

An Analysis of Availability of Social Security Benefits among Regular and Casual Salaried Workers in Indian Economy

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ABSTRACT

The present study aims to investigate the incidence of availability of social security benefits among regular and casual salaried workers both in the public sectors as well as private sectors in Indian economy. Along with that, this paper also examines the determining factors by using logistic regression model, which play significant roles behind the availability of social security benefits among regular and casual salaried workers. This paper uses 61st (2004-05) and 68th (2011-12) round National Sample Survey data on Employment and Unemployment to estimate the comparative analysis in the availability of social security benefits among regular and casual salaried workers for these two years. As social security benefit is one of the most important indicators of Informalisation of employment in Indian economy. The result shows that approximately 50 percentages of regular salaried workers and 90 percent of casual salaried workers are deprived of any social security benefits. Apart from that, we have used logistic regression model to estimate the determinants of availability of social security benefits in probabilistic terms. The results of the econometric analysis is that casual workers in the public sector are most deprived class of worker in both the rural and urban area. Therefore, a clear picture of inequality is visible in India labour market. Therefore, the Policy level intervention should focus on proper amendment of labour laws and implementation of various schemes such as Atal Pension Yojana and National Pension Schemes not only at the central level but also at the state level in India.

1. Introduction

It is undoubtedly a well-known fact that the crisis of unemployment is one of the most burning issues in Indian economy. Moreover, what is much more disheartening is that more than 90 percent of the workers are employed in the informal employment without suitable work environment and adequate social security benefits. Thus, Indian labour market is dominated by informal employment¹ where these workers are deprived of any social security benefits and are endowed with much lower pay compared to the formal worker (ILO, 2007). Availability of social security benefit is not only an indicator of formal employment but also an indicator of job security. However, there have been significant differences in the availability of social security benefits even among the regular salaried workers² and casual salaried workers³ in the public sector and casual workers in private sectors. This paper thus endeavors to investigate the heterogeneity of labour market in terms of availability of social security benefits among the across regular and casual salaried workers in public and private sectors during the post-reform period with 61st (2004-05) and 68th (2011-12) rounds on employment and unemployment survey conducted by National Sample survey office (NSSO).

Unfortunately, we are hardly confronted with plethora of literature highlighting the aspect of availability of social security benefits among regular and casual workers. Sanyal and Bhattacharya (2009) analyzed the estimates by the National Commission for Enterprises in the Unorganised Sector (2007). He found that regular, casual and contract workers without any social security benefits increased by 8.5 million during the period from 1999-2000 and 2004-05. Besides, according to

Government of India (GOI, 2007) report incidence of casual, contractual and even piece rate employment enhanced significantly during this time. Labour and Employment Report (2014) also pointed out that the percentage share of contract workers in organized manufacturing sector has increased from 13 percent in 1995 to 34 percent in 2011. Moreover, the growth of regular job has been very much slow. The share of regular salaried worker increased from 11.8 percent in 2004-05 to 17 percent in 2011-2012. Bhoite (2016) used data from Maratha Chamber of Commerce, Industries and Agriculture during 2012-13 and found that there was visible reduction of employment of regular and permanent workers during the period 1990-91 to 2012-13 in some of the major large-scale companies in Pune. Unlike the post reform period, during the pre-reform period there was a considerable dominance of permanent and full time workers in most of the companies. Shyamsunder (2011) used data from Annual Survey of Industry (ASI) during the year 1993-94 to 2006-07 and found that the share of non-regular workers particularly contract workers, increased significantly. Goldar and Aggarwal (2010) using ASI data also observed that the share of contract workers increased from 14 percent in 1995-96 to 29 percent in 2005-06.

The rest part of the study is organized as follows. The need and objective and the study are spelled out in the following section. Section 3 describes data and econometric methodology used in this study. Section 4 provides results and discussions regarding the availability of social security benefits across major dimensions. Section 5 concludes, provides policy prescriptions and future research prospect.

2. Need and Objective of the Study

2.1 Need of the Study

Although the available literatures highlight the fact that casual and contractual employment have enhanced during post reform period and hardly provide any social security benefit. However, none of the literatures have used NSSO data in order to investigate the extent of availability of social security benefits across regular and casual salaried workers. Besides, the availability of social security benefits among the regular salaried and casual salaried workers across major dimensions has not been dealt in the economic literature so far. Furthermore, none of the literature tries to find out the determinants of the availability of social security benefits among regular and casual workers. This paper aims to focus on this aspect.

2.2 Objectives

1. We have tried to find out the percentages of regular and casual salaried workers with and without social security benefits across different sectors, educational qualifications, sex, rural and urban location, and social groups as well social religions and so on.
2. We also aim to find out the determining factors behind the availability of social security benefits across regular and casual salaried workers in Indian labour market.
3. This study also aims to provide some lessons to the policy makers so that availability of social security benefits can be ensured among all types of workers and especially among the highly qualified workers so that labour market inequality is removed.

3. Data and Methodology

3.1 Data

In this study, we have used 61st and 68th round NSSO data on employment and unemployment for the period 2004-05 and 2011-12 respectively in order to find out the incidence of availability of social security benefit across regular and casual salaried workers. Total number of samples in the rural area is 134,169 and in the urban area is 62,469. This data is used because this is the latest data source, which contains the information used in the study. No other data source is available which contains the variable of social security benefit.

3.2 Methodology

We have estimated the possible effects of the major household specific and personal characteristics on the probability of entering into the labour market as informal worker by using logit model. Availability of single, dual and even all types of benefits are considered as formal workers while workers deprived of any type of social security benefits are informal workers. The binary response model like logistic regression may be appropriate because the dependent variable is qualitative in nature and unobserved. A person will enter into the labour market as informal worker (without any benefit) when the person gets positive utility by supplying labour as informal worker. The utility function of the person is unknown that is why the dependent variable in the participation equation is unknown:

$$y_i^* = \sum_{j=1}^k \beta_j x_{ji} + u_i \tag{1}$$

To estimate the model we have to create an observed binary variable based on the nature of the latent variable y_i^* .

$$y_i = \begin{cases} 1, & \text{if } y_i^* \geq 0 \\ 0, & \text{if } y_i^* < 0 \end{cases} \tag{2}$$

Here y_i^* is the dependent variable, which is taking binary values 0 and 1. Here, 0 indicates that the worker is getting at least single or dual or all types of social security benefits and 1 indicates that the worker is deprived of any type of benefit. Here, y_i^* denotes the utility in selecting informal job and x_{ji} is a covariate j for individual i representing the household and personal characteristics of a person described below.

We have taken worker's education level(x_1), experience (x_2), technical knowhow(x_3), workers' type (x_4) along with social group(x_5), social religion(x_6) location (x_7), gender(x_8), time i.e year(x_9) as the independent variable. It is expected that these explanatory variables help in explaining the utility of selecting an informal job (y_i^*) i.e. without social security benefits overtime.

Age (proxy of experience) is a continuous variable. However, the decision of the worker to work in informal jobs may not have a linear relationship with experience. So, we have considered square of age as another explanatory variable. Here we have also constructed some interacting dummy variables such as scheduled tribe and year, postgraduate and year, female with year, and Muslims overtime. It is expected that these explanatory variables help in explaining the utility of selecting a job without social security benefit (y_i^*) overtime. Besides, we have also considered interaction dummy between scheduled caste and females, postgraduates with females in order to understand whether gender biasedness at all exists in joining these kinds of jobs without any benefit.

Since all other explanatory variables are qualitative and not quantitative, we have constructed dummy of all these explanatory variables excepting the age. For educational level, we have used separate dummy variables for illiterates, informally literates, educated below primary level, primary level educated, secondary and higher secondary pass outs and postgraduate and above degree holders. Our aim is to find out whether the probability of receiving social security benefit is lower among each of the type educational qualifications with reference to graduate and diploma holders. Besides, dummy variable for technically educated workers are also created. In this case our purpose is to find out whether the probability of receiving benefits is higher among these workers with reference to the technically illiterates. Again, we have used separate dummy variables for different types of workers like casual salaried workers in the public sector and casual salaried workers in private sectors. Our objective is to investigate whether the probability of not getting any social security benefit is higher among the casual salaried workers compared to that of the regular salaried workers.

Furthermore, we create separate dummy variables for different social groups like scheduled tribes, scheduled caste, and other backward classes. Here our objective is to find out whether the probability of enjoying benefits is lower among each of different social groups with reference to general (others) workers. Along with that, we have also created separate dummy variables for Muslims, Christians and other religions. We intend to see whether the chances of receiving social security benefits

has been higher among the workers of each of the religions with reference to the Hindus. Apart from that, sex dummy is created in order to examine whether the probability of receiving benefit is higher among the female in comparison to that of the male. Year dummy is also constructed so that we can understand how incidence of Informalisation changes over time. We have estimated this equation separately for rural area and urban area.

$$Y_i^* = \alpha_0 + \sum_{j=1}^6 \alpha_j x_{1ij} + \beta_1 x_{2i} + \beta_2 x_{2i}^2 + \gamma x_{3i} + \sum_{k=1}^2 \theta_{ki} x_{4ki} + \sum_{l=1}^3 \phi_l x_{5il} + \sum_{m=1}^3 \delta_m x_{6im} + \pi x_{7i} + \pi x_{8i} + \tau_1 x_{5il} x_{8i} + \tau_2 x_{6im} x_{8i} + \tau_3 x_{1ij} x_{8i} + \tau_4 x_{8i} x_{7i} + \tau_5 x_{1ij} x_{7i} + \tau_6 x_{5il} x_{7i} + u_i \tag{3}$$

In a binary response model, interest lies primarily in the response probability

$$P_i = P(y_i = 1) = P(y_i^* > 0) = P\left(u_i > -\left(\beta_0 + \sum_{j=1}^k \beta_j x_{ji}\right)\right) = 1 - P\left(u_i \leq -\left(\beta_0 + \sum_{j=1}^k \beta_j x_{ji}\right)\right)$$

$$P_i = 1 - F\left(-\left(\beta_0 + \sum_{j=1}^k \beta_j x_{ji}\right)\right) = 1 - F(-z_i)$$

$$z_i = \beta_0 + \sum_{j=1}^k \beta_j x_{ji}$$

Here, and F is the cumulative distribution function of u. If the distribution of u is symmetric,

$$1 - F(-z_i) = F(z_i)$$

Therefore,

$$P_i = F\left(\beta_0 + \sum_{j=1}^k \beta_j x_{ji}\right) = F(z_i) \tag{4}$$

F is a function taking on values strictly between zero and one: $0 \leq F(z) \leq 1$, for all real numbers z. This ensures that the estimated response probabilities are strictly between zero and one. Various nonlinear functions have been suggested for the function F in order to make sure that the probabilities are between zero and one.

The functional form for F in (4) will depend on the assumption made about the error term u. If the cumulative distribution of u, is logistic we have what is known as the logit model. In this case

$$F(z_i) = \frac{\exp(z_i)}{1 + \exp(z_i)} \tag{5}$$

$$\log\left(\frac{F(z_i)}{1 - F(z_i)}\right) = z_i \tag{6}$$

$$\log\left(\frac{P_i}{1 - P_i}\right) = \beta_0 + \sum_{j=1}^k \beta_j x_{ji} \tag{7}$$

The left-hand side of this equation is called the log-odds ratio. Thus the log-odds ratio is a linear function of the explanatory variables.

4. Results and Discussions

4.1 Incidence of Availability of Social Security Benefit

The section below discusses percentages of regular and casual salaried workers receiving single, dual and even all types of benefits for the period 2004-05 and 2011-12. Table1 displays the percentages of social security benefits available among male and female candidates across regular and casual salaried workers in both public sectors and private sectors for the period 2004-05 and 2011-12. It is revealed that during both the period, more than half of the male regular wage earners in the rural area were deprived of any type of social security benefits. Moreover, percentage of those workers receiving all the

entitlements was also considerably low. Furthermore, more than 90 percent of the rural male casual workers in both the sectors hardly received any type of benefits. Percentages of regular male and female salaried workers not receiving any type of benefits enhanced overtime while that of casual workers declined overtime. Compared to the male workers, percentages of female rural regular and casual salaried workers not receiving any benefits is higher but the reverse is true in case of casual salaried workers in private sectors. In the urban area, percentages of all types of workers not receiving any benefit is little bit lower compared to that of the rural area. While, the percentages of women who are not receiving any benefits is higher than the males in the urban area.

Table 1: Percentages of Social Security Benefits among Male and Female candidates across Regular and Casual Salaried Workers in Indian Labour Market

Rural Male	2004-05			2011-12		
	Regular workers	Casual workers in public sector	Casual workers in private sector	Regular workers	Casual workers in public sector	Casual workers in private sector
PF/pension	9.8	0.05	0.32	10.26	0.18	0.16
Gratuity	0.88	1.32	0.16	0.81	0.27	0.26
Health care Benefits	0.95	1.2	0.28	1.47	0.29	0.31
PF and Gratuity	2.62	0	0.05	2.39	0	0
PF and Health Care Benefits	2.39	0.9	0.19	2.37	0	0.05
Gratuity and Health Care Benefits	1.2	0	0.03	1.15	0	0.11
All Benefits	26.32	0.17	0.22	21.9	0.66	0.25
No Benefits	55.83	96.36	98.74	56.12	90.9	93.97
Rural Female	2004-05			2011-12		
Social Security Benefit	Regular worker	Casual workers in public sector	Casual workers in private sector	Regular worker	Casual workers in public sector	Casual workers in private sector
PF/pension	10.5	0.02	0.61	7.54	0.11	0.21
Gratuity	0.99	0	0	0.97	0.15	1.06
Health care Benefits	2.7	0.05	0.06	2.7	0.57	0.95
PF and Gratuity	1.36	0	0	1.52	0.13	0.35
PF and Health Care Benefits	2.48	0	0.50	2.13	0	1.08
Gratuity and Health Care Benefits	1.32	0	0	1.63	0	0.1
All Benefits	21.8	0	0.58	19.28	0.19	0.72
No Benefits	58.86	99.94	98.26	61.15	92.93	92.12
Urban male	2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in private sector	Regular workers	Casual workers in public sector	Casual workers in private sector
PF/pension	9.7	0.3	0.35	8.62	0.26	0.1
Gratuity	0.6	19.3	0.1	1.06	0.08	0.45
Health care Benefits	1.28	0	0.63	1.72	0.02	0.33
Pf and Gratuity	2.9	0.1	0.1	3.41	0	0.06
PF and Health Care Benefits	3.03	0.1	0.19	3.54	0	0.04
Gratuity and Health Care Benefits	1.56	0.02	0.02	1.64	0	0
All Benefits	29.96	0	0.42	24.07	0.2	0.15
No Benefits	50.98	80.19	98.18	52.49	81.9	95.35

Urban female	2004-05			2011-12		
Social Security Benefit	Regular worker	Casual workers in public sector	Casual workers in private sector	Regular worker	Casual workers in public sector	Casual workers in private sector
PF/pension	6.91	0	0.18	6.8	0	0
Gratuity	0.75	0.56	0.03	1.15	0	0.85
Health care Benefits	1.82	0	0.32	2.28	0	0.06
Pf and Gratuity	2.31	0	0.3	1.76	0	0.02
PF and Health Care Benefits	2.54	0	0.32	4.74	0	0.15
Gratuity and Health Care Benefits	1.39	0.1	0.03	2.42	0	0
All Benefits	27.35	0	0.12	24.27	0	0.39
No Benefits	56.92	99.34	98.71	53.97	99.3	97.3

Source: Author's own calculation from NSS 61st and 68th round unit level data

Table 2 provides the estimates of availability of social security benefits across general educational qualifications. It is found that compared to the regular salaried workers, casual salaried workers in both the public and private sectors are deprived to a great extent in terms of availability of social security benefits. Most importantly, attaining educational qualification is not enough to solve the problem. What is much more disheartening is that even percentages of highly educated casual salaried workers receiving these benefits is lower than lower qualified regular salaried workers. This is true for both the period. Moreover, Incidence of availability of social security benefits among the regular salaried workers declined across all

types educational attainment overtime. While casual salaried workers in the public sector experienced increase in availability of social security benefits overtime across illiterate, secondary passed as well as graduate workers. While among the postgraduate workers availability of social security benefits declined phenomenally. On the other hand, among the casual salaried workers in private sector, availability of benefits has increased among all educational qualification. However, secondary passed workers in the latter period experienced reduction in the percentages of all benefit receivers and no benefit receivers.

Table2. Percentages of Social Security Benefits among Regular and Casual Salaried Workers across Different Educational group in Indian Labour Market

Literate	2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in private sector	Regular workers	Casual workers in public sector	Casual workers in private sector
PF/pension	5.99	0	0.28	3.95	0.05	0.09
Gratuity	0.52	4.11	0.09	0.28	0.22	0.63
Health care Benefits	0.86	0	0.33	0.8	0.49	0.56
Pf and Gratuity	0.71	0.03	0.06	0.81	0	0
PF and Health Care Benefits	1.87	0.24	0.17	0.76	0	0.04
Gratuity and Health Care Benefits	0.29	0.01	0	0.15	0	0.08
All Benefits	8.05	0	0.1	7.1	0.14	0.16
No Benefits	81.7	95.61	98.97	82.36	91.27	93.84
Secondary	2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in private sector	Regular workers	Casual workers in public sector	Casual workers in private sector
PF/pension	8.55	0	0.23	7.77	0.36	0.11
Gratuity	0.89	1.22	0.11	0.8	0.04	0.38
Health care Benefits	1.04	0	0.09	1.99	0.47	0.09
Pf and Gratuity	2.67	0	0.01	2.6	0.06	0.37
PF and Health Care Benefits	2.38	0	0.08	2.62	0	0.25
Gratuity and Health Care Benefits	1.77	0	0	1.2	0	0.01
All Benefits	28.9	0	0.71	18.48	0.19	0.31

No Benefits	53.8	98.78	98.77	60.53	95.9	93.98
Graduate	2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in private sector	Regular workers	Casual workers in public sector	Casual workers in private sector
PF/pension	13.19	0	0	13.05	0	0.08
Gratuity	1.03	0	0	1.92	0.98	0.01
Health care Benefits	1.48	0	0	1.9	0	3.9
Pf and Gratuity	4.52	0	3.38	4.06	0	0
PF and Health Care Benefits	4.34	0	0	5.43	0	0.13
Gratuity and Health Care Benefits	2.85	0	0	3.07	0	0
All Benefits	45.47	0	0	38.52	2.84	0.72
No Benefits	27.13	100	96.62	29.1	96.18	89.27
Postgraduate	2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in private sector	Regular workers	Casual workers in public sector	Casual workers in private sector
PF/pension	14.03	0	0	12.47	0	0
Gratuity	0.6	0	0	1.03	0	0
Health care Benefits	1.4	0	0	1.93	0	0
Pf and Gratuity	4.24	0	3.38	5.23	0	0
PF and Health Care Benefits	3.39	45.24	0	4.92	0	0
Gratuity and Health Care Benefits	1.65	0	0	2.81	0	0
All Benefits	50.28	0	0	44.36	0	5.39
No Benefits	24.4	54.76	96.62	23.26	100	95.64

Source: Same as table 1

Table 3 highlights the concentration of workers receiving social security benefits across different social groups. Among the regular salaried workers, availability of social security benefits have been least among other backward classes workers and most among the scheduled tribes during both the period. Although availability of social security benefits is very low among the casual salaried workers in both the sectors, these workers in both the sectors experienced slight increase

incidence in the availability of social security benefits irrespective of all the social groups. Besides, among the regular salaried scheduled tribe workers and other backward classes workers, there has been decline in the percentages of workers receiving all types of benefits and that of workers not receiving any benefit. On the other hand, there has been increases in the availability of social security benefits among the regular salaried workers in all other social groups.

Table3. Percentages of Social Security Benefits among Regular and Casual Salaried Workers across Different Social Groups in Indian Labour Market

scheduled Tribe	2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in private sector	Regular workers	Casual workers in public sector	Casual workers in private sector
PF/pension	12.16	0.21	0.11	11.12	0	0.35
Gratuity	0.62	0.3	0.08	0.38	0.08	1.09
Health care Benefits	1.48	0.05	0	2.35	0.69	0.08
Pf and Gratuity	2.01	0.08	0	3.14	0	0
PF and Health Care Benefits	2.02	0.28	0	1.44	0	0.02
Gratuity and Health Care Benefits	0.99	0	0	0.77	0	0.14
All Benefits	33.2	0	0.07	32.83	0.02	0.09
No Benefits	47.52	99.07	99.73	43.93	96.63	92.16

Scheduled Caste	2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in private sector	Regular workers	Casual workers in public sector	Casual workers in private sector
PF/pension	9.09	0.1	0.11	7.34	0.33	0.05
Gratuity	0.79	0	0.18	1.02	0.23	0.44
Health care Benefits	1	0	0.35	1.29	0.66	0.24
Pf and Gratuity	2.14	0	0	2.34	0	0.07
PF and Health Care Benefits	2.49	0	0.22	2.15	0	0.1
Gratuity and Health Care Benefits	1.12	0.39	0.04	1.08	0	0.07
All Benefits	24.33	0.33	0.22	21.25	1.2	0.53
No Benefits	59.03	99.18	98.87	60.06	93.22	94.26
Other Backward Classes	2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in private sector	Regular salaried workers	Casual workers in public sector	Casual workers in private sector
PF/pension	8.24	0	0.49	7.7	0.13	0.18
Gratuity	0.49	1.39	0.07	1.16	0.14	0.53
Health care Benefits	1.41	2.46	0.55	1.69	0.01	1.17
Pf and Gratuity	2.26	0	0.07	2.68	0.07	1.25
PF and Health Care Benefits	2.38	0	0.28	3.24	0	1.56
Gratuity and Health Care Benefits	1.29	0	0.02	1.51	0	1.57
All Benefits	22.9	0	0.37	19.06	0.11	1.69
No Benefits	61.03	96.15	98.15	60.06	89.31	96.1
General	2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in private sector	Regular workers	Casual workers in public sector	Casual workers in private sector
PF/pension	9.8	0.03	0.57	9.62	0	0.15
Gratuity	0.87	11.68	0.14	0.88	0.43	0.34
Health care Benefits	1.36	0	0.14	2.04	1.24	0.16
Pf and Gratuity	3.06	0	0.23	2.92	0	0.01
PF and Health Care Benefits	3.02	0.05	0.2	3.8	0	0.04
Gratuity and Health Care Benefits	1.6	0.02	0.01	1.98	0	0.23
All Benefits	31.28	0	0.35	25.59	0.2	0.46
No Benefits	49.02	88.23	98.36	49.51	81.94	94.49

Source: Same as table 1

Table 4 shows percentages of availability of social security benefits across Hindu, Muslims and Christian workers. Among the regular salaried workers, Christians are the most benefitted while Muslims are the most deprived social religions during both the period. While among the casual salaried workers in the public sectors, percentages of workers not receiving any benefits have been least among the Muslims but highest among the Hindus, while that of workers receiving all types of benefits have been highest among the Hindus but nil among the Muslims and Christians during both the period. Among the casual salaried workers in private sectors, concentration of no benefit holders have been highest among the Hindus but lowest among the Christians during the former period but the other way

round during the latter period. Furthermore, percentages of workers receiving all types of benefits have been very small but highest among the Christians and lowest among the Muslims during both the period. Among the Muslim regular salaried workers, incidence of availability of these benefits enhanced while among the Hindu and Christian workers, percentages of workers receiving all types of benefits and that among workers not receiving any types of benefits declined overtime. Among the casual salaried workers in the public sectors as well as in private sectors, Hindus experienced reduction in the incidence of not getting any benefit. Among the Muslims and Christian workers percentage of workers receiving all benefits and not receiving any benefits increased overtime. Among the Muslim

workers working as casual salaried workers in private sectors, incidence of not getting any benefits among the Muslims enhanced while Christians experienced increase in the

percentages of workers receiving all benefits and not receiving any benefits.

Table4. Percentages of Social Security Benefits among Regular and Casual Salaried Workers across Different Religion group in Indian Labour Market

Hindu		2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in private sector	Regular workers	Casual workers in public sector	Casual workers in private sector	
PF/pension	9.54	0.03	0.27	9.04	0.2	0.15	
Gratuity	0.78	0.1	0.11	1.06	0.24	0.49	
Health care Benefits	1.34	0.75	0.41	1.88	0.54	0.46	
Pf and Gratuity	2.74	0	0.04	3.02	0.05	0.05	
PF and Health Care Benefits	2.71	0.51	0.22	3.36	0	0.2	
Gratuity and Health Care Benefits	1.45	0.01	0.02	1.73	0	0.09	
All Benefits	28	0.11	0.3	24.02	0.53	0.35	
No Benefits	53.43	98.5	98.63	52.56	92.33	93.9	
Muslim		2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in other sectors	Regular workers	Casual workers in public sector	Casual workers in other sectors	
PF/pension	6.42	0.05	0.38	4.85	0	0.07	
Gratuity	0.36	29.63	0.18	0.56	0.03	0.15	
Health care Benefits	1.15	0	0.07	1.13	0	0.12	
Pf and Gratuity	1.54	0	0.29	1.34	0	0.13	
PF and Health Care Benefits	1.88	0	0.27	1.14	0	0.12	
Gratuity and Health Care Benefits	1.08	0	0.03	0.52	0	0.02	
All Benefits	16.68	0	0.2	10.87	0.06	0.05	
No Benefits	70.89	70.31	98.57	75.99	79.69	94.51	
Christian		2004-05			2011-12		
Social Security Benefit	Regular workers	Casual workers in public sector	Casual workers in other sectors	Regular workers	Casual workers in public sector	Casual workers in other sectors	
PF/pension	11.59	1.61	3.17	11.3	0	0.74	
Gratuity	0.36	1.18	0.11	0.74	0.29	0.13	
Health care Benefits	1.67	0.59	0.02	2.36	0	0.01	
Pf and Gratuity	2.81	0	0.17	1.56	0	0.03	
PF and Health Care Benefits	3.98	3.25	0.22	5.71	0	0	
Gratuity and Health Care Benefits	1.46	0	0	2.48	0	0.03	
All Benefits	31.75	0	0.75	27.69	0.09	0.45	
No Benefits	46.38	93.37	95.57	44.68	94.96	97.54	

Source: Same as table 1

4.2 Determinants of Availability of Social Security Benefits among Regular and Casual Salaried Workers

Estimating equation 3, we find that the relationship between the worker's decision to choose a job without any type of social security benefit and all the explanatory variables by using logistic regression model and hence the results are obtained in

probabilistic form. Moreover, we can as well rank different explanatory variables in terms of respective marginal effect values. It is found that compared to that of the regular salaried worker, both the casual salaried workers in the public sector and casual salaried workers in private sector have significantly higher chances of not getting any type of social security benefit in the rural as well as in the urban area. Surprisingly, in both

these regions casual worker in the private sector have substantially higher chances of being rewarded with social security benefit compared to that of the casual workers in the public sector. Thus, it is evident that public sectors hardly provide sufficient benefits and suitable work environment for its casual employees.

Considering general educational qualification as another explanatory variable it is inferred that compared to the graduate and diploma holders which is the reference group, in the rural area, workers with all other general educational qualifications have significantly higher chances of being deprived of any type of social security benefit. More specifically, both in the rural and urban area, primary educated workers have the least chance in this regard. While in the urban area, postgraduate degree holders have the highest chances of being deprived of any type of social security benefit, all other qualifications have significantly lower chances compared to the reference group. Moreover, the propensity of not receiving these benefits among the technically proficient workers is lower than the technically uneducated workers in the urban area, but this result is insignificant in the rural area.

Another surprising result is that both the scheduled tribe and scheduled caste worker in the urban area and scheduled tribe worker in the rural area have significantly higher chances of endowed with social security benefits than the general (others) workers. While other backward classes workers, have

significantly lower chances of getting any benefit. Furthermore, compared to the Muslims and other religions, Hindus have significantly higher chances of being endowed with social security benefits both in the rural and urban area. In fact Muslims have the lowest chances of receiving any type of social security benefit. Incidence of availability of social security benefit is significantly decreasing overtime. Compared to the male workers, female workers in the rural area have significantly lower chances of being deprived of any type of social security benefit, while the result is insignificant in the urban area. Probability of being deprived of these benefits surely reduces significantly with increase in experience both in the rural and urban area. However, we hardly find any non-linear relationship between experience and chance of receiving these benefits.

Moreover, we have used some interaction dummies to highlight the overtime changes of availability of social security benefit among the females workers. In the rural area, incidence of availability of social security benefit significantly decreases among the scheduled tribes and postgraduates workers over the years. On the other hand probability of receiving these benefits significantly increases among Muslim and female overtime and among scheduled caste and postgraduate female. In the urban area chances of receiving these benefits significantly decreases among Muslims and postgraduate degree holders overtime, while increases among the postgraduate females worker.

Table 5: Determinants of Availability of Social Security Benefits

Workers' characteristics	RURAL		URBAN	
	Coefficient	M.E	Coefficient	M.E
Constant	0.32**	—	3.09***	—
Age	-0.06***	-0.01	-0.17***	-0.04
Age square	0.00***	0	0.00***	0
Type of worker (Reference Regular salaried worker)				
Public sector casual worker	0.22*	0.09	1.28***	0.24
Other sector casual worker	0.20***	0.7	0.15***	0.12
General education (Reference Graduate and Diploma holders)				
Illiterate	1.15***	0.27	1.85***	0.34
Informally literate	1.25***	0.3	1.72***	0.29
Below primary educated	1.11***	0.27	1.77***	0.31
Primary educated	1.36***	0.33	1.81***	0.33
Secondary and higher secondary	1.26***	0.3	1.19***	0.27
Postgraduate	0.37*	0.09	-0.45***	-0.11
Technical education (Reference no Technical education)				
Technical education	0.13	0.03	-0.62***	-0.15
Caste (Reference General)				
Scheduled Tribe	-0.19***	-0.04	-0.51***	-0.13
Scheduled Caste	0.12*	0.03	-0.09*	-0.02
Other Backward Classes	0.11**	0.03	0.12**	0.03
Social religions(Reference Hindu)				
Muslim	0.23***	0.05	0.55***	0.12
Other religion	0.21***	0.05	0.15*	0.04
Sex(Reference Male)				
Female	-0.70***	-0.15	0.05	0.01
Year	0.23***	0.05	0.65***	0.16
Scheduled Tribe Overtime	-0.17*	-0.04	0.25	0.06

Muslim Overtime	0.26**	0.06	-0.14*	-0.03
Female Overtime	0.33***	0.08	-0.05	-0.01
Postgraduate Overtime	-1.11***	-0.20	-2.25***	-0.50
Scheduled caste female	0.70***	0.17	-0.16	-0.04
Postgraduate female	1.23***	0.30	0.40*	0.06
Number of observations:	134169		62,469	
Pseudo R2	0.06		0.05	

Source; same as table 1

5. Conclusions, Policy Prescriptions and Future Research Prospect

From the above analysis, we get a vivid description about the availability of social security benefits across regular and casual salaried workers in the public as well as private sectors. We find that most of the workers are not endowed with social security benefits in Indian labour market. Approximately 50 percent of the regular salaried workers and 90 percent of the casual salaried workers are deprived of any kind of benefits. What is more crucial is that incidence of availability of social security benefits has mostly reduced over the years from 2004-05 to 2011-12. Furthermore, the results of logistic regression model also shows that in both the rural and urban area, casual workers in the public sector have the least chance of receiving any type social security benefit followed by casual workers in other sectors. Thus, it can be said without any doubt that Indian labour market is extremely unequal so far as availability of social security benefit is concerned. In order to reduce such inequality in labour market, it would be necessary to amend labour laws, so that all the workers irrespective of their type and sector can be brought under one umbrella and all of them are eligible for social security benefits. Moreover, it is also seen that higher educated casual workers are worse paid compared to that of the lower educated regular workers. Therefore, measures must be taken by Government of India, so that higher educated workers can be rewarded which in turn increases their efficiency at the workplace. Lastly, the Government of India must also implement various schemes like Atal Pension Yojana and National Pension Schemes, so that all the workers can be

benefitted from social security benefits. These policy prescriptions can indeed make some effort to reduce the inequality of availability of social security benefit in Indian labour market. However, mere implementation of these schemes would not be sufficient to solve this entire problem. It would be necessary that Government of India would take proper steps, so that the benefit of these schemes can be enjoyed at the grass root level of regular and casual salaried workers.

Moreover, our research paper has some shortcomings as well. This paper hardly deals with the extent of availability of social security benefits among the child and adult street workers performing unskilled jobs in Indian labour market. So, it would be necessary to investigate the availability of social security benefits among the child and adult street workers in Indian labour market. Our future research would surely focus on this .

Note

1. Informal employment is not only generated only in informal sector. Informal employees work in both the formal as well as informal sectors in unhealthy working conditions with long working hours and devoid of any social security benefits (GOI, 2007; ILO, Standing, 1999).
2. Regular salaried workers are those workers who work in any enterprise on regular basis
3. Casual salaried workers are those workers who work in any enterprises occasionally

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