

<b>Institution: London School of Economics and Political Science</b>
<b>Unit of Assessment: 18: Economics and Econometrics</b>
<b>Title of case study: Improving the recruitment of health workers in developing countries</b>
<p><b>1. Summary of the impact</b> (indicative maximum 100 words)</p> <p>The recruitment and retention of qualified health workers is one of the most pressing challenges in developing countries today, especially in rural areas. Research by Oriana Bandiera and her colleagues is underpinning a policy implemented by the Ministry of Health in Zambia to recruit and motivate a new cadre of health workers called 'community health assistants' (CHAs). The collaboration between the researchers and policy-makers involved three randomised controlled trials to determine effective recruitment and motivation strategies for CHAs. The results of three policy experiments (which were implemented in July 2010, December 2011 and December 2012) are informing recruitment of the 5,000 CHAs who will be hired in Zambia over the next five years.</p>
<p><b>2. Underpinning research</b> (indicative maximum 500 words)</p> <p>RESEARCH INSIGHTS AND OUTPUTS:</p> <p>Since 2002 Bandiera has been developing a research programme aimed at providing rigorous empirical evidence on what motivates individuals beyond financial incentives. The programme applies an innovative methodology – field experiments run in collaboration with firms and non-governmental organisations (NGOs) – to study the interaction between financial incentives and other determinants of behaviour in the workplace, such as social relations, rank status and non-monetary rewards.</p> <p>In a series of papers with Imran Rasul (University of Chicago, then University College London) and Iwan Barankay (Warwick University, then Wharton School), Bandiera implemented an exogenously timed sequence of incentive schemes in a controlled way during the regular operations of a firm over a four-year period. The interplay between incentives and the social organisation of the workplace is identified by combining the firm's personnel data with custom-designed surveys that measure the social connections of each and every employee and manager.</p> <p>The research yields four sets of findings. First, social connections drive behaviour in the workplace: workers and managers internalise the effect of their effort on colleagues to whom they are socially connected. Second, the extent to which workers and managers internalise the externality depends on the strength of monetary incentives. Third, workers' effort is shaped by their peers, so that the social organisation of the workplace affects productivity and profits. Fourth, performance feedback and rank incentives can backfire by reducing the productivity of the least productive work teams.</p> <p>The results have been published in a series of papers (1-6), of which four were placed in 'top five' economic journals and one was awarded the 2007 IZA Young Labor Economist Award established to 'honor an outstanding published paper in labor economics written by young researchers' (<a href="http://www.iza.org">www.iza.org</a>).</p> <p>In 2007, this body of research led to a dialogue with Nava Ashraf (Harvard Business School), who was looking for an expert in incentive design to study how to motivate agents hired by a Zambian NGO to distribute condoms in urban areas. The conversation crystallised in a new field experiment run in collaboration with the Society for Family Health in Lusaka to investigate whether financial incentives are effective at motivating health workers or whether (as is suggested by previous research in psychology and behavioural economics) financial incentives crowd out intrinsic motivation and reduce performance. The experiment randomly assigned 1,200 agents hired to sell condoms to four different incentive schemes. The study provides the first field evidence that financial incentives do not crowd out intrinsic motivation but neither are they effective at motivating effort. It also found that non-monetary rewards led to a 50% increase in condom sales and were</p>

cost-effective. The effectiveness of the non-monetary rewards seemed to be because they allowed social comparisons among agents (7).

KEY RESEARCHER: Bandiera has been full-time at LSE since 1999.

### 3. References to the research (indicative maximum of six references)

1. Bandiera, Oriana, Imran Rasul and Iwan Barankay (2005) 'Social Preferences and the Response to Incentives: Evidence from Personnel Data', *Quarterly Journal of Economics* 120(3): 917-62, winner of the 2007 IZA prize. DOI: 10.1093/qje/120.3.917
2. Bandiera, Oriana, Imran Rasul and Iwan Barankay (2007) 'Incentives for Managers and Inequality among Workers: Evidence from a Firm Level Experiment', *Quarterly Journal of Economics* 122: 729-75. DOI: 10.1162/qjec.122.2.729
3. Bandiera, Oriana, Imran Rasul and Iwan Barankay (2009) 'Social Connections and Incentives in the Workplace: Evidence from Personnel Data', *Econometrica* 77: 1047-94. DOI: 10.3982/ECTA6496
4. Bandiera, Oriana, Imran Rasul and Iwan Barankay (2010) 'Social Incentives in the Workplace', *Review of Economic Studies* 77(2): 417-58. DOI: 10.1111/j.1467-937X.2009.00574.x
5. Bandiera, Oriana, Imran Rasul and Iwan Barankay (2011) 'Field Experiments with Firms', *Journal of Economic Perspectives* 25(3): 63-82. DOI: 10.1257/jep.25.3.63
6. Bandiera, Oriana, Imran Rasul and Iwan Barankay (2013) 'Team Incentives: Evidence from a Field Experiment', *Journal of the European Economic Association* 11-5. DOI: 10.1162/JEEA.2007.5.5.953
7. Bandiera, Oriana, Nava Ashraf and Jack Kelsey (2012) 'No Margin, No Mission? Experimental Evidence on Incentives and Productivity in a Non-Profit Organization', *CEPR Discussion Paper No. 8834*. [http://www.cepr.org/active/publications/discussion\\_papers/dp.php?dpno=8834](http://www.cepr.org/active/publications/discussion_papers/dp.php?dpno=8834)

EVIDENCE OF QUALITY: publications in top, peer-reviewed journals

### 4. Details of the impact (indicative maximum 750 words)

NATURE OF THE IMPACT: The impact of the research came by changing the guiding principles of personnel policies of the Ministry of Health in Zambia. In particular, the Ministry modified its approach by evaluating the benefits of alternative hiring policies using focused trials steered by the research findings in Section (2) and using the outcomes of such trials to inform strategy. Oriana Bandiera led this intervention in collaboration with MOH using a design inspired by the above research.

In 2008/09, the MOH began designing a programme to create a new cadre of health workers, the Community Health Assistants or CHAs, to address the shortage of health workers in rural areas. The context in which the policy is being implemented is similar to that in most of sub-Saharan Africa, where weak healthcare systems are undermined by shortages of qualified health workers, especially in rural areas where people are rarely willing to work. CHAs are embedded community members to whom the MOH offers health training and whose main task is to do preventative care in rural communities. CHAs carry out the same tasks as informal community health workers. But in contrast with informal health workers, they are trained for a full year, placed on the civil service payroll and provided with a ladder for professional advancement and de facto tenure. Selection, motivation, and retention are critical to programmes that want to attract competent individuals and motivate them to serve the community long-term.

Given the difficulty in retaining qualified staff for this work, the MOH was very mindful of adopting effective recruitment and motivation strategies for this new cadre. At the same time, the then Director of Research at the MOH (Dr Victor Mukonka) heard about Bandiera and colleagues running a field experiment on the motivation of health promoters with the Society for Family Health in Lusaka and thought the research methodology could be fruitfully implemented to understand how too best recruit and motivate CHAs (Source B). Dr Mukonka commissioned a review paper on existing evidence of recruitment and motivation strategies for CHAs, which draws on Bandiera's research on incentives (Source A). Following this, Mr Mwila, then Director of Human Resources at the MOH, organised a meeting with the research team in July 2010.

During the meeting, Mr Mwila stated the MOH's dilemma clearly: 'It is important that we formalise and support community health workers, but what will happen if they now see themselves as typical civil servants? Will they retain their connection to the community?' On the one hand, Mwila elaborated, having CHAs with high technical capacity and who are motivated to excel in their careers could make them more effective. On the other hand, such workers may be more likely to seek personal gain or leave for more lucrative job opportunities.

The questions raised by Mr Mwila resonated with Bandiera and her colleagues as their earlier research was aimed precisely at understanding the interactions between different sources of motivation and in particular whether private rewards, financial or otherwise, crowd out pro-social motivation.

At that meeting the Ministry and the researchers devised a new mode of collaboration that embedded research into policy design, with a dual feedback mechanism such that research findings shape future policy and new policy challenges inform new research questions. This research design had key features in common with Bandiera's earlier published work using field-based studies which provided a template for what could be achieved. (Sources C,F)

The collaboration began in July 2010 with the first cohort of 314 CHAs. At its core were three randomised controlled trials (RCTs) designed by Bandiera and her colleagues and implemented by the MOH with technical support from the researchers. The results of each trial informed subsequent stages of the programme and the combined results are informing the design of recruitment and motivation strategies for the 5,000 CHAs who will be hired over the next five years.

**The first policy trial** addresses Mr Mwila's question directly by measuring the effect of the job 'mission' on the selection, retention and performance of CHAs. At the recruitment stage in the summer of 2010, the nature of the job mission was experimentally varied: in half of the districts, the mission was advertised as 'help the community'; whereas in the other half, the mission was advertised as leading to career advancement in the health sector (Source E). The researchers then collected information on the skill level, pro-social motivation and career ambitions of the two groups of applicants, and put in place systems to measure performance on the field when CHAs were deployed in July 2012.

Performance was measured over the course of one year until July 2013 and the results showed a marked difference in skill levels and performance between the two groups. Applicants recruited on the basis of career opportunities have higher skills, stronger scientific background and stronger field performance. This does not come at the expense of lower pro-social motivation, as the two groups score similarly on a battery of tests that measure social preferences towards the community. Retention rates are also similar in the two groups in the short term, but CHAs recruited on the basis of career opportunities are more likely to want to move up the ladder, suggesting a trade-off between job retention and performance in the long-run.

Upon hearing about the findings, the Permanent Secretary and the Minister have agreed that highlighting career opportunities is a more effective recruitment strategy and the career advancement advert is currently being used to recruit the 2013 CHA cohort (Source H).

**The second policy trial** was embedded in the one-year training programme for CHAs that ran from July 2011 until July 2012. During training, four forms of non-monetary motivation schemes (providing various combinations of rank feedback and social recognition) were offered to motivate study effort. (Source D)

The findings indicate that providing relative performance feedback reduces performance, but that both MOH recognition and community recognition increase performance. But since all recognition schemes implicitly provide relative performance feedback, the net effect is zero (Source G). Qualitative evidence from interviews with the trainees suggests that these responses are partly due to their reluctance to draw attention to themselves or be seen as non-team players. These results directly affected the design of motivational strategies at the deployment stage. Indeed,

while originally the MOH was considering social recognition schemes, in the light of the results and after consultation with the researchers, the MOH decided not to implement recognition schemes once CHAs were deployed to the field.

**The third policy trial**, which started in December 2012, aims to quantify the effect of work autonomy on performance. The experiment randomly assigns CHAs to two groups that vary their autonomy in setting goals for the number of household visits to complete in a given month. In the first group, goals are set by supervisors; in the second, CHAs set their own goals. In line with most of the research evidence on workers' motivation, the MOH sees goal-setting as a fundamental tool to ensure good performance. The experiment is shedding light on which goal-setting strategy is most effective.

**Links between research and impact:** The previous field research had a direct impact on MoH in the approach that it has taken to investigating options for policy reform, leading the MoH to use an experimental intervention to inform policy. The use of field-based interventions by policy makers is rare and, without having access to prior successful peer-reviewed papers by the authors, the MoH would have been less likely to embrace this approach. The work has fundamentally changed personnel practices within MoH leading to the use of state of the art research designs embedded in the policy itself to provide evidence base for future policy design. This mode of collaboration between policy makers and academic researchers represents a major departure from the standard model whereby policies are evaluated ex-post by commercial consultants. The success of the CHA research collaboration has started a new dialogue to reform recruitment and motivation strategies for nurses, doctors and civil servants within MoH. The impact on policy is on-going. Yet already, the results of the recruitment experiment have informed the recruitment strategy for all subsequent cohort of CHAs; the results of the training experiment have dissuaded the ministry from using social recognition schemes as motivation.

#### 5. Sources to corroborate the impact (indicative maximum of 10 references)

All sources listed below can also be seen at: [https://apps.lse.ac.uk/impact/case\\_study/view/14](https://apps.lse.ac.uk/impact/case_study/view/14)

Note that in official communications with the MOH, the academic research team is referred to as 'IPA researchers' throughout. This term refers to the Principal Investigators (Ashraf, Bandiera, Lee) and the project managers and assistants based in Lusaka. IPA stands for Innovation for Poverty Action (<http://www.poverty-action.org>), an organisation that brings together researchers who run RCTs in developing countries.

- A. CHW Incentives - Research Approaches and Tools (a report to the director of research at MOH in 2010, citing Bandiera's earlier research). Source files: <https://apps.lse.ac.uk/impact/download/file/1059>
- B. Testimonial by former Director of Research at MOH. This source is confidential.
- C. Testimonial by Technical Support Specialist MOH. This source is confidential.
- D. Letter by MOH HR director to teachers in the CHA training school describing the collaboration between MOH and the research team. This source is confidential.
- E. Letter by MOH Permanent Secretary to Provincial Medical Offices describing the collaboration between MOH and the research team. This source is confidential.
- F. IGC Annual Report (2011-12) *Main Report*, 2 May 2012: 35-36. Source files: <https://apps.lse.ac.uk/impact/download/file/1064>
- G. No margin, no mission? Motivating agents in the social sector (VOX EU <http://www.voxeu.org/article/no-margin-no-mission-motivating-agents-social-sector> )
- H. RECRUITING HEALTH WORKERS: Evidence from the National Community Health Assistant Program (presentation to the Ministry of Health Human Resources Technical Working Group, September 2013). Source files: <https://apps.lse.ac.uk/impact/download/file/1065>