

Essays on Investment in Tertiary Education, Labor Market,
and Women Marital Outcomes

National Graduate Institute for Policy Studies (GRIPS)

Moges Endalamaw Yigermal

August 2024

Dissertation Summary

Investment in education has been shown to have better returns, including a higher probability of formal sector employment and improvements in women's empowerment (Card, 1992, 2001; Ashenfelter and Krueger, 1994). The impact of tertiary education on labor market outcomes varies depending on country case studies and gender, with women the effect shown to be higher for women in countries with lower per capita income (Psacharopoulos and Patrinos, 2004; Appleton, 2000). However, access to education, particularly tertiary education, remains limited in many developing countries, resulting in low enrollment rates at the tertiary level. The issue is particularly severe in Sub-Saharan Africa, where average gross enrollment ratio in tertiary education is barely 10% and far below the global average of 40% in 2020 (Arnhold, 2021).

Ethiopia is no exception, with gross enrollment in tertiary education is not more than 10% as of 2018. However, significant improvements in enrollment have been observed since the early 2000s. Ethiopia has invested significantly to expand tertiary education, seen by a massive public university opening across different regions in the country. Between 1999 and 2017, the Ethiopian government established over 40 new public universities. Following the expansion, access to tertiary education has significantly improved, which resulted in a significant surge in university enrollment. In this dissertation, I leverage the expansion of higher education in Ethiopia to explore the effects of increased access to university education on various labor market outcomes, fertility, and marital-related outcomes.

The dissertation includes two main chapters. In the first part of the dissertation, I examine the impact of the Ethiopian higher education expansion (HEE) on university education attainment and labor market outcomes. I exploit the expansion-induced kink in enrollment in 2002 to identify the causal effects of tertiary education on labor market outcomes. Using the Ethiopian Urban Employment Unemployment Survey

(EUEUS) I find that the expansion significantly increases university education attainment for cohorts who were 20 years old and younger during the enrollment surge in 2002. The gain in university education has resulted in better labor market outcomes. At the extensive margin, individuals with a university education were more likely to be in the labor force, and those in the labor force were more likely to be in paid employment. This effect is mainly driven by public sector employment. The public sector in Ethiopia remains a major employer of highly skilled workers, partly due to the underdeveloped private sector and the nature of economic growth, which has primarily been driven by public infrastructure investment.

In the second part, I used the Ethiopian Demographic and Health Survey (EDHS) to examine the impact of a university opening nearby on fertility and other female marital outcomes. I explore two sources of variation in the identification strategy: proximity to a nearby university opening (distance from a nearby university) and age at the time a university first became available nearby, and utilize difference-in-difference for the estimation.

The results show that women who were exposed to the availability of a university within 20 km by age 20 have 0.37 fewer childbirths by age 30 compared to non-exposed women, accounting for a 12% reduction from the mean. The effect of exposure to a university opening on fertility is significant from ages 18 through 30, with the effect becoming increasingly negative with age and decreasing with distance. The fertility effect in our analysis is attributed to a delay in marriage, first childbirth and an increased decision-making power over marriage. Tertiary education empowers women to participate in decision-making, including when and whom to marry, in contrast to the common practice in Ethiopia where parents decide over their children marriage.

The findings in this dissertation have implications for tertiary education attainment, human capital accumulation, and women empowerment. It suggests that reforms that improve access to tertiary education in developing countries have a significant effect in increasing tertiary education attainment. In a developing country like Ethiopia, where gross enrollment in tertiary education remains very low (barely 10% in 2023) and the skilled labor force is limited, policies designed to increase access to higher education could play a crucial role in human capital development and significantly enhance the country's innovation and research capacity.

The results also have implications for women empowerment. Women who have been exposed to a university expansion are more likely to have a say on their marriage and other decisions that may affect marital outcomes than the common tradition in Ethiopia where parents decide over their daughter's marriage. As women's enrollment in tertiary education remains low, efforts to improve women's access to tertiary education could bring better outcomes for women.

This dissertation contributes to the existing literature on higher education reforms in developing countries (Glewwe and Kremer, 2006; Peet et al., 2015; Duflo, 2001; Psacharopoulos and Patrinos, 2018; Sekhri et al., 2022; Elsayed and Shirshikova, 2023; Somani, 2021), where research is relatively limited. Specifically, the analysis in this dissertation adds to the debate on graduate unemployment in Ethiopia, a concern that has arisen following the expansion of higher education (Bishaw and Melesse, 2017; Reda and Gebre-Eyesus, 2018). Prior to this study, there was no rigorous empirical evidence examining whether this expansion of higher education has been associated with graduate unemployment in Ethiopia.

Much of the existing research has focused on the wage returns of higher education ([Psacharopoulos and Patrinos, 2004, 2018](#); [Card, 1993](#); [Peet et al., 2015](#); [Fasih, 2008](#); [Burger et al., 2020](#); [Somani, 2021](#)). However, little is known about whether political reforms that promote the development of the private sector could potentially provide new employment opportunities for graduates, in addition to the historically dominant public sector. This is particularly significant in the context of Ethiopia, where the private sector gained prominence following political reforms in the 1990s that replaced the socialist government, in which the private sector was almost nonexistent.

Furthermore, the paper contributes to the literature by examining the impact of proximity to a nearby university on women tertiary education attainment and marital outcomes using distance than the mere presence or absence of university openings in a province ([Elsayed and Shirshikova, 2023](#)). Additionally, our findings could contribute to a debate on whether investments in higher education or lower levels of education should be prioritized in low-income countries.

References

- Simon Appleton. Education and health at the household level in sub-saharan africa. *CID Working Paper Series*, 2000.
- Nina Arnhold. Higher education , world bank report. Technical report, 2021.
- Orley Ashenfelter and Alan Krueger. Estimates of the economic return to schooling from a new sample of twins. *The American economic review*, pages 1157–1173, 1994.
- Alemayehu Bishaw and Solomon Melesse. Historical analysis of the challenges and opportunities of higher education in ethiopia. *Higher Education for the Future*, 4 (1):31–43, 2017.
- Ronelle Burger, Agnès Zabsonré, Vaqar Ahmed, Mitzie Irene Conchada, and Ana Lucia Kassouf. Examining the impact of early childbearing on education, literacy, and labor-market outcomes in four african countries. *Partnership for Economic Policy Working Paper*, (2020-20), 2020.
- David Card. Using regional variation in wages to measure the effects of the federal minimum wage. *Ilr Review*, 46(1):22–37, 1992.
- David Card. Using geographic variation in college proximity to estimate the return to schooling, 1993.
- David Card. Estimating the return to schooling: Progress on some persistent econometric problems. *Econometrica*, 69(5):1127–1160, 2001.
- Esther Duflo. Schooling and labor market consequences of school construction in indonesia: Evidence from an unusual policy experiment. *American economic review*, 91(4):795–813, 2001.

- Ahmed Elsayed and Alina Shirshikova. The women-empowering effect of higher education. *Journal of Development Economics*, 163:103101, 2023.
- Tazeen Fasih. *Linking education policy to labor market outcomes*. World Bank Publications, 2008.
- Paul Glewwe and Michael Kremer. Schools, teachers, and education outcomes in developing countries. *Handbook of the Economics of Education*, 2:945–1017, 2006.
- Evan D Peet, Günther Fink, and Wafaie Fawzi. Returns to education in developing countries: Evidence from the living standards and measurement study surveys. *Economics of education review*, 49:69–90, 2015.
- George Psacharopoulos and Harry Anthony Patrinos. Returns to investment in education: a further update. *Education economics*, 12(2):111–134, 2004.
- George Psacharopoulos and Harry Anthony Patrinos. Returns to investment in education: a decennial review of the global literature. *Education Economics*, 26(5):445–458, 2018.
- Nigusse Weldemariam Reda and Mulugeta Tsegai Gebre-Eyesus. Graduate unemployment in ethiopia: the ‘red flag’and its implications. *International Journal of African Higher Education*, 5(1), 2018.
- Sheetal Sekhri, Md Amzad Hossain, and Pooja Khosla. Access to colleges, human capital, and empowerment of women. *Journal of Human Resources*, 2022.
- R. Somani. The returns to higher education and public employment. *World Development*,, pages 144, 105471., 2021.