



Rewarding schooling success and perceived returns to education: Evidence from India[☆]



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ABSTRACT

This paper tests two specific mechanisms through which individuals can form expectations about returns to investments in education: recognition for schooling performance, and exposure to successful students through family or social networks. Using a regression discontinuity design, we study the impact of two fellowship programs recognizing educational performance in secondary schools in India. We find that the fellowship award is associated with a significant increase in the perceived value of education, by both increasing the perceived mean of earnings (0.74 standard deviations (SD)) and decreasing the perceived variance in earnings (1.03 SD) associated with additional years of schooling. The effects spill over only selectively to social and family networks. Peers exposed to successful students do not update their beliefs but parents of fellows report higher perceived returns to education. Peers of fellows are however more informed about fellowship opportunities and report a higher intention to apply for the fellowship, thus contributing to the persistence of the potential impact of the fellowship across different cohorts.

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1. Introduction

Investments in human capital have long been considered a fundamental part of any sustainable process of economic development and growth (Barro, 1998; Romer, 1989; Mincer, 1974). And yet, despite growing evidence of both the importance of education in the formation of human capital and of high individual returns to schooling (Attanasio and Kaufmann, 2010; Jensen, 2010; Carneiro et al., 2011), demand for education has remained persistently low, particularly among low-income groups in the developing world (Banerjee and Duflo, 2011).

Becker's canonical model (Becker, 1962) of investment in human capital theorizes that demand for education is driven by students' and parents' perception of education as an investment in future income earning capacity: families weight the cost of an additional year of schooling against the perceived benefits accrued by the household in terms of future income. While a growing empirical literature has confirmed the impact of perceived returns to education on schooling decisions (Dominitz and Manski, 1996; Padula and Pistaferri, 2001; Belzil and Hansen, 2002; Nguyen, 2008; Attanasio and Kaufmann, 2009,

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2010; Jensen, 2010), it is also well documented that returns to education are perceived to be low in developing economies (Attanasio and Kaufmann, 2009, 2010; Jensen, 2010), which could drive down demand for education. The mechanisms through which low perceived returns to education are formed remain, however, poorly understood. Yet, understanding these mechanisms is critical for the design of policies that effectively (and sustainably) increase demand for education in the developing world.

In contrast to the recent literature exploring the impact of providing more accurate information about real returns to education on schooling decisions, this paper examines how perceived returns to education can be endogenously formed in the first place. First, we investigate how being recognized for schooling success affects an individual's perception of future returns to additional years of schooling, where success is evidenced by receiving a fellowship award for academic performance. We then investigate whether exposure to the educational success of others affects one's perceptions of returns to education. We do so by looking at whether changes in perceived returns to education of those rewarded for their schooling performance spill over into their family and social networks. While there is a growing literature documenting the importance of peer effects in schooling behavior in general (Sacerdote, 2001; Kremer and Levy, 2008; Epple and Romano, 2011), the role of peer effects in the formation of perceptions about the value of education remains unexplored.

To analyze the link between rewards for educational performance and perceptions, we measure the impact of two comparable fellowship programs rewarding high performing students in secondary school in India on perceptions of future wages associated with the completion of different levels of schooling. We first designed a survey to examine the impact of recognition for schooling performance on fellows and on those in their networks. We then implemented an extended survey in a different region to validate our main findings and further explore potential mechanisms.

In both settings, we adopt a fuzzy regression discontinuity design to identify a causal relationship between the fellowship award and perceived returns to education. Both fellowships are awarded to students pursuing secondary education in India based on a continuous score that measures each student's academic performance. The final score is based on both written tests and interview performance, and is not observed by the applicants. We exploit a discontinuity in the probability of being awarded the fellowship around a cutoff score defined by the pre-determined budget of the fellowship program. We take advantage of this same cutoff to identify family and social networks that are exogenously exposed to students who either just made the award criteria or came very close to meeting it. Since exposure is randomly assigned to a set of peers that pre-date the fellowship, it is unrelated to other factors that drive perceptions about the value of education. This enables us to overcome problems of reflection and correlated unobservables that constrain the identification of peer effects.

We present three main findings. First, we show that recognizing students for schooling performance has a significant impact on their perceived returns to investing in additional years of schooling: fellowship recipients perceive that completing higher education relative to lower secondary school can increase monthly entry salaries by an additional 1369 Rs (\$23¹ or 0.74 standard deviations (SD)) in the first five years after graduation. This leads the recipients to have more accurate perceptions of returns to higher education when measured against actual entry-level wages in the marketplace.

Second, fellowship recipients also expect a stronger decrease in the salary variance associated with completing higher levels of education. Recognition for schooling performance lowers the perceived standard deviation of the expected monthly entry salary upon completion of higher education by 1163 Rs (\$20 or 1.03 SD). Taken together, these two findings show that those rewarded for their schooling performance perceive education as an investment with higher return and lower risk relative to those who achieved similar levels of academic performance but were not rewarded for it.

Third, exposure to successful students recognized for their efforts does not affect the perceived returns to education of friends, neighbors and siblings. We do, however, find that these peers in the network of successful students are 9.2% points more likely to know about sources of funding for secondary education (mean: 27%) and 12.8% points more likely to consider applying for the fellowship itself (mean: 48.7%). All our main results are confirmed for the fellowship program implemented in a second region in India, which supports both the external validity and the generalizability of our findings. The point estimates on the impact of the fellowship on fellows' average expectations are nearly identical for both studies, with an estimated increase in perceived returns of 1690 Rs (\$28.2) compared to 1369 Rs (\$23).

In this second study, we extended our survey to explore some of the particular mechanisms underlying our main results. In theory, recognition for educational success can directly shape expectations about future earnings through different mechanisms. In uncertain environments, recognition for educational success can, among others, allow an individual to extract a signal about her own skills, or it may change the individual's overall valuation of education by strengthening the perceived link between schooling effort and rewards. We provide evidence that is consistent with the second mechanism. Fellowship recipients are more likely to encourage their peers to apply for the fellowship and they report higher perceived returns to education not only for themselves, but also for others in their cohort.

The second study confirms the selective transmission of information across networks. While perceptions about returns to education do not spill over to peers, we find that parents of successful fellows perceive higher expected earnings for additional years of schooling (with a point estimate of 1162 Rs or \$19.4, which is of similar magnitude to that of fellows) and report a higher valuation of education for all of their offspring. Taken together, our results suggest that uptake of the fellowship program is more likely to occur if a peer or a sibling has been recognized for her schooling efforts. The mechanism appears

¹ To facilitate this comparison, we also express the monetary values in US dollar terms (\$) using the exchange rate of \$1 ≈ 60 Rs.

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