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Gender Differences in Grant Applications and Awards

Some evidence from the UK

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Introduction

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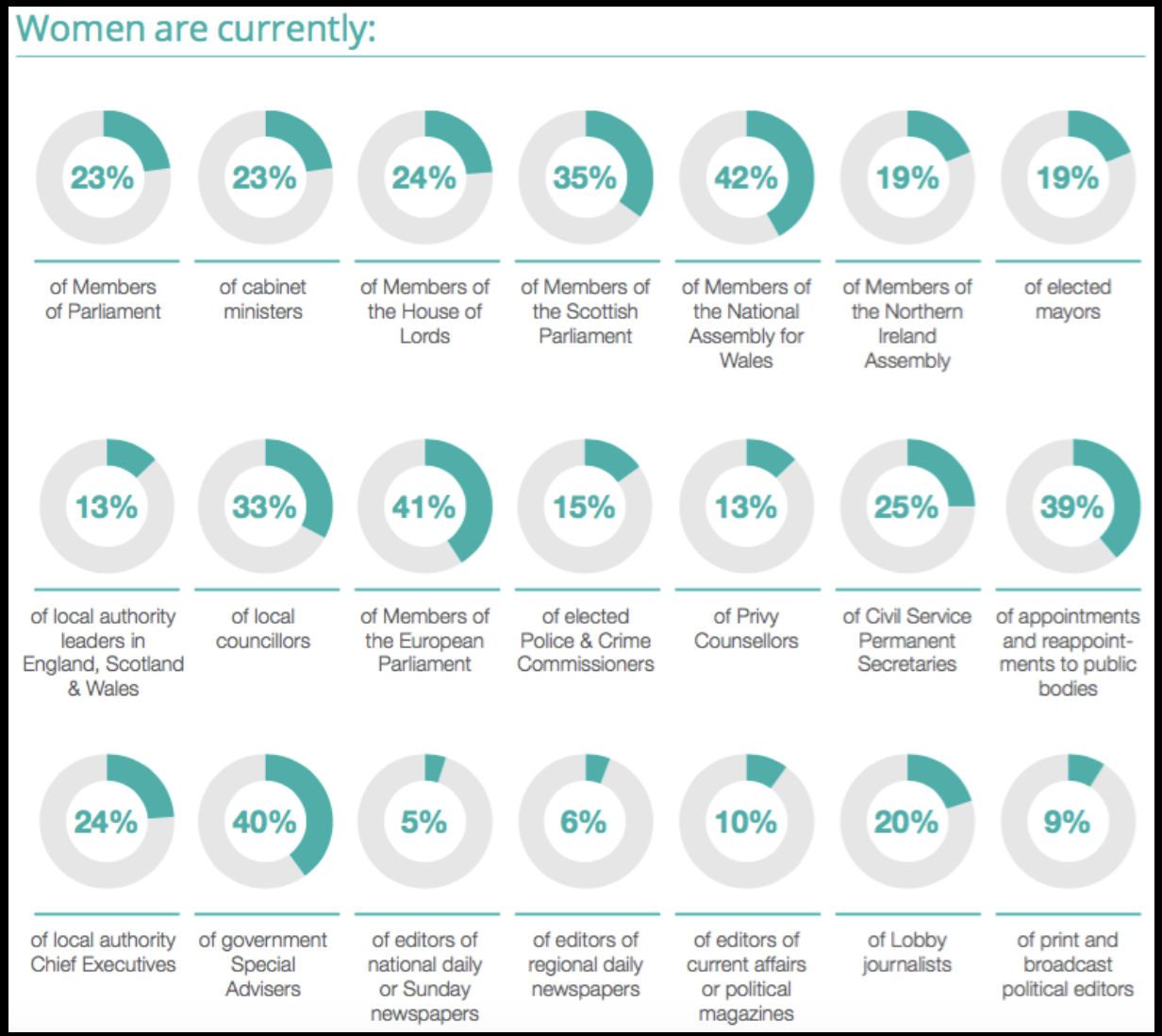

"We always speak of a glass ceiling. These figures reveal that in some cases it appears to be made of reinforced concrete"

Sex and Power 2014

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This is despite the fact that

- Companies with strong female representation in top management perform better than those without (CEB)
- Women-run businesses with more than 1,000 employees generate 18% higher revenue-per-employee than businesses headed by men (Mintigo)
- Companies with more diverse staff have a 22% lower turnover rate (Gallup)

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Higher Education

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Table 10.1. **Percentage of women students in higher education: past twenty years and projections**

	1985	1990	1995	2000	2005	2015	2020	2025
Australia	m	m	50	54	54	55	55	56
Austria	44	45	48	51	54	61	66	72
Belgium	47	49	49	52	54	58	59	60
Canada	49	54	53	56	58	60	62	64
Czech Republic	m	m	48	50	53	53	54	54
Denmark	48	50	52	57	57	59	59	60
Finland	49	52	53	54	54	54	53	53
France	52	53	55	54	55	56	57	57
Germany	m	m	43	48	50	54	56	58
Greece	m	m	49	50	51	53	53	53
Hungary	m	m	52	54	58	59	60	60
Iceland	m	m	58	62	65	67	67	68
Ireland	43	45	49	54	55	58	58	59
Italy	45	48	52	56	57	57	57	57
Japan	m	41	44	45	46	47	47	48
Korea	m	m	35	36	37	38	39	40
Luxembourg	m	m	m	m	m	M	m	m
Mexico	m	m	47	49	50	52	52	52
Netherlands	41	44	47	50	51	53	54	54
New Zealand	46	52	55	59	59	59	60	60
Norway	50	53	55	58	60	63	64	65
Poland	m	m	m	58	58	58	58	58
Portugal	53	m	57	57	56	56	56	56
Slovak Republic	m	m	m	50	55	58	59	59
Spain	48	51	53	53	54	55	55	55
Sweden	52	53	55	58	60	62	63	63
Switzerland	32	34	37	43	46	49	51	52
Turkey	31	34	38	40	42	43	43	43
United Kingdom	45	48	51	54	57	65	68	71
United States	52	54	55	56	57	60	61	62
Average	**46**	**48**	**50**	**52**	**54**	**56**	**57**	**58**
Comparable average	**46**	**48**	**51**	**53**	**55**	**57**	**58**	**59**

m = missing.
Note: The gross enrolment rates by gender were derived by linear regression from the changes between 1998 and 2005 and applied to the corresponding age cohorts according to UN projections.

Women are over-taking men worldwide

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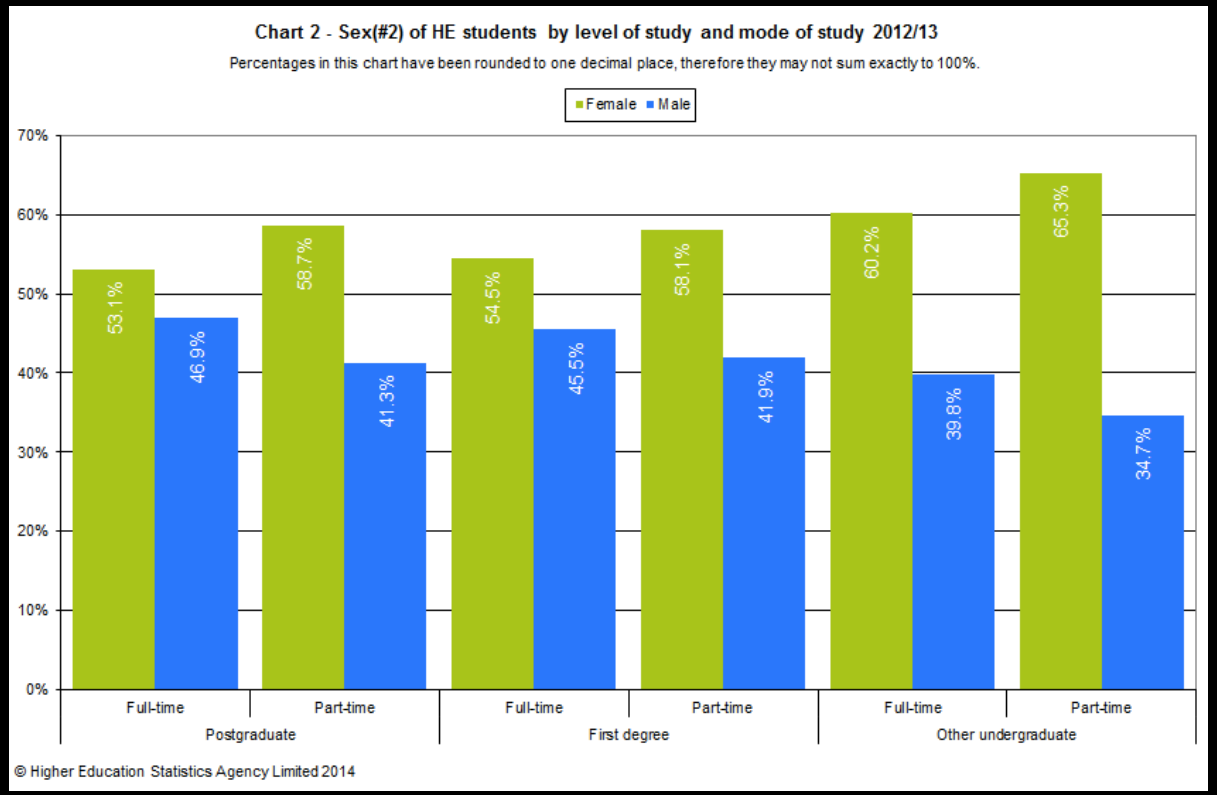

Women are over-taking men at both UG and PG level in the UK

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Men are of growing concern (HEPI)

- Young women are now 35% more likely to go to university than young men
- If the trends continue, then girls born this year will be 75% more likely to go to university than their male peers
- Of those in receipt of free school meals, young women are 51% more likely to make it to higher education

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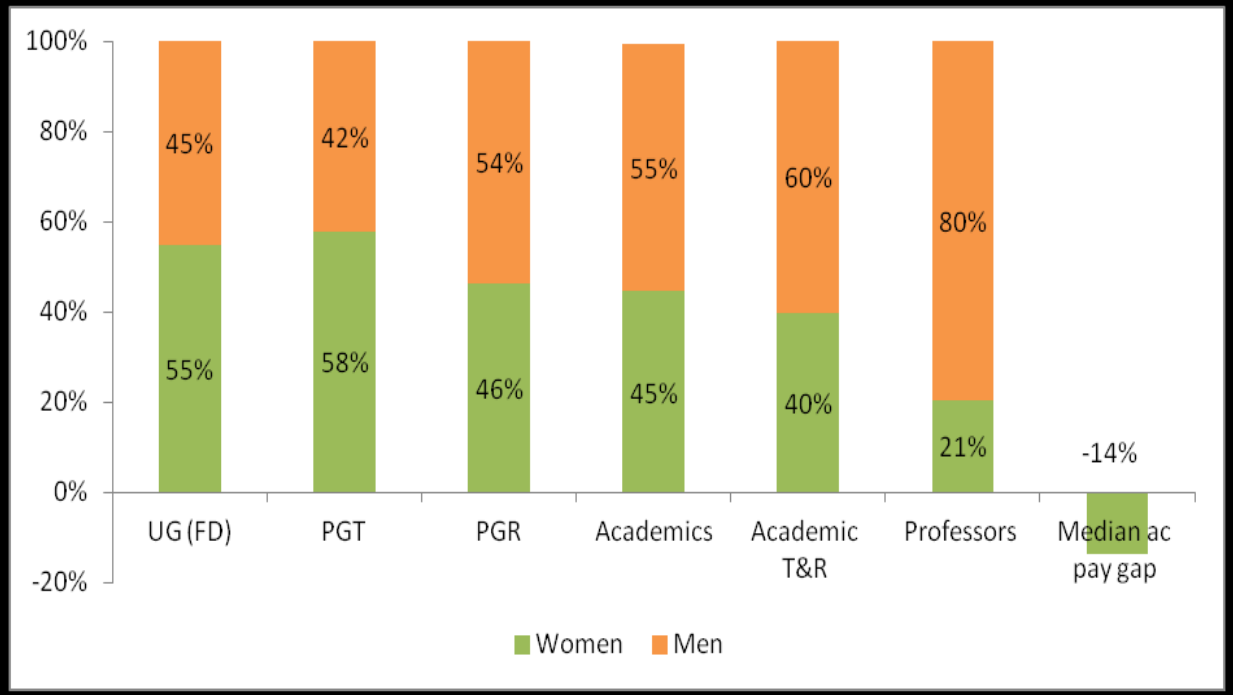

Women are less represented in senior positions

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Concerns remain in the sector

- Under-representation of women in certain subjects: Engineering (16.1%); Computer Science (17.1%)
- Lower proportion of females on contracts including both teaching and research, compared to men (43% vs 53%)
- Only 20% of institution heads are women

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Unconscious bias exists in science (men and women)

- Mothers less likely to be promoted and have lower salaries than non-mothers (Correll et al. 2007)
- 'Brian' more likely to be hired than 'Karen' as Professor, despite identical applications (Steinpreis et al. 1999)
- Confirmed in a randomised double-blind trial, where women also offered lower pay (Moss-Racusin et al. 2012)

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Women are less likely to submit grant applications than men (NCSR 2000)

- Women with dependent children less likely to submit than men with dependent children

Debateably, women's grant success similar to men's

- Australian Research Council grants (Marsh et al. 2008)
- Meta-analyses across countries and disciplines (Marsh 2009; Ceci & Williams 2011)
- Austrian FWO grants (Mutz et al. 2012)

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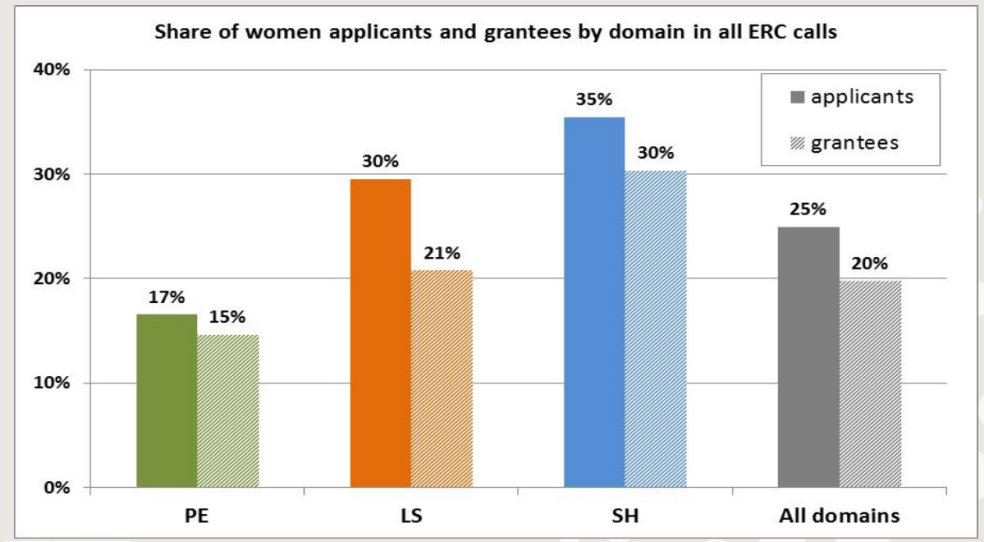
All ERC calls 2007-2013 (without SyG and CoG2013)

25 % of the applications from women

20 % of the grants to women

European Research Council
Established by the European Commission



European Commission

Withdrawn and ineligible proposals not taken into account

However, for ERC women's success is lower

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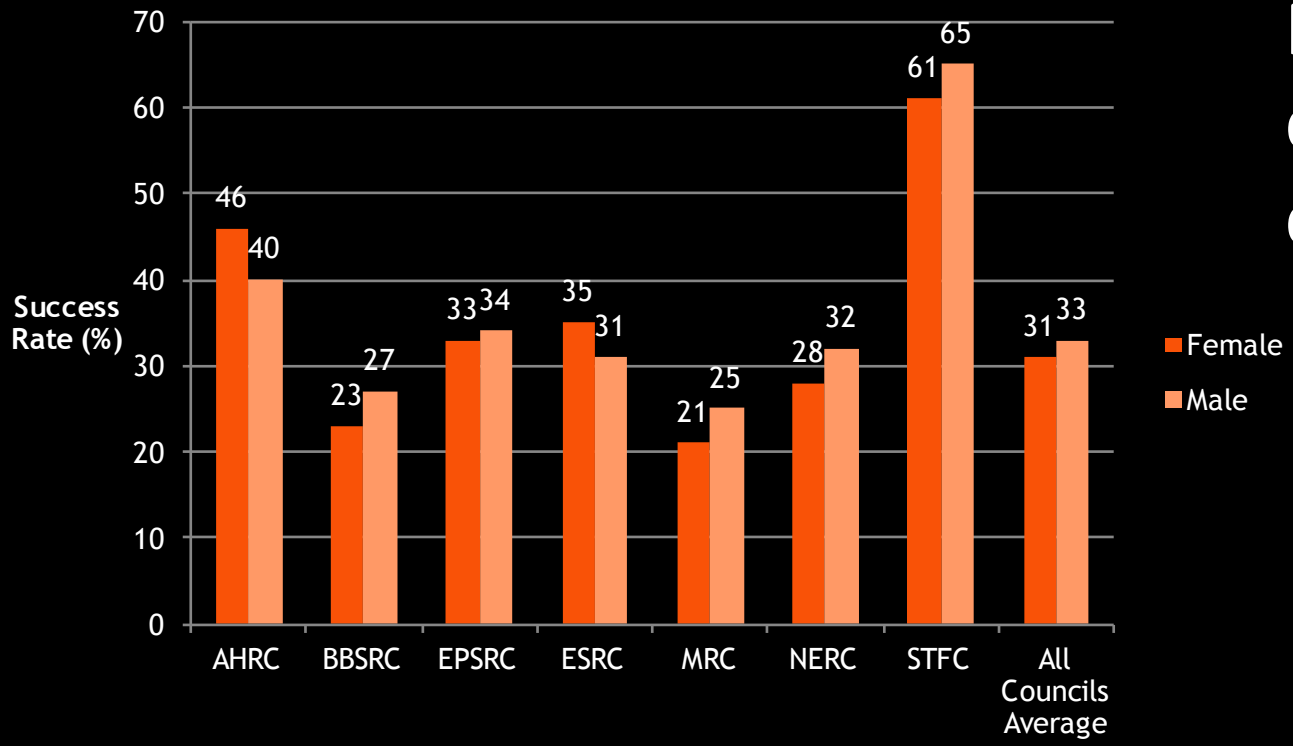
Success Rates of Male and Female applicants, 2012-13 across all Councils



For RCUK it depends on discipline

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Ayoya *et al.* (2012) analysed Wellcome Trust grants (2000-08)

- Noted the under-representation of women at higher levels of faculty in biomedical sciences
- Suggested we know relatively little about some of the underlying causes, such as success in obtaining funding
- Data on 10,283 awards made to 7,015 individuals
- Awards ranged from £150 to £16·8 million

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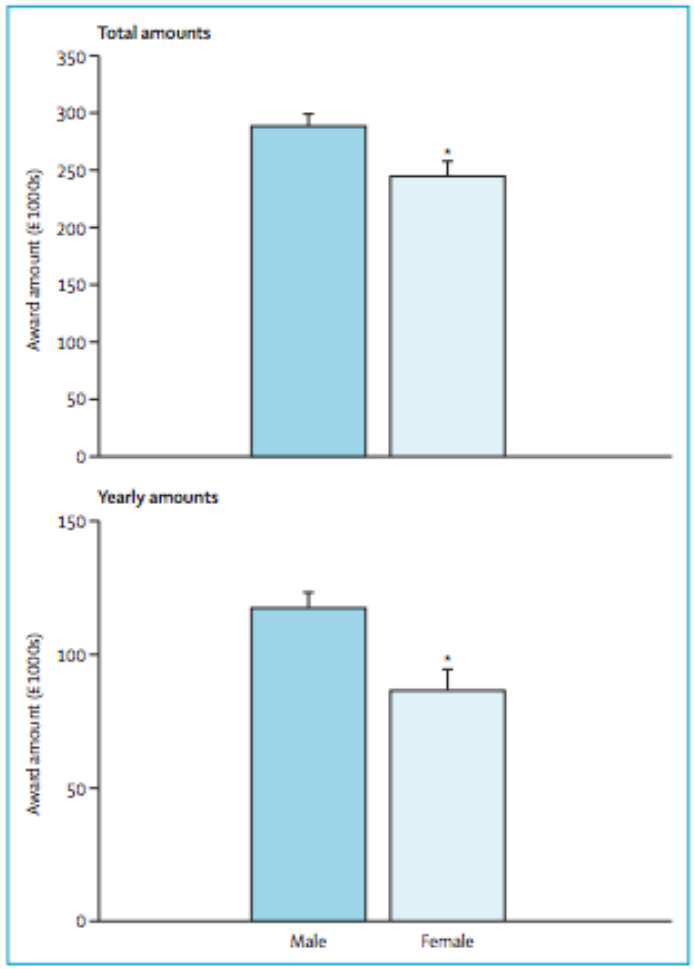

Figure: **Wellcome Trust award amounts 2001–08 by recipient gender**
Data are marginal means corrected for academic rank (error bars=SE). *Significant difference (p<0·05).

Controlling for academic rank, awards were £45k higher to men

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"In our opinion, the most likely explanation for the difference in amounts awarded to women and men is that women are systematically less ambitious in the amounts of funding requested in their grant applications. If we are correct, this represents a potentially modifiable target"

Ayoya *et al.* 2012

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Other possible conclusions?

- Men are less economical when submitting their grants?
- Women are more realistic when they apply?
- Panels may be more willing to accept women's grants if they are smaller?
- Panels are more likely to reduce the size of women's grants?

- And would we see similar results in other disciplines?

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Economic and Social Research Council (ESRC)

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Exploring gender differences in social science data

- ESRC ‘open call’ data from 2008-13
- Grant applications, success rates and grant award sizes

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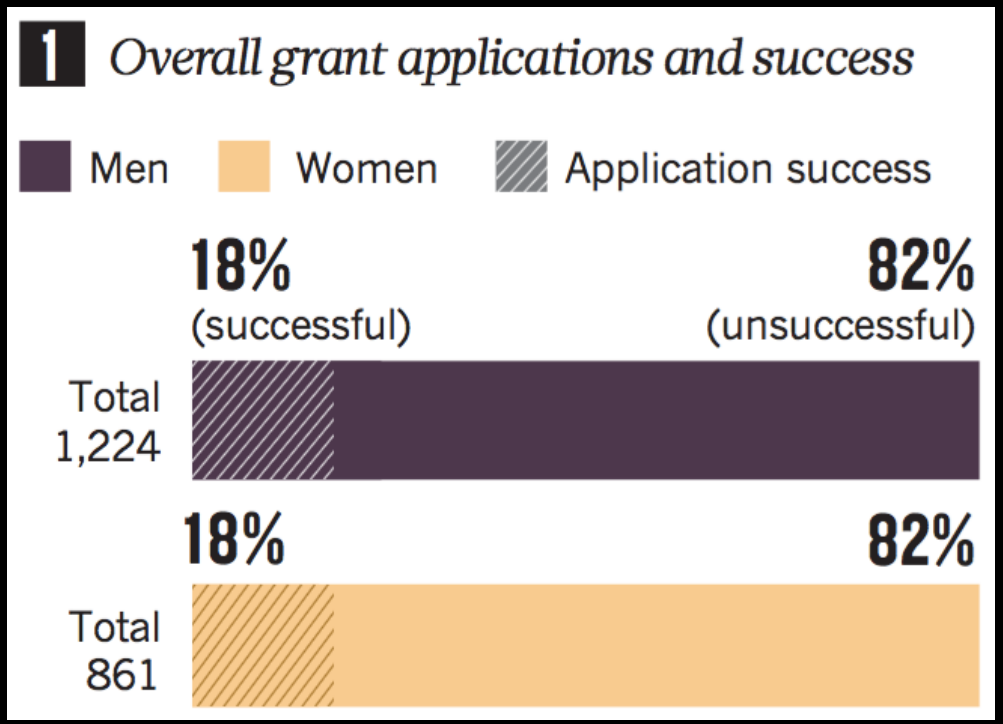

Accounting for academic position, women are as successful as men

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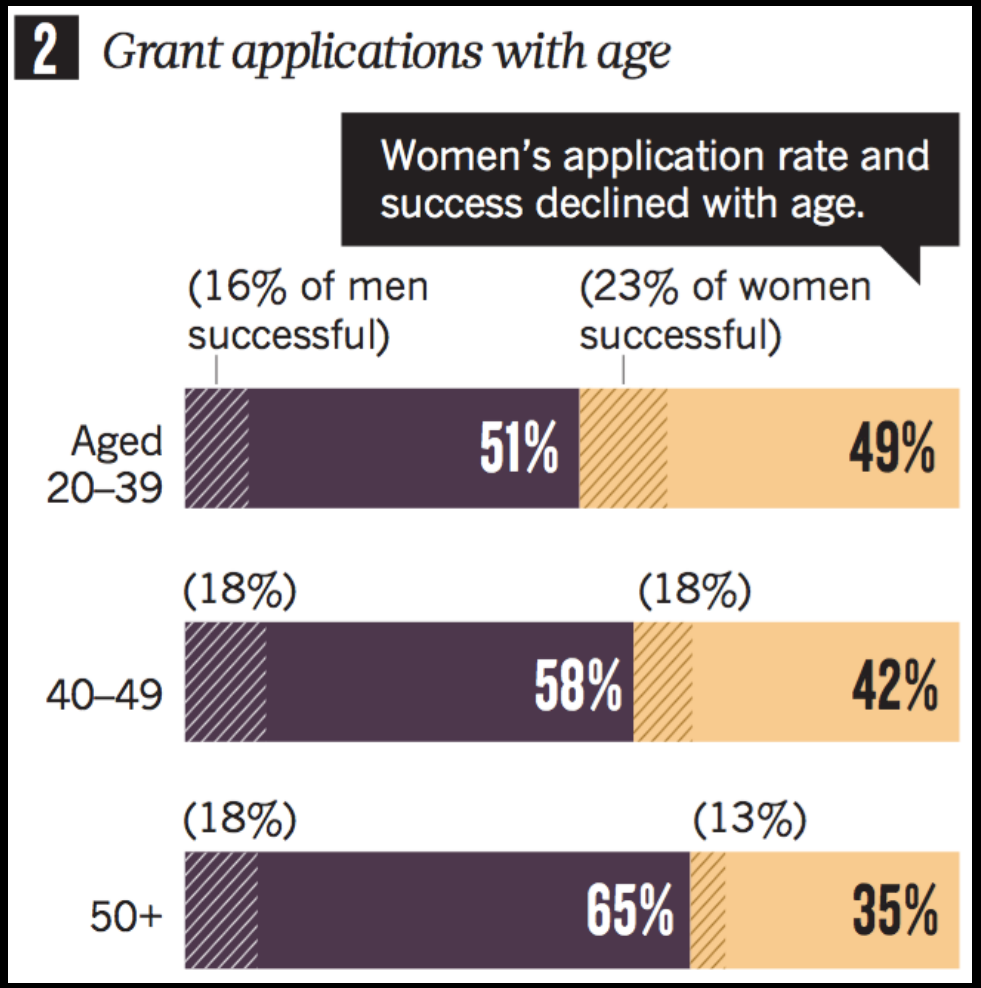

Accounting for academic position, younger women are more successful than younger men and older women

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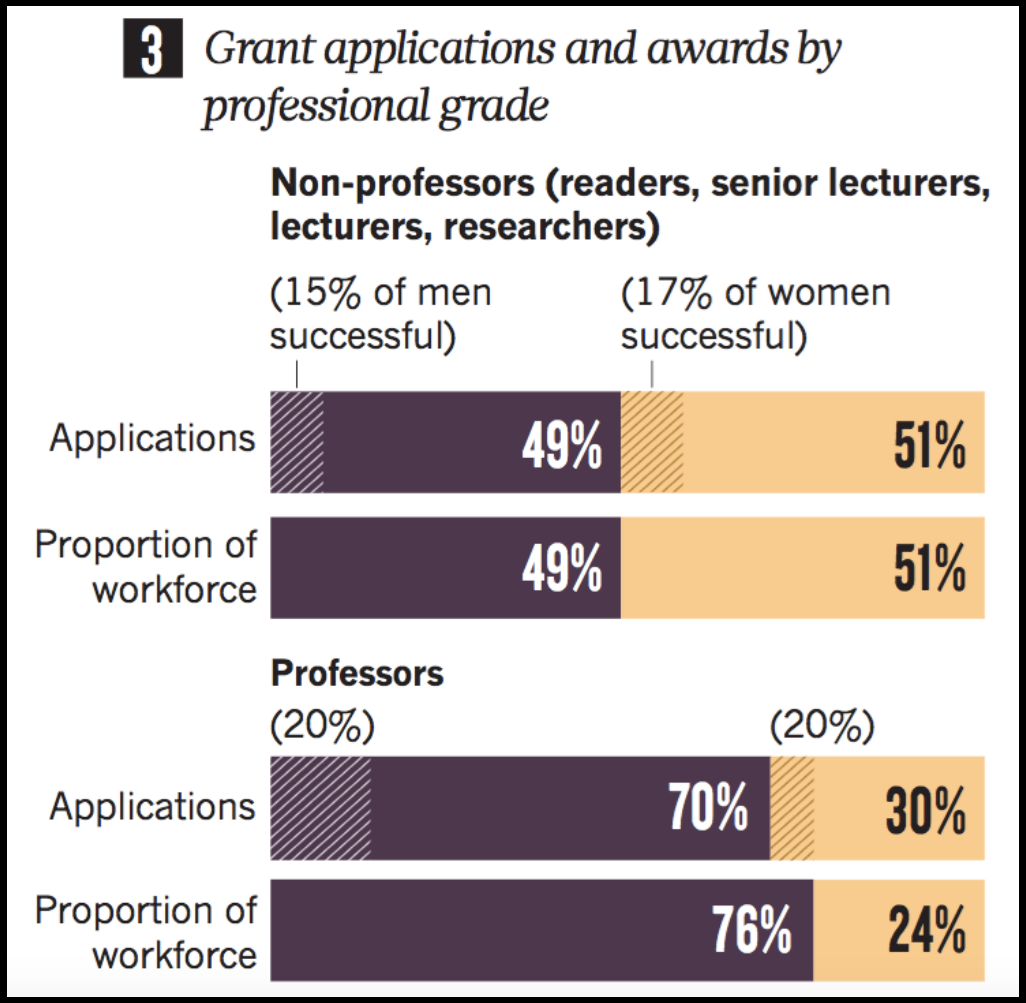

Professors are significantly more successful than non-professors

Women are as successful as men

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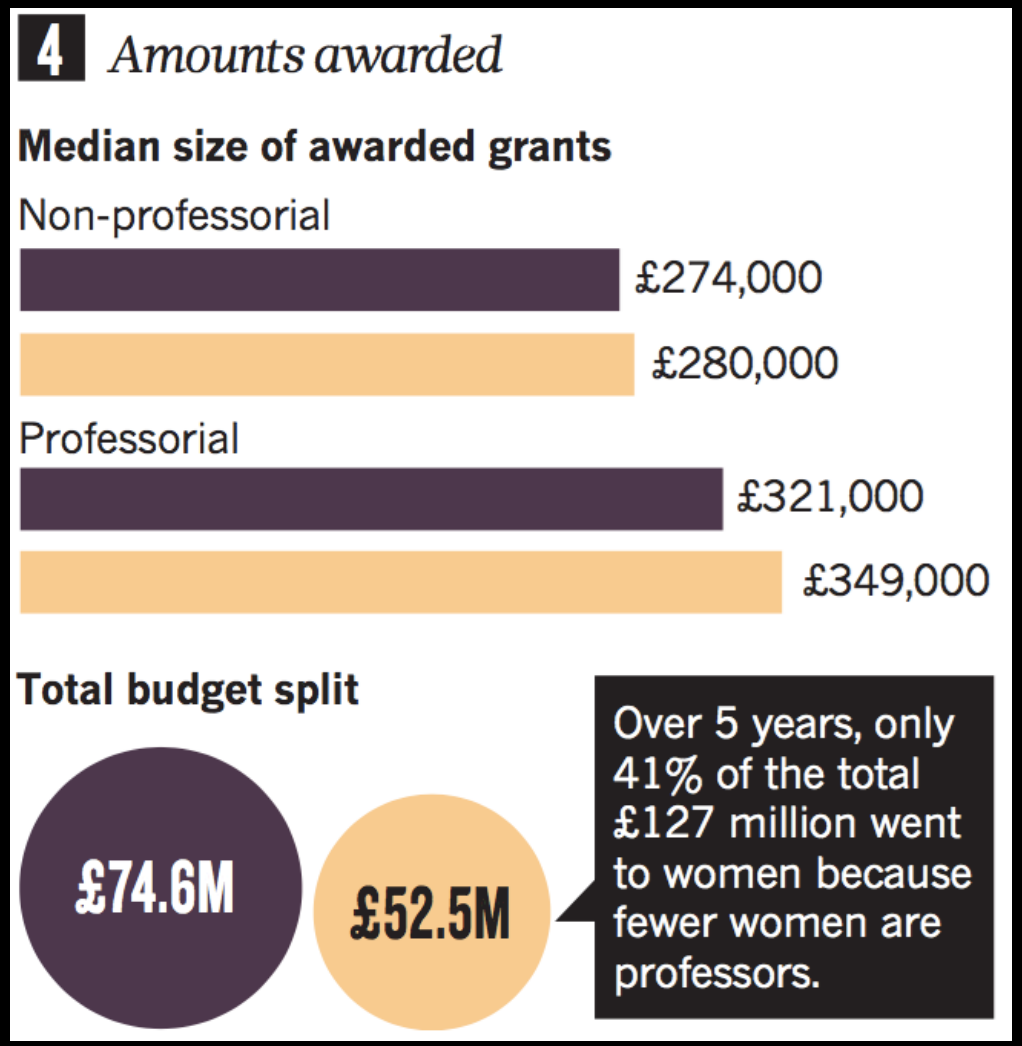

Size not different for men and women

But women only received 41% of the total grant value because there are fewer professors

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Conclusions

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What might explain the results in social science?

- The positive consequences of higher levels of female representation in social-science disciplines
- Social scientists have long been engaged with feminist research management practices, with the guiding principles of consultation, collaboration and social equality, which may have disrupted male hierarchies
- Men in the social sciences have long been aware of the ingrained, institutionalized male culture of universities

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Hence, UK social science data may hold lessons for how to close the gender gap in bioscience grant applications

- Significant change is unlikely, without some bold restructuring
- Bringing together funding agencies and prominent universities to develop coordinated approaches could have a significant impact

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BOLD ACTION

Ten ways institutions must close the gender gap

Steps for funding agencies worldwide

- Commit to ambitious expectations for gender performance that link to eligibility for receiving awards, following the lead of the National Institute for Health Research.
- Introduce targets for minimum gender representation on funding panels.
- Train selection panels on gender-equality issues, including unconscious bias.
- Submit data annually to independent scrutiny of gender differences in applications, success rates and award sizes.
- Publish figures to allow cross-agency and cross-national comparison by discipline.

Steps for universities worldwide

- Publish gender breakdowns in key areas including promotions, appointments and rewards in a consistent way, allowing for cross-institution comparison; such transparency would allow prospective employees and students to assess the institutional culture.
- Embed gender-equality issues in work practice. Become beacons of good practice for public-sector and private employers.
- Support women's career progression through the ongoing development of promotion criteria that focus on quality rather than quantity.
- Engage men in championing gender equality. Commit to the principles and uptake of shared parental leave.
- Celebrate women's achievements equally in a public way.

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Should we follow Scandinavia?

- Norway: Extra funds to universities who appoint women as Professors in under-represented disciplines
- Finland: Gender equality awards; Women holding academy professorships rose from 13% (2009) to 22% (2010); 50% women on Academy of Finland board and scientific committees in 2010
- Denmark: women-only grants scheme in STEM subjects; women-only scheme for training research managers

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"Women's under-representation in senior roles is clearly not a result of innate differences in intelligence or ability. Gender equality is not a matter of being nice to women. We need to ensure that the very best people reach the top of our institutions for the benefit of society"

Paul Boyle, United Nations HeForShe Impact Champion

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"It is calculated it will take about 40 years before women will equal men in professorial positions within the UK, if the current rate of change continues. If we allow it to take 40 years it effectively means we are asking the next generation to deal with this issue instead of stepping up ourselves"

Paul Boyle, United Nations HeForShe Impact Champion