WILLINGNESS TO PAY FOR VIABLE RURAL HEALTH INSURANCE SCHEME THROUGH COMMUNITY PARTICIPATION IN INDIA: AN CONTINGENT VALUATION APPROACH

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ABSTRACT

The main objective of this paper[1] is to examine **willingness to pay** for **viable rural health insurance scheme** through **community participation** in India, and the policy concerns it engenders. The willingness to pay for rural health insurance scheme through community participation is estimated through **Contingent Valuation Approach** (Logit Model) by using the rural household survey on health from Karnataka State in India. The results show that insurance/saving schemes are popular in rural areas. In fact, people have relatively good knowledge of insurance schemes (especially life insurance) rather than saving schemes. Most of the people stated 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 willingness to pay. 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. The main justification for the willingness to pay for proposed rural health insurance scheme are attributed from household survey results: (a) the existing government health care provider's services is not quality oriented, (b) is not easily accessible, and (c) is not cost effective.

The discussion suggests that policy makers in India should take serious note of the growing influence of the private sector and people's willingness to pay for organising rural health insurance scheme to provide quality and efficient health care in India. Policy intervention in health should not ignore private sector existence and people's willingness to pay for such scheme and these two things should be explicitly involved in the health management process. It is also argued that regulatory and supportive policy interventions are inevitable to promote this sector's viable and appropriate development in organising health insurance scheme.

Key Words: Willingness to pay, viable health insurance scheme, community participation, Contingent Valuation Approach.

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WILLINGNESS TO PAY FOR VIABLE RURAL HEALTH INSURANCE SCHEME THROUGH COMMUNITY PARTICIPATION IN INDIA: A CONTINGENT VALUATION APPROACH [1]

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I

The World Bank's agenda on *Financing Health Services in Developing Countries* (1987) and recent *World Development Report* (1993) emphasises the demand side - highlighting health insurance, user fees, and the private sector for strengthening the health sector. This is a major departure from the earlier approach which focused on the supply side - public sector spending, costs, management and efficiency- that has dominated the international health finance agenda for many years (Griffin 1989, 1990). The emphasis on demand is quite understandable as even seventeen years after Health For All by 2000 AD was launched, the non-availability of the necessary finances is a major obstacle to further progress in many developing countries like India (Abel-Smith and Dua, 1988; Abel-Smith, 1992).

In fact, there had been substantial increase in the total plan expenditure in India for health and family welfare in nominal terms, but it was not increased in the real terms (Economic Survey, 1997). For example, the total plan outlay for Sixth Five Year Plan (1980-85) was Rs.6.7 thousands crores, which accounted only 3.12 per cent of the total outlays of budget during this period. It increased to Rs.14.1 thousands crores; but in real terms it has increased only 0.12 per cent in Eighth Five Year Plan (1992-97). The health expenditure in relation to Gross National Product (GNP) in India was about 0.98 per cent in Seventh Five Year Plan as compared to 0.91 per cent in Sixth Five Year Plan. Indeed, the anticipation that governments would increase expenditure on health services to 5 per cent of the gross national product, in most cases, is unlikely to be realized. Yet, there is no evidence that donors will increase their aid to the health sector in India. Ministries of health are

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being asked to find their own solutions. This is an unfortunate scenario at the national level.

The situation at the state level seems to be no better than at the national level. For example, out of total plan allocation, only 3.30 per cent was the maximum proportion allocated for the health and family welfare sector of the Karnataka state during the last fifteen years of planning. It accounted only a maximum of 0.17 of Net State Domestic Product (SDP) for the same period. This has resulted to under funding in the health sector at the state level. This kind of concerns led to substantial debate in the international context about the range of options for financing health care (de Ferranti, 1985; Hoare and Mills 1986; WHO 1987; World Bank 1987; and Zschock 1979). One central option is to introduce health insurance scheme for improving quality health care services. Health insurance is a risk-sharing approach whereby communities or individuals pool their resources to cover uncertain costly events, which would be difficult for individuals to afford at the time of need.

There are several type of health insurance schemes operating through General Insurance Corporation (GIC) and Life Insurance Corporation (LIC) in India. Central problem of these schemes is biased towards only salaried class and better off people, whose resulting distribution of services is often regressive, with middle-income and higher groups benefiting disproportionately. Further, the doctors and hospitals in India are concentrated mostly in the cities, where they are available to the urban middle class but too far away to benefit most of the rural poor. In this context, it is realised that studying the viable rural health insurance scheme through community participation is an appropriate one. It is also considered as a way of realising social justice, because it is based on solidarity and cooperation between the well and the ill, the rich and the poor (Gomaa 1986). In this context, it is presumed that rural health insurance through community participation could bring more money to pay for better use of health services by all. In the process, larger people could possibly to choose the health services of the private sector through health insurance leading to shorter queues at government services and thereby fewer people have to share the limited drugs and other supplies that can be afforded in the government services. The viability of such policy and willingness to pay for it can be justified on the following grounds:

- it is evident that the rural poor are united for common concerns or events and also represent their problems to administrative bodies through their leaders. Does this mean that this kind of solidarity and cooperative effort of the rural people could give the basis for the viability of a rural health insurance through community participation?
- it is also observed from the recent economic reform that decentralisation at the grass-root level may increase efficiency in government services (GOI, Eighth Five

Year Plan Document 1992). In this context, would the existing *Panchayati Raj System* become an instrument for eliciting community participation in the health programme and providing supervision and support to primary health care infrastructure?

- it is also evident from the earlier studies that rural people bypass the supply constrained government health care services and seek care from the private sector. Does this suggest that the people are already paying out of their pockets for health care? Does this give a basis for the scheme that private or non-governmental organisation could be the service provider, which is expanding in almost all parts of the country?
- while the experience of Sevagram Rural Health Insurance Scheme of Maharastra in India shows the feasible administration of the scheme, the question arises whether the existing village administrative background (nearly 60 per cent of total settlement of India) could support the feasible administration of the scheme?

Keeping in mind these questions and the importance of resource constraints for financing quality health care services by the government, this study considers whether rural health insurance through community participation in India is a viable alternative policy: (a) to generate and increase financial resources for national health development; (b) to foster efficiency in health care provision; and (c) to guarantee maximum access to health services for the rural population, and rural poor, in particular. In this context, it is important to observe that once the viable health insurance scheme is established, it is necessary to investigate whether the people are willing to accept such a scheme and their willingness to pay for the same?

When economists attempt to infer values, it prefers evidence based on actual market behaviour, whether directly or indirectly revealed. Thus, a technique like the contingent valuation method-wherein values are inferred from individuals' stated responses to hypothetical situations-could readily be expected to stir lively debate in academic circles. However, a final set of reasons for economists to care about the contingent valuation debate has less to do with potentially important values. According to proponents of the contingent valuation method, asking people directly have the potential to inform about the nature, depth, and economic significance these values. Based on this rationale, during the last few years there has been an increased interest in the contingent valuation (CV) method of measuring willingness to pay of health care technologies { Appel et al. (1990), Donaldson (1990), Johannesson and Jonsson (1991), (Johannesson et al. (1991 a,b),

Johanesson (1992), Johansesson and Fagerberg (1992) and (Johansesson et al. (1993)}. This study is not a strict replication of the specified studies, since this study explores heuristic approach through informal observation and discussion with rural people about the opinion on existing health care services along with household survey. It is also important to note that this study first investigates the viability of rural health insurance scheme through community participation and finds out whether people are willing to pay for such a scheme?

The main objective of this paper is to examine the willingness to pay for viable rural health insurance scheme through community participation in India, and the policy concerns it engenders. The first section of this paper discusses the resource constraint in providing government health care services and role of alternative financing in this situation. The research approach and data source of this paper are discussed in the second part. The third section of this paper discusses the descriptive results of the household survey and empirical analysis of willingness to pay for a viable health insurance scheme. By using empirical results, the policy implications is also discussed in the same section.

II

Research approach

In order to answer the policy questions for organising a viable rural health insurance scheme through community participation in India, it is necessary to investigate the acceptance of the people regarding such a scheme and the extent to which they are willing to pay for the same. In this context, this study combines two approaches: viz., survey research and heuristic/documentary research. The survey research has been designed to analyse the available rural health care services through private and voluntary organisations, the cost of their services and opinions of people on rural health insurance scheme through community participation. The second approach of heuristic/documentary research is used in order to obtain the opinions of rural people for organising rural health insurance through community participation. In analysing the survey data and making a comparative study, inter-state experience has also been examined. By comparing the results of the two approaches, it is possible to judge (a) the viability of rural health insurance scheme and (b) their willingness to pay for such scheme. The viability of any program may be defined as feasible or practicable in terms of the ways and means of the design. The ways and means of rural health insurance through community participation are determined by the financial sustainability of the program, the accessibility of the program to the rural poor, the referral behaviour of patients in the rural areas and the administrative feasibility.

Data source

The study is confined to rural Karnataka State in India. There are 27,028 inhabited villages spread over 19 administrative districts and the total population living in these villages amount to 26.41 millions. The necessary data for analysis were mainly from the household survey in rural Karnataka of India. The sampling was carried out in 3 stages. Since the socio-economic development is diverse among the districts, it was decided to use a stratified random sample to ensure the representative nature of the sample. The districts were stratified into three strata based on the development of districts (i.e. developed, middle order, and backward). In the first stage, six districts were selected out of the three strata (i.e two districts from each stratum). Within a district the administrative sub units in the form of taluks exhibited different levels of development. Hence, in the second stage, the taluks were stratified in each district into two strata in terms of the accessibility to health care services expressed in the form of hospital beds per thousand population, doctors per thousand population etc., into high accessibility and low accessibility categories. In each of the selected districts, one taluk was selected from each of the two categories. Thus, a total of 12 taluks were selected. In the third stage, one village having a Primary Health Centre (PHC) and private/NGO hospital services was identified. This selection was purposive in the sense that the village was selected to obtain a large community. One or two more villages proximate to the selected village with PHC were included in the sample. Thus, a total of 36 villages were selected. Taking into consideration the time and resources, it was decided to cover a total of 1,000 households. These households were allocated in relation to the number of households in each of the villages. In all, there were 18,298 households. After deciding the number of households for each village, the specific households were selected in a systematic manner by listing them. Depending on the number to be covered, every third or fourth house was selected from a given sample village. It was felt that the female head of the household will be more knowledgeable about the health-related aspects of females and children. Hence, both male and female heads were present during the interview.

III

This part examines people's opinion and their validity through empirical assessment of a proposed rural health insurance scheme through community participation and willingness to join and pay for such a scheme. It includes the exposure to and knowledge of the rural population in the case of insurance/saving schemes, willingness to join and pay, choice of health care provider and preferences for the components of the proposed rural health insurance scheme.

Exposure and knowledge of rural population on insurance and savings

The survey allowed rural households to answer open-ended questions on their knowledge about insurance and savings schemes. It was expected that the exposure of rural people to insurance and savings schemes may have valid implications for their willingness to join and pay for rural health insurance scheme. In this context, data on: (1) their exposure to the scheme; (2) whether they have subscribed to the scheme, and (3) their understanding of the objective of the scheme were collected. A person exposed to the scheme meant that he has heard about the scheme. Subscribing to the scheme meant that he has heard of, and bought the scheme, and understanding of the objective of the scheme meant that he has heard and he has the knowledge of the principles and objectives of the scheme. Insurance/saving schemes are popular in rural areas. People have relatively better knowledge of insurance schemes (especially life insurance scheme) than savings schemes. The findings (table 1) reveal that nearly 64.4 per cent of the total sample households were exposed to life insurance schemes. Among them, nearly 12.2 per cent of the people were subscribing to the scheme. It also revealed that nearly 56.9 per cent of the people had understood the risk-sharing concept of life insurance very well. Though saving schemes were as familiar as life insurance scheme among the rural people, it was found that only 3.39 per cent of the total sample population subscribed to saving schemes. Though the principles and objectives were well understood by the rural households, it was not clear why rural people were not subscribing to the saving schemes? It was clear from the table 1 that people had hardly heard (2.6 per cent) about health insurance schemes. Perhaps, health insurance schemes by the government-owned General Insurance Corporation of India (GICI) and its subsidiaries (like National Insurance Corporation Limited, the New India Assurance Corporation Limited, the Oriental Insurance Corporation Limited and the United India Assurance Corporation Limited) operating as commercial health insurance schemes in India did not reach the rural people. It was also shown from the survey that most people saw health insurance as part of a life insurance scheme.

Willingness to join a proposed Rural Health Insurance Scheme through Community participation

An understanding of the viability of rural health insurance requires detailed information that comes from an investigation of willingness to join rural health insurance scheme. Willingness to join such a scheme is discrete - willing or not willing. Therefore, a suitable estimator was used to explain the qualitative response. The contingent valuation

approach or hypothetical valuation method was used to reveal rural households' willingness to join and pay a rural health insurance premium through community participation. This technique involves a process of offering a set of hypothetical situations to the respondents and determining how they would react to such situations. It means that estimates are not based on observed or actual behaviour but, instead, on inferring what an individual's behaviour would be from the answers he or she provides in a survey framework. Although this kind of method may not always provide accurate estimates, it does provide an order-of-magnitude estimate which could be valuable for planning.

The survey results on household's willingness to join the proposed rural health insurance are presented in table 2. Out of the total 1,000 households, nearly 91.8 per cent said they were willingness to join the proposed health insurance scheme, while 0.8 per cent said they were willingness to join if most people in the village joined the scheme, and nearly 7.4 per cent of the households said they were not willing to join the proposed scheme. There were some differences among regions regarding willingness to join the proposed scheme. In relative terms, a higher percentage (97.6) of Dcode5 households were willingness to join health insurance, and a higher percentage (19.1) of Dcode1 sample households refused to join. However, the differences on willingness to join health insurance did not vary much (91.5 to 97.6 per cent) across different regions except Dcode1 where only 76.6 per cent of the households said they were willing to join the scheme. It was also noted that the differences in willingness to join health insurance did not vary among the different castes except the Vaishya and Banajiga (Vai and Banaj) castes which reported a lower percentage as 73.3 (table 3). It is important to note that the low castes (SC/ST) recorded the highest percentage (94.3) under the category of willingness to join the proposed scheme.

Willingness to Pay for the proposed Rural Health Insurance Scheme

The survey included direct questions on rural household's willingness to pay for health insurance. Households were asked to state the maximum amount of money they could pay. The survey also included questions on reasons for refusing to pay for the proposed scheme. Table 4 shows the survey results of rural households' willingness to pay for health insurance. Out of the total 918 households willing to join health insurance, 86.82 said they were willing to pre-pay health insurance premium for one year medical services for themselves or their families. Willingness to pay for the proposed rural health insurance did not differ much among different regions' households. It varied between 80.46 to 92.79 per cent of the total sample households. Households were also willing to pay a maximum amount for the proposed

scheme which, on an average, was nearly Rs.163.48 per year. It is also noticeable (table 4) that the level of the average maximum amount people were willing to pay varied significantly from Rs.148.05 to Rs.187.85. It is also important to note that most of the households (41.53 per cent) would pay between Rs. 121 to Rs.240. Nearly 32.62 per cent of the households would pay Rs.120 or less which meant that they would pay Rs.10 per month. A significant number of households (7.90 per cent) were willing to pay between Rs.481 and Rs.600 which amounted to nearly three to four times higher than the average maximum amount (Rs.163.48).

An analysis of the results on willingness to pay for the proposed rural health insurance was made in relation to castes and the results are presented in table 5. Nearly 84.14 per cent of the 227 Schedule caste/Schedule tribes (low caste) households said that they were willing to pay for the proposed health insurance scheme. Vyshyas and Banajigas (high castes) accounted the lowest percentage (66.67) under the category willingness to pay for the proposed scheme. On an average, the maximum amount people were willingness to pay for health insurance for all castes in the sample area was Rs.163.48.In the case of the higher castes such as Vaishya, Banajiga, Bhramin and Kshatriya it was, on average, between Rs. 142.67 and Rs.163.83. In comparative term, the backward castes like Lingayat and Okkaliga were willing to pay for the proposed scheme, a higher average amount between Rs. 172.60 and Rs.173.35. The low caste like Scheduled caste and Scheduled tribe were willing to pay (Rs. 162.18) which was higher than some of the high castes (Vaishya and Banajiga).

Preference to pay for the proposed health insurance scheme

Households' preference for the medical benefits plan was measured in terms of types of illnesses and hence, data were collected on medical services desired to be covered by health insurance. Households were told that different types of medical benefits had different costs. This was explained by using a hypothetical method. Types of illnesses/medical care include (1) hospitalised benefit; (2) non-hospitalised benefit; (3) chronic illnesses benefit; (4) hospitalised and chronic illness benefit; (5) hospitalised and non-hospitalised benefit; (6) chronic illness and non-hospitalised benefit; and (7) comprehensive medical care benefit. The results are presented in table 6.

Most of the households selected a comprehensive medical care benefit, followed by hospitalised, and hospitalised and chronic illnesses care benefit. Out of the total 797 households who preferred to pay, 52.9 per cent wanted a comprehensive care benefit. This meant that they considered the combination of hospitalised, non-hospitalised and chronic

illnesses care benefits as necessary to the entire household. About 15.31 per cent of the total households preferred only hospitalised care benefits and 12.42 per cent opted for hospitalised and chronic illnesses benefit. The combination of other care benefits was reported in only a small proportion of the total sample households. When the results were broken down by region, it was portrayed that there was a similar pattern of preferences.

Framework for empirical analysis of willingness to join and pay for rural health insurance scheme

Evaluation of the viability and desirability of a rural health insurance through community participation and their willingness to pay for such a scheme requires pre-evaluation of the consequences for health care utilisation of the rural households and their socio-economic characteristics. Hence, in this context, the contingent valuation (CV) approach was used. In order to test the validity of the CV method, i.e., whether the hypothesized theoretical relationships are supported by the data (**Mitchel and Carson, 1989**), the validity was carried out in this study by estimating the theoretically derived regression equations. In this context, the logit estimator was used on the basis of computational convenience. It has also been shown to be consistent with the theory of utility maximisation, under certain specifications of the utility function. The following is a brief description.

The proposed logit model was expected to determine the willingness of rural people to join the proposed health insurance scheme. It was presumed that: (1) an individual must decide between some available options; and (2) the individual chooses one option above the rest if the utility of that option to the individual is greater than the utility of any of the other options. The two options considered in this particular context were willingness to pay and not willingness to pay. In this context, it assumed a hypothetical rural health insurance scheme which was briefed collectively in a village gathering, a day before the investigation, and individually to the concerned sample households at the time of interview. It was assumed that the private/NGO hospitals would be service providers. It is mainly because the private provider emerged as the people's choice in the rural area (**Mathiyazhagan, 1994**). The administration and monitoring of the scheme would be done by the government and the community. In this context, it was expected to test a hypothesis that there is a positive relationship between peoples' willingness to join and pay for rural health insurance and their socio-economic characteristics. The general framework of the logit model is expressed as follows:

It was assumed that the utility of option **i** to the j^{th} individual may be approximated

by the following equation.

$$U_{ij} = V_{ij} + E_{ij}$$

i.e., utility of the ith option to the jth individual is made up of a *systematic component* or *representative utility* V_{ij}, which was assumed to reflect the individual tastes.

The systematic component V_{ij} was assumed to be a linear function of the characteristics of the individual and attributes of the different options available to him.

$$V_{ij} = \sum_{k=1}^{K} \beta_{ik} S_{ikj}$$

The ß's can be the weights to each of the socio-economic characteristics of the individual j and the attributes of the options i (S_{ikj}) in the probability of choosing that option. These weights were assumed constant across individuals, but not across alternatives.

It can be demonstrated that if the E_{ij}'s are distributed according to the extreme value distribution, then the probability that the option i will be selected from a set of m options, can be expressed by the logit model presented in the following equation.

$$Pr\ (selection\ option\ i) = Exp(V_{ij}) \ / \sum_{m=1}^{M} Exp(V_{ij})$$

Description of Variables

In the model, the response of people's willingness (or unwillingness) to join and pay for rural health insurance in a hypothetical situation was considered as a dependent variable. The explanatory variables were classified into four categories. The first consists of the variables that proxy for the risk factors of the decision-making unit. These include demographic characteristics such as age, size of the family, caste of the respondent and health related factors towards physical accessibilities such as travel time and waiting time. The economic factors such as income, occupation, characteristics of income sources were also included.

For each categorical variable in the analysis, one category has been selected as a reference category. An estimated co-efficient for each of the remaining categories of the variable, indicating the significance of the category's contribution to the probability of reporting that condition (i.e willingness to join and pay) has been made in the analysis. An odds ratio has been estimated for each category of the factor that expresses the magnitude of

the increased reporting in relation to the reference category. Interaction effects for variables included in the analysis were tested for significance.

Results

The results from the logistic regression analysis lend support to the hypothesis that there is a significant relationship between willingness to join and pay for proposed rural health insurance and social, demographic, economic and physical accessibility of the households in the rural areas. The results are presented in table 7.

Risk Factors

Socio-Demographic Characteristics

It was found that the family size of the households strongly influenced the decision-making process for willingness to join and pay for the proposed rural health insurance scheme. However, the caste and age of the respondents were not influencing factors in the decision for willingness to join and pay for the proposed scheme. It was also found that there is a significant difference in the willingness to join and pay for the proposed scheme by family size. It means that larger family sizes have a 119 per cent higher probability of joining and 27 per cent higher chance of paying for the proposed scheme as compared to small family sizes.

In the case of age, it was found that the older people were lower by 35 per cent in the case of willingness to join and 64 per cent lower in the case of willingness to pay for the proposed rural health insurance scheme as compared to younger people. Thus, there is a negative relationship between age and willingness to join and pay for the proposed scheme.

It was also found that there was an inverse relationship between caste and willingness to join and pay for the proposed scheme except low caste (SC/ST). The results show that the willingness to join the proposed scheme is 18 per cent lower for backward caste and 13 per cent lower for religious minorities as compared to higher castes. It is important to note that the lower caste (SC/ST) have shown positive attitude towards willingness to join and pay for the proposed rural health insurance scheme. It was estimated that there was nearly a 35 per cent higher chance as compared to the higher castes.

Health Status Variable

As a group, the health status variables cannot be rejected as being insignificant in the health insurance choice. This is borne out by the likelihood ratio test statistics reported at the bottom of the table 7. The results indicate that the variables such as health condition, number of hospital episodes, number of working days lost due to ill-health are significant

determinants of willingness to join and pay for the proposed rural health insurance scheme. In contrast, the variable like health-seeking behaviour by households are not influencing factor households' willingness to join and pay for the proposed scheme. People who were sick have 296 per cent higher chance of willingness to join but only 172 per cent higher willingness to pay for the proposed scheme as compared to no illness people. Thus, the probability of willingness to pay for a rural health insurance scheme was found to be less than the probability of willingness to join which means there is a significant difference between willingness to join and pay for the same.

The number of hospital episodes in the household may lead to higher risks in the household. This is consistent with the hypothesis that households more prone to ill-health are more likely to be insured since they face the greater risk of larger health care costs. It was expected that there would be a positive significant coefficient on the number of hospital episodes. The results indicate that, with the exception of willingness to join, willingness to pay has a positive significant coefficient. It means that households who had three or more hospital episodes in a month may have a higher probability of willingness to pay for the proposed rural health insurance scheme as compared to one or two hospital episodes.

Not surprisingly, the higher the number of days lost due to ill-health, the more likely is someone to join and pay for the proposed health insurance scheme. The results indicate that, people who lost more than a week of working days due to ill-health in a month have a 59 per cent higher willingness to join and 36 per cent higher willingness to pay for the proposed scheme as compared to those who lost less than a week of working days.

Health care provider in the rural areas would play a significant role in the decision to join or pay for any proposed health insurance scheme. It was assumed that those who used private health care provider were expected to join and pay for a rural health insurance scheme. The estimated co-efficient are significant at 5 per cent level. The results show that people who used private sources of health care service have a 35 per cent higher chance of joining the proposed health insurance scheme compared to the people who used government sources of health care services. However, those who used private sources of health care services have a 9 per cent lower probability of willingness to pay for the proposed health insurance scheme as compared to willingness to join.

Economic Accessibility

Ability to pay is undoubtedly a major consideration in the decision to insure or not insure. Therefore, it was expected that there would be a positive coefficient with the income of the households. The estimated coefficients are positive and significant at the 5 per cent

level in the case of all income categories (i.e. low, middle and high income). The results indicate that the higher income level households have a higher chance of willingness to join and pay for the proposed scheme. In contrast, coefficients are negative in the case of income flow characteristics such as irregular income and three times in a year categories for willingness to join and pay. However, the coefficients are positively significant in remaining three income flow characteristics (i.e. daily or weekly, two times in a year and once in a year) for willingness to join and pay for the proposed scheme. It is important to note that the households which get income daily or weekly have a 10 per cent higher probability of willingness to join and 15 per cent higher willingness to pay for the proposed rural health insurance scheme as compared to all other categories. This implies that most of the labourer and allied agricultural activities household have higher willingness to join and pay for the proposed scheme as compared to business and allied activities. The results confirm that the occupational status of the households is not playing any role in the decision-making process on willingness to join and pay for the proposed scheme. The estimated coefficient is negative in the category of occupational status (i.e., business and allied activities).

Physical Accessibility

It was assumed that improved access to care was an important indicator for health policy. Distance, travel and waiting time to obtain health care were used as proxies for the physical accessibility of the respondents. It can be seen that the estimated coefficients of physical accessibility are significantly positive in all cases except one variable (i.e., waiting time). This suggests that the higher the distance and travelling time to obtain health care, the greater the willingness to join and pay for the proposed scheme. It is evident that the distance between the hospital and the clients' home of more than one kilometre leads to a 196 per cent higher chance of willingness to join and 145 higher chance of willingness to pay for the proposed scheme as compared to less than one kilometre distance. It also shows that there is a significant difference between willingness to join and pay across these two categories. Those who travel more than 1/2 hour to obtain health care have 13 per cent higher probability of joining the scheme and 9 per cent higher for willingness to pay. It implies that people are willing to pay for health care services which are close to their house. The waiting time in the hospital to obtain care is not a significant influence on the decision-making process of willingness to join and pay for the proposed scheme.

Familiarity of Health System

Educational status was used in the analysis as a proxy for familiarity with the health

system for rural people. It is quite reasonable to assume that education may make a significant contribution in the decision-making process on the proposed health insurance scheme. But the coefficient is not significant in the case of willingness to join. It suggests that educated people have a 15 per cent less chance to join the scheme as compared to illiterates. However, the coefficient is significant in the case of willingness to pay for the proposed scheme. The results indicate that educated people are more likely to pay for the proposed scheme by 55 per cent as compared to illiterates.

Community Participation in Health related services: A brief review

The proponents of community participation envisaged self-motivated rural communities working together with the State to design their own programmes to improve health and development. This grand vision has proved difficult to achieve in practice, particularly in countries and regions without an existing tradition of joint community-government cooperation (Morgan 1993). However, rural communities in India have a history of cooperating in social events/common problems such as rural drinking water, street lighting etc. Thus, organisation of rural health insurance through community participation is likely to be favoured. In this context, community participation and its role in social services delivery have been conceptualised and stressed in some studies. A United Nations report (1981) viewed this subject as spontaneous voluntary base-up participation without external support. But this type is referred to in the literature as informal (Sherraden 1991), bottom-up, community supportive (Werner 1976), social participation (Muller 1983), or wide participation (Rifkin, Muller and Bichmann 1988). It is not isolated in one sector such as health or education, but is part of a larger process of social development intended to foster social equity.

Spontaneous participation may be a deliberate effort to protest or counteract State policies. At the other end of the concept, induced participation can be sponsored, mandated and officially endorsed. This type is the most prevalent mode to be found in developing countries. Induced participation is called formal, top-down, community oppressive (Werner 1976), direct participation (Muller 1983), or narrow participation (Refkin, Muller and Bichmann 1988). Induced forms are not intended to be inter-sectoral, nor to affect the basic character of state-citizen relations. *This study however, favours the spontaneous, bottom-up, view of participation.* It implies that communities voluntarily join together to pay and organise the rural health insurance scheme. This helps the government to attain Health for All by 2000 A.D. without an undue financial burden.

The proponents of community participation contained in this study visualizes the self-motivated rural communities working together with the State to design their own programmes to improve health and development. It implies that communities voluntarily join together to pay and organise the rural health insurance scheme (table 2 & 3). In this context, the study found that most of the rural people prepared to participate and contribute some amount to such a scheme (table 4). It is also important to note that most of the households (41.53 per cent) would pay between Rs. 121 to Rs.240 (table 4). Nearly 32.62 per cent of the households would pay Rs.120 or less which meant that they would pay Rs.10 per month. A significant number of households (7.90 per cent) were willing to pay between Rs.481 and Rs.600 which amounted to nearly three to four times higher than the average maximum amount (Rs.163.48). It is interesting to note that the Government of India spent about only Rs.90 per capita in the year 1990-91 on state health services (**Duggal,1986b**) the amount enough to develop a just primary health care service. But the expenditure involved in providing quality health care services worked out to be only Rs.76 per capita per year (Rs.71 for hospital and Rs.5 for door-step services) at Sevagram project. Hence, it could be justified that if the Government joins forces with the people's willingness to pay for a viable health insurance scheme, it helps the government to provide a quality health care service without an undue financial burden. This could provide a base for a viable health insurance scheme through community participation in India. It has also proved in Sevagram Community Insurance Scheme by a voluntary organisation in Maharastra State in India (**Jajoo, 1993; Deve, 1991; Jajoo et.al. 1985**).

The empirical evidences of other developing countries also show that health insurance scheme through voluntary participation is successful. The noted countries in this context almost have some form of voluntary health insurance for rural population, while only a few countries have this option for urban citizens. For instance, in China, the rural cooperative insurance based on a decentralized approach to health care was put into action in 1968 on a voluntary basis. In 1973, this scheme covered approximately 70 per cent of China's 50,000 communes (**Hu 1981**). A voluntary prepaid health insurance scheme, called the health card, was introduced for the rural people in Thailand. It was extended and adopted as a national rural health insurance system in 1988 (**Hongvivatana and Manopimoke 1991**). It is also evident that 60 per cent of the rural population voluntarily enrolled health insurance in Zaire's Bwamanda health zone (**Kutzin and Barhum 1992**). Recently, a voluntary health insurance scheme for the urban population was set up in Indonesia: a scheme for private employees and their dependents started as a pilot project in 1985 in Jakarta. By 1988, the scheme had

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been extended to 16 cities in eight provinces (Ron, Abel-Smith and Tamburi 1990).

Discussion

In a nutshell, the results show that insurance/saving schemes are popular in rural areas. In fact, people have relatively good knowledge of insurance schemes (especially life insurance) rather than saving schemes. Most of the people stated 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 willingness to pay. 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. It is also important to note that by using the same survey data it was found that private health care providers emerged as the peoples' choice. Choice of private health care provider is significantly associated with the socio-economic status and physical accessibility of the people (Mathiyazhagan, 1994). The main justification for the choice of private health care provider and willingness to pay for proposed rural health insurance scheme are attributed from household survey results: (a) the existing government health care provider's services is not quality oriented, (b) is not easily accessible, and (c) is not cost effective (tables 8 & 9).

The estimated results are in accordance with the theoretical predictions and also support the validity of the CV method using the binary responses on willingness to pay for rural health insurance scheme through community participation. It is important that the findings have to be viewed in the context of India's on-going economic reform and structural adjustment. The economic reforms curtail government spending on social sectors including health to control and stabilise monetary factors. In the light of the findings of the present study, the government may be able to redefine its role in providing health care services and tap the potential of rural households in bearing health care costs. It is also very important to promote the credit system among rural people in villages. This could help to bring a sustainable income to support the insurance scheme. In this context, the role of private organisations/NGOs assumes importance as care providers.

The above findings also assume greater importance in the context of recent Constitutional provision for decentralised administration under the Panchayat Raj System (PRS) in India. The local bodies under PRS have the potential for participating in health insurance schemes. Such an arrangement has been found to be effective in the Savagram Community Health Insurance experience run by a voluntary organisation covering 36 rural settlements in the State of Maharastra in India. In this new context, the people will have a

greater choice of health care services. The government will be playing the role of monitor and facilitator and not necessarily as provider of health care services. This could provide an alternative framework for designing a viable rural health insurance scheme through community participation in India.

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Table 1 Exposure and Knowledge of Sample Households on Insurance/Savings Schemes (%)

Particulars	Exposed	Exposed & subscribed	Exposed & understood
Life Insurance scheme	64.4	12.2	56.9
Saving schemes	64.3	3.9	65.5
Health insurance scheme	2.6	0.0	0.0

Table 2 Households' willingness to join for proposed rural health insurance by region

Dcode	Willing	Conditional Willing	Not willing
Dcode1 (n=179)	76.6	1.3	19.1
Dcode2 (n=161)	91.5	1.1	7.4
Dcode3 (n=111)	97.4	0.0	2.6
Dcode4 (n=87)	92.6	1.1	6.4
Dcode5 (n=207)	97.6	0.5	1.9
Dcode6 (n=173)	96.6	0.6	2.8
N=1000	91.8	0.8	7.4

Note: Dcode1 stands for Bangalore Rural District; Dcode2 for Mysore District; Dcode3 for Chikmangalore District; Dcode4 for Uttarakannada District; Dcode5 for Belgaum District; and Dcode6 for Gulburga District.

Table 3 Willingness to join a proposed rural health insurance by caste

Caste	Willing	Conditional Willing	Not willing
Brn & Ksha (n=47)	87.2	2.5	10.6
Vai & Banaj (n=15)	73.3	6.7	20.0
Linga (n=163)	93.3	0.6	6.1
Okkali (n=127)	88.2	1.6	10.2
KGBBAUDK (n=100)	90.0	0.0	10.0
SC/ST (n=227)	94.3	0.4	5.3
Others (n=321)	92.8	0.6	6.5
N=1000	91.8	0.8	7.4

Note: Brn & Ksha stands for Brahmin and Kshatriya; Vasi & Banaj for Vaishya and Banajiga; Linga for Lingayat; Okkali for Okkaliga; KGBBAUDK for Kuruba/Golla, Badagi, Besta, Akkasaliga, Uppara, Devanga, Kammara; SC/ST for Scheduled caste and Scheduled tribe; Others includes Christians, Muslims, Jains, & Buddhists (religious category).

Table 4 Willingness to pay for level of proposed rural health insurance scheme by regions (%)

Willing to pay (Rs.)	Region						
	Dcode1 (n=179)	Dcode2 (n=161)	Dcode3 (n=111)	Dcode4 (n=87)	Dcode5 (n=207)	Dcode6 (n=173)	Total (N=918)
< 120	23.38	31.62	36.89	38.89	32.20	37.58	32.62
121-240	52.60	40.44	34.95	35.71	38.98	41.40	41.53
241-360	11.69	19.12	17.48	14.29	13.56	15.28	15.06
361-480	6.49	2.94	0.00	1.43	3.96	0.64	2.89
481-600	5.84	5.88	10.68	10.00	11.30	5.10	7.90
% of WP	86.03	84.47	92.79	80.46	85.51	90.75	86.82
Average amount willing to pay	148.05	154.66	187.85	150.43	181.30	158.58	163.48

Table 5 Willingness to pay for level of proposed rural health insurance scheme by Castes (%)

Maximum amount (Rs.)	Brn & Ksha (n=47)	Vai & Banaj (n=15)	Linga (n=163)	Okkali (n=127)	KGBBAUD K (n=100)	SC/ST (n=227)	Others (n=321)	Total (N=918)
< 120	55.56	40.00	54.48	50.49	60.01	56.02	56.92	32.62
121-240	25.00	40.00	22.39	29.13	25.71	29.84	23.71	41.53
241-360	8.33	10.00	10.45	7.77	7.14	8.91	7.51	15.06
361-480	0.00	0.00	1.49	5.82	1.43	0.52	3.56	2.89
481-600	11.11	10.00	11.19	6.79	5.71	4.71	8.30	7.90
% of WP	76.60	66.67	82.21	81.10	70.00	84.14	78.82	86.82
Average amount willing to pay	163.83	142.67	173.35	172.60	139.50	162.18	162.88	163.48

Table 6 Preference to pay for the different components of the proposed health insurance scheme (%)

Preference	Dcode1 (n=154)	Dcode2 (n=136)	Dcode3 (n=104)	Dcode4 (n=70)	Dcode5 (n=177)	Dcode6 (n=156)	Total (N=797)
Hospitalised benefit (n=122)	12.99	11.03	12.50	12.85	12.43	11.54	15.31
Non-hospitalised benefits (n=45)	1.30	1.47	1.92	1.43	2.26	1.28	5.64
Chronic illnesses benefits (n=20)	9.74	10.29	9.62	10.00	8.47	9.62	2.51
Hospitalised + Chronic (n=99)	13.64	14.71	16.35	15.71	15.82	17.31	12.42
Hospitalised + Non-hospitalised (n=13)	6.49	7.35	4.81	2.86	5.08	5.77	1.63
Chronic + Non-hospitalised (n=76)	1.39	3.68	2.88	1.43	2.26	3.21	9.54
Comprehensive benefits (n=422)	54.55	51.47	51.92	55.71	53.67	51.28	52.95

Table 7 Logistic Regression estimates for willingness to join and pay for the proposed rural health insurance scheme

Explanatory variable	Reference category variable	Willingness to join	Willingness to pay
		Odd Ratios [Exp(B)]	Odd Ratios [Exp(B)]
I. RISK FACTORS:			
(a) Demographic Characteristics			
(i) Age:			
Middle Age	Youthful	0.85	0.76
Old Age		0.65	0.36
(2) Family Size:	Small Size		
Medium		1.71**	1.08**
large		2.19*	1.27**
(3) Caste:	Higher Caste		
Backward		0.82	0.84
SC/ST		0.92	1.35**
Religious		0.87	0.84
(b) Health Status Variable			
(1) Health Condition:	No Illness		
Illness		3.96*	2.72*
(2) No. of Hospital Episodes:	One or two times		
Three or more times		0.79	1.32**
(3) No. of working days lost due to ill-health:	< a week		
> more than a week		1.59**	1.38**
(4) No. of times doctor consulted:	One time		
More than one time		0.50	0.58
(5) Source of health care service utilised:	Public health care		
Private health care		1.31**	1.22**
II. ECONOMIC ACCESSIBILITY	Low income		
(1) Annual income:		1.60**	1.42**
Middle income		2.15*	2.13*
High income			
(2) Income Flow Characteristics:	Monthly		
Daily or weekly		1.10**	1.15**
Irregular/others		0.45	0.66
Three times in a year		0.63	0.65
Two times in a year		1.58**	1.40**
Once in a year		1.07**	1.43**
(3) Occupational Status:	Agricultural and allied		
Business and allied activities	activities	0.90	0.85
Labours		0.66	0.64*
III. PHYSICAL ACCESSIBILITY			
(1) Distance between hospital and clients' home:	Less than one kilometre	2.96*	2.45*
More than one kilometre			
(2) Travel time to obtain care services:	Less than 1/2 hour		
More than 1/2 hour		1.13**	1.09**
(3) Waiting time to obtain care services:	Less than 1/2 hour		
More than 1/2 hour		0.92	0.47
IV. FAMILIARITY OF HEALTH SYSTEM	Illiterate		
(1) Education:		0.85	1.55**
Formal education			
Ancillary Statistic:			
-2 Log likelihood (δ = 0)		1006.33	854.74
-2 Log likelihood (δ = 1)		832.04	580.66
Goodness fit (Chi-squared test)		110.01	82.26
Degree of freedom		42	42

** significant at 5 per cent level of significance * significant at 1 per cent level of significance

Table 8 Average distance, travel and waiting time per medical treatment by health facilities

Particulers	Health facility									
	GH	PHC	PH	NGOH	PDC	PR	Others	Public	Private	Mean
Distance (in Kms)	9	6	10	11	9	0	3	7	6	7
Travel time (in minutes)	23	21	27	35	30	0	18	22	19	22
Waiting time (in minutes)	41	31	26	36	31	40	21	36	32	32

Table 9 Average transport, treatment and drug costs per medical treatment by medical facilities

Cost particulars (in Rupees)	Health facility									
	GH	PHC	PH	NGOH	PDC	PR	Others	Public	Private	Mean
Transport cost	4	3	4	4	4	0	3	4	3	3
Treatment cost	33	7	85	18	18	14	21	20	39	28
Drug cost	21	20	22	4	4	19	24	21	15	16
Total	58	30	111	26	26	33	48	45	57	47