

# Policy Brief

## Transitions to Adulthood: Education, Skills, and Labor Market Outcomes in Madagascar and Senegal

**Researcher** ..... David E. Sahn, Peter Glick, Ahmadou Aly Mbaye, Harivelo Rajemison, Fred Aubery, Aichatou Fall, Chris Handy, Catalina Herrera, Francesca Marchetta, Aurore Pélissier, Faly Rakotomanana, Naveen Sunder, Kira Villa, Thomas Walker

**Project Number** ..... 067

Using unique datasets, we study the transition from adolescence to adulthood in Madagascar and Senegal among a randomly selected cohort of men and women. We analyze the determinants of schooling and formation of cognitive and non-cognitive skills, and how these affect a range of outcomes such as teenage pregnancy, fertility, marriage and the timing of entry into the labor market and the type of work performed. We highlight the importance of schooling and cognitive abilities, but additionally find that family background, including parents' education and assets, and exogenous income shocks and health shocks are also important in explaining the outcomes of interest.

We used unique datasets to study the transition from adolescences to adulthood, in terms of the decisions that young people and their families make with respect to their schooling, work, marriage, and parenthood in Madagascar and in Senegal.

We investigated the impact of exogenous shocks to household income, assets, and children's school attendance in Madagascar, finding that the probability of a child dropping out of school increases significantly when a household experiences an illness, death or asset shock. Our results suggest that credit constraints, rather than labor market rigidities, explain the inability of households in Mada-

gascar to keep their children in school during times of economic stress.

We assessed the formation of adult cognitive skills in a cohort of Malagasy young adults, finding a strong effect of additional years of schooling on learning: progressing through school is the main factor of learning both academic and non-academic skills, even after controlling for school quality and parental inputs. We observed acceleration in learning: cohort members enrolled in higher initial grades in 2004 performed better at the final tests. Finally, parents' education, strongly predictive of early knowledge acquisition and early grade progression, has less impact on later achievement.

Low school attainment, early marriage, and age at first birth of females are major policy concerns in less developed countries. For females in Madagascar, aged 12–25 we sought to determine how low educational attainment, marriage age, and age at first birth outcomes interact. We found that an additional year of schooling resulted in a delay to marriage of 1.5 years, and marrying 1 year later delayed the age at first birth by 0.5 years. Parents' education and wealth also have important effects on these outcomes, with a woman's first birth being delayed by 0.75 years if her mother had 4 additional years of schooling, for example. The results provide rigorous evidence for the critical role of education—both individual women's own and that of their parents—in delaying the marriage and fertility of young women.

We analyzed whether teenage pregnancy contributes to lower school attainment and cognitive skills among young women in Madagascar. Our results show that having a child increases the likelihood of dropping out of school by 42 percent and decreases the chances of completing lower secondary school by 44 percent. This school–pregnancy-related dropout is associated with reduced Math and French test scores.

We also investigated how maternal cognitive skills, measured by standardized composites of Math, French, and Life Skills tests scores, affected their children's health in Madagascar. Madagascar has the sixth highest rate of malnutrition in the world and ranks higher than its income country peers in sub-Saharan Africa. We used children's height-for-age measurements to assess children's nutritional status. In Madagascar, 50 percent of children younger than 5 years old are stunted and 35 percent are severely stunted. Our findings show that maternal cognitive skills have a positive and statistically significant return on children's health; one standard deviation in the mother's total score increases the child height-for-age by 0.33–0.47 standard deviation. Our findings suggest that the role of formal education on child health is captured by the mother's cognitive skills; that the cognitive skills' effect on child health does not reflect a wealth effect; and that maternal cognitive ability is

not related to a better use of health infrastructure at the community level. Additionally, our results suggest that the effect of mother's cognitive ability on child height-for-age is independent of her non-cognitive skills, measured by her personality traits.

Using rich information on schooling characteristics, family background, and on the childhood and family history of cohort members' parents, we are able to present a useful descriptive story on personality development in Madagascar. We found that maternal background, extended family characteristics, and other environmental determinants all interact and play a role in determining the “Big Five” personality traits of Openness to Experience, Conscientiousness, Extroversion, Agreeableness, and Neuroticism. We find that improving school and community quality increases levels of relatively desirable personality traits (Conscientiousness, Openness to Experience) and decreases levels of less desirable traits (Neuroticism).

We further examined the role of personality, cognition, and shocks in determining labor outcomes for young adults in Madagascar. We estimated the effects of the Big Five personality traits, as well as cognition, measured through achievement test scores on the age of entry into the labor market, labor market sectoral selection, and within sector earnings. We examined how these behavioral traits interact with household-level shocks to affect labor market entry. We found that both personality and cognitive test scores affect these outcomes, and that their impact on labor supply is, in part, a function of how individuals respond to exogenous shocks.

Women represent the majority of the unpaid labor force in developing countries. To date, there has been little empirical evidence on the role of fertility in female labor force participation in the informal sector. We studied the effect of age at first birth on women's entry in the labor market and selection into different types of employment in Madagascar. We estimated the effect of early childbearing on selection into five employment categories: unemployed, informal paid employment, informal unpaid employment, formal employment, and stu-

dent. Our results suggest that young mothers are more likely to work, but in the unpaid informal sector, as compared to young non-mothers.

For young Senegalese women, we also examined the role of education and family background on age at marriage, age at first birth, and age at labor market entry. Our results highlight the importance of a woman's own education in delaying marriage and that the relationship between her education and timing of childbearing and of labor market entry operates mainly through the influence of schooling decisions on the age at marriage. We show that marriage and motherhood decisions are interrelated and that the timing of first birth strongly depends on the duration of marriage. We also shed light on the composite influence of parental education and death shocks on all the outcomes we examine.

Internal migration among Senegalese youth has also been studied. In our sample of 2,676 individuals, aged 21 to 35 years, 35 percent are internal migrants, and over half can be defined as temporary migrants. The higher the fathers' education the more (less) likely are their daughters to move to urban (rural) areas. Young men and women, who spend their childhood in better off households, are more likely to move to urban areas. The presence of younger siblings increases the propensity of moving to rural areas. Access to primary schools during childhood decreases the likelihood of mi-

grating to urban areas for both men and women.

Additionally, we found that being first-born, living outside of one's birthplace, as well as living in communities with poor infrastructure are associated with higher likelihood of migration. Furthermore, access to social capital/contact at destination has a significant positive effect on migration. The provision of housing and job or job search increases migration. Furthermore, we found that these effects are larger for women and urban migration. Access to a contact that provides only information increases the likelihood of migration of individuals from wealthier households, who are able to fund their own migration.



**I Z A** Institute  
of Labor Economics

Initiated by Deutsche Post Foundation

This document is an output funded by the UK Department for International Development (DFID) and IZA – Institute of Labor Economics (IZA) for the benefit of developing countries. The views expressed are not necessarily those of DFID or IZA.

The Growth and Labour Markets in Low Income Countries Programme (GLM | LIC) is a joint collaboration between IZA and DFID which aims to improve worldwide knowledge on labor market issues in low-income countries and provide a solid basis for capacity building and development of future labor market policies.

Based in Bonn, Germany, IZA is a local and virtual international research center and a place of communication between science, politics and society. IZA is an independent non-profit organization supported by the Deutsche Post Foundation.

The IZA research network is committed to the IZA Guiding Principles of Research Integrity. Research published in this series may include views on policy, but IZA itself takes no institutional policy positions.