GPG and segregation in education, occupation and industry – evidence from Ireland

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Outline

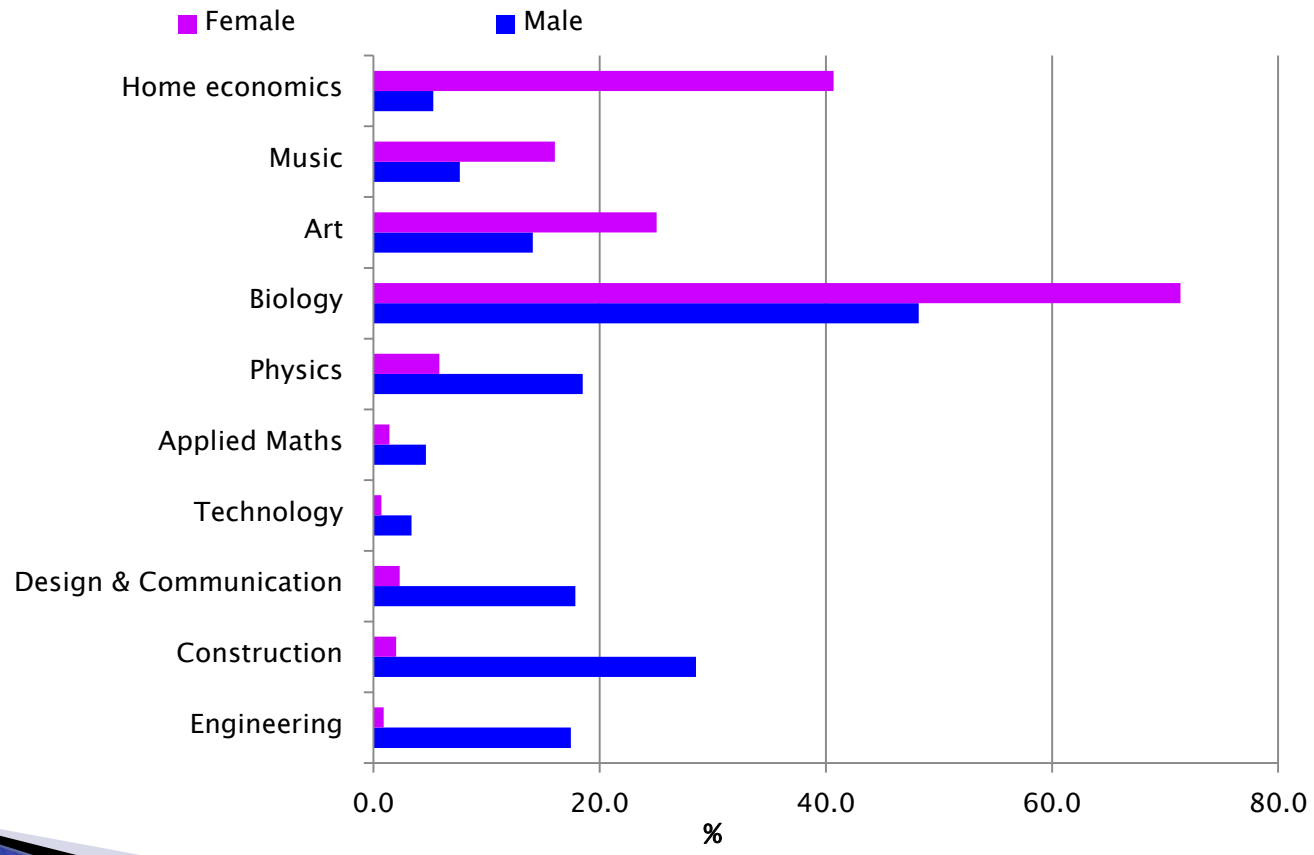
- Gender segregation:
- Education (second and third level)
- Labour Force

- Gender Pay Gap by:
- occupation, industrial sector,
- educational attainment

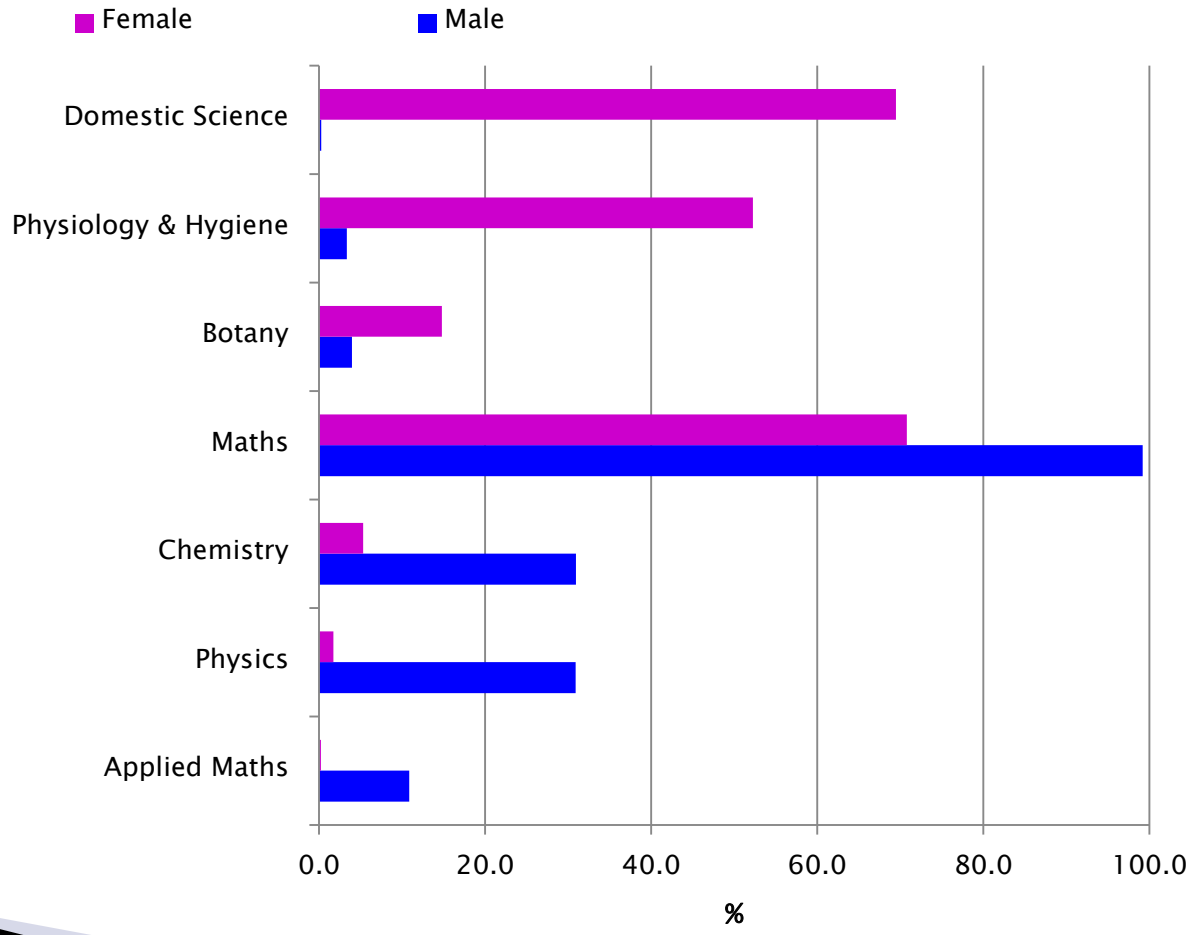
- Part –time working, Participation rates

Leaving Cert – final second level exam (age 19)

- % male & female students in 2013



% of male or female students taking certain Leaving cert subjects in 1968



Maths in the Leaving Cert

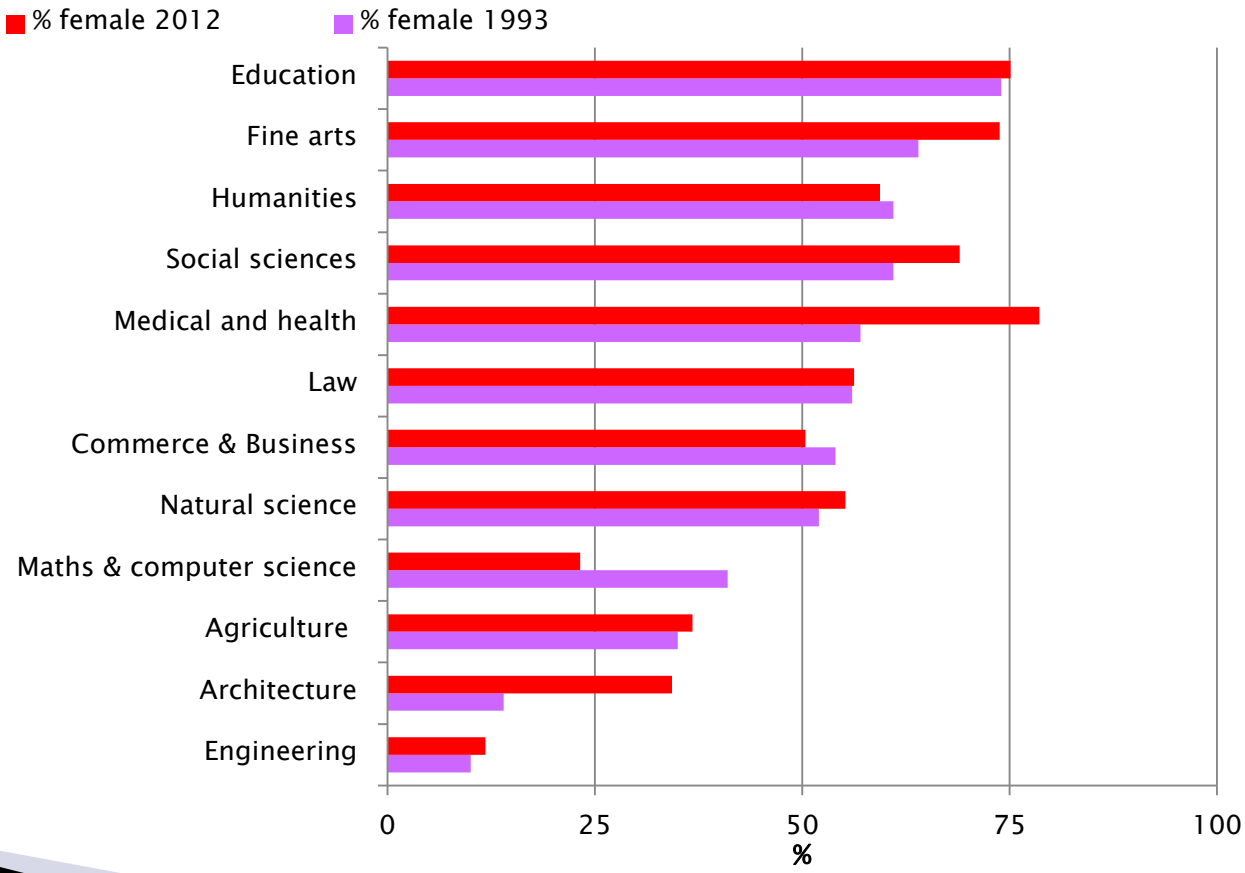
- 29.2% girls did not do maths in 1968
- School exam at end of lower second level (age16 years) had subject "Elementary maths (girls only)"
- By 2013 95.8% of girls do maths (97% boys)

- Higher level maths:
- 2.1% of girls in 1968 (and 26.6% of boys)
- 23.2% girls by 2013 (and 26.1% of boys)

Girls and maths

- 1960's – society clearly had low expectations for girls … and for girls doing maths
- Big changes between 1960's and today in maths takeup by girls
- Due to bonus points for higher level maths for University entrance??
- However …. Slow pace of change for other gender segregated subjects
- Would incentives make a difference?

Third level graduates by subject

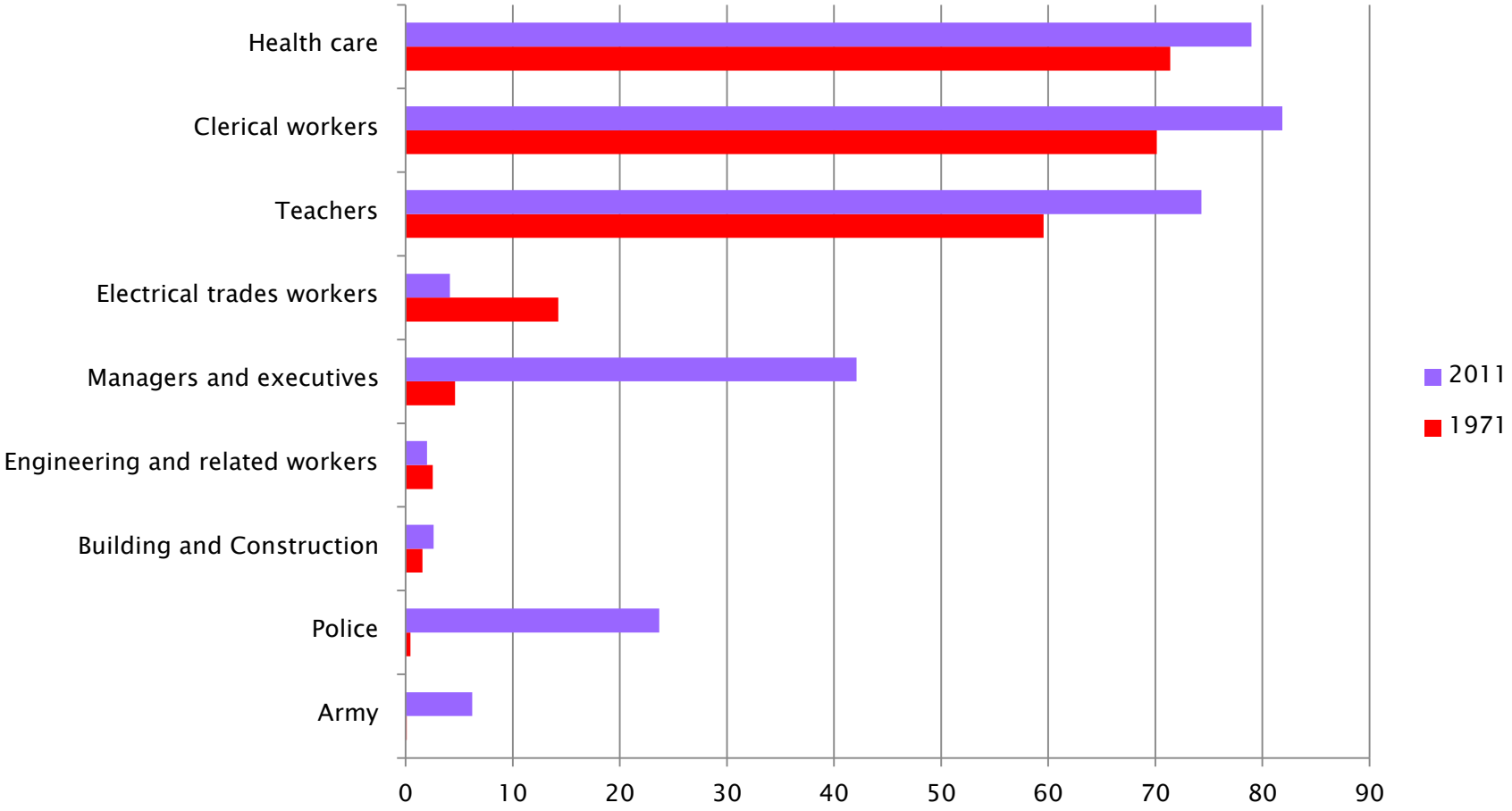


Maths & Computer Science graduates

- 41% female in 1993
- But just 23% female in 2012

- Why the drop?
- Computer Science degrees grown hugely but majority of students are male
- Only 19% of Computer Science qualifications to females in 2012

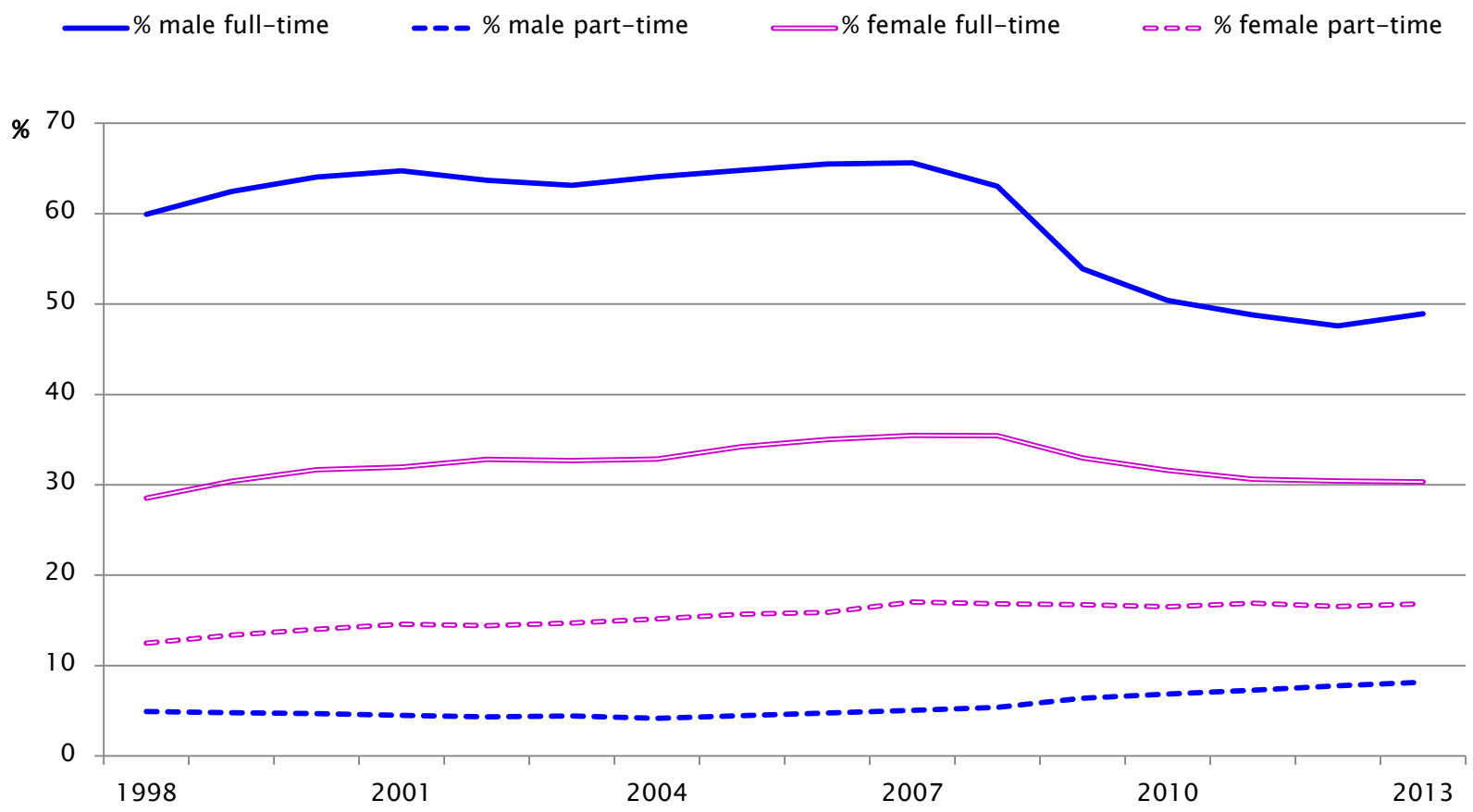
Labour Force by occupation, Census of Population 1971 & 2011– % female



% females at work by Industry (NACE rev.2) – COP 2011 and GPG for 2009

	% female	GPG
Construction	8.2	13.5
Transportation and Storage	19.8	9.8
Industry	29.5	16.7
Information and communication	33.3	25.7
Administrative and support services	44.1	15.3
Public administration and defence	47.3	8.7
Professional, scientific & technical	48.0	32.4
Wholesale and retail trade	48.7	18.6
Accommodation and Food Services	53.7	10.5
Financial, Insurance etc	55.3	29.4
Arts, entertainment, other services	61.3	20.6
Education	75.0	26.6
Health & social work	80.9	23.0
Total B to S	**49.6**	**12.8**

% at work aged 15+



Average full-time hourly earnings and full-time GPG by Industry

Industry (NACE Rev.2)	Average full-time hourly earnings			Full-time GPG
	Male	Female	Total	
	€	€	€	%
B-E Industry	22.57	19.10	21.67	15.4
F Construction	21.39	18.86	21.18	11.8
G Wholesale and retail trade	19.64	16.58	18.23	15.6
H Transportation and Storage	19.75	17.72	19.38	10.3
I Accommodation and food services	15.84	14.15	14.98	10.7
J Information and Communication	26.65	20.57	24.92	22.8
K-L Financial, insurance, etc	34.55	24.68	29.50	28.6
M Professional, scientific, technical	27.53	19.33	24.24	29.8
N Administrative and support services	19.52	17.42	18.54	10.8
O Public Administration and defence	27.53	25.28	26.49	8.2
P Education	44.95	33.69	36.93	25.1
Q Health and Social work	29.76	23.20	24.68	22.0
R-S Arts, entertainment, other services	21.99	17.59	19.43	20.0
Total R to S	**24.59**	**22.35**	**23.59**	**9.1**

Full-time GPG higher in all but one sector than overall GPG

- There is a high proportion of female full-time employees in sectors with higher hourly earnings (e.g., Education)
- This caused overall mean hourly earnings for female full-time employees to be higher than if female full-time employees had been distributed in same pattern over sectors as male full-time employees
- Thus GPG is reduced

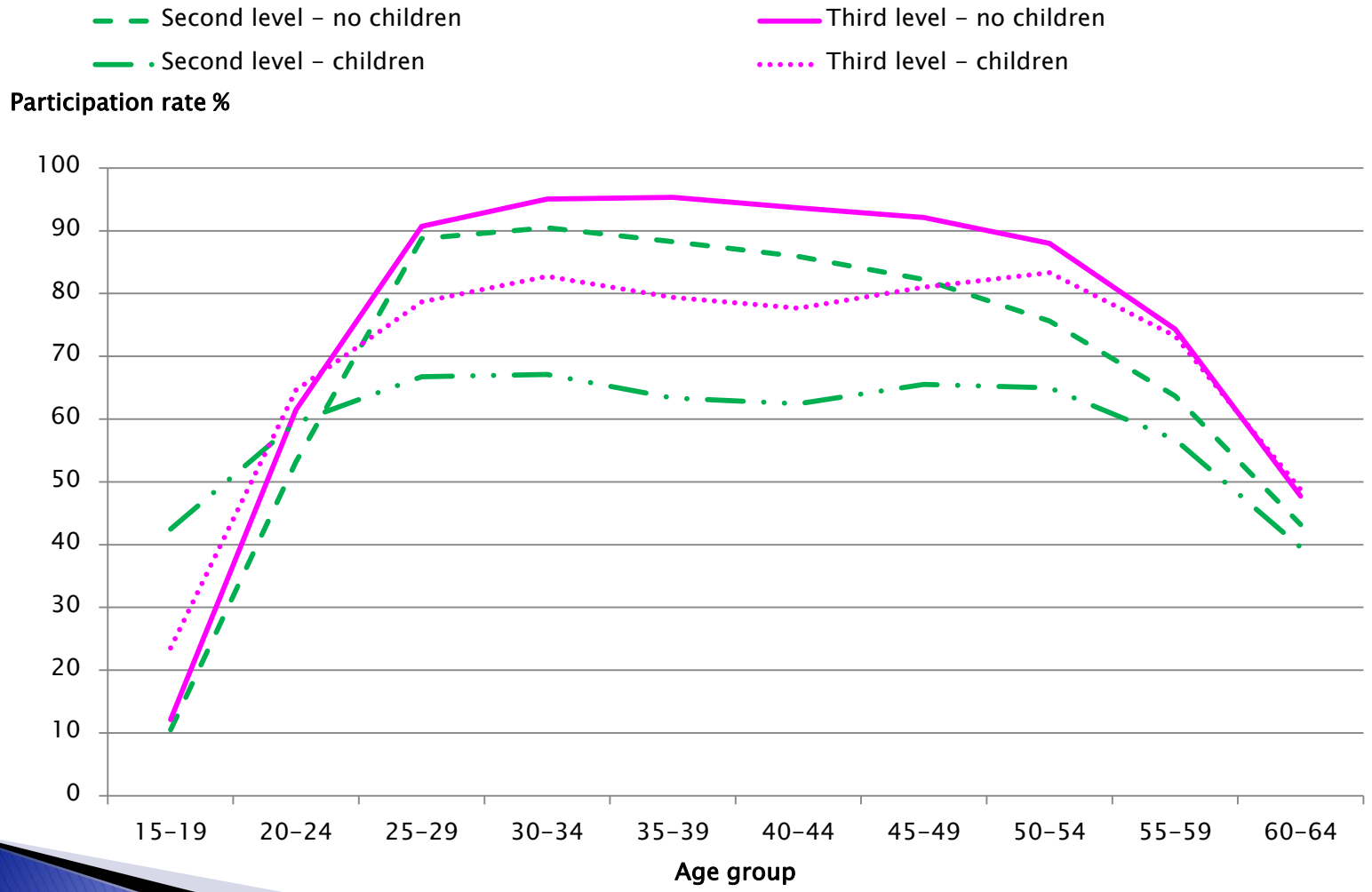
Average full-time hourly earnings and full-time GPG by occupation

Occupation	Average full-time hourly earnings			Full-time GPG
	Male	Female	Total	
	€	€	€	%
Managers and senior administrators	35.07	27.00	31.69	23.0
Professionals	38.11	35.78	36.94	6.1
Associate professional and technical	25.47	23.49	24.37	7.8
Clerical and secretarial	19.08	18.14	18.42	4.9
Craft and related trades	20.33	18.08	20.23	11.1
Personal and protective services	18.63	16.62	17.55	10.8
Sales	18.60	14.18	16.27	23.8
Plant and machine operatives	17.40	14.31	16.89	17.8
Other	17.10	13.52	15.89	20.9
Total	**24.59**	**22.35**	**23.59**	**9.1**

Average full-time hourly earnings and full-time GPG by educational attainment

Highest level of education attained	Average full-time hourly earnings			Full-time GPG
	Male	Female	Total	
	€	€	€	%
Primary or lower secondary	19.05	16.42	18.23	13.8
Higher secondary	20.41	18.75	19.65	8.1
Post leaving certificate	21.04	16.79	19.62	20.2
Third level non degree	24.25	19.96	22.08	17.7
Third level degree or above	35.29	29.51	32.22	16.4
Total	**24.59**	**22.35**	**23.59**	**9.1**

Female labour force participation rate, Census of Population 2011



Conclusions (1)

- Gender segregation in Education is leading to some gender segregation in certain occupations and industry sectors
- But: neither industry, occupation nor educational attainment can explain GPG
- Study on 2003 pay data showed one third of GPG could not be explained and two-thirds could be explained (e.g., length of tenure, years of work experience, education, etc)

Conclusions (2)

- GPG clearly influenced by women choosing:
- Part-time work & time out for childcare
- & self-selecting out of promotion process
- Question for policy makers is:
- Would more flexible working for parents; paternity leave; affordable & good quality childcare
- Increase female labour force participation rates?
- Or does large cohort of mothers want to work part-time and/or stay at home for period of time?

- Thank you for listening !!!