

“EXAMINING THE NEXUS BETWEEN GENDER INEQUALITY IN EDUCATION AND ECONOMIC GROWTH: A CROSS- CULTURAL ANALYSIS OF THE UNITED STATES AND INDIA”

Dr. K. Sankara Reddy*

School Assistant Teacher, Social Studies. Z. P. H. School, Dommara Nandyala, Kadapa (District), Andra Pradesh, India.

***Corresponding Author**

Dr. K. Sankara Reddy

Article History

Received: 10.12.2025

Accepted: 14.02.2026

Published: 16.03.2026

Abstract: Gender inequality in education remains a persistent global concern with significant implications for economic development and social progress. Although many countries have made efforts to improve gender parity in education, disparities continue to exist due to socio-cultural, economic, and institutional barriers. This study examines the relationship between gender differences in educational attainment and economic growth through a comparative analysis of two contrasting economies: the United States and India. Education plays a crucial role in enhancing human capital, fostering innovation, and improving productivity, thereby contributing to long-term economic growth. However, when gender disparities restrict access to education and skill development, the potential benefits of human capital formation remain underutilized.

The study highlights how gender inequality in education manifests in different forms, including variations in enrollment rates, subject specialization, academic achievement, and access to educational and economic resources. In the United States, although gender gaps in basic education have largely narrowed, disparities continue in areas such as science, technology, engineering, and mathematics (STEM) fields and leadership roles in higher education institutions. In contrast, India continues to face deeper structural and socio-cultural barriers that limit educational opportunities for girls and women, particularly in rural and marginalized communities. Issues such as poverty, early marriage, traditional gender norms, and unequal access to economic resources contribute to the persistence of educational disparities.

Furthermore, gender inequality in education has broader implications for economic empowerment and labor market participation. Limited educational opportunities for women restrict their access to employment, financial resources, and entrepreneurship, thereby reducing their potential contribution to economic growth. The persistence of patriarchal structures and discriminatory practices further exacerbates these challenges, particularly in developing economies. By comparing the educational and economic contexts of the United States and India, this study seeks to identify the underlying factors influencing gender inequality and assess their impact on economic development.

The research also emphasizes the importance of state-level and regional analysis, particularly in India, where socio-economic conditions vary widely across states. Such an approach helps to identify localized barriers and opportunities for improving women’s educational attainment and economic empowerment. Ultimately, the study underscores the need for targeted policy interventions, inclusive educational strategies, and gender-sensitive economic policies to bridge the gender gap in education. Promoting gender equality in education not only enhances individual opportunities but also contributes significantly to sustainable economic growth and social development.

Keywords: Gender Inequality, Education, Economic Growth, Gender Gap, Human Capital Development, Women’s Empowerment, Comparative Analysis, United States.



LABOR PARTICIPATION AND WAGES

In 2013, the labor force participation rate, for women was 80.7%. According to a description by Nancy Lockwood from the "Society for Human Resource Management", the world's largest HR association, women's participation in the labor force, while still lower than men's, has been gradually increasing since the 1990s. Lockwood highlights that out of India's 397 million workers, in 2001, 124 million were women.

Agriculture employs over half of India's labor force, with most rural men, working as cultivators, although a significant number of womanfolks are involved in livestock maintenance and the production of eggs and milk. Rao reports that about 78% of rural womanfolks are engaged in agriculture, as compared to 63% of men. While approximately 37% of women are cultivators, they are actively involved in various stages of agriculture, including winnowing, transplanting, irrigation, weeding, and harvesting. As of 2004, women performed roughly 70% of farm work, in India. Additionally, women's labor participation rates are approximately 47% in tea plantations, 46% in cotton cultivation, 45% in growing oilseeds, and 39% in horticulture.

Despite this, wage disparity in-between men and women is a major issue in the country of India. The largest wage gap, in 2009 was seen in physical plowing operations, where men were normally paid ₹103 per day compared to women's ₹55, resulting in a wage gap ratio of 1.87. For the sowing tasks, the wage gap ratio decreased to 1.38, and for weeding, it further reduced to 1.18. In other agricultural tasks like winnowing, threshing, and removing, the wage ratio ranged from 1.16 to 1.28. Interestingly, wages for sweeping were nearly equal for men and women across all states in India in 2009.

ECONOMIC INEQUALITY:

Access to the credit

While legal frameworks are generally supportive of loaning to females, and microcredit plans aimed at females are widespread, accessing credit remains a challenge for many women in India. One significant barrier is the lack of collateral, for bank loans, stemming from lower levels of asset possession among women. Additionally, microcredit schemes, have faced disapproval for their coercive lending practices.

Despite the proliferation of microcredit programs, a significant issue arises from women being communicated by multiple lenders. This leads to women taking on numerous loans and overextending their credit, as highlighted in a 2012 analysis of microcredit practices. Furthermore, the article found that financial inducements, for recruiters of these programs, were not aligned with the best interests of those women they were supposed to serve. Consequently, this situation resulted in a tragic outcome, with instances of women resorting to suicide due to their incapability to repay debts.

While microcredit plans have been effective in some of the cases and have led to the formation of local women's support groups, the negative consequences of overindebtedness

underscore the necessity for more sustainable and responsible lending practices. Efforts to address these issues include firming regulations to prevent coercive lending, providing financial literacy training to empower women to make informed borrowing decisions, and promoting alternative forms of credit that prioritize the welfare and empowerment of borrowers.

Property rights

While women have legal entitlement to property possession and equivalent legacy rights, practical realities reveal a systemic drawback. This is underscored by the statistic that 70% of the rural property is possessed by men. Despite protective laws like the 'Married Women Property Rights Act', of 1974, few women pursue legal remedies. Moreover, though the 'Hindu Succession Act' of 2005 theoretically grants identical legacy rights to ancestral and jointly possessed property, enforcement remains weak, particularly in the Northern India.

LITERACY

While the feminine literacy rate, in India is gradually rising, it still falls short of the masculine literacy rate. According to the 2011 Census of India, the literacy rate for females is 65.46%, whereas it is 82.14% for males. Additionally, there is a considerable gap in school enrollment between boys and girls, with fewer girls enrolling and many dropping out. The 1997 'National Sample Survey Data' reveals that only Kerala and Mizoram have nearly achieved universal female literacy. Scholars largely credit the enhanced social and economic position of women in Kerala to high literacy levels.

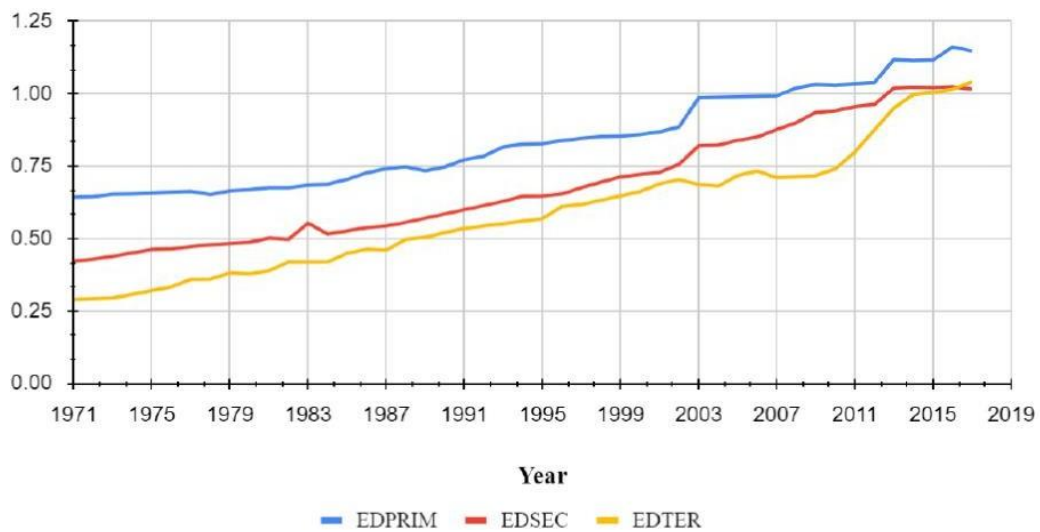
From 2006 to 2010, nearly twice as many males as females completed at least secondary education, with 50.4% of males and 26.6% of females achieving this level. Interestingly, although the gender gap, is ultimate at the primary education level among the current youth, it is widening at the secondary level. For example, in rural Punjab, the enrollment gap between girls and boys becomes more pronounced with age. The 'National Family Health Survey-3' shows that girls aged 15-17 are 10% more expected to leave school early compared to boys.

Despite some progress, challenges persist in the excellence of schooling for girls. In many cases, boys from the same family are sent to higher-quality private schools, while girls are sent to government schools in the community. This difference in admission to quality education further exacerbates gender inequalities in literacy and educational attainment. Addressing these disparities requires concerted efforts to improve access to education for girls, enhance the excellence of education in government schools, and promote gender parity in educational opportunities.

Though there are many persisting inequalities across the country, but education is the most significant factor to determine inequalities as is the base of development. Which is why this research is focused mainly on the educational inequalities in Higher secondary enrolments among male and female population in India and USA, and further to seen if educational inequalities work as a predictor of GDP growth.

Figure 1:

Female to male enrolment ratios in primary, secondary, and tertiary levels of education



Note: EDPRIM, EDSEC, and EDTER denote education in primary, secondary, and tertiary levels respectively. Sinha, Dhruv. (2022). HOW GENDER INEQUALITY IN EDUCATION AFFECTS ECONOMIC GROWTH IN INDIA: A COINTEGRATION ANALYSIS.

Secondary and tertiary levels achieved gender parity later than the primary level, with this milestone occurring around 2012-2015.

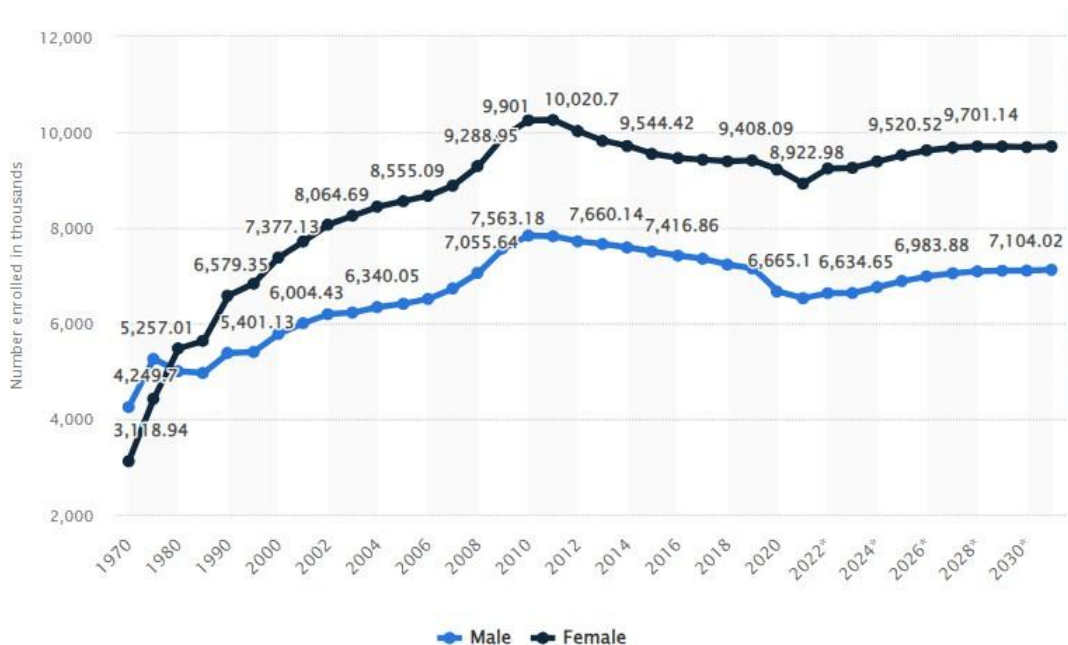
Figure 2 determines that, from 1970 to 2024, undergraduate enrollment in the United States of America has experienced several notable trends and shifts influenced by various socio-economic factors. In 1970, male enrollment was about 4.3 million, and female enrollment was approximately 3.1 million. By 1980, these numbers had amplified to 5.4 million for males and 5.4 million for females, reflecting significant growth, particularly among female

students. The period from 1980 to 2000 saw steady growth, with male enrollment reaching 6.3 million and female enrollment 8.1 million by 2000.

This growth continued into the early 2000s, peaking around 2010 when male enrollment was approximately 7.7 million and female enrollment about 10.0 million. This surge was partially due to the 2008 economic recession, which drove many individuals to pursue higher education to improve job prospects.

Figure 2:

Undergraduate enrolment number in the United States



Note: Published by Veera Korhonen in statista, 2023

However, from 2010 to 2021, there was a decline in enrollment, with male numbers falling to around 6.6 million and female numbers to approximately 8.9 million. This decline was influenced by rising tuition costs, demographic changes, and the COVID-19 pandemic, which had a significant influence on higher education.

Recently, there has been a modest recovery. By 2024, male enrollment is projected to be about 7.1 million, while female enrollment is expected to stabilize around 9.5 million. This recovery is attributed to various factors, including efforts to make college more accessible and affordable and post-pandemic normalization.

FACTORS AFFECTING GENDER INEQUALITY IN INDIA

The discussion on gender inequality in India underscores its global significance and the urgent need for a contextual examination within the country. It outlines various factors contributing to this issue, spanning historical, cultural, socioeconomic, and gender-based violence domains.

Historical and Cultural Dynamics: Gender roles deeply entrenched in tradition confine women to domestic roles, impeding their access to education and economic avenues. Caste-based discrimination compounds these inequalities, intersecting with gender bias, while patriarchal norms reinforce male authority, curtailing women's freedoms.

Socioeconomic Influences: Despite strides in education, gender biases and infrastructure gaps hinder girls' schooling. Women face hurdles in employment, encountering discrimination and lower pay, alongside scant representation in politics. Biases in property ownership further limit their economic autonomy.

Gender-Based Violence and Discrimination: India grapples with alarmingly high rates of violence against women, spanning domestic abuse and sexual assault. Harmful traditions like child marriage and son preference perpetuate gender disparities. Workplace discrimination and harassment inhibit women's professional progress.

Addressing these challenges necessitates a multifaceted approach, including promoting gender-sensitive education, dismantling stereotypes, enhancing economic opportunities, and ensuring legal safeguards and support systems for survivors. Eradicating detrimental practices and cultivating inclusive work environments are essential for forward-moving gender equality and empowering women across India.

GDP GROWTH RATE PER ANNUM

The GDP (Gross Domestic Product) growth rate is a critical metric used to gauge the pace at which a country's economy is expanding or contracting. This rate is expressed as a percentage and is typically calculated on a quarterly or annual basis. It reflects the increase or decrease in the value of all goods and services produced by an economy over a specific period, providing a snapshot of economic health and performance.

To calculate the GDP growth rate, the following formula is used:

This formula essentially measures the change in GDP from one period to the next, adjusted to show the percentage growth or decline.

There are mainly two types of GDP to consider:

Nominal GDP: This measures the worth of all finished goods and services produced within a country's borders at current prices, without adjusting for inflation. It provides a raw economic snapshot but can be misleading if inflation rates are high.

Real GDP: This adjusts for inflation, providing a more accurate reflection of an economy's size and growth over time. By using constant prices from a base year, real GDP allows for evaluations across different time periods by removing the distorting effects of inflation.

The significance of the GDP growth rate lies in its ability to indicate the overall economic health of a country. A positive growth rate usually signals a healthy economy, characterized by increasing production, job creation, and consumer spending. In contrast, a negative growth rate can be a sign of economic difficulties, such as a recession, where production slows, unemployment rises, and consumer spending declines.

Governments and central banks closely monitor GDP growth rates to inform their fiscal and monetary policy decisions. For instance, during periods of low growth or recession, governments might implement stimulus measures to boost economic activity, while central banks might lower interest rates to encourage borrowing and investment. Conversely, during periods of high growth, measures might be taken to cool the economy, and prevent inflation.

Stockholders also pay close attention to GDP growth rates as they provide valued insights into economic conditions, helping to guide investment decisions. Strong GDP growth often leads to higher corporate earnings and, consequently, higher stock prices, making the country a more attractive investment destination.

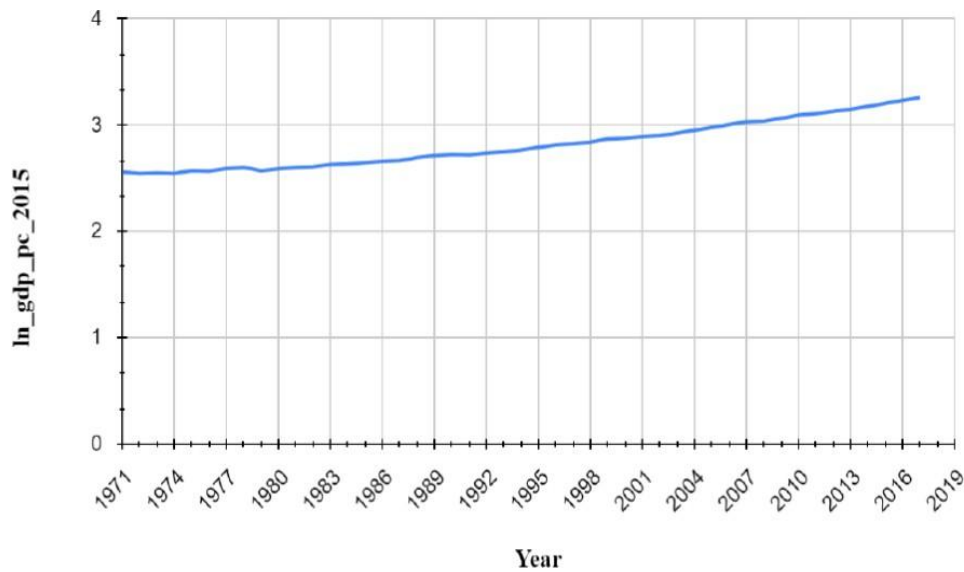
Several factors can influence GDP growth, including consumer and business spending, government policies, international trade, technological advancements, and external economic conditions such as global market trends and geopolitical events.

Side by side, gender inequality in education exerts considerable adverse impacts on GDP growth rates. When girls and women are deprived of equal access to education, the overall talent pool of a nation is underutilized, leading to a less skilled and less productive workforce. This restriction hinders economic growth by reducing the potential for innovation and efficiency within the economy.

Educated women are more expected to participate in the labor market, earn higher incomes, and invest more in their families' health and education, creating a positive cycle of economic growth and development. Conversely, gender inequality in education perpetuates poverty and limits economic progress, as half of the population is unable to fully support the economy. Studies show that countries that have higher gender equality in education tend to experience faster and more sustained economic growth.

Figure 3:

Natural Logarithm of GDP per Capita in India(Constant USD)



Note: The graph is taken from a thesis by Sinha, Dhruv. (2022). HOW GENDER INEQUALITY IN EDUCATION AFFECTS ECONOMIC GROWTH IN INDIA: A COINTEGRATION ANALYSIS.

The graph (figure 3) illustrates the logarithm of India's GDP per capita (adjusted to 2015 constant dollars) from 1971 to 2019, providing a clear interpretation of the country's economic growth over nearly five decades.

In early 1970s, the logarithm of GDP per capita, starts at a value slightly above 2.5. From the mid-1970s through the 1980s, the graph shows a relatively stable but gradually increasing trend. This period likely reflects India's efforts to build its economic foundation post-independence, with modest growth rates.

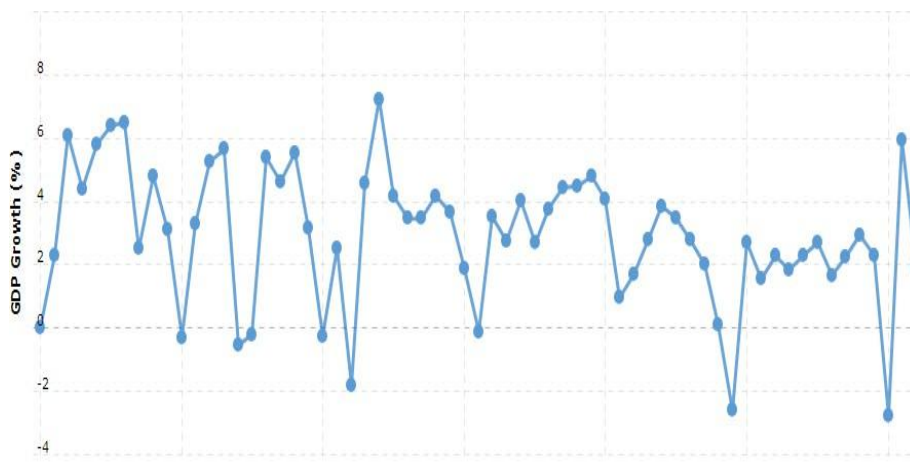
Entering the 1990s, a more noticeable upward trend begins, corresponding with India's economic liberalization policies initiated in 1991. These reforms, which included deregulation, reduction of import tariffs, and encouragement of foreign

investment, appear to have positively impacted GDP growth. The 2000s and 2010s show a continued and more pronounced rise in the logarithm of GDP per capita. This period reflects India's rapid economic expansion, driven by a boom in the service sector, increased foreign investment, and technological advancements. By 2019, the logarithm of GDP per capita approaches a value slightly over 3.5, indicating substantial economic growth over the observed period.

The graph depicts a steady and consistent growth in India's GDP per capita, especially marked by significant upward trends post-economic reforms in the early 1990s and continuing into the 21st century. This sustained growth highlights India's evolving economic landscape and its increasing role in the worldwide economy.

Figure 4:

GDP growth in the United States from 1960 to 2024



Note: Published by The World Bank Group, 2024

The GDP growth rate in the USA over a series of years. The y-axis represents the GDP growth percentage, ranging from -4% to 8%, while the x-axis likely represents time, although precise years are not visible in the image. The line graph shows significant fluctuations in GDP growth, with peaks reaching as high as 8% and troughs falling to nearly -4%. This variability suggests periods of robust economic expansion as well as contractions. The most notable feature is a sharp decline followed by an immediate sharp increase, indicating a rapid economic downturn and subsequent recovery, which could be associated with economic crises or recoveries. The overall trend appears to lack a consistent direction, reflecting the complex interplay of various economic factors over time. This graph is a clear visual representation of the dynamic nature of the U.S. economy, with periods of rapid growth and decline.

The trend of continuous GDP growth in India contrasts with the fluctuating GDP growth in the USA due to several factors. In India, sustained population growth, a burgeoning labor force, and ongoing urbanization contribute to consistent economic expansion. Despite occasional setbacks, such as policy reforms and global economic downturns, India's economy generally experiences uninterrupted growth, albeit at varying rates.

Conversely, the USA's fluctuating GDP growth reflects the economy's responsiveness to both domestic and global factors. The country's mature economy, coupled with its position as a global economic leader, makes it susceptible to various influences, including shifts in consumer sentiment, business investment, international trade dynamics, and geopolitical events. Additionally, the USA's economic structure, dominated by the service sector and technology-driven industries, leads to more pronounced fluctuations in response to changes in economic conditions.

While India's continuous GDP growth underscores its developmental trajectory and potential, the USA's fluctuating GDP growth reflects the inherent volatility and complexity of its mature economy within the global context.

In the subsequent sections, we will review the existing literature on gender inequality in education, examine its impact on economic growth, and provide insights into the cross-cultural perspectives offered by the United States and India. Through this comparative analysis, we aim to contribute to a deeper consideration of the complex relationship between gender, education, and economic development, ultimately advocating for transformative change toward a more equitable and inclusive future.

Gender difference in education remains a persistent challenge worldwide, with vital implications for the economic growth and societal development. This literature review synthesizes prevailing research to examine the complex relationship between gender disparities in education and economic outcomes, focusing on a comparative analysis between the United States of America and India.

Research Design:

This study employs a quantitative research design to investigate the association between gender inequality in education and economic growth in the United States of America and India. The focus is solely on analysing secondary data found from existing sources to explore trends and patterns in gender disparities in education, and

their potential impact on economic outcomes.

Objectives:

The aim of the dissertation topic "Examining the Nexus between Gender Inequality in Education and Economic Growth: A Cross-Cultural Analysis of the United States and India" is to investigate the relation in between gender disparities in education and economic growth, with a comparative analysis between two culturally distinct nations, the United States of America and India.

Hypothesis:

H1: There is a significant difference between the GDP growth and FtoM in India and USA.

H2: There is a significant relationship between GDP growth and gender inequality (female to male ratio) in India

H3: Gender inequality (Female to Male ratio) is a significant predictor of GDP growth in India

Data Collection:

Data for this study will be collected exclusively from secondary sources, including national surveys, databases, and reports. Key indicators of gender inequality in education, such as enrollment rates, educational attainment, gender gaps in STEM fields, and labor force participation, will be obtained from reliable sources the Statista, World Bank, and national statistical agencies of both countries.

Data Analysis:

The results were derived from the quantitative analysis conducted to explore the association between gender inequality in education, as measured by the female-to-male ratio in higher secondary enrollment rates, and economic growth, measured by GDP growth rate in percentage per annum. The methodology primarily involved the use of secondary data found from national statistical agencies and reputable databases for both the United States and India. A comparative approach was employed, focusing on conducting a t-test to compare gender inequality in education between the two countries and regression analysis specifically for the Indian secondary data.

The t-test was conducted to compare the female-to-male ratio in higher secondary enrollment rates between the United States and India.

Regression analysis was attained using Indian secondary data to inspect the association between gender inequality in education, and economic growth. The independent variable was the female-to-male ratio in higher secondary enrollment rates, while the dependent variable was the GDP growth rate in percentage per annum. valuable insights into macro-level trends and patterns in gender inequality in the education and its implications for the economic growth.

This chapter presents the results obtained from the empirical investigation into the nexus between the gender inequality in education and the economic growth, with a specific focus on a cross-cultural analysis of the United States of America and India. The chapter begins with an overview of the methodology employed in the research, followed by a detailed presentation and analysis of the findings.

Table 2: Independent Sample t-Test

Variables	Levene's Test for equality of variances		t-test for equality of means				
	f	Sig.	t	Df	Sig.(2-tailed)	Mean Difference	Std. Error Difference
GDP	2.094	0.153	6.008	58	0.000	3.717	0.619
HSEM	49.440	0.000	-13.124	58	0.000	-23.090	1.759
HSEF	74.772	0.000	-10.981	58	0.000	-33.887	3.086
FtoM	59.390	0.000	-6.061	58	0.000	-0.183	0.030

Note: GDP denotes the GDP Growth Rate, HESM and HSEF denotes Higher

Secondary Enrollments In Male and Female respectively, FtoM denotes Female to Male in Higher Secondary enrollments

The provided data furnishes a comprehensive assessment of statistical tests conducted to compare various variables between the United States and India. These analyses encompass Levene's test for equality of variances and t-tests for equivalence of means for four pivotal variables: GDP (Gross Domestic Product), HSEM (Higher Secondary Enrollment in Males), HSEF (Higher Secondary Enrollment in Females), and FtoM (Female-to-Male Ratio).

Beginning with GDP, Levene's test suggests no significant difference in variances in between the two countries, assuming equal variances ($F = 2.094, p = 0.153$). However, the subsequent t-test unveils a substantial contrast in mean GDP, with India exhibiting a markedly higher mean difference of 3.71700 compared to the United States ($t = 6.008, df = 58, p < 0.001$). This indicates a significant disparity in economic performance, with India showcasing superior GDP growth rates compared to the United States.

Transitioning to educational indicators, both HSEM and HSEF showcase significant variances in variances between the two countries according to Levene's test (HSEM: $F = 49.440, p < 0.001$; HSEF: $F = 74.772, p < 0.001$). Subsequent t-tests confirm substantial disparities in mean enrollment rates for males and females. For HSEM, the mean difference is -23.090 ($t = -13.124, df = 58, p < 0.001$), indicating significantly higher enrollment rates in India as equated to the United States. Similarly, for HSEF, the mean difference is -33.887 ($t = -10.981, df = 58, p < 0.001$), signifying a considerable discrepancy in female enrollment rates between the two countries.

Table 3: Model Summary

Model	R	R Squared	Adjusted	R Squared	Estimated Error of the Estimate
1	0.121 ^a	0.015	-0.021		2.86404

a. Predictors: (constant), FtoM

The Model Summary table presents the outcomes of a regression analysis conducted precisely within the context of India, inspecting the relationship between the Female-to-Male Ratio (FtoM) and the GDPInd (GDP India). In this analysis, FtoM serves as the predictor variable, while GDP India represents dependent variable.

Moreover, the Female-to-Male Ratio (FtoM) also exhibits significant differences in variances between the United States and India ($F = 59.390, p < 0.001$). The subsequent t-test elucidates pronounced differences in mean ratios, with India demonstrating a lower mean ratio of -0.183198 compared to the United States ($t = -6.061, df = 58, p < 0.001$), indicating a greater gender disparity in educational access in India relative to the United States.

In the observed outcomes, where India demonstrates higher GDP growth rates per annum but also exhibits greater gender disparities in education compared to the United States, reflect the intricate interplay of economic, social, and policy dynamics within each country. India's accelerated GDP growth can be attributed to robust economic reforms and development strategies implemented since the 1990s, fostering increased foreign investment and technological advancements. However, persistent gender disparities in education hinder the full utilization of India's human capital potential, stemming from socio-cultural norms, traditional gender roles, and systemic barriers that impede girls' access to education, particularly in rural areas. In contrast, the United States, while experiencing economic growth, maintains more balanced enrollment rates between genders due to legislative frameworks like Title IX and cultural shifts towards gender equality. Investment in human capital, coupled with efforts to address infrastructure disparities and promote equal access to education, contributes to a more inclusive and productive workforce. Ultimately, addressing gender disparities in education remains a critical imperative for both countries to ensure equitable opportunities and foster sustainable economic growth.

The results propose a modest association between the Female-to-Male Ratio and the Gross Domestic Product Index in the Indian context. The R Square value, indicating the amount of variance in GDP Ind explained by FtoM, is 0.015. This implies that approximately 1.5% of the variability in GDPInd can be attributed to deviations in the Female-to-Male Ratio.

Furthermore, the Adjusted R Square value, which adjusts for the number of predictors, in the model, stands at -0.021. Despite the adjustment, this value advises that the Female-to-Male Ratio does not contribute significantly to explaining the variability in GDPInd in the Indian context.

The correlation coefficient (R) of 0.121 indicates a very weak, positive association between FtoM and GDPInd. This suggests that as the Female-to-Male Ratio increases marginally, there is a slight tendency for the Gross Domestic Product Index to rise, although the correlation is not strong.

While these outcomes suggest some degree of association in between gender disparities (measured by FtoM) and economic indicators (represented by GDPInd) in India, the overall explanatory power of the model remains limited. Further investigation is warranted to discern the nuanced dynamics underlying gender disparities and economic development in the Indian context. This might involve exploring additional variables or employing alternative analytical approaches to gain a deeper understanding of the intricate interplay between the gender equality and the economic growth in India.

Major Findings:

The results from the empirical investigation into the nexus between the gender inequality in education and the economic growth, focusing on a cross-cultural analysis of the United States of America and India, offer several significant insights:

Economic Growth Disparities: India demonstrates a substantially higher mean GDP growth rate compared to the United States. Plausible reasons for India's superior GDP growth include catch-up growth dynamics, demographic trends, structural reforms, and government initiatives. But, this growth coexists with notable gender disparities in education.

Gender Disparities in Education: India exhibits lower mean higher secondary enrolment frequencies for both genders compared to the United States. Females in India face particularly pronounced challenges, with lower enrollment ratios and a lower female-to-male enrollment ratio, indicating fewer females enrolled in higher secondary education relative to males. In contrast, the United States demonstrates higher mean enrollment rates for both genders, with females slightly be more numerous than males in higher secondary education.

Statistical Analyses: Statistical tests comparing GDP, higher secondary enrollment rates, and the female-to-male ratio between India and the United States reveal significant differences. India exhibits higher variability in enrollment rates, particularly among females. These findings underscore the compound interplay between the gender inequality in education and the economic growth.

Correlation: There is weak positive correlation between the GDP growth and FtoM ratio in Indian context.

Regression Analysis: Regression analysis within the Indian context suggests a modest link between the female-to-male ratio and the Gross Domestic Product Index (GDPInd). While the constant term significantly influences GDPInd, the coefficient for the female-to-male ratio lacks statistical significance, indicating that other issues may play a more substantial role in shaping GDPInd in India.

Policy Implications: The findings emphasise the importance of targeted policy interventions to address gender disparities in

education and foster economic growth. Efforts to promote gender parity in education should be complemented by broader initiatives addressing infrastructure development, labor market inclusivity, and institutional quality.

Conclusion

This study examined the relationship between gender inequality in education and economic growth through a comparative analysis of the United States and India. Education plays a crucial role in strengthening human capital, encouraging innovation, and improving productivity, all of which are essential for sustainable economic development. However, persistent gender disparities in educational access and attainment continue to limit the full utilization of human potential and hinder inclusive economic progress. The research highlights that although global efforts have been made to promote gender equality in education, socio-cultural norms, institutional barriers, and economic inequalities still create obstacles for women and girls.

The comparative analysis reveals distinct patterns between the two countries. India demonstrates relatively higher GDP growth rates, yet it continues to face significant gender disparities in educational access, particularly in higher secondary education where female enrollment remains comparatively lower than that of males. These disparities are largely influenced by socio-cultural norms, economic constraints, and structural barriers that limit opportunities for girls and women. In contrast, the United States shows a relatively balanced gender distribution in educational enrollment and attainment. Nevertheless, gender differences persist in certain fields such as science, technology, engineering, and mathematics (STEM) and in leadership positions within higher education and professional sectors.

Statistical analysis, including t-tests, regression, and correlation analysis, provides insight into the relationship between gender inequality in education and economic performance. The results indicate that although economic growth in India remains strong, the association between the female-to-male educational ratio and GDP growth appears relatively weak in the short term. This suggests that economic growth alone does not automatically lead to gender equality in education. Instead, targeted policy interventions are necessary to address deep-rooted structural and cultural barriers.

The findings of this study emphasize the importance of inclusive educational policies that promote equal access, reduce gender-based discrimination, and empower women through skill development and higher educational opportunities. Improving female educational participation can enhance labor force participation, increase productivity, and contribute to long-term economic development.

In conclusion, achieving gender equality in education is essential not only for social justice but also for sustainable economic growth. Policymakers, educators, and researchers must work together to design gender-sensitive policies and programs that eliminate disparities and create equal opportunities for both men and women. Further research, particularly longitudinal and regional studies, will be valuable in understanding the evolving dynamics of gender inequality and its impact on economic development.

References

1. Klasen, S. (2002). Low schooling for girls, slower growth for all? Cross-country evidence on the effect of gender inequality in education on economic development. *World Bank Economic Review*, 16(3), 345–373.
2. Klasen, S., & Lamanna, F. (2009). The impact of gender inequality in education and employment on economic growth: New evidence for a panel of countries. *Feminist Economics*, 15(3), 91–132.
3. Altuzarra, A., Gálvez-Gálvez, C., & González-Flores, A. (2021). Is gender inequality a barrier to economic growth? A panel data analysis of developing countries. *Sustainability*, 13(1), 367.
4. Xu, L. (2025). Gender equality and economic development: A cross-country comparative study. *Advances in Economics, Management and Political Sciences*, 162, 200–206.
5. Moheyuddin, G. (2005). Gender inequality in education: Impact on income, growth and development. Munich Personal RePEc Archive (MPRA) Paper No. 685.
6. Kanwal, A., & Munir, K. (2015). The impact of educational and gender inequality on income inequality in South Asia. Munich Personal RePEc Archive (MPRA) Paper No. 66661.
7. Ali, W., Ambiya, & Dash, D. P. (2023). Examining the perspectives of gender development and inequality: A tale of selected Asian economies. *Administrative Sciences*, 13(4), 115.
8. Seguino, S. (2000). Gender inequality and economic growth: A cross-country analysis. *World Development*, 28(7), 1211–1230.