AT TIMES WHEN LIMBS MAY FAIL:
SOCIAL SECURITY FOR UNORGANIZED WORKERS IN KARNATAKA

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1. Introduction

The unorganized sector in India comprises roughly of 92 per cent of the population in the working age group. Of the 376 million workers in 2000, only 8 per cent were in the organized sector, and had access to statutory social security benefits. The remaining workforce had been socially excluded and suffered from persistent deprivation associated with general low standards of living and social insecurity. The unorganized sector makes a significant contribution to the national wealth; yet, workers in this sector do not have access to sufficient and reliable social security. Although the unorganized workers have some access to risk-management mechanisms such as micro-finance, their access to statutory benefits like health care, old age pension, etc., has been quite poor. These workers adopt informal strategies such as borrowings, sale of assets, etc, which are very expensive and their continued dependence on such strategies only renders them more vulnerable.

The governments at the central and state levels have found it challenging to formulate social security schemes for unorganized workers for the following reasons: A large proportion of these workers is poor, illiterate, vulnerable and isolated. A vast majority of them do not have fixed employer and employee relationship. The unorganized sector work is usually temporary, seasonal and changing in nature, and many occupations within this sector are home-based. Notwithstanding the attempts of the government to provide social security in the form of pensions and other benefits, the problems of minuscule coverage and paltry amounts of benefits were often noticed. The workers in certain occupations like beedi industry in Karnataka, who were initially benefiting from statutory provisions such as minimum wages, provident fund, etc., chose to become 'unorganized' by way of withdrawing accumulated provident fund to meet the life-cycle needs (Rajasekhar and Sreedhar 2002). Attempts to initiate social security funds have ended up with high operational costs leading to poor viability. A severe resource crunch has not only disabled the governments to introduce social protection programs but also has been inviting questions from them, such as "where is the need to start universal health insurance scheme when free health care services are provided through public health centres?"

The policy makers, therefore, often encounter the following questions while formulating the social security schemes. What are the priority social security needs of unorganized workers? What existing mechanisms and strategies do they use to meet the social security needs? Do social security needs and risk management strategies vary across different categories and within a particular category of unorganized workers? Are workers willing to contribute to social security? If yes, how much? Is it sufficient to introduce financially viable and sustainable schemes for the workers? If not, what are the

subsidy implications for the government? For which categories of unorganized workers are subsidies needed? And, so on. This paper is a modest attempt to address these questions with the objectives of analyzing the social security needs of the unorganized sector workers, examining the risk management mechanisms that are most frequently used by these workers and assessing their willingness to participate in contributory social security schemes. For this purpose, a large sample from agricultural, construction and domestic workers, accounting for a large proportion of unorganized workers in both urban and rural areas of four agro-climatically different districts in Karnataka, was drawn.

The paper has been presented in six sections. Section 2 places the research questions and hypotheses in the larger framework of social security and provides a brief note on the sample areas and workers. Section 3 explores the links between the protective and promotional aspects of social security. Section 4, which analyses the different risks of workers, and the mechanisms employed to overcome these risks, shows that despite the efforts of the government to provide social security, there seem to be severe constraints with respect to their access. Section 5 looks at the willingness of the workers to contribute towards social security schemes to explore the feasibility of a contributory social security scheme. Section 6 presents the main conclusions of the analysis.

2. Social Security for the Unorganized Sector

Two dominant paradigms in the social security literature are Protection and Promotion. Protective Social Security is the label given to the following definition of ILO (1984) on social security: 'The protection which society provides for its members, through a series of public measures, against the economic and social distress that otherwise would be caused by the stoppage or substantial reduction of earnings resulting from sickness, maternity, employment injury, unemployment, invalidity, old age and death; the provision of medical care; and the provision of subsidies for the families with children'.

This definition presupposes that the members of society have already reached an acceptable standard of living and the main aim of social security is to *protect* them from a fall in their standard of living. Implicit in this is the understanding of social security as a concept whereby the core of income and welfare is assured through regular participation in work and production, leaving *only specific contingencies* to be tackled through public policy. While this type of social security succeeds in developed countries, its applicability and adaptability to developing countries are found to be questionable given the large unorganized sector in these countries.

The need for a broader concept of social security was, therefore, felt in developing countries as it became clear that protective social security did not take into account the high degree of deprivation and vulnerability of the majority of the population (Dev *et al* 2001). Dreze and Sen (1989) first articulated the broader concept of social security as '…social means to prevent deprivation and vulnerability to deprivation', known as the promotional aspect of social security. This concept has the objective of enhancing the normal living conditions and dealing with regular and often persistent deprivation. It is, in

a sense, more ambitious, in wanting to eradicate problems that have persisted for thousands of years, and this ought to be the ultimate end of any social security program (Dreze and Sen 1999: 3).

There have been several debates on the two aspects of social security, but one thing is clear: while the objectives of protection and promotion are distinct, the pursuits of these objectives are not entirely independent of each other. Nor is the importance of one independent of the achievement of the other. This paper, therefore, raises the question of what are the protective social security needs of the workers, and how are they related to the basic entitlements of worker households. We hypothesize in this paper that there are links between the promotional and protective needs of the workers.

The provision of social security is also seen in a Social Risk Management (SRM) framework (Holzmann and Jorgensen 2000: 3). The main idea behind SRM is that all individuals, households and communities are vulnerable to multiple risks[1] from different sources, whether they are natural (earthquakes, floods, etc) or human-made (unemployment, environmental degradation, war, etc). These shocks hit the individuals, communities and regions in an unpredictable manner, and cause and aggravate poverty. This implies increased vulnerability since the poor are typically more exposed to risk while they have limited access to risk management instruments. Therefore, the provision and selection of appropriate SRM instruments become important in order to reduce vulnerability and poverty. SRM, thus, clubs both the promotional and protective aspects of social security, and is useful in analyzing mechanisms and strategies adopted by the unorganized sector workers.

Arrangements are of three types; formal, market-mediated and informal (Holzmann and Jorgensen 2000). Formal arrangements typically refer to government-initiated programs. Under informal arrangements such as entering sharecropping arrangements with a landlord, borrowing from employers, moneylenders or relatives, sale of assets, etc, promises of reciprocity cannot be enforced due to lack of legally binding commitments. Market-mediated arrangements refer to the programs such as micro-finance[2] and micro-insurance having the potential to serve as effective risk management mechanisms. The risk management strategies are prevention, mitigation and coping (Holzmann and Jorgensen 2000). Prevention strategies are employed before a risk occurs, the idea being to reduce the probability of a downside risk. Mitigation strategies are also used before the risks occur; but the main aim of mitigation is to reduce the adverse impact of a future risk. Coping strategies are used after the risk has occurred, when there is no other option.

Do all unorganized workers have access to the mechanisms and strategies? The literature suggests that access to and utilization of formal social security measures were uneven across different

[1] The term is used in a broad sense to include both predictable and unpredictable risks, because, for unorganised workers, who typically lack risk management tools, predictable events such as seasonal drought, will also have negative welfare effects.

[2] Micro-finance in India, however, is clubbed with the informal arrangements since micro-finance programmes here are less dependent on the market forces.

vulnerable groups (Gayathri 2001). It is, therefore, hypothesized that access to and utilization of formal social security measures vary across the workers in different occupations and within an occupation; that the unorganized workers mainly adopt informal strategies; and that the costs involved in employing informal mechanisms and strategies by the unorganized workers outweigh the benefits obtained by them.

Since the characteristics of unorganized workers (lack of fixed employer-employee relationship, etc.) do not easily permit the application of standard social security scheme, it becomes essential to design a scheme appropriate to their characteristics. Two sets of issues are important here. First, in view of the severely constrained public finances, most of the developing countries do not have resources to support a general social assistance program. It, therefore, becomes essential to analyze whether the unorganized workers are able to contribute to social security or not. The second set of issues relates to contributory mechanisms. Since the facility for the collection of contributions through deductions from wage payments made by the employers is either not available (as in the case of self-employment) or not easy (as in the case of informal type of employment), a workable arrangement is necessary. The widespread perception is that unorganized workers are unwilling to contribute towards social security. The workers, if they are provided with a dependable scheme, may be willing to contribute, although the very poor may need assistance. We, therefore, hypothesize that the workers are willing to contribute to social security scheme provided that it is reliable and convenient; and that the willingness to contribute varies across the different categories of workers.

These hypotheses have been analyzed with the help of data collected from 910 sample workers belonging to agriculture, construction and domestic work drawn from four agro-climatically different districts in Karnataka. Dakshina Kannada, being coastal and hilly area, is a highly developed district with plantation crops of areca, coconut and rubber making all the difference. As a contrast, Gulbarga is semi-arid and grows rain-fed crops such as jowar, bajra and sunflower. It is also a district from where a large number of unorganized workers migrate. Mysore is a developed district, with large tracts of irrigated lands. There is, therefore good demand for agricultural labour. Greater Bangalore represents both Bangalore Rural and Urban districts, which was chosen mainly because of its proximity to Bangalore city.

Of the 505 sample agricultural workers, most were landless. Some of the landless labourers, however, had entered into sharecropping agreements with the landlords in their villages. It was found that the sample agricultural workers in Dakshina Kannada were working in both farms and plantations. The sample covered both men (279) and women (226), belonging to the age group of 18 to 65 years. Of the 301sample construction workers, only around 9 per cent of the workers were migrant workers from other states or other districts within the state. Over half of the workers were skilled with employment in trades such as masonry, carpentry, painting, plumbing, electricals, bar-bending, etc. Around 45 per cent of the sample workers were semi-skilled or unskilled workers. The entire sample of construction

workers had only 6 female workers. Around 19 per cent of the workers interviewed were from rural areas, who were daily commuters to the cities for work. The total number of sample domestic workers was 104 and all of them were women[3] in the age group of 20 to 60. While some had settled in the cities for some years, many belonged to erstwhile agricultural households and had come to the cities in search of employment.

3. Levels of Vulnerability and Social Security Needs of Unorganized Workers

It has been criticized that protective social security schemes for the unorganized workers in India were introduced arbitrarily by the government, and hence, they were largely counter-productive. It has also been argued that such a failure was because the policy makers failed to recognize the links between the promotional and protective social security. In this section, we defend the argument that in the case of the highly vulnerable workers, it was the *lack of having met the promotional needs[4] adequately* that acted as the biggest constraint in their ability to access protective schemes. Making use of a 'vulnerability index'[5], we show that different categories of workers have different levels of access to promotional social security (inclusive of food, drinking water, education, housing, health and employment security), and this determines the way they perceive protective social security.

The vulnerability index is used to classify the households into the following three categories – based on the extent to which they have met their basic entitlements.

1. **The households that face low level of vulnerability** are those that have met their basic entitlements adequately and seldom face periods of extreme vulnerability. When they do, they are able to meet these periods effectively without the situation pushing them lower down the vulnerability ladder. More often than not, these households have access to productive assets (land, milch animals, etc.), own consumer durables and obtain significantly higher incomes.

2. **The households that face medium level of vulnerability** are those that have not met their basic entitlements adequately, but still they do not face very high levels of vulnerability in their current lives. However, they are prone to risks, and when they do face high-risk situations, it is possible that these situations render them more vulnerable than they are, in the future.

3. **The households that face high level of vulnerability** are those that have not satisfied their basic entitlements, and are characterized by persistent vulnerability. Typically, they are very low-income households, do not have any assets, and rely to a major extent on credit from moneylenders, who exploit them further.

[3] While male domestic help was observed quite often even around half a century ago, this trend has changed. Exceptions may be in the form of men who work in households as gardeners, drivers, agricultural workers, etc, and also undertake some domestic chores in their employers' houses as part of their overall employment agreement.

[4] Note that in the paper, we use the terms 'promotional social security needs' and 'basic entitlements' interchangeably.

[5] Refer Annex 1 for a note on the construction of the index.

Table 1: Distribution of households (%) by level of vulnerability and categories of workers[6]

Level of vulnerability	Agricultural workers (n=505)	Construction workers (n=301)	Domestic workers (n=104)	All workers (n=910)
	Mean Index: 1.44	**Mean Index: 1.41**	**Mean Index: 1.40**	**Mean Index: 1.42**
Low	21.98	28.57	38.46	26.04
Medium	42.38	38.54	26.92	39.34
High	35.64	32.89	34.62	34.62

Table 1 shows that while the average vulnerability indices of the three categories of workers were more or less identical, the distribution of each of the worker categories across the vulnerability indices was different. Agricultural workers were the most vulnerable group. They suffered persistent deprivation with respect to education, employment, drinking water and health.

Table 1 would be concealing much unless it is studied alongside Table 2, which shows the average daily wages of the three worker categories.

Table 2: Average daily wages of workers[7]

Workers	Average daily wages (in Rs.)
Agricultural	42.58
Construction	78.54
Domestic	23.10

Table 2 shows that with respect to average daily wages, the construction workers were way above the domestic and agricultural workers. This is significant in the light of the fact that they emerged as a relatively more vulnerable group. The construction workers earned incomes high enough for them to offset areas and phases of vulnerability in their everyday lives. A large number of these workers, for instance, did not have regular access to the PDS, given the migratory nature of their work, and therefore, had to depend on the open market. But this vulnerability was compensated by the relatively higher wages that they earn. In fact, in several cases, the construction workers did not even perceive their inability to access the PDS or the absence of proper housing facilities at various work-sites as rendering them vulnerable.

[6] Note that the higher the index value, the higher the vulnerability of the household and vice versa. For more details, refer Annex 1.

[7] Note that the average daily wages refers *only* to the wages that the workers were paid either in cash or kind. It does not include the additional benefits, such as meals, medical assistance, etc, that several workers were found to be getting.

The domestic workers, on the other hand, were a mixed bunch. As Table 1 shows, while a good many workers were quite secure in terms of having met all their entitlements adequately (38.46 per cent), almost 35 per cent of these workers also faced a high level of vulnerability. The former category of workers typically belonged to households where the domestic worker's income was only supplementary to the household income, and therefore, despite their own low incomes, they did not face much vulnerability. The latter category of workers faced the most wretched form of deprivations. They were widowed/deserted women, who had to support their families with their incomes alone, they usually didn't have their own houses, nor did they have ration cards. Given the very low incomes, they were unable to educate their children beyond a certain point. The only surety that these workers had was the continuous employment with at least one employer.

One of the factors determining the extent to which the workers are able to meet their basic entitlements is the spatial aspect. Many construction and domestic workers were still recent migrants to the urban areas, and therefore, resided in rented/leased houses, which took away a considerable portion of their monthly incomes, which left them little residual income to meet other necessities. Those who lived in the slums in particular faced very poor housing conditions. Agricultural workers, on the other hand, barring very few cases, typically had semi-*pucca,* but own houses. Many of them were recipients of the benefits of government-funded housing programs.

Health security is determined, on the supply side, by the availability of health facilities, and on the demand side, by the people's ability to access the health facility both physically and monetarily. In this sense, the agricultural workers were found to be at considerable disadvantage compared to the other two categories. The non-existence of Primary Health Centres in several villages necessitated the people to travel distances to access them. In the event that they could not do this, they chose to either turn to traditional healers (evidence of this was, however, marginal in the sample), or more often, not address the health problem at all. Even though some villages had private health facilities, most of the agricultural worker households could not afford to pay for these services. Construction workers were better off with respect to health security because usually, their higher incomes and the urban setting allowed them the freedom to choose what kind of services they wanted to avail of. Most construction workers preferred to go to private health centres as against PHCs.

Food Security, in this paper, refers to each household's ability to access the Public Distribution System, and the extent to which it is forced to depend on borrowings to meet the food requirements (See Annex 1). As far as the former is concerned, the agricultural workers were better off, because these were households that had been residing in the rural areas for several years, and most of them had some ration card or the other. A good many were found to have access to subsidized food grains. When it came to the construction and domestic workers, however, the fact that many of them were recent migrants into the urban areas acted to their disadvantage. The domestic workers, in particular, reported that since they lived in rented houses, and were often forced to shift residence, they were unable to get

ration cards issued. With respect to borrowing from various sources to meet the food requirements, it was found that across sectors, households did borrow from shopkeepers on credit, informal agencies, etc, to meet food requirements, not necessarily only during periods of shortage.

The social organization of production is another important determinant of the extent of security that workers' households had with respect to employment and education. As mentioned earlier, the domestic workers, in general, enjoyed a higher degree of employment security than the other two categories, and this was a function of their continuous employment throughout the year, which was not the case with the agricultural and construction workers. Education security was found to be highest among the construction workers, which was due to two reasons – their migration into the urban areas, and their higher incomes, which enabled them to send their children for college education, etc. For domestic workers, on the other hand, the relatively high education security was attributable to the relationships they had with their employers. Many domestic workers received the patronage of their employers when it came to their children's education, and were therefore, able to send their children to colleges as well.

The analysis thus far has made two points – a) The unorganized sector is not a homogenous unit – each sector faces a different kind and degree of vulnerability, and b) within each sector, all workers are not equally secure. The sample household had met their basic entitlements to varying extents. These results have an important bearing on the way in which the workers perceived the protective social security needs in relation to old age pension, unemployment, health, employment injury, death, maternity, etc.

Each respondent worker was asked to rank five protective social security needs, namely, old age, employment injury, unemployment, death and sickness. For women workers in the reproductive age, maternity was also included. PRA techniques were used to undertake this exercise. An important finding was that a majority of the workers who were *unwilling* to rank the protective needs belonged to the *highly vulnerable* category of households, and a good many belonged to households that faced medium level of vulnerability (Table 3). Table 3 shows that nearly half the sample workers who were unwilling to rank the protective social security needs belonged to the high vulnerability category, and 31.43 per cent belonged to the medium vulnerability category.

Table 3: Distribution of workers (%) by vulnerability categories and willingness to rank protective needs

Vulnerability categories	Willingness to rank	
	Yes	No
Low	26.67	20.00
Medium	39.17	31.43
High	34.17	48.57
Total No. workers	840	70

The reason that workers were unwilling to rank the protective needs in these cases was quite simply that they *did not consider them important enough in the light that even their basic entitlements had not been met entirely satisfactorily*. Box 1 substantiates this point.

As in the case of Devamma (Box 1), promotional social security had not been met adequately for a large section of the unorganized workers but the problem was particularly acute for the most vulnerable category, and it kept them out of reach of any kind of protective social security. There was thus clearly a relationship between promotional and protective social security, especially in the case of the most vulnerable groups.

Box 1: Non-fulfillment of basic entitlements

Devamma is a 40 year-old widow with two children in Bangalore Rural district. She does not own either land or any asset. She works as an agricultural labourer, and sometimes, during the slack agricultural season, goes to the town in search of other wage labour, usually construction work. She does not have a house. The house, where she and her children live, is in a dilapidated condition. She said that she has applied for the government site, but she is yet to hear from the Gram Panchayat about it.

She pulled her daughter out of school after the child completed the second standard because she couldn't afford the expenses. Her 10-year old son attends school only intermittently as he has leukoderma and other children avoid him like the plague. Devamma said that he started getting the whitish patches on his skin only this year, and when she consulted a doctor, she was told that it was nothing. Since she herself is unaware of medical problems and associated treatments, she does not know whether to believe the doctor and just let it be, or whether to spend money in consulting another doctor. Devamma has not stepped inside a government hospital for many years now, because she has been harassed there in the past. She says the government doctors are irresponsible and do not check properly, nor do they give effective treatment. In addition, one has to wait at the hospital endlessly, and often bribe the staff to get the consultation.

Devamma has been at the receiving end of indifference from the government on other fronts as well. After her husband passed away, she took the death certificate and went to apply for the widow pension, but she was denied it on the grounds that she was young and capable of working. She said that they did not even consider the fact that she had no house, no land and no other assets, and has two children to support. She applied for a loan from the government for purchasing a buffalo, and the application had been turned down as she did not pay a bribe.

Not surprisingly, when Devamma was asked to rank the various social security needs, she promptly said that managing her day-to-day life itself is such a problem, that she cannot afford to even think of meeting other needs right now. She agreed that these needs are also important but pointed out that unless her basic needs are taken care of adequately, it is impossible for her to think about hypothetical future situations.

The percentage of workers who were unwilling to rank the needs was less than 10 per cent. The remaining workers expressed their priorities for the social security needs. Many of them were able to give their opinion for all the needs, while some mentioned just the most important need. Table 4 shows that for the agricultural and domestic workers, the two most important protective needs were old age

pensions and unemployment benefits, while for the construction workers, the three most important needs were unemployment benefits old age pensions and employment injury insurance.

Table 4: Distribution of workers (%) by proportion of top priority to needs and vulnerability categories

Vulnerability categories	Sickness	Employment Injury	Unemployment	Old age pensions	Death	Total No. workers
Agricultural workers						
Low	11.65	6.80	34.95	40.78	5.83	**103**
Medium	10.05	8.04	36.68	39.70	5.53	**199**
High	10.32	10.32	35.48	38.06	5.81	**155**
All workers	**10.50**	**8.53**	**35.89**	**39.39**	**5.69**	**457**
Construction workers						
Low	10.71	23.81	22.62	33.33	9.52	**84**
Medium	14.16	22.12	37.17	20.35	6.19	**113**
High	12.63	25.26	30.53	26.32	5.26	**95**
All workers	**12.67**	**23.63**	**30.82**	**26.03**	**6.85**	**292**
Domestic workers						
Low	13.89	5.56	22.22	41.67	16.67	**36**
Medium	8.33	4.17	33.33	50.00	4.17	**24**
High	15.15	9.09	30.30	33.33	12.12	**33**
All workers	**12.90**	**6.45**	**27.96**	**40.86**	**11.83**	**93**

From the table, it is clear that while there were only marginal differences among the vulnerability categories in the prioritization of agricultural workers, the differences were more marked in the case of the domestic workers. In the latter, a much greater number of workers among the low and medium vulnerability categories had given top priority to old age pensions as compared to unemployment benefits. In the highly vulnerable group, however, while 33.33 per cent had preferred old age pensions, around 30 per cent had also preferred unemployment benefits.

As far as construction workers are concerned, a disaggregation of social security needs by vulnerability categories shows that among the low vulnerability workers, there was a greater preference for old age pensions, while among the medium and high vulnerability workers, the greater preference was for unemployment benefits. This may be related to the fact that some workers had higher employment security and these were the workers who were able to rank old age pensions higher. When it came to the more vulnerable groups, here, basic employment security itself was not guaranteed, and therefore, they chose to give a higher preference for unemployment benefits.

The surprising finding from Table 4 is that the unorganized workers, across all categories of workers, insurance against sickness and death were the relatively less important needs. In the next section, it will be shown that a majority of the risks faced by the workers and their households were related to these two needs. Both these needs emerged to be more important for the domestic workers as compared to the agricultural and construction workers. Among the domestic workers, the low vulnerability workers tended to give greater preference to the life insurance, as compared to the more

vulnerable workers. One trend that was noticed was that the workers, across categories, who had taken out a life insurance policy, tended to give this need much less importance, since they were already covered for such a contingency.

The reason the unorganized workers, in general, tended to give low importance to death may be found in their perception of such a contingency. Most of these workers lived day-to-day, and for them, death was a very distant and almost unreal phenomenon. They did not consider it very important in the context of their here-and-now problems. Also, some workers tended to get offended when 'death' was mentioned as an eventuality. The relatively lower importance accorded to this contingency by the sample workers may also be explained as a methodological issue. The death of an earning member of the household usually appeared to be more burdensome for the *other* members of the household, rather than for the respondent workers himself/herself[8]. Since the ranking of the social security needs was done only by the respondent worker, and did not involve the other household members, such a finding is perhaps not so surprising.

The low importance given to insurance against sickness, however, was a befuddling result. It may be understood as follows: since the workers were asked to *rank* the needs, they tended to give continuous and persistent problems more importance. For instance, unemployment was a pressing problem for them almost all through the year, as in every month, they did not have employment at least for a few days. Or old age, for instance, showed an age-wise trend, where it was the older workers (above 35-40) who showed a greater preference for old age pensions. These workers had been able to see and live through their elders, in some cases, the continuous indisposition that old age put them in. However, events like sickness and death were also serious but short-term occurrences, the fall-outs of which might not last long enough for the workers to perceive them as being *as* important as the other needs.

4. Formal and Informal Means of Meeting Social Security Needs

This section aims to analyze the risks of the unorganized sector workers and the risk management strategies that they had adopted. One of the obvious indicators of the risk-proneness of a household was the occurrence of risks during the reference period[9] and the frequency of occurrence of risks.

Table 5: Distribution of households (%) by vulnerability categories and household crisis

Vulnerability category	Agricultural workers			Construction workers			Domestic workers		
	Yes	No	Total No. workers	Yes	No	Total No. workers	Yes	No	Total No. workers
Low	36.89	63.11	122	38.82	61.18	85	30.00	70.00	30
Medium	43.98	56.02	216	42.48	57.52	113	37.93	62.07	29
High	41.32	58.68	167	43.69	56.31	103	37.78	62.22	45
Total	**41.39**	**58.61**	**505**	**41.86**	**58.14**	**301**	**35.58**	**64.42**	**104**

[8] This argument is justified, more so because most of the workers who gave the least preference for social security against death remarked that 'death' was the best thing that could happen to them, given their current problems.

[9] The reference period was taken as the past 3 years.

Table 5 shows that the risks at the household level, such as accidents, deaths, marriages and social obligations to organize, health problems, etc, had occurred in the case of all the workers. Fewer domestic workers, however, faced risks as compared to agricultural and construction workers. It is interesting to note that fewer households among the less vulnerable reported the occurrence of risks in the reference period. This supports our argument that the less vulnerable households were usually less risk-prone as compared to more vulnerable households. It may also be indicative of the fact that it was for the most vulnerable category that *even predictable events* were perceived as risks[10]. When it came to the frequency of risks, only 25 of 910 households had experienced more than one crisis, and 80 per cent of them belonged to the medium and highly vulnerable categories.

Table 6: Distribution of households (%) by vulnerability categories and type of crisis

Vulnerability categories	Death of household member	Health emergency (including operations)	Marriages and other festivities involving large and compulsory expenditure	Accident	Any other, specify
Agricultural workers					
Low	26.42	19.05	24.32	19.23	0.00
Medium	47.17	47.62	35.14	53.85	100.00
High	26.42	33.33	40.54	26.92	0.00
Total no. workers	53	105	37	26	2
Construction workers					
Low	25.00	22.39	22.22	45.45	0.00
Medium	45.00	37.31	40.74	31.82	100.00
High	30.00	40.30	37.04	22.73	0.00
Total no. workers	20	67	27	22	1
Domestic workers					
Low	16.67	25.00	11.11	66.67	0.00
Medium	16.67	30.00	44.44	33.33	0.00
High	66.67	45.00	44.44	0.00	0.00
Total no. workers	6	20	9	3	0

Table 6 shows that across the sectors, the highly vulnerable households had been more affected by the different kinds of risks. Among the agricultural workers, this difference was most prominent when it came to expenditure on marriages held at short notice and other social obligation. With respect to the construction workers, the incidence of all types of risks except accidents was greater among the highly vulnerable households. Around 40 per cent of the households where accidents were faced by one or the other member belonged to the low vulnerability category. More than 40 per cent of all kinds of risks faced, except accidents, were by the highly vulnerable category of households.

[10] For instance, a less vulnerable household may not perceive a routine wedding as a crisis really. But the same may be seen as a crisis by a highly vulnerable household, because such an event is likely to render them even more vulnerable.

It was among the domestic workers that the exposure to risks by the different vulnerability categories of households was most evident. What is also clear is that for all the categories of workers, the most recurrent crises were health related, followed by death of a household member[11].

Table 7: Sources of expenditure (per cent in total expenditure) on household crises by vulnerability categories

Vulnerability categories	Own sources	Borrowing from moneylenders	Relatives	Bank	Employer	Sale of assets	Other source	Total expenditure (in Rs.)
Agricultural workers								
Low	13.50	53.07	11.88	0.00	13.93	0.85	6.77	585,100
Medium	28.23	43.70	15.05	1.55	5.92	4.91	0.65	1,158,000
High	8.39	69.89	8.92	0.53	8.26	1.38	2.62	941,500
Total no. workers	**18.06**	**54.92**	**12.21**	**0.86**	**8.49**	**2.79**	**2.67**	**2,684,600**
Construction workers								
Low	12.60	67.93	13.62	0.00	5.75	0.00	0.09	539,500
Medium	29.95	42.79	11.56	0.89	3.30	6.69	4.82	1,120,600
High	26.78	44.38	12.10	9.78	4.49	0.88	1.59	1,135,000
Total no. workers	**25.32**	**48.29**	**12.17**	**4.33**	**4.26**	**3.04**	**2.59**	**2,795,100**
Domestic workers								
Low	25.70	30.96	40.25	0.00	3.10	0.00	0.00	161,500
Medium	11.06	66.50	4.92	0.00	3.38	12.29	1.84	162,700
High	19.06	53.62	9.85	13.13	1.71	0.00	2.63	228,450
Total no. workers	**18.65**	**50.79**	**17.28**	**5.43**	**2.61**	**3.62**	**1.63**	**552,650**

In order to analyze the hypothesis that the unorganized sector workers depend more on the informal strategies during periods of crises, Table 7 has been prepared. Across all categories of workers and the vulnerability categories (excepting the domestic workers in the low vulnerability category), the most important source of financing the crises was borrowing from moneylenders at a high rate on interest (Table 7). Among the agricultural and domestic workers, the highly vulnerable households tended to have greater dependence on this source. The construction workers, however, showed a contradictory picture. The less vulnerable construction workers showed greater dependence on borrowings as compared to the more vulnerable households. Equally surprising is the result that the dependence on own sources was very low among less vulnerable construction worker households as compared to their more vulnerable counterparts. The construction workers, in general, were significantly higher income groups as compared to the agricultural and domestic workers. This is reflected only at the overall level, where the dependence on own sources is highest among these workers.

[11] It is in this context that the prioritization of social security needs of the workers where they have given relatively low importance to these two needs is significant.

One phenomenon that remains concealed in this table is that it shows only how the households faced the crises through dependence on some source or the other. There were also some households who had faced risks of varying degrees, but they were *unable to do anything about them,* and were therefore, forced to carry on with life as though nothing had happened. For example, many health problems would go untreated by these households because they would not have the resources to address these problems at that juncture. It is in this context that the dependence on borrowings is significant. While borrowing from moneylenders or others at high rates of interest might seem to be the most wretched and disabling form of coping with risks, even worse than this was the eventuality that the *inability to borrow* put some households in. This is probably the reason why the pattern of borrowing across the vulnerability groups among construction workers emerges as it does.

Non-borrowing was, thus, of two types. One category of households did not depend on borrowings, or depended to a lesser degree on this source to meet the requirements. This is the category that is reflected in Table 4.04, i.e. the households who alternatively depended on sources such as savings, own sources, etc. The even more vulnerable category was that comprising of households who not only *did not* have the luxury of sources other than borrowing, but also *could not even borrow from any sources* since they were sure they could never repay the amounts.

Relatives were also an important source of borrowing for the households during the crises, especially for the domestic workers. While across the sectors, the low and medium vulnerability category households appeared to have the luxury of dependence on family and relatives, it was in the case of domestic workers that this difference was very evident. Around 40 per cent of the workers who had borrowed from relatives belonged to the less vulnerable category of households.

Dependence on employers and sale of assets were also important sources for the expenditure on the household crises. Clearly, sale of assets was resorted to by medium and highly vulnerable households, but only marginally by the less vulnerable households (only in the case of agricultural workers). Surprisingly, all the households that were able to access banks during periods of crises were medium and highly vulnerable households.

The dependence on borrowing imposed on the unorganized sector workers, heavy costs in the form of interest rates. We may add that borrowing from relatives was also a costly mechanism for these workers, though not always monetarily. While relatives usually did not demand any interest on the

amount lent, such borrowing and lending was always placed on the principle of *balanced reciprocity*[12], which could render them helpless and more vulnerable in the future.

In the case of borrowings on interest, on many occasions, these workers paid interest amounts for years together without having returned any of the principal amount borrowed. The following is an analysis of the costs incurred by these workers on borrowings. Table 8 shows the ranges of interest rates that informal borrowing imposed on them, and Table 9 shows the proportion of interest amount paid to the amount borrowed. If the workers had paid more than 100 per cent of the amount borrowed merely by way of interest, it indicates a situation of absolute vulnerability.

Table 8 shows that the domestic workers were the most vulnerable with respect to the rates of interest they paid per annum on borrowings. There is, however, a surprising picture that emerges here. It was the less vulnerable households among these workers who were more prominent in this category.

Table 8: Distribution of households (%) by vulnerability categories and rates of interest paid on borrowings

Vulnerability categories	Rates of Interest (per cent per annum)			
	<25	25 - 50	50 – 100	>100
Agricultural workers				
Low	23.68	31.58	42.11	2.63
Medium	13.24	41.18	38.24	7.35
High	15.38	36.54	32.69	15.38
Total no. workers	**16.46**	**37.34**	**37.34**	**8.86**
Construction workers				
Low	16.67	50.00	29.17	4.17
Medium	11.11	36.11	41.67	11.11
High	13.95	46.51	30.23	9.30
Total no. workers	**13.59**	**43.69**	**33.98**	**8.74**
Domestic workers				
Low	0.00	0.00	42.86	57.14
Medium	20.00	20.00	40.00	20.00
High	0.00	50.00	25.00	25.00
Total no. workers	**6.90**	**27.59**	**34.48**	**31.03**

With respect to agricultural and construction workers, it was the medium and highly vulnerable households who were seen to be more significant in terms of high interest rates.

[12] Balanced reciprocity means that for any 'gift', there is the inevitable strong assumption that at some time in the future, there will be a counter-gift.

Table 9: Distribution of households (%) by worker categories and proportion of interest amount paid to principal amount

Categories of workers	<50 per cent	50 – 100 per cent	>100 per cent
Agricultural	76.43	15.71	7.86
Construction	84.95	10.75	4.30
Domestic	75.00	10.71	14.29

From Table 9, it is clear that costs incurred by the workers in the form of interest payments was substantial. Although more than 75 per cent of the workers in all the categories had paid interest amounts less than 50 per cent of the amount borrowed, there were workers who had paid more than they had borrowed just by way of interest. This was particularly evident in the case of domestic workers where 14.29 per cent of them had repaid more than 100 per cent of the principal just as interest. The construction workers were relatively better off, as almost 85 per cent had paid only less than 50 per cent of the principal amount as interest. There were no significant differences found among the different vulnerability categories of households with respect to this variable. This only shows us that even the less vulnerable among the unorganized workers fell prey to informal borrowing, the only consolation being that they were better equipped to handle such shocks as compared to the highly vulnerable households.

In the absence of associations and organizations to protect the interests of the workers in the three sectors under study, the level of awareness of the several formal social security programs was found to be very low. For instance, only 3 workers out of the entire sample were even aware of minimum wages though there is a law pertaining to this in place. Among the agricultural workers, the awareness of rural employment generation programs such as the SGRY and SGSY was found to be very poor – around 90 per cent of the workers were *unaware* of such programs, and *none* of the sample workers had availed of the benefits of either program. This is significant in the light of the fact that the average number of months of unemployment among the agricultural workers during the reference year was 3.68.

Some protective social security programs were found to be more successful – for instance, widow pension for the agricultural workers. 75 per cent of all the eligible workers were found to be getting the pension. However, old age pension was obtained by only 25 per cent of the eligible workers. This is interesting in the light of the fact that among the agricultural workers, old age pension emerged as the most important social security need. In the absence of any pension, most of the older workers foresaw that they would continue to work as agricultural laborers for many more years, notwithstanding the lack of physical strength, health problems, etc. Many of them who worked whenever possible and depended on their children/relatives otherwise, were forced to borrow every now and then, etc.

One of the important statutory schemes that construction workers are covered under is the Workman's Compensation Act, which entitles them to a monetary compensation in the event of an accident/injury at the work-site. Among the sample workers, around 19 per cent had experienced some form of injury or

health problem at the work-site, but it was found that *none* of these workers had any awareness about a law such as the Workman's Compensation Act. Only 2.52 per cent of them had been given some minimal financial assistance by their employers for the expenditure incurred. 66.30 per cent of the workers had depended on borrowings from moneylenders, and 15.85 per cent on assistance from family and friends. Only 9.56 per cent of these workers had some savings that they could fall back on during the crisis. This only reiterates the point that the unorganized sector workers were unable to adopt prevention and mitigation strategies, and almost always fell into the debt trap that a coping strategy such as borrowing from moneylenders put them in.

Given that construction is high-risk work, it is hardly surprising that almost 24 per cent of the first preferences to the protective needs were given to insurance against employment injury. For these workers, and all unorganized workers, in general, injuries of this nature were double-edged swords. On the one hand, it imposed on them heavy expenditure in the form of medical expenses. The equally important apprehension was that it *rendered them unemployable* for a considerable period of time after the injury had taken place. Given that workers in this sector were, in general, not given any unemployment compensation either, both these contingencies (employment injury and unemployment) were inarguably very important for them to have some protection against.

Domestic workers, in general, have employment throughout the year; however, they always have the fear of the discontinuity of this security due to sudden termination from work, etc. Only those workers who had the luxury of having worked at one or two employers' houses for many years, and who had built a reasonably strong bond of trust with their employers, did not face this problem. While the closer contact between the employer and the employed in the case of domestic work allowed these workers greater patronage from their employers[13], among the highly vulnerable workers, such luxury was rare. Box 2 presents the case of Nanjamma, a domestic worker in Mysore, who lived in the eternal fear that she would render herself unemployable by seeking any sort of help from her employer.

Box 2: Case Study – Chinigirikoppal Slum in Mysore District

Nanjamma, a domestic worker from Mysore, earns Rs.200 as the monthly salary, in addition to which she gets old age pension of Rs.100/- per month. Nanjamma lives by herself as she has no children. Her husband passed away ten years ago, and since then, she has been forced to fend for herself. She says that she has been looking for more employers but since there is stiff competition, households generally prefer younger women as domestic help. Three years ago, she had a minor accident (slipped and fell) and had to incur hospital expenses of about Rs.700.. She borrowed money from a moneylender to cover this expenditure at the rate of 10 per cent interest per month. On asking her why she did not request her employers to loan her some money, she says that her employers are not very approachable, and she feared that if she bothered them with her problems, they might terminate her from work, which is her biggest fear currently.

[13] For example, Ishwari, a domestic worker in Bangalore, has been working for just one household for the last 8 years, and has developed a very close bond with them. Her employers have facilitated the opening of a bank account for her, they have taken out an insurance policy in her name, and are paying the annual premium for her.

The argument thus far has been that the unorganized sector workers are forced to fall back on informal coping strategies during periods of risk, whether these risks occur at the household level, or at the work-sites, which renders them even more vulnerable. But this is not to say that there is no evidence of preventive or mitigating strategies employed by them at all. The findings of the study show that some workers did have savings in formal institutions, had taken out insurance policies, etc, but what it also shows is that the workers' access to such formal mechanisms varied both across the three categories of workers and the vulnerability levels of the respective households.

Just 18.2 per cent of the total sample workers had any insurance coverage, and almost 40 per cent of these workers belonged to the low vulnerability category of households. Although around 25 per cent of the workers who had some insurance policy belonged to the highly vulnerable category of households, two features distinguished this category from their less vulnerable counterparts – a) less ability to keep these policies active, and b) the sum assured for the policies taken was smaller.

Table 10: Workers with insurance coverage (per cent to total workers)

Type of Workers	Ever Insured	Active Policies
Agricultural workers	17.23	82.76
Construction workers	23.26	84.29
Domestic workers	8.65	88.89

Table 10 makes it clear that as a formal means of seeking a sense of economic security, life insurance coverage was too low in all the three sectors. This does not come as a surprise finding. Yet, the question of why it was not popular needs to be answered. The response received from more than 90 per cent of those without any insurance coverage was that they 'could not afford' it. At its first encounter, such a response became evident more as an economic phenomenon. However, further probing and careful analysis of their behavior in relation to other forms of seeking social and economic security revealed interesting, and more of non-economic factors associated with such a stock response.

It may be noted from Table 10 that construction workers had a higher incidence of insurance coverage than the other two. The very low coverage among domestic workers was because all of them were women. Given the vastly prevailing gender bias against women in these households, this tendency was to be readily explained. However, when one looks at the coverage-retention rate, it was the domestic workers who had the highest 'active' insurance coverage. This might be as a result of two factors – a) it was the domestic workers who had continuous and steady employment throughout the year, and, therefore, a regular source of income, notwithstanding the fact that the income was quite low, and b) if the domestic workers belonged to households where their income only supplemented that of the principal earning member, then it was easier for them to keep aside amounts of money regularly for such payments.

Secondly, most insurance companies, whether private or state owned, have historically targeted the urban rather than the rural, the more organized rather than the unorganized workers. Between the agricultural and construction workers, the latter were more urban oriented, either they lived and worked in urban areas or maintained greater urban contacts than did the agricultural workers. Consequently, the level of awareness about insurance schemes was much higher among the construction workers than the agricultural or other rural based workers, besides the fact that the former were more prone to health risks while at work. In any event, nearly 60 per cent of those without coverage of any insurance, supplemented their response to our question by stating that they were 'unaware' of any insurance scheme. We may add here that a large number of those with an insurance coverage had no clear knowledge of what specific insurance they had subscribed to, which was the agency that provided the coverage, or how the scheme worked. Often, the insurance 'agent' in his or her haste to achieve the target assigned, enrolled a person without paying sufficient attention to matters such as how the monthly or annual subscriptions were to be made, or in educating the person sufficiently about the claims to be made. This limited or lack of awareness too needed to be taken into account while understanding the stock response as 'cannot afford' or with low rates of active coverage.

The savings behavior of the unorganized sector workers also reflects a similar pattern, i.e. where the workers save, how much they are able to save, etc, are largely determined by their occupations, earnings and vulnerability. The single most popular institution for savings among these workers was SHGs, where around 60 per cent of the workers chose to save money (Table 11).

Table 11: Institutions of savings (per cent to total saved)

Type of workers	Banks	Post Office	SHG	Chit Fund	Employers	Others	Total
Agricultural workers	11.21	8.41	71.96	5.14	1.87	1.40	214
Construction workers	18.58	12.39	41.59	23.01	0.88	3.54	113
Domestic workers	12.00	12.00	48.00	28.00	0.00	0.00	25
All workers	13.64	9.94	60.51	5.40	8.52	1.99	352

The access to formal institutions of savings such as banks and post offices was, in general, low, but it was lowest among the agricultural workers. It was the highest among the construction workers. This is easy to understand as the incomes of these workers were much higher, and the urban localities facilitated greater access to such formal institutions.

Given the rural setting of the agricultural workers and the more localized networks, and given the marginal savings that they were capable of, they depended more on less formal sources, such as self - help groups - nearly 72 per cent of the agricultural workers who had savings chose to save in SHGs. While SHGs were also popular among the construction and domestic workers as well, these workers also had savings in informal sources such as chit funds. On the whole, the ability and willingness to access formal institutions was greater among the less vulnerable households, and the cumulative amount of savings of these households was also greater than those of the more vulnerable households.

In sum, therefore, the unorganized sector workers were found to depend to a much greater extent on the informal coping mechanisms, such as borrowing, depending on relatives, friends, etc, whatever be the risk or contingency they faced. If at all they adopted mitigating strategies such as savings and insurance, they showed a preference for less formal means such as SHGs and chit funds. To the extent that they continued to depend on any form of borrowing, their ability to be socially and economically mobile got further restricted, pushing them deeper into debt and likeness of bondage of varying degrees. These workers were thus perceived as without much care from formal institutions, on the one hand, and the informal sources pushing them into debts and extra-economic obligations, on the other. Consequently, it is necessary not only to identify different programs capable of providing a sense of security to the lives of the workers and their dependents, but also design them in such a way that subscription to them becomes both meaningful and feasible. The next section discusses the workers' perception regarding participation in contributory social security schemes.

5. Worker's Willingness to Contribute

Are workers willing to contribute to social security scheme? Before asking this question to sample respondents assigning priority to one social security need or the other, the purpose and operational details were explained to them in their local language. Of course, as anticipated, there was a strong initial reaction as to why they should be making any contribution at all, for they believed that such a scheme should be in place supported and funded by the State. If a worker was willing to contribute, further question on amount of contribution amount per annum, frequency and contribution mechanism were asked. For those unwilling to join, the reasons for not willing to join were elicited. With an open-ended approach, respondents were asked what was the maximum amount that they would be prepared to pay, without being prompted. With the bidding procedure, respondents were bid up from some other starting point. This meant that willingness to contribute was, effectively, measured as a continuous variable.

The worker's willingness to contribute for the security needs has been presented in Figure 1. Nearly 67 per cent of the agricultural workers expressed their willingness to contribute. The willingness to contribute was higher (82 per cent) in the case of construction workers. As many as 73 per cent of the domestic workers revealed their willingness to contribute for the social security needs. As mentioned earlier, two top social security needs for the agricultural workers were old age and unemployment benefits. Table 12 shows that 180 (35.6 percent) out of 505 agriculture workers gave first rank to old age pension. The minimum amount of contribution was Rs.25 per annum, maximum was Rs.3,000 and the average amount was Rs.624. Nearly 50 per cent stated that they would contribute between Rs.600 and Rs.1,200. The next important social security benefit for agricultural workers was unemployment benefit. Of the 505 workers, 164 (32.8 per cent) workers assigned first rank to unemployment benefits. Minimum, Maximum and average amounts of contribution were Rs.600, Rs.3,600 and Rs.758, respectively.

Figure 1: Willingness to contribute for social security schemes

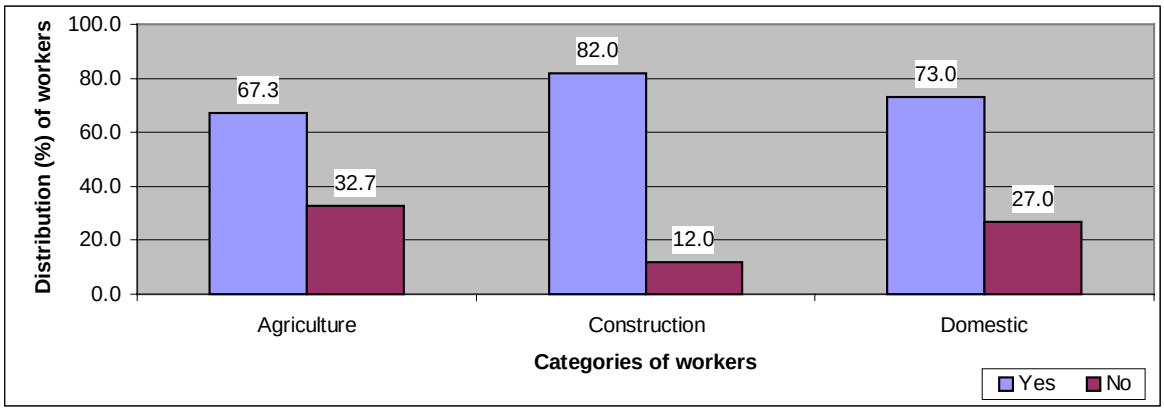

Table 12: Average amount (Rs.) of contribution for priority social security needs

	Sickness	Maternity	Employment Injury	Unemployment	Old age	Death
Agricultural workers						
Minimum	100	-	100	60	25	100
Maximum	2,400	-	3,600	3,600	3,000	1,200
Average	696	-	1,174	758	324	607
Construction workers						
Minimum	300	-	100	100	200	100
Maximum	7,200	-	12,000	9,600	6,012	3,000
Average	1666	-	1,701	1,092	1,397	1,163
Domestic workers						
Minimum	100	120	360	200	100	240
Maximum	2,400	600	1,200	2,400	2,400	1,200
Average	890	360	972	842	906	867

Among the needs, unemployment benefit, old age and employment injury were given top priority, in that order, by the construction workers. Out of 291 workers, 75 (25. 7 per cent) of them gave first rank to the old age benefit. The minimum amount was Rs.200 per annum, while the maximum amount was Rs.6,012. The average amount of contribution was Rs.1,397. The next important social security need was employment injury, which was assigned the first rank by 69 out of 291 workers. The minimum, maximum and average amounts were Rs.100, Rs.12,000 and Rs.1,701, respectively. In the case of unemployment benefit, 90 out of 291 workers assigned the first rank, and the minimum and maximum amounts were Rs. 100 and Rs.9,600, respectively. The average amount was Rs.1,092.

The two top needs among the domestic workers were old age pension and unemployment benefit. Nearly 38 out of 93 gave the first rank. The average, minimum and maximum amounts of contribution were Rs.906, Rs.100 and Rs.2,400, respectively. The average amount was higher than agriculture labourers. Out of 93, 26 workers revealed the first preference for unemployment benefit. The minimum amount of contribution towards unemployment benefits was Rs.200 per annum, while the maximum amount was Rs.2,400. The mean amount of contribution was Rs.842. Irrespective of the category of

workers, while the workers attributed that they were poor to contribute as reason for not willing to pay, they also stated that partially the government should contribute for the social security schemes.

Determinants of willingness to contribute

Two basic theoretical approaches are available for making reliable estimates of household's willingness to contribute, namely, direct and indirect approach. In this paper, we confined ourselves to direct approach. Under this approach, an individual was asked about how much he or she would be willing to pay for the improved use of goods or service. This approach, known as the contingent valuation method (CVM), seeks to construct hypothetical markets for goods in order to enable the estimation of the demand for these goods. Due to its hypothetical nature, many biases can arise during the survey (Mitchell and Carson 1989; Neill *et al* 1994; Whittington 1998; Frykblom 1998). However, this method, which has been applied to several domains, is considered as appropriate to evaluate non-marketed resources and public goods. It will also be useful to assess the willingness to pay for the access to social security needs.

It is argued that zero responses might have explanations other than a genuine zero WTC, and that these might range from reporting errors to protest responses. In this case, a more flexible specification of the censoring mechanism is required. One possibility is to use selectivity and Heckman-two step procedure (Heckman 1979). With the assumption that the underlying error terms have a bivariate normal distribution, Heckman's two-step estimator has been estimated in this paper using Maximum Likelihood method. We have also performed diagnostic test (Annex 2) to select the model and functional form. The preferred specification is the Heckman-two step Model and log (WTC). The variables included in the equations are age, level of education, household income, savings, household expenditure towards crises, dependency ratio, membership in the organization, caste of the workers and vulnerability index. The measurement of variables and its expected sign have been presented in Table 13. In the first step, willingness to contribute for the social security scheme has been measured as binary dependent variable. The Probit results have been presented in Annex 3. All the variables that enter the final models are reflective of the ability to pay and the results corroborates with *a priori* expectation. The highly significant chi-square and Pseudo R-square indicate that the estimated model is a good fit. The inverse mills ratio has been calculated from the Probit model and introduced as an additional explanatory variable in the determinants of amounts contribution equation to overcome selectivity bias.

Table 13: Definition and measurement of main variables

Variables	Definition	Expected Sign
HH income	Household income in Rs. (per annum)	Positive
Age	Age in years	Positive
Age square	Age Square (in Years)	Negative
Primary	1 = if the worker possesses primary level of education; 0 otherwise	Positive
Middle	1 = if the worker possesses Middle level of education; 0 otherwise	Positive
High school+	1 = if the worker possess high school and above level of education; 0 otherwise	Positive
literate	1 = if the worker who has had formal education; 0 otherwise	Positive
SCST	1= if the worker belongs to scheduled caste or scheduled tribe; 0 otherwise	Negative
HHEXP	1=if the households incurred expenses towards crises; 0 otherwise	Positive
Depratio	Dependency ratio	Negative
Membership	1 = if the worker has membership in any organization; 0 otherwise	Positive
Savings	1= if the worker has saving; 0 otherwise	Positive
VIND1	1 = if the worker belongs to low vulnerability category; 0 otherwise	Negative
VIND2	1= if the worker belongs to medium vulnerability category; 0 otherwise	Positive
Institution	1 = If the worker prefers bank and post office to pay his/her premium; 0 otherwise	Positive

Determinants of amounts of contribution

The results on the determinants of amounts of contribution have been presented in Table 14. As expected, most of the parameters have the expected sign and are significant. The household income, which is the important determinant of amount of WTC, is positive and highly significant. One per cent increase in household income, on an average, increased the amount of contribution by 13 per cent in the case of agricultural workers, 14 per cent in the case of construction workers and 12 per cent in the case of domestic workers. Amount of WTC rose with age but fell beyond a point (as evidenced by positive coefficient of AGE variable and negative coefficient of Age square variable). Again, the concave relation between WTC and age was established in the construction and domestic worker's equation. However, in contrast to Probit results, convex relationship between the amount WTC and age was found in the case of agricultural workers.

The next important finding is that there was a positive relationship between levels of education and WTC in the agriculture and construction worker's equation. It was statistically significant at the 5 per cent and 10 per cent level. As the cell frequency of educational level variables was small in domestic workers sample, an alternative method of using a dummy variable, which was 1 for those who have had any formal schooling and 0 for those who have not had formal schooling, was tried and it produced the

same results. This implies that education improved awareness among workers on social security schemes. Coefficient of caste (SC/ST) was negative and significant. This is not a surprising result since SC/ST workers might be willing to contribute (Annex 3), but the amount contribution was small as compared to other caste groups. This might be due to their high vulnerability among them.

Table 14: Determinants of amounts of contribution for social security needs - OLS results (Selectivity bias corrected)

Dependent variable = log (Contribution amount per annum)

Independent variables	Agriculture workers	Construction workers	Domestic workers
HH Income	0.1320 (2.545)*	0.1404 (2.850)*	0.1232 (1.898)***
Age	-0.0567 (1.963)**	0.0286 (1.970)**	0.0887 (1.948)**
Age square	0.0064 (1.825)***	-0.0044 (-1.810)***	-0.0011 (-1.753)***
Primary	0.4791 (3.026)*	0.1408 (1.903)***	--
Middle	0.2550 (1.965)**	0.1383 (1.868)***	--
High School +	0.0658 (1.989)**	0.0693 (1.857)***	--
Literate	--	--	0.1484 (1.964)**
SCST	-0.0125 (-1.658)***	-0.0646 (-1.851)***	-0.1963 (-1.927)***
HHEXP	0.3032 (1.896)***	0.1621 (1.895)***	0.4326 (1.762)***
Institution	0.3854 (3.39)*	0.4430 (3.509)*	0.2318 (1.997)**
Depratio	-0.03616 (-0.056)	-0.0114 (-1.967)**	0.2717 (1.674)***
Membership	0.0564 (1.86)***	0.3286 (2.681)*	0.1745 (2.670)*
Savings	0.0143 (2.125)**	0.3208 (2.730)*	0.1174 (2.513)**
VIND1 (less than 1.25)	0.1398 (2.12)**	0.0689 (1.859)***	-0.1036 (-1.65)***
VIND2 (1.25- 1.5)	0.1659 (2.60)*	0.0458 (1.987)**	-0.2561 (-2.45)**
Lambda	0.4156 (2.824)*	-0.8995 (-1.813)***	0.3903 (1.054)
Constant	6.9185	5.8697	4.4084
R-square	0.2214	0.1839	0.2621
F-Value	32.00	26.08	18.70
N	340	247	76

Note: Figures in Parentheses indicate t-values. * 1 % level significance; ** 5% level significance and *** 10 % level significance

As noted earlier, workers in the sample incurred expenditure on different crises, and this resulted in borrowing from informal sources at high interest rate. The formal risk management mechanism was also weak among them. In this context, the result shows that the household expenditure towards crises was positive and significant. Higher the dependency ratio, on an average, there were decreases in the workers' amount of the WTC. This coefficient was negative and significant. The opposite picture was true in the case of domestic workers. This was due to the fact that the domestic workers and their dependents were involved in multiple activities.

The savings coefficient was positive and significant in all the equations. This implies that the workers with savings discipline were confident to contribute for the social security benefits. A positive and significant coefficient of membership in organization demonstrated the importance of solidarity among workers on the willingness to pay for the social security schemes.

We need to examine if there was any variation in respect of their `willingness to contribute', among the different classes of vulnerability as we identified them. We found that compared to less vulnerable households, medium and high vulnerable households had more capacity to pay for the social security benefits. This is evident that the VIND1 and VIND2 coefficients were positive and significant in agricultural and construction workers' equation. Contrary to that, low vulnerability domestic workers were prepared to pay more *vis-à-vis* the other category of vulnerability groups. It can be thus concluded that the willingness to contribute varied across different vulnerable groups of households, although such a difference was not always along the expected lines. This, once again, confirms that the desire to participate in a contributory social security scheme was high among different vulnerable groups of households.

A major concern in this study has been to determine the modalities of making a contribution that suited the worker best. With this in mind, we sought to find the most preferred mode. Modalities of contributions comprise of at least two elements: the frequency with which they preferred to make the contribution, and secondly, where or through whom they chose to make such payments. All categories of workers preferred monthly payment. To a small extent, yearly payment was preferred. The coefficient of institution was positive and significant, which implied that the workers were expecting a safer institutional mechanism like bank and post office for paying their contribution. It is noted that most of the workers in our sample were SHG members. In order to reduce the transaction cost, our result suggests that the premium might be collected by SHG and it could be linked to the Bank or Post office. Since the efficiency and sustainability of social security programs depended on the collection of contribution, record keeping and information, benefit determination and delivery, asset management and costs, collection of contribution by SHG's and management of the same by bank/government might be the best solution.

As mentioned above, the Inverse Mills ratio (λ) variable has been calculated from the Probit equation and introduced as an additional explanatory variable in the determinants of WTC equation. The result shows that IMR was significant except in domestic workers' equation and the reported results were unbiased. The R-square values of 0.22, 0.18 and 0.26 for the models estimated for agricultural, construction and domestic workers, respectively, imply that 22, 18, and 26 percent of the variations in amount willing to contribute explained by the variables included in three equations respectively. Further, the F-values were highly significant at 1 per cent level, which rejects the hypothesis that all the slope parameters are zero.

The expected maximum willingness to pay and the predicted probability of willing to contribute were calculated from the Ordinary Least squares and Probit equation respectively (Table 15). The expected mean willingness to contribute was as high as Rs.1,372 in the case of construction workers and the minimum was Rs.724 in the case of agricultural workers. The maximum amount that domestic workers were willing to contribute was Rs. 870. If we multiply the expected mean value with predicted probability to arrive total willingness to contribute for all workers, again the amount of contribution was high (Rs.1139) in the case of construction workers. and it was low (Rs.500) in the case of agricultural workers. In the case of domestic workers, the total willingness to contribute was Rs.644. The results obtained from the OLS and Probit equation can be used to design a new social security insurance schemes. If we knew the cost of insurance product, the result would have been helpful to arrive at the amount of subsidy, which the government has to bear for introducing the new schemes.

Table 14: Expected mean WTC (Rs.) and predicted probability of WTC

Category of workers	Expected max. mean WTC (OLS MODEL)	95% Confidence Interval for mean		Expected max. median WTC	Predicted probability of WTC (PROBIT MODEL)
		Lower bound	Upper bound		
Agriculture workers	724	661	790	600	0.6930
Construction workers	1372	1192	1557	1200	0.8331
Domestic workers	870	735	1008	600	0.7402

6. Conclusions

The paper has shown that there was considerable heterogeneity in the unorganized sector with respect to both promotional and protective social security. There were differences in the extent to which different categories of workers had met the basic entitlements. In addition, each category of workers faced greater vulnerability with respect to different entitlements. For instance, domestic workers faced high food and housing insecurity, while the construction workers faced high employment insecurity. The

main factors contributing to such variation were the social organization of production and the spatial (rural and urban) variation.

With respect to protective social security, on the whole, old age, unemployment and employment injury emerged as the most important social security needs of the workers. Some differences were found across the categories of workers. For instance, agricultural and domestic workers gave greater importance to old age pensions, while construction workers gave more importance to unemployment benefits.

The relationship between the promotional and the protective needs emerged from the results, albeit less clearly. At one extreme, a larger number of workers who did not consider the protective needs as being important at all, were clearly the most vulnerable in terms of promotional social security. On the other hand, such a clear picture did not unfold in the case of the workers who did prioritize the social security needs. We may thus only partially accept the hypothesis that the promotional and protective needs of the workers are related.

The workers in the unorganized sector were exposed to different types and degrees of household and work-related risks. The highly vulnerable households were found to be more risk-prone than the less vulnerable households. Across the categories, the households were seldom able to adopt prevention and mitigation strategies, and they largely depended on informal coping strategies such as borrowing from various sources. Their access to the formal and market mediated arrangements was severely thwarted by their lack of awareness, illiteracy and levels of vulnerability. For these workers, the transaction costs involved in accessing the formal social security benefits was often greater than the benefits they got out of them, and therefore, they tended to adopt mechanisms that were closer-home, i.e. the informal mechanisms. The irony, however, was that their falling back on the informal mechanisms was, if anything, more costly to them, both monetarily and non-monetarily.

However, the continuous use of these strategies, in the light of the relative failure of the formal means of risk management, cannot be ignored at the policy level. The formulation of social security schemes by the government should consider some meritorious features of the informal strategies, such as flexibility, ease of access, etc, to amalgamate these into the new scheme.

The popular perception that the unorganized workers are passive recipients of state-sponsored benefits, needs to be revisited. The paper shows that these workers were also willing to participate in contributory social security schemes. The amounts willing to contribute, however, varied across the sectors. In the light of the results of the study, it may be worthwhile for the government to undertake a sector-by-sector approach, for instance, concentrating on the construction workers first, since not only a larger proportion of them were willing to contribute, but also the amounts they were willing to contribute were significantly higher than the other two sectors.

Given that all the workers in the unorganized sector are not equally vulnerable, at least three levels of intervention are necessary. For the least vulnerable category of workers, direct links can be established with the insurance sector. The workers who face medium vulnerability are willing to and would be able to contribute towards their social security, but these workers would have to be subsidized by the state. For the most vulnerable category of workers, promotional social security itself is a constraint; here, this should be addressed first. The finding that household income has positive relationship with the willingness to contribute also substantiates the point that promotional aspects of social security are important for all types of workers, particularly so in the case of highly vulnerable households. For the protective schemes, they would need to be completely subsidized, i.e., social assistance programs.

ANNEX 1: CONSTRUCTION OF VULNERABILITY INDEX

The vulnerability index is constructed with the help of six components, i.e., housing, food, health, drinking water, education and employment. Each of these components uses one or more variables that measure the extent of security *vis-à-vis* vulnerability. Every household is given a score on each variable based on the responses obtained. These scores are assigned in the increasing order of vulnerability. Initially, an independent index is constructed for each component. The variables used to construct independent variables are listed below.

1. Two variables that have been used to measure the food security are: a) the extent to which the household is able to access the Public Distribution System; and b) the extent to which the household is forced to depend on sources such as borrowing from shopkeepers on credit and informal agencies.

2. The employment security index is constructed using two variables: a) the severity of unemployment faced by the respondent worker in the last one year; and b) whether more employment was sought by the worker. Both the variables are given an equal weight of 0.5 each.

3. The housing security index is constructed with the help of: a) type of house; b) pattern of ownership; and c) type of electricity facility. The weights assigned to the variables are as follows – 0.5 to the type of house, 0.3 to the pattern of ownership and tenancy, and 0.2 to the type of electricity facility[14].

4. Education security is a weighted average of four variables. These are: a) schooling and drop-out status of children in the age group of 6 – 10[15]; b) educational qualification of the highest educated member of the household; c) proportion of female literate to total female members in the household (age 15 and above)[16]; and d) proportion of male literate to total male members in the household (age 15 and above)[17]. The weights assigned to each of these variables are 0.50, 0.25, 0.15 and 0.10, respectively.

[14] The weights given to the three variables under housing security may be explained as follows. The highest weight is given to the type of house and the lowest weight is given to the type of electricity facility. This is because electricity facility is seen as a luxury and not as a necessity by this section of the population, and the fact that they have electricity facility is only a bonus. It does not amount to the degree of housing security that is provided by a *pucca* or even a *semi-pucca* house, as against a *katcha* hutment. A mid-range weight is assigned to the pattern of ownership/tenancy.

[15] In the case of households where there are no children in this age group, a rank of zero is given.

[16] Households that do not have any female adults have got a rank of zero on this variable. Eight such households have been found in the sample.

[17] Households with no male adults have got a rank of zero for this variable.

5. The health security index has been constructed using one variable, i.e., the type of health facility that the household is able to regularly access.

6. Drinking water security has been constructed with the help of two variables, namely, a) the households' assessment of adequacy of drinking water from all sources, and b) the extent to which the households face inadequacy of drinking water.

The overall vulnerability index is a weighted average of these individual indices. The weights given to each of these components are 0.25 each for food and employment, and 0.125 each for education, health, housing and drinking water. The overall vulnerability index ranges from 0 to 3, the lower the index, the lower the vulnerability. Based on the index, the households have been categorized as follows. First, the households obtaining less than 1.25 are called low vulnerable, those obtaining between 1.26 and 1.50 are called medium vulnerable households, and those obtaining more than 1.51 are called high vulnerable households.

ANNEX 2: DIAGNOSTIC TESTS

Tobit and Heckman two-step procedure were applied to data on WTC for social security schemes. Before interpreting our results, we performed diagnostic tests to examine the homoscedasticity using Lagrange Multplier statistics, normality using Skewness and Kurtosis and functional misspecification using RESET test as general check for functional form. These tests were carried out for OLS Model, Heckman two-step Model and Tobit Model. The results have been presented in Annex Table 1. We have used absolute WTC amount, the square root of WTC, and the logarithmic of WTC as dependent variables and host of independent variables, which has been described in Annex 3. In Annex Table 1, the tests for normality and heteroscedasticity indicate that a log transformation of WTC values was consistent with the maintained hypothesis of homoscedastic and normal distribution. On the basis of Annex Table 1, the preferred specification was the Heckman-two step Model and log (WTC). It is not surprising that Tobit Model was not our preferred model; as respondents were being asked to give their WTC for their preferred option and negative values were therefore ruled out by construction.

Annex Table 1: Diagnostic tests

Dependent variable WTC		**√WTC**	**log(WTC)**
Ordinary least squares			
Adj-R square	0.18	0.17	0.14
M^3 (Skweness)	1.68	0.64	-0.07
M^4 (Kurtosis)	7.39	2.95	1.55
Normality ($\chi^2_{0.95}$=5.991)	40.51	15.87	3.71
Heteroscedasticity ($\chi^2_{0.95}$=12.592)	49.52	9.59	1.45
RESET ($t_{0.05} \cong 2$)	2.24	1.99	1.25
Heckman two step procedure (OLS for Positives)			
Adj-R square	0.19	0.20	0.22
M^3(Skweness)	1.01	0.43	-0.13
M^4 (Kurtosis)	4.64	2.51	2.21
Normality	13.75	6.67	2.70
Heteroscedasticity	19.56	6.24	3.87
RESET	0.99	1.01	1.01
Lambda($t_{0.05} \cong 2$)	2.47	2.27	-2.04
Tobit model			
M^3(Skweness)	1.03	0.38	-0.04
M^4(kurtosis)	3.67	1.94	1.28
Normality	43.36	61.47	70.13
Heteroscedasticity	15.65	5.72	12.32
RESET	4.51	2.97	1.89

Annex 3: Willingness to contribute for social security needs - Probit results
Dependent variable = 1 if the worker is willing to contribute; 0 otherwise

Independent variables	Agricultural workers		Construction workers		Domestic workers	
	Coefficient	Marginal effects	Coefficient	Marginal effects	Coefficient	Marginal effects
HH Income	0.2585 (2.63)*	0.09038	0.000112 (2.488)**	0.1488	0.000306 (2.320)**	0.1309
Age	0.4047 (1.988)**	0.1426	0.6152 (1.897)***	0.1544	0.7200 (1.785)***	0.2340
Age square	-0.00633 (-1.996)**	-0.0022	-0.00837 (-1.758)***	-0.0021	-0.0093 (-1.658)***	-0.00305
Primary	0.3454 (1.545)	0.1216	0.1480 (1.658)***	0.3717	--	--
Middle	0.3968 (2.087)**	0.1398	0.5674 (1.985)**	0.1482	--	--
High School +	0.5621 (2.084)**	0.1980	0.0470 (1.988)**	0.1180	--	--
Literate	--	--	--	--	0.02487 (1.999)**	0.0808
SCST	0.1563 (1.967)**	0.0510	0.0789 (1.999)**	0.1982	-0.1584 (-1.898)***	-0.05150
HHEXP	0.5341 (1.945)**	0.1882	0.2617 (2.454)**	0.0657	0.1511 (1.899)***	.04911
Depratio	-0.3984 (-1.89)***	-0.0603	-0.1169 (1.763)***	-0.0296	0.2337 (1.648)***	0.0759
Membership	0.3314 (2.255)**	0.1167	-0.1511 (-1.728)***	-0.0379	0.0672 (2.564)**	0.0218
Savings	0.2492 (1.88)***	0.0978	0.1652 (1.812)***	0.0414	0.3902 (1.996)**	0.1268
Vind1 (1ess than 1.25)	-0.2485 (-1.96)**	-0.0898	0.2517 (2.10)**	0.0596	0.2038 (2.61)*	0.0652
Vind2 (1.25-1.5)	0.0968 (2.68)*	0.0569	0.1197 (2.59)*	0.09958	0.0154 (2.04)**	0.0502
Constant	-0.7485		-0.0825		-1.0168	
Log-likelihood	-290.0829		-141.61		-124.56	
Chi-square (14 df)	57.9923		27.8556		24.8925	
Pseudo R-square	0.235		0.212		0.1996	
Number of observations	505		301		104	

Note: 1.As the level of education does not have enough observation in domestic workers equation, we have measured the education variable as 1=literate, 0 otherwise.

2. Figures in Parentheses indicate t-values. * 1 % level significance; ** 5% level significance and *** 10 % level significance

REFERENCES

Dev, S. M, P. Antony, V. Gayathri and R. P. Mamgain (2001). Towards a Holistic Perspective of Social Security. In Mahendra Dev *et al* (eds.), *Social and Economic Security in India.* New Delhi: Institute for Human Development.

Dreze, J. and A.K. Sen (1989). *Hunger and Public Action*, Oxford: Clarenton Press.

Dreze, J. and A .K. Sen (1999). Public Action for Social Security: Foundations and Strategy. In E. Ahmad *et al* (eds.), *Social Security in Developing Countries.* New Delhi: Oxford University Press.

Frykblom, P. (1998). *Questions in the Contingent Valuation Method: Five Essays.* A Ph.D. Thesis, Uppsala: Acta Universitatis Agriculturae Sueciae Agraria, Swedish University of Agricultural Sciences.

Gayatri, V. (2001). Security for Women Workers. In Mahendra Dev *et al* (eds.), *Social and Economic Security in India*. New Delhi: Institute for Human Development.

Heckman, J. J. (1979). Sample Selection as a Specification Error. *Econometrica*, 47(1):153-61.

Holzmann, R. and S. Jorgensen (2000). Social Risk Management: A New Conceptual Framework for Social Protection and Beyond, *Social Protection Discussion Paper.*

ILO (1984). *Introduction to Social Security*. Geneva: International Labor Office.

Mitchell, R. C. and R. T. Carson (1989). *Using Surveys to Value Public Goods: The Contingent Valuation Method.* Washington DC: Resources for the Future.

Neill, H. R., R. G. Cummings, P. T. Ganderton, G. W. Harrison and T. MacGuckin (1994). Hypothetical Surveys and Real Economic Commitments. *Land Economics,* 70(2):145-54.

Rajasekhar, D. and G. Sreedhar (2002). Changing Face of Beedi Industry in Karnataka, *Economic and Political Weekly*, September 2002.

Whittington, D. (1998). Administering Contingent Valuation Surveys in Developing Countries. *World Development*, 26(2): 21-30.