

The Ripple Effect: How Women's Education Fuels Economic Growth in Developing Economies

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ABSTRACT

This paper examines the complex relationship between women's education and economic development in developing countries, highlighting both progress and persistent challenges. Prior research demonstrates that women's education yields multiple economic benefits—improved health outcomes, increased national GDP, and reduced poverty. While significant strides toward gender parity in education have been made globally in recent decades, substantial barriers persist, particularly in secondary and tertiary education. This paper analyzes these gaps and demonstrates the considerable economic benefit bridging them brings to developing nations. It explores how various factors can impede expected economic gains and examines how intersecting factors necessitate comprehensive policy approaches. This paper also advocates for a holistic strategy that addresses both educational access and broader socio-cultural barriers to workforce participation in developing economies. In doing so, it attempts to advance the understanding of how targeted investments in women's education, combined with structural reforms, can drive inclusive and sustainable economic growth in developing nations.

Keywords: Women's education, Economic development, Developing countries, Gender parity, Growth.

INTRODUCTION

Women's literacy has long been linked to economic growth, reinforced by a growing body of statistical findings. It is associated with improved maternal and child health outcomes (Diallo et al., 2023), population stabilization (Saurabh et al., 2013), reduced HIV/AIDS infection rates (Schenker, 2006), increased per capita Gross Domestic Product (GDP) (Jusaj and Fetai, 2022), and reductions in multidimensional poverty (Wei et al., 2021). Educated women are also more likely to participate in the labor force, have decision-making power over health and household

matters, assert greater agency and autonomy, experience higher mobility in society, and build better futures for themselves and their families.

It is this consistent relationship that prompted former UN Secretary-General Ban Ki-moon to assert that women's education has “a powerful ripple effect across all areas of development” (United Nations, 2016). For developing economies, these externalities of human capital are particularly crucial, as they directly shape the long-term growth trajectories of nations (Basile and Mukhopadhyay, 2009). In fact, limiting educational opportunities for girls was estimated to cost countries anywhere between \$15 trillion to \$30 trillion in future lifetime earnings (Montenegro et al., 2018).

Despite this expensive finding, macroeconomics was long seen as gender-neutral. In the same vein, the impact of economic development on women's issues was also naturally assumed to be one-sided rather than reciprocal. However, since the 1970s, economists and researchers have extensively challenged this notion. Boserup (1970) and her contemporaries put forth seminal perspectives on the integration of gender issues into economics (Benería and Bisnath, 2001). Many recent studies have also argued that gender-responsive macroeconomics is critical to equal development, particularly in low- and middle-income countries (UN Women, 2015; Berik and van der Meulen Rodgers, 2023). Another set of findings go one step further, linking women's empowerment—of which education is a key component—to positive behavioral choices that mitigate the inefficiencies of patriarchal family structures, resulting in better allocation of household resources and greater investment in children's education (Kabeer, 1999; Çagatay 1998; Stotsky, 2006). Increasing women's access to education also makes them more likely to be active participants in local governance, which translates to better advocacy and representation of women's issues in public policy.

In recent years, significant progress has been made in women's education across the globe. New data shows that since 2015, an additional 50 million girls have been enrolled in school, with primary school enrollment approaching near-universal levels in many countries (UNESCO, 2023). However, this progress also masks several underlying complexities. Opportunities for secondary, or high school, and tertiary education, or post-high school, still remain sparse for women in many regions. Educational gains do not always reflect in labor market outcomes as economists expect either. For instance, in South Asia, women with degrees have a labor force participation rate of just 39% (International Labour Organization, 2023), which is also drastically lower than their male counterparts. Other factors like the safety of learning environments for girls and a lack of gender-sensitive curriculum also dramatically impact the quality of education imparted, and successively, their benefits, and the overall development agenda.

It is this complex relationship between women's education and broader economic development that this paper attempts to explore. Drawing on case studies, data, and evidence from various developing countries, it traces the ripple effect women's education can have on economic outcomes, while examining the factors that both facilitate and impede this process, as well as the gaps within this discourse. By engaging with a growing body of literature on gender-responsive economic policies, it contributes to the ongoing discourse on how targeted investments in women's education can ultimately lead to inclusive, sustainable, and long-term economic growth.

BACKGROUND

Women's education has been a key priority in developing countries for decades now. King and Hill (1997) analyzed the gender gap in education across 152 developing countries from 1960 to 1985 and evidenced strong linkages between women's educational attainment and national development objectives. Klasen (2002) identified that regions like South Asia, the Middle East, and Africa in particular face substantial economic losses in this regard. Measuring the extent of these losses in South Asia and Sub-Saharan Africa led Klasen (1999) to previously conclude that if these regions had achieved gender-balanced educational outcomes back in 1960, their annual economic growth would have been 0.9% faster per year.

However, from the late twentieth century onwards, there have been many impressive advances in education. Gender parity rates have improved at both primary and secondary levels across the world, with primary school enrollment attaining gender parity for the first time in 2013 (UNESCO Institute for Statistics). However, these statistics mask many important nuances, challenges, and widespread geographic differences. For example, once enrolled in primary school, only 66 percent of girls complete school compared to 71 percent of boys.

In countries like India and Egypt, reforms have led to strong gender parity in primary school enrollment. However, the gap widens when secondary and tertiary education are brought into the picture (Maity et al., 2022; Roudi, 2016). This trajectory is concerning, especially since economic returns to education are the highest at the tertiary level—especially for developing countries—and have a far greater impact on wages compared to lower levels of education (World Bank, 2024). Both countries also demonstrate patterns consistent with other economies in the Middle East, North Africa, and South Asia, where educated women—who policymakers assume will automatically transition into the labor force—do not always do so, which further limits the expected economic benefits (Moghadam, 2023).

Likewise, Sub-Saharan Africa has also made significant progress in the last three decades. But large gaps in gender parity still remain at all levels of schooling. In Nigeria, for example, various

educational interventions have improved access in some regards, but girls still continue to be widely excluded from schooling, particularly in the northern region.

Additional challenges also complicate women's education in developing countries. These range from women's barriers to entry in science, technology, engineering, and mathematics (STEM) fields that are traditionally high-paying, as well as the gendered nature of the current digital divide. The latter is especially significant as education trends shift toward digitalization. These realities further explicate the need for developing nations to conceptualize interventions that address access to education, retention in schools, quality learning outcomes, and transition to higher education levels—all of which demand long-term policy solutions that are both culturally sensitive and forward-looking.

DISCUSSION

The costs incurred by developing countries due to gender gaps in education are undoubtedly substantial. This is particularly significant in low-income countries in the Sub-Saharan African region, where potential benefits are also the most substantial. In Burundi for instance, girls completing their education could transform the economy completely. For primary school dropouts (27% of girls) their lifetime earnings would equal a quarter of the country's annual GDP, while for secondary school dropouts (88% of girls), their additional lifetime productivity would increase Burundi's GDP by an amount exceeding two-thirds their annual GDP (Chaaban and Cunningham, 2011, p. 13). If all girls in Burundi advanced to the next educational level, their lifetime contribution could match the country's entire annual GDP (p. 14).

These economic opportunities extend across the region, to a lesser, but equally productive, degree. In Kenya, Tanzania, Senegal, and Uganda, preventing girls from dropping out of primary school would mean their additional lifetime output would equal 13-20% of annual GDP values. For secondary schooling, these figures shoot up to 24-48%, meaning an annual GDP boost of 0.5-1% over the next 45 years (Chaaban and Cunningham, 2011, p. 14).

However, deriving the full spectrum of these benefits demands further effort. For example, countries must also be able to transition educated women into the workforce, where socio-cultural factors, gender discrimination, and supply shortages can become significant, yet often invisible, obstacles. As stated earlier, this roadblock is shared by several middle-income countries. While these nations post comparatively higher literacy rates, fully capitalizing on these academic achievements is equally prudent.

In India, this "U-curve" between women's education and labor force participation has been linked to social norms, cultural factors, limited availability of appropriate job opportunities, and the likelihood of highly educated women marrying into wealthy families, among other factors

(Chatterjee et al., 2018). Countries like Indonesia, Turkey, and Ghana also show significant gender gaps in labor force participation for secondary-educated individuals, with women's participation rates being several percentage points lower than men's, highlighting the need to target systemic barriers to workforce integration alongside educational improvements.

This is in line with cost-benefit analyses that show that low-income countries stand to gain more from investments in primary education, whereas secondary and higher education investments offer more returns to middle-income economies (Psacharopoulos and Patrinos, 2018). However, there is more nuance to this. Take for example the contrasting outcomes between two states in India—Bihar and Kerala—which illustrate how paradoxes can emerge even within the same country. Kerala stands out for its exceptional female literacy rate of 92%, on par with high-income countries; while Bihar lags significantly behind, with a female literacy rate just above 50%. But as Parayil (1996) cautions, the Kerala model should not be idealized or regarded as a universally applicable blueprint based on statistics alone. Its design is deeply rooted in the state's unique social, cultural, and political context, and has critical limitations surrounding economic and external returns that demand continued engagement with socio-cultural institutions (Eapen and Kodoth, 2002).

Intersectionality also plays a crucial role in educational access and outcomes. Identities—including class, ethnicity, and location—often intersect to create distinct barriers, which influence who accesses and benefits from educational opportunities. Without addressing this in policy, countries risk exacerbating barriers to education and creating uneven benefits across social groups. However, when these barriers are addressed comprehensively, the results can be transformative.

In India, for example, education for girls from Scheduled Castes (SC) and Scheduled Tribes (ST) lags significantly behind other groups and requires critical attention. Following liberalization in India, however, English education translated to higher economic returns. Munshi and Rosenzweig (2006) later evidenced how this led to an unexpected surge in English-based education for girls belonging to SC and ST communities, who sought it as a pathway to break rigid caste networks and secure employment.

The shift, ironically, was not driven by educational policy. Yet, it highlights the critical need to recognize and address the unique experiences of marginalized groups and expand educational opportunities through an intersectional framework. To achieve lasting change, it is imperative that developing nations prioritize inclusive educational policies that do not see women as a monolith. Moreover, as Duflo (2012) cautions, it is equally important to be wary of viewing economic development and women's education as “magic bullets” capable of resolving complex societal issues on their own (p. 1076).

A more nuanced understanding is ultimately necessary here—one that acknowledges the importance of education while recognizing that it must be accompanied by broader, structural reforms. This includes addressing workplace discrimination, providing affordable childcare, ensuring safe and accessible working environments, and challenging deeply ingrained social norms that limit women's economic participation.

These changes require a coordinated approach that integrates educational initiatives with wider social and economic reforms. At the same time, women's education should also not be seen merely through an economic lens or as a tool for national development, but as a fundamental human right and an essential pillar of equitable, just societies.

CONCLUSION

The relationship between women's education and economic development in developing economies is both profound and multifaceted. These countries typically spend anywhere between 2.5 percent to 7.5 percent of their GDP on education, with many looking to increase spending in the near future (Chu and Hemming, 1991). Understanding how gender parity influences economic growth is crucial for policymakers to create gender-responsive policies and targeted interventions.

While significant progress has been made, with primary school enrollment reaching near-universal levels in many countries, persistent challenges remain across different regions and socioeconomic groups. The cost of gender gaps in education is substantial, but at the same time, these estimates also mean that there is significant potential for economic gains in these countries. Moving forward, developing nations can adopt a holistic approach that goes beyond simply increasing educational spending. Such an approach should address gender gaps alongside the complex interplay of social, cultural, and institutional barriers that can, and often do, limit women's participation in the labor force.

Particular attention must be paid to secondary and tertiary education, where gender gaps widen. Creating pathways for educated women to enter the workforce is also crucial, especially in regions where participation rates remain low despite educational achievements. Success will also require targeted interventions that consider intersecting identities and create equal opportunities for all women.

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