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The Role of Education in Availing Old Age Social Security Schemes: An Evidence-Based Study from Kerala, India

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Abstract: Addressing the old age poverty and enhancing the older person's social status, the Government of India initiated different social security schemes. Present study selects a South Indian state, Kerala, to understand the level of awareness, utilization and constraints faced older persons in availing various social security schemes. We analyzed the survey dataset from the 'Building a Knowledge Base on Population Ageing in India' (BKPAI), was conducted during 2011. Results show that education of the older persons has a multifaceted association with awareness, utilization, and constraints in availing various social security schemes. Older persons try to deal with the delayed fund or paying a bribe. A significant proportion of the benefit of several schemes goes to some group of older persons who are not meant for it. Results of our study suggest an urgent transparency measure from the government side to avoid these hardships in availing the social security schemes for older persons.

Keywords: *Education; BKPAI; old age pension schemes; social security; IGNOAPS; IGNWPS; Kerala*

Introduction

Social security is a convoluted and open-ended aspect of modern human advancement which is considered as the basic human rights (Scheinin, 2001). The United Nations (UN) and some other organizations such as International Labour Organisations (ILO), European Union (EU), Organisation for Economic Co-Operation and Development (OECD) enlisted social security as a protective and promotional measure for the well-being of any society. Although the emergence of social security in a form of paper work has come into view in Indian scenario since the mid of twentieth century, the major ventures were initiated to strengthen social security in past two decades in India through the implementation of a number of schemes and programmes (Drèze and Khera, 2017). Broadly, social security implies the overall security of a person whereas, in the Indian scenario, social security schemes are more focused on the financial security of a person. Moreover, the origin of financial security as a form of social security is well accepted in Indian scenario, where economic insecurity has been underlined by several groups of citizen stick in the hardship of poverty (Mehta and Shah, 2003). Among all the distressed group, Indian older persons, in particular, are more exposed to economic insecurity in their later life because of their engagement in informal labour force without any pension facility and this way the familial economic dependency among older persons increases in India (Bali, 2014). Therefore, the need for mighty social security systems for Indian older persons could be

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validated by several socio-economic aspects of the nation: firstly, unlike developed countries, India's old age population are growing swiftly with a faster rate from the last century (Tripathi, 2014) and secondly, the country is a home of one-third of the poor population of the entire world (Lutz, Butz, and KC, 2014). Therefore, the combined effects make an increase of oldage poverty day by day. However, in order to address the chronic poverty among older persons and to improve their social status, self-esteem, and overall quality of life, the federal government of India initiated the financial assistance scheme with the inauguration of National Social Assistance Programme in 1995. The social security schemes help the marginalised geriatric population to avoid dependency on their families as well as to live their rest of the life with self-dignity and self-confident. Financial independence also helps them to participate in decision making in their families which will also indirectly reduce the elder abuse.

Several studies in past two decades had focussed on the reforms of non-contributory pension schemes in India (Alam, 2004; Bali, 2014; Dandekar, 1996; Dutta, Howes, and Murgai, 2010). Social security schemes and programmes work differently among the states of India with an absence of uniformity in allocation and distribution (Gupta, 2013). Studies also revealed that the disparity regarding utilization of social security schemes among various socio-economic strata appears both in Northern and Southern Indian states (Dutta et al., 2010; Prasad, 1995). Older persons reported that they are getting less amount pension than their full entitlement (Chopra and Pudussery, 2014). In a study, Sanyal, Gayithri, and Erappa (2011) criticised the coverage of National Pension Scheme, as very less proportion of older persons benefitted through this scheme. Not only the coverage, but the entitlement reaches to the beneficiary after a long waiting time (Dutta et al., 2010). In a recent study, Singh, Bharati, and Sanyal (2015) argued that with the faster-increasing proportion of old age population in India, security schemes show a fiscal impact on the state as well as national level. While, another group of researchers raises the issue that the amount of money an older person receives from the social security schemes are not enough to address the hardship in their day to day requirements (Chopra and Pudussery, 2014; Dutta et al., 2010). According to Census 2011, Kerala has the highest proportion of oldage population in the country (Registrar General of India, 2011). Some other factors such as high rate of adult migration, increasing nuclearization in the family structure are significantly higher in this state which necessitates the sturdy old age social security to protect them from poverty and morbidity (Bali, 2014; Bloom et al., 2010; Pal and Palacios, 2011). In light of this, it is important to study the effectiveness of social security schemes so the corrective measures can be taken to facilitate its access to the disadvantaged and deprived section of the society. This way, our study aims to understand the level of awareness, utilization, and constraints in availing the old age social security schemes in Kerala. In addition to this, an effort was made to assess the role of several demographic and socio-economic aspect of the older person in the way of awareness and utilization of various social security schemes.

Existing Schemes and Eligibility Criteria for Old age Social Security

Non-contributory pension schemes had been initiated in India during 1995, as a part of National Social Assistance Programme (NSAP) which was aimed to provide the financial support to the various distressed group in the society including widowed, disabled persons and economically poor older persons (Bhattacharya et al., 2015). The four main social security schemes available for older persons in Kerala as well as other states of India are – Indira Gandhi National Old Age Pension Scheme (IGNOAPS), Indira Gandhi National Widow Pension Scheme

(IGNWPS), Annapurna and Rashtriya Swasthya Bima Yojana (RSBY). In IGNOAPS the financial assistance is provided to both male and female persons aged 60 years and above. IGNWPS scheme is meant for the older widows as well as destitute women belonged to BPL households in the age group of 40-79 years. After attaining the age of 80 years, beneficiaries of IGNWPS can shift to IGNOAPS for getting an increased entitlement. Both IGNOAPS and IGNWPS are the monetary schemes framed for oldage economic security, while Annapurna – a non-monetary scheme was framed for providing food security to the poor older persons (Rajan, 2001). RSBY is the only non-monetary scheme which acts as a health security programme for older persons (Maroof et al., 2016). Poor older persons get medical care facility at zero cost from central government by the RSBY scheme. To avail the benefit from these monetary and non-monetary schemes, the beneficiary should possess a BPL card, as the eligibility criteria provided by the Government of India.

Materials and Methods

Data Source

Our study was designed as the information and datasets available from the elderly survey namely 'Building a Knowledge Base on Population Ageing in India' (BKPAI) conducted by the Population Research Centre at the Institute for Social and Economic Change (ISEC), Bangalore and Institute of Economic Growth (IEG), New Delhi, in collaboration with the Tata Institute of Social Sciences (TISS), Mumbai, during the year of 2011. The sponsoring agency for this survey was the United Nations Population Fund (UNFPA), New Delhi. The survey covered all four major geographical regions as a representative of one or two states from each region - Northern (Punjab and Himachal Pradesh); Southern (Kerala and Tamil Nadu); Eastern (West Bengal and Orissa) and Western (Maharashtra) and this way data are available for seven states of India. A number of 9852 older persons aged 60 and above, were interviewed as a representative sample. The survey adopted a two-stage probability proportion to size (PPS) sampling method, where the household was considered as a primary sampling unit (PSU) (UNFPA, 2012). However, for the purpose of present study, we have considered, the older persons interviewed from Kerala state only and we found a number of 1365 individual responses from 1258 different households (UNFPA, 2013). Therefore, two separate datasets i.e. individual and household were used for the present study. The BKPAI data set has been identified as latest available state-level data, enriched with social security related detailed information for separate social security related schemes accompanied by various demographic and socio-economic characteristics of older person.

Measuring Awareness, Utilization, and Constraints of Social Security Schemes

The awareness, utilization, and constraints of four social security schemes i.e. IGNOAPS, IGNWPS, Annapurna, and RSBY, were measured separately by simple percentage distribution. At the time of BKPAI survey, the participants were asked about the knowledge of separate social security schemes with and without prompt. In this study, awareness of such schemes was calculated by merging with and without prompt knowledge about the particular scheme:

$$Level\ of\ Awareness = \frac{Total\ number\ of\ elderly\ has\ knowledge\ about\ schemes\ with\ prompt\ and\ without\ prompt}{Total\ number\ of\ elderly\ interviewed} \times 100$$

Another question canvassed during the interview whether the older persons were receiving any benefit from a particular scheme or not. Based on the responses from the participants we measured the level of utilization of various social security schemes. Here we have considered the following measurement:

$$Level\ of\ Utilization = \frac{Total\ number\ of\ elderly\ enjoying\ particular\ schemes}{Total\ number\ of\ elderly\ aware\ about\ that\ schemes} \times 100$$

The level of constraints in availing benefits from each scheme was also calculated from a simple measurement:

$$Level\ of\ Constraints = \frac{Total\ number\ of\ elderly\ experienced\ some\ barrier\ in\ a\ particular\ schemes}{Total\ number\ of\ elderly\ utilizing\ that\ schemes} \times 100$$

Predictor Variables

Predictor variables for this study were ascertained from a range of demographic and socio-economic phenomenon and further categorized by different sub-group. Demographic predictors include age, sex, religion, and caste of the older person, whereas socio-economic covariates were encircled with year of schooling, marital status, living status, place of residence, type of card[a] possessing and wealth quintile. Household wealth quintile was considered as the individual's wealth condition, which was measured by calculating principal component analysis (PCA) from the availability of several household assets[b] and housing characteristics[c] of older persons at the time of interview.

Statistical Tools

To reach the quest of the study we have come across a number of statistical tools herewith bivariate analysis, chi-square test, and multivariate binary logistic regression. To trace the level of awareness, utilization, and constraints, a bivariate association was made with a significance measure by chi-square test. In the next step, a series of the binary logistic regression model was constructed, where awareness and utilization of each separate scheme were used as a dependent variable. The first model consisted of only one predictor variable namely years of schooling of the older person to show the unadjusted effect of year of schooling on awareness and utilization of several schemes. The second model examined the association of years of schooling with awareness and utilization of several schemes by controlling selected demographic variables. The third and final model has all selected demographic and socio-economic variables, shows the main effect of control variables on dependent variable – that is, the awareness and utilization of old age social security schemes. For all the above mentioned statistical analysis we have used statistical software package Stata (StataCorp LP, v. MP 14.0).

Results

Table 1 illustrates the level of awareness of various social security schemes for older persons by their demographic and socio-economic characteristics. The result shows an average of 86 percent, 85 percent, 44 percent, and 74 percent older persons have some knowledge about

IGNOAPS, IGNWPS, Annapurna and RSBY schemes respectively. Surprisingly, the level of awareness changes differently for monetary and non-monetary schemes with the increase of older person's age. For instance, the awareness of monetary schemes such as IGNOAPS (89.1% to 78.9%) and IGNWPS (88.9% to 76.5%) reduces sharply among younger-old (60-69 years) and oldest-old (80 and above) persons. In contrast, level of awareness for non-monetary schemes including Annapurna (49.9% to 71.2%) and RSBY (18.8% to 43.5%) increased from younger-old to oldest-old age group. The level of awareness for all schemes (monetary and non-monetary) scores maximum once the year of schooling of an older person reaches its highest level (above 8) – 95.1%, 95.4%, 66.3% and 81.8% for IGNOAPS, IGNWPS, Annapurna and RSBY respectively. Older persons living with their spouse had maximum knowledge about all social security schemes than those who were living with others or living alone. Religion-wise Christian older persons were maximum aware of all four security schemes followed by the Hindu and Muslim.

Table 2 presents the level of utilization of social security schemes accompanying with total financial assistance (in INR) received in last one year, from two monetary schemes – IGNOAPS and IGNWPS. The result shows the utilization of IGNOAPS increases when older person reaches younger-old to oldest-old (3.3% to 11.9%). As the older persons have their primary schooling (1 to 4 year) the level of utilization becomes highest for IGNOAPS (15.9%), IGNWPS (25.7%) and Annapurna (9.8%). The level of utilization of these three schemes was slowing down when older persons had more than primary schooling including 5 to 8 and 8+ years of schooling. When it comes to the caste of the older persons, scheduled castes (SCs) were maximumly benefitted by both the monetary schemes. Overall, the pensioners benefitted by an amount of ₹4,000 and ₹3,000 by IGNOAPS and IGNWPS respectively. Fortunately, the rural older persons were more benefitted by all four schemes than those older persons were living in urban area. Unexpectedly, a significant proportion of older persons belong to good economic strata were also enjoying the social security schemes; particularly the middle and fourth wealth quintile groups were more benefitted than the highest quintile group.

The results presented in Table 3 show the level of utilization of different social security schemes on the basis of eligibility criteria – that is, whether the older persons hold a BPL card or not. In order to assess the coverage of social security schemes among the targeted group or more precisely the BPL older persons, we have divided our total sample into two groups – BPL and APL and then measured the utilization levels of social security schemes separately for these two population group. Results show that the level of utilization for all four social security schemes was always higher for the BPL older persons compared to APL older persons. The level of utilization for IGNOAPS was lower among BPL older persons aged 60-69 years compared to older age groups (70-79 years and 80+) whereas, level of utilization for IGNWPS was highest (34.95%) among the BPL older persons aged 60-69 years and reduced sharply when older person's age was higher. The coverages of IGNOAPS, IGNWPS, and Annapurna were highest among those BPL and APL older persons who have 1 to 4 year of schooling whereas, the coverages of these schemes were relatively lower among the older persons having no schooling. The BPL older persons belonged to the Muslim community had less access to all the social security schemes. Similarly, older persons belonged to ST category also had poor access to various social security schemes. For instance, utilization level of IGNWPS among BPL widowed

was lowest among the ST (12.50%) population compared to SC (51.85%), OBC (25.74%) and others (24.32%).

Table 1: Percentage of older persons aware of national social security schemes in Kerala, 2011

Demographic and Socioeconomic Characteristics	Monetary Schemes		Non-monetary Schemes		N
	IGNOAPS (%)	IGNWPS (%)	Annapurna (%)	RSBY (%)	
Age†					
60-69	89.1	88.9	49.9	18.8	813
70-79	82.4	80.8	62.9	32.3	378
Above 80	78.9	76.5	71.2	43.5	174
Sex†					
Male	91.8	86.9	44.2	80.8	567
Female	81.7	83.7	64.9	69.7	798
Years of Schooling†					
No Schooling	69.8	67.0	24.0	72.6	271
1 to 4	85.6	86.4	34.3	68.7	343
5 to 8	90.2	87.6	46.7	73.8	340
Above 8	95.1	95.4	66.3	81.8	411
Religion†					
Hindu	88.0	84.9	42.2	78.9	797
Muslim	76.3	77.7	39.4	67.7	310
Christian	93.0	95.7	55.4	70.2	255
Other	33.3	33.2	0.0	33.3	3
Caste†					
SC	83.9	85.1	36.8	82.8	87
ST	71.4	76.2	20.0	76.2	24
OBC	83.8	81.3	40.4	74.9	766
Others	91.0	92.3	52.3	72.0	488
Marital Status†					
Never Married	84.2	73.7	21.1	61.1	18
Currently Married	90.0	87.1	51.1	80.3	769
Widowed	80.5	82.9	34.7	66.8	578
Place of Residence†					
Rural	85.1	83.5	45.9	75.5	690
Urban	87.8	88.7	39.4	71.9	675
Living Status†					
Living Alone	82.0	83.7	34.0	63.3	49
Living with Spouse	96.7	95.4	63.6	84.1	167
Living with Others	84.7	83.8	41.8	73.5	1149
Chronic Diseases†					
No	86.5	84.9	40.3	71.2	392
1 Type	86.7	83.5	42.7	73.2	473
2 and More	86.6	89.2	44.0	74.5	500
Hospitalized†					
No	87.6	86.3	43.1	74.9	1117
Yes	81.9	84.7	39.9	65.2	248
Possessing Card†					
APL	88.4	88.5	48.1	71.4	933
BPL	71.2	78.6	35.6	80.3	432
Wealth Quintile†					
Lowest	76.4	70.8	30.6	72.2	61
Second	81.6	81.6	36.9	73.7	174
Middle	83.7	81.7	33.9	83.7	329

Fourth	87.4	85.0	45.0	69.6	317
Highest	90.2	91.8	56.7	70.7	484
Total	**86.0**	**85.1**	**43.8**	**74.4**	**1365**

Source: Authors calculation based on BKPAI dataset (2011).
Note: Percentage of based on weighted analysis and sample size (N) are un-weighted.
† The chi-square statistic significant at 95% confidence interval (CI).

Table 2: Percentage of older persons utilizing national social security schemes with the received amount (only for monetary schemes) in Kerala, 2011

Demographic and Socioeconomic Characteristics	Monetary Schemes				Non-monetary Schemes	
	IGNOAPS		IGNWPS		Annapurna	RSBY
	Availing (%) (N=1182)	Amount Received (₹)	Availing (%) (N=481)	Amount Received (₹)	Availing (%) (N=580)	Availing (%) (N=999)
Age†						
60-69	3.3	2774	25.3	2718	2.5	43.6
70-79	10.9	2716	20.4	3026	2.1	45.0
Above 80	11.9	7460	10.5	3384	10.2	37.5
Sex†						
Male	5.3	2956	NA	--	1.9	36.9
Female	7.0	4240	23.3	2877	4.0	48.7
Years of Schooling†						
No Schooling	7.1	2418	15.7	2760	6.3	68.9
1 to 4	15.9	2961	25.7	2963	9.8	52.8
5 to 8	4.5	8148	18.0	2972	1.2	45.9
Above 8	1.4	2493	4.2	3125	0.0	15.3
Religion†						
Hindu	8.1	2729	20.7	3095	3.4	48.0
Muslim	5.1	3099	31.3	2551	2.3	46.9
Christian	2.1	5769	7.1	2815	2.1	23.2
Other	0.0	--	0.0	--	0.0	0.0
Caste†						
SC	26.7	2974	34.1	3001	12.1	61.1
ST	13.7	2485	18.2	3269	0.0	62.5
OBC	6.7	2825	23.8	2552	2.2	50.9
Others	3.4	7677	11.2	3149	2.5	24.7
Marital Status†						
Never Married	18.8	5234	NA	--	25.0	50.0
Currently Married	3.9	3002	NA	--	2.0	39.1
Widowed	9.5	2795	20.8	2880	4.0	49.9
Place of Residence†						
Rural	7.6	2815	23.9	2966	2.6	47.8
Urban	3.7	7748	14.5	2614	3.5	33.1
Living Status†						
Living Alone	9.5	5984	29.3	3070	12.5	41.9
Living with Spouse	4.1	2322	NA	--	5.2	25.8
Living with Others	6.5	2008	20.8	2649	2.3	46.0
Chronic Diseases						
No	5.6	3579	8.7	1823	2.5	40.9

1 Type	6.5	4150	7.4	2137	3.2	42.1
2 and More	3.8	3739	5.2	3240	1.5	46.2
Hospitalized						
No	6.46	4260	21.7	2059	3.3	39.3
Yes	4.44	3735	18.4	3012	1.8	44.0
Possessing Card†						
APL	2.6	2772	11.0	2378	0.4	18.2
BPL	11.1	4335	28.4	2889	3.0	54.1
Wealth Quintile†						
Lowest	21.8	3449	46.9	3292	28.6	82.7
Second	14.4	3239	36.1	3244	6.2	59.4
Middle	8.3	2934	25.2	2743	2.4	61.6
Fourth	4.5	3122	16.2	2586	2.7	41.4
Highest	0.8	2266	1.8	2548	0.0	12.6
Total	**6.3**	**3977**	**20.8**	**2874**	**2.9**	**43.3**

Source: Authors calculation based on BKPAI dataset (2011).
Note: Percentage of based on weighted analysis and sample size (N) are un-weighted.
† The chi-square statistic significant at 99% confidence interval (CI).

It is evident from table 4 that an average of 8.6% older persons who have access to the IGNOAPS facing several types of problems in Kerala. The problems appear more severely for those older persons who were in the age group 70-79 years. 9.1% pensioner of IGNOAPS have reported facing problems with delayed fund receiving. When age reaches 80 years and above, older persons reportedly become the victim of delay in receiving the fund as well as giving bribe; 6.7% of pensioner of IGNOAPS have reported their experience of receiving delay fund and bribe-related problem. Female pensioners were more vulnerable in terms of facing several problems in receiving their entitlements than the male pensioners. Result also reveals that about 13% of pensioners those who do not have any formal schooling, have faced problems related to delaying fund and bribe. This level becomes half (6.3%) when the pensioners have primary schooling. Besides, Muslim (9.4%), SC (8.9%), Widowed (11.9%) pensioners have reported a higher rate of constraints while receiving IGNOAPS benefit. One among ten older widows (10.5%) those who were availing IGNWPS suffer from either delay funding or bribe or some other constraints. Widow pensioners in the age group 60-69 and 80+ years have faced maximum problem in availing IGNWPS. Widowed pensioners who did not attend primary level schooling faced maximum problems (19.4%). Hindu widowed face relatively more problem in getting pension than Muslim. Result also shows that older widows living alone were more likely to face problem than those who live with others.

Table 5 presents the odds ratios (ORs) from three separate binary logistic regression models to show the association between awareness of different schemes and various demographic and socio-economic factors. ORs of model 1 for all four social security schemes show the simple bivariate logistic regression output between awareness of schemes and education level of the older persons, without the effect of any other covariates. The odds of awareness of all three schemes including two monetary schemes (IGNOAPS and IGNWPS) and one non-monetary scheme (i.e. Annapurna), were increased significantly once the level of education was increased. The ORs 2.26 [p=<0.001], 3.52 [p=<0.001], and 8.82 [p=<0.001] suggest that older persons having an education of 1 to 4 years, 5 to 8 years and above 8 years respectively, were aware of IGNOAPS 2.26 times, 3.52 times and 8.82 times respectively more

than those older persons have no schooling. Similarly, ORs of IGNWPS, Annapurna and RSBY from model 1 indicates that year of schooling has a strong association with the awareness of social security schemes. Results from model 2 represent the adjusted effects of education on the awareness of various social security schemes. After adjusting for selected demographic factors, ORs for year of schooling from model 2 for all schemes were relatively reduced than the earlier model (model 1). The odds of awareness of all schemes sharply declined when the older persons were reached to older-old (70-79 years) and oldest-old (80+) age groups. Gender of older persons also significantly correlated with the awareness of social security schemes. It has been fact from the results (model 2), female members were 0.47 times [OR = 0.465, p=<0.001], 0.52 times [OR=0.519, p=<0.001] and 0.54 times [OR=0.538, p=<0.001] less likely to be aware about IGNOAPS, Annapurna and RSBY schemes respectively than male members. Older persons belonged to the Muslim community had less knowledge about all the social security schemes. In model 3, the association of awareness of social security schemes among older persons was tabulated by adding selected socio-economic covariates (place of residence, living status, possessing BPL card, and wealth quintile) with the previous model (model 2). After inclusion of new covariates in model 3, the effects of year of schooling on awareness of social security schemes were relatively declined than the earlier models (model 1 and 2). Results show that awareness of schemes significantly associated with the living status of an older person. The older persons living with their spouse were 1.78 times [OR=1.779, p=<0.05], 1.49 times [OR=1.494, p=<0.05] and 1.25 times [OR=1.255, p=<0.05] more likely to be aware of IGNOAPS, IGNWPS, and RSBY schemes respectively. Available wealth in the household of older person also had a positive role in uprising the level of awareness of various social security schemes, although this finding was not statistically significant.

Table 3: Level of the utilization of social security schemes among the BPL and APL older persons

Demographic and Socioeconomic Characteristics	**Monetary Schemes**				**Non-monetary Schemes**			
	IGNOAPS		**IGNWPS**		**Annapurna**		**RSBY**	
	BPL (%)	**APL (%)**	**BPL (%)**	**APL (%)**	**BPL (%)**	**APL (%)**	**BPL (%)**	**APL (%)**
Age	†	†	†			†	†	
60-69	6.23	1.62	34.95	13.29	3.11	0.18	61.09	20.14
70-79	19.01	3.11	25.40	10.58	1.65	0.39	47.93	17.51
Above 80	16.67	5.83	16.67	6.06	5.56	1.67	35.19	10.83
Sex								
Male	12.84	2.15	--	--	1.35	0.72	17.18	55.41
Female	10.21	2.92	--	--	3.87	0.19	19.07	53.52
Years of Schooling	†			†	†	†		†
No Schooling	8.67	3.11	23.00	12.35	4.44	0.00	60.00	36.76
1 to 4	15.56	7.35	35.53	14.29	4.67	1.55	52.67	23.83
5 to 8	7.84	2.94	23.53	12.05	0.00	0.42	52.94	21.01
Above 8	6.67	0.27	21.43	3.03	0.00	0.00	44.44	6.56
Religion	†	†		†				†
Hindu	13.45	2.96	27.01	11.05	3.79	0.20	56.21	20.91
Muslim	4.49	3.62	35.29	16.13	1.12	0.90	53.93	23.08
Christian and others	9.43	0.49	20.00	3.17	1.89	0.49	43.40	6.34
Caste	†	†	†	†			†	†

SC	26.67	11.11	51.85	20.00	6.00	0.00	62.00	35.14
ST	12.00	5.41	12.50	6.67	0.00	0.00	53.33	44.44
OBC	10.78	3.22	25.74	13.09	2.97	0.00	57.62	22.94
Others	9.18	1.28	24.32	7.69	2.04	1.03	40.82	10.00
Marital Status		†					†	†
Never Married	28.57	9.09	12.50	0.00	14.29	0.00	28.57	36.36
Currently Married	11.00	0.71	--	--	1.91	0.54	60.29	16.43
Widowed	10.65	5.25	10.94	29.21	3.70	0.28	49.07	20.44
Place of Residence	†		†			†	†	†
Rural	12.25	4.35	30.51	12.16	1.98	0.92	57.71	24.03
Urban	9.50	1.01	25.56	10.00	4.47	0.00	49.16	13.10
Living Status				†		†		†
Living Alone	11.11	3.23	46.15	25.93	5.56	3.23	38.89	19.35
Living with Spouse	19.44	0.76	--	--	0.00	2.29	55.56	10.69
Living with Others	10.32	2.85	27.18	9.63	3.17	0.00	54.76	19.46
Chronic Diseases	†			†				
No	12.70	2.26	29.23	17.05	3.97	0.38	52.38	20.68
1 Type	14.11	2.58	33.73	6.54	3.68	0.65	55.83	19.68
2 and More	6.29	2.80	20.00	10.53	1.40	0.28	53.85	15.13
Hospitalized								
No	11.49	2.73	26.74	10.53	3.45	0.39	53.45	18.34
Yes	9.52	1.83	36.11	12.90	1.19	0.61	57.14	17.68
Wealth Quintile	†	†	†	†	†	†	†	†
Lowest	19.23	11.11	48.00	40.00	9.62	11.11	53.85	66.67
Second	12.12	10.67	33.96	30.30	2.02	2.67	57.58	33.33
Middle	10.65	4.38	28.21	15.00	2.37	0.00	60.95	37.50
Fourth	7.41	2.12	17.95	11.11	2.47	0.42	48.15	20.34
Highest	6.45	0.66	0.00	2.90	0.00	0.00	22.58	6.84
Total	**11.11**	**2.57**	**28.37**	**10.98**	**3.01**	**0.43**	**54.17**	**18.22**

Source: Authors calculation based on BKPAI dataset (2011).

Note: Percentage of based on weighted analysis and sample size (N) are un-weighted.

† The Chi-Square statistic significant at 95% confidence interval (CI).

Table 6 shows the adjusted and unadjusted effects of education on the utilization of three social security schemes namely, IGNOAPS, IGNWPS, and RSBY. ORs of model 1 shows the simple bivariate association between older person's year of schooling and the utilization of social security schemes. The result of model 1 indicates that there is a positive relationship between utilization of social security schemes and primary schooling (1 to 4 years); for instance, utilization of IGNOAPS increased nearly 53% [OR=1.531, p=<0.01] among theolder persons having primary schooling than those who have no schooling. In contrast, the level of utilization of IGNOAPS significantly declined at a level of 52% [OR=0.475, p=<0.01] and 82% [OR=0.176, p=<0.001], 5 to 8 years and more than 8 years of schooling respectively compared to those oldage persons who have no schooling. Similarly, primary education (1 to 4 year of schooling) plays a significant role while older widows utilizing IGNWPS. The older widows with primary education was utilizing IGNWPS 61% [OR=1.610, p=<0.01] more than those older widows who do not have formal schooling. Model 2 shows the relationship between the

utilization of social security schemes and older person's year of schooling with control of selected demographic covariates (age, sex, religion, and caste). Older-old and oldest-oldest aged persons were 2.33 times [OR=2.331, p=<0.01] and 2.5 times [OR=2.503, p=<0.05] more likely to avail the IGNOAPS than their younger counterpart. Surprisingly, the age of older persons shows reverse relationship for IGNWPS and RSBY, where age acts as a barrier to receiving benefit from IGNWPS and RSBY. Muslim and Others religion were significantly less benefitted by all the social security schemes than the Hindu. Model 3 adds the selected socio-economic covariates with the earlier model (model 2) and shows the adjusted effect of education on social security utilization among older person. The result shows that those older persons living alone were more benefitted by IGNOAPS and IGNWPS than those who were living with other family members. The utilization of IGNOAPS and IGNWPS were reduced significantly among the tribal (ST) older persons. BPL card holders had 2.26 times [OR=2.261, p=<0.01], 1.85 times [OR=1.855, p=<0.05] and 2.62 times [OR=2.624, p=<0.001] more access to IGNOAPS, IGNWPS and RSBY schemes respectively than the APL cardholder.

Table 4: Percentage distribution of older persons by type of constraints in utilizing national social security schemes (monetary schemes only) in Kerala 2011

Demographic and Socio-economic Characteristics	IGNOAPS			IGNWPS		
	Problem Faced (%) (N=72)	Types of Problem		Problem Faced (%) (N=95)	Types of Problem	
		Delayed Fund	Paid Bribe		Delayed Fund	Others
Age†						
60-69	0.0	--	--	13.3	50.0	50.0
70-79	9.1	100.0	0.0	3.3	50.0	50.0
Above 80	6.7	60.0	40.0	20.0	50.0	50.0
Sex†						
Male	0.0	--	--	NA	--	--
Female	11.4	62.5	37.5	10.1	50.0	50.0
Years of Schooling†						
No Schooling	13.0	44.4	55.6	19.4	33.1	66.7
1 to 4	6.3	80.0	20.0	8.7	75.0	25.0
5 and above	0.0	--	--	5.8	33.3	66.7
Place of Residence†						
Rural	9.6	57.1	42.9	8.0	20.0	80.0
Urban	0.0	--	--	20.0	60.0	40.0
Living Status†						
Living Alone	15.0	54.5	44.5	15.4	0.0	100.0
Living with Spouse/Others	4.8	66.7	33.3	10.3	62.5	37.5
Possessing Card						
APL	5.5	50.0	50.0	6.3	33.3	66.7
BPL	13.9	60.0	40.0	14.7	78.5	21.4
Wealth Quintile†						
Low	16.7	100.0	0.0	13.8	25.0	75.0
Medium	8.0	50.0	50.0	18.1	25.0	75.0
High	0.0	--	--	6.7	50.0	50.0
Total	**8.6**	**69.7**	**30.3**	**10.5**	**50.1**	**50.0**

Source: Authors calculation based on BKPAI dataset (2011).
Note: Percentage of based on weighted analysis and sample size (N) are un-weighted.
† The Chi-Square statistic significant at 95% confidence interval (CI).

Discussion

The present study investigated the level of awareness, utilization, and constraints of various social security schemes available for the older persons residing in the state of Kerala. With a special focus on older person's level of education, this study investigated the factors associated with awareness, utilization, and constraints of various oldage social security schemes. Understanding the relationship of various demographic and socio-economic factors including older person's education with awareness and utilization of social security schemes will be crucial to the policymakers and programme managers to remove the barriers for creating awareness and utilization of various social security schemes in Indian society.

The result of present study highlights that awareness of social security schemes among the older persons is significantly associated with the older person's level of education. The level of education which was measured by years of schooling shows a positive association with the level of awareness for both monetary and non-monetary social security schemes. Those older persons never came to the light of formal education (or having no formal schooling), were comparatively less aware of the social security schemes than the literate older persons. Once the level of education increases, the level of awareness also increased rapidly among older persons. This finding was in line with a previous study investigated the awareness of social security schemes among older persons in Delhi by Kohli et al. (2017). Their study also highlighted that illiterate senior citizens were relatively less aware of all social security schemes than their literate counterparts (Kohli et al., 2017). The social relations between higher education level and awareness of geriatric welfare schemes are generally found to be positive (Van Ginneken, 2003). One possible explanation why educated older persons have greater awareness level would be that persons with higher education level have strong social connections and media exposures than the persons with lower level of education and that ultimately lead to the former group for the greater awareness in government schemes and benefits.

Table 5: Relationship between awareness of social security schemes and various demographic, socio-economic characteristics of older persons

Demographic and Socioeconomic Characteristics	IGNOAPS			IGNWPS			Annapurna			RSBY		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Years of Schooling												
No Schooling (ref.)												
1 to 4	2.261***	1.892***	1.827***	2.761***	2.615***	2.569***	1.517*	1.371**	1.358	0.883	0.892	0.917
5 to 8	3.521***	2.130***	1.984***	3.276***	2.578***	2.355***	2.638***	2.009***	1.951***	1.046	0.793	0.896
Above 8	8.823***	4.511***	3.612***	9.807***	6.625***	5.278***	5.567***	3.932***	3.497***	1.650**	1.141*	1.549*
Age												
60-69 (ref.)												
70-79		0.634**	0.617**		0.543***	0.529***		0.779*	0.762*		0.453***	0.465***
Above 80		0.454***	0.449***		0.403***	0.392***		0.527***	0.529***		0.261***	0.282***
Sex												
Male (ref.)												
Female		0.465***	0.478***		1.230	1.282		0.519***	0.538***		0.546***	0.547***
Religion												
Hindu (ref.)												
Muslim		0.437***	0.409***		0.805	0.722		0.837	0.789		0.542***	0.601***
Christian and Other		1.196	1.167		1.977*	1.935*		1.039	1.034		0.644**	0.665*
Caste												
Others (ref.)												
SC		0.870	1.043		0.941	1.139		0.973	1.002		1.458	1.448
ST		0.618	0.776		0.578	0.698		0.396*	0.394		0.846	0.889
OBC		1.116	1.160		0.664*	0.701		1.080	1.121		1.263	1.181
Place of Residence												
Rural (ref.)												
Urban			1.122			1.205			0.681***			0.975*
Living Status												
Living with Others(ref.)												
Living Alone			1.110			0.704			0.759			0.871
Living with Spouse			1.779*			1.494*			1.176			1.255*
Chronic Diseases												
No (ref.)			-			-			-			
1 Type			-			-			-			1.019
2 and More			-			-			-			1.112*
Hospitalized												
No (ref.)			-			-			-			
Yes			-			-			-			0.894
Card Holder												
APL (ref.)												
BPL			0.837			0.645*			1.036			1.484**
Wealth Quintile												
Lowest (ref.)												
Second			1.135			1.171			0.937*			1.3644
Middle			1.283			1.223			0.979			2.378**
Fourth			1.580			1.332			1.202			1.383
Highest			1.273			1.109			1.419			1.121
Constant	**2.474*** **	**6.882*** **	**7.226*** **	**2.227*** **	**3.378*** **	**2.760***	**0.303*** **	**0.514*** **	**0.416***	**2.430*** **	**9.052*** **	**3.783*** **
Pseudo R^2	**0.079**	**0.117**	**0.122**	**0.085**	**0.116**	**0.125**	**0.070**	**0.092**	**0.099**	**0.009**	**0.073**	**0.093**

Source: Authors analysis based on BKPAI dataset (2011).

Note: ref. denotes reference category; ***p <=0.001, ** p <=0.01, *p <=0.05
Dependent variable: Awareness of social security schemes (No=0, Yes=1)

Table 6: Relationship between utilization of social security schemes and various demographic, socio-economic characteristics of older persons

Demographic and Socio-economic Characteristics	IGNOAPS			IGNWPS			RSBY		
	Model 1	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**	**Model 1**	**Model 2**	**Model 3**
Years of Schooling									
No Schooling (ref.)									
1 to 4	1.531**	1.551*	1.616*	1.610**	1.761*	2.410**	0.612**	0.678*	0.721*
5 to 8	0.475**	0.529**	0.588*	0.433**	0.927*	1.378	0.470***	0.433***	0.642*
Above 8	0.176***	0.191***	0.275**	0.095***	0.249**	1.120*	0.128***	0.113***	0.314***
Age									
60-69 (ref.)									
70-79		2.331**	2.703***		1.002	1.159		0.585***	0.615**
Above 80		2.503*	3.132***		0.681**	0.634*		0.303***	0.329***
Sex									
Male (ref.)									
Female		0.762*	0.823		-	-		0.838	0.836
Religion									
Hindu (ref.)									
Muslim		0.391**	0.590*		1.579*	2.539*		0.502***	0.674*
Christian and Other		0.552*	0.674		0.389*	0.291*		0.554**	0.604*
Caste									
Others (ref.)									
SC		1.407	0.893		1.216*	1.042		1.461*	1.260
ST		0.799*	0.551		0.474*	0.553*		1.195	1.035
OBC		1.559	1.325		0.818	1.097		1.668*	1.415*
Place of Residence									
Rural (ref.)									
Urban			0.731			1.213			0.789
Living Status									
Living with Others (ref.)									
Living Alone			0.704**			3.513**			0.721
Living with Spouse			1.361			-			0.886
Chronic Diseases									
No (ref.)			-			-			
1 Type			-			-			0.928
2 and More			-			-			1.019
Hospitalized									
No			-			-			
Yes			-			-			0.784
Card Holder									
APL (ref.)									
BPL			2.261**			1.855*			2.624***
Wealth Quintile									
Lowest (ref.)									
Second			0.903			0.727			0.989
Middle			0.667			0.386*			1.297
Fourth			0.391*			0.232**			0.694
Highest			0.211*			0.046***			0.270***
Constant	**0.129*** **	**0.085*** **	**0.081*** **	**0.129*** **	**0.142** **	**0.274**	**0.935**	**1.267** **	**0.870**
Pseudo R^2	**0.070**	**0.118**	**0.171**	**0.074**	**0.082**	**0.193**	**0.094**	**0.146**	**0.218**

Source: Authors analysis based on BKPAI dataset (2011).
Note: ref. denotes reference category; ***p <=0.001, ** p <=0.01, *p <=0.05
Dependent variable: Utilization of social security schemes (No=0, Yes=1)

The education level of older persons shows a two-way effect on utilization of various social security schemes. Findings suggest that primary schooling of older persons has a positive effect on their utilization of social security schemes. The role of primary education is important in the utilization of security schemes because, education, either alone or combined with higher social capital (Himanshu, Arokiasamy, and Talukdar, 2019) removes the barriers to access the benefits. For instance, older persons with primary education have better access to the government offices and financial institutes (such as banks and post offices) which make them more familiar with the relevant schemes and their application procedure. At the same time, older persons with no formal education may experience difficulties with filling the right application forms and producing relevant documents during the initial application and at the time of renewal. We also noted that the association between higher years of schooling and utilization of various oldage social security schemes found to be negative even after adjusting for selected demographic and socio-economic factors. In Indian context, education is typically associated with household wealth and therefore, most of the well-educated older persons either belonged to APL family or have adequate household assets (Agarwal, 2007; Rajasekhar et al., 2017) and may be due to this reason they did not seek the benefits from the non-contributory pension schemes.

Apart from education, several other demographic and socio-economic factors were associated with the awareness and utilization of social security schemes. We found that oldest old, female, living alone, ST, Muslim older persons were less likely to be aware of several social security schemes. Similarly, lower coverage of IGNOAPS, Annapurna and RSBY were found among the ST and Muslim older persons. However, the analysis of utilization pattern for BPL and APL older persons was crucial to understanding the coverage gap in various security schemes among the targeted group – that is, BPL older persons. The result shows that BPL older persons belonged to urban areas had less access to IGNOAPS and IGNWPS compared to those BPL older persons who reside in rural areas. We also found, BPL older persons belonged to tribal (ST) and Muslim communities have very less access to the IGNOAPS and IGNWPS benefits. As per the available information, the non-contributory pension schemes were only for those destitute older persons who belonged to BPL households or having a BPL card. Contrarily, our study also reveals that non-targeted group of older persons (i.e. APL) was also seeking benefit from the social security schemes although, most of them were from lower wealth group. This finding implies that eligibility criteria to avail the benefits from social security schemes are flexible and not rigid in Kerala. However, the result of the previous study claims that APL and upper economic group pay a bribe to make them eligible for pension scheme (Mishra and Kar, 2017; Singh et al., 2015).

The present study also identified the major constraints which were associated with availing benefits from the various social security schemes. The most commonly listed problem for both the monetary schemes was receiving the delayed fund. Earlier studies also reported about the delayed fund-related issues in Indian non-contributory pension schemes (Drèze and Khera, 2017; Dutta et al., 2010; Gupta, 2013). As the expenditure of older persons in the poorer society depends upon the pension amounts (Marulasiddappa, Raonka, and Sabhikhi, 2014), they really face trouble with a delayed pension and cannot adjust with the small amount of pension so far (Barik, Agrawal, and Desai, 2015). We also found that a significant proportion of older persons reportedly paid some bribe to receive their entitlements from IGNOAPS. Previous

studies also concluded that in Indian scenario, paying a bribe was not a very uncommon practice, and people were regularised to pay bribe either to postman (Prasad, 1995) or any middleman to get the pension smoothly (Chopra and Pudussery, 2014).

Though it is evident from our study that level of education among older persons is significantly associated with the awareness and utilization of various social security schemes but, from the policy point of view, universalization of education or increasing level of education among this group of population would be a challenging task. Therefore, an intervention designed to mitigate the education-related disparities should be age-friendly for the older persons. We recommend two best possible ways based on the previous success history in developing countries to increase the reach of social security benefit among targeted groups: the first one – through the initiation of public awareness programmes from both government and non-government efforts. The public awareness can also be echoed by large campaigns of various civil society organizations such as the Pension Parishad, the Rights to Food Campaign, etc. The second way is to extend the coverage among the targeted group would the community-based social security schemes – has met a great variety of success in most middle-income countries. The best possible way out to increase the reach of social security benefit would be the public awareness programmes which can be initiated from both government and non-government efforts. Besides, this study explored the complicated relationship between older person's level of education and utilization level of various social security schemes.

Conclusion

Findings of the present study are potentially important to the policymakers and programme managers to gauge the level of awareness and utilization of welfare schemes among different group of older persons. Our findings suggest low coverage of social security schemes among some of the targeted groups is a major policy intervention gap, in this context more participation and encouragement from governmental and non-governmental organizations (NGOs) are required (van Dullemen and de Bruijn, 2015). Awareness should also be raised among the local administrators including Gram Panchayat, Panchayat Pradhan and the NGOs. The effectiveness of the security schemes can be increased through the dispelling of bribe, which is possible through public awareness and strict policy implication. To reduce the leakage of the social security schemes some strategical intervention should be promoted by the government sector and one of the best-suggested ways is the deployment of mobile money payments (Rajasekhar, Kesavan, and Manjula, 2017). It is also suggested to modify the eligibility criteria and the application procedure of social security schemes in a more simplified manner where older persons would not be suffered from heavy paperwork and that may enhance the accessibility to social security schemes. As a result, the success of security schemes will promote opportunities for older persons to guarantee them a minimum standard of living in conditions of freedom, equity, and human dignity.

Limitations and Scope for Future Research

Our study might be affected by some unavoidable limitation related to study design and other reason. Firstly, this study was restrained by the cross-sectional type of data design. All the information collected about social security schemes based on the limited interview, older persons

could have better informed about utilization and constraints of these schemes if the repeated interviews were scheduled. Secondly, this study was also limited by the self-reported nature of the data. The interviewee had no further scope for scrutinizing the bank account of the respondents to validate the amount he or she benefitted by a particular scheme. However, the initiatives and experiences have opened up vast possibilities in this field for the relatively near future. In this context, further research is required with appropriate measures to understand the implication of pension and economic support in thewellbeing of older person. Of course, there is a good opportunity to conduct a national level study to widen the level of understanding of the social security for older persons in India, which may be subject to availability of data.

Notes

a. 'Possessing any card' refers to holding of a ration card issued by the Department of Food and Public Distribution System, Government of India. There are three different types of card, issued based on the economic condition of a particular household namely APL (above poverty level), BPL (below poverty level) and Antyodaya (extreme poverty level).
b. A number of 23 household assets have been considered to compute wealth quintile, those are television, mobile phone, telephone, motorcycle, car, water pump, computer, pressure cooker, chair, sewing machine, big agricultural equipments like tractors, etc.
c. The household characteristics identified by 7 criteria such as household electrification, house ownership, building materials of the house, household drinking water source, available toilet facility, fuel used for cooking, owner of a bank or post-office savings book.

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