

Exploring the Association between Education Level and Gender Equality: A Global Perspective

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Abstract:

This study investigates the link between education levels and gender equality from a global perspective, taking into account various socioeconomic factors that may impact this relationship. By examining a comprehensive set of independent variables, the project seeks to understand their influence on key gender equality indicators such as female employment and political representation.

Using tools like Excel, SPSS, and Tableau, the analysis will reveal trends and significant relationships in the data, ultimately offering valuable insights into the effectiveness of education policies and initiatives in promoting gender equality and female empowerment. These findings are intended to inform evidence-based decision-making, assisting governments and organizations in devising targeted strategies to achieve gender equality through education.

Introduction

- This project examines the association between education level and gender equality, considering factors like national income and government expenditure on education.
- Gender equality is vital for sustainable development, impacting economic growth, social progress, and overall well-being.
- Investigating education's impact on gender equality informs targeted interventions to address disparities and foster inclusive growth.
- Analyzing education-related factors and gender equality indicators uncovers complex relationships for policy development.
- The comparative approach across countries and contexts adds an intriguing dimension to the study, with the potential for actionable insights.

Background

- Gender equality in education is linked to improved economic outcomes and societal development (World Bank, 2021).
- UNESCO (2016) highlights the positive impact of gender-responsive education policies on reducing gender gaps in labor force participation and political representation.
- The Global Gender Gap Report (World Economic Forum, 2020) emphasizes the need for targeted strategies to address persistent disparities in education access and outcomes.
- Hannum and Park (2019) reveal that higher government spending on education is positively correlated with gender equality in education and employment.
- A study by Klasen and Lamanna (2009) found that reducing gender inequality in education significantly lowers fertility rates and improves women's health outcomes.

Research Question

- Is there an association between education level and gender equality?

Rationale:

- The rationale behind this research question is to investigate the potential relationship between education and gender equality.
- The research question examines if increased female education levels correlate with enhanced gender equality in areas like education access, job opportunities, and wages.
- This information can be useful for policymakers and educators to design effective strategies that promote gender equality and women's empowerment through education.
- Understanding the relationship between education and gender equality can also help identify any barriers or challenges that may hinder progress in achieving gender equality.

Methodology – Hypotheses & Rationale

- There is an association between education and women's political standing.
- There is an association between education and female employment ratio.
- There is an association between education and fertility rate.
- There is an association between education and female mortality rate.
- There is an association between education and female life expectancy at birth.
- There is an association between education and female waged/salaried workers.

Rationale:

The project hypothesizes that educational quality and national efforts in education influence gender equality, political standing, workplace experiences, fertility, mortality, life expectancy, and wage equity for women.

Methodology – Independent Variables

Name	Unit of Analysis	Brief Definiation	Scale	Type	Example	Control Variable
Years	years		Interval	Number	1998	N
Country Name	country names		Nominal	String	Argentina	N
National Income Level	low, lower-middle, upper-middle, high	A classification of countries based on their income groups	Ordinal	Categorical	High income	Y
Population	number of people	Number of people residing in a country	Ratio	Numerical	36233195	Y
Land area	square kilometers	Total land area excluding inland water bodies	Ratio	Numerical	2736690	Y
Compulsory Education Duration	years	Legally required number of years children must attend school	Ratio	Numerical	9	N
Government Expenditure on Education	% of GDP	Percentage of total government expenditure spent on education	Ratio	Numerical	12.42580032	N
Tertiary School Enrollment	% of the relevant age group	Ratio of total tertiary enrollment to the relevant age group	Ratio	Numerical	72.79666901	N
Female Academic Staff in Tertiary Education	% of total academic staff	Share of female academic staff in tertiary education	Ratio	Numerical	56.90385056	N
Tertiary Pupil-Teacher Ratio	number of students per teacher	Average number of pupils per tertiary school teacher	Ratio	Numerical	13.98137	N

Methodology

– Rationale for Independent Variables

- National income level, population, and land area are controlled variables.
- These variables could also indicate differences in cultural attitudes and economic opportunities that affect gender equality.
- Compulsory education duration and government expenditure on education could influence the availability and quality of educational opportunities.
- School enrollment, tertiary education, academic staff, and pupil-teacher ratio are all factors that could affect the level and quality of education that women receive, which could influence gender equality outcomes.

Methodology – Dependent Variables

Name	Unit of Analysis	Brief Definiation	Scale	Type	Example
Proportion of Seats Held by Women in National Parliaments	percentage of total seats	Percentage of parliamentary seats held by women	Ratio	Numerical	9.843400447
Female Employment to Population Ratio	percentage of the female working-age population	Proportion of employed females in the working-age population	Ratio	Numerical	51.74700165
Fertility Rate	births per woman	Average number of children born to a woman during her lifetime	Ratio	Numerical	1.305
Female Mortality Rate	deaths per 1,000 females	Probability of a 15-year-old female dying before age 60	Ratio	Numerical	157.269
Female Life Expectancy at Birth	years	Average number of years a newborn female is expected to live	Ratio	Numerical	73.34
Female Wage and Salaried Workers	the percentage of employed females in paid employment jobs out of the total female employment	Percentage of female employees in paid employment jobs	Ratio	Numerical	92.37999725

Methodology

– Rationale for Dependent Variables

- Proportion of seats held by women in parliaments gauges political representation and decision-making power for women, reflecting gender equality progress.
- Female employment to population ratio measures female labor force participation, unveiling economic opportunities and workforce gender disparities.
- Fertility rate shows the relationship between education and reproductive choices, affected by women's education access and empowerment.
- Female adult mortality rate offers insights into health outcomes, influenced by education level and gender-specific social determinants of health.
- Female life expectancy at birth and female wage/salaried workers serve as well-being and economic security indicators, both impacted by education and gender equality.

Data Description

- Data Size: 675 rows * 17 variables = 11,475
- Number of Years: 20
- Periods: 1998 – 2018
- Web Link to Data:

<https://databank.worldbank.org/source/world-development-indicators>

Platform / Tool

- Excel: for data organization, cleaning, and preliminary analysis, taking advantage of its user-friendly interface and widespread familiarity.
- SPSS: for advanced statistical analysis, including hypothesis testing and regression modeling, to identify significant relationships and patterns in the data.
- Tableau: to create interactive visualizations and dashboards for effectively communicating our findings and facilitating data-driven decision-making.
- Integration: leveraged the compatibility between Excel, SPSS, and Tableau for seamless data pre-processing and analysis throughout the project.

Key Results

- Longer durations of compulsory education, increased government expenditure on education, and higher tertiary school enrollment rates are associated with a larger proportion of seats held by women in national parliaments.
- Duration of compulsory education, government expenditure on education, tertiary school enrollment, and number of female academic staff in tertiary education are *not* significantly correlated with female employment-to-population ratio.
- Longer durations of compulsory education, increased government expenditure on education, and a greater number of female academic staff in tertiary education are all linked to a lower fertility rate.
- Increased tertiary school enrollment and a larger number of female academic staff in tertiary education are associated with a lower female mortality rate.

Key Results (continued)

- Increased tertiary school enrollment, longer compulsory education duration, and greater government expenditure on education are all associated with a higher female life expectancy at birth.
- Higher tertiary school enrollment, a greater number of female academic staff in tertiary education, and a lower tertiary pupil-teacher ratio are all associated with an increased number of female wage and salaried workers.
- Tertiary school enrollment is the most significant variable in relation to female life expectancy at birth.
- Tertiary pupil-teacher ratio is the most significant variable in relation to the number of female wage and salaried workers.
- Female academic staff in tertiary education is the most significant variable in relation to fertility rate.

Scope & Limitations

- Scope: The project covers a broad range of independent variables related to education and socio-economic factors to analyze their impact on gender equality outcomes across countries and over time.
- Limitation 1: Due to missing data in the variables “Educational attainment, at least Bachelor’s or equivalent, population 25+, female” and “Literacy rate”, these variables will not be included in the analysis.
- Limitation 2: The study may not account for all factors affecting gender equality, such as cultural, religious, or political influences, which could impact the findings’ generalizability.
- Limitation 3: The quality and accuracy of data for certain countries or time periods may vary, potentially affecting the robustness of the results.
- Limitation 4: The project’s focus on education-related variables may not capture the full complexity of the relationship between education and gender equality, as other variables may also play a significant role.

Conclusions

- Increased tertiary enrollment boosts female life expectancy and representation in parliaments, highlighting education's role in gender equity.
- The female employment-to-population ratio is not significantly influenced by educational factors, pointing to other factors like labor policies and cultural norms.
- More opportunities for women in higher education are linked to lower fertility rates, affecting family planning and reproductive choices.
- Enhanced female health and well-being are connected to higher tertiary enrollment and more female academic staff in tertiary education.
- A balanced learning environment, female role models, and higher tertiary enrollment lead to increased female wage and salaried workers, impacting economic participation and career choices.

Future Research

- Investigate the impact of labor market policies, cultural norms, and workplace practices on the female employment-to-population ratio to better understand factors affecting women's workforce participation.
- Analyze the effectiveness of targeted gender empowerment programs and policies, such as gender quotas, mentorship initiatives, and skill development programs, on improving gender equity across various sectors.
- Study the influence of socioeconomic factors, such as family background, income levels, and access to resources, on educational attainment and gender equity outcomes to develop tailored interventions for underprivileged populations.
- Explore the long-term impact of increasing women's representation in decision-making roles and leadership positions in education, politics, and the corporate sector on broader societal attitudes towards gender roles and expectations.

Managerial Implications

- Develop and support initiatives that promote gender diversity and inclusivity within organizations.
- Implement mentorship and leadership programs to empower female employees and encourage professional growth.
- Encourage a culture of equal opportunity by addressing unconscious biases and promoting fairness in recruitment, promotion, and compensation processes.
- Collaborate with educational institutions to create opportunities for women in traditionally male-dominated fields.
- Regularly assess and report on gender equality metrics to ensure ongoing progress and maintain transparency.

Policy Recommendations

- Increase government expenditure on education to enhance gender equality outcomes across various sectors.
- Implement or strengthen compulsory education policies, ensuring equal access to quality education for both genders.
- Facilitate access to tertiary education for women to empower them professionally and politically.
- Promote the inclusion of female academic staff in tertiary education to foster diversity and inspire female students.
- Address regional disparities in gender equality by tailoring interventions to local cultural, social, and economic contexts.

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