

# Differences in health status and health expectancies by gender and geographical districts in Hong Kong

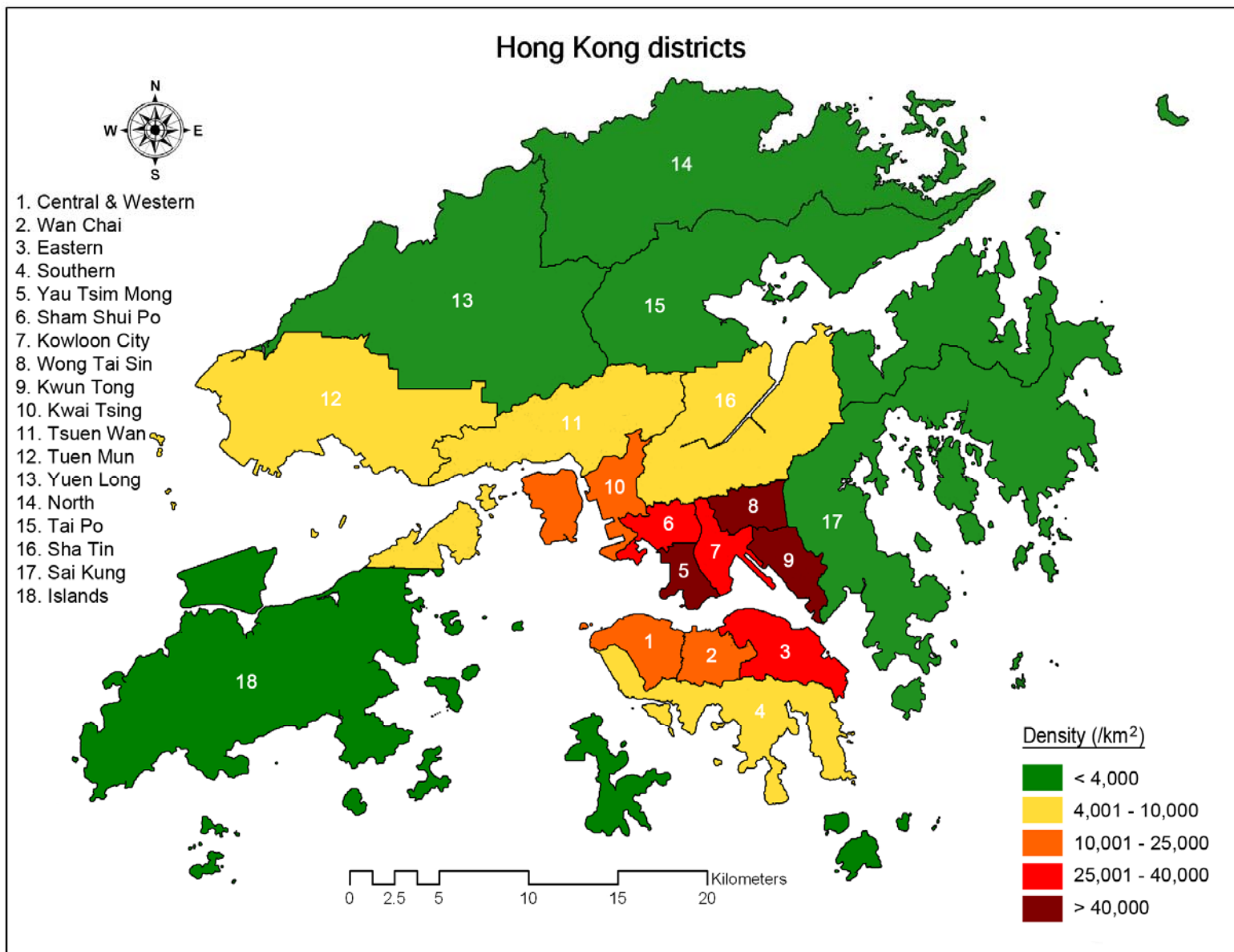
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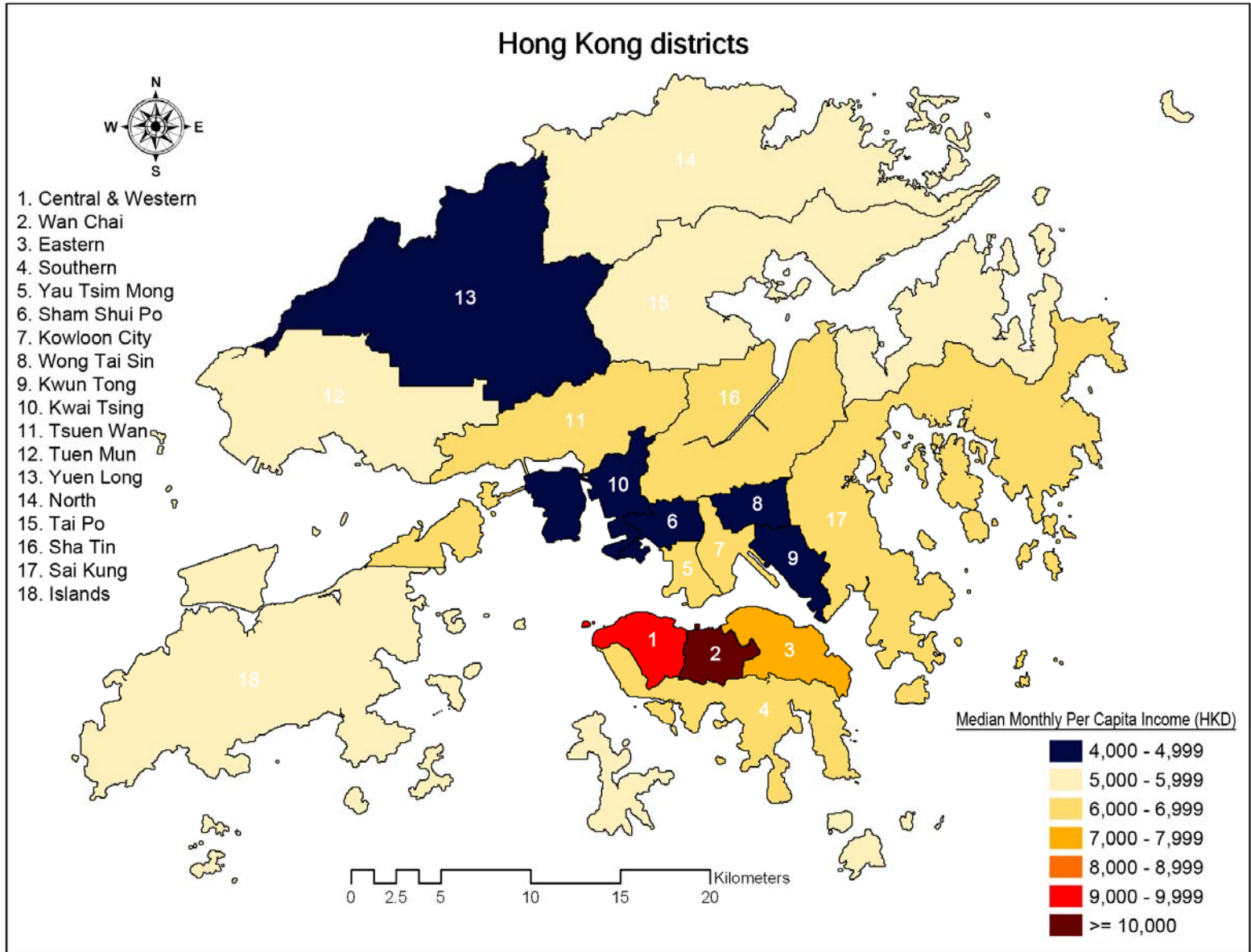
# Population Density by districts (2006)



Source: 2006 By-census, C&SD, HKSAR



# Median Monthly Per Capita Income (2006)

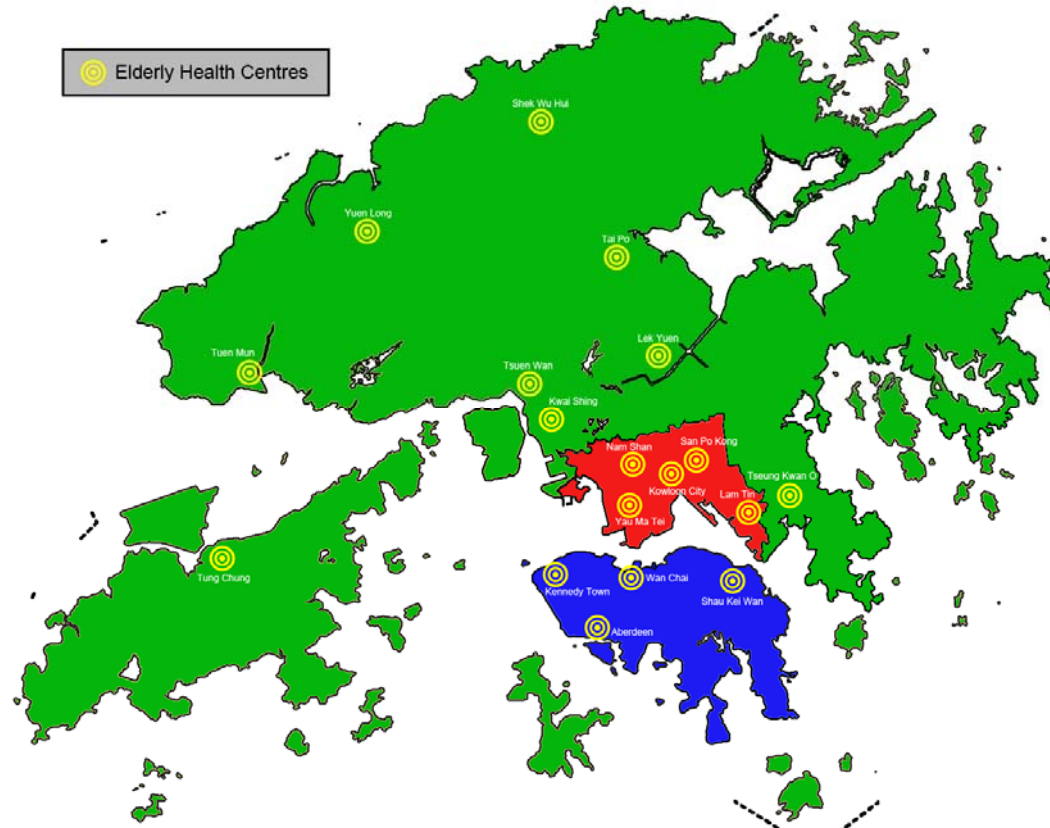


Source: 2006 By-census, C&SD, HKSAR



# Data

- Longitudinal datasets from 18 Elderly Health Centres (EHCs), Department of Health, HKSAR Government.
- The EHCs provide (1) physical check up and health assessment, (2) counselling and curative treatment, and (3) health promotion and education to the elderly aged 65 and above.





- From 2004 to 2008, the EHCs recorded 80,049 members who attended health assessment and medical consultation.
- Participants (**N=39,570**) were elderly members who enrolled and followed up in the 18 EHCs during January 2004 to December 2008.
- Clients were interviewed by trained nurses with a standardized questionnaire, and underwent clinical examination by EHC doctors.
- Vital status and cause of death were ascertained from death registration in Hong Kong by record linkage using the unique Hong Kong identity card number.
- Data collected in 2004 was used to form the baseline of the analyses and same cases were followed up.
- The data collected each year from 2005 to 2008 formed another 4 waves of the analyses.





# Methods

- Microsoft EXCEL
- SPSS ver17.0
- Interpolation of Markov Chains (IMaCH) computer program \*
- IMaCH computer program can deal with several waves of data at once and different lengths of intervals between surveys;
- It produces outputs of total life expectancies and health expectancies by single age and other covariates based on the multistate life table method.
- Requires 1 data file and 1 parameter file

\* source: <http://euoreves.ined.fr/imach/doc/imach.htm>





## Definition of health status

- Functional active and disabled states
  - Activities of Daily Living (ADL)  
(7-items)
  - Instrumental Activities of Daily Living (iADL)  
(5 items)
- Absorbing state – death
- Each item in ADL and iADL was scored:
  - 1 mark** – perform independently / no need to do so
  - 2 marks** – sometimes need others help / aided
  - 3 marks** – rely on the others help / cannot perform because of poor health condition

# The total score of ADL and iADL was used as the major health index for HE calculation.





## iADL and ADL

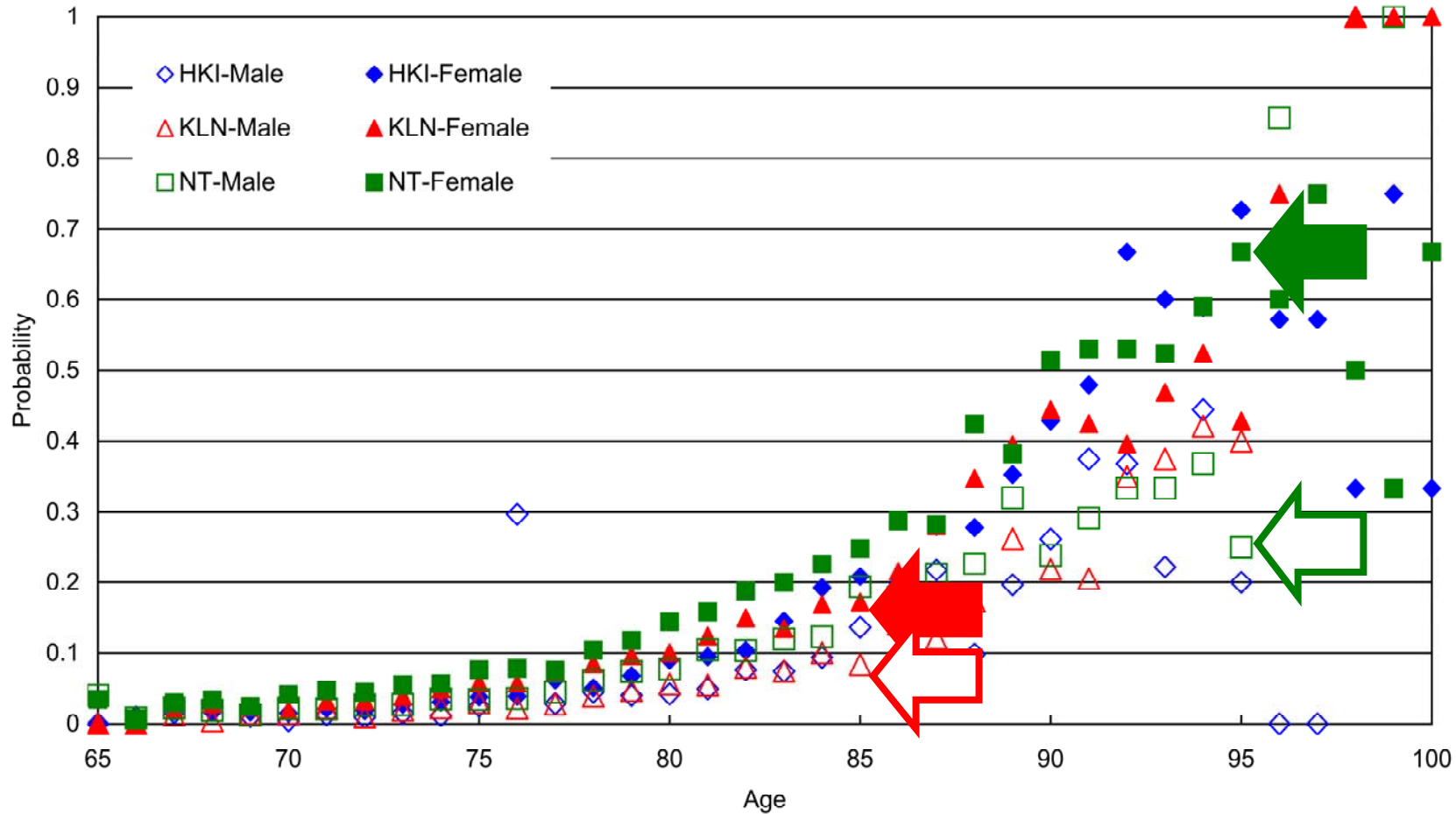
- ADL
  - 1) Taking a bath or shower;
  - 2) Using the toilet;
  - 3) Walking;
  - 4) Getting in/out of bed;
  - 5) Dressing;
  - 6) Eating;
  - 7) Cleaning up
- iADL
  - 1) Using a telephone;
  - 2) Public transport;
  - 3) Shopping;
  - 4) Cooking;
  - 5) Managing finances
- Classified as:
  - (i) functional active if the total scores of ADL and iADL = 12
  - (ii) functional disabled if the total scores of ADL and iADL > 12





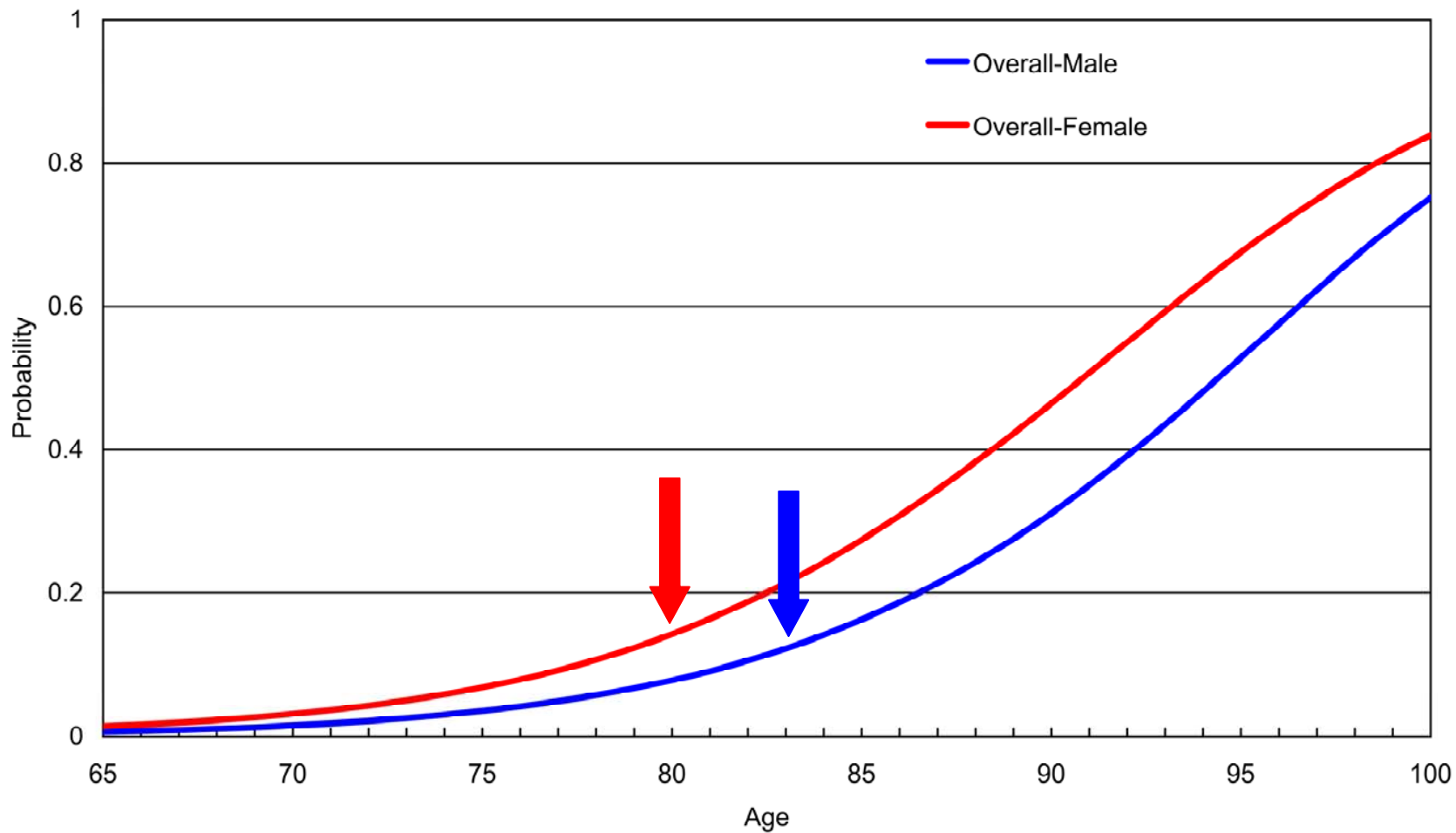


# Cross-sectional Prevalence of Disability among Aged 65+ (2004-2008)





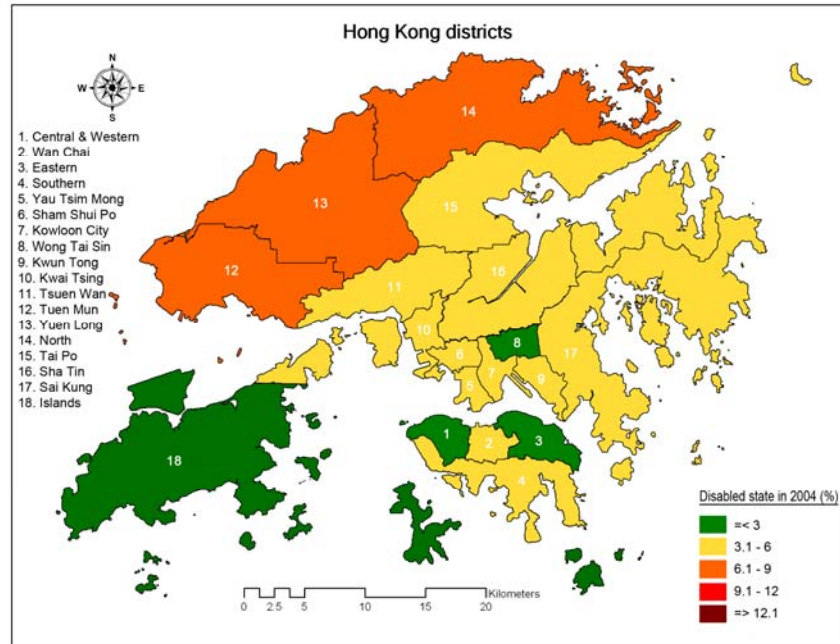
## Period Prevalence of Disability among Aged 65+ (2004-2008)



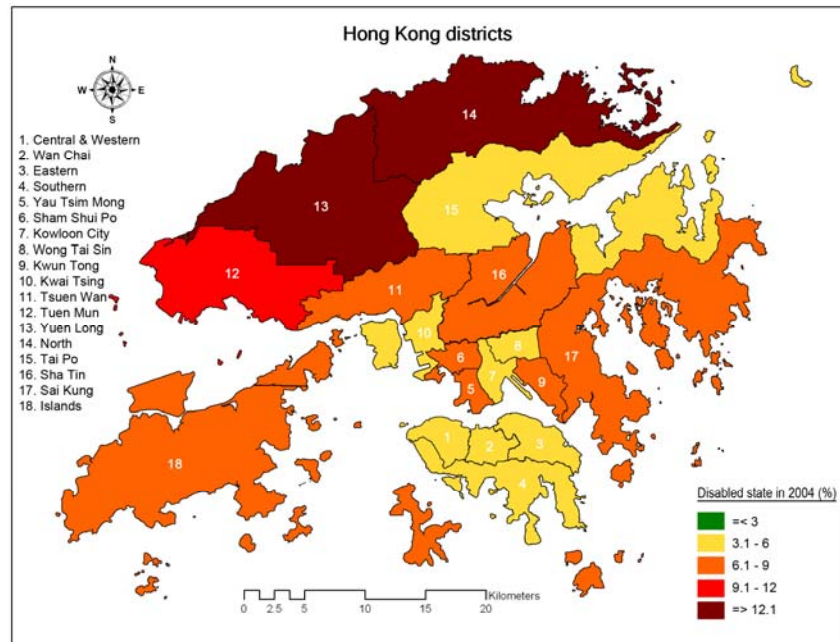


# Proportion of the disabled ageing in 2004 among the EHCs' members

Male

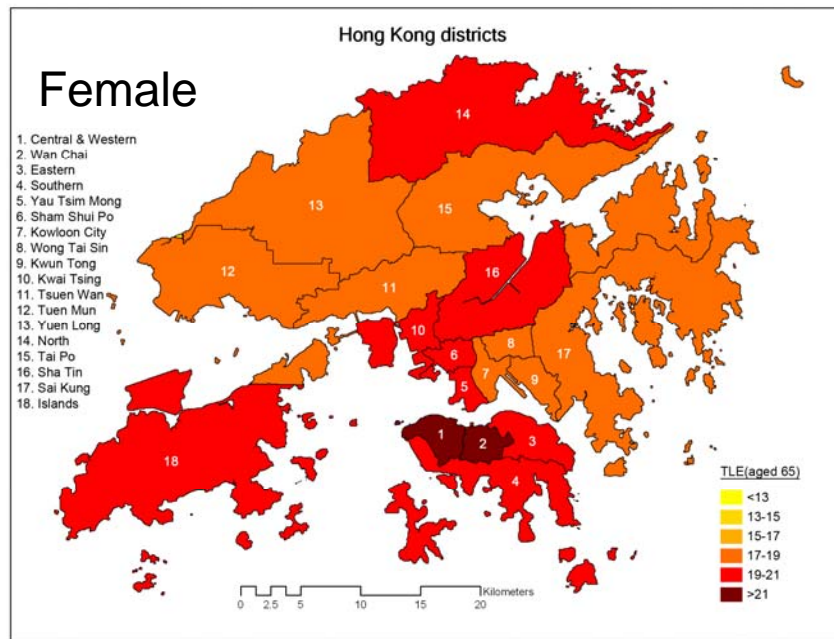
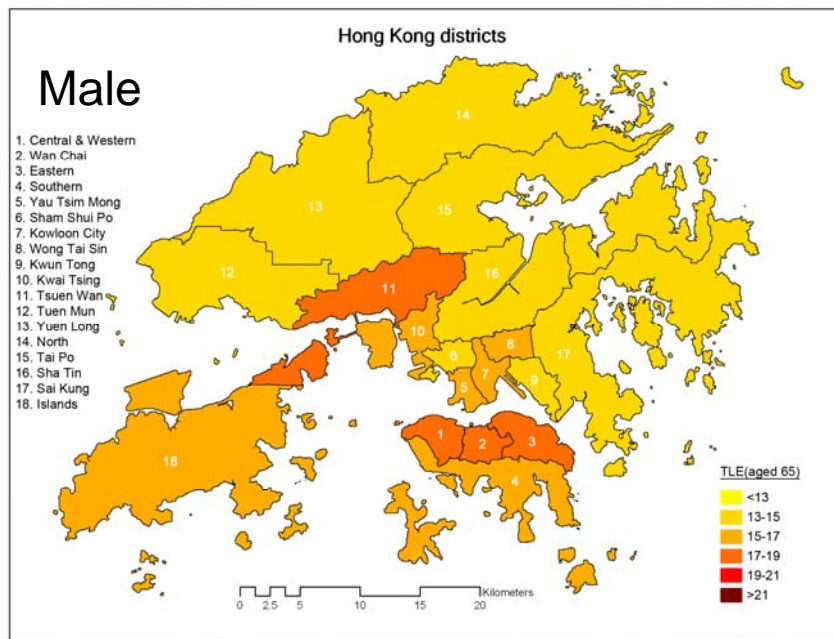


Female





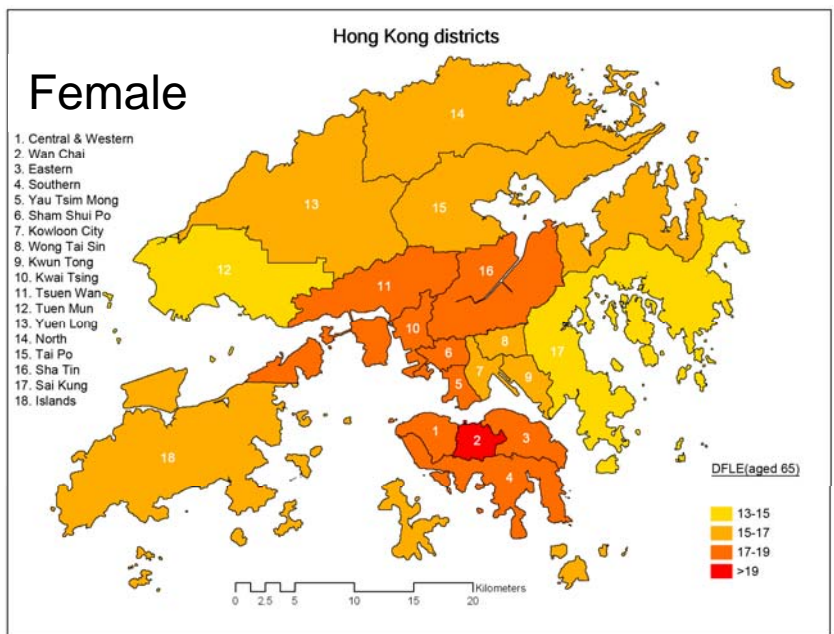
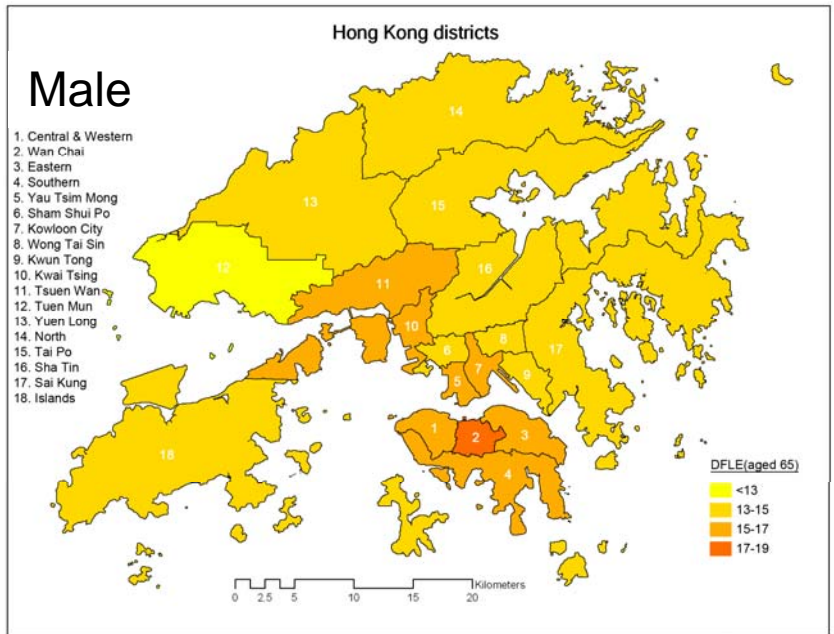
# Total Life Expectancy among Age 65 by Gender and Districts (2004-2008)



	Total Life Expectancy (Aged 65)		Gender variation	
	Male	Female	Years	(F-M)/M
Central & Western	17.12	22.32	5.19	30.32
Wan Chai	18.75	21.70	2.95	15.74
Eastern	18.01	19.63	1.63	9.05
Southern	15.94	19.21	3.27	20.51
Yau Tsim Mong	15.90	19.16	3.26	20.49
Sham Shui Po	13.98	20.87	6.89	49.31
Kowloon City	16.76	18.51	1.76	10.47
Wong Tai Sin	15.08	18.99	3.91	25.93
Kwun Tong	14.84	18.98	4.14	27.86
Kwai Tsing	15.54	19.45	3.90	25.10
Tsuen Wan	17.55	18.82	1.27	7.24
Tuen Mun	13.95	18.67	4.72	33.82
Yuen Long	14.85	18.86	4.01	27.00
North	13.89	19.61	5.72	41.15
Tai Po	14.15	18.52	4.38	30.92
Sha Tin	14.93	19.31	4.37	29.29
Sai Kung	14.97	17.25	2.28	15.24
Islands	15.59	20.60	5.00	32.09



# Disability-free Life Expectancy among Age 65 by Gender and Districts (2004-2008)



	Disability-free Life Expectancy (Aged 65)		Gender variation	
	Male	Female	Years	(F-M)/M
Central & Western	16.31	18.68	2.37	14.53
Wan Chai	17.75	19.04	1.29	7.27
Eastern	16.91	17.46	0.55	3.25
Southern	15.13	17.07	1.94	12.82
Yau Tsim Mong	15.25	17.48	2.23	14.62
Sham Shui Po	13.14	17.82	4.68	35.62
Kowloon City	16.06	16.23	0.17	1.06
Wong Tai Sin	14.45	16.59	2.14	14.81
Kwun Tong	14.18	16.55	2.37	16.71
Kwai Tsing	15.04	18.12	3.08	20.48
Tsuen Wan	16.73	17.32	0.59	3.53
Tuen Mun	12.83	14.98	2.15	16.76
Yuen Long	13.92	15.63	1.71	12.28
North	13.09	16.36	3.27	24.98
Tai Po	13.59	16.89	3.3	24.28
Sha Tin	14.31	17.32	3.01	21.03
Sai Kung	13.22	13.28	0.06	0.45
Islands	14.45	15.47	1.02	7.06

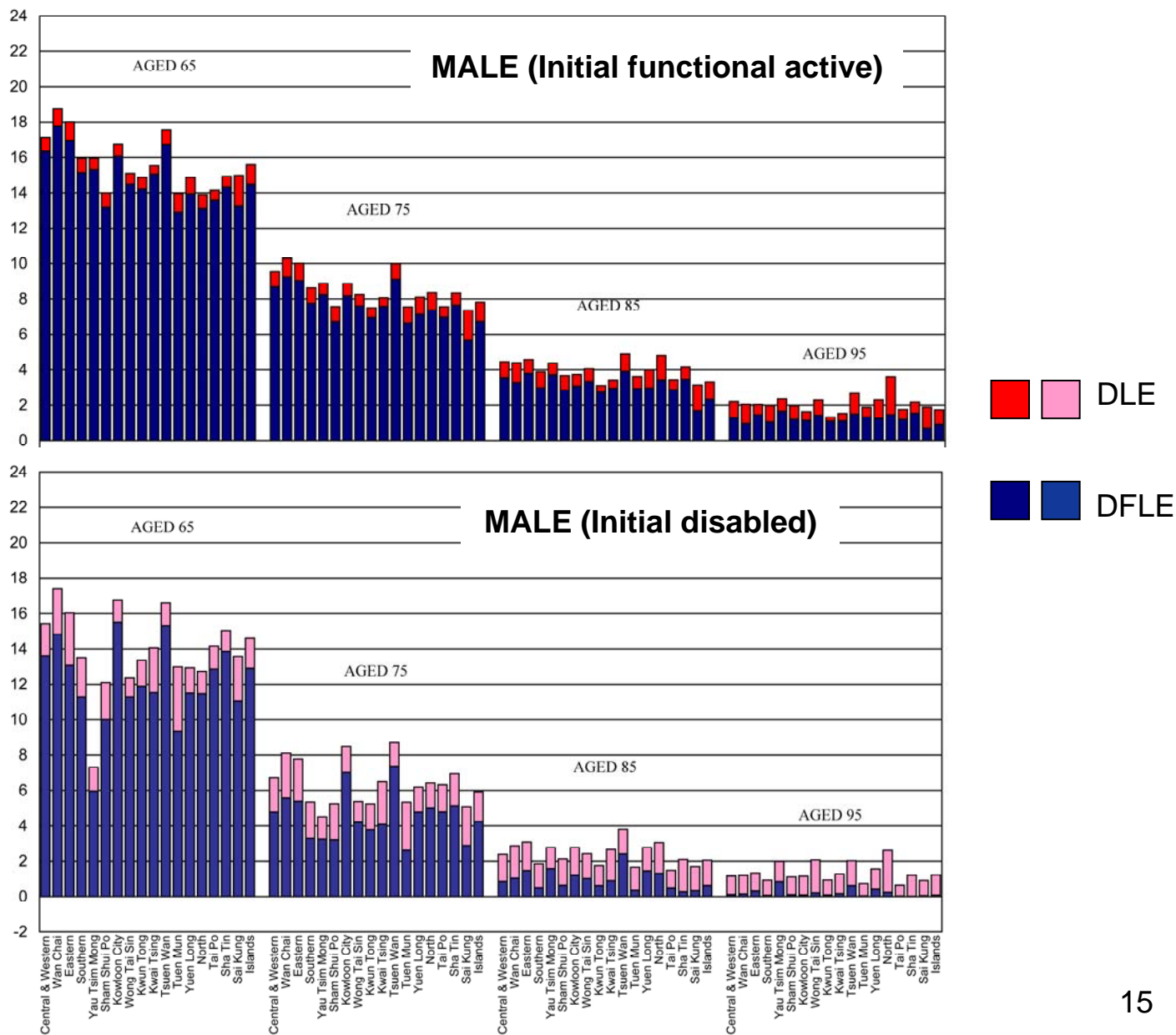


	Total Life Expectancy (Aged 65)		Disability-free Life Expectancy (Aged 65)		DFLE/TLE (Aged 65)	
	Male	Female	Male	Female	Male	Female
Central & Western	17.12	22.32	16.31	18.68	95.27	83.69
Wan Chai	18.75	21.70	17.75	19.04	94.67	87.74
Eastern	18.01	19.63	16.91	17.46	93.89	88.95
Southern	15.94	19.21	15.13	17.07	94.92	88.86
Yau Tsim Mong	15.90	19.16	15.25	17.48	95.91	91.23
Sham Shui Po	13.98	20.87	13.14	17.82	93.99	85.39
Kowloon City	16.76	18.51	16.06	16.23	95.82	87.68
Wong Tai Sin	15.08	18.99	14.45	16.59	95.82	87.36
Kwun Tong	14.84	18.98	14.18	16.55	95.55	87.20
Kwai Tsing	15.54	19.45	15.04	18.12	96.78	93.16
Tsuen Wan	17.55	18.82	16.73	17.32	95.33	92.03
Tuen Mun	13.95	18.67	12.83	14.98	91.97	80.24
Yuen Long	14.85	18.86	13.92	15.63	93.74	82.87
North	13.89	19.61	13.09	16.36	94.24	83.43
Tai Po	14.15	18.52	13.59	16.89	96.04	91.20
Sha Tin	14.93	19.31	14.31	17.32	95.85	89.69
Sai Kung	14.97	17.25	13.22	13.28	88.31	76.99
Islands	15.59	20.60	14.45	15.47	92.69	75.10



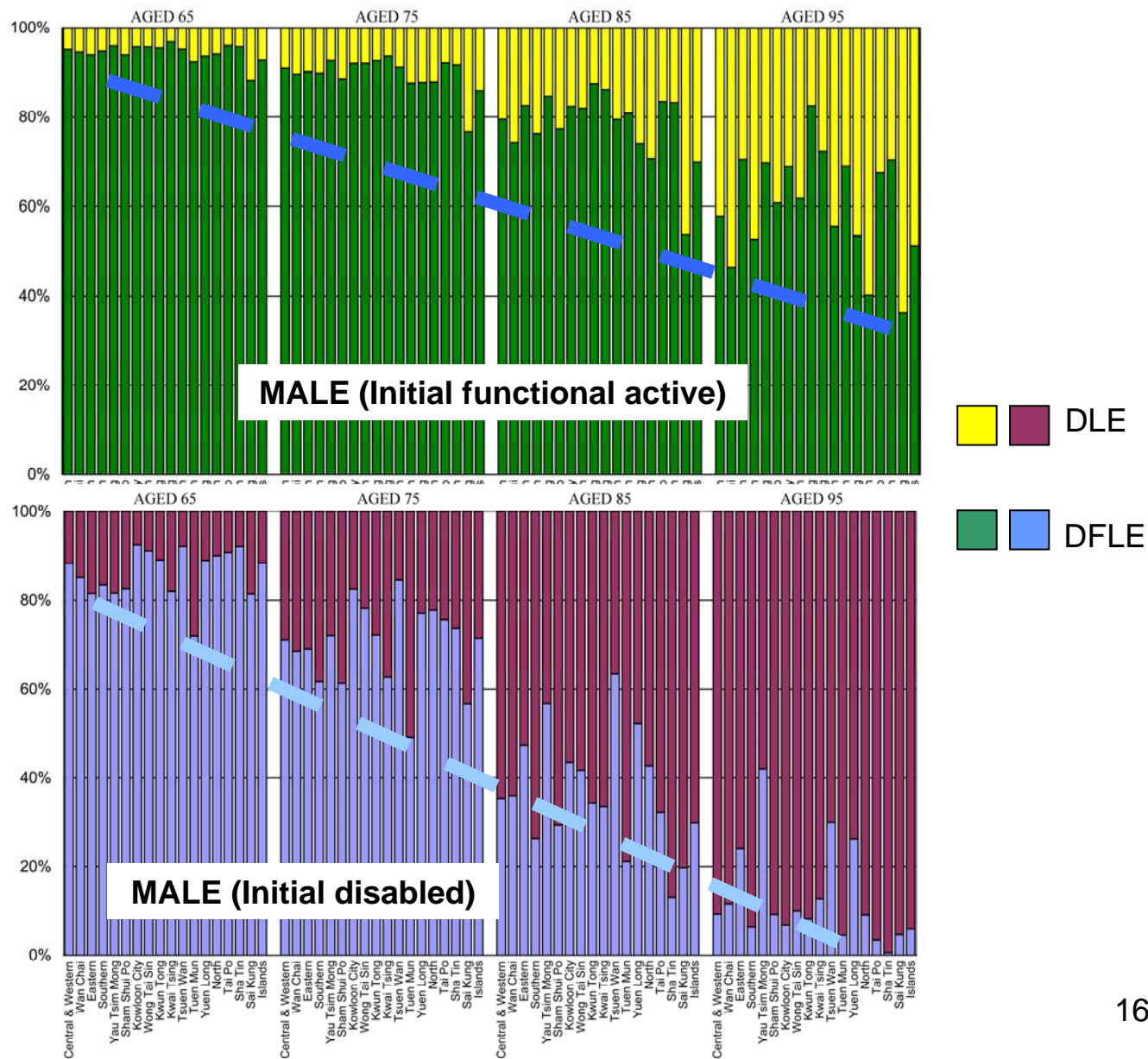


# Total Life Expectancy and Disability-free Life Expectancy among Older People (Aged 65+) with different initial health status (2004-2008)





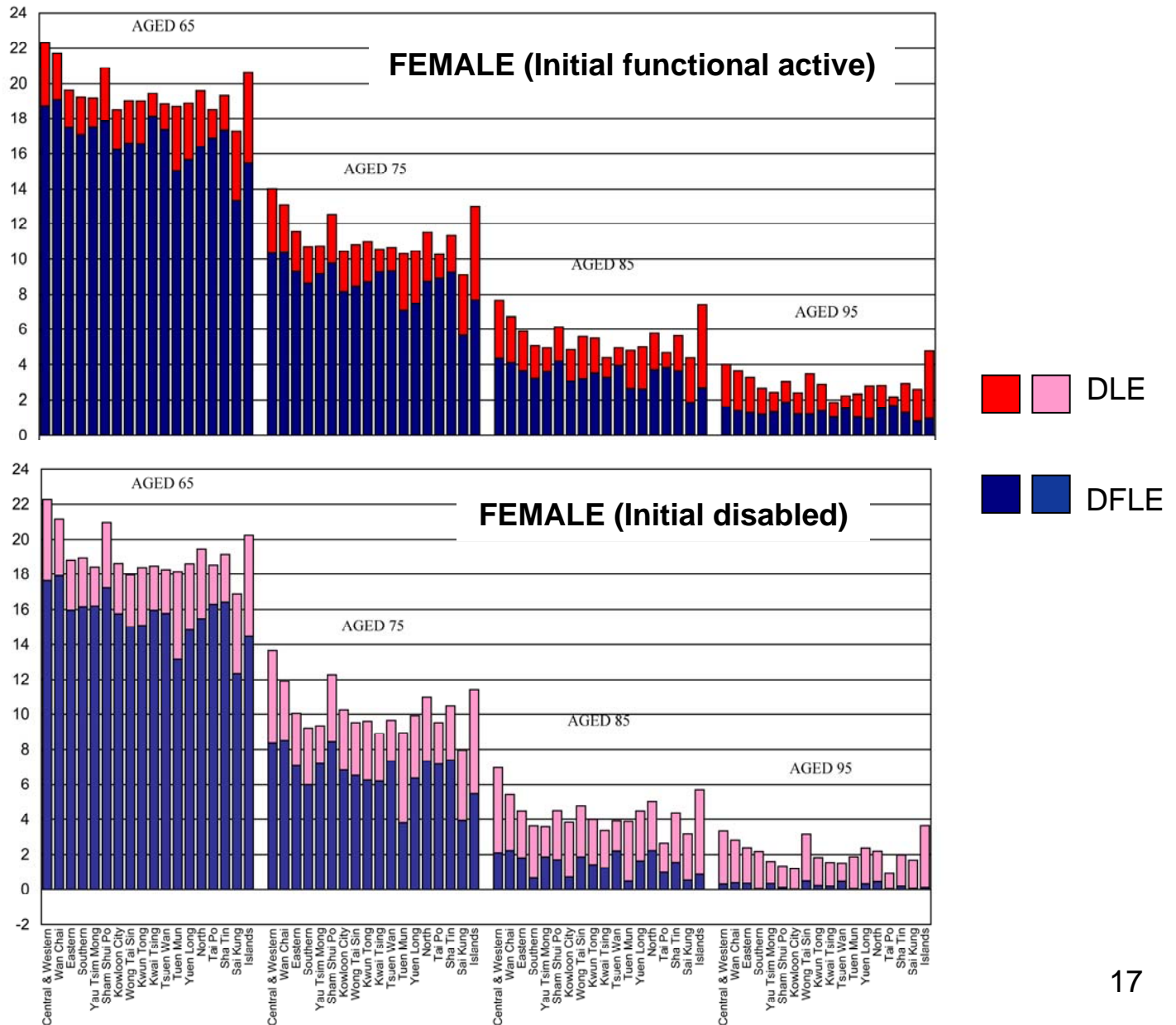
# Disability-free Life Expectancy / Total Life Expectancy Ratio among Older People (Aged 65+) with different initial health status (2004-2008)





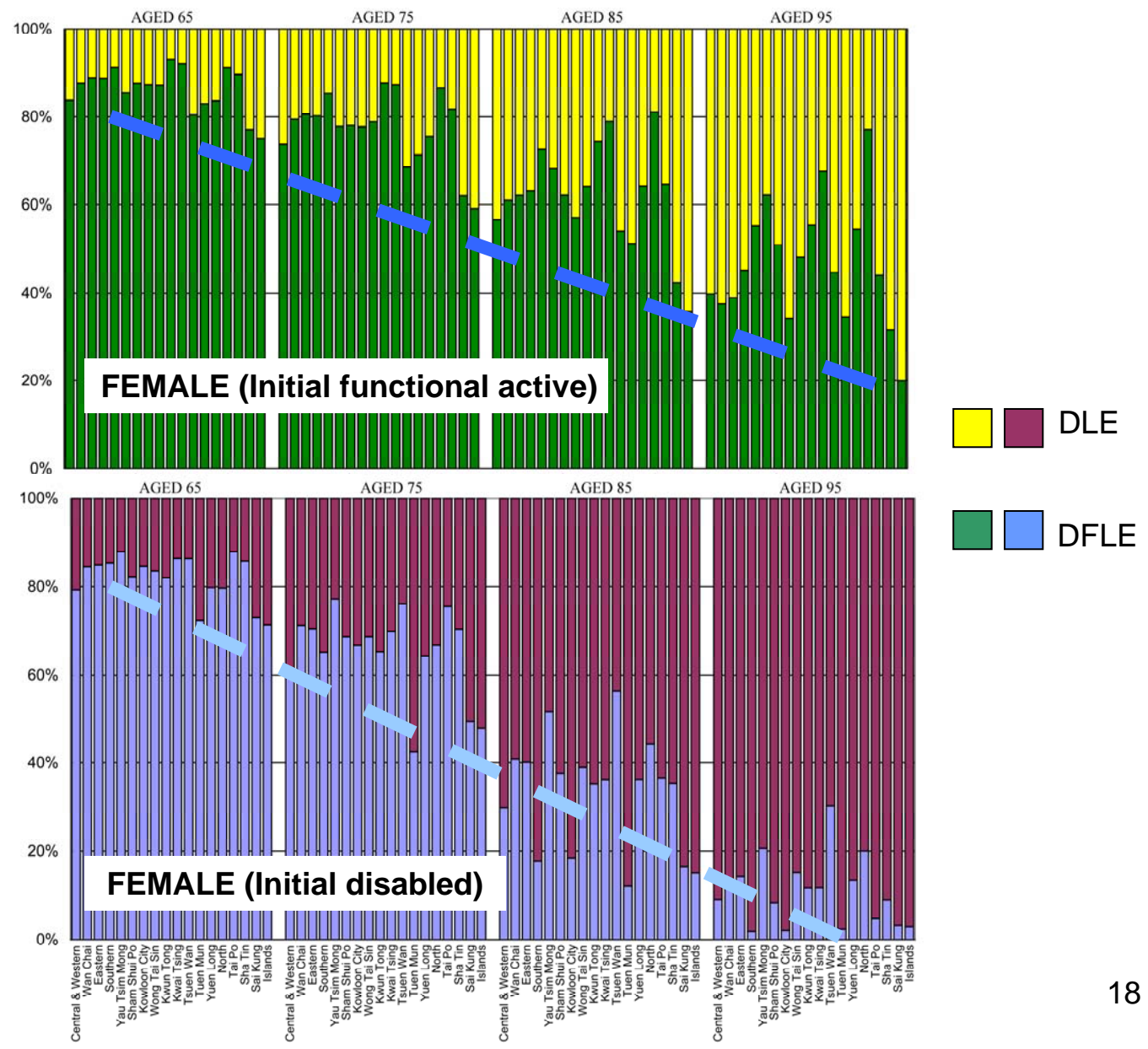


# Total Life Expectancy and Disability-free Life Expectancy among Older People (Aged 65+) with different initial health status (2004-2008)





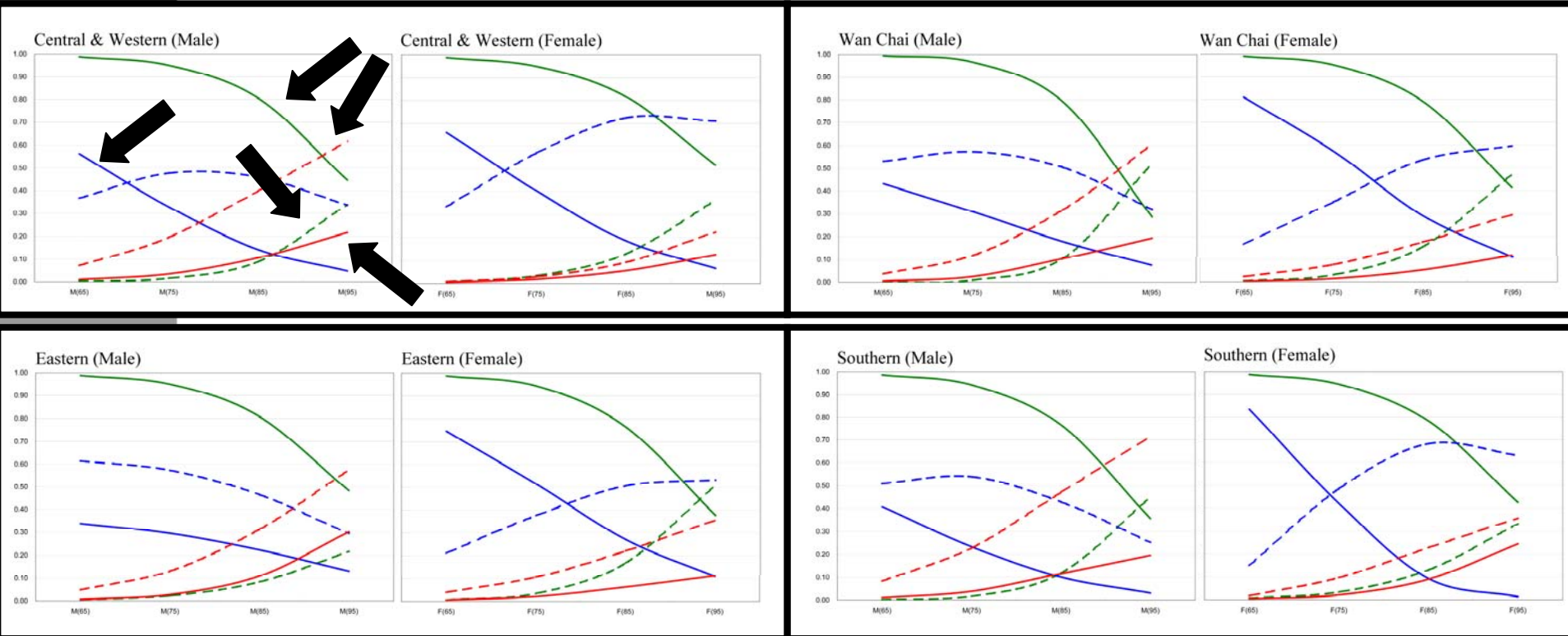
# Disability-free Life Expectancy / Total Life Expectancy Ratio among Disabled Older People (Aged 65+) (2004-2008)





# Health Transition by Initial Health Status, Gender and Districts (2004-2008)

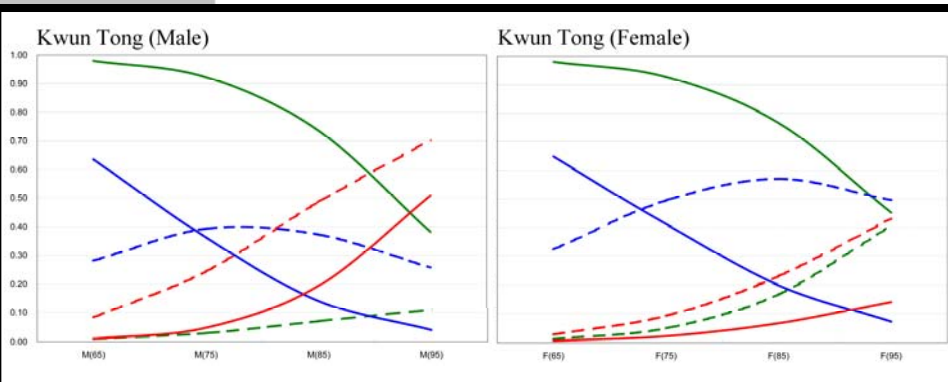
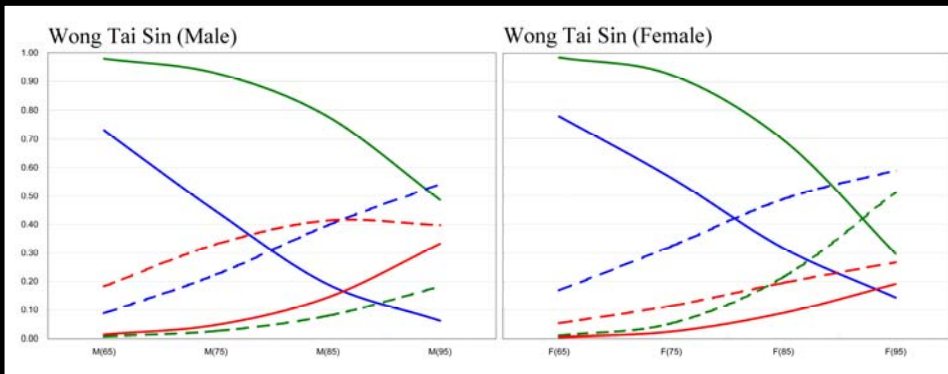
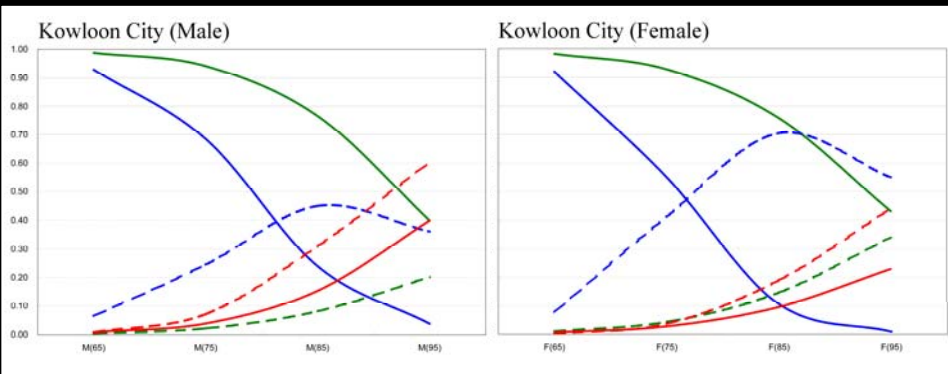
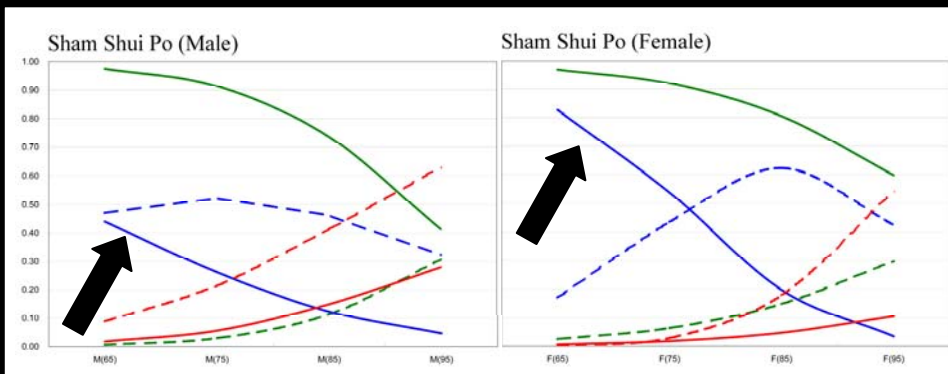
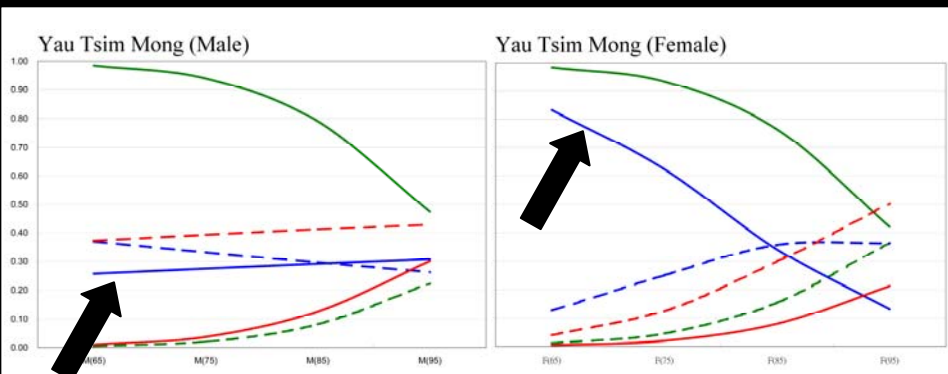
## Hong Kong Island



—— p11    - - - p12    —— p21    - - - p22    —— p13    - - - p23

Where “1” – Functional active; “2” – Disabled; “3” – Death.



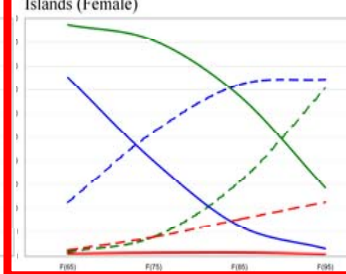
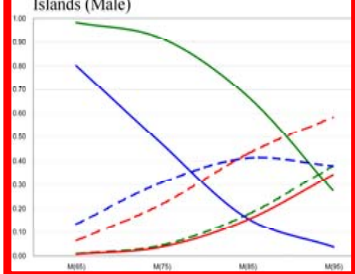
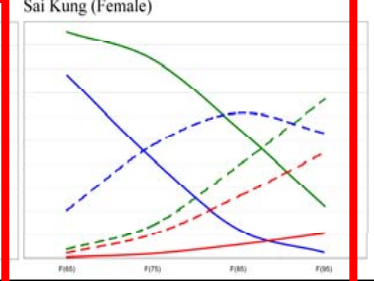
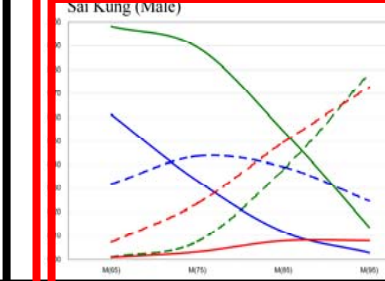
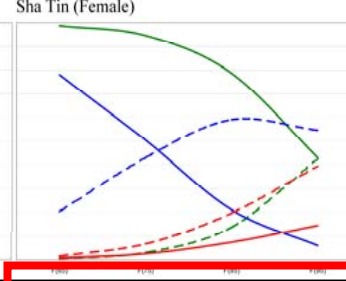
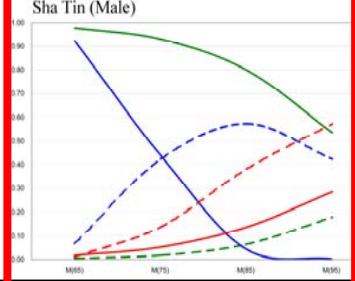
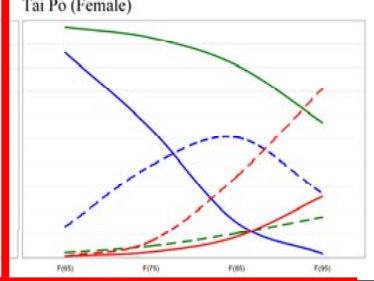
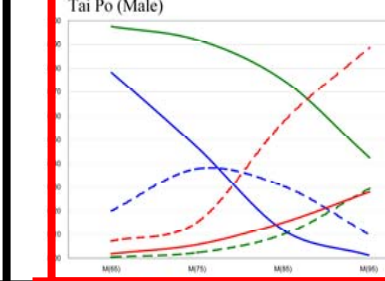
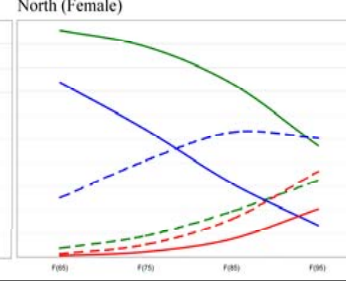
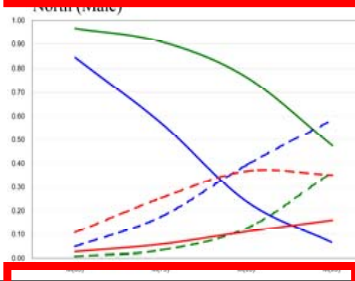
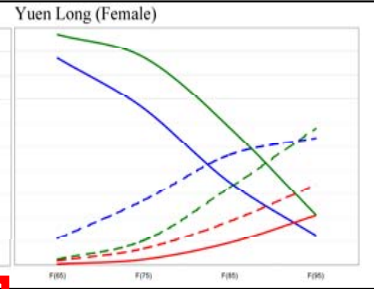
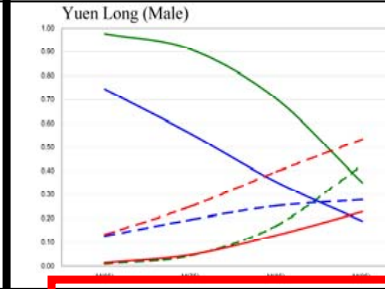
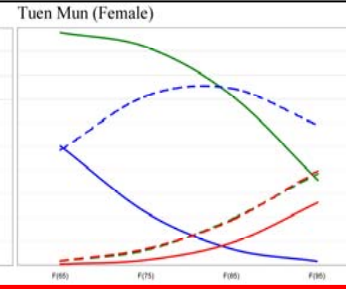
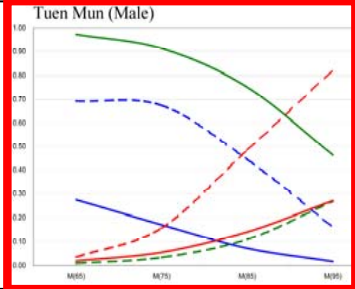
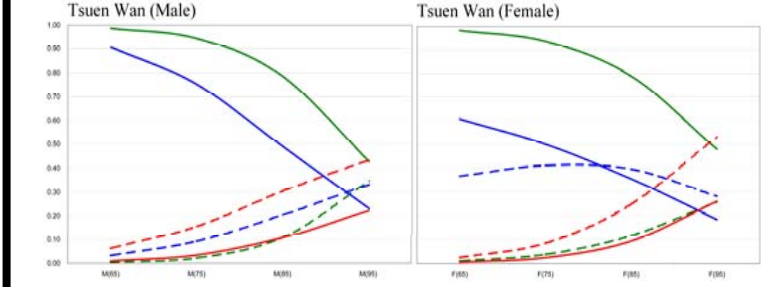
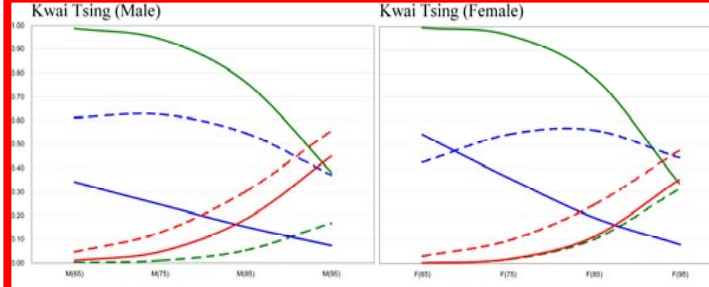


### Kowloon

- p11
- p21
- p13
- - - p12
- - - p22
- - - p23

Where “1” – Functional active; “2” – Disabled; “3” – Death.





New Territories ——— p11    - - - - p12  
    ——— p21    - - - - p22  
    ——— p13    - - - - p23

Where "1" – Functional active; "2" – Disabled; "3" – Death.





Note:

### Health transition – 95% Confidence Interval

All significant except:

Aged 65 Male	e21	Yau Tsim Mong	Aged 85 Female	e12	Islands
	e22	Wan Chai		e21	Islands
		Kwai Tsing		e22	Islands
Aged 85 Male	e21	Central & Western	Aged 95 Female	e12	Wong Tai Sin
		Southern			Islands
		Sham Shui Po		e21	All except North and Yuen
		Sha Tin			Long
		Tai Po		e22	Wong Tai Sin
		Tuen Mun			Kowloon City
		Islands			Islands
Aged 95 Male	e12	Eastern			
		Yau Tsim Mong			
		Wong Tai Sin			
		Kwun Tong			
		Kowloon City			
		Tsuen Wan			
		Kwai Tsing			
		North			
		Islands			
	e21	All districts			
	e22	Wong Tai Sin			
		Tsuen Wan			
		Kwai Tsing			
		North			
		Islands			





## ***TLE & ALE:***

- Females tend to suffer from functional disability more than males.
- Females tend to have lower percentage of DFLE in TLE than males. Therefore, they live a greater portion of their life with disability.
- Hong Kong Island is the most advantaged geographical area in Hong Kong for both genders in terms of TLE and DFLE.
- New Territories is the most disadvantaged geographical area in Hong Kong for males in terms of TLE and DFLE.





## ***HEALTH TRANSITIONS:***

Hong Kong Island –

- Both genders have similar probability of retaining functional active state.
- Both genders have similar probability of health deterioration.
- Females tend to have higher probability of health improvement than males.
- Males tend to have higher probability of mortality both from functional active state and disabled state.

Kowloon –

- Both genders have similar probability of retaining functional active state.
- Females have higher probability of health deterioration.
- Males tend to have higher probability of mortality both from functional active state and disabled state.







## ***HEALTH TRANSITIONS:***

New Territories –

- Both genders have similar probability of retaining functional active state.
- Males tend to have higher probability of mortality both from functional active state and disabled state.





- It seems that moderate densely populated areas with high median monthly per capita income provide a better environment for living longer and healthier, particularly for males.
- Further research should be done by controlling different health determinants in order to draw a clearer picture of geographical variations on life and health expectancies.





## Acknowledgements

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MERCI~

