

Chapter 6

Summary

Poor households often do not have health insurance, forcing them to pay for health care directly out-of-pocket. According to the World Health Organization, every year an estimated 150 million people suffer financial hardship because of illnesses and injuries. Catastrophic health expenditures induce them to borrow at high interest rates, sell their land and other productive assets, or take children out of school because the household can no longer pay the school fees. A major question, then, is why there is no health insurance shielding the poor from the financial hardship.

One reason is that it is difficult to supply health insurance in developing countries. Without mandatory enrollment, insurance providers might fear *adverse selection*, meaning that families mainly enroll when they expect to spend large amounts on health care. Another problem is *moral hazard*, i.e. the insured have an incentive to seek more (expensive) health care because insurance covers part of the costs. Further, in remote areas where enrollment agents need to go door-to-door to collect the premium, transaction costs will be high. Additionally, programs require large investments in the quality of health care. These factors increase costs for insurance providers, resulting in unsustainable commercial insurance premiums.

Policy-makers are therefore subsidizing *micro health insurance* - affordable health insurance targeted at the poor. At first glance, these insurance schemes are typically of good value, providing comprehensive benefits in refurbished health facilities. However, take-up and renewal rates often remain low, even when premiums are heavily subsidized. This finding is difficult to reconcile with predictions from economic theory. The key problem addressed in this thesis is therefore why demand for insurance is not higher. Why do the poor not buy that much-needed insurance card?

First hypothesis: Reference-dependent decision-making

One explanation builds on prospect theory, developed by psychologists Amos Tversky and Nobel prize winner Daniel Kahneman. According to prospect theory, well-being depends not on consumption itself but on changes relative to a reference point, for instance the planned level of consumption. Consuming more (or less) than the planned level is considered a gain (or loss) and this improves (or reduces) well-being. Gains and losses are felt most when they involve present consumption. Consumers with such reference-dependent preferences take income losses in the future in order to consume the planned level today. This reduces their savings.

To illustrate this, consider a consumer expecting to earn \$10 both today and tomorrow with

the plan to spend this income the same day it is earned. When the consumer finds out today that earnings will be only \$9 per day, the initial plan to spend \$10 per day is no longer feasible. Because giving up a present plan affects well-being more giving up a future plan, the consumer borrows \$1 to be able to spend \$10 today, as planned, and take the full loss tomorrow by consuming \$2 less than planned (the \$9 income minus the \$1 loan). This example suggests that reference-dependence reduces savings. Since insurance - with premiums being paid in advance - is a savings technology, this also explains low insurance take-up.

Nevertheless, the poor often cannot borrow. This thesis demonstrates that in that context, reference-dependent behavior is an implausible explanation for low take-up. When poor households coping with income losses face borrowing restrictions, they might have to give up their present plans while future plans are still feasible. This motivates them to take the full loss immediately and save to carry through their future plans. Consider the example above, where daily income is unexpectedly \$9 instead of \$10. The plan to consume \$10 today is unattainable for someone unable to borrow. The best feasible alternative is to meet tomorrow's plan by saving \$1 and consuming only \$8 today. This finding implies that in a context of borrowing restrictions, prospect theory can result in *higher* - as opposed to *lower* - savings or insurance take-up. Hence, for the poor, prospect theory is unlikely to explain low take-up.

Second hypothesis: Adverse selection

Another explanation for low take-up is adverse selection, which means that people are only inclined to enroll when they have worse health at baseline and expect to use more health care. Testing for adverse selection *between* households is challenging due to variation in household-level characteristics like wealth and risk aversion. These are correlated both with health and the demand for insurance, biasing estimates of adverse selection. To control for these household-level characteristics, this thesis looks at differences between members *within* the same household and tests whether households are more likely to enroll their high-risk members. To that end, the thesis studies a unique micro health insurance program in rural Nigeria that allows households to enroll individual members. Households do not have to enroll the entire family, as is often required by other programs.

Data collected at baseline and two years later show that many households indeed did not enroll their entire family. Especially large and relatively poor households chose to enroll only a few members. These households might have faced difficulties paying the insurance premium for all family members. Nonetheless, there was very limited adverse selection. Although baseline health was a significant predictor of future health expenditures in a control sample without access to health insurance, households offered health insurance did not enroll members on the basis of baseline health indicators. This suggests that adverse selection cannot explain low take-up.

In fact, it seems worthwhile experimenting with individual-based enrollment to enhance

take-up among large and relatively poor households. They might have faced difficulties enrolling their entire family and could have decided to forgo health insurance entirely if enrollment was family-based. Insurance providers often use family-based enrollment to avoid adverse selection, but the Nigerian case study presented here finds no adverse selection within households. Thus, individual-based enrollment might help increase insurance coverage among households at the bottom of the income distribution.

Third hypothesis: Free-riding on the microcredit group

A final hypothesis is that take-up remains low because the poor turn to their social network to finance health expenditures. In many microfinance institutions, clients are responsible for all loans within their group. In order not to default and maintain access to future loans, clients contribute for ill members who cannot repay their loan themselves. The group will nevertheless default if too many group members are ill. Thus, insurance - reducing the default risk - can improve welfare even in a context where microcredit groups already share part of the risk.

At the same time, the decision to buy *individual* insurance in a microcredit *group* is a social dilemma: When insurance is offered at the individual level, clients might not enroll because they believe that their group members enroll and will always be able to repay on their behalf. Such behavior, called free-riding, will harm group welfare, especially when other group members decide to free-ride as well and nobody ends up buying insurance. When insurance is offered at the group level, and either all or no group members enroll, free-riding is no longer possible and clients will be willing to join whenever they believe that insurance enhances group welfare.

To test this theory, a laboratory experiment with microcredit clients in Tanzania closely mimicked the insurance decision in microcredit groups. The experiment shows that in particular less risk averse participants opted out of insurance offered at the individual level. They were free-riding on contributions from more risk averse group members. Insurance offered at the group level eliminated free-riding and improved demand for insurance among participants with low levels of risk aversion. This finding suggests that group insurance targeted at pre-existing risk-sharing networks has the potential to increase take-up, depending on clients' risk preferences.

Concluding, this thesis considers both the institutional context and behavioral mechanisms like reference-dependence, adverse selection and risk preferences. The thesis shows that behavior and institutions interact: reference-dependence can explain low take-up only if the poor do not face borrowing restrictions; adverse selection did not occur in the rural Nigerian context; and in the laboratory experiment, group insurance enhanced demand mostly among less risk averse microcredit clients. Understanding these interactions is critical to design good insurance products and hence a crucial step towards financial inclusion and better health.

