LABOUR FORCE PARTICIPATION OF ELDERLY IN INDIA

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Abstract – Using data from different rounds of employment and unemployment surveys of National Sample Survey Office, we analyse the labour force participation of older persons (aged 60 and above) in India from 1983 to 2011-12. We examine different socio-economic and demographic factors that are associated with labour force participation of elderly in India. The paper also briefly reviews the conditions of work for the elderly in India. The results show that labour force participation rate of older persons in rural India remained almost stable between 1983 and 2011-12, despite the rapid economic growth that India experienced during the same period. Further, the results show that among the elderly those who belong to relatively poor socio-economic status are more likely to participate in the labour force. Also, it is observed that large percentage of the elderly workforce are engaged in poorly paid jobs in the informal sector, either as casual workers or as self-employed in low skilled or unskilled occupations. This suggests that given the inadequate social security for the majority of the older persons and with the growth of nuclear families and declining traditional support from extended family members, continuing to work remains the only option for old age support for the majority in India.

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1. *INTRODUCTION AND MOTIVATION*

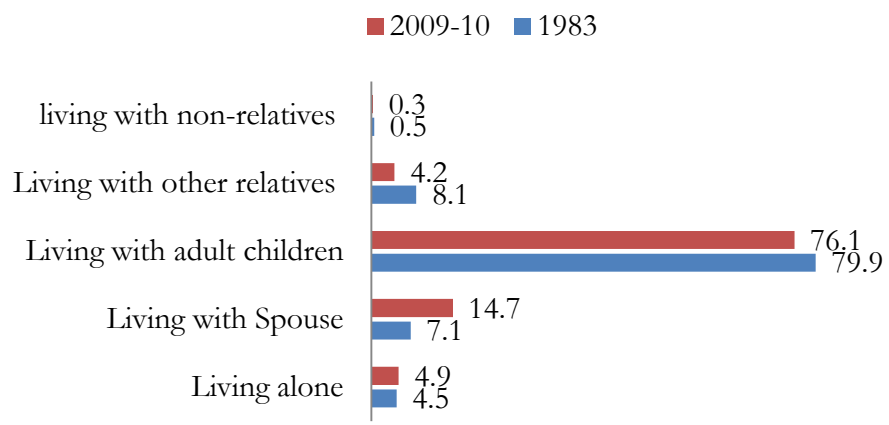
The increased life expectancy coupled with decline in fertility levels has contributed to an increasing older population in India. The proportion of the elderly (age group 60 years and above) has grown from 6.8% in 1991 to 8% in 2011. The share of the elderly is projected to increase to 19 % of the total population in India, by 2050 (UNFPA 2012). In other words, by 2050, India's older population is expected to reach 323 million, a number that exceeds the current total population of the U.S.A. With this increase in the relative size of the aged population, the wellbeing of elderly population has become a major social concern in India. However, unlike developed countries, elderly in developing countries such as India face different set of problems. In the context of developed countries, with well developed institutionalized social security, the majority of the labour force has gained access to some form of formal social security benefits which contributes to the major source of their retirement income (Crawford and Lilien 1981). For example, Boskin (1977) shows that the social security system has significantly contributed to the continuous decline in the labour force participation of the elderly males in the post-war United States (Also see Quinn 1977).

In contrast to most of the developed countries, in India, workers employed in formal and informal sector face significantly different retirement systems. Differences across formal and informal sector in both retirement patterns and access to old age social security are extreme in India. Only a small percentage of work force employed in the formal sector in India have regular wage employment, retire around between 55 and 65 years and are entitled to some form of financial support post retirement. By contrast, informal sector employees who constitute around 86 percent of total workers(Naik 2009), lack access to any form of social security such as pension support and having no retirement age and are expected to work until relatively late in their lives.

In India, though some contributory pension scheme for the people who work in the formal sector of the economy exist, the majority of the old people are not covered by any form of formal old age social security program or are not eligible for retirement benefits. India implements Indira Gandhi National Old Age Pension Scheme (IGNOAPS) for old people belonging to below poverty line (BPL) households. However, the amount is too small to meet the consumption needs of the elderly and coverage of the scheme has been modest (Kumar and Anand, 2006; Dandekar, 1996; Rajan, 2007; Narayana, 2011). The gross inadequacy of such social security measures by government of India is reflected in the amount of public expenditure on different social security measures which amounts to only about two per cent of India's gross domestic product (Krzysztof et. al. 2009).

Traditionally, India has had an extended family system and usually the elderly lived with their adult children as part of such an extended family. Such living arrangements usually provided elderly emotional and economic support. However, some previous studies have noted that with economic and social changes, urbanisation and migration, nuclear families are on rise with the implication that family care for the elderly has been on the decline in India (Dandekar, 1996; Rajan, Kumar, 2003; Rajan, 2007 and Pal and Palacios, 2011). As shown in the Figure 1, the percentage of old people who live with their children has declined between 1983 and 2009-10. The proportion of old people either living with their spouse or living alone is on the rise in both rural and urban India. In developing countries like India, where old age social security support system is almost negligible and the traditional structures of family care for the old people are eroding, the risk of economic vulnerability may increase for the elderly. In the context of inadequate institutional social security and lack of family support, the only option left for most of the elderly is to depend on their own earnings for their day-to-day maintenance.

Figure 1. Living arrangements of elderly 60 and older in India: 1983-2010 (Percentages)



Depending on the stage of development and the differences in historical, socio-economic and demographic conditions, the factors that influence labour force participation of the elderly may vary from country to country. There exist a number of studies on the dynamics of labour supply of the elderly in the context of developed countries but there are few in the context of in India. Noticeable is the lack of research on understanding factors that influence the labour force participation in the old age in India. The main aim of this paper is to provide a descriptive analysis of the elderly labour force in India and examine how different socio-economic and demographic factors are associated with labour force participation decision at older age. It also assesses conditions and nature of work for the elderly in India.

Rest of the paper is organised as follows: Section two discusses the data set used in this paper. Section three examines trends in the labour force participation rate of older persons in India from 1983 to 2011-12. Section four assesses conditions and nature of work for the elderly in India in terms of industrial and occupational distribution of employment, and wage earnings of elderly persons. Section five examines different socio-economic and demographic factors that influence labour force participation of elderly in India. The last section presents discussion and conclusions.

2. *DATA AND METHODS*

This study uses Employment and Unemployment Surveys (EUS) of the National Sample Survey Office (NSS) of Government of India, rounds 38 (1983), 43 (1987-88), 50 (1993-94), 55 (1999-2000), 61 (2004-05), 66 (2009-10) and 68 (2011-12). These are quinquennial cross-sectional surveys, an important source of information related to labour force in India. These are nationally representative multi-stage stratified sampling household surveys covering around more than 100,000 households. These surveys not only provide information on individual employment and unemployment status, but also give information on different demographic and socio-economic variables like educational attainment, marital status, social group (caste and religion), monthly household consumer expenditure and so on.

All the above mentioned NSS rounds data have been used to analyse trends in labour force participation in India. However, to examine conditions employment of elderly and factors related to the elderly labour force participation, we have used most recent round, the NSS 68th round of Employment and Unemployment survey, 2011-12. Labour force is defined as the proportion of people who are either currently employed or currently unemployed but seeking work during the reference period, according to the "usual activity status" (i.e. usual principal status and usual subsidiary status) definition of NSS.

3. *LABOUR FORCE PARTICIPATION OF OLD PEOPLE IN INDIA*

This section aims to illustrate the heterogeneity in the labour force participation of elderly persons in India, highlighting important differences due to sex, age, place of residence. At all India level, the combined labour force participation rate of elderly men and women was 42% in 1983 and the same reached, with only slight decline, to 37.1% in 2011-12 (see Figure 2).

Fig. 2 Labor force participation rates by age and gender,India, 1983-2012

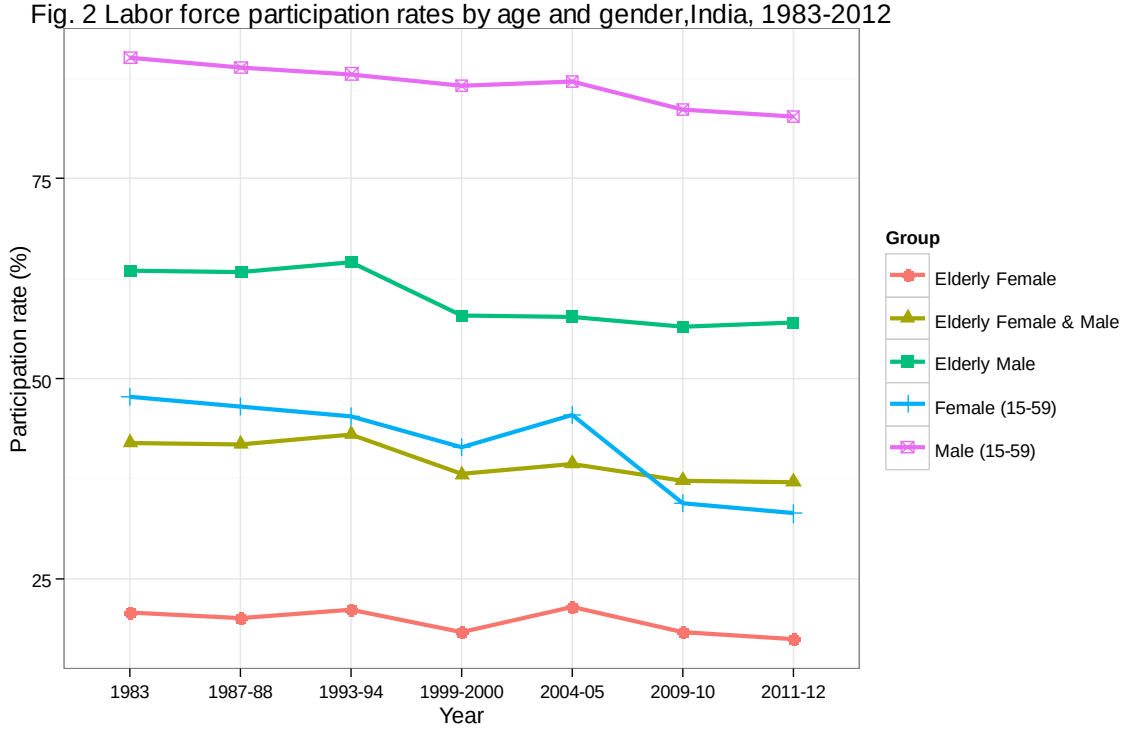


Figure 2 illustrates temporal changes in labour force participation rate of male and females over time in India. Labor force participation rate of elderly males and females remained stable during the period between 1983 and 1993-94 and thereafter the labor force participation rate of elderly men has gradually declined. On the contrary, elderly female labor force participation rate fluctuated around 20% during 1983 to 2011-12. Women's lower participation in economic activity is a feature of Indian labour market.[2] Women belonging to 15-59 age group had much lower labor force participation rate than that of the corresponding age group of males. In other words, in 2011-12, while male labor force participation rate in the 15-59 age group was twice that of female counterparts belonging to the same age group, whereas the labor force participation rate of elderly men was three times larger than that of elderly women[3]. To put it in another way, among older adults gender differences are more pronounced, which may be due to a cohort

[2] Bhalla and Kaur (2011, p.21) show that "India has one of the lowest labour force participation rates for women in the world; more accurately, one of the lowest rates for urban women."

effect, as women have increasingly been participating in economic activity with expansion of mass education and employment opportunities, especially the younger ones. Another reason for lower labor force participation rates of women could be due to sexual division in families where women are expected to stay back to carry out domestic work at home. In the specific case of old women, they are expected to take on caring responsibilities of the young grandchildren. However, these gender differences should be analysed with caution, as research shows underreporting of female economic activity in India. Many women may be recorded as not economically active in official statistics, but they contribute to household income by usually participating in non-market home based economic activities (Klasen and Pieters 2013).

As shown in Figure 3, between 1983 and 2011-12 while rural old men and women's labor force participation rate almost remained unchanged, the same declined for their urban counterparts. labor force participation rate of men in urban areas fell from 50.4% in 1983 to 36.5% in 2011-2012. Similarly, urban elderly female labour force participation also declined between 1983 and 2011-12. It was 13.8% in 1983 and declined to 7.7% in 2011-12. The most striking feature of the observed trend is that while the labor force participation rate of rural elderly in India remained stable, the same decreased, between 1983 and 2011-12 for the urban elderly. Compared to rural areas, in urban areas relatively higher proportion of people were employed in formal sector regular jobs and these urban employees can expect to receive a pension upon retirement. However, they face mandatory retirement at the age around 60. By contrast, predominant share of rural workers engaged in informal farm and non-farm jobs which usually do not only offer low incomes but also do not offer any retirement support; hence, older people in rural India have to support themselves by continuing to work. This could be one of the reasons for this stark difference in labor force participation rate of elderly between urban and rural India.

Fig. 3 Elderly labor force participation rates by gender and place of residence, India, 1983-2012

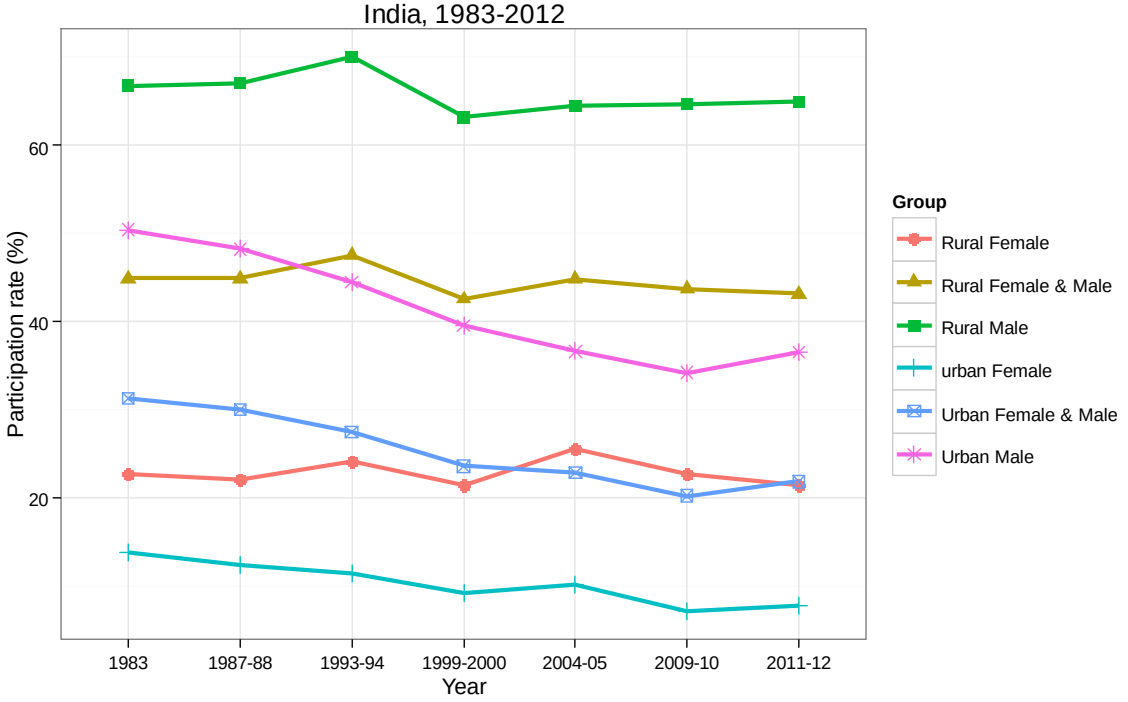
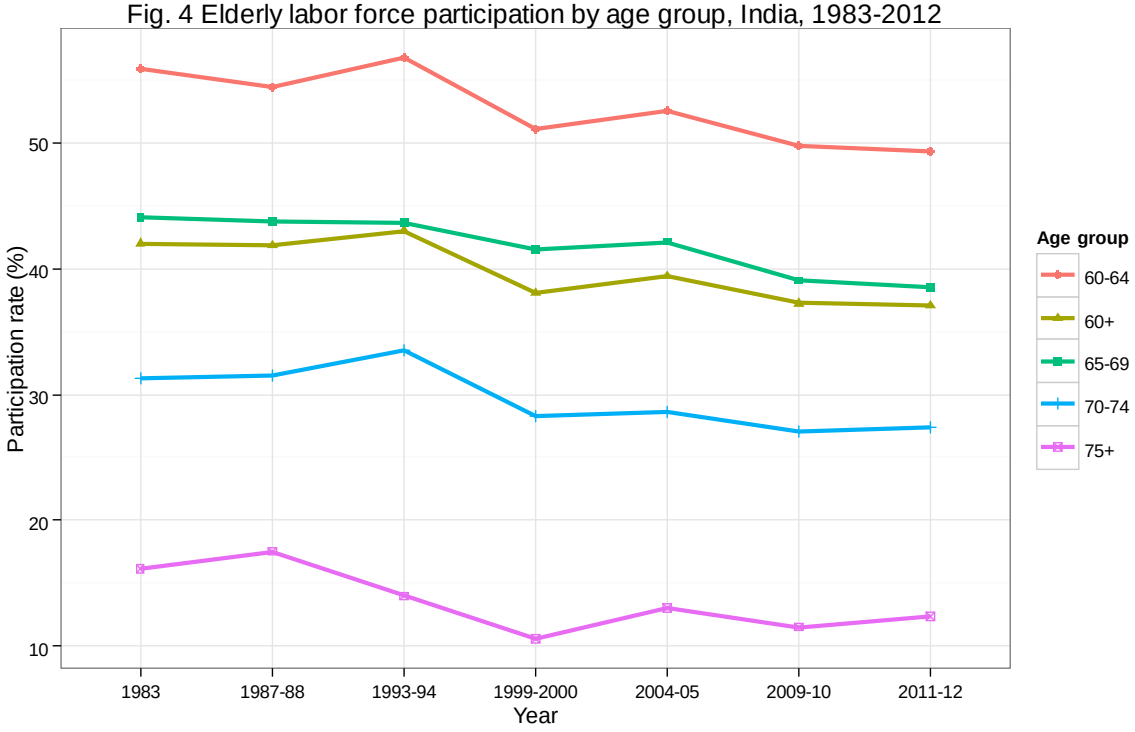


Fig. 4 Elderly labor force participation by age group, India, 1983-2012



As can be seen in Figure 4, disaggregating participation labour force participation rates according to specific age groups reveals great variation. As would be expected, the participation rate greatly

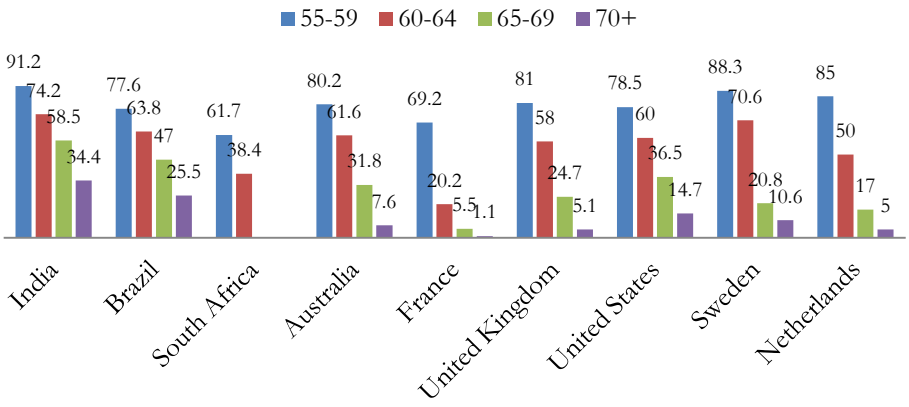
declines with age, but it is worthwhile highlighting that the level of participation is still quite high for the 60-64 age group.[4]

Studies point out that there exists a negative relationship between economic development and labour force participation of older males (Barrientos, 2007; Clark et al., 1999). Historical experiences of most of the developed countries show that labor force participation rate of older people declined with socio-economic development (Lee, 2009). Well developed national social security policies for the elderly have played an important role in this decline (Clark et al., 1999; Gruber & Wise, 2004; Costa, 1998). However, in the case of India, though we observe some decline in urban areas, this was not accompanied by any increase in social security measures for old age income support during this period. In rural India, the decline in labour force participation of the elderly with economic development did not take place but has remained unchanged.

International comparisons show that India's labour force participation rates for old men exceed those in developed countries and also some developing countries with better provision of institutional social security for elderly such as Brazil and South Africa (See,Figure 5). When compared with the developed economies, a high percentage of old people participate in the labour force in India. This may be a result of inadequate provision of social security for the elderly in India, which has left the majority without any economic support who have to continue to work in their old age.

[4] See Table A.1 in the appendix for detailed age group wise labour force participation rates.

Fig. 5 International comparisons of labour force participation rates for men by age group, 2010



Source: ILO, LABORSTA database and 66th round of Employment and Unemployment Survey (2009-10), NSSO.

4. *WORKING CONDITIONS AND WAGES*

In this section, we describe conditions of employment for the elderly in India. We examine different factors that characterize the conditions of work for elderly such as, sector of economic activity, occupation and type of employment, and wages.

The industrial distribution of employment of elderly differs between urban and rural India. In rural India, agriculture sector accounts for more than two thirds of employment for both elderly men (78%) and elderly women (79%) (See Figure 6) Service sector is the second most important source of employment for elderly in rural India. Unlike rural India, service sector provides the predominant share of employment to the urban elderly (See Figure 6). Among the economically active urban elderly, 55% of the men and 49 % of the women were employed in the service

sector in 2011-12. Nevertheless, even among elderly residing in urban India, a considerable proportion was employed in agricultural activities (17% elderly males and 21% elderly females in 2011-12). Overall mostly elderly concentrated either agricultural sector or service sector indicating low wage and poor condition of work.

Fig.6 Distribution of elderly workforce across industries, India, 2011-12

Figure 7 illustrates occupational distribution of elderly workers in 2011-12. Around half of the elderly men (48 %) and 39 % older females worked in agricultural related occupations such as cultivators. But there exists difference between males and females in terms of occupational distribution. That is, 39 % of elderly females are engaged in unskilled elementary occupations compared to 26 percent elderly males. Only a small percentage of females and males are engaged in skilled occupations such as administrators, managers and professionals. In other words, the older workforce overwhelmingly works in low skilled occupations. This is especially so among older women (see Figure 7)

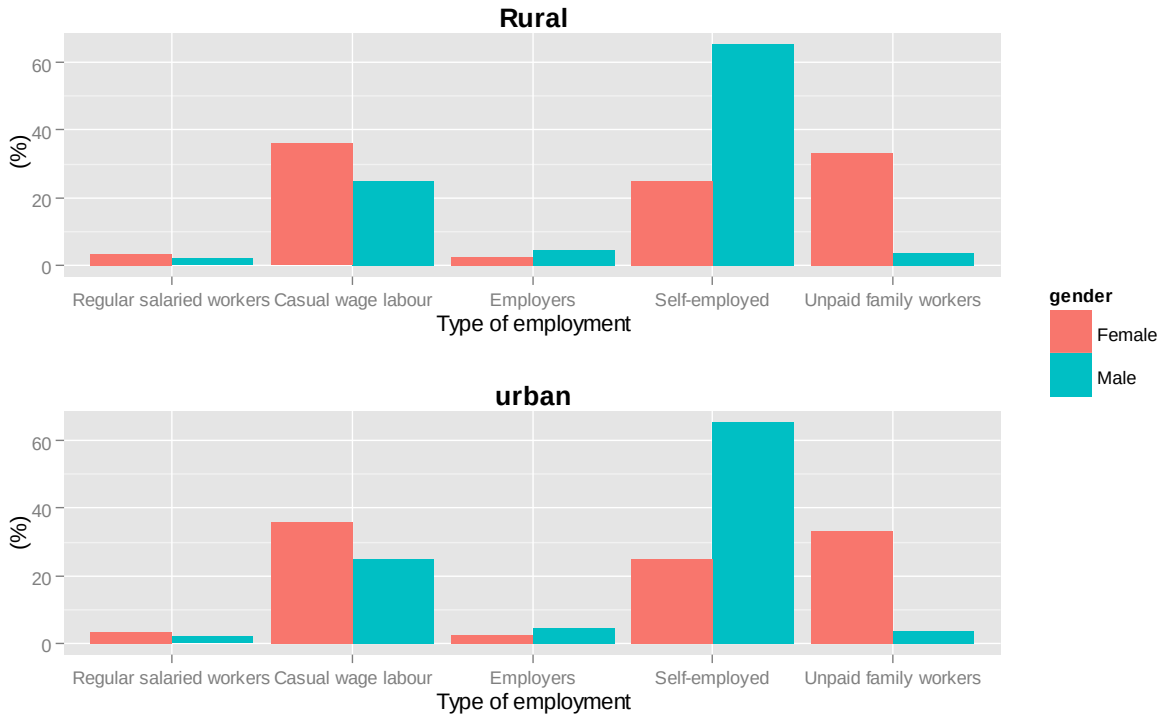
Fig. 7 Distribution of elderly workers across occupations by gender, India, 2011-12

Based on types of activity status, workers in India can categorised as regular workers, casual workers, and self-employed. This classification broadly indicates job quality. Regular workers receive their wages on regular basis indicating continues employment and periodic review of job contract. Casual work usually characterised by low wages and mostly not covered by any labour regulations, lack of social security and casual work is often considered to be least desirable. Those who are self-employed can be further categorised as following: (i) own-account workers running household enterprise without hiring other workers (ii) employers who run enterprises by hiring other workers, and (iii) helpers in household enterprises(unpaid family workers). Self-employment often represents subsistence entrepreneurship due to lack of other remunerative employment opportunities.

Figures 8 show the employment status classified as regular workers, casual workers, self-employed (employers and own account workers) and unpaid workers in household enterprises for the male and female elderly working respectively in rural and urban India. In rural and urban India, more than two thirds of elderly males and females were self-employed. However, in both rural and urban areas, unpaid work in household enterprises is quite prevalent among elderly

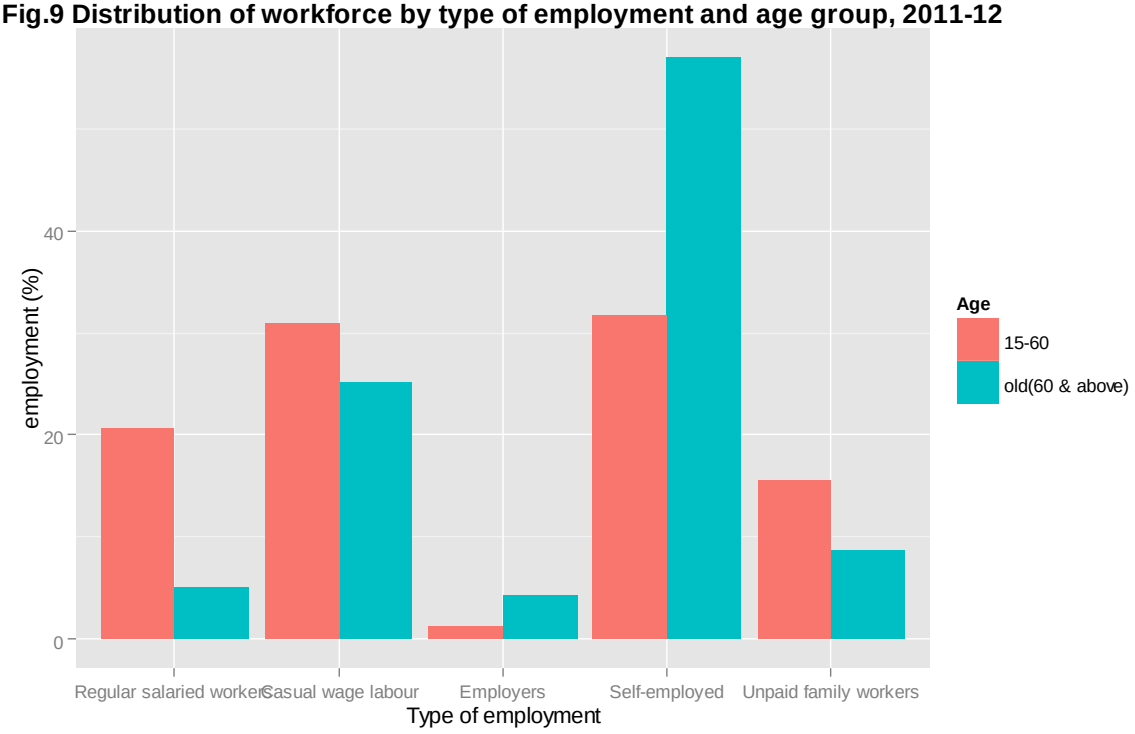
women compared to elderly men. That is, a substantial part of elderly women and men are working without payment in agricultural land or family business. In rural India, 33% of elderly females worked as unpaid family workers as against only 4% among males. Similarly, in urban India, among elderly females 15% were unpaid family workers as against 3% for elderly men. Also, in rural India, a higher percentage (36%) of elderly females worked as casual workers compared to elderly men (25%). The same is true for urban India as well. But, very small share of elderly workforce is engaged in regular work in rural India compared to urban India. To summarise, most of the elderly are engaged in self-employment or worked as unpaid family workers or casual workers in agricultural activities in rural India and service sector in urban India. Most of the self-employment in India is characterised by subsistence economic activity in informal sector. This indicates that the main sources of employment for the elderly population in India are informal work in agriculture and service sectors in India. Casual work signifies lack of employment security and inadequate social security benefits for workers.

Fig. 8 Distribution of elderly workforce by type of employment and gender, 2011-12



As shown in the Figure 9, when compared with workers from age-group 15-59, higher percentages of the old people are employed as either self-employed or as casual workers. In the year 2009-10, 25% of old workers were employed as casual workers and around 70 % of old workers were self-employed. Only 4% were employed as regular salaried workers. The high concentration of older workers in self-employed compared to the working age group workers may be due to the reason that "employers tend to be hesitant to hire older persons on a regular salaried basis in view of their age and perceived deterioration of health" (Rajan, 2010 p.). Also, the officially permitted age for retirement for most of the public sector and most of the regular salaried jobs in formal sector is 60 in India (Rajan, 2010). Hence, only very few old people work as regular salaried workers compared to working age workers as shown in Figure 9.

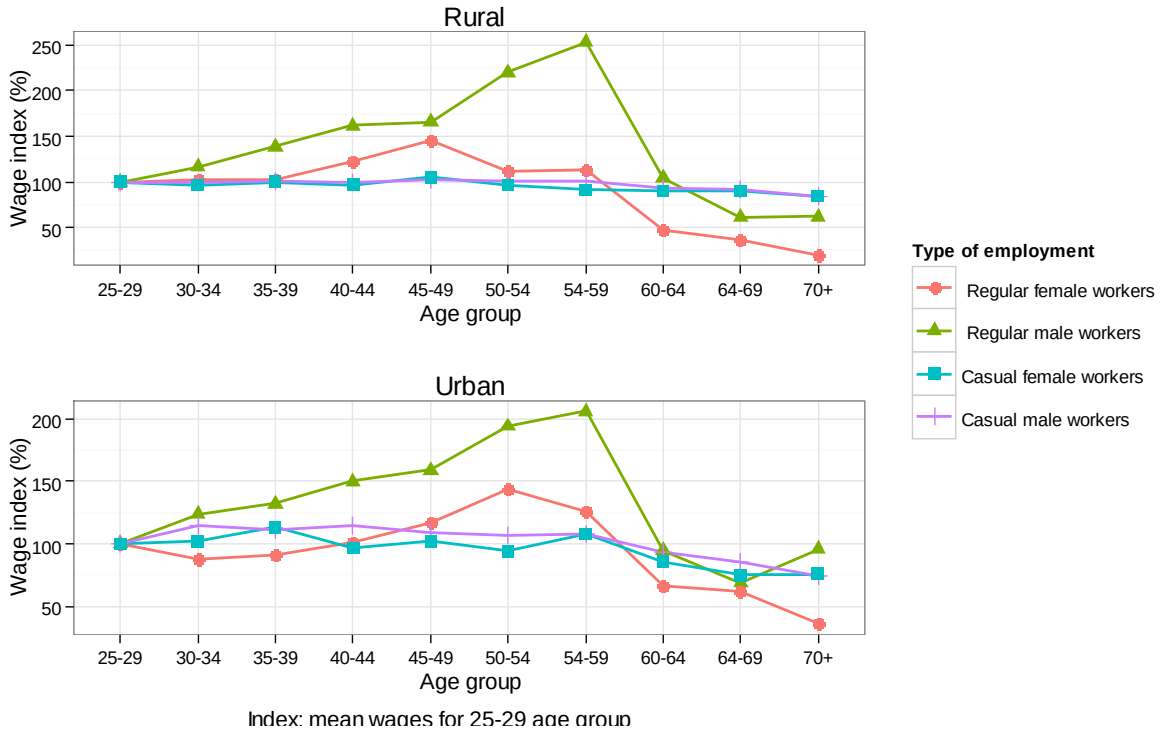
Fig.9 Distribution of workforce by type of employment and age group, 2011-12



Almost half of the old people were employed in agriculture and around one third of the total old workers were employed in unskilled occupations. Not only disproportionately high percentage of old workers were concentrated in low skilled occupations, they were also being paid less in almost all the occupations, as shown is the Figure 10, in comparison to younger workers. From

the above analysis it is clear that majority of the old people are engaged in casual work or self-employment in the informal sector and were paid poorly compared to younger workers in India.

Fig. 10 Wage profile by age group, gender and type of employment, 2011-12



Index: mean wages for 25-29 age group

5. *FACTORS ASSOCIATED WITH ELDERLY LABOUR FORCE PARTICIPATION IN INDIA*

In this section using the Employment and Unemployment Survey of 2011-12 round of NSSO, a probit regression model is carried out to examine the different socio-economic and demographic variables that are associated with labour force participation of the elderly in India. The independent variables include age, gender, marital status, educational attainment, log-monthly per capita expenditure (log-MPCE), living arrangement, place of residence and social group. The dependent variable of labour force participation is treated as a dichotomous variable. Hence, the labour force participation of the elderly is, either old person participates in labour force or is out of labour force. In the probit model, while age and log-monthly per capita expenditure are

measured as continuous variables, the remaining independent variables are measured as categorical variables.

Table 6: Probit estimates of factors influencing labour force participation of elderly in India, 2011-12

Variable		Coefficient	Standard Error
	living alone	0.475	(.000827)**
Living arrangement	living with spouse only	0.094	(.0005061)**
Sex	male	1.371	(.0003689)**
Marital Status	widowed	-0.306	(..0004223)**
Place of residence	rural	0.588	(.0004223)**
Education	higher secondary	-0.321	(.0005789)**
	under graduate and above	-0.472	(.0008152)**
Social Group	Scheduled Castes	0.185	(.0004231)**
	Scheduled Tribes	0.036	(.0006249)**
	Muslims	0.072	(.0005336)**
	OBC	0.273	(0.0003016)**
Log(MPCE)	Log(MPCE)	-0.088	(0.0003016)**
Age		-0.069	(.0000293)**
Constant		3.919	(.0033441)**
Sample size	34521		
Pseudo R-squared	0.2791		

Table 2 presents the estimates of these probit regressions. From probit regression results, we see that the probability of participating in labour force decreased significantly with increasing age. Education attainment of elderly has a negative effect on labour force participation. The coefficients for the education dummy variables indicate that with higher levels of education attainment, the probability of participating in labour force decreased for the elderly in India. With increase in the log-monthly per capita expenditure, the probability of labour force participation decreased. Coefficients of social group indicates that elderly belonging to underprivileged social background such as Scheduled Castes, Scheduled Tribes, Muslims and Other Backward Classes are significantly more likely to participate in labour than otherwise. The coefficient of the rural dummy indicates that older population living in rural India are significantly more likely to participate in labour force compared to their urban counterparts. The

living arrangement dummies, with living with adult children as the omitted category, indicate that elderly living alone or living with spouse are significantly more likely to participate in labour force. Elderly who either widows or unmarried are more likely to participate in labour force than otherwise. Overall, results from the probit analysis suggest that elders from poorer socio-economic background are more likely to be in the labour force compared to the well off sections.

DISCUSSION AND CONCLUSION

Over the last three decades though there has been some decline in the trend of labor force participation rate for elderly living in urban India, the labor force participation rate of the rural elderly has remained unchanged. Given that rural India is dominated by poor conditions of work, higher proportion of elderly labor force participation is worrisome. The majority of elderly workers face poor conditions of work and low wages in the informal sector.

Also, a large majority of elderly workers are unskilled or have lower educational attainment lower compared to younger workers. Further, we find that it is the poor and vulnerable among the elderly who are more likely to participate in the labour force and that too mostly in the informal sector and in low paid jobs. The high proportion of old people working as casual workers or self-employed may indicate lack of option to withdraw from labour force due to unavailability of retirement benefits. Further, it can be suggested that labour force participation of the most of the elderly in India is a coping mechanism to avoid the risk of falling into poverty and arises from the necessity of maintaining day to day living.

In India the majority of the old people are left out of old age social security coverage and lack support from adult children and they are left with no option other than to continue working in their old age. As mentioned before, unlike most of developed countries which have relatively well-established programs for social security and elderly care, India lacks programs for the elderly, especially the poor among elderly population or the existing programmes are too modest

to meet their needs. Hence, there is an urgent need for public policy intervention to provide decent old age social security in the form of old age pensions for all the elderly in India. This will not only enhance living standards in old age and but also provide freedom for the elderly to choose between either working in old age or option to retirement.

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Appendix

TableA.1: labour force participation elderly (age 60 and above) in India, 1983- 2009-10 (in percent)

Round and Year	Rural			Urban			Rural+Urban		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
38th round, 1983									
15-59	91.81	54.98	73.37	85.42	24.83	57.05	90.1	47.67	69.21
60+	66.8	22.66	44.85	50.41	13.8	31.26	63.5	20.73	42
60-64	83.18	34.24	59.81	63.93	20.14	41.53	79.31	31.09	55.94
65-69	71.68	23.93	47.2	52.76	13.93	32.71	67.66	21.78	44.1
70-74	54.69	12.92	33.56	38.76	7.89	21.96	51.74	11.86	31.27
75+	28.5	5.26	16.71	24.53	4.51	14.02	27.64	5.09	16.11
43rd round, 1987-88									
15-59	90.49	52.95	71.81	84	25.14	56.16	88.86	46.5	68.03
60+	67.04	22.03	44.87	48.2	12.3	29.96	63.31	20	41.84
60-64	83.39	31.91	58.14	59.88	18.08	39.19	78.8	29.17	54.42
65-69	71.68	22.31	46.95	51.41	12.61	31.48	67.62	20.28	43.79
70-74	53.18	12.55	33.5	40.03	8.23	23.6	50.68	11.64	31.51
75+	31.12	7.09	19.21	20.9	3.28	11.75	28.89	6.19	17.52
50th round, 1993-94									
15-59	89.88	52.1	71.22	83.3	25.12	55.85	88.09	45.21	67.16
60+	70.09	24.13	47.53	44.44	11.35	27.41	64.57	21.17	43.03
60-64	86.14	35.69	62.01	57.39	17.4	37.36	80.25	31.67	56.78
65-69	72.83	24.3	48.23	46.93	11.43	28.12	67.14	21.27	43.64
70-74	59.4	14.01	37.04	35.24	6.83	20.89	54.16	12.39	33.46
75+	27.4	4	16.08	15.19	1.64	8.16	24.32	3.34	13.98
55th Round, 1999-00									
15-59	88.21	48.48	68.5	82.49	22.22	53.9	86.59	41.49	64.49
60+	63.18	21.43	42.51	39.48	9.12	23.54	57.86	18.4	38.05
60-64	80.63	32.26	56.4	53.09	13.35	32.59	74.64	27.95	51.09
65-69	70.05	23	46.37	43.49	10.51	25.9	64.06	19.91	41.52
70-74	51.51	10.69	31.7	30.24	5.81	17.43	46.68	9.44	28.26
75+	20.37	2.43	11.88	13.35	1.41	7.1	18.58	2.13	10.56
61st Round, 2004-05									
15-59	88.63	52.46	70.61	83.44	26.13	56.22	87.14	45.4	66.62
60+	64.49	25.44	44.82	36.6	10.02	22.79	57.77	21.54	39.39
60-64	82.32	38.17	59.44	47.63	14.64	30.94	73.77	32.58	52.55
65-69	69.77	26.83	48.04	37.56	10.61	23.46	62.24	22.83	42.13
70-74	50.86	12.44	32.51	28.06	7.31	17.09	45.47	11.03	28.57
75+	24.96	4.38	14.78	15.13	2.18	8.23	22.44	3.75	13
66th Round,2009-10									
15-59	84.84	39.85	62.61	80.85	21.04	52.3	83.65	34.49	59.6
60+	64.65	22.63	43.73	34.18	7.05	20.16	56.52	18.23	37.26
60-64	82.65	32.36	57	50.14	11.05	29.63	74.21	26.58	49.73
65-69	67.31	23.99	45.91	33.68	7.32	20.14	58.59	19.42	39.03
70-74	50.76	12.92	32.34	22.3	3.69	13.29	42.79	10.36	27.03
75+	24.41	3.59	14.37	10.34	1.25	5.43	20.25	2.78	11.5
68th Round,2011-12									
15-59	83.55	37.81	60.87	80.97	22.2	52.65	82.74	33.11	37.06
60+	64.94	21.35	43.11	36.52	7.75	21.8	57	17.42	49.37
60-64	82.2	31.78	56.69	49.44	11.54	29.91	73.37	26.17	58.35
65-69	67.65	21.7	45.07	37.59	7.5	22.54	59.04	17.53	38.53

70-74	50.08	10.81	30.99	27.98	5.94	17.29	44.26	9.53	27.39
75+	26.64	5.4	15.63	11.58	1.34	5.95	21.79	3.98	12.37

Source: Computed from Employment and Unemployment Surveys of NSS of India Rounds 38 (1983), 50 (1993-94), 55 (1999-2000), 61 (2004-05), 66 (2009-10) and 68(2011-12)