

The Empirical Relationship Between Gender Inequality and GDP Growth: the Case of Asian Countries

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ABSTRACT: This research paper investigates the empirical relationship between gender inequality and GDP growth in the case of 47 Asian countries. Against the backdrop of persistent gender disparities in economic participation, our study aims to unveil how gender inequality can impact overall economic development. By examining the historical context and prevailing gender norms in these economies, we seek to elevate how obstacles to women's economic empowerment are revealed through sectors and contribute to suboptimal GDP growth. The paper includes a comprehensive analysis, incorporating data on workforce participation, income inequality, educational opportunities, and the overall gender gap index to illuminate the multifactorial dimensions of gender inequality. The results show that countries have a strong correlation above 0,1 in both positive and negative directions, with all five variables showing the influence of gender equality on the economy. Understanding these dynamics is crucial for policymakers, as it not only sheds light on the ethical imperative of gender equality but also underscores the economic imperative of harnessing the full potential of all citizens for sustained GDP growth in the Asian region and could be beneficial for the analysis in other parts of the world.

KEYWORDS: Economics; Gender Inequality; Correlation; GDP growth; Asia.

■ Introduction

In recent years, there have been advancements in gender equality and a shift towards equal opportunities in the workforce due to changes in laws and society regarding women's participation in the economy. Despite this progress, significant gender disparities persist in education, employment, and income. Progress has varied across countries, and the Asian region still presents some of the widest gender gaps in the world. Extremely low female labor force participation rates are particularly noticeable in the Arab States and South Asia.¹ As the Global Gender Gap World Economic Forum reported in 2020 "The proportional differences between Asian women and men on measures of health, education, economy, and politics are substantial, and not improving significantly".² This indicates that there are long-standing barriers to women's economic empowerment.

Undoubtedly, gender inequality is a significant social problem, but does it have any impact on economic prosperity? In the Asian region, women are typically concentrated in a limited number of industrial sectors. Tzannatos (1999)³ notes that around two-thirds of women employed in the manufacturing sector hold positions as laborers, operators, and production workers, with only a small minority occupying administrative and managerial roles. Consequently, women's earnings are significantly lower than those of men. Moreover, there are numerous instances where women, despite working in the same capacity and for the same duration as men, receive lower pay, leading to a gender pay gap. On average, women earn 77 cents for every dollar earned by men.⁴ As the hard work of women is not fully compensated in monetary terms, it has a detrimental impact on GDP rates.⁵ Also, factors such as low female literacy rate and high Gini coefficient contribute to slow GDP growth.

Overall, gender inequality affecting the country's economic structure reduces its GDP.⁶

Economists previously have delved into the experiences of a diverse array of countries to understand the factors of economic growth, as exemplified by the works of Barro (1991, 2000)⁷ and Barro and Sala-i-Martin (2003, Ch. 12).⁸ From this body of research, several variables predictive of subsequent economic growth rates have been identified. A central insight is that comprehensive explanations for economic performance must extend beyond mere economic metrics and contain the intricate interplay of political and social forces. Particularly, empirical evidence underscores the substantial influence of government policies and public institutions on economic growth trajectory.⁹

2010x when fourth-wave feminism began, researchers started considering women's social status and economic participation while examining GDP growth.¹⁰ However, studies that have been done at some point contradict one another. Based on Zahra Huseynova's research¹¹ correlation between the gender pay gap and GDP growth in Azerbaijan's economy the results confirmed the hypothesis of a negative relationship between the gender wage gap and economic development. However, similar studies disproved this theory, such as Stephanie Seguin's research¹² on Gender inequality and economic growth. The study shows that GDP growth is positively related to gender wage inequality in contrast to recent work that suggests that income inequality slows growth. Evidence also indicates that part of the impact of gender wage inequality on growth is transmitted through its positive effect on investment as a share of GDP. Another study by Grotti and Scherer¹³ states that the increase in inequality and negative GDP growth is caused by

increased polarization between low- and high-income families in the spread of income within family types.

Our study aims to clarify the key factors of gender inequality that influence GDP growth and examine the correlation between each variable out of 5 included in the analysis (female employment rate, literacy rate, Gini coefficient, gender pay gap, gender equality index) and GDP growth in the case of the Asian economy. The previous studies have not yet covered this territory, considering that it is a diverse region with a mix of upper-middle and low-income countries. The results provide a hybrid dataset that could be used for the worldwide investigation.

■ Methods

Data:

Before proceeding with the data collection, we first divided countries into 4 categories: Low-income, Lower-middle-income, Upper-middle-income, and high-income, based on their income level, by using the World Bank Atlas method.¹⁴ For the current 2024 fiscal year, low-income economies are defined as those with a GNI per capita of \$1,135 or less in 2022; lower- middle-income economies are those with a GNI per capita between \$1,136 and \$4,465; upper-middle-income economies are those with a GNI per capita between \$4,466 and \$13,845; high-income economies are those with a GNI per capita of \$13,846 or more.¹⁵ This was made to provide a more comprehensive analysis of the relationship between the country's economic condition and gender status, while also considering external factors affecting economic stability, which were not included in this research.

Data on countries' female employment rates are regained from the International Labour Organization database¹⁶ labor force participation rate among females aged 15+. The ILOSTAT dataset has been regularly updated, and the final version was released on September 5th, 2023. However, some countries' received data timeline varies from 2020 to 2023. To estimate the Global Gender Equality Index 4 measures were taken into account, including Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment.¹⁷ The most recent dataset used is the GEI World Economic Forum 2021 Report.¹⁸ The Gini Coefficient Metric used for measuring income inequality and adult female literacy rate are received from the World Bank 2022 report.¹⁹

Methodology:

We assessed the gender pay gap at the national level by taking the mean (average) monthly pay for men and subtracting the mean (average) monthly salary for women dividing the result by the mean (average) monthly pay for men and multiplying the result by a hundred percent.²⁰ The data exclusively refers to full-time workers and was sourced from the World Salaries Database.²¹ Once all pertinent variables were gathered, we examined the relationship between each variable and GDP growth for 2022-2023. The findings are presented graphically on pages 4-6, with the graphs beginning with low-income nations and concluding with high-income economies.

■ Results and Discussion

Results and Discussion:



Figure 1: Correlation of the female labor force participation rate and GDP growth.

The data indicates a consistent negative correlation, with most values falling below 0. Furthermore, as a country's income level rises, the correlation between female labor force participation and GDP per capita strengthens. Notably, high-income countries exhibit an almost perfect correlation between these two variables. This suggests that as countries experience economic growth, a more pronounced link exists between female labor force participation and GDP growth.



Figure 2: Correlation of female literacy ratio and GDP growth.

The findings reveal a diverse correlation pattern, with positive correlations evident in low-income and high-income countries, while a negative correlation is observed in upper-middle-income countries. Remarkably, lower-middle-income countries demonstrate a minimal correlation between these variables. This suggests that the relationship between female literacy rates and GDP per capita varies across different income levels, with unique dynamics in each category.



Figure 3: Correlation of the Gini coefficient and GDP growth.

The correlation values are closely aligned with the reference line and are concentrated near zero, suggesting a weak correlation between the two variables. This indicates that changes in the Gini coefficient have a limited impact on GDP growth. However, only high-income countries with a high percentage of the Gini coefficient have a correlation that is near 1 (perfect correlation).

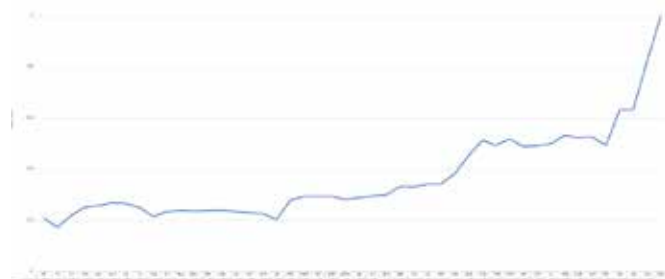


Figure 4: Correlation of the wage gap and GDP growth.

We can observe a positive correlation between these two variables. Also, it is noticeable that the correlation is monotonic, predominantly increasing along with the countries' income.

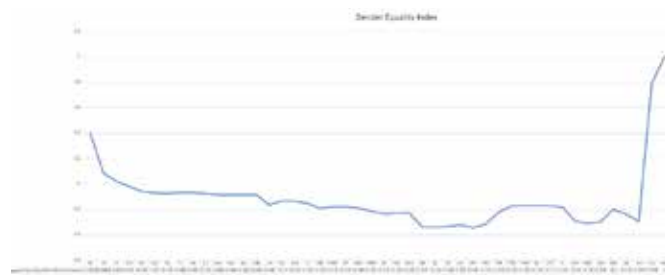


Figure 5: Correlation of the Gender Equality Index and GDP growth.

Both variables tend to move in the same direction, indicating a positive correlation. As the gender equality percentage increases, the GDP tends also to increase. Noticeably, the correlation is not strong for lower-middle-income and upper-middle-income countries compared to low-income and high-income economies.

■ Discussion

Overall, countries have a strong correlation above 0,1 in both positive and negative directions, with all five variables showing the importance of gender equality in the economy. Although the results vary by country, there are prominent trends for each income category, which indicates that the countries' present economic situation is another factor to consider when examining the correlation. The absence of classification of the countries by income level might be why previous studies have failed to address the issue thoroughly. Another noticeable point in all five figures is that high-income countries have an almost perfect correlation between each variable and GDP growth. This demonstrates the positive influence of gender-inclusive policies on workforce participation and productivity. Countries that prioritize gender equality tend to force a broader talent pool, leading to increased innovation and efficiency, which could contribute significantly to sustained economic growth.

An unusual finding was an inverse relationship between the Gender Equality Index and GDP growth for lower-middle and upper-middle countries, where some countries exhibit high GDP growth despite significant gender inequality or even experience a decline in gender inequality alongside a decrease in GDP. This might prompt further investigation into unique socio-economic factors influencing these patterns.

■ Conclusion

Given the strong correlation between gender inequality variables and GDP growth, the implications of this research suggest that investing in gender equality initiatives could catalyze economic development. Policymakers should prioritize measures to reduce gender disparities in the workforce, education, and wages to foster sustained economic growth.

By acknowledging the economic impact of gender inequality, governments and organizations can formulate targeted policies to empower women in the workplace, enhance access to quality education, and narrow wage gaps. This promotes social justice and aligns with economic objectives, potentially leading to increased labor force participation, productivity, and innovation. Nevertheless, this study is limited to its extensions, and further examination needs to be done in this field, considering the rest of the factors such as maternal health and family planning and legal policies. One of the possible investigations could include a review of legal and social policies in the country through a period and the change in GDP during that point. Supportive policies, such as maternity leave and equal opportunity laws, can influence women's economic participation and GDP growth. Moreover, other regions, particularly African and South American continents, should be included in further studies to fully understand the issue's dimensions.

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List of the countries:

Afghanistan, Armenia, Azerbaijan, Bahrain, Bangladesh, Bhutan, Brunei, Cambodia, China, Cyprus, Georgia, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kazakhstan, Kuwait, Kyrgyzstan, Laos, Lebanon, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Oman, Pakistan, Philippines, Qatar, Russia, Saudi Arabia, Singapore, South Korea, Sri Lanka, Syria, Tajikistan, Thailand, Timor-Leste, Türkiye, Turkmenistan, UAE, Uzbekistan, Vietnam, Yemen

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