The Economic Value of the Willingness-to-Pay for a Community-Based Prepayment Scheme in Rural Cameroon

Hermann Pythagore Pierre Donfouet†

Department of Public Economics
University of Yaounde II-Soa

Ephias Makaudze
Department of Economics
University of Western Cape-South Africa

Eric Malin
Faculty of Economics
University of Rennes I-France

Jean-Roger Essombè Edimo
Department of Public Economics
University of Yaounde II-Soa

* This work was carried out with financial and scientific support from the International Labor Organization (ILO) under the Microinsurance Innovation Facility. The authors would like to thank Pierre-Alexandre Mahieu, Amjath Babu, Joseph Cook and the European Development Research Network (EUDN) resource persons for useful discussion. Any errors or omissions remain the authors’ sole responsibility.

† Corresponding author, address: Faculty of Economics and Management, P.O. Box: 1365, University of Yaoundé II. E-mail: donfouetz@yahoo.fr. Telephone: Tel: (+237) 7555 72 01, Fax: (237) 22 21 34 41
Abstract

In rural areas of Cameroon, many poor people do not have access to health care services and this has been largely attributed to lack of private out-of-pocket payment to finance health care services. A Community-based prepayment scheme as a strategy to increase access to health care has not received considerable interest by rural households in Cameroon. Hence, this study seeks to assess the economic value of a community-based prepayment health care system by the rural households in Cameroon. To achieve this, we use willingness-to-pay approach based on the contingent valuation method. Our results indicate that rural households on average are willing to pay 1010 CFA francs/person/month or $2.15/person/month. Furthermore, The results of the study reveals that the age, religion, usual means of seeking treatment when the rural populations get sick, profession, knowledge of the basic concept of community health insurance, the income and the social capital are key determinants of WTP. The results have important policy implications showing that the rural poor are prepared to sacrifice monthly payments as insurance premiums so as protect themselves from any social disaster such as chronic diseases which may even lead to death.

Key words: Rural areas, Prepayment scheme, Contingent valuation.

JEL Classification: C35, C81, I10, I38
1. Introduction

Good health is necessary for well-being and essential for achieving the Millennium Development Goals (MDGs) and hence for eradicating poverty. Besides, as implied by the theory of endogenous growth, good health by the general population underlies higher productivity, an essential factor for economic growth. Knowing this, many governments in developing countries have increased efforts to improve the provision of health care in both urban and rural areas. Despite these efforts, many developing countries are still far from achieving universal coverage. The situation is even worse in rural areas where the living standards are very low (WHO, 2000) and access to quality health care services is low due to the absence of formal financial protection in the form of insurance schemes. As pointed out by Khan (2001), a majority of rural households (more than 90%) in many developing countries do not only face limited access to health care but also endure poor quality water and unsafe sanitation. Therefore it is not surprising that compared to urban counterparts, rural households tend to suffer disproportionately from higher levels of ill health, mortality, malnutrition and inadequate health which are one of the factors perpetuating poverty (Gwathin et al. 2005). In order to reach the poor in rural areas with quality health care services, many policymakers and international organizations have been advocating for developing alternative health care insurance schemes. Given health care for the rural poor is an issue of grave concern. Hence, NGOs, policymakers, and health practitioners have turned their attention to proposals for community-based health insurance schemes. Community-based health insurance can form an important source of health security especially for the rural poor where the prevalence of chronic diseases is very high. Hence, examining the demand for health care by rural households using willingness-to-pay technique in the form of community-based health insurance can provide important clues to policymakers and microinsurance practitioners.

In developing countries, social protection and risk management have been considered from the supply side, but recently most authors have focused their analyses on the demand side such as community-based health insurance as an effective instrument to improve access to health care and alleviate poverty in rural areas. In many of these countries, community-based prepayment schemes have proven to increase access to health care services especially among children, pregnant women, rural folk and informal workers, a majority who are excluded from formal insurance (Shaw and Griffin, 19995; Dror et al.2007). Recently in Cameroon,
there has been an awareness campaign by the government to create and expand community-based prepayment schemes with the objective of having at least 40% of the population with improved access to health care by 2015. Currently, very few studies have been conducted in rural areas with objective of assessing the willingness-to-pay (WTP) by rural households for a community-based health care prepayment scheme. The overall objective of the study is to assess the WTP of rural households in Cameroon for a proposed community-based health care prepayment scheme. More specifically the study aims at:

- Finding the determinants that influence rural households’ WTP for a community-based health care scheme; in other words what are the major determinants influencing households’ choice for the proposed health care scheme?

- Understanding the reasons behind the payment (rejection) by households of this proposed scheme;

- Suggesting useful policy recommendations to policymakers.

The rest of the paper is organized as follows: Section 2 looks at the literature of the willingness to pay for a community health care prepayment scheme. Section 3, 4 and 5 discuss the elicitation format, econometric estimation, survey design and sampling, respectively. Section 6 discusses the empirical results of the study and Section 7 concludes with some policy implications.

2. Previous Research

The attribution of a value to public goods such as health care has been a serious problem to economists. In fact according to the consumer theory, the law of supply and demand states that the equilibrium market price and quantity of a good is at the intersection of consumer demand and producer supply. However, health care is not a good traded on the market as other commodities; hence, giving a value to it can be complex. To solve this problem, economists have put in place the contingent valuation method (CVM) which mainly consists of estimating the value a person places on a good, usually one that is not sold in the market. This method is now the most widely accepted approach for assessing WTP for services in the health sector.
The involvement of the community in health financing was spurred, among others, by the Declaration of Alma Ata in 1978 (Bose and Desai 1983), urging maximum community participation in organization of primary health care (Carrin et al. 2005). As a community-based health insurance scheme has been become an important issue, some empirical studies were done by some authors to assess the WTP of households for such a scheme.

Mathiyazhagan (1998) reports the results of a survey conducted in Karnataka (India) where the main objective of the study was to examine the willingness to pay for a viable rural health insurance scheme through community participation in India. By using the contingent valuation approach (Logit model), the results show that insurance/saving schemes are popular in rural areas. In fact, people have a relatively good knowledge of insurance schemes (especially life insurance) rather than saving schemes. Most of the people stated that they were willing to join and pay for the proposed rural health insurance scheme. However, the probability of willingness to join was found to be greater than the probability of WTP. Indeed, socio-economic factors and physical accessibility to quality health services appeared to be significant determinants of willingness to join and pay for such a scheme. Dror et al. (2007) also study households’ WTP for health insurance by analyzing data from a bidding game conducted in more than 3,000 households in India. They find a higher WTP than the ones obtained in previous studies and a positive link between households’ income and WTP.

Furthermore, Dong et al. (2004) used the CVM to compare heads WTP for community-based health insurance for themselves with their WTP for other household members. A random sample of 698 heads of households was interviewed in the North West of Burkina Faso and a bidding game approach was used to elicit WTP. The mean WTP by heads of households for insurance for themselves (3575 CFA francs) was twice their mean WTP per capital for the household as a whole (1759 CFA francs). The old have a lower WTP than the young; females have lower WTP than males. The poor have a lower WTP than the rich; those with less education have a lower WTP than those with more years of education. The authors suggest that when setting the insurance premium, the differences in household heads’ WTP for themselves and their WTP to insure their households as a whole needs to be considered. Lastly, Asgary et al. (2004) examine WTP for health insurance in rural Iran and they found that households are willing to pay on average US$2.77 per month for health insurance. Nevertheless, up to date very few studies have examined the influence of the social capital on
the demand for community health care prepayment scheme and the motives behind the demand for health insurance.

The concept of Social Capital (SC) emerged from Sociology (see e.g., Putnam 2000) where the SC is related to concepts like social networks, reciprocity, trustworthiness, and civic engagement. SC can be defined as: “...investment and use of embedded resources in social relations for expected returns” (Lin 2000, p.786). SC is increasingly recognized as having a positive effect on individual health (Coleman 1990; Putnam et al. 1993; Wilkinson 1996) and there are still active research activities on this effect. Recent research typically shows that a low level of trust among citizens leads to a high mortality rate (Baum 1997; Kawachi et al. 2004). Moreover, trust in the community facilitates cooperation, gives access to support, aid and care services that is provided by informal institutions which are mainly based on reciprocity. This informal institution provides health insurance to the poor. By showing solidarity, poor groups increase these capacities to take advantage of opportunities that will enable them to increase their income and social well being (Flores and Rello 2003). There is no consensus in the literature on how SC ought to be measured (Note 1), mainly because there is a large variety of SC. SC can refer to a social group or an individual asset; it can be informal or mediated by formal institutions; it can be inclusive or exclusive.

Several studies have demonstrated that a high SC in the community increases the chance of success of community health care prepayment scheme (Woolcock 2001; Woolcock and Narayan 2006). Moreover, another contribution of this study is to investigate the motives behind the WTP (or refusal to pay) for health insurance.

3. Willingness to pay elicitation format

Proposed by Davis (1963), the Contingent Valuation (CV) method has been used in many areas including environment, health, transport and marketing and has proven to be a useful instrument to obtain information on people’s preferences for non-marketed goods. The CV method which belongs to the family of the so-called stated preference techniques is a “survey-based method frequently used for placing monetary values on environmental goods and services not bought and sold in the marketplace” (Carson 2000, p.1413). Over the last two decades, methodological improvement has been made, and some practice has been discarded,
like the use of open-ended question to elicit WTP. Many researchers recommend the use of the referendum format (Bishop and Heberlein 1979; Hoehn and Randall 1987; Arrow et al. 1993). People are faced with a given payment, the payment amounts varying across participants, and they are to state whether they would accept to pay the assigned payment. This format which is incentive compatible and places a low cognitive burden on the participants has an important drawback: it provides little information on the WTP: just that the WTP is below or above the given payment. To overcome this issue, Hanemann et al. (1991) proposed to use a second payment, higher or lower to the first depending on the first response. This Double-Bounded Dichotomous Choice (DBDC) format is nowadays commonly used.

4. Econometric estimation

The econometric procedure follows Cameron (1988). An interval data regression is used to compute the WTP function and the mean WTP. Let denote $WTP_i$ the willingness-to-pay, $x_i$ a vector of explanatory variables including social capital (SC) and $\varepsilon_i$ a random component following a normal distribution with mean zero and standard deviation $\sigma$. Then, the equation to be estimated is:

$$WTP_i = x_i'\beta + \varepsilon_i$$

In DBDC applications, $WTP_i$ is unobserved, and there are three possible cases depending on the participants’ yes/no answers to the valuation questions. (a) $WTP_i$ is inferior to a bid amount say $t_u$, (b) $WTP_i$ is superior to a bid amount, say $t_l$ (c) $WTP_i$ is between two bid amounts $t_l$ and $t_u$. Situation (a) corresponds the case where the individual state “no” twice (the second bid amount is $t_u$) while on the other hand situation (b) corresponds to the case where the individual states “yes” twice (the second bid amount is $t_u$). Finally, situation (c) is the case where the individual states “yes” and “no”, regardless of the order (the higher and lower bid amounts are denoted $t_u$ and $t_l$ respectively). The probability associated to each case is the following:

$$P(WTP_i < t_u) = P\left(z_i < \frac{t_{u_i} - x_i'\beta}{\sigma}\right) = \Phi(z_{u_i})$$

$$P(t_l < WTP_i) = P\left(\frac{t_{l_i} - x_i'\beta}{\sigma} < z_i\right) = 1 - \Phi(z_{l_i})$$
\[ P(t_i < \text{WTP}_i < t_{ui}) = P\left( \frac{t_i - x_i'\beta}{\sigma} < z_i < \frac{t_{ui} - x_i'\beta}{\sigma} \right) = \varphi(z_{ui}) - \varphi(z_{li}) \]

The corresponding binary indicators are

\[ I_{iYY} = 1 \] (the individual \( i \) states “yes” twice),

\[ I_{iNN} = 1 \] (the individual \( i \) states “no” twice),

\[ I_{iYN} = 1 \] (the individual \( i \) states “yes” and “no” irrespectively of the order),

where the function \( 1(.) \) takes value one when the argument is true and zero otherwise.

The following log-likelihood function can be maximized for \( N \) independent observations to estimate both \( \beta \) and \( \sigma \):

\[ \text{Ln}L = \sum_{i=1}^{N} \left[ I_{iYN} \cdot \ln(\Phi(z_{ui}) - \Phi(z_{li})) + I_{iNN} \cdot \ln(\Phi(z_{ui})) + I_{iYY} \cdot \ln(1 - \Phi(z_{li})) \right] \]

The unconditional mean WTP corresponds to the intercept when all the explanatory variables have been removed from the model.

5. Survey design and sampling

In November 2009, 399 households of a rural area of Cameroon (Bandjoun) were surveyed by trained interviewers. A two-stage cluster sampling was used. First, six villages were selected based on population size and availability of health centres. Second, people in these villages were picked. In an attempt to conduct a state of the art CV, guidelines provided by Arrow et al. (1993), Carson (2000), Carson et al. (2001), and Whittington (1998, 2002) were followed. Furthermore, “consequentialism” (Note 2) script built on Bulte et al. (2005) was integrated to mitigate the so-called hypothetical bias (Blumenschein et al., 2008).
Focus groups and pretests were conducted to set the bid amounts to be used in the final survey. Each participant of the final survey was assigned one of the following payments: 250, 350, 450, 550, 650 and 800 CFA francs, the payment being randomly assigned to the respondents as recommended in Mitchell and Carson (1989). The second bid amount was half of the first bid if the respondent said “no” and twice if he said “yes”. For instance, an individual stating “yes” to 350 CFA francs was asked whether he would pay 700 CFA francs in the second round. Focus groups and pretests were also used to ensure that the questionnaire was properly worded.

6. Results and discussion

6.1 Descriptive statistics

Tables 1, provides summary statistics describing the sample population.

[Insert Table 1 here]

From the sample, the average age of the household heads that participated in the survey is about 42 years. The average household size is 6 members living in most cases in houses where wood is the main source of energy (90 %). In Western rural areas of Cameroon, wood is the main source of energy. About 62 % of the respondents are male-headed households while the remainder is female-headed, and this is typical of most African household settings in rural areas. Most of the household heads interviewed (76%) are married and predominantly of the Catholic religion (59 %) and had attained primary school (39 %). In the study, most of the households interviewed (52.63%) are either employed as farmers/sellers or self-employed (47.37%) or employed in the public/private sector. 38 % of the household heads had a monthly income of less than 15 000 CFA francs ($32) for their living. This is equivalent to one dollar per day ($1/day). This shows the extent of poverty in rural areas of Cameroon.

In the warm-up questions of the questionnaire, 40% of sampled household heads reported health care as an expensive service. They also reported (43%) that the problem of inadequate health care services in their community was very serious. A majority (74%) of the sampled households indicated that they cannot afford health care services due to poverty.
On average each of the surveyed area is serviced by two health centers. Also, about 59% of the respondents indicated a household member falling sick within 30 days prior to the interview. 26.39 % of the household heads reported a health status above ‘good’ as at the time of interview. On the average across the whole sample, a rural household consisting of 6 family members spend monthly $ 62.85 (29507.8 CFA francs) for treatment. This cost of treatment is considerably high for most of the rural poor. Moreover, 89% of households go to health centers/clinics/hospitals when they get sick. 35% of rural households are highly implicated in associations or any health policies which aim at improving their health and alleviating the poverty in their community. Most households (54 %) live in houses where the floor is bare, that is, the floor is not made up of cement/tiles/concrete. This is not a surprise in Western rural areas of Cameroon. In these areas, the floor of poor people is bare whereas the rich people in communities usually use cement/tiles/concrete to cover up their floor. Regarding the knowledge of community health insurance, we found that the rate is very low (27.07%) in the study area. Accordingly, public awareness campaigns may be increased to better inform the rural communities about what a community health care prepayment scheme is all about.

Table 2 displays the response rate to both the first and second bid amounts respectively. As can be seen, only 8.52% of the participants stated “no” to both amounts, i.e. they stated “no” twice. This means that very few participants are not willing to pay for the program. Or, to say it differently, that most participants are willing to pay for the proposed health insurance scheme.

[Insert Table 2, here]

In Table 3, we probe reasons why a typical household would be willing to pay for the proposed scheme. From results, the main reason as indicated by about 42% of sampled households for paying for the scheme would be to guarantee health security to family members and hence protect themselves against any health-related shocks or disasters (chronic diseases or even death). On the other hand, as shown in Table 4, the main reason for not paying for the scheme (35.3%) is mainly due to the financial constraints.

[Insert Table 3, 4 here]
6.2 Econometric results

The demand of households for health insurance depends not only on the quality of care offered by the health centers, on the premium and benefit package, but also on socio-economic and cultural characteristics of households in the rural areas. The regression results for the interval regression of the DBDC are shown in Table 5.

The coefficient on age is statistically significant, implying that age is an important factor in determining WTP for the community health care prepayment scheme. The negative sign on the coefficient implies that the younger ones are more willing to pay as compared to older individuals. The coefficient on religion is positive and statistically significant implying that Catholic household heads are more willing to pay than those in other religions. As expected, the social capital (SC) has a positive impact on WTP. Most of the rural households involved in associations such as ‘tontines’ or ‘jangy’ have a higher WTP that those who are not ceteris paribus. The positive and significant coefficient of SC reveals that the degree of community solidarity is an important factor in establishing a community health care prepayment scheme. Hence, SC has a positive and significant effect on the WTP for community health care prepayment scheme. It is consistent with other studies (Hisao 2001, Zhang et al. 2006) which show that social cohesion and solidarity facilitated collective action, which might increase willingness to pay for community health care prepayment scheme. Furthermore, health status does not affect WTP for community health care prepayment scheme. Gustafsson et al. (2009) found the same results in a case study conducted in Namibia and conclude an absence of adverse selection.

The households in the rural areas of Bandjoun who are more knowledgeable about community health insurance tend to be more willing to pay than their counterparts. Besides, the positive and significant coefficient of the usual means of seeking treatment implies that the household heads who regularly use the orthodox means of seeking treatment(clinics/hospitals) when they get sick are more willing to pay than those who use other means (traditional healers, herbalists). This variable is a crux factor for establishing community health care prepayment scheme since the establishment of the community health care prepayment scheme requires the regulars use of orthodox means of treatment. The heads of the household who are
farmers/sellers are less willing to pay than those who are self employed or working in the private/public sector.

An important variable in explaining the decision of respondents to pay for community health care prepayment scheme is the income. The positive sign of the coefficient of the income is in conformity with theory. In fact, according to theory, there must be a positive relationship between the income and the WTP. Income has a positive, consistent, and statistically significant impact on the willingness of households to pay; this implies that the more the income of the household heads increases, the more they are willing to pay for the community health care prepayment scheme.

[Insert Table 5 here]

One of the key aspects of CV studies is to determine the mean of the WTP. In table 7, the mean WTP is approximately 1010 CFA francs/person/month or $2.15/person/month. This information is important for the government and health practitioners to set premiums that will not exceed the amount households can afford to pay.

[Insert Table 6 here]

7. Conclusions and Policy implications

In many CVM on health insurance and community health care prepayment schemes, many authors have disregarded the reasons for paying and the influence of the social capital (SC) on the demand for community-based health insurance. Another contribution of the current study is the inclusion of debriefing questions to understand the respondent’s motivations for his/her answers to the valuation question, that is, to know the motives of the rural household’s willingness or refusal to pay for the community-based health insurance. Including this turns out to be very important to policymakers and micro-assurance practitioners.

The community-based health care prepayment scheme is increasingly being recognized as a potentially powerful instrument for granting the rural poor access to health services in a more equitable way. Hence, the overall objective of the study was to assess the willingness-to-pay (WTP) of rural households in Cameroon for a proposed community-based health care
The results of the study reveals that the age, religion, usual means of seeking treatment when the rural populations get sick, profession, knowledge of the basic concept of community health insurance, the income and the social capital are key determinants of WTP. Moreover, the most reason for paying was that such a policy will protect the rural household and its family members from any health-related shocks. The rural households are willing to pay on average 1010 CFA francs/person/month or $2.15/person/month. It turns out from the study that there is a potential demand. Hence, this type of low-cost health insurance schemes can be well accepted in rural areas of Cameroon and has the potential to protect the rural households from any health risks. Since there is lack of data in setting premiums in community health care prepayment schemes, the policymakers can refer to the current study as far as setting premiums for the rural poor in developing countries is concerned.

The low rate of knowledge of the community health care prepayment scheme may be due to the lack of information via campaigns or mass media. Accordingly, policymakers need to reinforce and intensify public awareness campaigns in order to better inform the rural poor about community health care prepayment schemes. This may encourage them to be involved in such scheme and hence improve their wellbeing. Furthermore, given that the farmers/sellers (who are most often expose to poverty) are less willing to pay than those who are self employed or working in the private/public sector, policymakers must be aware that the poorest can be excluded from such scheme. Accordingly, a policy option is to subsidize/reduce their premiums. Lastly, they must strengthen the social ties in the community since the SC has a positive impact on the demand for community health care prepayment scheme. This may increase the enrolment rate and the demand for community health care prepayment scheme in rural areas. Consequently, this will improve the well being of the poor in rural areas who are most often exposed to ill health conditions and poverty.
References


Gaag, V.J. (2007). Health care for the world’s poorest: is voluntary (private) health insurance an option? 2020 Focus Brief on the World’s Poor and hungry People. IFPRI.


**Notes**

Note 1. One drawback of the social capital (SC) is its measure. Up to date there is not a general consensus in the scientific community on how to measure the SC. Most studies use the membership. Nevertheless there is a wide consensus about association membership as proxy of SC.

Note 2. This was done to mitigate the hypothetical bias. This bias refers to the fact that respondents are not making real transactions and the WTP can be overestimated. This script explicitly informs the respondents they should consider that the results of the study will have an actual effect and that the respondents must integrate this before answering the valuation question.
Table 1: Description of the variables and summary statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bid1</td>
<td>First bids (250, 350, 450, 550, 650, 800 CFA francs)</td>
<td>510.40</td>
<td>184.89</td>
<td>250</td>
<td>800</td>
</tr>
<tr>
<td>Bid2</td>
<td>Second bids</td>
<td>850.31</td>
<td>422.28</td>
<td>125</td>
<td>1600</td>
</tr>
<tr>
<td>Yesno1</td>
<td>First yes/no response (1 if yes, 0 otherwise)</td>
<td>0.81</td>
<td>0.40</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Yesno2</td>
<td>Second yes/no response (1 if yes, 0 otherwise)</td>
<td>0.58</td>
<td>0.50</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Male</td>
<td>Gender of the respondent (1 if the male, 0 otherwise)</td>
<td>0.62</td>
<td>0.48</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hfamily</td>
<td>Family health status (percentage of individuals in the household who were ill in the last 9 months)</td>
<td>0.17</td>
<td>0.45</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Knowledge</td>
<td>Knowledge regarding the concept of community health insurance (1 if know the concept, 0 otherwise)</td>
<td>0.27</td>
<td>0.44</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Hnumber</td>
<td>Number of people in the household (continuous)</td>
<td>6.18</td>
<td>3.81</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>Catholic</td>
<td>Religion (1 if Catholic, 0 otherwise)</td>
<td>0.59</td>
<td>0.49</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Age</td>
<td>Age (number of years)</td>
<td>42.39</td>
<td>12.42</td>
<td>22</td>
<td>82</td>
</tr>
<tr>
<td>Farmer</td>
<td>Profession (1 if farmers/sellers, 0 otherwise)</td>
<td>0.53</td>
<td>0.50</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Meanstreatment</td>
<td>The means of seeking treatment when any member of the household falls sick (1 if orthodox, 0 otherwise)</td>
<td>0.83</td>
<td>0.38</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Education</td>
<td>Level of education of the respondent (1 if the respondent has been to school at least 7 years, 0 otherwise)</td>
<td>0.94</td>
<td>0.23</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Involvement</td>
<td>Participation in a health policy and/or in an association which aims at improving the health status (1 if yes, 0 otherwise)</td>
<td>0.55</td>
<td>0.50</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Income</td>
<td>Level of income (1 if equal or above average income, 0 otherwise)</td>
<td>0.16</td>
<td>0.37</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 2: Response to the assigned bids

<table>
<thead>
<tr>
<th>Yesno1</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (Yesno1 = 1)</td>
<td>46.87%</td>
<td>33.83%</td>
</tr>
<tr>
<td>No (Yesno1 = 0)</td>
<td>10.78%</td>
<td>8.52%</td>
</tr>
</tbody>
</table>
### Table 3: Reasons for paying

<table>
<thead>
<tr>
<th>Response category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I consider this programme as a means to improve my health and alleviate poverty in my community</td>
<td>27.81</td>
</tr>
<tr>
<td>I really want my family and I to be protected against any social disasters such as chronic diseases which may lead to death</td>
<td>42.25</td>
</tr>
<tr>
<td>I would like to have a health insurance as other citizens in urban areas</td>
<td>18.72</td>
</tr>
<tr>
<td>I am always sick, hence via this programme my health will improve</td>
<td>10.16</td>
</tr>
<tr>
<td>Other reasons</td>
<td>1.06</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

### Table 4: Protesting responses

<table>
<thead>
<tr>
<th>Response category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I doubt the management of the fund</td>
<td>29.41</td>
</tr>
<tr>
<td>Out-of-pocket payment is better</td>
<td>14.71</td>
</tr>
<tr>
<td>It is the responsibility of the government to pay for such a programme</td>
<td>5.88</td>
</tr>
<tr>
<td>I am always in good health</td>
<td>2.94</td>
</tr>
<tr>
<td>I cannot because of lack of income/money/I am so poor</td>
<td>35.3</td>
</tr>
<tr>
<td>Other reasons</td>
<td>11.76</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>
### Table 5: Econometric estimation of the interval data model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-8.86***</td>
<td>2.77</td>
</tr>
<tr>
<td>HHNumber</td>
<td>9.923</td>
<td>9.20</td>
</tr>
<tr>
<td>Catholic</td>
<td>178.46**</td>
<td>74.07</td>
</tr>
<tr>
<td>Male</td>
<td>57.46</td>
<td>75.85</td>
</tr>
<tr>
<td>Involvement</td>
<td>177.56**</td>
<td>72.93</td>
</tr>
<tr>
<td>HFamily</td>
<td>10.54</td>
<td>88.49</td>
</tr>
<tr>
<td>Knowledge</td>
<td>141.99*</td>
<td>83.11</td>
</tr>
<tr>
<td>Meanstreatment</td>
<td>217.21**</td>
<td>93.79</td>
</tr>
<tr>
<td>Education</td>
<td>136.00</td>
<td>114.70</td>
</tr>
<tr>
<td>Income</td>
<td>212.25*</td>
<td>105.42</td>
</tr>
<tr>
<td>Farmer</td>
<td>-120.68*</td>
<td>71.77</td>
</tr>
<tr>
<td>Intercept</td>
<td>767.70***</td>
<td>199.96</td>
</tr>
</tbody>
</table>

***, ** and * mean significant at 1, 5 and 10% respectively.

### Table 6: Mean of the WTP of the parametric approach

<table>
<thead>
<tr>
<th>Mean</th>
<th>Std. Err.</th>
<th>[95% Conf. Interval]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1011.356</td>
<td>10.87901</td>
<td>989.9686  1032.744</td>
</tr>
</tbody>
</table>