



SYNERGETIC AFFECT OF MICRO SAVINGS AND MICRO INSURANCE ON VULNERABILITY IN THE PERUVIAN SOUTHERN HIGHLANDS *

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The objective of the study is to investigate the interrelation between formal micro savings accounts and micro life insurance and their paired effect on vulnerability reduction. Both serve as instruments of risk mitigation and management to smooth income and consumption. In this paper I highlight themes within the synergetic impact of the two programs on levels of vulnerability within a poor population. In order to extract this data, in depth qualitative interviews were held with women in the Southern Highlands region of Peru, the location of the *Proyecto de Desarrollo del Sierra Sur*¹ (hence forth referred to as Sierra Sur). Three different groups of women were selected for interviewing. The first group was made up of women savers, beneficiaries of Sierra Sur; the second group composed of

1. www.sierrasur.gob.pe

women savers of Sierra Sur who were also recipients of a micro life insurance additionally offered by Sierra Sur; and lastly, eligible women from the communities where Sierra Sur is active, who were not beneficiaries of Sierra Sur.

Risk and vulnerability are related terms; in economic development both play an important role in the persistence of poverty. In the context of this analysis *risk* refers to the potential states of the world exogenous to any particular individual (Dercon, 2005), otherwise referred to as a shock. Vulnerability however is the likelihood that a shock will result in a decline in quality of life. Rural poverty implies being faced to numerous risks (Dercon & Murdoch

* The complete document is available at The Capital Project web page: <http://proyectocapital.org/index.php?fp_verpub=true&idpub=115>

2009; Dercon 2004; Murdoch 1994), as well as higher levels of vulnerability to those risks. In other words, the rural poor face more risks, *and* the risks they face have greater repercussions on their quality of life. In the Southern Highlands of Peru, this is witnessed predominantly in the riskiness of agricultural and livestock occupations, as well as instability within the informal employment sector.

The poor have developed numerous tools to manage the risks they face. Extensive research has been done into the financial management systems of the world's poor. Rutherford (2004) painted a comprehensive picture of the diverse informal financial mechanisms used by the poor in Bangladesh. His research team created financial diaries for forty-two different families, meeting with each family bi-monthly over the course of a year. They recorded thirty-three different "services and devices" used by the poor to manage their money; no family used less than 10 different methods. The demand for formal financial services does exist amongst poor communities, but the vast majority of poor still lack access to formal banking services of any kind (Duflo & Banerjee, 2007).

Savings and insurance are the less recognized limbs of microfinance, both with the potential to be powerful tools for poverty reduction. They offer a secure way to create useful lump sums with little to no transaction costs. They also help to cushion households against income fluctuations and unforeseen future shocks, both of which could push the family deeper into poverty and/or bury them under insurmountable debt. Formal savings accounts present themselves as a safer way to save, securing the funds from theft and making them less accessible for frivolous spending.

Access constraints to these overlooked pillars of microfinance have lasting effects on rural households' ability to smooth their income and consumption effectively. The exclusion of the rural poor from such markets directly affects their vulnerability to profound and prolonged poverty, especially when taking into account the various risks they face on a daily basis. These consequences contribute to the poverty trap, where poor populations are stuck in a vicious cycle that causes poverty to persist.

PROYECTO DE DESARROLLO SIERRA SUR²

The *Sierra Sur Development Project* is a publicly offered by the Peruvian government, principally implemented through the Ministry of Agriculture, via AgroRural. Sierra Sur's mission is to facilitate processes and initiatives that improve human, physical, natural and social capital; contributing towards the advancement of income generating opportunities and the betterment of living conditions for the citizens of the Southern Highland Regions of Peru. The program is composed of three parts: a focus on the improved use of natural and productive resources; recognition and value placement of the Southern Highland's inhabitants' knowledge and cultural assets; and lastly, the strengthening of the formal market. The last part is where we dedicate this study. That component consists of the development of local businesses, and the support of financial services. As part of the latter, two aspects have been developed: formal financial inclusion, in the form of formal savings accounts;

2. For a more indepth look at the savings program within Sierra Sur, please refer to the document: Promoviendo el uso de cuentas de ahorro individuales: el caso de las ahorristas apoyadas por el Proyecto Sierra Sur, found at www.proyectocapital.org



and financial innovation, illustrated in the offer of micro insurance policies.

In terms of the financial inclusion, the first step is the creation of savings groups (SG), made up of roughly 25 women savers from a particular town. The SG help to lower transaction costs, and forms the groups for the financial education. It also creates a system of peer support/accountability. The second step was financial education, which familiarizes the women savers with the financial system. It covers processes such as opening accounts, explains what and how interest is calculated; and stresses the fact that money deposited in the bank is secured by the government. Financial education is not only to capacitate the women in the financial system, but also make them comfortable and familiar with being in a bank—a potentially severe obstacle to the success of the project. Lastly, there is an intricate system of incentives, the following two are the most important. Initially they are offered an opening match; the amount with which they opened their account was matched up until 100 nuevos soles. During the duration of their contract with Sierra Sur they receive a preferential interest rate at Caja Sur, 1.5 percent on their monthly average balance³; an incentive to maintain a balance in their account.

In terms of the financial innovation, beneficiaries were offered micro life insurance policies for the breadwinner of the household. The micro insurance is offered by *La Positiva* insurance company. The policy, *Seguro de Vida Campesino*—Peasant Life Insurance—covers up until 1,200 nuevos soles⁴ for natural death;

3. An effective 23-24 annual percentage rate, that is calculated automatically due to a specialized software program.

3,600 nuevos soles for accidental death; 3,600 nuevos soles for accidental permanent or partial invalidity; and lastly, 1,200 nuevos soles for funeral expenses. The total cost of the policy is fifteen nuevos soles annually, to be paid in full at the time of signing up. Sierra Sur, subsidized the beneficiaries, during the first year of policy coverage the beneficiaries paid only five nuevos soles per year; and if they renewed their policy the following year they would pay six nuevos soles. Sierra Sur would then be responsible for ten nuevos soles, followed by nine nuevos soles for the first two years, respectively.

THE INTERVIEWS

The interviews were administered to a total of thirty-six women from various populated centers in the Colca Canyon of Peru's Southern Highlands.⁵ The locations ranged from the town of Chivay, the largest populated center and home to any and all formal financial institutions found in the canyon, as well as the Sierra Sur headquarters; to the extremely rural outpost in the highest elevated part of the canyon, Cuchucapilla—all within the province of Caylloma.

Of the total women interviewed; twenty-three of which were holders of a savings account with Caja Sur, of those twenty-three, twelve were also policy holders of the micro life insurance *Seguro Campesino*; and the remaining thirteen were women of the same communities who were not beneficiaries of Sierra Sur—nor had savings accounts and/or insurance policies through other service providers.

4. The current exchange rate is roughly (\$1) one American dollar for (S/. 2.85) nuevos soles.

5. Referred to as the Chivay Zone, Chivay being the region's headquarters.

Departamento de Arequipa



The average age of the women was thirty-nine, all but one participant named Quechua as their maternal language. The majority of the women were married or living with their partner, three were single, one divorced and one widowed. The average years of schooling was six, meaning that they completed their primary education. On average the women have 2.5 children living with them at present, this number doesn't represent their total offspring excluding those who have moved out on their own and/or are studying in another town.

The income generating activities of the household were diverse as was expected. In the lower elevations of the canyon most households dedicated at least part of their time to an agricultural lot, some with the purpose of selling the harvest, but all with the intention of consumption to some degree. Those in higher elevation were almost solely dedicated to the raising of livestock, primarily sheep, alpacas and llamas. Many women had small all purpose stores or kiosks and/or prepared food. The Colca Canyon draws increasingly larger numbers of tourists, inclining

Provincia de Caylloma



many women into traditional artisan crafts such as embroidery and knitting. None of the women had stable incomes, and only six of their husbands/partners had stable employment, namely as secondary school professors or working in a local mine. The majority of the households was made of adobe, with dirt floors, and had corrugated aluminum roofing. All but two households had a separate room for cooking.

THE RESULTS

Of the twenty-three women beneficiaries with savings accounts that I spoke with, the average account balance was 340 nuevos soles. The modest balances do not reflect the success of the project. It is important to mention that there is only one Caja Sur branch where the women can deposit and withdrawal their money.⁶ For the beneficiaries that live further away it is a far greater trek to make deposits, as is illustrated in the notably smaller average balances for the women who live in higher elevation. To get around this obstacle the wo-

⁶ Within the Chivay Zone where the study was held.



men within their SG take turns depositing for the rest of the group, usually on market days or due to other necessities that requires a trip into town to lower the transaction costs of the visit.

In general, for the majority of the women I interviewed the objective in opening an account was to have funds in the case of an emergency. Of course, in the absence of any emergency it is beneficial to have the funds far enough out of daily reach so that a productive lump sum could be accumulated. I stress however that the main purpose was to *buffer against an unexpected shock*. In the case of the women who live far from the branch, this common objective is null. They live too far away to access the funds in an emergency.

One of the most salient conclusions I reached in my analysis is the importance of Sierra Sur's financial education. Those who had undergone the training were empowered. They felt confident in entering the bank; they understood the processes such as the automatic cash dispenser and were in charge of their own money. In response to the question of whether they would continue saving in Caja Sur once their contract with Sierra Sur was completed, one woman responded, "It depends on what interest rate they offer, I am going to look around for the best rate." Another woman said she would cancel her account, withdraw her savings to invest in a business and when she had savings again she would deposit into a fixed savings account, in order to render higher interest. Yet another woman responded, "It's the only way I can save —like kids with their piggy banks— this is a present to myself"

Empowerment could also be attributed to the group dynamic of the program. The forming of the SGs introduced them to people they may

not have met before. It was a way to socialize with neighbors that was accepted and often times encouraged by their husbands. When one woman was asked how she would explain her experience with Sierra Sur to another interested woman, apart from mentioning that it is better to save in a bank, she said, "...and you get to connect with people you wouldn't have ever met otherwise." For an older participant, the only divorced woman I interviewed, the group dynamic was an important aspect for her. She lives alone and works hard to support her two sons in university in Arequipa, the SG meetings are her only opportunity to socialize.

Additionally, the financial education has also helped widen their prospective opportunities for investment and/or risk management. Having become accustomed to the processes of the bank, they are also now much more aware of the other products and services that are offered by Caja Sur and the various other financial entities in Chivay.⁷ Six of the women savers I interviewed presently have loans from various financial institutions. With this increase in offers, and the higher levels of financial literacy, the women now have at their disposal far more risk management tools than ever before.

Rotating savings and credit associations (RoSCAs) are the most common informal financial mechanism found in less developed countries

7. Before Sierra Sur there were the following financial institutions: Banco de la Nación and FondeSurco, a non governmental organization. Since Sierra Sur's arrival in addition there are the following: PrestaSur a credit union; Proempresa and Promujer, both non governmental organizations; La Caja Nuestra Gente and Caja Municipal de Arequipa, both MFIs; and Agente Banco de Credito del Perú and Mibanco, both banks.

(Anderson & Baland, 2000).⁸ So it is not a surprise that one of the women I interviewed was also a member of a RoSCA. She mentioned that she and some fellow women in her SG, apart from their individual savings accounts, had also started a RoSCA. However, they had opened a separate account under the name of one of the (more responsible and reliable) members allowing the account to accrue interest and be more safely maintained. This example interested me substantially for the ingenuity behind a common form of informal savings.

As part of the interview, I asked a number of hypothetical questions, seeking to illicit a sense of their aversion to risk. One of the questions presented them with an unexpected lump sum (S/. 1000). I was interested in how they would utilize this hypothetical inheritance. They had the options of investing the money in agriculture, in businesses (not related to agriculture or livestock), in household consumption, or in savings (either formal or informal). In the case of the interviewees who were not beneficiaries of Sierra Sur, 45 percent of them chose to invest the money in agriculture, followed by 29 percent who chose to invest it in a business. For the participants who were only savers with Sierra Sur, the majority, 54 percent, elected investing in a business, followed by 24 percent who chose to spend it in household consumption. The beneficiaries

8. RoSCAs' function is straightforward; they consist of small groups who meet consistently to make fixed contributions into a collective 'pot'. Each meeting a different member takes home the pot and they meet until all have had the opportunity to do so. Those who receive the pot initially, like debtors, are still obliged to deposit until they group has completed full rotation—proving an effective way for participants to build up useful lump sums, aided by the pressure to save regularly (Besley *et al.*, 1993)

of both the savings accounts and the insurance elected to apply the money to a business followed closely behind by those inclined toward their savings, 35 percent and 33 percent respectively.

These results shed light on various themes within development. Primarily, the non-beneficiaries of Sierra Sur are far more dependent on agriculture, an economic activity traditionally viewed as less risky. However, as was mentioned previously agriculture is vulnerable to many shocks. Agriculture is a *safe* investment because the harvest can be used for household consumption. It's also interesting to note that, amongst this group only 9 percent chose to apply the funds towards household consumption, potentially due to the assumption that investing in agriculture would serve that purpose when rendering the harvest.

In regard to the group of women with only savings accounts, which chose to invest in business with the largest majority of either three groups. This could be explained by their recent familiarization with formal financial systems, aided of course by Sierra Sur's financial education and consequent discussions on small business ideas. This group of women was empowered to start their own businesses. Lastly, the beneficiaries of both the savings accounts and micro life insurance had a far more equally weighted response between business and savings. This can be interpreted as either their concern for future unexpected negative shocks and/or saving up for a much larger investment.

While a distinct differentiation can be inferred from Sierra Sur's potential beneficiaries—the women who had neither savings accounts nor micro insurance policies—and the beneficiaries with savings accounts, the deduced



difference between the beneficiaries of the savings accounts and those of both the savings accounts and the micro life insurance is less obvious.

This micro life insurance is a very straightforward service, in the case of the unfortunate death of the policyholder; his or her family receives the indemnization. The case for indemnization is clear—the death of the household head, as a result there is little room for misunderstanding; and the outcome is undesirable, therefore there is little to no incentives for moral hazard. There are no constraints as to how the indemnization can be utilized, that is left up to the discretion of the recipients. The annual price of the policy, even without the subsidy from Sierra Sur is affordable and accessible to the vast majority of the target population.

Nevertheless, based on my conversations with the policy-holding beneficiaries, I have doubts as to whether the coverage of the policy is truly valued. If the policy were truly valued we would expect to see in the case of policyholders, a change in their risk perceptions and/or the possible risk management mechanisms subjectively available to them. The theoretical basis behind offering insurance of any category to typically excluded populations is to generate more risk management options, with the assumption that with a larger or stronger safety net these poor populations will be more willing to take riskier choices that offer the potential of higher returns. However, in the case of this micro life insurance we do not see the amplified effects.

Of the twelve women policy holders interviewed, half of them didn't know or incorrectly answered the question of what the actual total price of the insurance would have been if not

subsidized by Sierra Sur. To the policyholders it seemed like a logical acquisition based on the explanations given by the Sierra Sur fieldworkers, yet I didn't infer that beneficiaries subjectively valued it as a mechanism for risk management. A potential explanation could be that the supposed recipients of the life insurance are the policyholders' children. While it gives the policyholder security in the advent of their passing, it would not lead to a drastic change in their daily actions given the insurance. The children may or may not be capable of acknowledging the security blanket thus provided for by their parents, in order to be able to encourage "riskier" economic activities on behalf of their parents.

That being said, in terms as a government-funded program to aid poor communities in their struggle out of the cyclical pattern of poverty, I question whether this is a valid use of funds—an understandably draconian view. Obviously, the micro life insurance assists the family of the deceased to cover funeral costs, an economic shock; it does not however offer a large enough indemnization to cover the loss of the head of the household's income, a much larger and more difficult economic shock to overcome. It therefore helps to smooth the unexpected expense of a funeral, but falls short to smooth income in the long—term horizon—the larger shock to overcome.

It was quite apparent through my interviewing, that the uptake of the micro life insurance was largely dependent on the field workers of Sierra Sur, albeit the insurance itself a product offered by a private insurance company. After traveling nearly six hours to one of the more remote communities we visited, it became very clear that the total transaction costs of the in-

insurance were not represented in the price that was being offered to the population.

The Sierra Sur field workers took on a wide range of roles leading to the successful uptake of the insurance. They acted as the marketers for the product, holding extensive community gatherings on numerous occasions, educating the public on the product. It should be taken under consideration that is a fairly new concept amongst these communities historically excluded from formal financial products. Therefore, it goes without sayings that their understanding of the value of this particular insurance was only after several hours, if not several separate visits, by the Sierra Sur field workers to generate effective interest in the product. Even after interest is established, several return visits are necessary to collect all the required documentation to complete the applications. That whole process is repeated the following year if the policy is renewed. In addition, Sierra Sur field workers maintain the role as the intermediary between the clients and La Positiva during the entire span of the policy. They collect and return all correspondence between the two parties; and manage the documentation and dispersion of the indemnization in the case of a death.

This has many implications for the longevity and sustainability of the insurance product. First and foremost, a general goal of any development-economic intervention is the sustainability of the desired outcomes even after the retraction of the initial intervention. We would want to see that the processes and educational advancements amongst the population be sufficient to adapt and continue even after Sierra Sur ceases to operate. I unfortunately do not see that to be the case. In

the advent of Sierra Sur's eventual termination, there are not the proper mechanisms established to bridge the gap between the clientele and La Positiva, both in terms of general inter-cultural understanding and in the bureaucratic processes of the insurance company. Once the true transaction costs of the insurance offer are taken into account when determining the premium price, I speculate that the annual premium will rise drastically enough to exclude a significant portion of its target population.

In that same vein however, the target population that was before unfamiliar with insurance and therefore unable to properly value it economically, has now been giving an external price gage. They will henceforth compare future offers against this initial insurance offer, which as aforementioned does not include the transaction cost that would make it sustainable. This is illustrated in the following analysis of the populations' willingness to pay for a micro life insurance policy.

To discern the willingness to pay for a micro life insurance policy, the interviewees were offered a hypothetical policy, which had similar indemnizations for natural and accidental death; however the policy premium was randomized. If the interviewee responded yes to the original premium price, the price was then raised in increments of two nuevos soles until the interviewee no longer accepted the price. Likewise, if the initial price was rejected, it was lowered in increments of two nuevos soles until an acceptable price was reached.

Amongst the respondents who were actual policyholders, the average willingness to pay for they hypothetical insurance was 15 nuevos soles per year, consequently the actual



price of the real micro insurance being offered to them. The average amongst non-policyholders was only slightly higher at 16 nuevos soles per year. Nevertheless, when the hypothetical micro life insurance coverage is doubled,⁹ the willingness to pay was seven nuevos soles higher on average for the non policyholders than the actual policyholders, 27 nuevos soles and 20 nuevos soles, respectively. The actual policyholders are comparing the hypothetical offer to the insurance policy they hold in reality. The low price of 15 nuevos soles is attractive and economical, but not representative of the true transactions costs. The policyholders do not take into account the extended coverage of the hypothetical option because they do not have an effective valuation of the insurance product and are attached to a price.

In conclusion, it is apparent that when analyzing the joint effects of savings accounts and micro life insurance on the vulnerability of the rural poor, we must do so from a variety of angles. Theory has articulated the effect of both on the betterment of people's lives, allowing access to more risk negation tools and more effective risk management. In the case of formal savings accounts, the ability to accumulate useful lump sums helps to shield against income fluctuations and unexpected shocks. As for insurance products, they have the potential to buffer households against unexpected shocks, such as a death in the family. Both would help to protect households from the cyclical patterns of poverty and keep them out of debt.

However, in this study we do not necessarily see the assumed effects of both products.

9. From an indemnization of 3,500 nuevos soles to 7,000 nuevos soles for accidental death; and 1,000 nuevos soles to 2,000 nuevos soles for natural death.

The women beneficiaries of Sierra Sur did not create a drastic rise in savings, albeit small advancements are better than no advances at all. Nor have we witnessed the effect of insurance in the softening of risk aversion in the actions and economic decisions of its policyholders. Nevertheless, if we widen our lens we will notice that Sierra Sur has accomplished a great many other advancements helping to break the cycle of poverty.

The financial education component is a decisive part of Sierra Sur. Educating the beneficiaries on the processes of the formal financial institutions, leading field trips to demonstrate the newly acquired information, and having the ability to question the experience of their peers who have already undergone the training has had a lasting impact on the women I interviewed. The beneficiaries are empowered and feel in control of their own funds, in many cases for the very first time in the lives. When asked whether she felt more economically secure having her savings in the bank, one woman saver responded: "Yes. Everything is in my hands." They feel empowered to start or better their own businesses and their concerns over financial requirements for their children's education and health are eased.

Also an effect of the financial education is the broadened acknowledgement of risk management tools. With the experience of the savings accounts, and the increased knowledge of the numerous financial services and products offered, the Sierra Sur beneficiaries are now armed with many more tools than ever before. This financial literacy has allowed them the ease to inquire about credit, different types of savings accounts, as well as insurance products.

The women have also greatly benefited from having met one another. Their social networks have grown, not only resulting in higher levels of empowerment, but also in the expansion of mutual informal insurance networks. They now have a greater community base to help protect against the constant risks each faces daily. Until formal markets are established to more effectively assist the poor to that end, the creation and reinforcement of social networks is a critical risk management tool in the lives of the rural poor. We witnessed this with the creation of a RoSCA amongst a women savings group, which in addition was also deposited the funds in a savings account. This illustrates the ingenuity behind the risk mitigation techniques utilized, and how with more options the poor have a greater ability to pick and chose the tools that best buffer against poverty for each individual or household.

Lastly, the micro life insurance experience has proven to bridge a necessary gap between the potential clientele and the insurance product. As was mentioned before, there have been several experiences where the unfamiliarity with new formal financial services such as insurance they have been neglected because of the ambiguity of the policy contract. Too often is it witnessed that useful insurance offers are refused because of fear of the unknown on behave of the poor potential policyholders. While there are several aspects of this offer to be improved upon, it should be acknowledged that effective demand for the product has been established. This allows beneficiaries to become accustomed to insurance policy contracts, gaining a greater understanding the complexities of premiums and indemnizations. These advancements can potentially have a greater and longer lasting positive effect on the persistence of poverty in the Southern Highlands of Peru.●

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