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Measuring ageing in the North Atlantic region: the prospective approach

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PhD thesis on circumpolar dimension of population ageing: cross-regional analysis



The studies / publications involved in the PhD

1. Emelyanova, A., Rautio, A. 2012. **Ageing population of the Barents Euro-Arctic region**, *European Geriatric Medicine* 3: 167-173
2. R.Danilova, E.Golubeva, A.Emelyanova. 2011. **Demographic aspects of social safety of the elderly population in the Barents Euro-Arctic region**, *Advances in Gerontology* 1(3): 195-202
3. Emelyanova, A., Rautio, A. 2013. **Perspectives for population ageing in the Russian North**. *Journal of Population Ageing* 6(3): 161-187
4. Rautio A., Poppel B., Young K. (contributing authors Emelyanova A., Juutilainen S., Sunnari V.). (in English). **Human health and well-being**. In: *Arctic Human Development Report-II*, Stefansson Arctic Institute, Akureyri, Iceland. In press
5. Emelyanova, A., Rautio, A. 2014. **Policies of Arctic countries to promote volunteering in old age**. In "Ageing, Wellbeing and Climate Change in the Arctic: An Interdisciplinary Analysis", Routledge. To be published in 2015.
6. Emelyanova, A., Rautio, A. 2014. **Measuring ageing in the North Atlantic region: the prospective approach**. *Journal of Population Research*. Submitted
7. Emelyanova A., Rautio A. (in English). **Ageing in Denmark**. In "SAGE Encyclopedia on Aging". SAGE. Submitted
8. Emelyanova, A., Rautio, A. 2014. **Across an Ageing Gradient in Arctic Alaska and Northern Canada, 1980-2013**. In writing



The North Atlantic region



[Click for Live Map](#)



The Study Plan

1. Study on what demographic trends contribute to the ageing development

2. Indicators of ageing

Conventional ageing measures

United Nations Indicators of Ageing

Prospective ageing measures

Sanderson & Scherbov

Median Age, MA	Prospective Median Age PMA
Proportion of the population aged 60+, PROP 60+	Proportion of the population with RLE 15-, PROP RLE 15-
Aging Index, AI	Prospective Aging Index, PAI
Old-age dependency ratio, OADR	Prospective old-age dependency ratio, POADR

60-year old threshold as a denominator

3. Discussion and conclusions



The demographic profile of the North Atlantic

Considerable population growth in the 20th century: from 100 000 to 450 000

“Thinning out societies” (Aasbrenn 1989)

Heavy out-migration from rural areas, particularly of young educated women, and affected by financial crises in fishery industry

Decreasing rates of natality. In 2013, the TFR in Iceland -1.88, Greenland - 2.08, the Faroe Islands - 2.39.

Relative to a proportion of native people / abortion rights

Rural and economically poor areas of Norðoyar and Vágur (the Faroe Islands), Vestfirðir and Suðurland (Iceland), and the East Greenland have the highest mortality. In 2013, crude mortality rate was higher in Greenland (8.3), followed by the Faroe Islands (7.5), and Iceland (6.2)

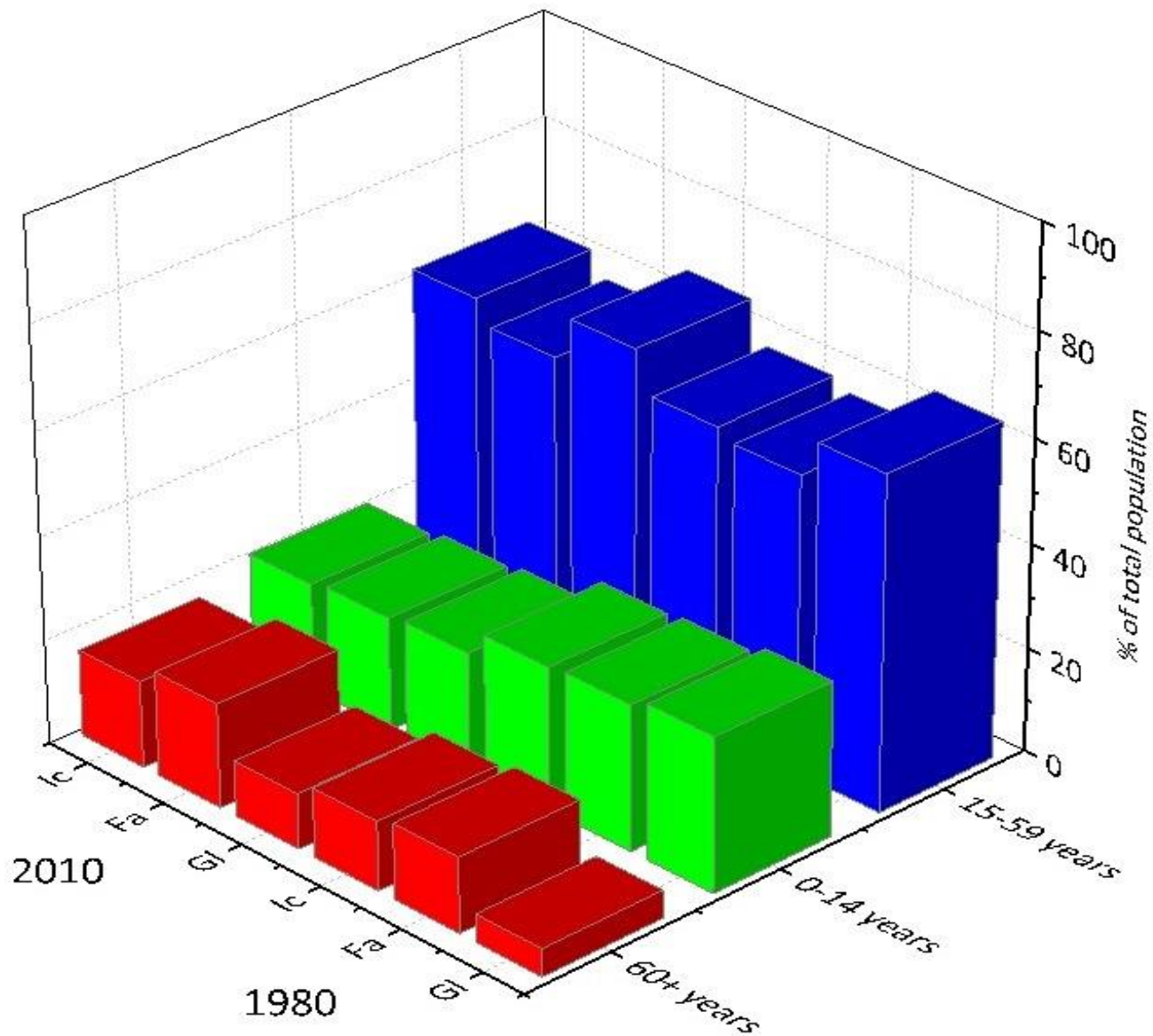
Life expectancy at different ages, Male / Female

- (1) Iceland and the Faroe Islands have a LE at birth almost 10 years higher than in Greenland. It rose faster to men (8 years) within 3 recent decades.
- (2) Arctic territories of Denmark have much lower (Greenland) or higher (Faroe Islands) rates of longevity than the national Danish average
- (3) Longevity has risen more slowly at a later age than at birth

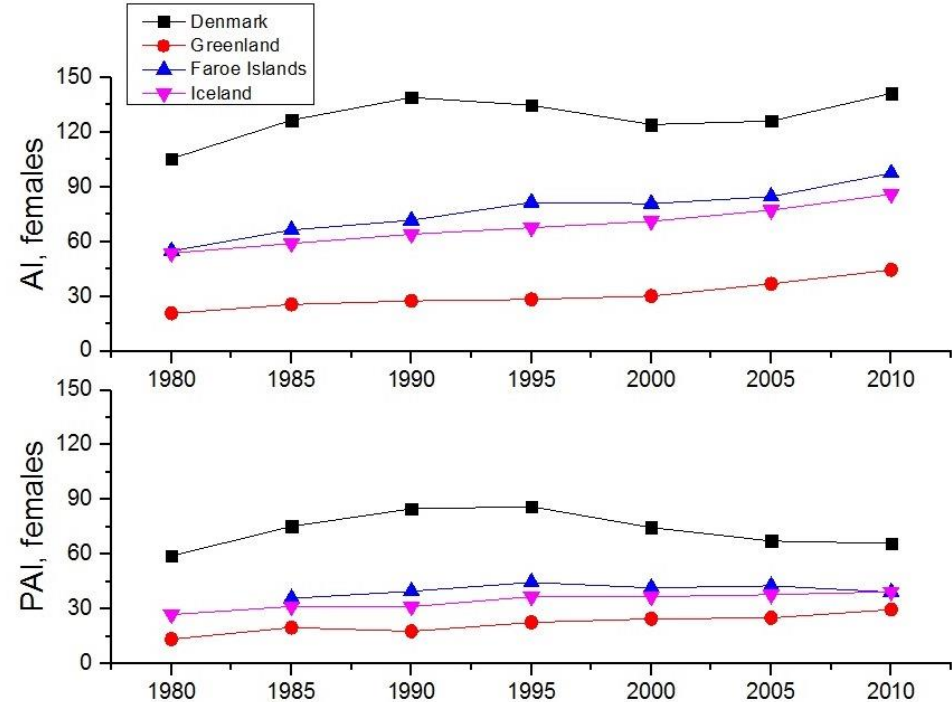
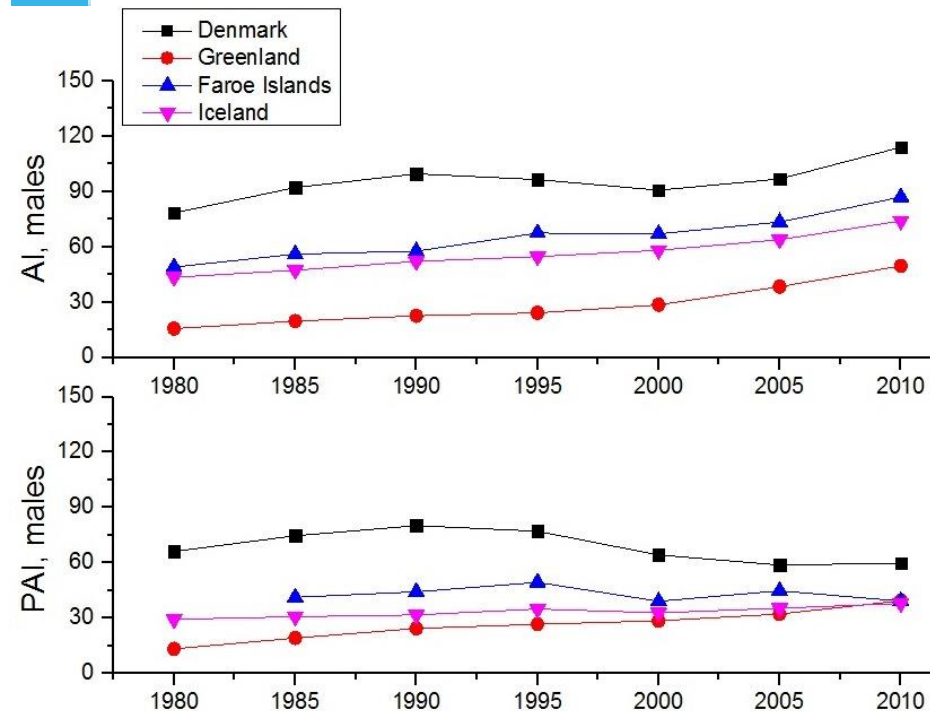
	Denmark		Greenland		The Faroe Islands		Iceland	
	1980	2012	1977-1981	2008-2012	1985-1986	2011-2012	1980	2012
Life expectancy at birth	71.4 / 77.4	78.0 / 81.9	60.3 / 67.7	68.7 / 73.4	72.1 / 79.4	79.6 / 84.6	73.5 / 79.5	80.8 / 83.9
Life expectancy at age 60	17.14 / 21.59	21.26 / 24.24	15.6 / 17.9	16.4 / 18.6	18.3 / 21.9	22.5 / 24.9	19.3 / 23.0	23.4 / 25.4
Age at which RLE is 15 years	63.1 / 68.6	68.3 / 71.4	61.0 / 64.6	61.9 / 64.7	64.5 / 68.7	69.2 / 72.1	65.8 / 70.4	69.0 / 72.4

8

Age structures 1980 vs. 2010 in three broader population groups (GI – Greenland, Fa – the Faroe Islands, Ic – Iceland), % of total population



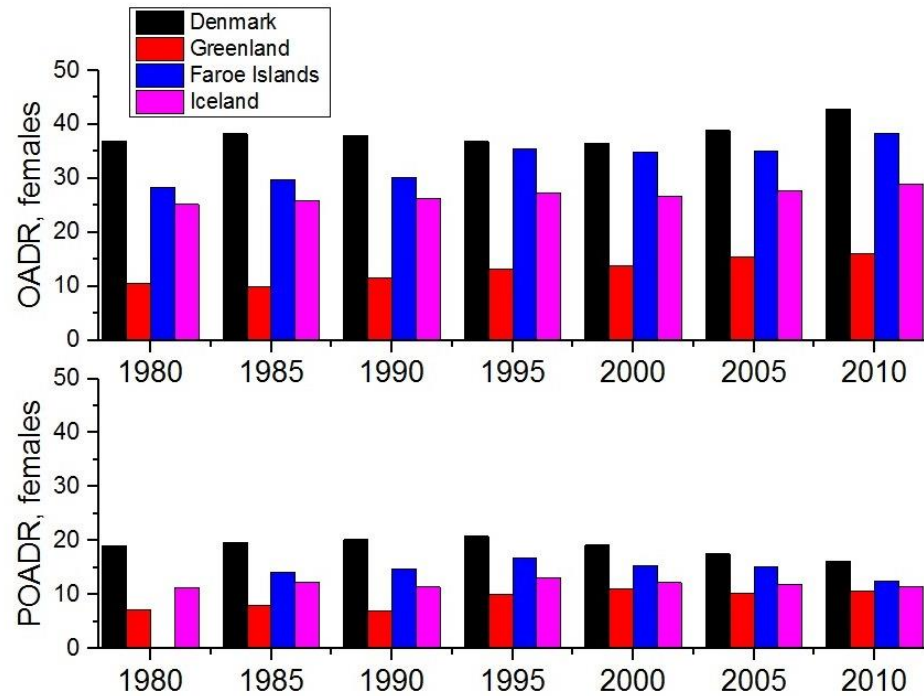
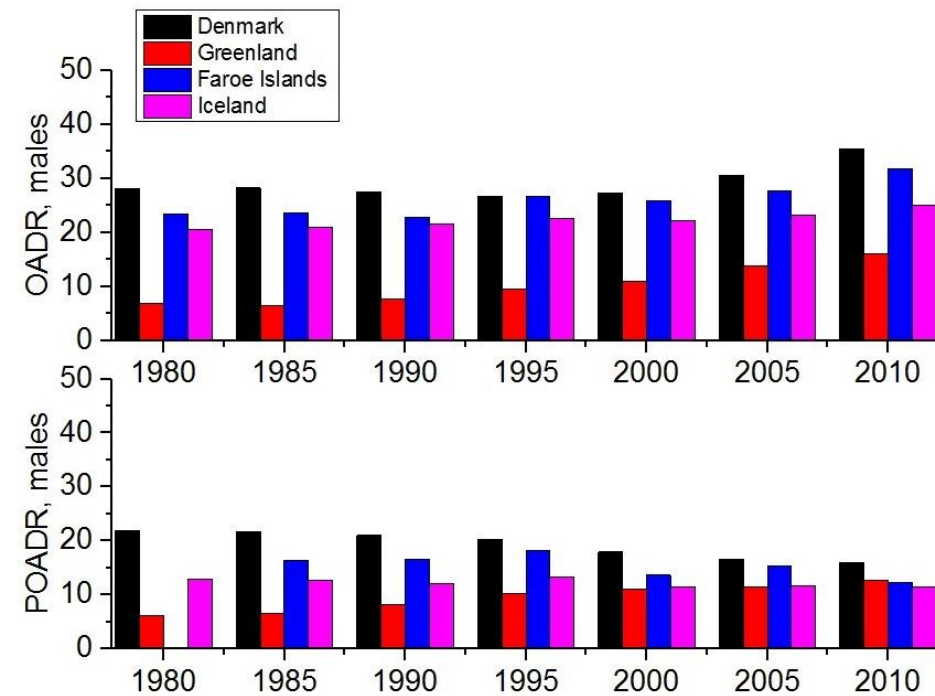
Conventional vs. prospective Aging Index (elder-child ratio) by sex, 1980-2010



- Mostly, an AI upward trend (Denmark has the highest AI for both sexes)
- Within the North Atlantic, the Faroe Islands performs the highest AI

- PAIs show lower values, rose slower, non-consistently
- In 2010, all 3 territories of the North Atlantic converged

Conventional vs. prospective Old-age Dependency Ratio by sex, 1980-2010



Year	Sex	MA	PMA	Prop 60+	Prop RLE 15-	OADR x 100	POADR x 100	AI x 100	PAI x 100	Age 15-
Greenland										
1980*	Males	24.72	37.13	4.51	4.17	6.76	6.14	15.67	13.32	61.02
1990		28.53	40.49	5.45	5.81	7.74	8.26	22.60	24.42	59.23
2000		32.56	42.53	7.34	7.40	10.96	11.09	28.52	28.54	59.74
2010		35.08	42.84	10.85	8.80	16.12	12.78	49.71	39.45	61.90
1980	Females	22.52	33.51	6.54	4.50	10.55	7.22	20.74	13.55	64.63
1990		26.81	36.97	7.54	4.78	11.59	7.00	27.59	17.83	64.73
2000		29.59	41.69	8.66	7.10	13.84	11.09	30.13	24.64	62.54
2010		32.01	40.52	10.59	7.23	16.12	10.57	44.61	29.73	64.68
Iceland										
1980	Males	26.30	31.95	12.24	8.25	20.53	12.98	43.51	29.34	65.80
1990		29.38	32.52	13.26	8.08	21.63	12.16	52.11	31.77	66.89
2000		32.13	33.12	13.83	7.83	22.16	11.45	58.12	32.90	68.84
2010		34.27	33.92	15.73	8.07	24.94	11.41	74.12	38.03	68.99
1980	Females	27.34	30.94	14.63	7.36	25.17	11.25	53.74	27.03	70.41
1990		30.25	32.69	15.74	7.70	26.36	11.37	64.09	31.37	70.85
2000		32.48	34.97	16.27	8.41	26.73	12.23	71.20	36.78	71.06
2010		35.31	34.54	17.78	8.15	28.87	11.45	86.12	39.50	72.39
The Faroe Islands										
1980	Males	28.39	34.54	13.70	10.50	23.48	16.40	49.05	41.32	64.51
1990		30.39	35.46	14.04	10.78	22.76	16.60	57.75	44.34	64.24
2000		33.96	35.34	15.73	9.18	25.88	13.63	67.05	39.13	68.17
2010		36.71	36.63	18.85	8.50	31.70	12.18	87.02	39.25	70.00
1980	Females	28.30	33.02	15.74	9.23	28.28	14.17	54.97	35.94	68.74
1990		31.06	33.74	17.53	9.71	30.21	14.75	71.76	39.75	69.22
2000		35.15	35.41	19.58	10.09	34.84	15.37	80.85	41.68	72.14
2010		38.18	35.34	21.58	8.68	38.32	12.55	97.58	39.26	74.46

Concluding remarks

Chronological and prospective measurements are not always in agreement with the **'leadership', speed and rates** of ageing within the North Atlantic trio.

The ageing in the North Atlantic differs:

- in distantly settled (rural) vs. highly urbanized areas/cities,
- between men and women,
- between Denmark, Nordic countries and the North Atlantic asking for differential solutions in labor policy, health care and welfare programs.

Maintaining a sufficient level and accessibility of health and social services is more costly in the sparsely populated / islands' North Atlantic municipalities.

The NA region is utterly sensitive to migration, controlling of which to the balanced 'state' can mitigate the ageing.



Thank you!

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Iceland

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