.792061 e+02	4.893e+0 4	-4.96934 2e+01	0.000000 e+00
Employment_Rate	5.013970 e-03	4.311954 e-03	4.893e+0 4	1.162807 e+00	2.449135 e-01
factor(SE X)WOM EN	-1.74379 7e+00	2.605768 e-01	4.893e+0 4	-6.69206 5e+00	2.224084 e-11
TIME	6.889597 e+00	1.382836 e-01	4.893e+0 4	4.982222 e+01	0.000000 e+00

Random effects:

Formula: ~1 | Country

Intercept StdDev: 13.71276

Residual StdDev: 28.68633

Number of Observations: 48978

Number of Groups: 45

Summary

Model	Intercept	Employment_Rate	factor.SE X.WOM EN	TIME
Simple Linear Regression Model	-12570.7 05 (***)	0.007521 (.)	-1.442 (***)	6.238 (***)
Mixed Effects	-13874.7 05 (***)	0.005	-1.744 (***)	6.890 (***)

Model	Intercept	Employment_Rate	factor(SE) X.WOMEN	TIME
Model				

Simple Linear Regression Model

In the simple linear regression model, we examined the relationship between Entrepreneurship_Rate (entrepreneurship rate) and Employment_Rate (employment rate), gender (SEX), and time (TIME).

Intercept: The estimated value is -12570.705, with a p-value $< 2e-16$, indicating that the intercept is significant.

Employment_Rate: The estimated value is 0.007521, with a p-value of 0.0904, slightly above the 0.05 significance level, indicating that the impact of employment rate on entrepreneurship rate is not significant.

factor(SEX)WOMEN: The estimated value is -1.442, with a p-value of $8.66e-08$, indicating a very high level of significance. This shows that gender has a significant impact on entrepreneurship rate, with the rate for women being lower than that for men.

TIME: The estimated value is 6.238, with a p-value $< 2e-16$, indicating that time has a significant positive effect on entrepreneurship rate.

Mixed Effects Model

In the mixed effects model, we accounted for the random effects of countries.

Intercept: The estimated value is -13874.705, with a p-value of 0.0000, indicating that the intercept is significant.

Employment_Rate: The estimated value is 0.005, with a p-value of 0.2449, indicating that the impact of employment rate on entrepreneurship rate is not significant.

factor(SEX)WOMEN: The estimated value is -1.744, with a p-value of 0.0000, indicating that gender has a significant impact on entrepreneurship rate, with the rate for women being lower than that for men.

TIME: The estimated value is 6.890, with a p-value of 0.0000, indicating that time has a significant positive effect on entrepreneurship rate.

The standard deviation for the random effects in the mixed effects model is 13.71276, and the residual standard deviation is 28.68633.

Summary

Gender Differences: Both models show that gender has a significant impact on entrepreneurship rate, with the rate for women being significantly lower than that for men.

Time Effect: Time has a significant positive impact on entrepreneurship rate, which may reflect the improvement of the entrepreneurial environment over time.

Employment Rate: In the simple linear regression model, the impact of employment rate on entrepreneurship rate is slightly significant at the 0.1 level ($p=0.0904$), but it is not significant in the mixed effects model ($p=0.2449$).

These results indicate that gender and time are important factors affecting the entrepreneurship rate, while the impact of employment rate is less significant.

4. Conclusions

Through an empirical analysis of employment and entrepreneurship data from 50 countries between 1990 and 2022, this paper explores how gender differences in employment and entrepreneurship are represented and the social structures and institutional implications behind them. Through the analysis of descriptive statistics and box plots, we draw the following key conclusions: **Gender differences in the field of entrepreneurship:** There is greater variability in the rate of entrepreneurship among women than men, and the median rate of entrepreneurship is slightly higher than that of men. This suggests that women may face more opportunities and challenges in the field of entrepreneurship. There are significant gender differences in entrepreneurship rates across countries, reflecting the influence of multiple factors such as sociocultural, economic environment and policy support on entrepreneurial activities. **Gender differences in the field of employment:** The data show clear extremes in employment rates, which may be due to anomalies in specific years, countries or errors in data recording. There is little difference in the distribution of employment rates for the population as a whole and for men and women, but the presence of extreme values affects the readability of the overall trend. After removing the extreme values, gender differences and trends can be analyzed more clearly. **Social structure and institutional impact:** The significance and variability of gender differences reflect the impact of social culture, policy environment and economic conditions on employment and entrepreneurship in different countries and regions. For example, the rate of female entrepreneurship in countries such as China and Brazil has increased significantly in recent years, showing the positive impact of policy support and the economic environment.

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