

Social inequalities in mortality in Belgium from 1991 to today: exploitation of life tables by social group

"Causineq" project: "Causes of inequalities of health and mortality in Belgium (multiple dimensions, multiple causes)".

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Introduction

- While life expectancy is increasing in Western countries, the differences between 'social groups', 'regions' and 'places of residence' remain, or even increase.
- ***A main question:*** how have social inequalities in mortality evolved in Belgium in recent decades?
- ***Two secondary questions:***
 1. Do social inequalities in mortality also affect older people ... and how have they evolved?
 2. For the same social group, are there still differences in mortality at the regional and sub-regional level?

1. Data and methods

1.1. The data

Matching of the individual data of the National Register (1991-2016) with those of the censuses of 1991, 2001 and 2011 and those of the death certificates of the civil registration.

1.2. The methods

- *Calculation of life tables* by sex, region, district and social group. Each death observed in the national registry for the five-year observation periods 1992-1996, 2002-2006 and 2012-2016 is related to the socio-economic and housing characteristics of persons from the previous census

➤ Social groups

- *Why ?*

Different dimensions are used to determine the social positioning of individuals: educational level, socio-professional status, housing conditions and income. But they can have a different role on health status and mortality.

Educational level → Attitudes of prevention, recourse and access to health care
Income, socio-professional status, housing conditions → material resources

But in practice, most often, only one dimension is used

- *How ?*

- Three dimensions: educational level, socio-professional category and housing characteristics.
- Scoring method. Each individual is assigned a score according to their position on each dimension. The score varies from 1 to 10.
- Assignment of the parents' score to the children.
- Each individual is positioned on a social continuum, but to synthesize information, 4 groups were identified by quartile score.

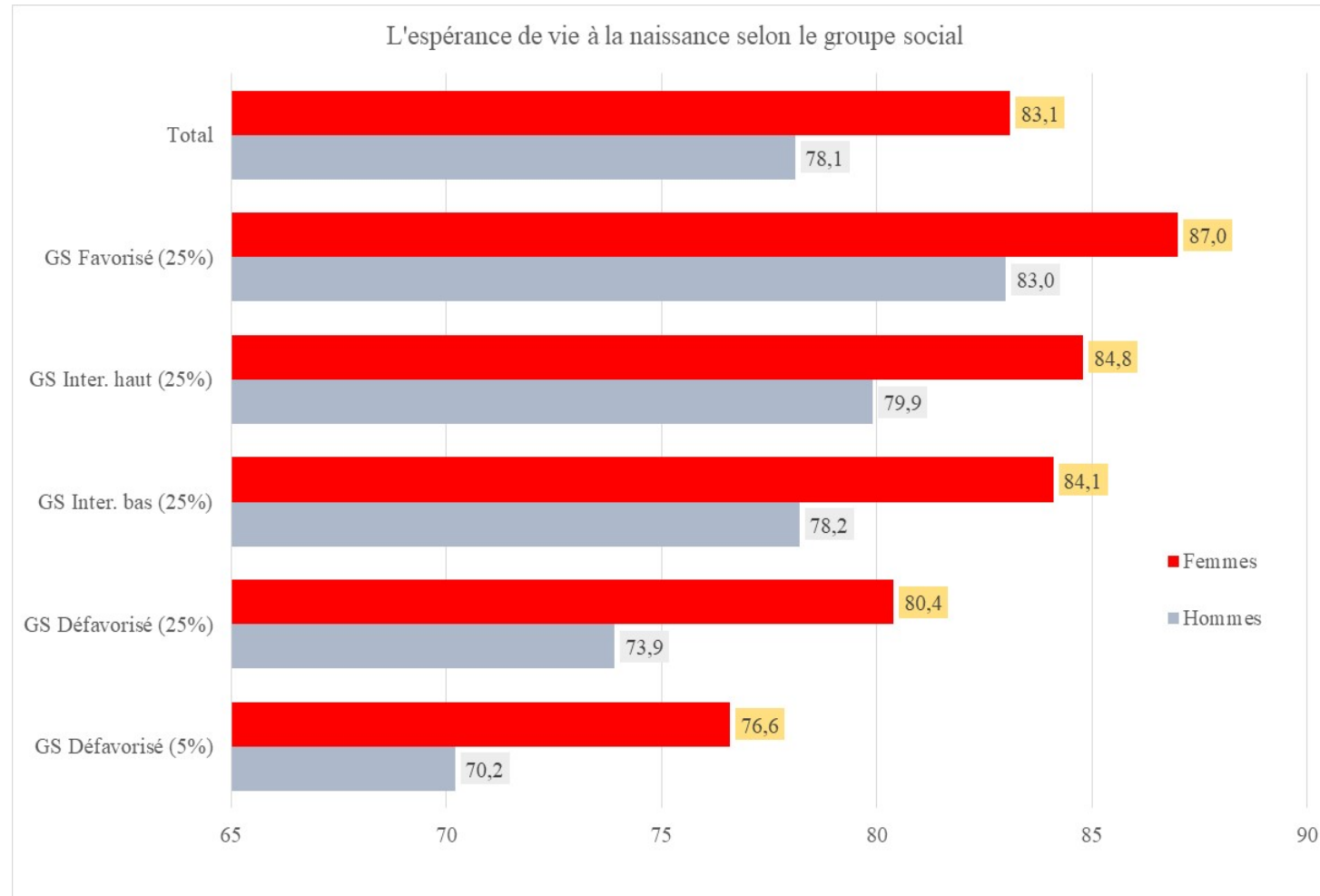
2. The results: main question

2.1. Social inequalities of mortality in 2012-2016

➤ Important inequalities in mortality by social group in 2012-2016

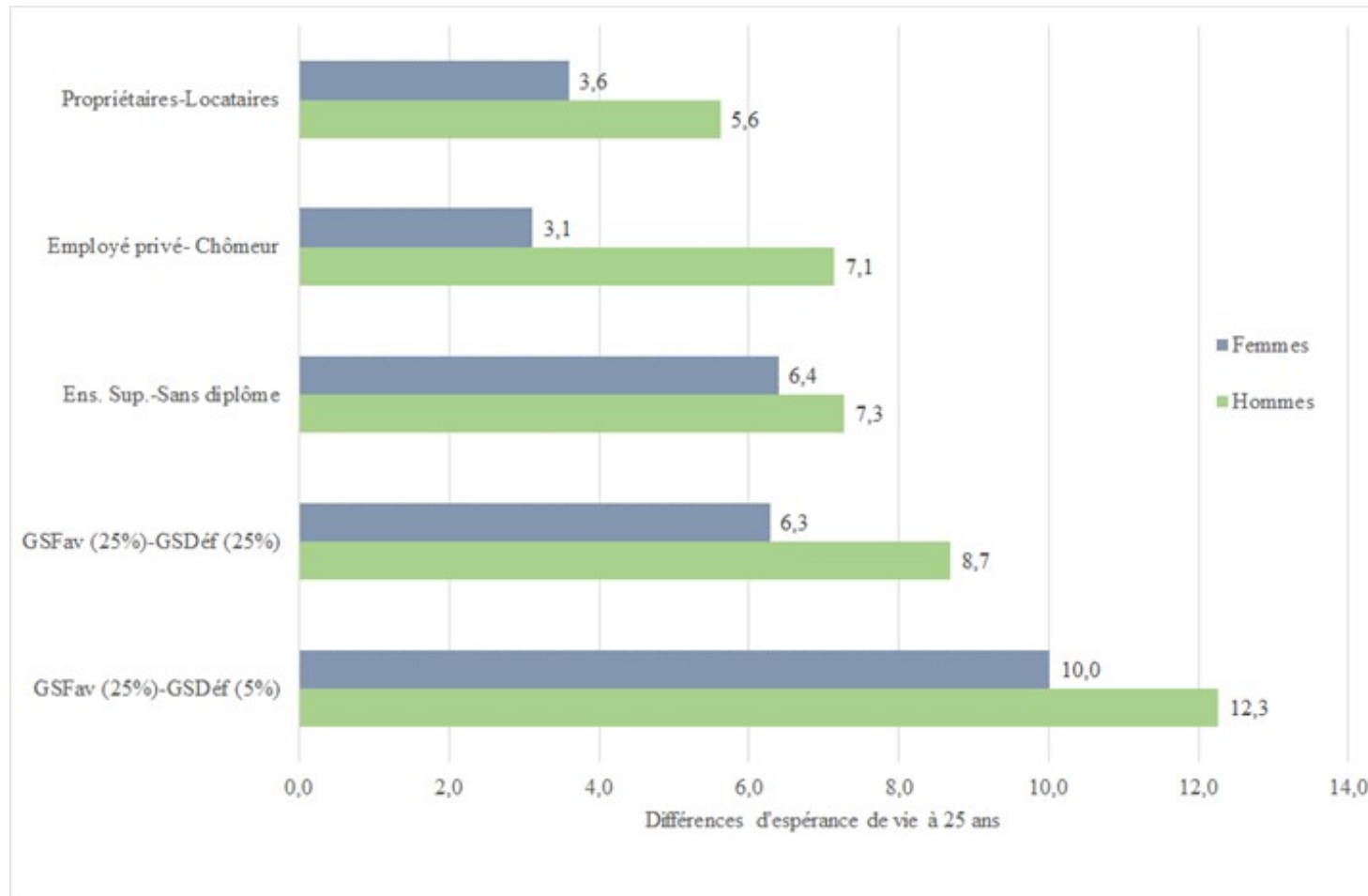
Between GS Favored (25%) and GS Disadvantaged (25%):
EO : 9.1 years difference for men and 6.6 years for women.

Between GS Favored (25%) and GS Disadvantaged (5%):
EO : 13 years difference for men and 10 years for women.



- The gap between female and male life expectancy is greater for the disadvantaged GS (6.5 years) than for the GS favored (4 years).
- Multidimensional indicator maximizes inequalities in mortality

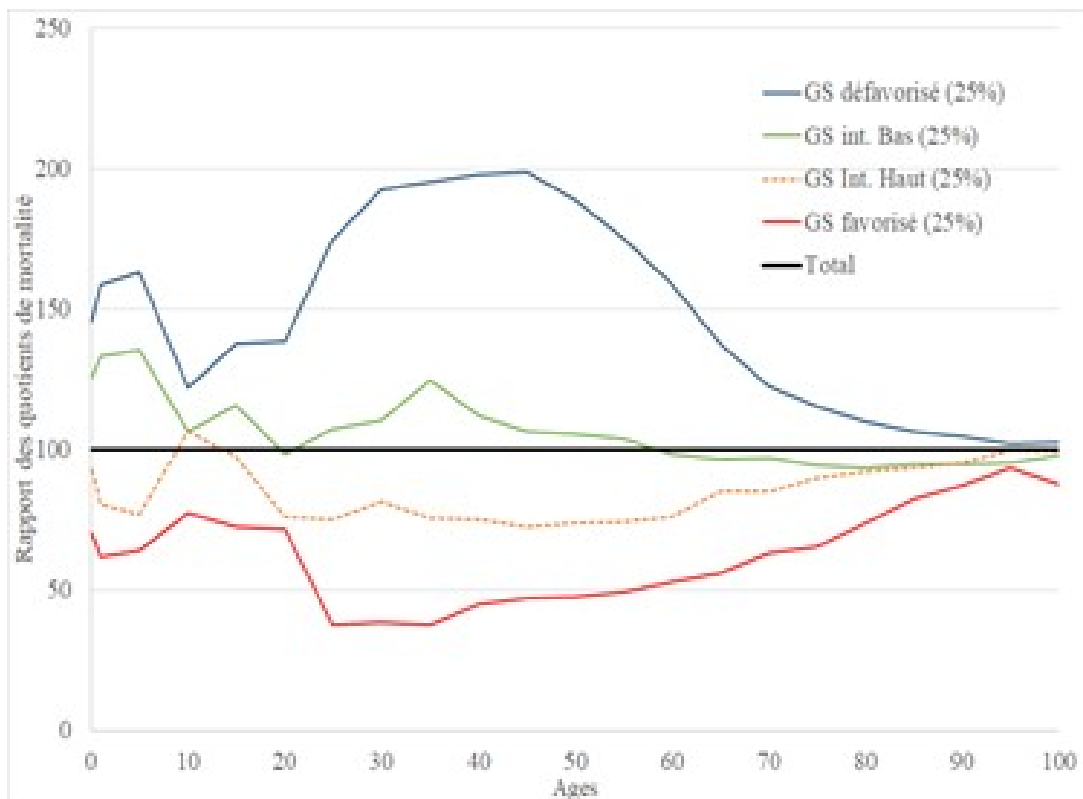
Differences in life expectancy at age 25 between the extreme situations of social variables in 2012-2016



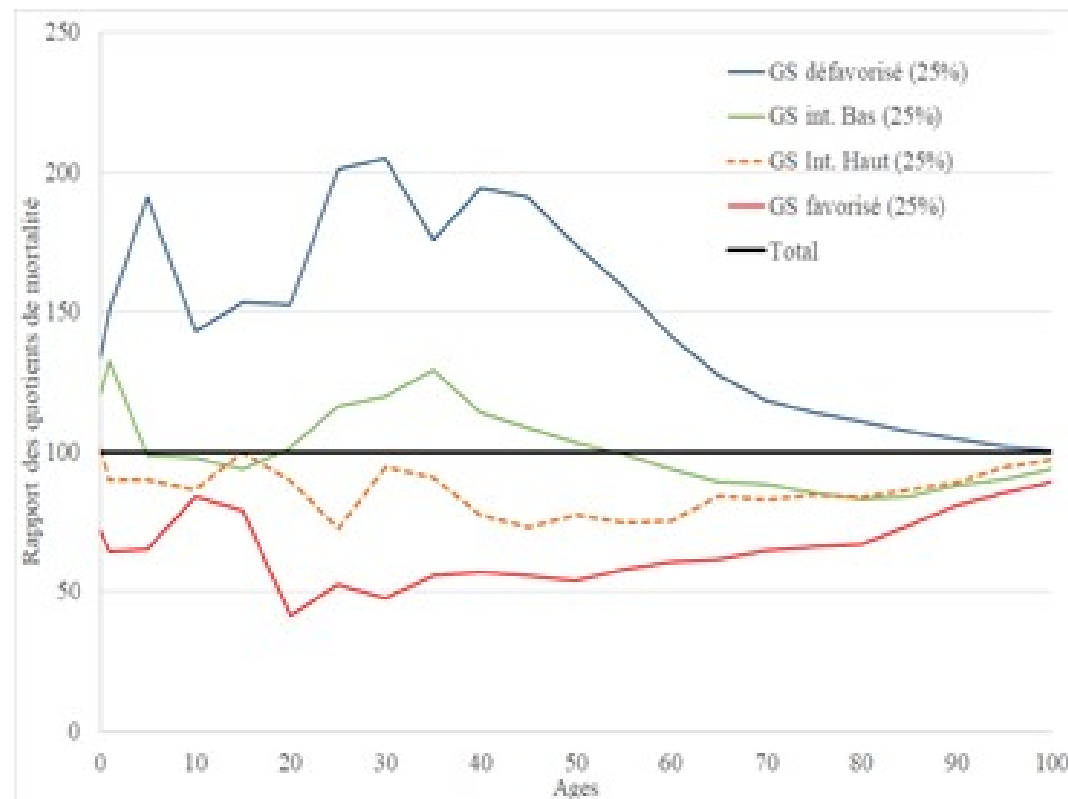
- According to the 'mortality rate ratio', the excess mortality of the disadvantaged GS is observed at all ages, but especially between 25 and 50 years old and for young children

Mortality rate ratios (‰) by age, 2012-16 (total population = 100)

Hommes



Femmes



- According to the contribution of age groups to differences in life expectancy at birth between social groups? (Arriaga method)

Contribution of age groups to differences in life expectancy at birth between favored and disadvantaged social groups (2012-2016)

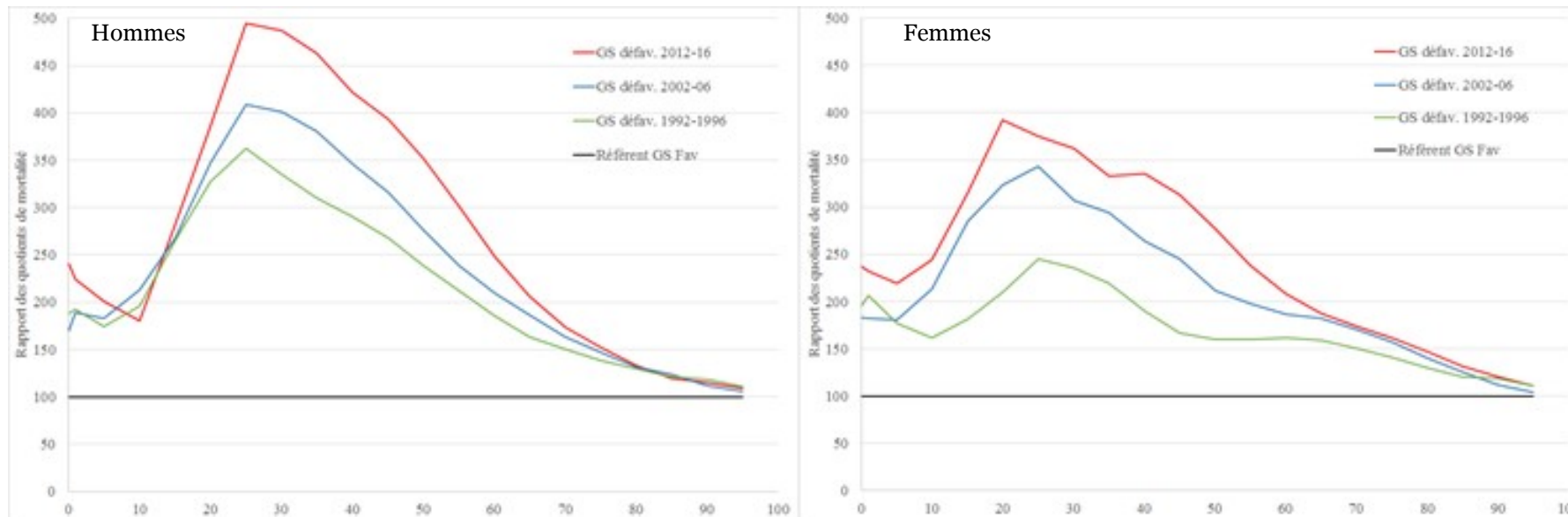
- Among men: significant contribution of people aged 40-59 (35%) and 60-79 years (39%)
- For women, significant contribution of people aged 60-79 (35%) and over 80 (23%)

Ages	Hommes		Femmes	
	Absolu	Relatif	Absolu	Relatif
0-19	0,42	4,6%	0,31	4,6%
20-39	1,13	12,4%	0,55	8,4%
40-59	3,21	35,3%	1,93	29,3%
60-79	3,54	38,8%	2,30	34,9%
80+	0,81	8,8%	1,50	22,8%
	9,1	1	6,6	1

2.2. Life expectancy gains are greater for the advantaged social group ... and social inequalities in the face of death increased between 1992/96 and 2012/16

Sex	Social group	Life expectancy gains between 1992-96-2012-2016
Men	Disadvantaged	+ 4,3 years
	Favored	+ 5,1 years
Women	Disadvantaged	+ 2,1 years
	Favored	+ 3,9 years

The evolution of ratios of mortality rates between disadvantaged and favored social groups (Favored Gs = 100)



3. The results: secondary questions

3.1. Do social inequalities in mortality also affect older people?

2 assumptions :

- they persist in a process of accumulation of beneficial or harmful effects in the life course
- they disappear following a selection process that gradually "eliminates" the weakest.

Social inequalities in the face of death beyond age 65 are significant and have increased over the last 25 years for both women and men.

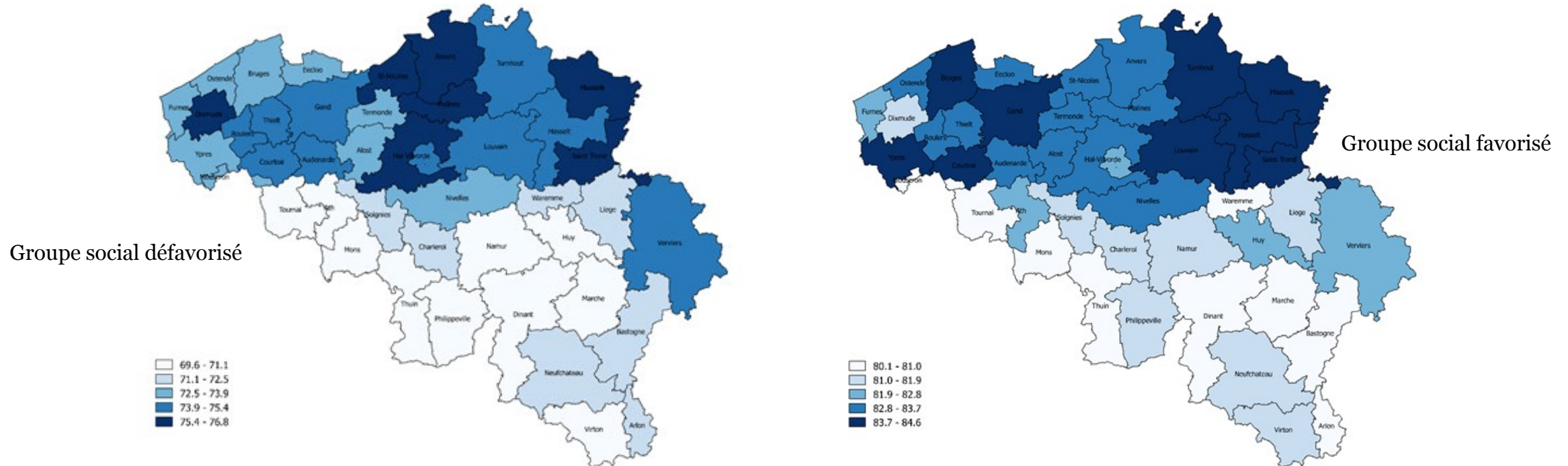
E65	Hommes			Femmes		
	1992-1996	2012-2016	Gains	1992-1996	2012-2016	Gains
GS défavorisé (5%)	12,5	13,7	1,2	16,6	17,0	0,4
GS défavorisé (25%)	13,9	16,5	2,6	18,4	20,3	1,9
GS favorisé	17,4	20,7	3,3	21,3	24,0	2,7
Diff. 25%	3,5	4,3		3,0	3,7	
Diff. 5%	5,0	7,0		4,7	7,0	

E80	Hommes			Femmes		
	1992-1996	2012-2016		1992-1996	2012-2016	
GS défavorisé (5%)	5,5	5,9	0,4	7,2	7,1	-0,1
GS défavorisé (25%)	6,1	7,5	1,4	8,0	9,2	1,1
GS favorisé	7,9	9,3	1,4	9,7	11,5	1,8
Diff. 25%	1,8	1,9		1,7	2,4	
Diff. 5%	2,4	3,4		2,6	4,4	

3.1. For the same social group, are there still differences in mortality at the regional and sub-regional level?

- There is a relationship between the level of mortality and the socio-economic characteristics of the population of each 'arrondissement'.
- But for the same social group, life expectancies still have important differences.
- Other factors come into play: the physical, social and institutional environment, historical and 'cultural' factors that go beyond social belonging, supply and quality of health services that are spatially differentiated.

Male life expectancy at birth by 'arrondissement' and social group (2012-2016)



Conclusions

- Social inequalities in mortality are significant and have increased over the last 25 years for men and women and for almost all ages.
- The multidimensional index maximizes social differences in mortality and demonstrates that low life expectancy is not a marginal 'phenomenon'. Inequalities in the face of death affect everyone because they evolve along a social continuum ...!
- Spatial differences in mortality have also increased and large differences in mortality persist at the district level for the same social group. The socioeconomic characteristics of the population alone are not sufficient to explain spatial disparities in mortality; the physical, social and institutional environment is also involved, as are historical and "cultural" factors that go beyond social belonging.