## The Social Multiplier from Visibility: Experimental Evidence from Deworming in Kenya

Anne Karing<sup>†</sup> Karim Naguib<sup>‡</sup>

May 2021

## Abstract

Differently to financial or material incentives, the strength of reputational incentives depends on the equilibrium level of contributions (Bénabou and Tirole, 2012). We test this prediction empirically in the context of a new deworming program that offers free treatment to 200,000 adults in Kenya. We randomize the introduction of two types of social signals in the form of colorful bracelets and ink applied to the thumb. The bracelets and ink allow adults to signal that they contributed to protecting their community from worms. Further, we exogenously vary the cost of deworming by assigning communities to different travel distances to treatment locations. Reduced form estimates show that (1) bracelets as signals significantly increase deworming take-up, outperforming a material incentive; (2) there is no detectable effect for the ink signal; (4) adults are highly sensitive to distance and both signaling treatments have a larger impact on take-up at far distances. We build a structural model that mirrors the theoretical framework provided by Bénabou and Tirole (2012) and explicitly model latent variables such as the private benefit of incentives, the visibility of the signals and the reputational returns to signaling. The model allows us to estimate counterfactuals in response to manipulations imfeasible to conduct in the experimental setting and investigate how aggregate shifts in the cost of deworming change the returns to signaling. Consistent with the theoretical predictions, we find that reputational returns increase at lower equilibrium take-up levels, and that the increase in reputational returns mitigates the negative impact of cost on treatment take-up. Of substantive policy importance, as individuals' willingness to walk increases at further walking distances, deworming treatment locations can be set up further apart and with the same number of locations larger geographic areas can be covered.

<sup>\*</sup>This study was funded by the Children's Investment Fund Foundation and implemented by Evidence Action. We thank Guillaume Kroll, the study's project manager; Arthur Baker, our research assistant; Doris Njomo and Rosemary Musuva for their qualitative research input during the study's pilot; Carol Nekesa and her implementation and data collection team; Ned Augenblick, Edward Miguel and Stefano DellaVigna for their research advice; Arun Chandrasekhar, Pascaline Dupas, Rachel Glennerster, Seema Jayachandran, Supreet Kaur, Nancy Qian, Dmitry Taubinsky, for helpful feedback and discussions; and Karen Levy and Grace Hollister for their advice and support. We received Internal Review Board clearance from the Kenya Medical Research Institute and the University of California Berkeley. The study pre-analysis plan was registered with the American Economic Association registry (https://www.socialscienceregistry.org/trials/1643/history/17782).

<sup>&</sup>lt;sup>†</sup>Princeton University and CESifo. Email: akaring@princeton.edu.

<sup>&</sup>lt;sup>‡</sup>Email: karimn2.0@gmail.com