Understanding the status of under-represented groups in the Information and Communication Technologies

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UK Research and Innovation brings together the seven UK Research Councils, Innovate UK and a new organisation, Research England, working closely with its partner organisations in the devolved administrations.
**What we do**

- **56%** of our portfolio is multidisciplinary
- **55%** of EPSRC's research portfolio is collaborative
- **£900m** annual budget
- **£4.6bn** EPSRC's total research & training portfolio
- **£1.2bn** of leverage from industry, public sector organisations, and charities
- **£3.4bn** of our portfolio is relevant to the industrial sectors
c25% of ICT student population and 18% of research staff are women, but ICT covers a wide range of fields making it difficult to know the diversity of the landscape.

EPSRC organised a discussion in 2016 that indicated issues.

With no single body able to take responsibility, EPSRC commissioned a study from Napier University:

*Understanding the status of women and under-represented groups in the “Information and Communication Technologies”* (published April 2018)
Understanding the status of under-represented groups in the Information and Communication Technologies

A report to the Engineering and Physical Sciences Research Council

Helen Graham, Robert Raeside and Gavin Maclean
Employment Research Institute, Edinburgh Napier University

July 2017
Women and those with a limiting disability or health condition are under-represented in academic ICT.

Men are twice as likely to be Professors.

Women are slightly more likely to be on a fixed-term or teaching only contract.

Source: HESA
Key Findings

The report grouped its finding under 7 headings:

- Motivation for pursuing an academic career
- Working conditions
- Confidence
- Caring responsibilities
- Discrimination (including harassment)
- Future career plans
- Diversity
Motivation

Women may have different motivations for pursing this career - and therefore different incentives to stay/leave.

Men more likely to cite intrinsic motivations, women to cite instrumental

“I wanted work that’s interesting. If you’re spending so much time working, you want it to be working on something interesting and with people that are interesting, doing something that will hopefully make some sort of progress. I’m not wedded to academia, but if I moved to industry, it would be an industry where I would still be doing research.”

Source: Interview respondent, female
Working conditions

- Long hours culture
- Competing responsibilities
- Expectation that women do ‘good citizenship’
- Part-time and flexible working: detrimental to career
“The problem I think with our job is that there is no clearly defined set of tasks you have to do, especially when you do research... It’s open-ended, you can always do more and you have to do more to stay at the forefront of research.”

“There is still the attitude that your work is more than a job and it’s your raison d’être and everything else gets pushed to the side lines... Even if I wanted to make it the overwhelming thing in my life, I’m not going to be able to because I have caring responsibilities both of young kids and older parents.”

Source: Interview respondents, female
Working conditions

- Caring responsibilities may also make it more difficult to participate in the wider academic (e.g. seminars) and social life of the department.

- Also affects those who do not drink, or those with conditions that make social interaction difficult (e.g. autism).

“A classic example is that there will be a late afternoon seminar...and people say we’ll go to the pub afterwards, and even if I can come to the seminar, I can’t come to the pub afterwards and that’s where the soft networking stuff goes on and it’s frustrating.”

“People always select evening pub events to socialize. I have to pick up children from childminder and I do not consume alcohol nor enjoy being in that setting. So I did feel excluded.”

Source: 1) Interview respondent and 2) online survey respondent, female.
Women are less confident in their abilities than men

Q: To what extent would you say that you feel confident about...

Source: Online survey, staff respondents, n=395
Female postgraduate students also display lower confidence

Q: To what extent would you say that you feel confident about...

Source: Online survey, postgraduate respondents, n=242
“We seem to suffer a lot more with feeling, like, we don’t fit and that we just don’t seem to be as confident in our innate ability to complete a PhD, whereas the males seem to … even though some of them are significantly less well-qualified than us, and achieve less than us, just don’t seem to have that mental block of, “Oh, I can’t do this, and I’m not good enough to do this,” and those kind of things. They just don’t have that.”

Source: Interview respondent, female
Women are less likely to believe that their colleagues perceive them as ‘brilliant’, but more likely to believe that they are perceived as ‘reliable’.

Q: Do you think your academic peers perceive you as...
Q: Do you think your managers and senior colleagues perceive you as...

Source: Online survey, staff respondents, n=406
Women more likely to feel ‘different’ within their departments

Feelings of difference reported by other groups: ethnic minorities, those with a disability, older postgraduates

Q: To what extent do you agree with the following statements?

Source: Online survey, staff respondents (n=432) and postgraduate respondents (n=244)
Diversity

Not necessarily outright hostility, but feelings of being different or being treated differently

“People are generally, you know, really friendly towards me but I still, like, although I’m included, I do get treated a bit differently. Maybe, like, the attitudes towards me are a little bit different than to everyone else... Maybe it’s just me being paranoid, but I just feel like I stand out a little bit.”

Source: Interview respondent, female
Women are more likely to experience bullying, harassment and micro-aggression

During your time in academia...
Q: Have you ever experienced harassment and/or bullying?
Q: Have you ever felt excluded or inferior because of something a colleague has said (even if they did not mean to make you feel this way)?

Source: Online survey, staff respondents, n=432
Discrimination and Harassment

Experiences of sexual harassment (often at early stage of career)

“When I started my PhD, in my office of 9 men, most of them had page 3 girls as screen savers, and they would make sexual comments about pretty much every female PhD student in the dept. I was also propositioned quite a lot”

“Sexual harassment online from other students who are part of the same doctoral training centre... Being threatened and called a snitch when complaints have been made of sexual harassment (although the complaints were not from me)”

Source: Online survey respondents, female
Sex discrimination is often maternity related

Possibly a lack of clarity around what provision is available when a PI or researcher takes leave during a project

“Expressions of interest were requested for an internal role. I was the only one who responded. Was told that someone else was invited to job share it with me in case I ‘became pregnant again’.”

“[I was] asked not to get pregnant again by my doctoral training centre as they don’t have any money in the budget for maternity leave.”

Source: Online survey respondents, female
‘Feminine’ sub-disciplines in computer science considered by some to be inferior

“There’s always an element of ‘it’s not the technical side of computer science therefore she’s a second class citizen’, there’s still some dinosaurs that have that attitude, and therefore you’re maybe not seen as being technical by some people and therefore they look down on some of the work you do.”

Source: Interview respondent, female
Discrimination and Harassment

Indirect sexism, and a reluctance to call out or escalate minor incidents

“It’s not exactly quantifiable, you know, but sometimes you get the feeling, so to speak, that sometimes your male co-workers talk over you... You don’t see them doing it with their male co-workers as much. So it’s little things like that which sort of tend to add up all the time, and again, you know, it’s not like they mean to, you know... it’s not that it’s done intentionally, it’s almost subconscious for them as well, so it’s really hard to point it out”

“I feel like if I went to someone and said, “This person made this sexist comment,” they’d be like, ‘That doesn’t sound that bad. It didn’t affect your performance.’ So I don’t really feel like I can deal with them in any way. I usually just laugh along with them and then I go and complain to my supervisor as a friend, rather than as a work thing... I don’t ever really think about escalating it because it’s never what I think an HR-type person would consider sexual harassment. It’s just sexist comments that are demeaning without people realising it, I think is the key.”

Source: Online survey respondents, female
Summary

Why are women/other groups less likely to enter/stay in academic ICT?

• More likely to experience bullying, harassment and micro-aggression – direct and indirect sexism (or racism, xenophobia, able-ism, etc.)
• More likely to take part-time/flexible working patterns that can limit career – affects how they are perceived, and incompatible with expectations regarding outputs
• More likely to take on academic ‘housework’ at personal cost
• Lower confidence in abilities
• Feeling ‘different’
• Different motivation for pursuing (and thus staying in/leaving) career
Need for a proactive response not always appreciated by male colleagues

- Some supportive in principle but complacent in practice
- Seen as women’s (or minorities’) problem to solve

“But the male staff are all saying, “Oh, yes, yes, you know, we’re very equitable minded,” and all the rest of it, but I don’t think they understand the difference between personally kind of advocating that this should be done and the changes which have to be made.”

“Because I am a female in STEM I am expected to spend some part of my time working on the women in STEM issue... Through my whole career I have spent countless hours on the topic at the expense of personal research and growth goals. As I write this I am in the middle of sorting out a cake for an Athena SWAN event while the guy in the next office is writing a grant ... And yes it is 10pm.”

Source: Interview respondents, female
Diversity in academic ICT

At worst, women experience backlash from male colleagues

This was also evident from the online survey responses of some men

- Hostility to positive action measures
- Dismissing or trivialising negative workplace environment

“When I received a grant ahead of a male colleague, he said it was only because I was a woman and he wasn't.”

Source: Interview respondent, female

“Posts were advertised as especially welcoming applications from persons of a background other than my own, rather than as looking for the best person for the role.”

“I think this [micro-aggression] is the least of the concerns.”

Source: Interview respondents, male
The Action Plan

Building on findings, 4 commitments for the period March 2019:

- Establishing a baseline against which to measure progress
- Workshop including academia and Government to identify and share examples of best practice
- EPSRC will coordinate discussions to develop and publicise Case Studies to celebrate success
- EPSRC, working with partners in UKRI will explore what work is being done on tackling discrimination, harassment and aggression and if appropriate partner with them and work together
The Action Plan

Over the coming months we will be:
- Collating information on what all our partners are doing in this area such as events, so that we can look for synergies
- Developing smarter case studies
- Organising a meeting to explore how we can collect baseline data as well as to prioritise the key findings and what actions we can begin to take.

We are also exploring the possibility of commissioning a further study to understand the levels of bullying, discrimination and harassment. Before starting this, however, we are in the process of trying to find out what work is already being done in departments and by other organisations.
Thank you