

# Heterogeneous Effects of Mosquito Nets among Generations:

## The Inclusion Error of Free Distribution<sup>\*</sup>

YAMASAKI Junichi<sup>†</sup>

January 20, 2011

### Abstract

Many African countries are introducing insecticide treated nets for malaria prevention; however, the usage rate of these nets for young people are lower than those for other age groups (Noor et al. (2009b)). We conducted field surveys that exploited an exogenous situation of a free distribution campaign in Madagascar in 2009 and analyzed its heterogeneous effects on usage rate. In addition, we analyzed the heterogeneous effects of using nets on malaria infection by extending a framework of Abadie (2003). We found that (1) when purchasing costs were removed, young people began to use nets; however, (2) the local average treatment effect (LATE) of using nets on malaria infection for young people was almost zero and lower than that for other generations. The second finding indicates that the benefits of using nets are lower for young people, possibly as a result of improper use. These results show that free distribution caused inclusion errors from the viewpoint of targeting and suggest that self targeting by selling nets (cost sharing) will be more effective than universal coverage by free distribution.

---

<sup>\*</sup> This is my master's thesis. I have benefited from the valuable comments of Yasuyuki Sawada and Hidehiko Ichimura. I thank the Institute of Developing Economies, which permitted the use of their dataset and the Institut National de la Statistique de Madagascar, which implemented the surveys. Errors if any are my own.

<sup>†</sup> Graduate School of Economics, The University of Tokyo.