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bcs The Chartered Institute for IT

THE WOMEN IN IT SCORECARD

A definitive up to date evidence base for data and commentary on women in IT employment and education

2014

Foreword

Forewords

As the employer body for technology skills, e-skills UK is privileged to work with tech employers of all sizes and types. No-one who is fortunate enough, as I am, to visit employer premises on a regular basis, will be surprised by the contents of this report – a simple glance around will invariably confirm that men are significantly in the majority in tech workplaces.

While the scale of the gender imbalance itself is shocking, its persistence is no less so. Clearly there are societal influences that affect all STEM roles, and misperceptions of tech careers persist – that the work is hard, dull and unsocial. Employers long to recruit more women, but they can only choose from those who put themselves forward, and have the appropriate qualifications. Hence employers strongly believe that the key to reducing the gender imbalance lies at an earlier stage - in schools, colleges and universities. Recent months have seen significant changes to the school curriculum, and employers continue to be deeply committed to active interventions in the classroom and outside that demonstrably change girls' beliefs.

There are perhaps some positive straws in the wind: the absolute number of women in the IT workforce has risen; girls taking GCSE and A-Level qualifications outperform their male counterparts; and where a motivating curriculum is offered, young women show an appetite for degree level work in tech, as the high level of female participation in e-skills UK's ITMB degree demonstrates.

Whatever the solutions to the problem, there is nothing to be gained from failing to face up to it. This report is a robust and rigorous exposition of the issue: thanks are due to all who have contributed to and supported it.

Karen Price OBE
CEO, e-skills UK

At BCSWomen we aim to offer a range of opportunities, services and support to women working in computing and IT, in related professions and also to students of computing. As a campaigning organisation we try to make the IT profession better for all – but looking at this report we have plenty to do on the gender imbalance.

Having an eye to the often poor fortunes of women working in IT for the last fifteen years, I have been aware that one of the understated problems which makes it difficult to retain women in technology is the gender pay gap.

The disparity in wages for men and for women is just depressing. Some years ago a woman from the Equal Opportunities team ran me off the figures specific to IT. At a time when the UK average pay gap was 17 per cent it was horrifying to find that the gap for women working in tech was nearer to 23 per cent. The ONS now suggest that the pay gap for women working in programming/data etc is 27 per cent. This report shows a lower, but no less worrying, 16 per cent gap.

For me, it is time that the leaders of our industry got real about the impact of the gender pay gap on the retention of women in tech. This research shows that the potential in the female IT workforce is huge. When we start addressing these issues the technology profession can prove to all that we are forward thinking and fair to all of our workers.

Gillian Arnold
Chair, BCSWomen

1.0 Background

IT & Telecoms is central to the UK economy and a key source of competitiveness for all sectors; opening up new markets, increasing performance and driving productivity. The IT & Telecoms industry alone represented an annual gross value added (GVA) of £75 billion in 2012[1] – approximately 8 per cent of the UK total in that year[2], whilst the continued adoption and exploitation of ICT having the capacity to generate an additional £47 billion of GVA to the UK economy over the next five to seven years[3].

IT also accounts for a significant proportion of UK employment and in 2013 there were just under 1.4 million people working either within the IT industry sector or in IT roles within other parts of the economy (753,000 in the IT industry and 643,000 IT professionals working in other industries)[4]. These are the people upon which the 29.7 million employees who use IT in their daily work rely upon for the creation, implementation and operation of systems, services and communications, forming the backbone of companies across the UK.

The gender divide starts early in the ICT education system. Lower female participation rates exist at GCSE level, the gap increases at A-Level and continues in Higher Education and into the IT professional workforce. The lack of females taking IT related qualifications directly impacts upon the proportion of females that are employed today as IT specialists. Interestingly, although females taking IT related qualifications in Secondary Education are low in number, they consistently outperform their male counterparts and the supposition is therefore that if females were more inclined to participate in IT careers then the pool of talent available to IT employers might improve noticeably. Female participation rates at A-Level and in Higher Education across the majority of STEM subjects fall short of averages seen across all subjects; the notable exception is biological sciences.

Given that the trend in the under representation of females throughout ICT education and careers has been predominately downwards for some years, it suggests that this situation is likely to worsen further – unless there are some significant and meaningful interventions. The gender imbalance throughout ICT education must be rectified if the UK is to meet both the current demand and the continuing future growth of the IT professional workforce over the next decade. e-skills UK's recent employment forecasts work, in partnership with Experian, indentified that there is a need for around 129,000 new entrants a year into IT & Telecoms specialist job roles through to 2015, with a minimum of around 22,600 (17.5 per cent) likely to be filled by people joining from education[5].

This document provides details of participation rates and trends by gender from Secondary Education through into the IT workforce. International comparisons by gender in IT occupations and the IT sector as well as an evaluation across other STEM[6] subjects are made, investigating whether the low representation levels of females is a problem limited just to the IT workforce in the UK or is an issue that needs to be addressed throughout STEM subjects and across the globe.

1. ONS Annual Business Survey, provisional estimates
2. ONS Blue Book
3. Technology Insights 2012, e-skills UK
4. All employment estimates from the ONS Labour Force Survey, see appendix for further details
5. Technology Insights 2012, e-skill UK
6. STEM refers to Science, Technology, Engineering and Mathematics

2.0 Key Messages

2.1 Workforce representation

- From an already low base, female representation within both the IT professions and the IT sector have declined slightly over the past 10 years
- By 2013, of 1,129,000 people working as IT specialists in the UK, less than one in six (16%) were women
- Of the 753,000 people working in the IT sector at this time, just one in five (20%) were women
- In 2013, within the IT sector itself little more than one in ten (11%) IT specialists were women
- The proportion of women working as self-employed IT specialists has more than doubled in the past decade
- Just under one in five (18%) of females working as IT specialists were employed on a part-time basis – a figure well below that for other occupations
- Women are much more likely to hold technician/engineer grade positions than men (34% vs. 20% respectively) and less likely to be working in 'professional' (primarily development related) occupations (46% vs. 57%)
- Female representation within IT specialist roles is higher within the devolved nations than in the UK as a whole (19% vs. 16%)
- A comparison with other EU15 nations reveals the level of female representation in IT positions within the UK is slightly below the norm

2.2 Higher education

- Across all subjects in Higher Education in 2013, females accounted for 57% of UK domiciled applicants and 55% of acceptances. By stark contrast, in Computer Sciences (Group I) subjects, females made up just 12% of applicants and 13% of acceptances
- Across science, technology, engineering and mathematics (STEM) subjects, females accounted for, on average, just 34% of applicants and 35% of acceptances (UK domicile), with these proportions dropping to as low as 11% and 12% respectively for engineering and 12% and 13% for Computer Sciences
- In 2012, across all subjects, females accounted for 59% of UK domiciled qualifiers (first degree, foundation degree, post graduate degree and other). In contrast, females accounted for just 18% of qualifiers from all Computer Sciences/IT related HE courses

2.3 Secondary education

- The proportion of females who sat an IT related GCSE in 2013 was 44% (51% for all GCSE courses), a decrease of 3 percentage points compared to 2012
- 76.3% of females compared to 69.2% of males who took an IT related (ICT and Computing) full course GCSE were awarded A*-C at GCSE level
- In 2013 females accounted for just 6.5% of those taking Computing A-Level, a decline of 1.5 percentage points compared to 2012
- Females, although fewer in number, continue to outperform their male counterparts and at Computing and ICT A-Levels

2.4 Qualifications and earnings

- Just over two thirds (69%) of female IT specialists held some form of HE qualification in 2013 – a proportion equal to that of their male counterparts but much higher than that observed for either women or men within the wider workforce
- At £640 per week, the median gross weekly rate of pay for female IT specialists[7] was 16% (£120) less than the comparison figure for men working in IT roles (£760) and the recorded level of pay for women IT roles has been consistently below that of male IT specialists in each of the past 10 years

7. Full-time permanent employees

2.5 International comparisons

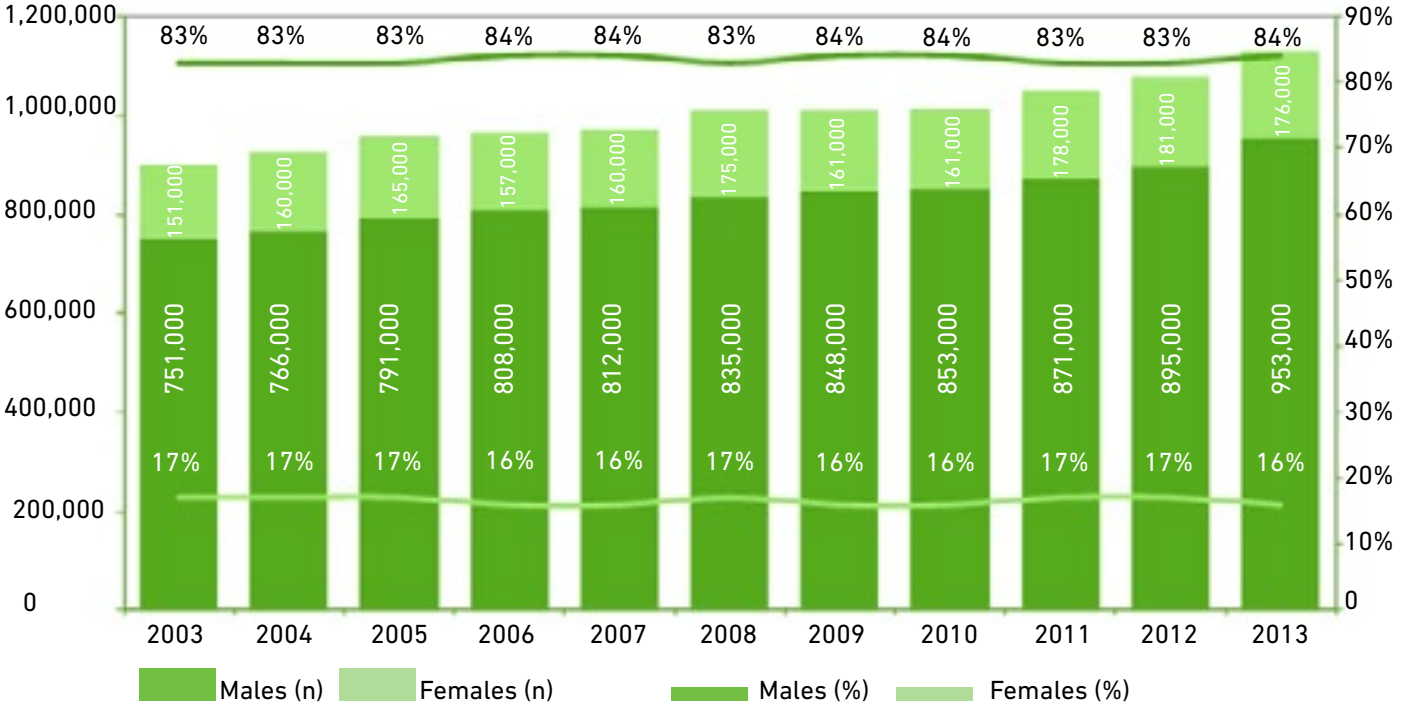
- Gender imbalance in both the IT industry and in IT occupations is an issue to all EU15 nations
- Female representation in these industries/occupations is lower in the UK than the EU 15 average

3.0 The representation of females in the IT workforce

3.1 Employment numbers and trends

Latest estimates from the ONS show there to have been 176,000 women working as IT specialists in the UK during 2013 - just under one in six (16%) of all those working in such roles at that time (1,129,000 people in total). The number of women working in IT positions has grown dramatically over the past 10 years, and at 16%, the level of employment growth for the 2003-13 period was almost three times that recorded for the UK workforce as a whole (6%) .

Figure 1: IT specialists in the UK by gender, 2003-2013



Source: e-skills UK analysis of data from the ONS Labour Force Survey (four quarter averages)

Growth in the number of male IT specialists was however, still greater over the past ten years (27%) and as a result the proportion of women relative to men in such positions had declined slightly from 17% in 2003 to 16% in 2013.

3.2 Employment characteristics

3.2.1 Permanency of employment

As with male IT specialists and workers (of both sexes) in other occupations, only a small proportion of female employees working in IT roles were working under temporary contracts in 2013 (6% of female IT specialists and 7% of female employees more generally). Though the specific reasons for their taking temporary as opposed to permanent employment are not known, what is clear is that only in around one third

of cases (33%) was this due to them being unable to find a permanent position – a proportion only slightly higher than that reported by male employees working as IT specialists (29%) and one significantly lower than that recorded for temporary employees within the workforce as a whole (i.e. 38%)[8].

3.2.2 Contractual status

As with male IT specialists, by far the majority of women working in IT roles (i.e. 90% or 158,000) during 2013 were employees and this has always been the case for those working in IT and other occupations (again as with male workers). At one in ten or 10%, the incidence of self-employment amongst female IT specialists in 2013 was also similar, though slightly below that for males working in IT roles (13%), though over much of the previous decade self-employment amongst male IT specialists has been running at around 2/2.5 times the level recorded for women in such professions.

Figure 2: Scale/incidence of self-employment amongst IT specialists, 2003-2013

Source: e-skills UK analysis of data from the ONS Labour Force Survey (four quarter averages)

3.2.3 Hours of work

Amongst female IT specialists working as employees in the UK during 2013, just under one in five (18%) are thought to have been working on a part-time basis. This is well below the overall figure for female employees in the workforce (42% of which were working part-time), but conversely much greater than the comparison figure for male employees in the workforce (12%) and, more specifically, male employees working as IT specialists at that time (2%).

In general, the incidence of part-time working was much higher amongst IT specialists working on a self-employed basis than those working as employees, and again, still more so amongst females than males (with comparison figures of 52% and 14% respectively in 2013).

8. Figures given in this section based upon a 3 year average 2011-2013

When asked why they had taken up part-time, as opposed to full-time positions, virtually all female IT specialist employees stated that it was because they did not want a full-time post – a higher percentage than for female employees working part-time as a whole (73%). By contrast, only one in six (60%) male employees working part-time as IT specialists were doing so as they were unable to find full-time work and less than one in four (37%) males working part-time in total (employees).

Table 1: Usual hours of work for IT specialists and other employees, 2013

	Full-time employees		Part-time employees	
	Basic usual hours	Total usual hours	Basic usual hours	Total usual hours
Males (IT specialists)	39	42	18	20
Males (all occupations)	40	44	18	19
Females (IT specialists	38	40	22	23
Females (all occupations)	37	40	19	20

Source: e-skills UK analysis of data from the ONS Labour Force Survey (four quarter averages)

As illustrated in the table above, female IT specialists working as employees and on a full-time basis worked an average of 40 hours a week during 2013 – 2 hours more than their basic hours but still two hours less than their male counterparts (who not only contracted to work longer hours but also worked longer hours overall). By contrast female part-timers tended to work longer hours than males whether employed in IT or other occupations and with respect to both their basic and total weekly hours.

3.2.4 Nature of employment

An analysis of IT employment by occupation reveals that female IT specialists are much more likely to hold technician/engineer grade positions than men (34% vs. 20% respectively working as either Operations or User Support Technicians) and less likely to be working in 'professional' (primarily development related) occupations (46% vs. 57%)[9]. Though the proportion of female IT staff working in Director/Managerial positions also appears lower than that for their male counterparts, perhaps surprisingly, the difference is relatively small by comparison (i.e. 20% for women compared with 23% for men during 2013).

9. The definition of 'professional' roles in this context differs from that given by ONS in that it does not include 'specialist IT managers' which are combined with IT directors to form a 'managerial level grouping'

Table 2: Occupational breakdown of IT specialist employees, 2013

	Female employees (n)	Proportion (%) of all female IT staff	Comparison for all male IT staff	Female as proportion of all staff in role
IT management IT managers/ directors	31,000	20%	23%	14%
IT professionals	**72,000**	**46%**	**57%**	**75%**
IT Project & Programme Managers	10,000	6%	6%	16%
Business Analysts, Architects & System Designers	14,000	9%	10%	15%
Programmers & Software Developers	25,000	16%	23%	11%
Web Designers & Developers	8,000	5%	4%	21%
Other 'professional' IT staff	15,000	10%	14%	12%
IT Technicians & Engineers	**54,000**	**34%**	**20%**	**49%**
Operations Technicians	31,000	19%	9%	28%
User Support Technicians & IT Engineers	23,000	15%	11%	21%
Total	158,000	100%	100%	16%

Source: e-skills UK analysis of data from the ONS Labour Force Survey (four quarter averages)

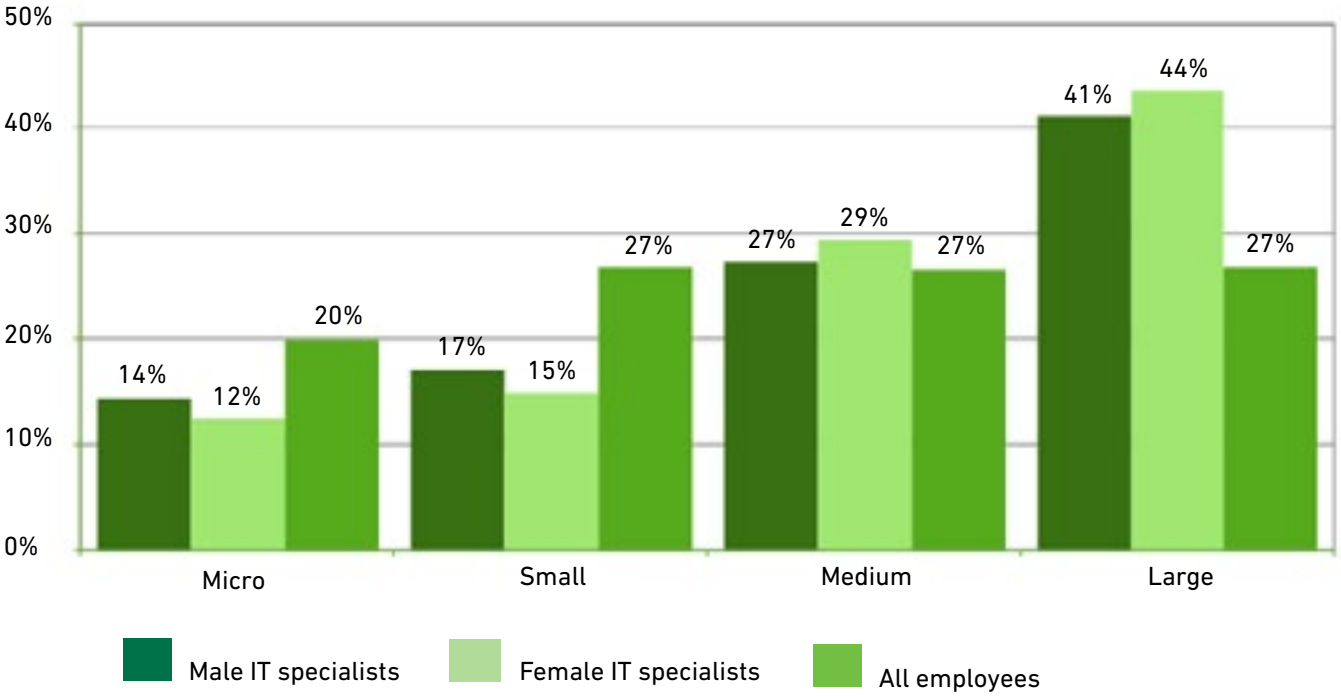
Though the proportions of female (and male) IT employees working in different occupational groups have fluctuated considerably over the past decade, overall, the employment distribution within the groups for which data is available was broadly the same at the beginning/end of the ten year period.

3.3 Employer characteristics

3.3.1 Size of employer

More than half (56%) of all female IT staff were employed within micro firms or SMEs (small and medium sized enterprises) in 2013 and in comparison with male IT specialists they were slightly more inclined to be working in businesses of a smaller size (i.e. micro/small) . Though the proportion of male IT staff working in firms of this size was much the same (58%) it is interesting to note that, for the wider workforce, micro businesses/SMEs are a much more important source of employment, accounting for just over 73% of all employees working in the UK at that time.

Figure 3: Distribution of IT/other employees by gender and employer size, 2013[10]



Source: e-skills UK analysis of data from the ONS Labour Force Survey (four quarter averages)

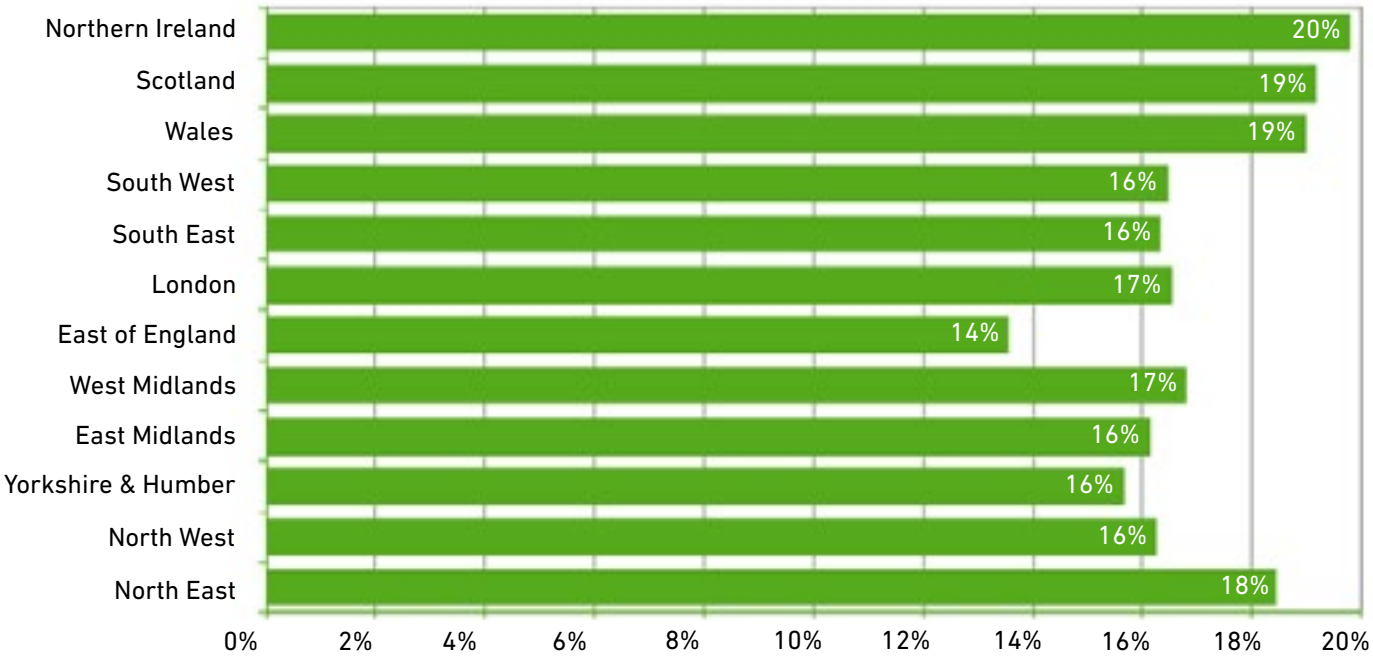
3.3.2 Location of employer

Like males working in IT, female IT specialists are most likely to be found working in London/the South East of England and in both cases the proportion working in this area appears well above that for workers more generally (i.e. 41% of male/female IT specialists compared with 28% of workers as a whole)[11]. As a proportion of all IT specialists in the region however, females were best represented within the devolved nations where they accounted for 19% on average of all those working in IT roles. Conversely at just 14%, representation of women in IT roles was lowest within the East of England and two full percentage points below the national average (16% for the 2011-13 period).

10. Micro businesses are defined in this case as having between 1 and 10 staff, small businesses having 11-49, medium 50-249 and large having 250 or more

11. Due to small bases size in certain nations/regions, a three year average 2011-2013 has been employed for the production of charts/commentary in this section

Figure 4: Proportion of IT specialists that are women, by region/nation



Source: e-skills UK analysis of data from the ONS Labour Force Survey (twelve quarter average, 2011-2013)

3.3.3 Industry of employment

It is perhaps unsurprising to find that an analysis of ONS workforce data shows a large proportion of IT specialists in the UK (43%) working within the IT sector itself and that this observation is still more pronounced for self- employed IT specialists (72% of which work in the IT sector compared with 39% of employees).

Table 3: IT specialists working in the IT sector by contractual status and gender, 2013

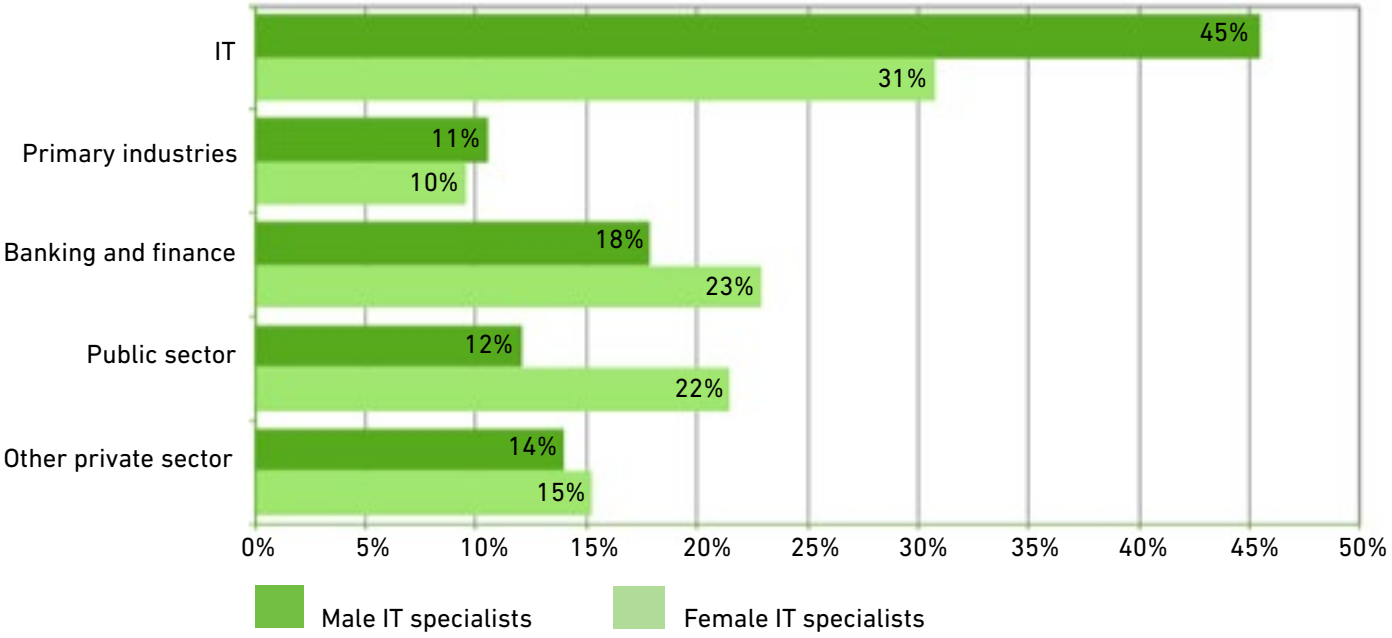
	IT sector		Other sectors		All sectors	
	(n)	(%)	(n)	(%)	(n)	(%)
All female IT specialists	54,000	31%	121,000	69%	175,000	100%
Self-employed	10,000	57%	7,000	43%	17,000	100%
Employees	44,000	28%	114,000	72%	158,000	100%
All male IT specialists	432,000	45%	519,000	55%	951,000	100%
Self-employed	89,000	75%	30,000	25%	120,000	100%
Employees	342,000	41%	487,000	59%	829,000	100%
All IT specialists	486,000	43%	640,000	57%	1,126,000	100%
Self-employed	99,000	72%	38,000	28%	137,000	100%
Employees	386,000	39%	600,000	61%	986,000	100%

Source: e-skills UK analysis of data from the ONS Labour Force Survey (four quarter averages)

What is surprising however, is that the incidence of IT specialists working in the IT sector varies so dramatically with gender, either when considering the employment patterns of this group as a whole (31% of all female IT specialists work in the IT sector compared with 45% of all male IT specialists), or, when focussing upon employees/self-employed workers in particular (i.e. 57% of female IT specialists that are self-employed work in the IT sector compared with 75% of self-employed males in such roles whilst comparison figures for employees are 28% for females and 41% for males).

Perhaps the most alarming finding from this analysis of employment by sector however is that, of the 486,000 IT specialists working in the IT sector in 2013, just 54,000 (11%) were women.

Figure 5:Proportion of IT specialists working in the IT/other sectors by gender, 2013



Source: e-skills UK analysis of data from the ONS Labour Force Survey (four quarter averages)

Outside of the IT sector itself, other key sectors of employment for female IT specialists include were Banking and finance (home to 23% of female workers in such roles) and the Public sector (22%). Again this finding was interesting in that, (outside IT) though the distribution of male/female IT specialists is broadly in line, the proportion of female IT specialist working in Public sector organisations is almost double that for males (12%).

3.4 Employee characteristics

3.4.1 Age

At 39, the average age for female IT specialists working in the UK in 2013 was one year less than that of men working in IT roles at that time and two years less than the average for all UK workers. Like their male counterparts, female IT specialists working as employees tended to be slightly younger than those in self-employment with average ages of 39 and 42 respectively for female IT specialists and 39 vs. 44 for males.

Compared with the wider workforce, the proportion of IT specialists (male and female) aged 16-24 is extremely low though this will, at least in part, be due to the nature of the occupations in question (i.e. IT specialists are skilled roles requiring a degree of experience/higher qualifications whilst the figure for the whole workforce will include both skilled and unskilled positions).

Figure 6: Age distribution for IT specialists/all workers, 2013

Source: e-skills UK analysis of data from the ONS Labour Force Survey (four quarter averages)

3.4.2 Ethnicity

One in five (20%) of female IT specialists are considered to be from 'non-white' ethnic groups, a higher proportion than that for male IT specialists (15%) and when compared with the workforce as a whole (10%). Amongst these 'non white' female IT specialists, just over half (52%) classed themselves as 'Indian'.

3.4.3 Disability

Just under one in ten female IT specialists (9%) stated that they had a 'work limiting disability' and/or a disability as described by the Disability Discrimination Act (DDA) in 2013 – a slightly lower proportion than that relating to either male IT specialists (10%) or those within the workforce more generally (13%).

4.0 Higher Education

Higher Education (HE) statistics presented in this section originate from various sources including the Higher Education Statistics Agency (HESA)[12] and the Universities and Colleges Admissions Service (UCAS). The term 'IT related degrees' is used generically to refer to disciplines identified by the Joint Academic Coding System (JACS), specifically:

- Applicants and accepts data:
  - From 2012: Computer Sciences, Group I
  - Prior to 2012: G4 (Computer Science), G5 (Information Systems), G6 (Software Engineering), G7 (Artificial Intelligence)
- Qualifiers data: G020 (Computer Science) G4 (Computer Science), G5 (Information Systems), G6 (Software Engineering), G7 (Artificial Intelligence), and, G92 (Others in Computer Science)

Though the focus of this section is on IT related degrees, it should be noted that employers of IT staff also look to graduates from other disciplines when seeking to fill IT positions at graduate entry level as this is seen to provide a healthy mix in the workforce. Additionally, there is no assumption that all students on IT related degrees should necessarily wish to enter the sector; as with other degrees, many students may choose these disciplines because of their interest in the subject area, not necessarily that they have decided on a career in this discipline.

4.1 Applicants to IT related Higher Education courses

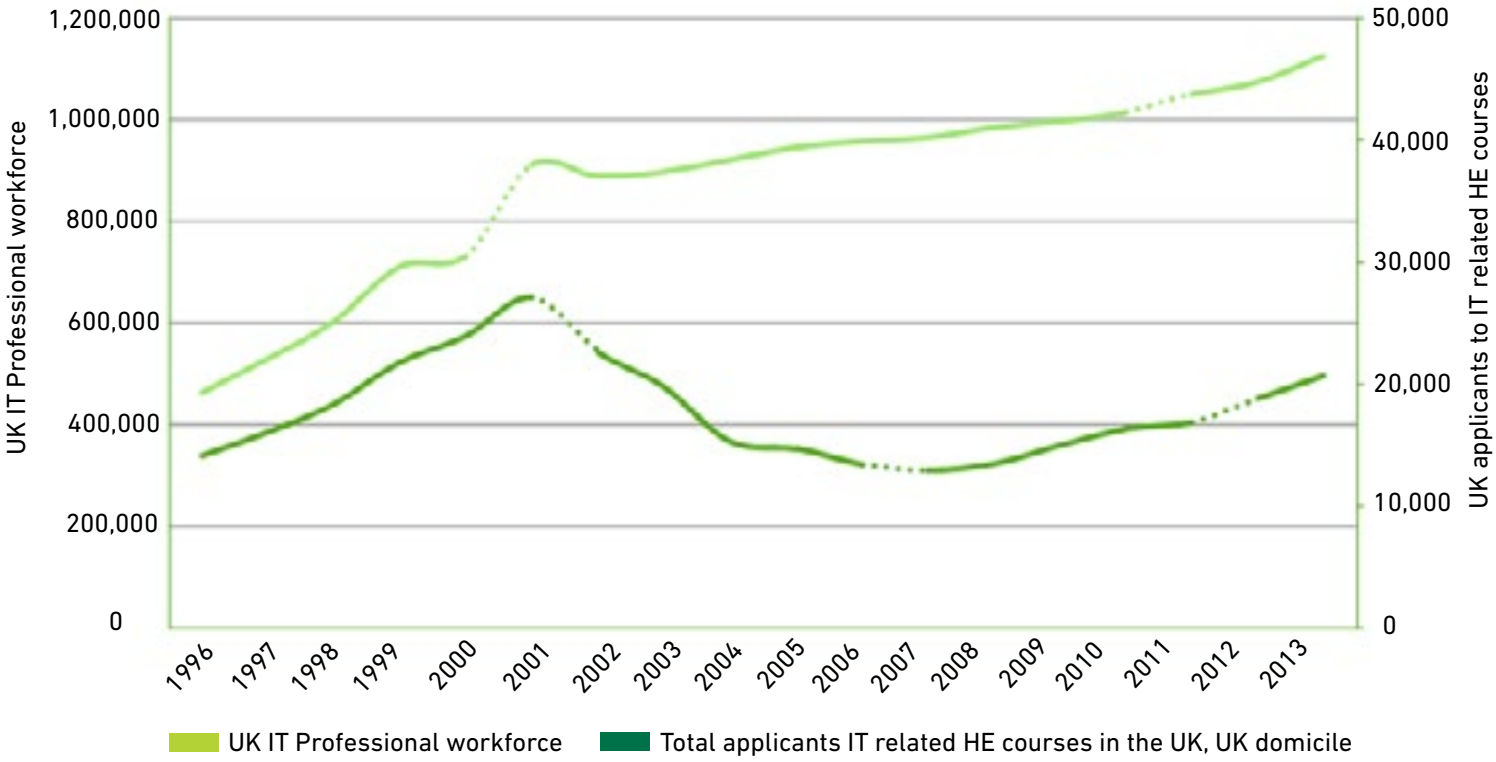
Changes in the Joint Academic Coding System (JACS) that took place in 2012 mean that data for IT related applicants and accepts, now in JACS3 Group I, cannot be compared directly with previous years.

The number of UK domiciled applicants to IT related courses decreased steadily from 2002 to 2007 and then increased year on year to 2011 after which the new JACS codes were introduced. In 2013 there was a total of 20,740 UK domiciled applicants to Computer Sciences courses (Group I), an increase of 10% compared to 2012. By comparison, the number of UK domiciled applicants to all HE courses in the UK increased by 3% over the same period.

The degree choices of young people do not appear to be supporting the growth of the IT workforce. This is still more apparent when comparing trends in workforce growth with those relating to applicant numbers. Whilst the UK IT professional workforce grew by 27% over the period 2002 to 2013, the number of applicants to IT related HE courses declined by 9% as illustrated in Figure 7, below:

12. Figures presented relate to UK domiciled students unless otherwise stated

Figure 7: Comparison between the number of IT specialists and applicants to IT related HE courses, 1996-2013 (UK domicile)



Source: e-skills UK analysis of data from the ONS Labour Force Survey (four quarter averages) and UCAS
Notes: IT specialists: SOC codes changed in 2001 (SOC 2000), 2011 (SOC 2010)
University course codes changed in 2002 (JACS), 2007 (JACS2), 2012 (JACS3)

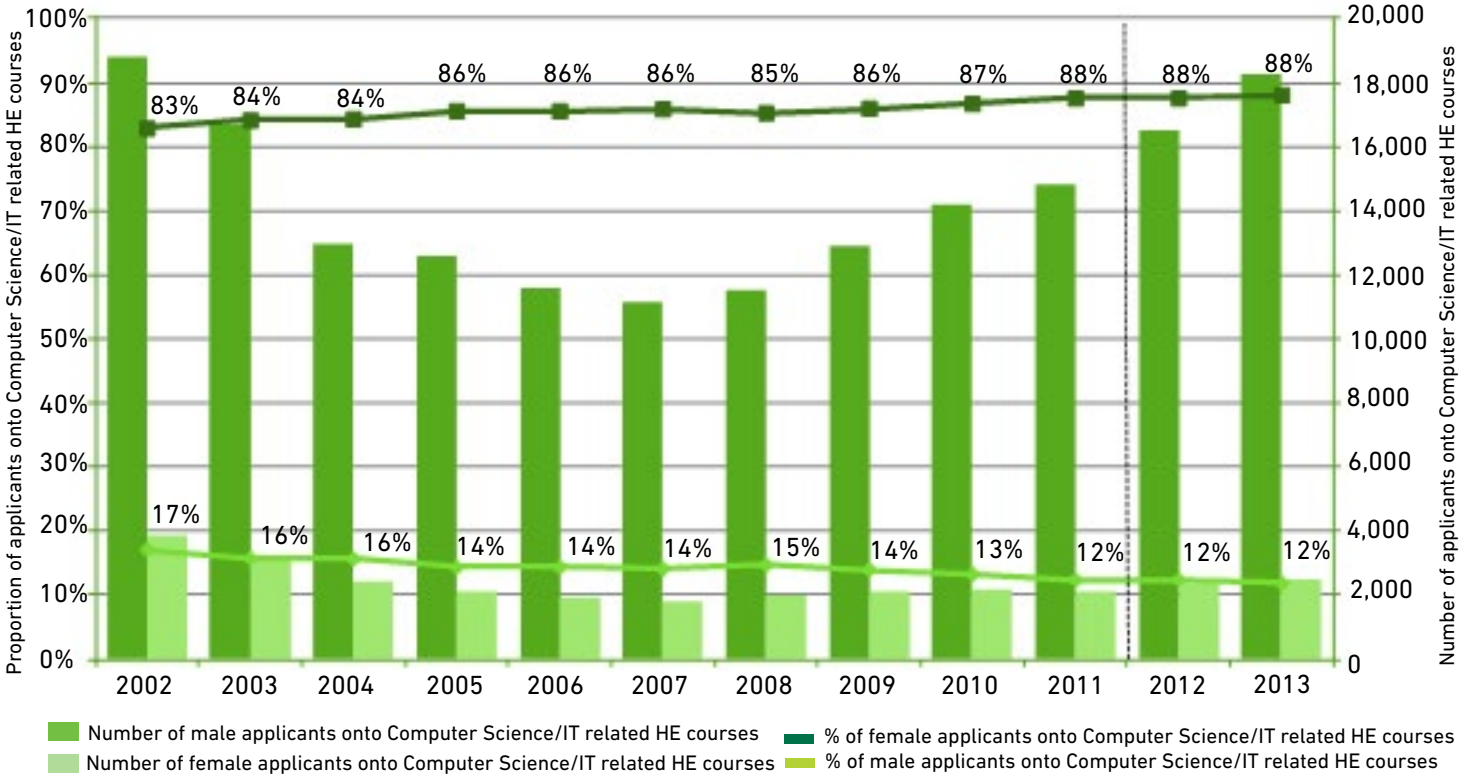
4.2 Female representation in Higher Education

4.2.1 Applicants and acceptances on HE courses

Across all subjects in Higher Education in 2013, females accounted for 57% of UK domiciled applicants and 55% of acceptances. By stark contrast, in Computer Sciences (Group I) subjects, females made up just 12% of applicants and 13% of acceptances.

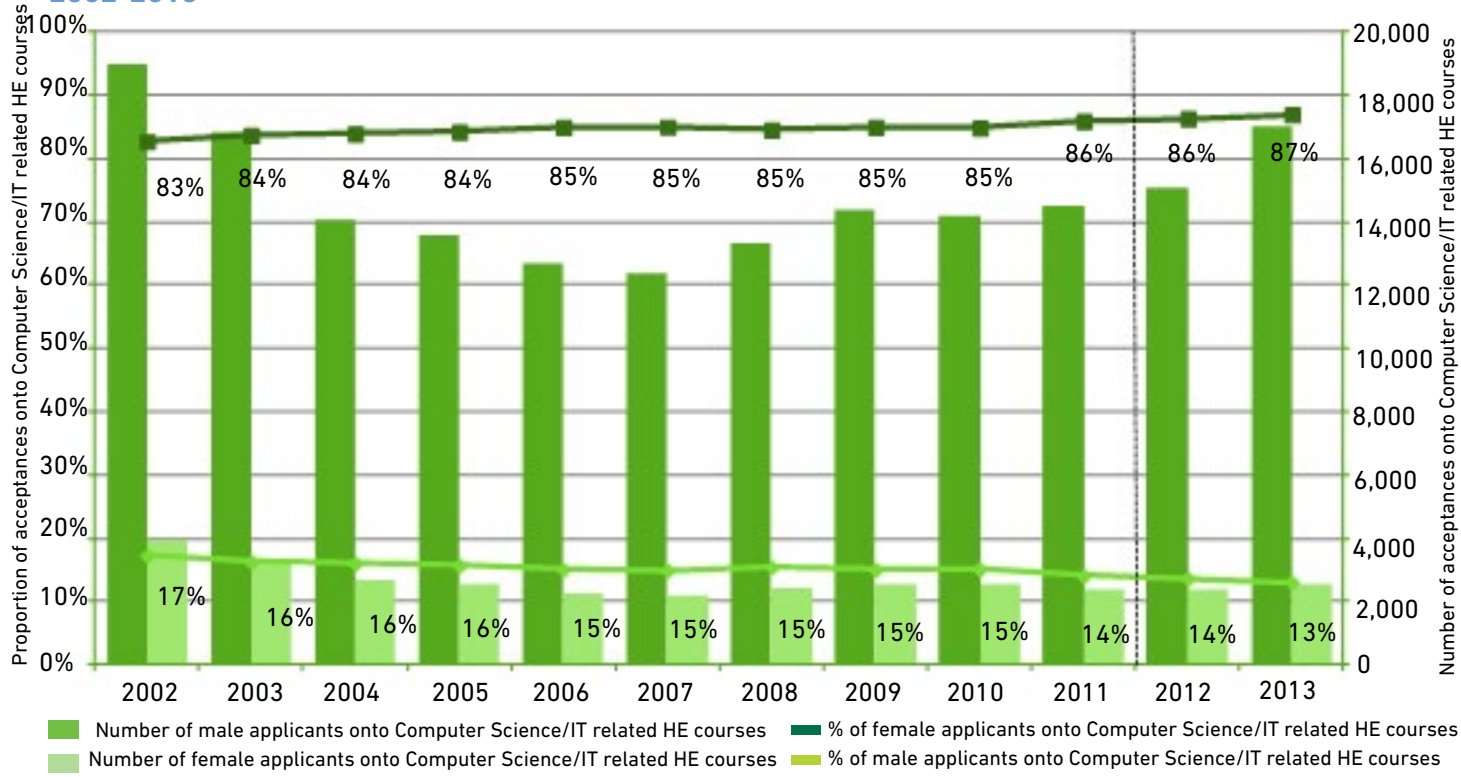
The proportion of female applicants for Computer Sciences/IT related HE courses remained static for the past two years at 12% but the proportion of acceptances that were female decreased by one percentage point from 14% to 13%.

Figure 8: UK domiciled applicants to Computer Sciences/IT related HE courses by gender, 2002-2013



Source: e-skills UK analysis of UCAS data, 2002-2013

Figure 9: UK domiciled acceptances onto Computer Sciences/IT related HE courses by gender, 2002-2013



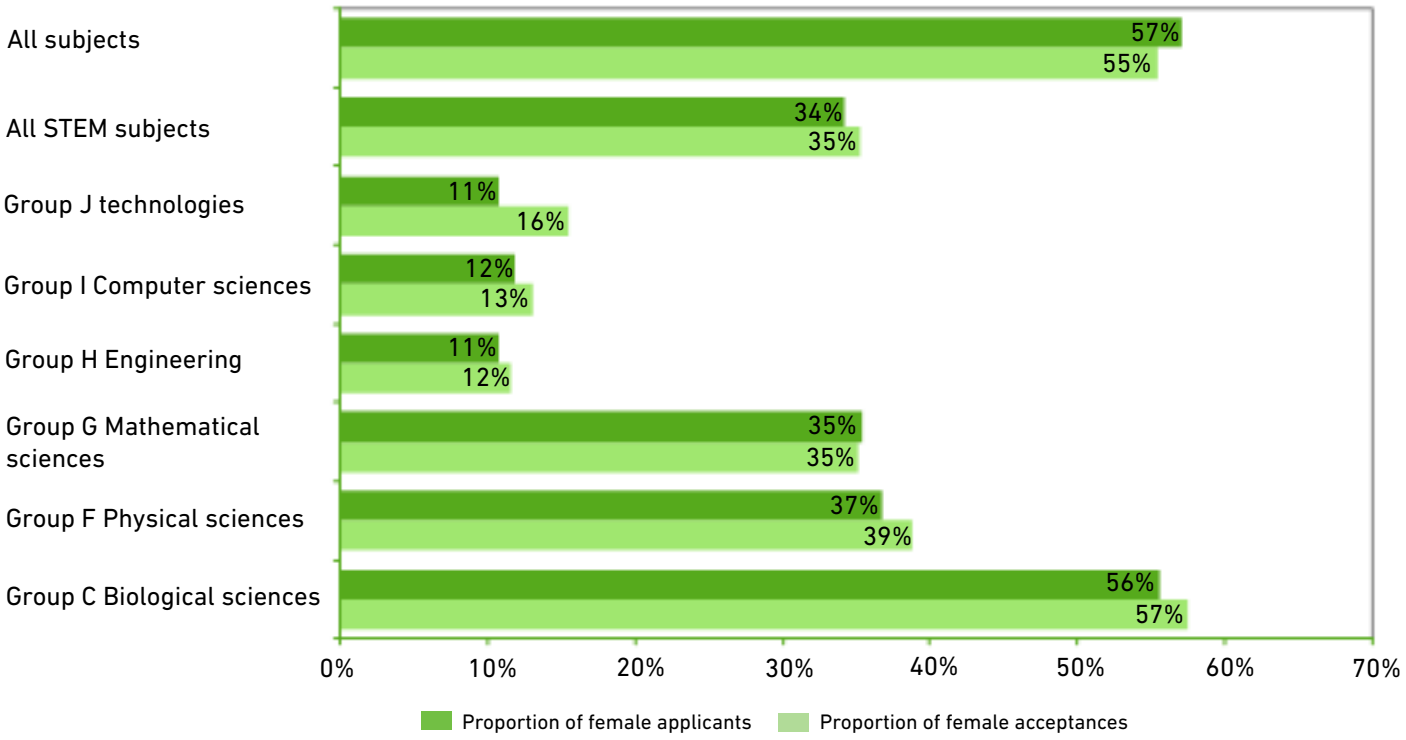
Source: e-skills UK analysis of UCAS data, 2002-2013

4.2.2 Applicants and acceptances across STEM subjects

Across science, technology, engineering and mathematics (STEM) subjects in 2013, females accounted for, on average, just 34% of applicants and 35% of acceptances (UK domicile), with these proportions dropping to as low as 11% and 12% respectively for Engineering and 12% and 13% for Computer Sciences.

As is the case with A-Levels, (see Figure 18), the Biological Sciences group was the only STEM subject group where female participation rates were comparable to the average seen across all subjects.

Figure 10: Proportion of UK domiciled female applicants and acceptances onto STEM subjects in Higher Education, 2013



Source: e-skills UK analysis of UCAS data

Table 4: Number of UK domiciled applicants and accepts onto STEM subjects in Higher Education by gender, 2013

	Applicants			Acceptances		
	Female	Male	Total	Female	Male	Total
Group C Biological Sciences	24,570	19,610	44,180	23,395	17,320	40,715
Group F Physical Sciences	7,035	12,085	19,120	6,825	10,785	17,610
Group G Mathematical Sciences	2,610	4,760	7,365	2,485	4,590	7,070
Group H Engineering	2,330	19,325	21,655	2,390	18,280	20,670
Group I Computer Sciences	2,470	18,270	20,740	2,560	17,025	19,585
Group J Technologies	150	1,235	1,385	325	1,750	2,075
All STEM subjects	39,165	75,280	114,445	37,975	69,745	107,725
All subjects	320,605	241,745	562,350	240,720	193,210	433,930

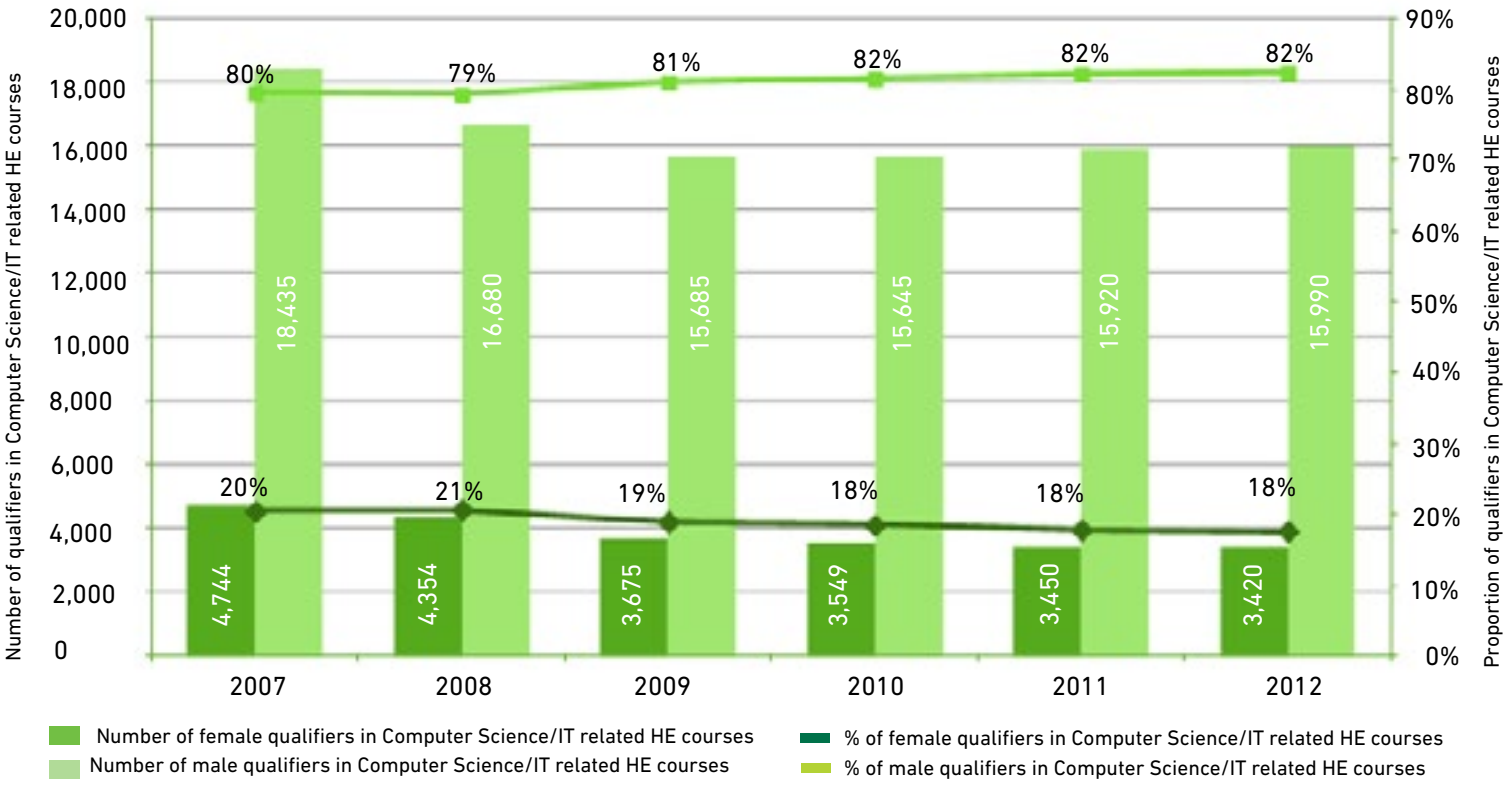
Source: e-skills UK analysis of UCAS data
Note: figures may not add up due to rounding

4.3 Higher Education qualifiers in Computer Sciences/IT related subjects

Qualifiers data provides an estimation of the potential pool of graduates in each discipline that could enter the labour market. It takes between three and four years to complete a Higher Education course so any changes in numbers of acceptances onto HE courses will affect the number of qualifiers three to four years later.

In 2012, across all subjects, females accounted for 59% of UK domiciled qualifiers (first degree, foundation degree, post graduate degree and other). In contrast, females accounted for just 18% of qualifiers from all Computer Sciences/IT related HE courses. Since 2008 the gap between the genders has widened by three percentage points. The number of female qualifiers has fallen by 28% over this time period, 15 percentage points more than the fall in the number of male qualifiers.

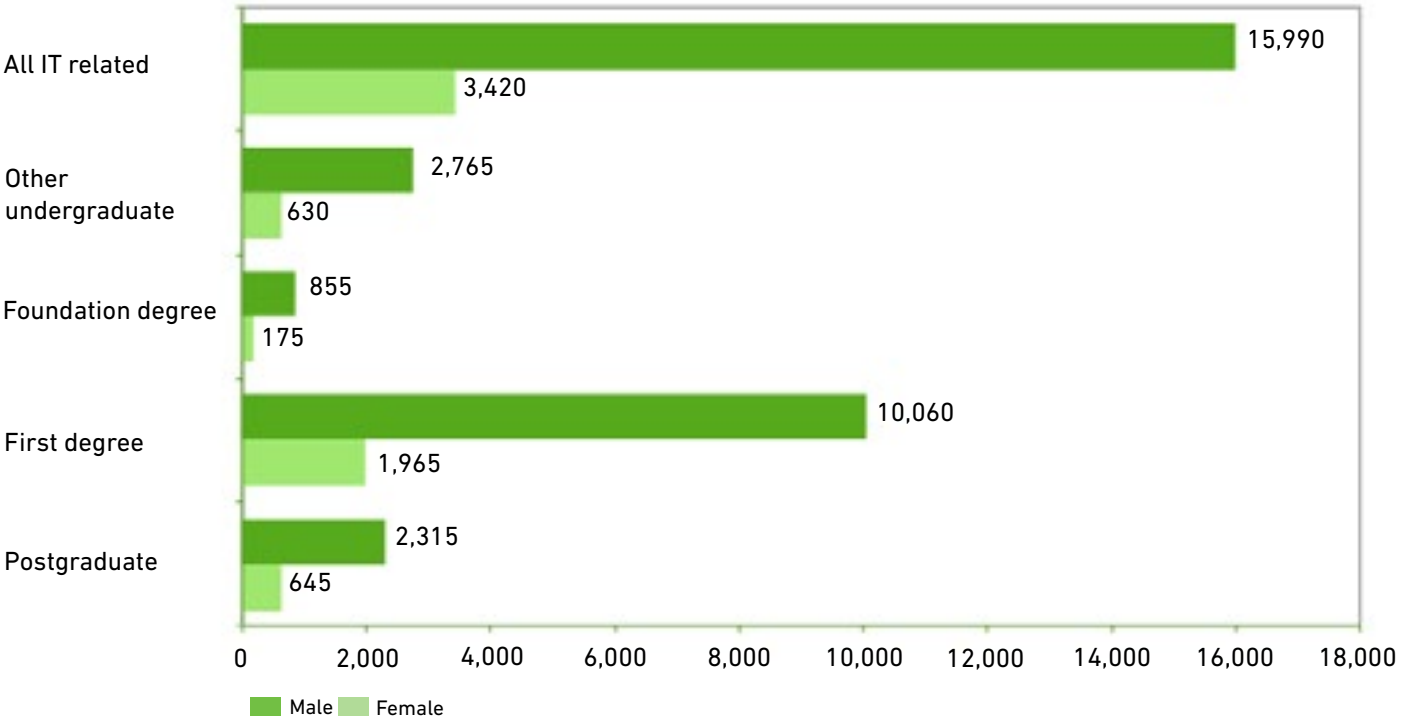
Figure 11: UK domiciled qualifiers in Computer Sciences/IT related HE courses by gender, 2007-2012



Source: e-skills UK analysis of HESA data

Figure 12 shows the gender breakdown for each level of qualification and Table 4 shows that, in 2012, IT related post graduate courses had the largest proportion of females (22%) and that first degree qualifiers had the smallest proportion (16%) across all IT related courses.

Figure 12: Number of UK domiciled qualifiers from IT related HE courses by level of qualification, 2012



Source: e-skills UK analysis of data from HESA

Table 5: Proportion of UK domiciled qualifiers from IT related and all HE courses by gender and level of qualification, 2012

	IT related qualifiers		All qualifiers	
	Female	Male	Female	Male
Postgraduate	22%	78%	59%	41%
First degree	16%	84%	58%	42%
Foundation degree	17%	83%	60%	40%
Other undergraduate	19%	81%	63%	37%
All IT related	18%	82%	59%	41%

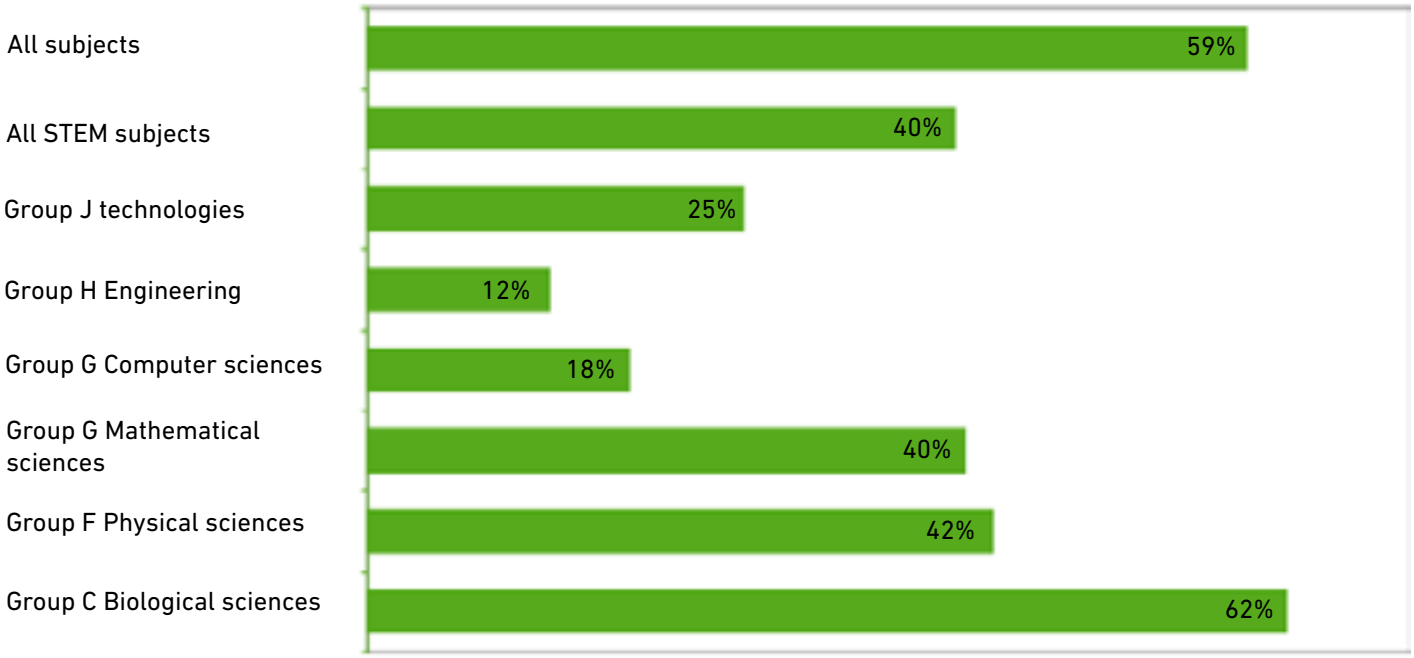
Source: e-skills UK analysis of data from HESA

4.4 Higher Education qualifiers in STEM subject

Low female representation levels in STEM subjects (excluding Group C Biological Sciences) at A-Level (Figure 18) and in Higher Education applicants and accepts (Figure 10) has filtered through and affected the proportion of female qualifiers from Higher Education STEM subjects.

Across STEM subjects in 2012, 40% were female, 19 percentage points lower than the proportion of female qualifiers across all subjects and only 18% of qualifiers in Computer Sciences were female.

Figure 13: Proportion of UK domiciled female qualifiers from STEM subjects in Higher Education, 2012



Source: e-skills UK analysis of data from HESA

Table 6: Number of UK domiciled female qualifiers from STEM subjects in Higher Education, 2012

	Female	Male	Total
Group C Biological Sciences	29,480	18,240	47,720
Group F Physical Sciences	8,830	12,160	20,990
Group G Mathematical Sciences	3,360	4,990	8,350
Group G Computer Sciences	3,420	15,990	19,410
Group H Engineering	2,875	20,430	23,305
Group J Technologies	1,060	3,125	4,190
All STEM subjects	49,025	74,935	123,960
All Subjects	344,270	238,795	583,065

Source: e-skills UK analysis of data from HESA
Note: Figures may not add up due to rounding

5.0 Secondary Education

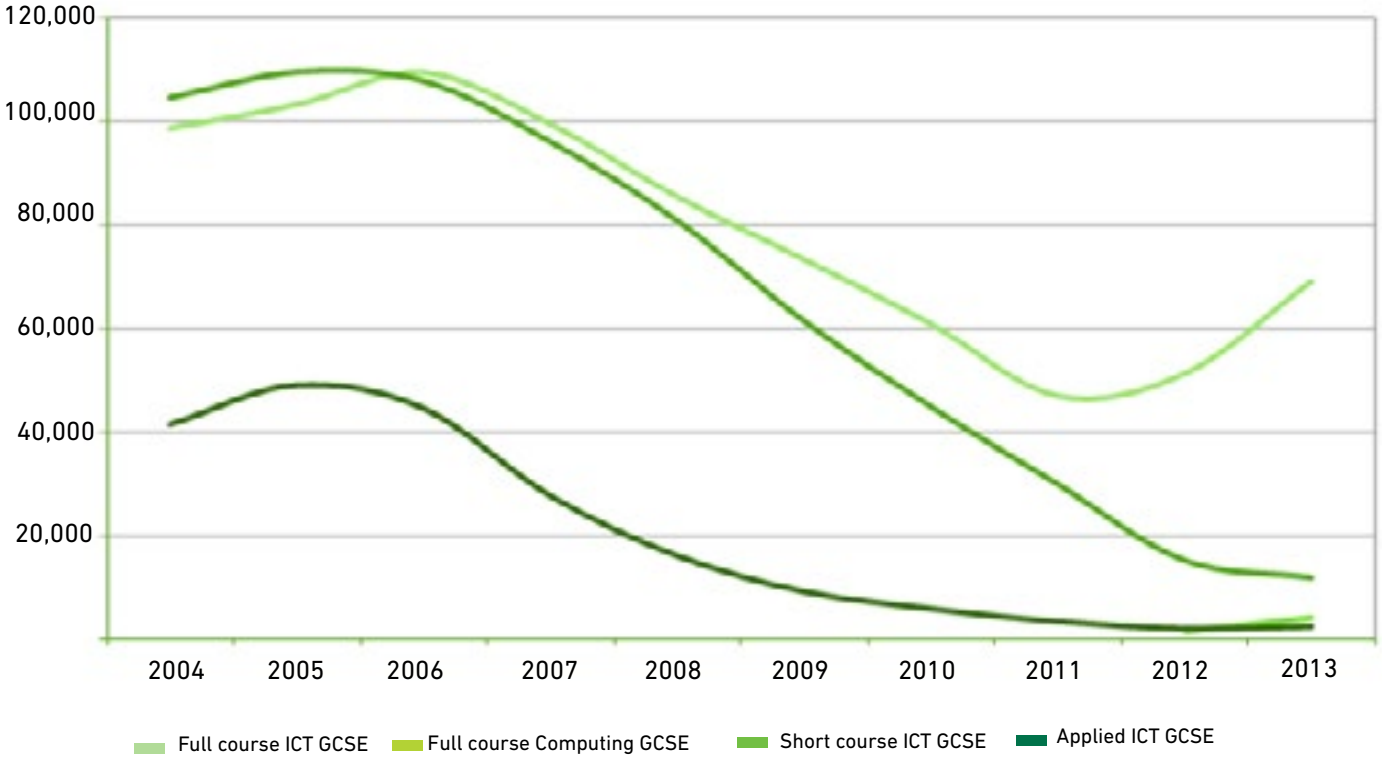
Gender differences are evident in the representation and attainment at both GCSE and A-Level. This section presents data for both[13].

5.1 Uptake of IT related GCSEs

There are a number of IT related GCSE courses open to students considering GCSE choices in England, Northern Ireland and Wales, including: a full GCSE in ICT, a GCSE Double Award in Applied ICT, a short course GCSE in ICT and, newly introduced in 2012, a full GCSE in Computing.

The UK IT related GCSE results for 2013 showed an increase in entries from 2012 with the number being 87,788, (an increase of 25% from 2012 to 2013) for all ICT courses (full, short and double awards) compared to an increase of 1.9% for all courses (full, short and double awards). This was the first increase since 2005 but was still 66.5% lower than the number of entries in 2005. In 2013 in the UK, ICT GCSEs (all courses) represented just 1.53% of all GCSEs taken.

Figure 14: Uptake of IT related GCSEs in England, Wales and Northern Ireland, 2004-2013



Source: e-skills UK analysis of data from the Joint Council for Qualifications

There was an increase of 35% in the number of entries for the ICT full course GCSE from 2012 to 2013 (compared to an increase of 4% for all full course GCSEs), an increase of 141% in the number of entries for the new Computing full course GCSE and an increase of 20% in the number of entries for the ICT double award GCSE (compared to a 36% decrease for all double award GCSEs). However, there was a decrease of 22% in the number of entries for the ICT short course GCSE (compared to a 26% decrease for all short course GCSEs).

13. References to the UK in this section excludes Scotland as it does not have the same educational system or qualifications and is not directly comparable

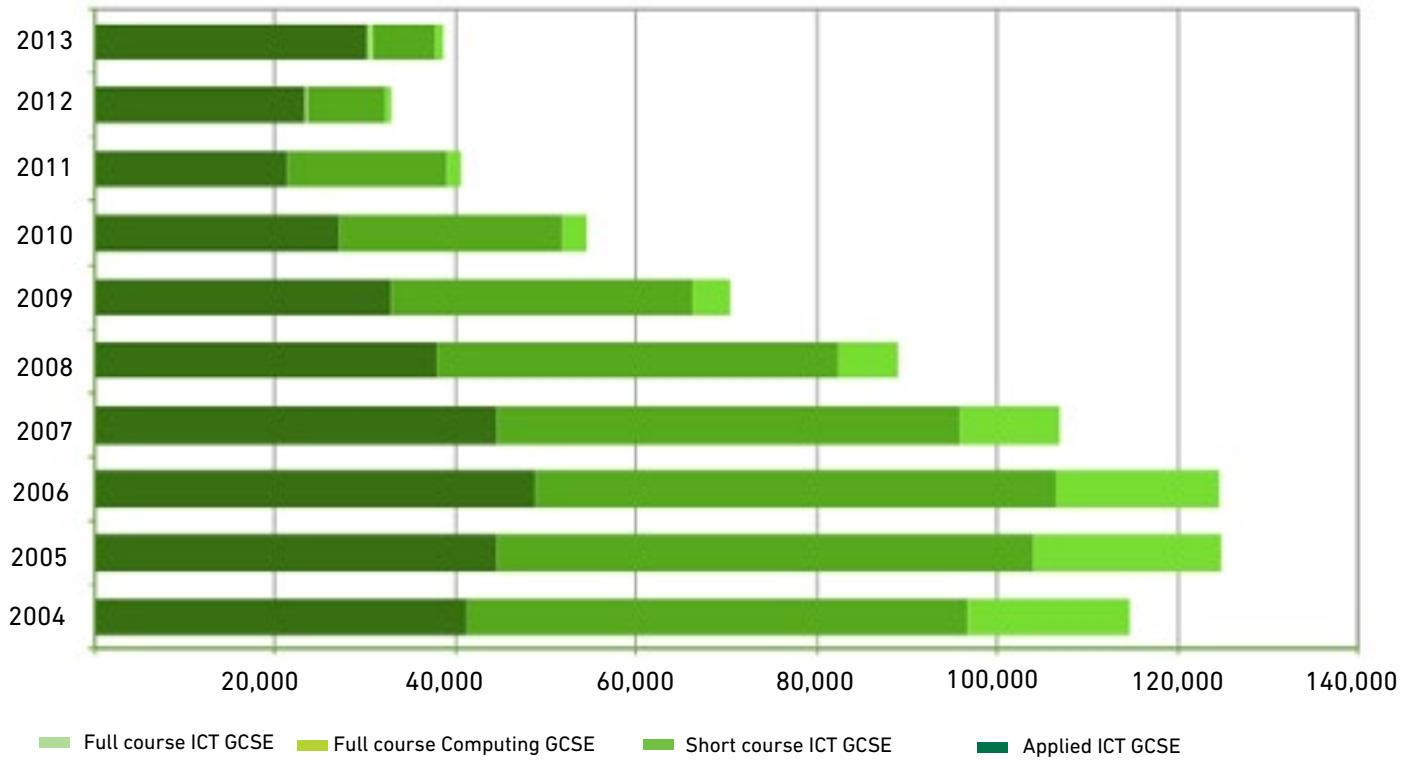
Table 7: Proportion of those taking ICT GCSEs (all courses) by nation and gender, 2004-2013

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
UK	Male	53%	52%	52%	52%	51%	51%	51%	50%	53%	56%
	Female	47%	48%	48%	48%	49%	49%	49%	50%	47%	44%
England	Male	53%	52%	48%	52%	51%	51%	51%	48%	52%	56%
	Female	47%	48%	52%	48%	49%	49%	49%	52%	48%	44%
Wales	Male	55%	55%	55%	54%	53%	53%	52%	53%	58%	57%
	Female	45%	45%	45%	46%	47%	47%	48%	47%	42%	43%
Northern Ireland	Male	58%	58%	56%	58%	57%	55%	55%	55%	57%	57%
	Female	42%	42%	44%	42%	43%	45%	45%	45%	43%	43%

Source: e-skills UK analysis of data from the Joint Council for Qualifications
Note: Figures may not add up due to rounding

The proportion of females who sat an IT related GCSE in 2013 was 44% (51% for all GCSE courses), a decrease of three percentage points compared to 2012.

Figure 15: Number of females taking ICT GCSEs in the UK by course



Source: e-skills UK analysis of data from the Joint Council for Qualifications

Table 8: Numbers taking ICT GCSEs (all courses) by gender, 2004-2013

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
UK	Male	130,230	137,110	137,320	116,320	93,380	73,700	57,140	39,910	37,420	49,180
	Female	114,610	124,860	124,630	107,050	89,120	70,420	54,580	40,530	32,990	38,610
	Total	244,830	261,970	261,950	223,370	182,500	144,120	111,720	80,440	70,420	87,790
England	Male	117,430	124,090	104,300	103,730	80,610	60,590	44,690	28,750	28,290	40,420
	Female	104,470	114,430	114,060	96,800	78,540	59,110	43,490	30,860	26,140	31,940
	Total	221,900	238,520	218,360	200,530	159,150	119,710	88,180	59,610	54,430	72,360
Wales	Male	9,010	9,000	8,990	8,340	7,800	8,000	7,440	6,050	4,110	3,810
	Female	7,380	7,500	7,460	7,170	6,790	7,170	6,950	5,440	3,010	2,870
	Total	16,380	16,500	16,450	15,500	14,590	15,170	14,390	11,490	7,120	6,680
Northern Ireland	Male	3,790	4,010	4,030	4,250	4,970	5,110	5,010	5,110	5,020	4,950
	Female	2,760	2,930	3,110	3,080	3,790	4,140	4,150	4,230	3,840	3,800
	Total	6,550	6,940	7,140	7,330	8,760	9,250	9,150	9,350	8,860	8,750

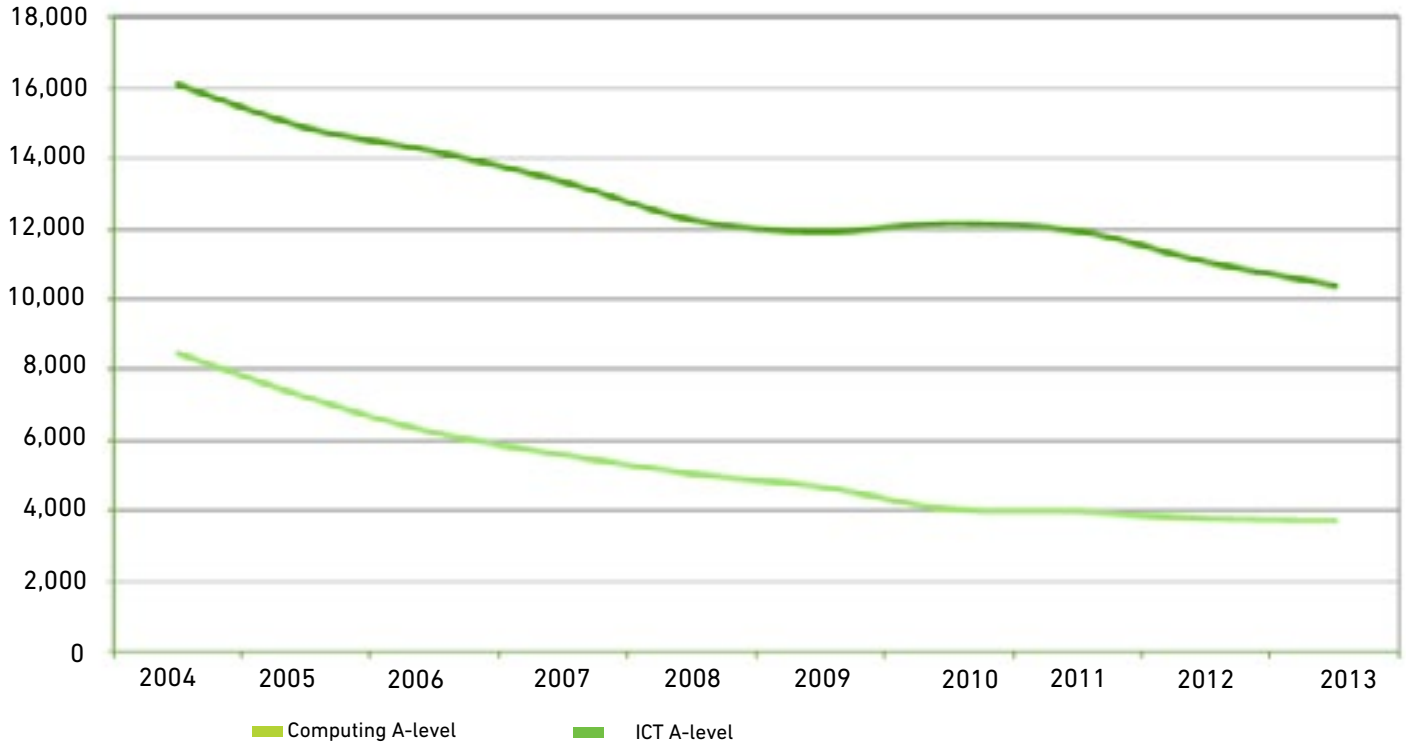
Source: e-skills UK analysis of data from the Joint Council for Qualifications
Note: Figures may not add up due to rounding

5.2 Uptake of Computing and ICT A-Levels

Data has been analysed for Computing and ICT A-Levels. Computing A-Level sets out to develop a broad range of specialist skills and knowledge relating to IT. ICT instead sets out to encourage students to be 'discerning users of ICT'. Broadly speaking these are, equivalent to 'IT professional' and 'IT user' related qualifications and the content of the Computing A-Level is more relevant to IT related Higher Education and IT related employment than A-Level ICT.

Figure 16, below, shows how the number of students taking A-Level Computing and ICT courses has continued to decline in recent years, falling by 42% over the 2004-2013 period.

Figure 16: Number of UK students taking A-Level Computing and ICT courses, 2004-2013



Source: e-skills UK analysis of data from the Joint Council for Qualifications

The proportion of females undertaking ICT A-Levels has remained fairly stable in recent years and, in 2013, females accounted for 38% of those taking this subject. However, the proportion of females undertaking Computing A-Levels had remained relatively stable in recent years but, in 2013, females accounted for just 6.5% of those taking this subject, a decline of 1.5 percentage points compared to 2012. Wales had the largest proportion of female Computing A-Level students at 12% in 2013.

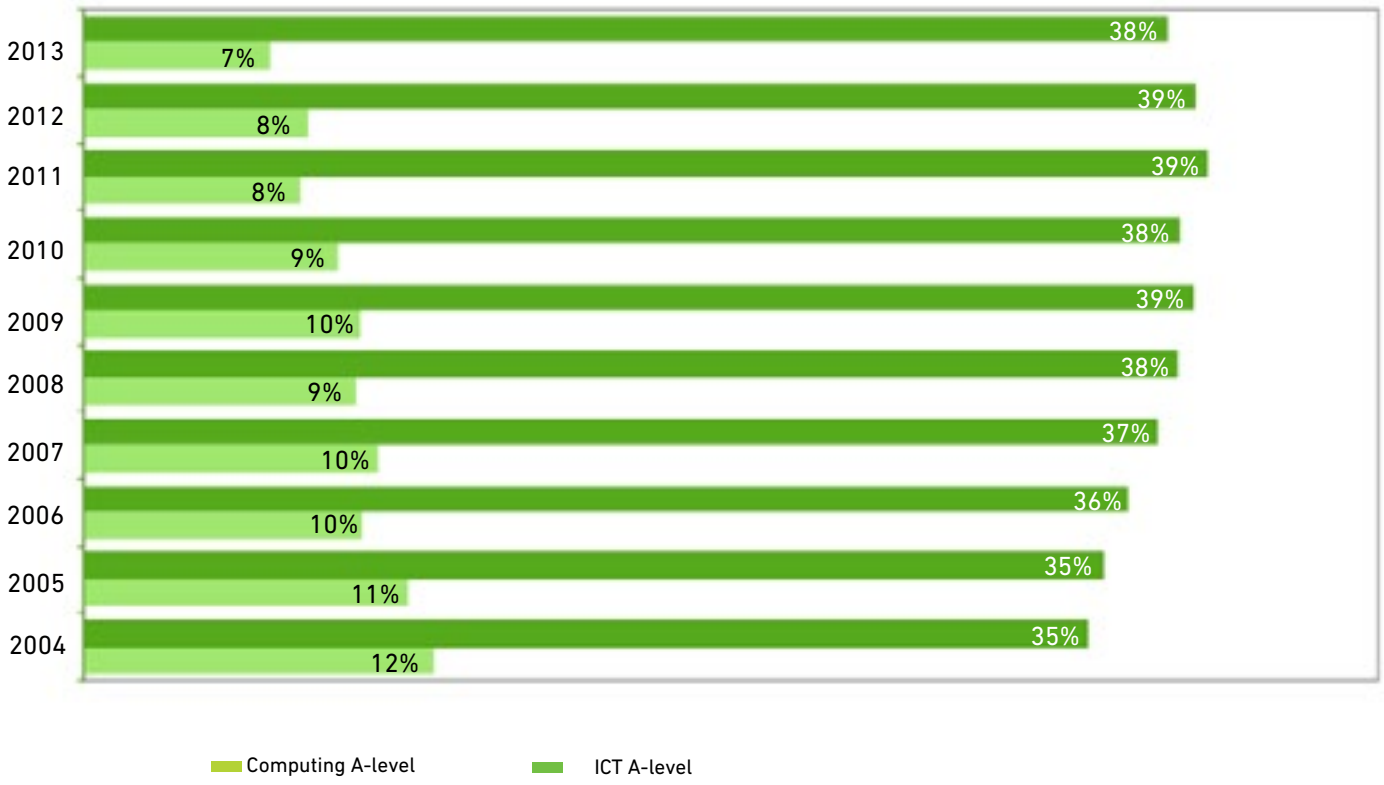
Table 9: Proportions taking ICT and Computing A-Levels by nation and gender, 2004-2013

			2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
UK	Computing	Male	88%	89%	90%	90%	91%	90%	91%	92%	92%	93%
		Female	12%	11%	10%	10%	9%	10%	9%	8%	8%	7%
	ICT	Male	65%	65%	64%	63%	62%	61%	62%	61%	61%	62%
		Female	35%	35%	36%	37%	38%	39%	38%	39%	39%	38%
England	Computing	Male	90%	91%	92%	92%	92%	92%	92%	93%	93%	94%
		Female	10%	9%	8%	8%	8%	8%	8%	7%	7%	6%
	ICT	Male	66%	65%	65%	64%	64%	63%	64%	63%	63%	64%
		Female	34%	35%	35%	36%	36%	37%	36%	37%	37%	36%
Wales	Computing	Male	79%	78%	80%	77%	80%	78%	79%	86%	87%	88%
		Female	21%	22%	20%	23%	20%	22%	21%	14%	13%	12%
	ICT	Male	61%	65%	59%	61%	56%	54%	53%	55%	56%	55%
		Female	39%	35%	41%	39%	44%	46%	47%	45%	44%	45%
Northern Ireland	Computing	Male	76%	75%	85%	84%	81%	86%	93%	91%	92%	94%
		Female	24%	25%	15%	16%	19%	14%	7%	9%	8%	6%
	ICT	Male	59%	56%	55%	56%	53%	56%	57%	55%	58%	60%
		Female	41%	44%	45%	44%	47%	44%	43%	45%	42%	40%

Source: e-skills UK analysis of data from the Joint Council for Qualifications
Note: Figures may not add up due to rounding

Figure 17, below, shows the proportion of females taking ICT A-Level and Computing A-Level from 2004 to 2013, whilst Table 9 shows the actual numbers by type of A-Level, nature and gender.

Figure 17: Proportion of females in the UK taking Computing and ICT A Levels, 2004-2013



Source: e-skills UK analysis of data from the Joint Council for Qualifications

Table 10: Numbers taking Computing and ICT A-Levels by gender, 2004-2013

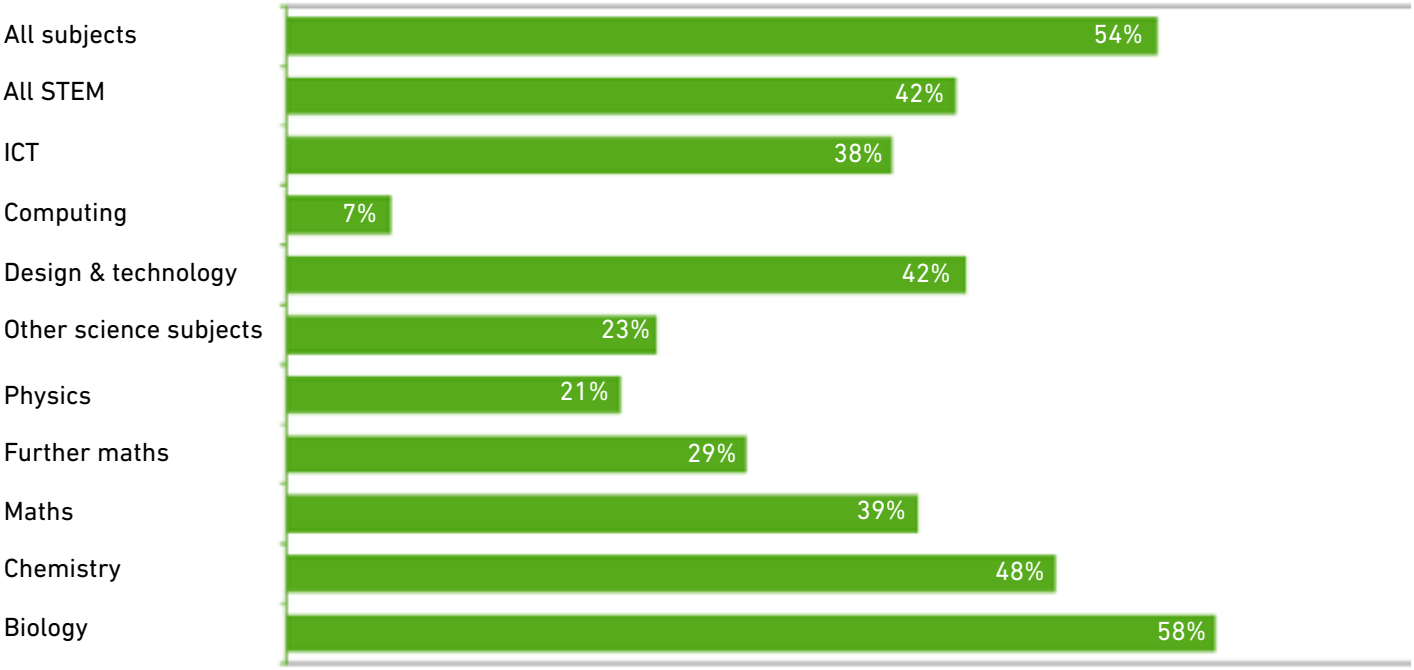
			2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
UK	Computing	Male	7,455	6,425	5,630	5,035	4,590	4,255	3,705	3,700	3,510	3,515
		Female	1,030	815	605	575	480	455	360	300	295	245
		Total	8,490	7,240	6,235	5,610	5,070	4,710	4,065	4,000	3,810	3,760
	ICT	Male	10,480	9,605	9,050	8,375	7,605	7,340	7,545	7,285	6,805	6,490
		Female	5,625	5,275	5,155	4,985	4,670	4,610	4,645	4,675	4,285	3,925
		Total	16,105	14,885	14,210	13,360	12,275	11,950	12,185	11,960	11,090	10,420
	Total Computing/ ICT	Male	17,935	16,030	14,680	13,410	12,195	11,595	11,245	10,985	10,315	10,005
		Female	6,660	6,095	5,760	5,560	5,150	5,065	5,005	4,980	4,580	4,170
		Total	24,595	22,125	20,440	18,970	17,345	16,660	16,250	15,960	14,895	14,175
Eng	Computing	Male	6,345	5,450	4,725	4,330	3,975	3,695	3,350	3,330	3,205	3,220
		Female	720	525	390	380	330	300	280	245	255	210
		Total	7,060	5,980	5,115	4,710	4,305	4,000	3,630	3,575	3,460	3,430
	ICT	Male	9,705	8,630	8,060	7,120	6,350	5,935	5,960	5,640	5,250	4,960
		Female	5,105	4,600	4,400	4,075	3,630	3,445	3,335	3,345	3,110	2,830
		Total	14,810	13,230	12,455	11,200	9,975	9,375	9,295	8,985	8,365	7,790
	Total Computing/ ICT	Male	16,050	14,085	12,785	11,450	10,325	9,630	9,310	8,970	8,455	8,180
		Female	5,825	5,125	4,785	4,460	3,955	3,745	3,610	3,595	3,365	3,040
		Total	21,870	19,210	17,570	15,910	14,280	13,375	12,920	12,565	11,820	11,220
Wales	Computing	Male	785	710	710	555	515	480	290	305	260	230
		Female	205	200	180	165	130	140	80	50	40	30
		Total	995	910	895	720	645	620	370	355	300	260
	ICT	Male	340	360	380	590	700	755	785	800	685	610
		Female	215	195	260	385	555	650	700	650	545	495
		Total	560	555	635	975	1,255	1,405	1,480	1,450	1,225	1,105
	Total Computing/ ICT	Male	1,130	1,065	1,090	1,150	1,215	1,235	1,075	1,105	945	840
		Female	425	400	440	550	685	785	775	700	580	525
		Total	1,550	1,465	1,530	1,695	1,900	2,020	1,850	1,805	1,525	1,365
NI	Computing	Male	325	265	190	150	95	80	65	65	50	65
		Female	105	90	35	30	25	15	5	5	5	5
		Total	435	355	225	180	120	95	70	70	50	65
	ICT	Male	430	615	615	660	560	650	800	845	870	920
		Female	305	480	500	525	485	520	610	680	630	605
		Total	740	1,095	1,115	1,185	1,045	1,170	1,410	1,525	1,500	1,525
	Total Computing/ ICT	Male	760	880	805	810	655	730	865	910	915	985
		Female	410	570	530	555	510	530	615	685	635	605
		Total	1,170	1,450	1,340	1,365	1,165	1,260	1,480	1,595	1,550	1,590

Source: e-skills UK analysis of data from the Joint Council for Qualifications
Note: Figures may not add up due to rounding

5.2.1 Uptake of A-Levels across STEM subjects

With the exception of biology, a gender imbalance is prevalent in those taking A-Levels across the majority of STEM subjects with female participation rates, particularly in Computing (7%), and Physics (21%), well below the average for all A-Level subjects (54%) and below the average for all STEM subjects (42%).

Figure 18: Proportion of UK female A-Level students by STEM subject, 2013



Source: e-skills UK analysis of data from the Joint Council for Qualifications

Actual numbers are shown in table 10.

Table 11: Number of A-Level students by STEM subject and gender, 2013

	Male	Female	Total
Biology	26,990	36,950	63,940
Chemistry	26,990	24,830	51,820
Maths	53,435	34,625	88,060
Further Maths	9,870	3,950	13,820
Physics	28,190	7,380	35,570
Other Science Subjects	2,675	805	3,475
Design & Technology	9,030	6,610	15,640
Computing	3,515	245	3,760
ICT	6,490	3,925	10,420
All STEM	167,180	119,320	286,500
All subjects	389,550	461,200	850,750

Source: e-skills UK analysis of data from the Joint Council for Qualifications
Note: Figures may not add up due to rounding

5.3 Gender differences by attainment

Although males account for the majority of those taking IT related GCSEs and A-Levels, the females who do take such qualifications, in terms of attainment, outperform their male counterparts.

5.3.1 IT related GCSEs

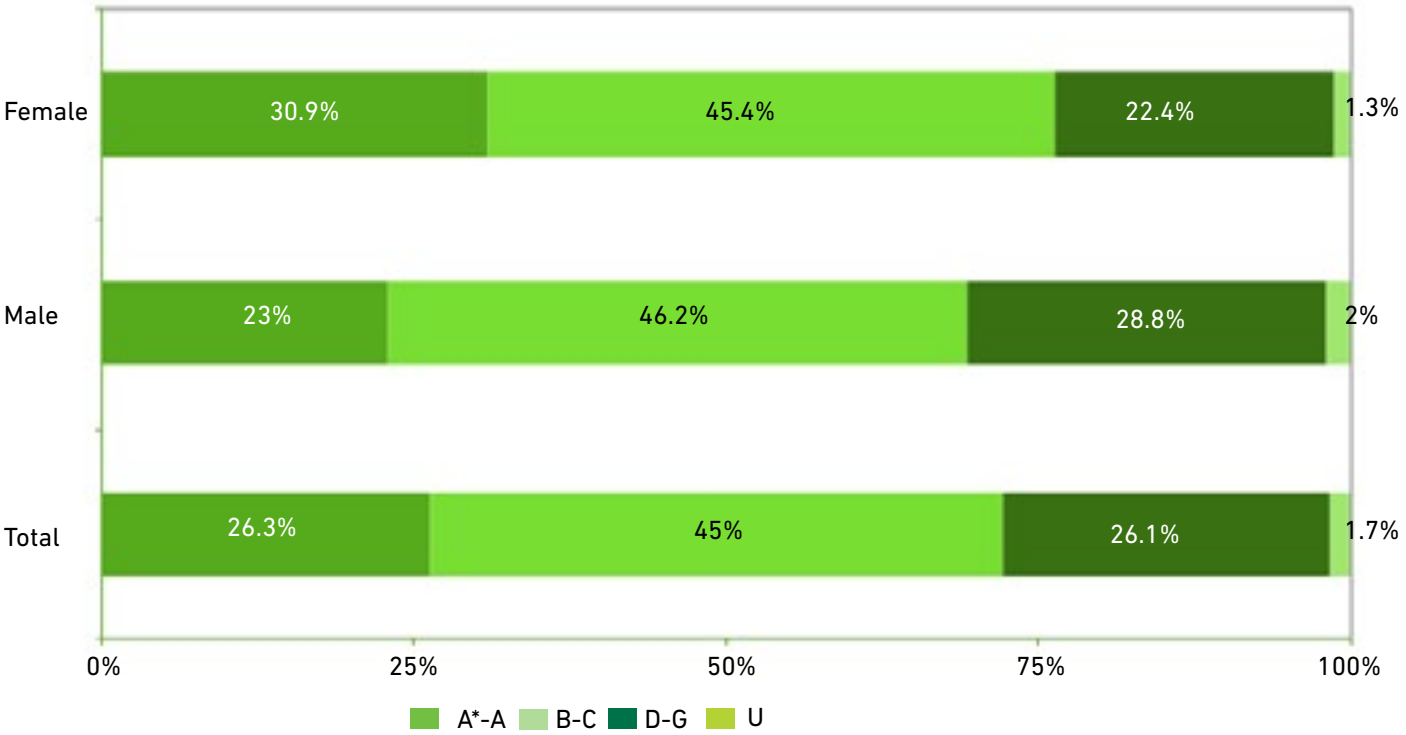
Females consistently outperform males at the higher grades, C and above. 76.3% of females compared to 69.2% of males who took an IT related (ICT and Computing) full course GCSE were awarded A*-C grades with 30.9% of females as opposed to 23% of males being awarded either an A* or A grade in 2013. These attainments were above the average for all GCSE full courses, where 24.8% of females and 17.6% of males were awarded either an A* or A grade.

Table 12: Percentage of IT related GCSEs at each grade by gender, 2013

		Percentage at each grade								
		A*	A	B	C	D	E	F	G	U
IT related (ICT and Computing) GCSE full course	Male	5.9	17.1	23.4	22.8	13.1	7.2	5.1	3.4	2.0
	Female	9.1	21.8	24.9	20.5	10.9	5.8	3.3	2.4	1.3
	Male & female	7.2	19.1	24.0	21.9	12.2	6.6	4.4	2.9	1.7
ICT GCSE short course	Male	2.2	12.9	23.9	19.6	13.5	10.0	7.6	5.4	4.9
	Female	9.0	26.0	25.5	16.4	9.8	6.0	3.7	2.1	1.5
	Male & female	6.1	20.4	24.8	17.7	11.4	7.8	5.3	3.5	3.0
ICT GCSE double award		A*A*	AA	BB	CC	DD	EE	FF	GG	U
	Male	2.4	16.7	29.2	25.1	13.7	7.1	3.9	1.6	0.3
	Female	2.9	21.2	36.9	24.3	8.0	5.1	0.8	0.8	0.0
	Male & female	2.6	18.5	32.1	24.8	11.5	6.3	2.7	1.3	0.2

Source: e-skills UK analysis of data from the Joint Council for Qualifications

Figure 19: Percentage of IT related (ICT and Computing) GCSE full course in each grade band by gender, 2013



Source: e-skills UK analysis of data from the Joint Council for Qualifications

5.3.2 Computing and ICT A-Levels

The story is much the same at A-Level with females, although fewer in number, continuing to outperform their male counterparts. 21.2% of females taking Computing A-Levels compared to 15.4% of males and 16.3% of females taking ICT A-Levels compared to 10.3% of males were awarded either an A* or A grade in 2013 in the UK.

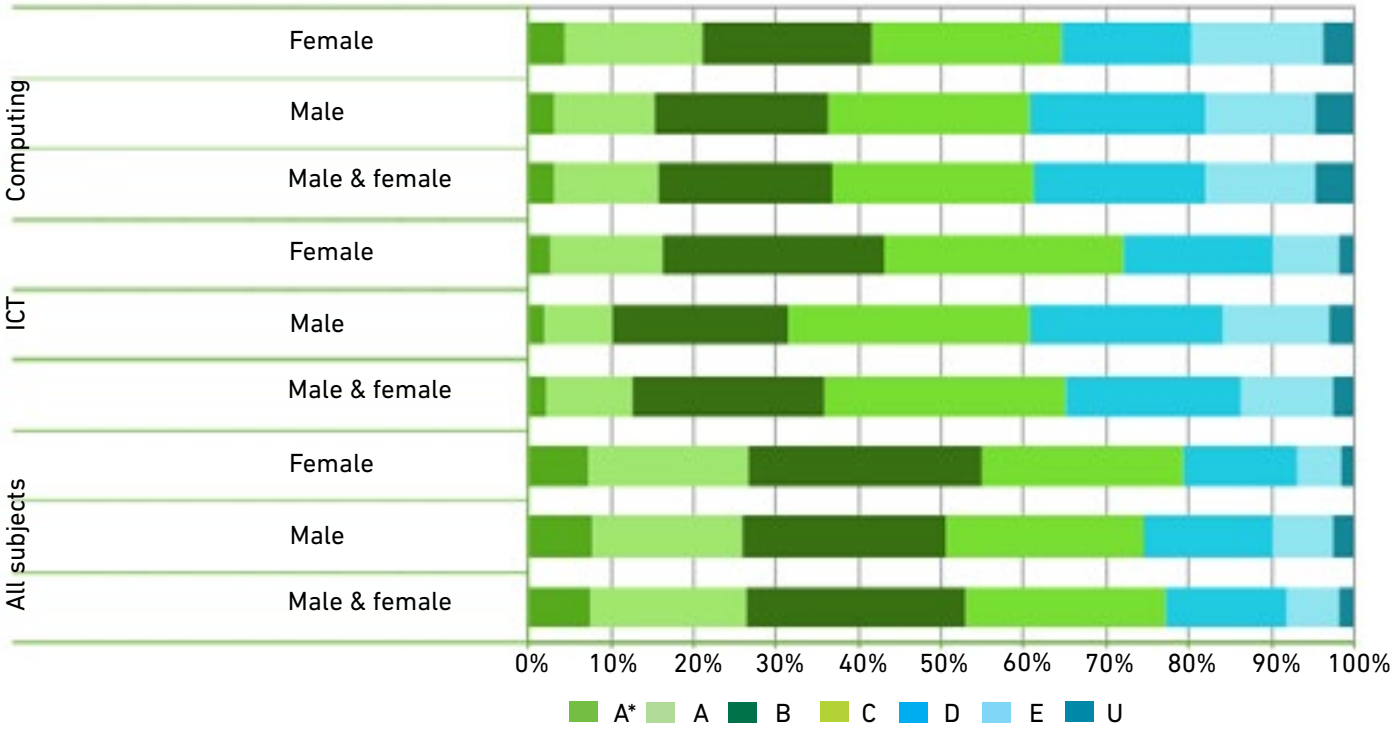
Table 13: Percentage of Computing and ICT A-Levels in each grade by gender, 2013

		Percentage at each grade						
		A*	A	B	C	D	E	U
Computing	Male	3.2	12.2	21	24.4	21.3	13.2	4.7
	Female	4.5	16.7	20.4	22.9	15.9	15.9	3.7
	Male & female	3.3	12.5	21.0	24.3	20.9	13.4	4.6
ICT	Male	1.9	8.4	21.2	29.3	23.3	12.9	3.0
	Female	2.7	13.6	26.7	29.2	18.0	8.1	1.7
	Male & female	2.2	10.4	23.2	29.3	21.3	11.1	2.5
All subjects	Male	7.9	18.0	24.7	23.9	15.8	7.3	2.4
	Female	7.4	19.3	28.2	24.5	13.8	5.3	1.5
	Male & female	7.6	18.7	26.6	24.3	14.7	6.2	1.9

Source: e-skills UK analysis of data from the Joint Council for Qualifications

IT related A-Level attainments are, however, below the average across all subjects where 26.7% of females and 25.9% of males were awarded either an A* or A grade.

Figure 20: Percentage of Computing and ICT A-Levels in each grade by gender, 2013



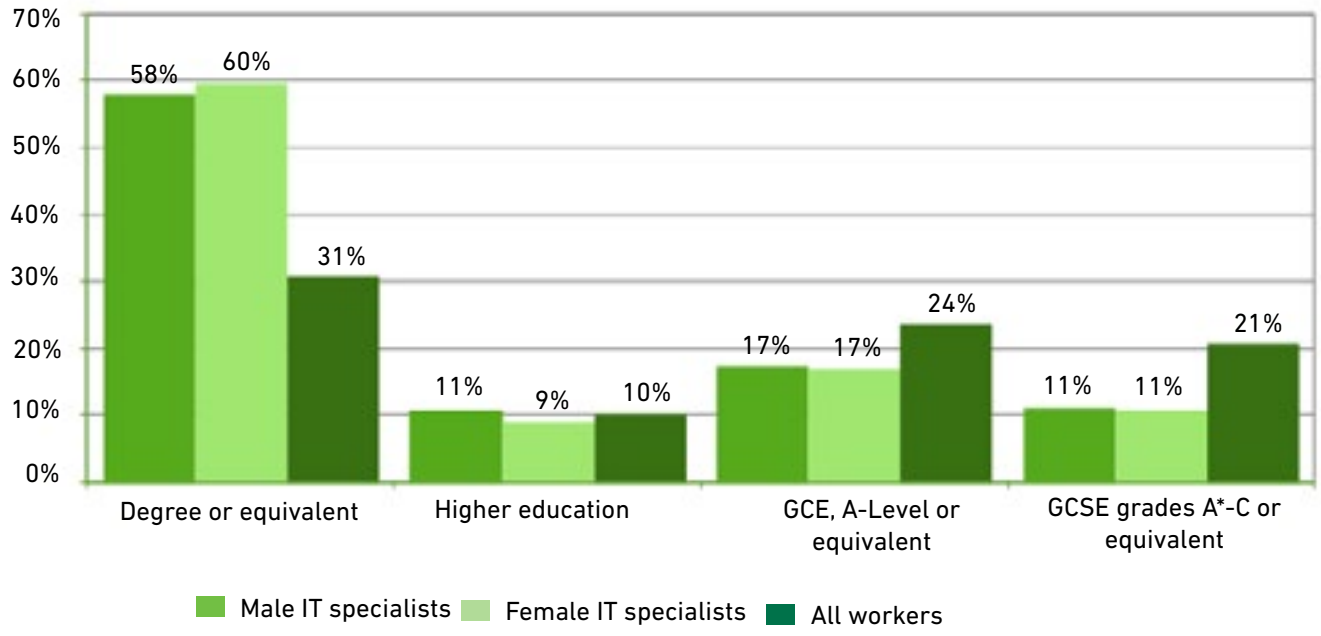
Source: e-skills UK analysis of data from the Joint Council for Qualifications

6.0 Professional qualifications

6.1 Educational attainment

Just over two thirds (69%) of female IT specialists held some form of HE qualification in 2013 – a proportion equal to that of male IT specialists but one much higher than that observed for either women or men within the wider workforce (44% of all female workers and 39% of all males were thought to hold an HE qualification at that time).

Figure 21: Highest qualification held by gender for IT specialists/all workers, 2013



Source: e-skills UK analysis of data from the ONS Labour Force Survey (four quarter averages)

Like men working in IT roles, female IT specialists that were self-employed were slightly more likely to hold an HE level qualification than those working as employees (72% vs. 69% respectively).

6.2 Apprenticeships

6.2.1 Apprenticeship starts

In 2011/12, nearly two thirds (63%) of IT & Telecoms related programme starts were onto the 'IT & Telecoms Professional' apprenticeship and 38% were onto 'IT User' apprenticeships. Females accounted for 22% of IT & Telecoms related apprenticeships, compared to 53% for all apprenticeships.

Table 14: Apprenticeship programme starts by sector framework, level and gender, 2011/12

	Gender	Communications Technologies (Telecoms)	IT and Telecoms Professional	IT Services and Development	IT User	Total IT & Telecoms	All courses total
Intermediate Level Apprenticeship	Male	-	2,700	-	3,220	5,920	163,500
	Female	-	370	-	2,140	2,510	165,500
	All	-	3,070	-	5,360	8,430	329,000
Advanced Level Apprenticeship including Higher Apprenticeship	Male	-	7,690	-	890	8,580	80,800
	Female	-	830	-	680	1,510	110,700
	All	-	8,530	-	1,570	10,100	191,600
All Apprenticeships	Male	-	10,400	-	4,100	14,500	244,400
	Female	-	1,200	-	2,820	4,020	276,200
	All	-	11,600	-	6,920	18,520	520,600

Source: e-skills UK analysis of data from The Data Service
Notes: This table shows starts for frameworks, some of which have been grouped after the introduction of SASE (Specification of Apprenticeship Standards for England) frameworks in 2010/11
- indicates a base value of less than five
- volumes are rounded to the nearest ten except for the grand totals which are rounded to the nearest hundred

6.2.2 Apprenticeship achievements

In 2011/12, 57% of IT & Telecoms related programme achievements were from the 'IT & Telecoms Professional' apprenticeship and 43% were from 'IT User' apprenticeships. Females accounted for 25% of all IT & Telecoms related apprenticeship achievements, compared to 53% for all apprenticeships.

Table 15: Apprenticeship programme achievements by sector framework, level and gender, 2011/12

	Gender	Communications Technologies (Telecoms)	IT and Telecoms Professional	IT Services and Development	IT User	Total IT & Telecoms	All courses total
Intermediate Level Apprenticeship	Male	-	1,310	-	1,780	3,090	83,000
	Female	-	170	-	1,420	1,590	89,400
	All	-	1,480	-	3,200	4,680	172,400
Advanced Level Apprenticeship including Higher Apprenticeship	Male	-	3,520	10	400	3,930	38,600
	Female	-	380	-	420	800	47,300
	All	-	3,900	10	810	4,720	85,900
All Apprenticeships	Male	-	4,820	10	2,170	7,000	121,600
	Female	-	560	-	1,830	2,390	136,800
	All	-	5,380	10	4,010	9,400	258,400

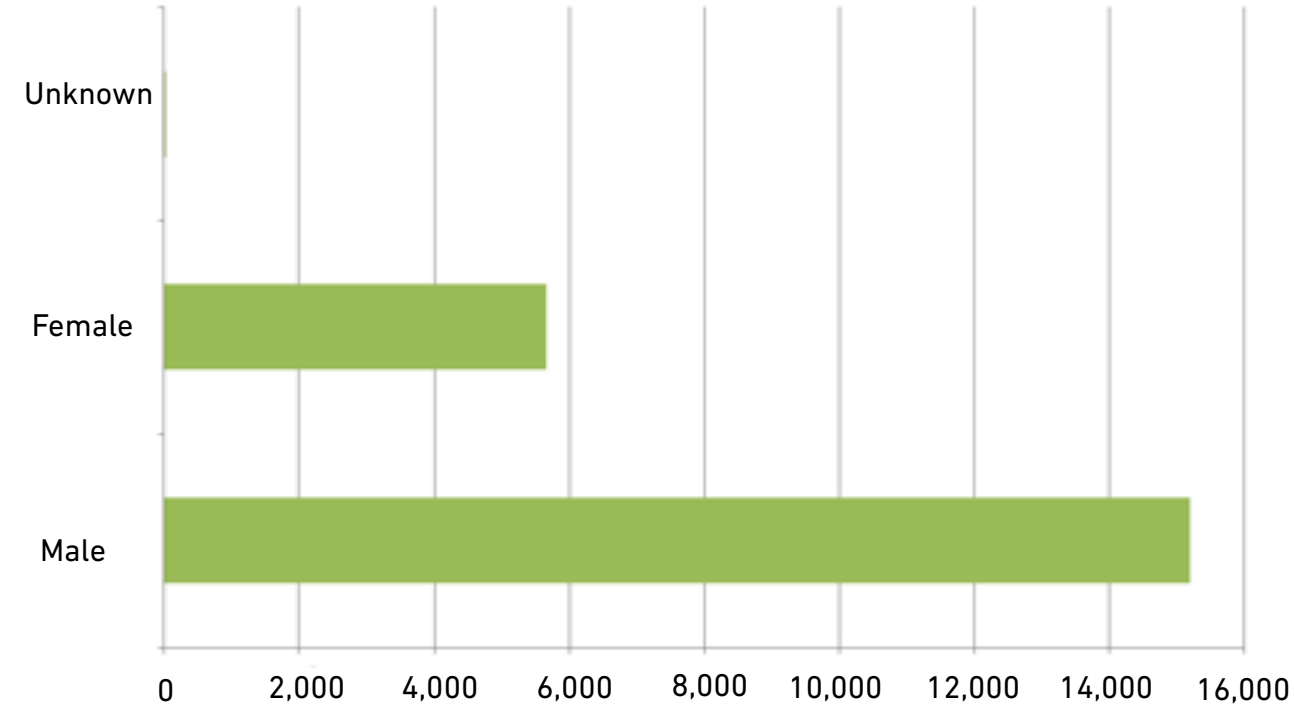
Source: e-skills UK analysis of data from The Data Service
Notes: This table shows starts for frameworks, some of which have been grouped after the introduction of SASE (Specification of Apprenticeship Standards for England) frameworks in 2010/11
- indicates a base value of less than five
- volumes are rounded to the nearest ten except for the grand totals which are rounded to the nearest hundred

6.3 BCS qualifications

6.3.1 HEQ

The Institute's Higher Education Qualifications were developed in consultation with employers and offer an alternative route to an IT honours degree. The highest level qualification, the Professional Graduate Diploma (PGD) in IT, provides a route to postgraduate study at many UK universities.

Figure22: Gender splits for HEQ exam sitters:

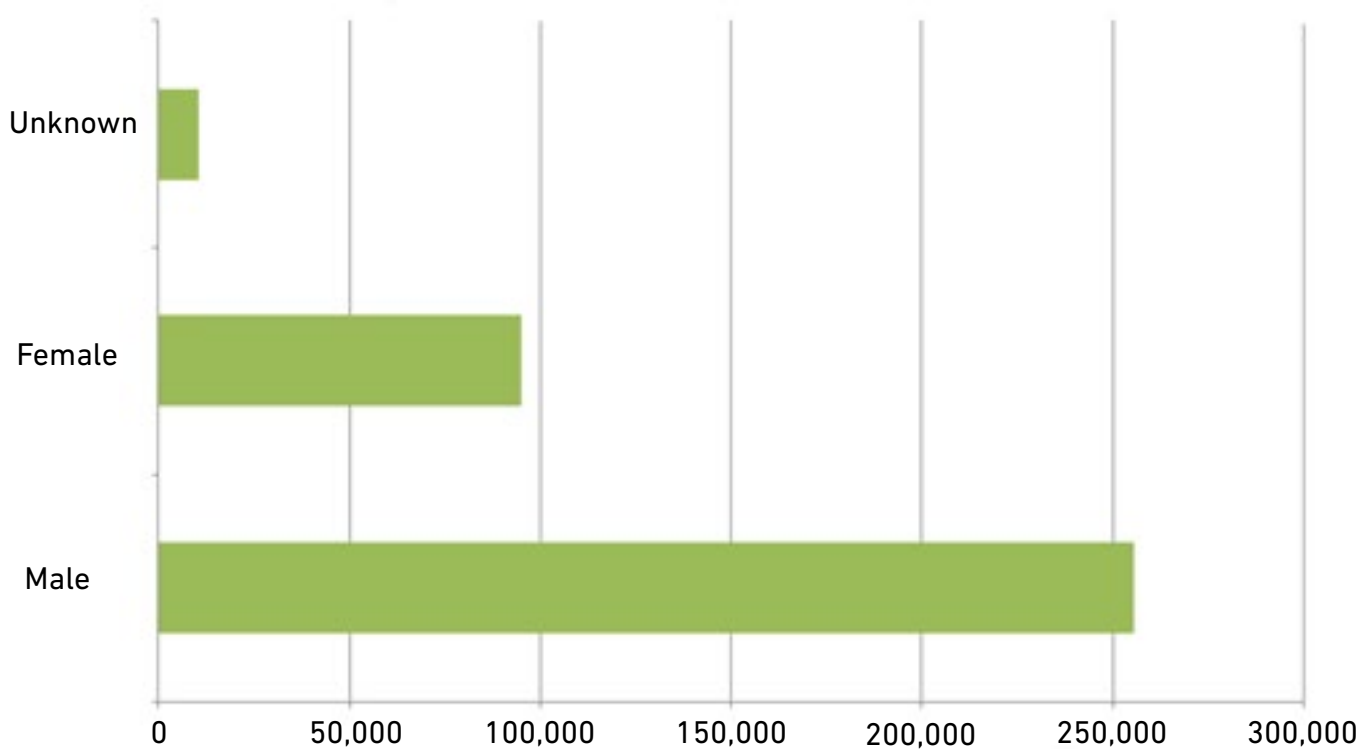


Source: BCS, The Chartered institute for IT

6.3.2 Professional examinations

BCS's Professional Certifications are internationally recognised and industry relevant certification to support specific skills and career development. The certification portfolio spans the breadth of IT and covers 10 subject areas including IT service management, software testing, business analysis and sustainable IT.

Figure 23: Gender splits for Professional Examination exam sitters:



Source: BCS, The Chartered institute for IT

7.0 Earnings

The median gross weekly wage for female IT staff (full-time permanent employees) in 2013 was £640 per week – 16% (£120) less than the comparison figure for men working in IT roles (£760). In fact, the recorded level of pay received by women in IT roles has been consistently below that of male IT specialists for each of the past 10 years with the pay differential ranging from just 10% in 2012 to 19% in 2004 and 2005.

Figure 24: Gross weekly pay (median) by gender for permanent, full-time IT specialists/other employees, 2003-13

Source: e-skills UK analysis of data from the ONS Labour Force Survey (four quarter averages)

Of course it could be argued that women may be paid less than men owing to differences in the employment characteristics of the two groups and in particular the occupational distribution of IT staff. However, a comparison of the basic rate of pay (i.e. excluding overtime) for full-time IT staff by occupation reveals that in 2013, women were paid less than men irrespective of the type of IT role they were employed in - the difference ranging from just 4% for Programmers/Software Development staff to 19% in the case of IT Project/Programme Managers.

Table 16: Gross (median) weekly pay of full-time IT specialists/other workers by gender, 2013

	Females	Males	Difference (n)	Difference (%)
IT Directors	£1,180	£1,190	£10	1%
IT Specialist Managers	£720	£850	£130	18%
IT Project and Programme Managers	£830	£990	£160	19%
IT Business Analysts, Architects and Sstems Designers	£670	£780	£110	16%
Programmers and Software Development Professionals	£710	£740	£30	4%
Web Design and Development Professionals	£490	£560	£70	14%
IT Professionals n.e.c.	£650	£710	£60	9%
IT Operations Technicians	£500	£550	£50	10%
IT User Support Technicians	£480	£530	£50	10%
IT Engineers	-	£510	-	-
All employees	£450	£530	£80	18%

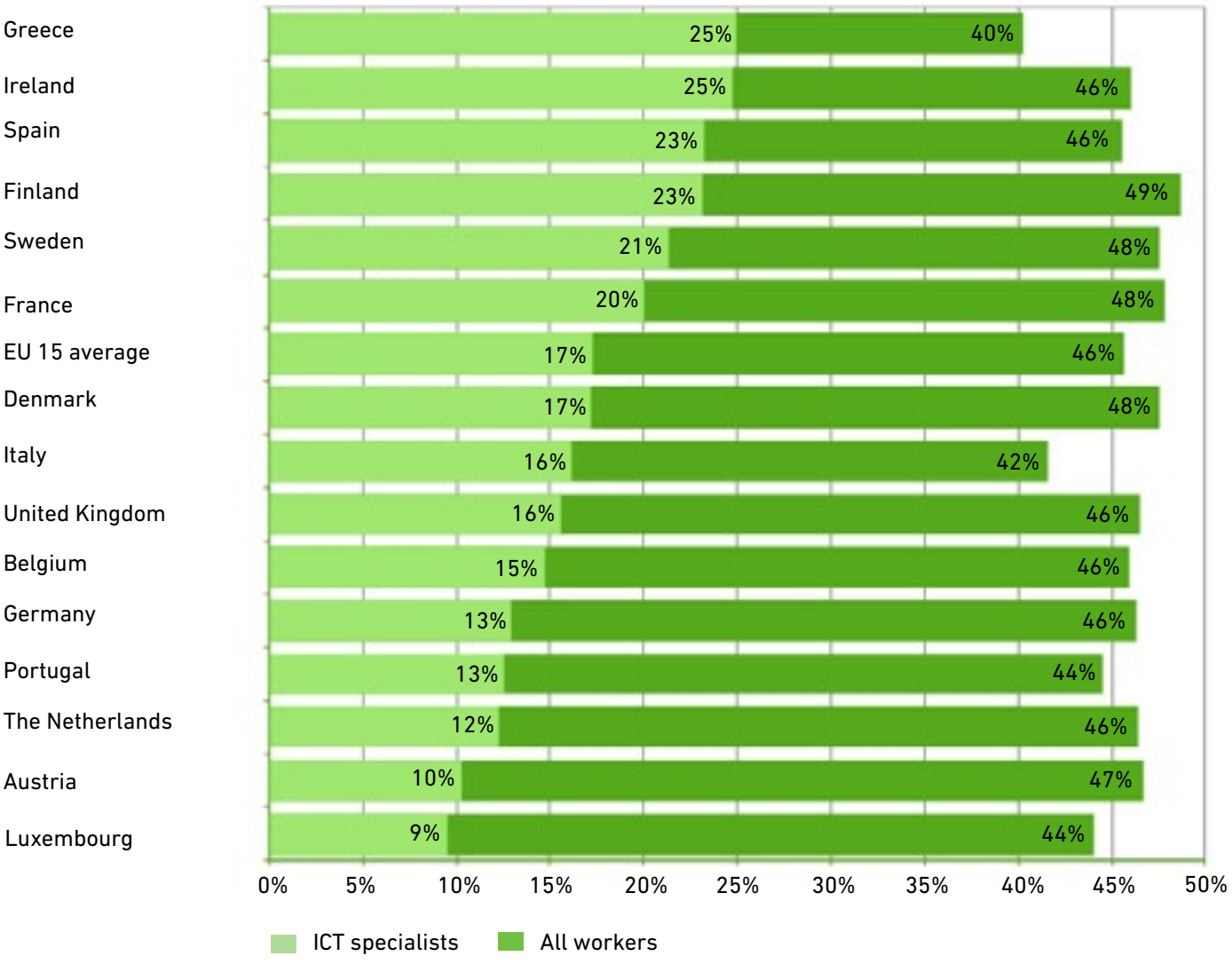
Source: e-skills UK analysis of data from the ONS ASHE survey

8.0 International comparisons

8.1 IT occupations

Though the representation of women within IT occupations in the UK is relatively low by comparison with their workforce presence more generally, this is a common issue throughout Europe. More specifically, an analysis of data on female participation in the workforce amongst the EU15 shows that, on average, only around 17% of IT staff within these member states are female compared to a participation rate for the wider workforce (all workers) of 46%.

Figure 25: Female representation in IT/other occupations amongst the EU15, 2013



Source: e-skills UK analysis of data from Eurostat (four quarter averages)[14]

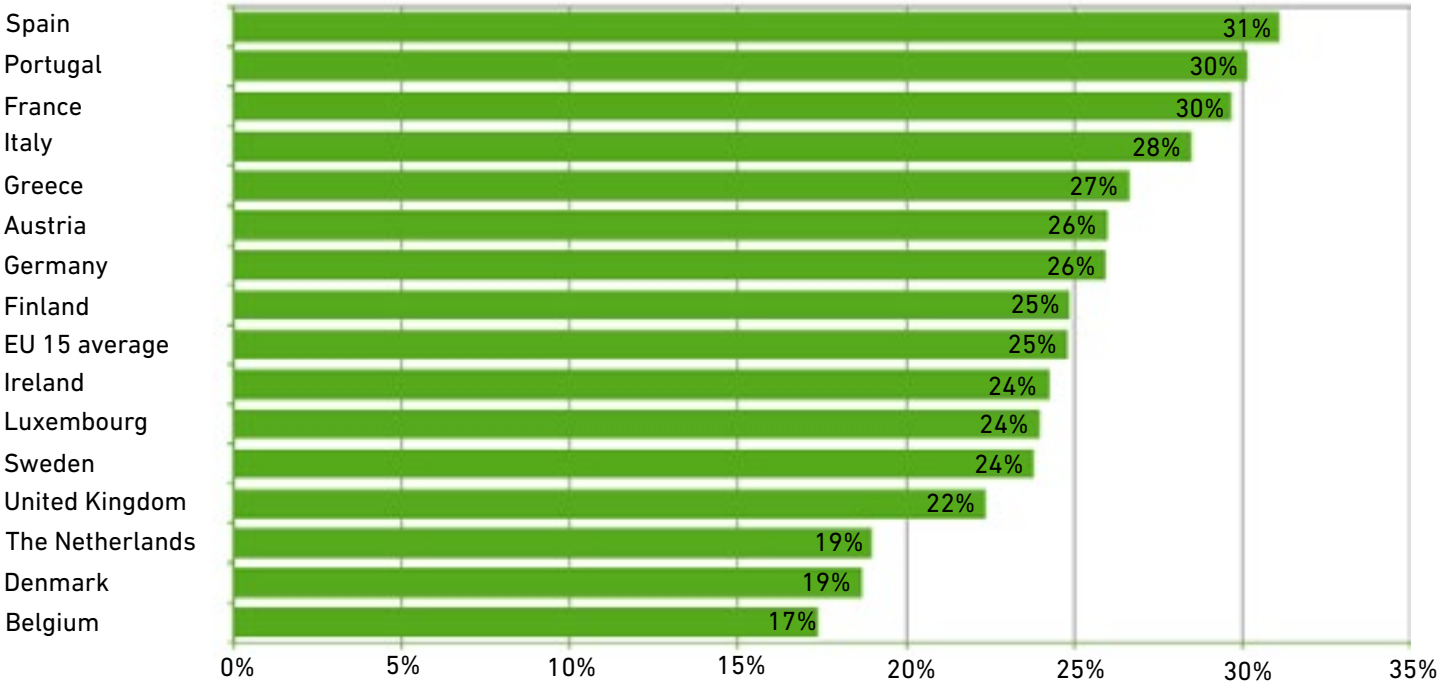
14 Eurostat data/analysis are based on a different (though broadly equivalent) classification to that employed within the UK and as such are not directly comparable.

Compared to other EU15 members then, the proportion of IT specialists that are female in the UK is slightly below average and well below the levels recorded in Sweden, Finland, Spain, Ireland and Greece in particular where more than 20% of IT specialists are women.

8.2 The IT sector

Interestingly, the level of representation for women in the IT sector (IT businesses) was also found to be lower in the UK across the EU15 as a whole in 2013 (22% vs. 25% respectively), and though the difference is small, the UK is noted for having one of the lowest levels of female representation of all such member states.

Figure 26: Female representation amongst IT firms within the EU15, 2013



Source: e-skills UK analysis of data from Eurostat (four quarter averages)[15]

15 Ibid

9.0 Glossary of terms

9.1 Labour Force Survey data

The ONS Labour Force Survey 'is a survey of the employment circumstances of the UK population. It is the largest household survey in the UK and provides the official measures of employment and unemployment' (ONS). LFS data presented in this report are generally derived figures based on four quarter averages for the period though in some instances three year averages have been employed where low bases exist in order to improve the accuracy of data presented.

9.2 SOC (Standard Occupational Classification)

The ONS SOC classification system is used as a basis for sizing and comparing different occupational groups within in the labour market. During the 2003-2010 period, ONS employed the SOC2000 system to identify/classify the occupation of respondents to the LFS. At its most detailed level, SOC2000 comprises 350 unit/4 digit codes in total, six of which are deemed IT specific for the purposes of this report i.e.

1136	ICT Managers
2131	IT Strategy & Planning Professionals
2132	Software Professionals
3131	IT Operations Technicians
3132	IT User support
5245	Computer Engineers

In 2011, ONS introduced an updated version of SOC, designed to more accurately reflect the occupational breakdown of the workforce at that time. Under SOC2010 the overall number of unit codes available was increased slightly (to 369) whilst the number of IT specific codes at this level increased from six to ten:

1136	IT&T Directors
2133	Specialist IT&T Managers
2134	IT&T Project & Programme Managers
2135	Business Analysts, Architects & System Designers
2136	Programmers & Software Development Professionals
2137	Web Design & Development Professionals
2139	IT&T Professionals NEC
3131	IT Operations Technicians
3132	IT User Support Technicians
5245	IT Engineers

Given the changes in the occupational classification system employed by ONS during the 2003-13 period, a degree of caution should be given to longitudinal comparisons, however, as illustrated within this report, the general trends observed do appear to arise both with respect to the 2003-2010 and 2011-13 periods and as such, it is felt that the broad conclusions/highlighted findings remain valid observations for the entire period under investigation.

9.2 SIC (Standard Industrial Classification)

The ONS SIC classification system is used as a basis for sizing and comparing different elements of the economy.

At its most detailed level, SIC07 (the latest version and that employed within this report) comprises 615 classes (4 digit industry codes) and 191 'sub classes (5 digit codes), the following of which are deemed IT specific for the purposes of this report i.e.

18.20/3	Reproduction of computer media
26.2	Manufacture of computers and peripheral
46.51	Wholesale of computers, computer
47.41	Retail sale of computers, peripheral units
58.21	Publishing of computer games
58.29	Other software publishing
62.01/1	Ready-made interactive leisure and
62.01/2	Business and domestic software
62.02	Computer consultancy activities
62.03	Computer facilities management activities
62.09	Other information technology and computer
63.11	Data processing, hosting and related
63.12	Web portals
95.11	Repair of computers and peripheral

e-skills UK is the employer-led organisation responsible for ensuring the UK has the technology skills to thrive in the global economy. Through us, leaders from global corporates, SMEs, and technology-enabled companies come together to create the pipeline of technology skills and talent that is vital for economic growth and job creation.

We do this by inspiring talented young people into digital careers; providing industry-relevant entry routes for them, including degrees and apprenticeships; and ensuring current professionals keep apace with priority areas like cyber, big data, e-commerce, mobile and cloud.

BCS, The Chartered Institute for IT, champions the global IT profession and the interests of individuals engaged in that profession for the benefit of all.

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