



# The Demand for Microinsurance: A Literature Review

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**Summary.** — Microinsurance has recently received much attention as a promising tool to protect poor individuals from important shocks. Yet, voluntary demand from people has been low, shedding doubt on the viability of microinsurance as a useful risk-management tool. To better understand this puzzle, this paper reviews both the theoretical and empirical literature on the demand for insurance. While people's lack of understanding of insurance does seem to limit the demand for it, several more fundamental factors, such as price, quality, limited trust in the insurer, and liquidity constraints also seem to have an important role in explaining the puzzle. © 2017 Elsevier Ltd. All rights reserved.

*Key words* — micro-insurance, demand, trust, risk, insecurity, microfinance

## 1. INTRODUCTION

Microinsurance, or insurance for the poor, has been considered as “the next revolution” in addressing risks and vulnerability in low-income countries (Morduch, 2006). In the hope of breaking the circle of poverty and offering a reliable protection to the poor, development agencies have made huge investments in this revolutionary tool during the last decades. Such investments are seen as a much-needed response to the dimly low performances of conventional, formal insurance schemes. Thus, the rate of coverage against agricultural risks was estimated by Swiss-Re economic Research & Consulting (2014) at 0.36% in Latin America and the Caraihs (2013), 0.1% in Africa (2014), and 0.6% in Asia and Oceania (2012). As for coverage against health risks, it is hardly higher: 1.24% in Latin America and the Caraihs (2013), 0.74% in Africa (2014), and 0.74% in Asia and Oceania (2012).

The name given to the new insurance programs echoes the well-known micro-credit programs, and this is on purpose. Both types of programs have in common a specific attention to low-income households in the developing world, and they moreover try to overcome a market imperfection identified as a major cause of persisting poverty. Microinsurance is even more complex than micro-credit. First, it implies paying a regular premium in return for an uncertain payout. Second, it is mostly conceived as a set of individual, rather than group-based, contracts where some subscribers benefit from a compensation while others do not. Finally, microinsurance is far from being homogeneous: It concerns a wide variety of risks and takes a lot of different forms.

The focus of this review is on low-income countries, where adverse shocks are frequent, and risk-pooling mechanisms and self-insurance strategies are imperfect. As poor individuals also display a relatively high level of risk aversion, the demand for microinsurance products is expected to be high (Churchill, 2002). The evidence is disappointing, though: subscription to the widely subsidized insurance schemes is low, rarely above 30%.<sup>1</sup> This could still be seen as a reasonable rate for a new product: thus, according to Dror and Jacquier (1999, Chap. 2), a large number of poor people who would otherwise not be able to afford access to health services have been reached by health microinsurance schemes, community-based health insurance programs (CBHI), in particular. Even though Jütting (2003) warns

that even in those schemes financial and social exclusion persists, their achievements appear far superior to those of conventional insurance schemes. The problem of low subscription rates in microinsurance programs is nonetheless compounded by that of low renewal rates, which range from 10% to 70%. At such rates, insurance cannot be sustainable and will fail to deliver the benefits it promises. This is in line with the work of Churchill (2000) who argues that customer loyalty is key to the success of microinsurance programs. The question at the heart of this paper is therefore: why are demand and renewal for microinsurance so low?

The present paper addresses this puzzle both from a theoretical point of view and by reviewing the empirical evidence on the factors influencing demand for insurance. Given the numerous studies devoted to microinsurance in the past ten to fifteen years, and since the results obtained are far from converging, we believe the present review is not only necessary but also timely. We will focus both on demand for, and renewal of, microinsurance. Renewal is a topic that has received much less attention than demand despite its importance in promoting a sustainable insurance scheme. While demand and renewal are, of course, related, the decision to purchase an insurance after having already subscribed to a scheme is not the same as the decision to purchase it in the absence of any prior experience. Moreover, explaining low renewal rates is critical for a correct assessment of the potential of microinsurance and its long-term sustainability.

Our literature review is extensive, covering a wide range of topics including behavioral models, supply deficiencies of insurances and the role of existing substitutes of insurances.<sup>2</sup> It considers qualitative as well as quantitative, and theoretical as well as empirical papers that study the demand for insurance in developing countries. However, because of the extensive recent literature on this subject, we only present the

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papers which bring the most robust evidence on the different aspects of demand. For this reason, we do not rely much on studies investigating the hypothetical willingness-to-pay (WTP) since the methodology used to elicit hypothetical demand presents great challenges. In particular, these studies systematically produce overly optimistic estimates of the demand for insurance and, in some cases, the WTP even fails to correlate with actual demand (McIntosh, Sarris, & Papadopoulos, 2013).

Various types of insurance are considered, among which two main categories may be distinguished: contracts insuring the subscriber against the risk of incurring medical expenses and insurance contracts against harvest losses. Among crop insurance schemes, those based on an index have recently received considerable attention. The fundamental difference with classical insurance lies in the nature of the event that triggers the payment of compensation. The index insures against the occurrence of an easily identified event that correlates with an expected decrease in the incomes of the farmers in a given area. In weather index insurances, for instance, it is the level of rainfall, rather than the observed damage, that triggers the payout.

Finally, the review is mainly concerned with the extensive margin—whether individuals have purchased some insurance or are covered in some way—, rather than with the intensive margin—whether individuals who are already insured have purchased more insurance—or with the question as to whether they have bought enough insurance. Our choice, here, is constrained by the available evidence that essentially relates to the first question.

Although the evidence is far from decisive, several lessons can be drawn from this review. Understanding the concept of insurance is not an easy task for individuals but there exists a wide range of alternative explanations as to why demand for conventional insurance schemes is so low. A lack of trust in the institution delivering the insurance, or in the specifics of the product, may significantly decrease uptake. The existence of liquidity constraints or insurance substitutes yields the same effect. On the other hand, the frequency of payouts and the quality of the product may increase insurance uptake.

A major feature of the present review is the attention devoted to economic theory in order to shed light on empirical findings. Therefore, we start by presenting various theories, including behavioral ones, which help to explain observed insurance demand. In the same section, we also present the evidence on other characteristics of subscribers, such as their understanding of insurance and risk aversion, which affect demand. Next to demanders' characteristics, supply deficiencies such as high prices or basis risk matter. These are treated in Section 3. We then discuss how a lack of trust in insurance affects uptake. Section 5 considers the possible role of different substitutes for insurance, such as informal risk-sharing and credit. It is only to the extent that such alternatives are too imperfect or costly that the issue of insurance demand as addressed in the previous sections makes sense. There are two reasons why insurance substitutes are discussed at the end rather than at the beginning of the paper. First, as stressed above, since we want to rest our review of empirical evidence on economic theory, it is logical to anchor the discussion in the latter. Second, Section 5 not only deals with insurance substitutes but also highlights the interactions between these mechanisms and the demand for insurance. This task is easier to perform after the determinants of this demand have been examined. Conclusions are drawn in Section 6.

## 2. LOW DEMAND ARISING FROM CHARACTERISTICS OF POTENTIAL SUBSCRIBERS

### (a) *Theoretical models*

Before assessing which factors affect the demand for microinsurance, it is useful to discuss the available theories. The dominant one is the expected utility theory, which is the standard theory of decision making under uncertainty. However, in an attempt to explain the low demand for insurances, researchers have increasingly resorted to behavioral models. In this section, we first summarize the central point of the expected utility theory, and then turn to the most important alternative setups based on various behavioral assumptions.

#### (i) *Expected utility theory*

To see why insurance can be valuable under expected utility theory, we need to take a closer look at the level of satisfaction or utility each individual derives from subscribing to the policy. According to this theory, people try to maximize their expected utility when deciding whether to purchase the insurance product. If marginal utility is decreasing, that is, if greater consumption leads to more utility but that the increase in utility is smaller for each additional increase in consumption, the utility function of the agent is concave. This specific feature of the utility function gives rise to risk aversion. Indeed, as can be seen in the utility function in Figure 1(a) (Patt *et al.*, 2009), a risk-averse farmer will always prefer receiving a definite amount (the average of two possible harvests) over a risky situation in which each possible harvest is equally likely (in which case his utility is the average of the two levels of utility that he could experience).

The readiness to pay for receiving a certain amount allows an insurance market to emerge. Indeed, because of the aversion for uncertain outcomes, risk-averse individuals are willing to pay more than the actuarially fair price of the insurance, the price which is equal to the average amount the insurance will pay out, in order to receive a compensation in case the harvest fails. A key concept is that of certainty equivalent (c.e.) which measures the certain income that the individual would consider equivalent (from a utility standpoint) to the lottery he (she) wants to avoid (for example, 3 tons instead of 50% chance of obtaining 0 tons and 50% chance of obtaining 10 tons, that is, a lottery of which the average outcome is equal to 5 tons).

Figure 1(b), an example elaborated by Patt *et al.* (2009), depicts the case in which each ton of production is worth USD 100. Without any production shocks, the farmer may expect to harvest 10 tons of cereals and get 1000 USD. However, in case of a drought, the farmer loses his entire production and earns USD 0. When there is a 50% probability of drought, the average loss is USD 500. If an insurance pays USD 1000 in case of harvest failure, a risk-averse individual will be willing to pay up to the difference between USD 1000 and his certainty equivalent for the insurance (Figure 1(b) shows his "maximal willingness to pay" as \$1000 minus the certainty equivalent). As is shown in the graph, this maximum willingness to pay is indeed bigger than the actuarially fair price. An insurance that has a price between the actuarially fair price and the maximum willingness to pay can thus be profitable for the insurer while at the same time providing an increase in expected utility for the farmer.

From the tight framework of rational expected utility theory, a central result is easily derived: the more risk-averse an individual, the higher the premium he (she) is willing to pay to get insured against shocks. It is thus readily checked from

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