

Appendix – I

Calculation of P-index of Ageing

In calculating the P-index, problem arises when individual age is reported in five year age group data. Then, it is not possible to know the exact age of each individual elderly person separately. So it may be reasonable to assume that within the age group, elderly persons are distributed evenly on each side of the middle of the class interval. Therefore age of all individuals in a particular age group is assumed to be the mid points of the age group. Thus, age of the individuals in the 60 to 64 years of age group is assumed to be 62 years and the total age difference in this group will be $2 \times 775698 = 1551396$ for 2011. Similarly, the other groups are also calculated.

P-index of Ageing in Assam'2011

Age group	Persons	$Y_1 - 60$	Total $Y_1 - 60$	$(Y_1 - 60)^2$	Total $(Y_1 - 60)^2$
60-64	775698	2	1551396	4	3102792
65-69	503642	7	3525494	49	24678458
70-74	385277	12	4623324	144	55479888
75-79	184352	17	3133984	289	905721376
80+	229575	22	5050650	484	2444514600
Total	2078544		16488648		3433497114

Source : Social and cultural tables – 2011 census

Note : Researcher's calculation

$$n(p) = 31205576, \sum(Y_1 - 60) = 16488648$$

$$q(p) = 2078544, \sum(Y_1 - 60)^2 = 3433497114$$

$$H(p) = 2078544/31205576 = 0.066$$

$$I(p) = (1/2078544) (16488648/60) = 0.1322$$

$$Q(p) = H(p) \times I(p) = 0.0088$$

$$P(p) = (1/31205576) (3433497114/60^2) = 0.03056$$

P-index of Ageing in Assam'2001

Age group	Persons	$Y_1 - 60$	Total $Y_1 - 60$	$(Y_1 - 60)^2$	Total $(Y_1 - 60)^2$
60-64	577084	2	1154168	4	2308336
65-69	382083	7	2674581	49	18722067
70-74	296029	12	3552348	144	42628176
75-79	135531	17	2304027	289	39168459
80+	169639	22	3732058	484	82105276
Total	1560366		13417182		184932314

Source : Social and cultural tables, Census Report

Note : Researcher's calculations

$$n(p) = 26655528, \sum(Y_1 - 60) = 13417182$$

$$q(p) = 1560366, \sum(Y_1 - 60)^2 = 184932314$$

$$H(p) = \frac{1560366}{26655528} = 0.0585$$

$$I(p) = \left(\frac{1}{1560366}\right) \left(\frac{13417182}{60}\right) = 0.143$$

$$Q(p) = H(p) \times I(p) = 0.143 \times 0.0585 = 0.0083$$

$$P(p) = \left(\frac{1}{26655528}\right) \left(\frac{184932314}{3600}\right) = 0.001927$$

Appendix – II

$$\text{Logit (HS)} = b_0 + b_1 (\text{GR}) + b_2 (\text{AR}) + b_3 (\text{ES}) + b_4 (\text{LE}) + b_5 (\text{EW}) + b_6 (\text{SA}) + U$$

Where, HS = Health status indicated as fairly Healthy = 1 and unhealthy = 0.

GR = Gender of respondents coded as Male = 1, Female = 0.

AR = the age of the respondents coded as below 70 years = 0,
above 70 years = 1.

ES = Economic condition of the respondents coded as APL = 1 and BPL = 0.

LE = Level of education of respondents coded as literate = 1, Illiterate = 0.

EW = Engagement in work coded as working = 1, not working = 0.

SA = Spouse alive or not coded as alive = 1, not alive = 0.

Variables in the Equation

		B	S.E.	Wald	df	Sig.
Step 1(a)	GENDER	.384	.260	2.192	1	.139
	Age_grp2	-1.958	.260	56.533	1	.000***
	EconomicStatus	.168	.306	.303	1	.582
	Literat_illiterate	-.302	.501	.363	1	.547
	Working_notworking	1.753	.287	37.278	1	.000***
	Spouse_alive	1.062	.286	13.762	1	.000***
	Constant	.182	.500	.133	1	.715

a Variable (s) entered on step 1: GENDER, Age_grp2, EconomicStatus, Literat_illiterate, Working_notworking, Spouse_alive.

*** denotes significance at 1% level of significance.

Source: Researcher's calculation.