

# Labour Force Participation of Elderly Population in Sri Lanka : Patterns and Determinants



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## Background

- ❑ Sri Lanka has the fastest ageing population in South Asia

Country	Proportion of Population aged 60+			
	2000	2015	2030	2040
<b>Sri Lanka</b>	<b>9.3</b>	<b>13.9</b>	<b>21.2</b>	<b>25.6</b>
Afghanistan	3.7	4.0	5.1	6.6
Bangladesh	6.0	7.1	11.7	16.3
Bhutan	5.4	6.9	11.3	16.2
India	6.9	8.9	12.5	15.3
Maldives	6.1	6.0	11.0	16.5
Nepal	5.9	8.5	10.8	13.7
Pakistan	6.2	6.6	8.5	10.2

Source: United Nations, Department of Economic and Social Affairs, Population Division (2017)

## Contributory factors for the demographic transition

- ❑ High Life expectancy at birth ( 75 years – females 79 and Male 73)
- ❑ Decline in fertility rates
- ❑ Out-migration

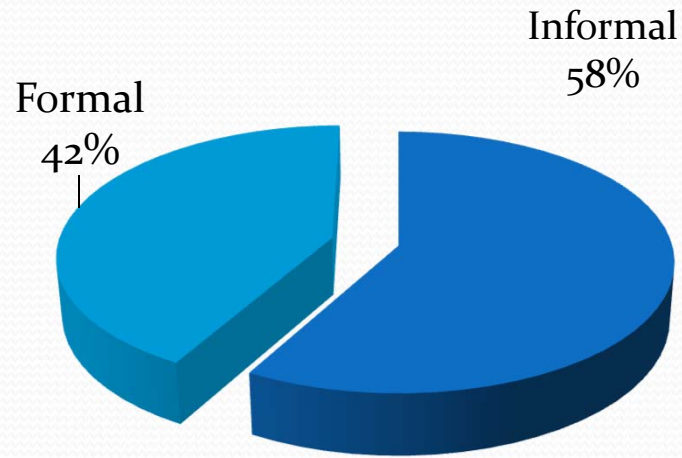
## Implications of Ageing Population

- ❑ An increase in the dependency ratio → increases the care burden on the working age population
- ❑ Health expenditure
- ❑ Social protection costs
- ❑ Labour Market - (e.g. shrinking working age population)

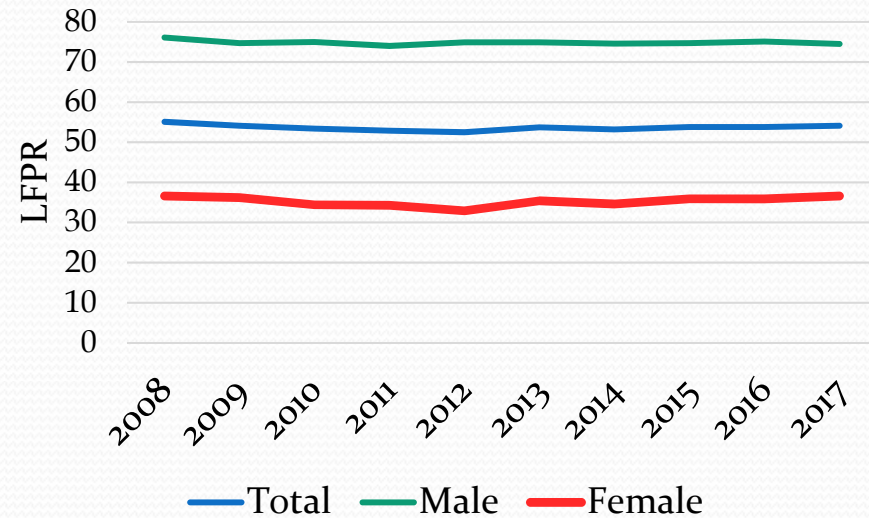


*The issues of ageing population is further compounded by two major labor market related challenges.....*

**(i) Informal sector employment**



**(ii) Low levels of female LFP**



Source: Labour Force Surveys, various issues

## Objective of the Study

- To investigate the determinants of elderly labor force participation in Sri Lanka
- To examine whether the determinants of LFP vary across gender and age categories of elderly.
- To provides a detailed profile of elderly population of Sri Lanka

## □ Methodology and Data Sources

- Household Income and Expenditure Survey (HIES) 2012/13 of the DCS
- Econometric analysis (probit model) and Descriptive analysis



# Significance of the Study

- ❑ Relevant to a number of SDGs



**8.5** By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value



**1.3** Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable

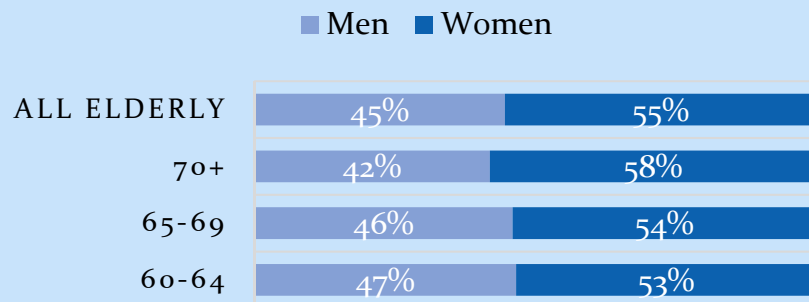
- ❑ Despite a handful of previous studies looking at LF patterns of elderly population in Sri Lanka, no detailed study looking at LFP of various sub-groups of elderly – by gender and age group.
- ❑ Further, this study examines the effect of various individual, HH and spatial characteristics as well as variables like receipt of SP and remittances – on elderly LFP



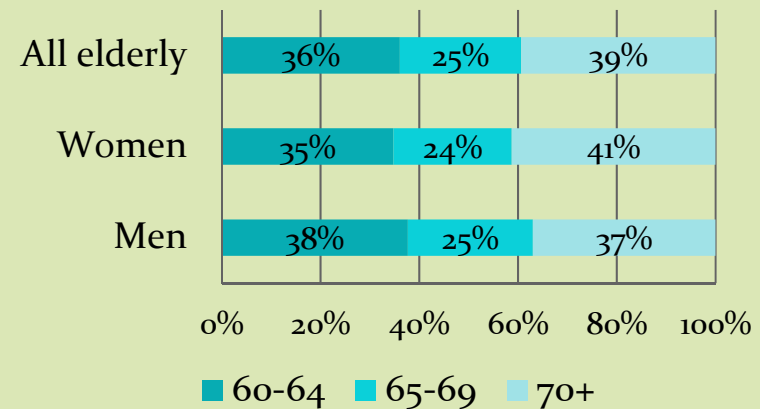
**Profile of Elderly in Sri Lanka –  
A Descriptive Analysis**

# Elderly Population in SL – Some Key Features

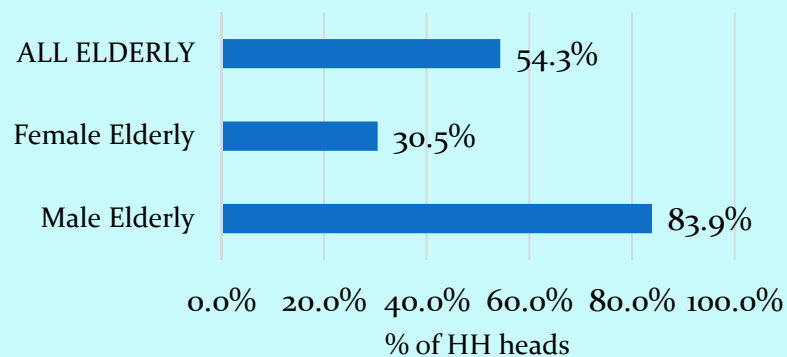
## Feminization of elderly - 55% of elderly are female....



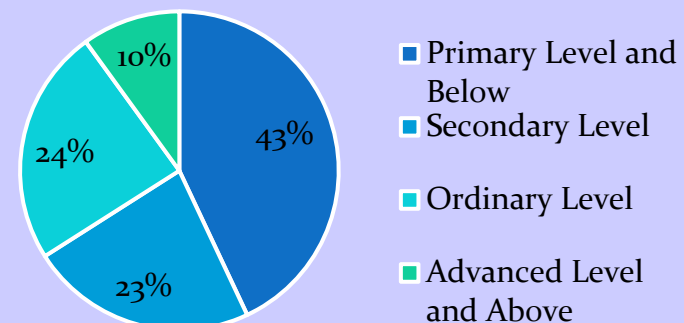
## Nearly 40% are 70+ years



## A majority of elderly are HH heads. Nearly 84% of male elderly are HH heads



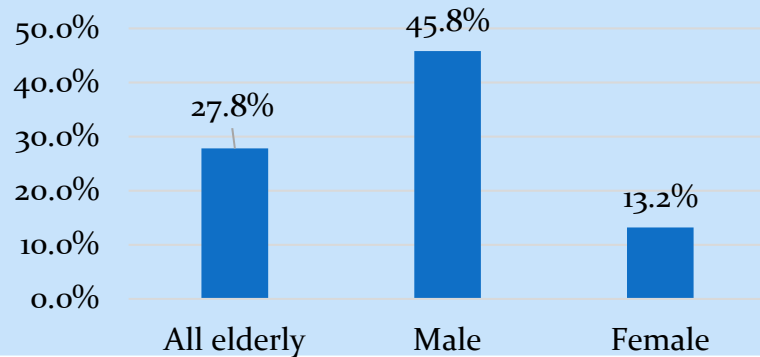
## 43% of elderly have received education up to /below the primary level



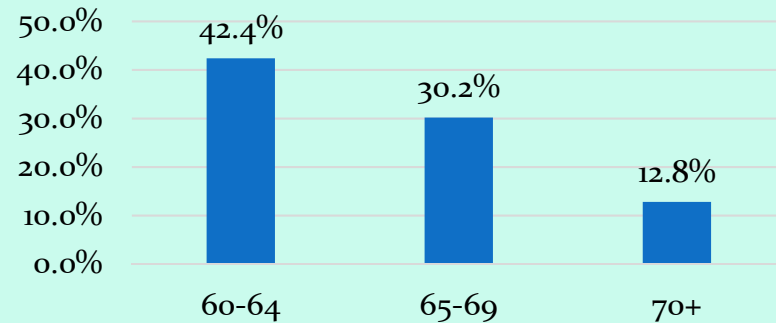


# Elderly Population and Labour Market

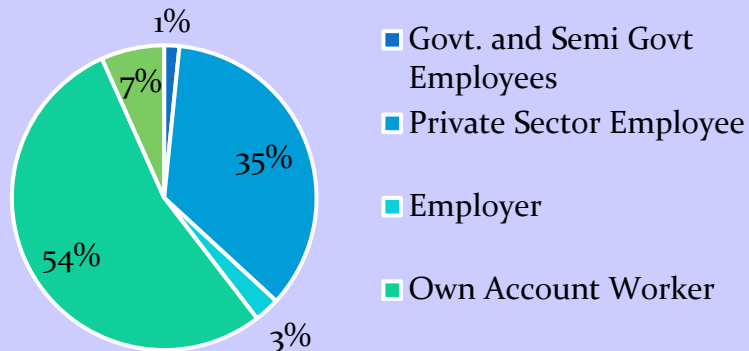
**Overall, 27.8% of elderly are in the LF. LFP is higher among men than women**



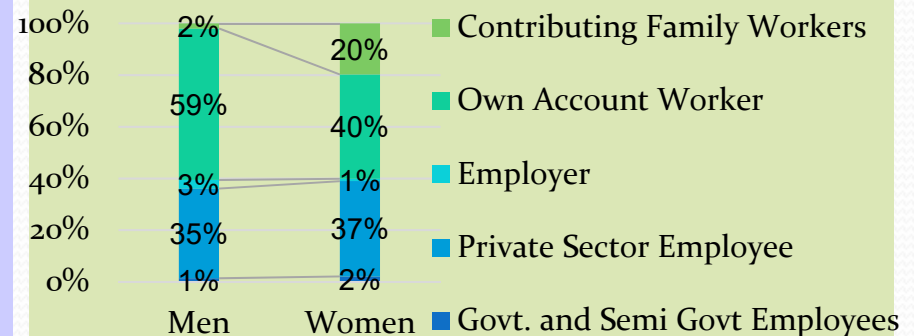
**LFP is higher in the 60-64 age group compared to the older categories**




**A majority of employed elderly are own-account workers. Pvt sector employee is also important**



**More women (19.8%) than men (2%) work as contributing family workers.**





**Determinants of Elderly Labour  
Force Participation  
-An Econometric Analysis**

# Methodology

- Determinants of Elderly labour force participation (using a **Probit Model**) -

$$y_i = \beta_0 + \beta_1 x + \varepsilon$$

- $y = 1$  if the individual participates in labour force and  $y = 0$  otherwise
  - $X$  is a vector of variables capturing individual, household and spatial characteristics
- 
- **Data Sources**
    - Household Income and Expenditure Survey (HIES) 2012/13



## Methodology ( Cont'd)

- Six probit models were estimated
  - Mode 01: Determinants of Elderly LFP ( all elderly)
  - Mode 02: Determinants of Male Elderly LFP
  - Mode 03: Determinants of Female Elderly LFP
  - Mode 04: Determinants of LFP of Elderly Aged 60-64
  - Mode 05: Determinants of LFP of Elderly Aged 65-69
  - Mode 06: Determinants of LFP of Elderly Aged 70 and above
  
- Additionally, disaggregated models were estimated - based on gender for each of the three age groups

## Methodology ( Cont'd) - Variables

List of Variables	Description
<b>Dependent variable</b>	
<b>Labour Force Participation (LFP)</b>	1= Those who were engaged in economic activity ( employed) during the previous week plus those who were available and seeking for work (unemployed); 0= Those who were neither engaged in any economic activity (employed) nor were seeking for work in the same period
<b>Independent Var.</b>	
Individual Characteristics	
<b>Gender</b>	1= male, 0=female
<b>Marital Status dummy</b>	Never married [reference category], Married, Widowed/Divorced/Separated
<b>Ethnicity dummy (Ref: Sinhala)</b>	Sinhala [reference category], Tamil, Moors & Malay, Other
<b>Age</b>	Person's age squared
<b>Education level dummy(Ref: Primary)</b>	Primary & below [reference category], Up to secondary level, Ordinary level, Advanced level & above
<b>Head of Household</b>	1= head of household, 0= not head of household
<b>Ill or disabled</b>	1= ill or chronically disabled, 0= not ill or chronically disabled

	<b>Individual - receipt of SP/ Remittance</b>
<b>Total Social Assistance Received</b>	The sum of Samurdhi payments, elder payments and disability payments received.
<b>Pension Recipient</b>	1= pension recipient, 0 = non pension recipient
<b>Remittance Recipient</b>	1= remittance recipient, 0= non remittance recipient

<b>Household Characteristics</b>	
<b>Number of children below 6</b>	Captures the number of children below 6 years of age in the household
<b>Presence of Economically Active people in HH</b>	1= there are non-elderly economically active people in the household 0= there are no non-elderly economically active people in the household
<b>Income/expend strata</b>	Quintiles based on the household per capita expenditure per month
<b>Spatial Characteristics</b>	
<b>Sector</b>	Urban [reference category], Rural, Estate
<b>Province</b>	Western [reference category], Central, Southern, Northern, Eastern, North Western, North Central, Uva, Sabaragamuwa



## Results – Marginal Effects of the Probit Models

	(1) Total	(2) Male	(3) Female	(4) 60-64	(5) 65-69	(6) 70+
<b>Individual Characteristics</b>						
<b>Male</b>	0.1856*** (0.0104)	-	-	0.2764*** (0.0200)	0.2166*** (0.0231)	0.0926*** (0.0129)
<b>Marital Status (Ref: Never Married)</b>						
Married	0.0537** (0.0207)	0.0945* (0.0369)	0.0210 (0.0212)	0.0893** (0.0345)	0.0520 (0.0405)	0.0229 (0.0304)
Widowed/ Div/Separ	-0.0234 (0.0225)	-0.0310 (0.0412)	-0.0175 (0.0225)	0.0226 (0.0405)	-0.0571 (0.0448)	-0.0381 (0.0312)
<b>Ethnicity (Ref: Sinhala)</b>						
Tamil	-0.0039 (0.0185)	-0.0008 (0.0327)	-0.0113 (0.0220)	0.0557 (0.0313)	-0.0013 (0.0435)	-0.0660* (0.0267)
Malay/M moors	-0.0191 (0.0176)	0.0203 (0.0300)	-0.0703** (0.0228)	-0.0015 (0.0323)	-0.0146 (0.0361)	-0.0429 (0.0243)
Other	-0.1969 (0.1023)	-0.2128 (0.1491)	0.0000 (.)	-0.3458* (0.1668)	0.0000 (.)	-0.0460 (0.0813)
<b>Head of HH</b>	0.1349*** (0.0106)	0.1693*** (0.0206)	0.0767*** (0.0135)	0.1609*** (0.0211)	0.1267*** (0.0235)	0.0976*** (0.0125)
<b>Age</b>	-0.0001*** (0.0000)	-0.0002*** (0.0000)	-0.0001*** (0.0000)	-0.0002*** (0.0000)	-0.0001 (0.0000)	-0.0001*** (0.0000)
<b>Ill /disabled</b>	-0.0895*** (0.0084)	-0.1504*** (0.0135)	-0.0384*** (0.0096)	-0.1402*** (0.0155)	-0.0939*** (0.0181)	-0.0413*** (0.0104)

### Gender

- Highly significant determinant. - Male elderly have a higher probability of LFP

### Head of the HH

- Being Head of HH increases the probability of LFP – among all gender and age groups

### Age and disability

-both have negative significant effect  
- disability/ illness reduced the probability of LFP  
- Age has a slight negative effect

### Ethnicity

- Not a significant determinant  
- Malay/ Moor females have lower prob of LFP

## Results – Marginal Effects of the Probit Models ( Cont'd)

	(1) Total	(2) Male	(3) Female	(4) 60-64	(5) 65-69	(6) 70+	Education level
<b>Individual Characteristics</b>							
<b>Education level (Ref: Primary)</b>							- Not a significant determinant of elderly LFP
Secondary Education	0.0103 (0.0111)	0.0401* (0.0180)	-0.0153 (0.0135)	0.0015 (0.0203)	-0.0340 (0.0243)	0.0329* (0.0134)	
Ordinary Level	-0.0187 (0.0122)	-0.0200 (0.0197)	-0.0177 (0.0135)	-0.0259 (0.0213)	-0.0313 (0.0250)	-0.0058 (0.0168)	
Advanced Level and Above	-0.0090 (0.0181)	-0.0207 (0.0277)	0.0012 (0.0215)	0.0007 (0.0305)	-0.0729 (0.0373)	0.0367 (0.0264)	
<b>Total Social Assistance Received</b>	-0.000007 (0.0000)	-0.00002 (0.0000)	0.00001 (0.0000)	-0.00001 (0.0000)	-0.000004 (0.0000)	-0.000005 (0.0000)	
<b>Pension Recipient</b>	-0.1842*** (0.0161)	-0.2517*** (0.0229)	-0.1069*** (0.0234)	-0.2920*** (0.0286)	-0.2133*** (0.0339)	-0.0876*** (0.0190)	<b>Pensions / remittance</b> - Significant negative effect on LFP - Being a pension recipient lowers the prob of LFP – for both gender and age groups. - Marginal Effect larger for males than females - Similar results for remittances
<b>Remittance recipient</b>	-0.0888*** (0.0146)	-0.1261*** (0.0227)	-0.0420* (0.0194)	-0.0829** (0.0264)	-0.1298*** (0.0321)	-0.0663*** (0.0197)	<b>Social assistance</b> - Not a significant determinant of LFP

## Results – Marginal Effects of the Probit Models ( Cont'd)

	(1) Total	(2) Male	(3) Female	(4) 60-64	(5) 65-69	(6) 70+
<b>Household Characteristics</b>						
<b>No. of children below 6 in the HH</b>	-0.0352*** (0.0078)	-0.0338** (0.0126)	-0.0335*** (0.0092)	-0.0303* (0.0140)	-0.0471** (0.0171)	-0.0286** (0.0102)
<b>Economically Active people in the HH</b>	-0.0137 (0.0105)	-0.0393* (0.0162)	0.0093 (0.0111)	-0.0199 (0.0180)	-0.0269 (0.0208)	-0.0011 (0.0131)
<b>Expenditure (Quintiles)</b>	-0.0069* (0.0035)	0.0025 (0.0057)	-0.0153*** (0.0039)	-0.0102 (0.0062)	-0.0079 (0.0073)	-0.0053 (0.0044)

### No. of Children < 6 years

- Significant negative impact on likelihood of LFP
- This holds for both male and female elders.

### Economically active

- Significant negative effect for elderly men (but no effect on females)

### Expenditure Quintile

- Significant negative association between expenditure quintile (income status) and LFP among females.
- No effect on males



## Results – Marginal Effects of the Probit Models ( Cont'd)

	(1) Total	(2) Male	(3) Female	(4) 60-64	(5) 65-69	(6) 70+
<b>Spatial Characteristics</b>						
<b>Sector (Ref: Urban)</b>						
Rural	0.0186 (0.0116)	0.0319 (0.0179)	0.0045 (0.0129)	0.0495* (0.0201)	0.0055 (0.0229)	0.0046 (0.0141)
Estate	-0.0299 (0.0252)	-0.0970* (0.0409)	0.0195 (0.0267)	-0.0796 (0.0427)	-0.0498 (0.0528)	0.0363 (0.0339)
<b>Province (Ref: Western)</b>						
Central	0.0126 (0.0156)	0.0498* (0.0248)	-0.0151 (0.0175)	0.0511 (0.0270)	-0.0454 (0.0324)	0.0124 (0.0195)
Southern	0.0677*** (0.0136)	0.0911*** (0.0216)	0.0438** (0.0138)	0.1173*** (0.0253)	0.0701* (0.0273)	0.0238 (0.0163)
Northern	-0.0648** (0.0235)	-0.0006 (0.0398)	-0.1277*** (0.0310)	-0.1064** (0.0400)	-0.0879 (0.0520)	-0.0071 (0.0356)
Eastern	-0.0462* (0.0203)	-0.0441 (0.0335)	-0.0431 (0.0239)	-0.0970** (0.0361)	-0.0644 (0.0419)	0.0131 (0.0270)
North	0.0168 (0.0166)	0.0777** (0.0275)	-0.0320 (0.0192)	0.0397 (0.0289)	0.0259 (0.0377)	-0.0106 (0.0216)
North	0.0258 (0.0196)	0.0826** (0.0301)	-0.0176 (0.0226)	0.0914** (0.0337)	-0.0126 (0.0410)	-0.0250 (0.0298)
Central	0.0698*** (0.0209)	0.1274*** (0.0310)	0.0219 (0.0218)	0.1508*** (0.0349)	-0.0134 (0.0437)	0.0459* (0.0224)
Sabaragam uwa	0.0505** (0.0171)	0.0965*** (0.0274)	0.0142 (0.0182)	0.0933** (0.0301)	-0.0007 (0.0372)	0.0341 (0.0199)
<b>Observations</b>	10608	4764	5828	3818	2658	4122
<b>Pseudo R2</b>	63.75	28.97	14.47	31.6	14.49	15.57

### Sector/ Province

- Overall, sector (urban/ rural) does not appear to be a significant factor
- Province seem to be an important determinant.
- Elderly in provinces like Southern, Uva and Sabaragamuwa (compared to western) are more likely to participate in LF
- A possible reason is the higher share of employment in agriculture & informal sectors

## Policy Implications

- **Pensions:**
  - A significant inverse relationship between receipt of pensions and probability of LFP – among elderly of both gender and all age groups
  - However, the PSPS accounts for over 10% of government recurrent expenditure and over 40% of the transfers to households , yet covers less than 20% of the total elderly.
  - Sustainability of the non-contributory scheme is a challenge → Need for pension reforms
  
- **Social assistance**
  - Not a significant determinant of LFP- can be due to low coverage and inadequacy of the benefits.
  - Discussions around introduction of Universal social pension schemes (replacing all above programs)
  
- **Raising the Retirement age**
  
- **Measures to improve Female LFP**



*Thank you!*