



HARVARD | BUSINESS | SCHOOL

SHAWN COLE |
PROFESSOR

November 10, 2014

Dear Hiring Committee,

I write in strong support of Nilesh Fernando's application for a position as assistant professor. Nilesh is a promising development economist, possessing a wonderful mix of creativity and outstanding empirical skills. I expect him to do extremely well on the job market this year and would place him among the best two development students graduating from all of Harvard's programs this year.

I have worked closely with Nilesh for the past seven years. He worked as a research assistant for me for three years and has been my advisee in the doctoral program at Harvard for the past four years.

From the day I hired him, Nilesh showed great promise and demonstrated flashes of brilliance and extreme creativity: in providing comments on my papers before I submit them to journals, in suggesting alternate analyses, and even proposing new field experiments which we implement in the field. As a graduate student, he has matured from an assistant to a collaborator. I believe that the joint paper I describe below, for which he deserves well more than half the credit, will be the most impactful paper of all my current research.

Nilesh's job market paper examines the relationship between inherited agricultural land--by far the most significant asset for the majority of households living in poverty--and subsequent economic outcomes. He uses several data sets from India, one of which he collected himself through a household survey.

The paper has two primary strengths. First, it answers a first-order question. The demographic shift from rural to urban living is a key determinant of economic development in many countries, and understanding what drives (efficient) transitions is important. Second, the paper demonstrates Nilesh's creativity and care when conducting research: the identification strategy is clever, original, and entirely his own, and because the identification strategy is good but not perfect, the paper demonstrates the care and creativity he can muster to overcome potential weaknesses to a research approach.

The intuition behind Nilesh's approach derives from a Hindu custom whereby parental land is evenly divided among sons but not daughters. Thus, a first-born boy whose younger sibling is a girl stands to inherit twice as much land as a first-born boy whose younger sibling is a girl. If the parental stopping rule for fertility is not influenced by the composition of children, the identification strategy cleanly identifies the relationship between inheritance and subsequent economic activity. Of course, one could imagine alternative stories which threaten the identification strategy (e.g., Jensen (2003) argues that if parents favor boys, girls may on average belong to larger families than boys), and Nilesh addresses each of them quite carefully.

His findings are sensible and sometimes surprising. Less surprising is the finding that those who inherit more land are more likely to obtain a bank loan and on average enjoy higher consumption as adults. However, Nilesh also finds that inheriting land slows the transition to non-agricultural activity and reduces the probability of migration to urban settings. This stands in some contrast to previous literature that had imagined credit constraints as a key barrier to exit from agriculture.

A further contribution of the paper is to explore whether culture and land market frictions affect the role of land inheritance. In particular, Nilesh shows that the "Pithru Rina," a Hindu requirement that first-born sons manage household affairs, makes them much more likely to stay in agriculture relative to their brothers, who stand to inherit equal amounts of land. To some extent, this helps answer a puzzle identified in Jayachandran and Pande (2013) about why first-born children receive greater investment than subsequent children. More importantly, he shows that this leads to a "reversal of fortune," whereby greater agricultural land inheritance leads to lower subsequent consumption among the population of first-born sons. While he is careful not to make welfare statements (as the utility

consequences of repudiating millennia of tradition could well outweigh the consumption loss), he does show that this tradition does impose costs in terms of consumption on first-born children.

The final important set of findings relates to the role of frictions in land markets on allocative efficiency. Taking an index of transaction costs for land, he shows that those whose inheritance is more like a liquid asset enjoy higher average consumption than those whose inheritance is less easy to sell.

Nilesh has carefully considered every plausible concern or objection that other the lunch speakers and I have raised. He has both diligence and care and an ability to execute with deliberate speed, which will serve him well as he begins his research career.

The second paper in Nilesh's packet is joint work with me. In this paper, working in collaboration with an Indian non-profit and computer science researchers from Stanford and Berkeley, Nilesh and I implement a randomized evaluation of a system that allows small-scale farmers in India to obtain customized agricultural advice via mobile phones.

It may be instructive to explain the genesis of this project. Another PI and I had received a large grant from AusAid to examine the effect of the provision of spot and futures prices, by cell phone, on agricultural outcomes. AusAid awarded us the grant but wrote that we should "do something more" since the grant was substantial in size.

Nilesh, who was finishing up as an RA for me at the time, prior to enrolling in the PhD program, took the lead in identifying several potential projects. We ultimately settled on this agricultural advice service ("Avaaj Otalo"), which Nilesh had identified, because it was an intriguing program; Nilesh was the one who discovered the program and persuaded the organization to work on an RCT. Nilesh played the role of the lead PI, negotiating with the service provider, designing the project roll-out, and supervising the field staff. While I typically suggest graduate students involved in field projects, not work, when they are taking classes, Nilesh managed both his coursework and the project well.

The paper itself examines the role of informational frictions in agriculture in India. We randomly assign (at the individual level) a mobile-phone based advice service to 800 of 1,200 cotton-farmers living in 40 villages. The farmers were chosen to be roughly representative of the population (the only criteria for inclusion in our sample frame was possessing a mobile phone).

We find that demand for agricultural advice is high, with farmers listening to a very high share of push calls, and more than half of treatment farmers calling into the line to ask a specific question. We observe changes in agricultural behavior: more effective pesticide choice and expansion into cumin, a lucrative but risky crop. We observe a marginally statistically significant but economically important increase in cotton yields.

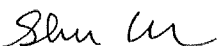
The paper also helps understand how information is used and spreads within a village. Farmers appear to adopt the advice without much learning, as treated farmers are no better at answering a series of agricultural knowledge questions. We also document the presence of important informational and behavioral spillovers: at the baseline prior to treatment, we asked farmers to identify their key agricultural peers. In a series of follow-up surveys, we show that the peers who were not in the study population but were referred to by a treatment farmer exhibit improved pesticide practices and increased cumin planting relative to the peers who were referred to by a control farmer.

Nilesh and I are taking the project further, with a replication/scale-up funded by USAID in a second state in India (a Chicago graduate student is managing this round of field work). A large foundation has expressed interest in providing several million dollars in funding for this type of service, though it is not clear that Nilesh will be involved in that scale-up, as he will likely want to focus only on academic research for his first years as an assistant professor.

In my view, Nilesh has amply demonstrated that he possesses the skills and capabilities necessary to succeed as an assistant professor: he has written grant proposals, taught graduate level-coursework, and successfully completed both individual and collaborative research. I expect him to place very well on the job market this year and highly recommend him to all economics departments and policy schools.

Please don't hesitate to contact me if you have any questions.

Best regards,



Shawn Cole