



European Year of Workers' Mobility 2006



"This project has received funding from the European Commission within the framework of the European Year of Workers' Mobility 2006"

Bulletin nr.

1

Women and Job Mobility: Obstacles and Solutions for Women in the ICT Sector An Introduction



1. Statistical sources and analysis

1.1 Existing statistics

At the EU level, the best source of comparable statistics is produced by EUROSTAT. The Statistics in Focus series have been the base for the analysis contained in this paper. Additional national data have been used to elucidate the differences between the countries in the study, in particular to highlight the differences and similarities among countries in both context and culture as they affect women's opportunities or obstacles to use ICT or enter ICT related careers.

There are also a number of other indicators important to understand the context, such as general labour market indicators and expenditure by Member States on R&D and education, or even ITC usage indicators that are particularly important in the context of our study such as the use of ITC's among women with lower educational levels. In 2005 EUROSTAT has carried out Community survey on ICT usage in households and by individuals. According to this survey 61% of persons with the lowest educational levels have no basic computer skills. Unfortunately, there is no cross data between educational level and sex available.

1.2 Needed statistics and tools

After an extensive search on the Internet the following gaps in the information and tools on job-to-job mobility have been detected:

- Information on new and emerging occupations by gender in general and more specifically in ICT sectors
- What soft skills are required for different jobs
- Career building tools for youth
- What are the expected growth rates for ICT sectors and occupations
- Ways to change jobs within ICT sectors or occupations
- Ways to change jobs from other sectors and occupations into ICT

1.3 General context: general economic and labour market trends, and expenditure in R&D and education

1.3.1 Economic trends

The purpose of this section is to put the ICT data analysed in the context of the EU and some EU Member States. In first place it is important to point out that Spain and Ireland have experienced very strong economic growth in the past five years, superior to the EU15 and EU25 averages (as can be observed in Table 1). On the other hand, Italy has been lagging behind, but has shown some positive indicators such as lower unemployment and relatively low fixed term unemployment.

Economic growth rates can be compared with the level of investment in both education and research and development (R&D) that our study countries have had in comparison with the EU Member States. According to economic growth models both education and R&D have a very strong influence on economic growth in the long-term, mainly through the effect they have on increasing productivity. The trends in all three countries show that expenditure on education and R&D has stagnated and have been decreasing. Although various other factors can be used to explain the downward trend of GDP growth, a direct relationship between expenditure on Education and R&D and economic growth appears significant.

With respect to the gender dimensions of these variables, it is important to point out that expenditure on these important areas for the economy must have a gender balanced impact if the full benefits of these expenditures are to be reaped. Access to education and funds for R&D must be enjoyed equally by men and women in all fields of study and research. Gender stereotypes and biases in certain areas of education, research and scientific environments must be addressed in order to avoid economic and social inefficiencies.

Although there is no available analysis of the specific impact in our study countries of R&D expenditure by sex, there is abundant information on the educational outcomes. According to figures from the publication *She Figures 2006* (Figures and indicators on women and science) by the European Commission, across the EU25 in 2003 the proportion of women PhD (ISCED6) graduates was 43%. In our study countries this proportion was 45% for Spain and 51% for Ireland and Italy. Between 1999 and 2003, the growth rate of PhD graduates was higher for women than for men in Spain and Ireland, while in Italy it was higher for men. However, in terms of the EU average female PhD growth rates the result has been much better for Italy (more than double the rate of the EU average at 15%) than for the other two countries with growth rates of 5% (Spain) and 6% (Ireland).

1.3.2 Employment and labour market trends

Employment growth has been more vigorous in Spain and Ireland than in Italy. Trends of the employment rates from 1996 are available separately for women and men. While men in both Ireland and Spain have experienced slower employment growth since 2001, men in Italy seem to be entering a downward phase in 2005 after a slower but steadier upward trend compared with the other two countries. It is interesting to observe that, although at lower levels, the trends for Spain and Ireland are strikingly similar and that employment rates for men of these two countries seem to be converging.

On the other hand, employment trends for women show much lower average levels than for men in all three countries although the upward trends are much steadier. In this case the two countries showing similar trends are Italy and Spain, while Ireland has much higher female employment levels (which coincide with the EU25 averages) that have grown at similar male rates. It is interesting to note that in both Italy and Spain employment growth for

women has been higher than for men. Only in the case of Italy the rates remain below the EU25 average and seem to also be slightly decreasing in 2005 as is the case with men. This "massive" entry of women into the labour forces of all three countries pose specific challenges as far as policy is concerned in the area of reconciliation of work and family life.

Although unemployment in all countries has dropped significantly, the very high level in Spain in previous years (18% compared to around 12% in the case of Ireland and Italy in 1996) continues to influence its higher unemployment level compared to the other two countries more recently, although it has already reached the EU25 level by 2005 (around 8.5%). In all three countries men's unemployment rate was below the EU25 average (7.9%) in 2005. In the case of female unemployment, only Ireland remained well below the EU25 average (at only 4% and even lower than men's unemployment), while Italy converged to the EU25 average (at around 10%) and Spain remained above the average (at 12%). Even so, the drop in unemployment for women has been faster than for men. Both the employment and unemployment rates show that all three countries have been experiencing important changes in their economies over the past decade and that the entry of women into the labour force has been one of the most notable changes. The fact that women have lower employment and higher unemployment (except in Ireland) reveal the general difficulties and obstacles that women face in the labour market.

Even in the case of Ireland, where the statistics look positive and better than in the other two study countries, there is a 20% difference in activity rates between women and men, significantly higher than the 15,3% EU25 average difference. Looking at the activity rates per se, this means that while 20% of men in working age in Ireland are inactive (studying, disabled, caring for other family members or for other reasons), 40% of women in Ireland

are also inactive. While inactivity due to engagement in education is not a negative reason, all other reasons for inactivity reflect mostly negative aspects of economic and social discrimination and/or disadvantage. In Italy and Spain the differences are slightly worse: with 24 and 23 percentage points respectively. In Italy only half of the female working force is active, while in Spain the figures are similar to Ireland (around 40% of women in working age are still inactive). Education is the main reason for inactivity in the 15-24 age group for both women and men and the difference in rates of inactivity of younger men and women is less pronounced (10 percentage points or less in our study countries) than for older age groups. However, inactivity rates of older population groups is linked to other factors and differs more between older women and men, being much more pronounced for women than for men. While men between 25 and 54 years of age across the EU claim "own illness or disability" and "other reasons" for being out of the workforce, women cite these reasons as well but also add "personal or family responsibilities" as a main reason or the main reason (men also do but to a much more lesser extent, almost statistically negligible). In our study countries, personal or family responsibilities as the main reason reaches very high proportions (between 40% to 70%), while at EU25 level this reason reaches only 10%. This is an important element to keep in mind when analysing cultures around job mobility in our countries. The reality in our study countries with respect to the unpaid care activities is very much linked to access and permanence in employment. Women face a much higher number of interruptions in their professional careers over the life cycle than men do, and this very clearly affects job-to-job mobility, not always in a positive sense.

Furthermore, it is important to look at sectorial employment (although we will look at the ICT sector more in detail further on) and its interactions with the rest of the economy. In all

the study countries the proportion of human resources in science and technology in the different economic sectors (manufacturing, and services) is lower than the EU averages in the case of men, and higher in the case of women. This is related to the much higher presence of women in the service sector. Female presence in the manufacturing sector is much lower than that for men and under EU averages.

1.3 ICT employment

Employment occupations in ICT can be divided into three broad measures as specified by the OECD:

- ICT specialists, who have the ability to develop, operate and maintain ICT systems. ICTs constitute the main part of their job.
- Advanced users are those who are competent users of advanced, and often sector-specific, software tools. ICTs are not the main job, but a tool.
- Basic users are those who are competent users of generic tools (e.g. Internet explorers, word processors, spreadsheets, presentation programmes, etc.) needed for the information society, e-government and working life. Here too, ICTs are a tool, not the main job.

The first category, in market terms, involves those who supply ICT tools and the second and third those who demand the tools. However, these categories are not straightforward as developers in the second category can also be identified. Furthermore, ICT specialists are also required to have other skills, such as business knowledge, creativity and oral and written communication skills in order to make their "innovations" successful in market terms. Finally, non-ICT related professionals also require that some ICT skills be learned and used on the job.

Although we already mentioned above that women seem to be better represented in ICT related sectors as a proportion of the total of

women's employment, we now turn to the situation by occupation. According to OECD data the share of women in ICT-using occupations in 2004 as described above was around 42% in Ireland, 41% in Italy and 38% in Spain. In this case we find that most women in occupations using ICTs are in the office or clerical type occupations. In the case of Ireland this reaches around 85%, in Italy 70% and in Spain around 62%. This means that in the ICT specialist category there are relatively fewer women than men: 19% in Ireland, 12% in Italy and 11% in Spain. According to the She figures 2006 database, in 2004 the proportion of women engineers and scientists in the total labour force in the EU25 is only 1.4% while in Italy the proportion is slightly lower at 1.2%, in the case of Spain the figure rises to 1.9% and in Ireland 4%! However, the most worrisome trend noted in these statistics is that the proportion of women within ITC specialist fields between 1998 and 2004 is declining in Ireland and Italy and only increasing slightly in the case of Spain. This can be linked to declining number of women in ICT related educational fields.

On the other hand, the sectorial distribution of men and women with science and technology backgrounds (professionals or technicians having successfully completed tertiary education) in 2004 showed that the majority were working in knowledge intensive industries and that women occupied better positions in this area than men. Curiously, there is a higher proportion of these well educated persons in the less knowledge intensive sectors than in other sectors in which their knowledge might make more meaningful contributions.

Finally, based on the definitions described above and using the so-called relative feminisation rate index only Ireland is among the countries with an index value above 1 (that is above average among the 23 OECD selected countries for this index), while Italy and Spain fall below this value (0.92 and 0.90 respectively). It is interesting to note that the

countries with the highest index value are the new EU member states of Hungary, Czech Republic and Slovak Republic, while those with the lowest index value are Austria, Portugal and Greece. The index does not include the US.

1.4 Job-to job mobility

The EUROSTAT database on Science and Technology includes job-to-job mobility of human resources in science and technology (HRST). This indicator shows the percentage of persons that have changed jobs over a one year period.

Analysing these data, one can note the increasing mobility in Science and Technology jobs for women in Ireland and Spain as opposed to the declining mobility overall in the EU (including Italy) since 2004. None the less, during the period 1999-2005 the trend for Italy has also been positive, but lower than in the other two study countries. A second striking feature is that the percentage of women moving from one science and technology job to another in Spain and Ireland is higher than that of men. While in both Spain and Ireland men's mobility seems to be stabilising while women's mobility continues to grow, in Italy women's mobility seems to be decreasing while men's mobility is increasing. Finally, it is interesting to note that Ireland has the highest mobility rates out of all the study countries and much higher than the EU averages, at least for the period.

It is important to understand what drives the change in jobs in order to draw lessons that can be applied more generally. In the case of Ireland, with the highest and growing rates of mobility for women, the proportion of fixed term employment is one of the lowest in the whole of the EU but women have a slightly higher rate of fixed term contracts than men. On the other hand, with also very high rates of job-to-job mobility for women, we observe that Spain has the highest rate of fixed term employment in the whole of the EU and that it is higher for women than for men (almost 5

percentage points higher). This means that, in principle, there are two very different factors driving the high mobility rates and that they result in very different outcomes in terms of conditions and pay as well as the impact on the overall economic performance can be found in the two countries. While in Ireland the high job-to-job mobility rate is likely to have a positive impact (and mobility is voluntary), in the case of Spain the high turnover and lack of job security can lead to a negative impact, especially in terms of productivity. However, it would also be important to know if mobility in Ireland has a gender component.

In the case of Italy, women also have a higher fixed-term contract proportion than men, with a similar difference with Spain of 5 percentage points. Here another explanation or model might be behind the lower mobility rates. While fixed term contract affect other sectors, the IT sector might be less affected by this type of contracts. Also, as human resources become scarcer (employers might have retention policies in place) or there is less willingness by workers to move, the mobility rates might be affected.

These figures also need to be contrasted with more general figures on mobility. The Eurobarometer on job mobility in the career of European workers indicates that the average age of entry to the labour market is at 19 years of age for Europeans. In the EU, the average percentage of people (over 35) that have never worked is still a significant 8%. The values of those who have never worked varies noticeably with gender, while only 1% of all men older than 35 have never worked, this figure grows to 13% for women. This figure can be linked to the unpaid care work segment.

In relation to the levels of job mobility, the average number of jobs that people in the EU have held is of 3,9 and the average job duration in Europe is calculated to be 8,3 years. However, almost 25% of European workers over 35 have been classified as never mobile, that is they have never changed employer in their career.

Regarding the most recent change in employer, around 8% of EU workers changed employer in the past year, while 32% changed employer at least once in the past 5 years and 50% in the last 10 years.

According to the survey, Italy and Spain are at the top of the EU rankings in the percentage of people that have never worked (1st and 3rd respectively), while values for Ireland are much closer to EU25 averages. All three countries are above EU25 average in the percentage of people who have never changed employer, although values for Italy are significantly higher than for Ireland and Spain. In relation to the average duration, Ireland and Spain rank at EU25 average, while Italy scores almost one percentage point higher. Data for recent job mobility indicates that Ireland has the highest percentage of mobile workers in recent times, followed closely by Spain while values for recent job mobility in Italy are considerably lower. The overall view from the comparative table suggests that Ireland and Spain have similar levels of mobility in their labour force while Italy has a significantly less mobile work environment.

1.5 Cultural and Institutional issues: Eurobarometer

Job mobility is generally accepted as an important aspect to meet the Lisbon Agenda goal the EU set itself in March 2000; "to become the most competitive and dynamic knowledge based economy in the world, capable of sustaining economic growth and more and better jobs and greater social cohesion" (European Commission, 2003). In this context, the European Commission designated 2006 as "European Year of Worker's Mobility" and in order to examine the complex phenomenon of mobility in Europe a Eurobarometer survey dedicated to labour and geographical mobility was carried out in September 2005. This section aims to summarising the findings of the analysis of this survey carried out by the European Foundation

for the Improvement of Working and Living Conditions.

From a theoretical perspective one of the most accepted theories on labour and career mobility that was used in the report was the "trans-national market theory" developed by Schmid. This theory proposes a strategy of qualitative growth rather than the traditional emphasis on economic and employment growth. Schmid argues that the ideal of full employment in the traditional sense is not a realistic goal due to the growing individualization of our societies; instead labour policies should focus in facilitating the transitions between periods of work, unemployment, education and non-activity

It is important to highlight the fact that mobility decisions are generally not isolated decisions, but rather a part of a complex decision making process in which geographical, societal, occupational and relational issues all take part and interrelate themselves. The concept of "bounded mobility" has been recently introduced to acknowledge these interrelations between geographical and labour mobility with individual and family needs. Figures from the Eurobarometer indicate that about a third of job mobility decisions are a consequence of people voluntarily choosing to improve their labour market position, leaving the remaining two thirds as forced job mobility decisions, or related to a search for better balance between family and work life. Further investigation of the bounded mobility concept is recommended as it can affect women more than men at certain moments of the life-cycle and also influenced by specific cultural and institutional aspects in each country.

There also seems to be a correlation between the classification of welfare states as defined by Esping-Anderson and the levels of job mobility in the EU countries. At the high end of the job mobility scale are the social-democratic and liberal welfare state countries (such as Sweden, Finland and

Netherlands), which includes Ireland. Corporative regimes, such as Germany and France, score lower in job mobility. The countries of Southern Europe such as Portugal, Greece and Italy show higher work security but show the lowest overall job mobility rates. Spain is also included in this group, but is somewhat of an exception since it shows job mobility levels closer or above EU average not correspondent with its welfare state regime classification. However, as we previously noted, mobility in the ICT sector is particularly high for Spanish women.

The opinions and attitudes of people towards labour and geographical mobility gathered in the Eurobarometer study are a fairly valid predictor of readiness to move. However, it is important to distinguish perceptions and opinions from clear intentions. The majority of Europeans (62%) consider geographical and job mobility as "a good thing". If faced with unemployment, most Europeans would be ready to move. Regarding gender, women were less willing to move than men if faced with unemployment. Job and geographical mobility is closely linked to living and working conditions, and both processes should be studied in conjunction to obtain optimal outcomes, which clearly has links with the concept of bounded mobility.

The link between job mobility and geographical mobility indicates a complex and dynamic relationship between the two types of mobility, which are essentially interdependent and interrelated processes. Findings suggest that highly educated, well off and younger groups often apply and complement better geographical and job mobility. More vulnerable groups such as single parents, blue collar workers and people with temporary contracts are more likely to forced into geographical and job mobility as a survival mechanism rather than as a free choice. From a gender perspective, women seem to be more aware of the costs of geographical mobility to family ties and social networks. As we also briefly

mentioned above and attempt to explain in the following chapter, there is a big difference between workers with a high persistence of fixed term and low paying jobs.

From an economical perspective, geographical and job mobility are generally viewed as positive, its advantages include the enhancement of employment opportunities, adaptability, greater economic well-being and the prevention of unemployment. The social point of view of geographical and job mobility suggests that it can lead to improved jobs and prevention of social exclusion caused by

unemployment. However, negative effects such as the loss of social network and difficulties of reconciliation of family and work life are also present as well as being trapped in a series of fixed term and low paying jobs. Current findings indicate that if policies favour job security and flexibility, job and geographical mobility are positive for both the economy and the individual. However, the more vulnerable groups of society are the ones experiencing higher levels of forced mobility, resulting in a much less favourable outcome for the individual and the economy.

2. *Issues and aims in our project*

In the project proposal job-to-job mobility (for women in the ICT sector in particular) is identified as an important issue in the context of acquisition of different skills that in turn foster adaptability. The proposal also recognises that job-to-job mobility rates vary in relation to age and gender and that occupational and sectorial mobility gender differences (namely upward occupational mobility) are particularly notable and are particularly negative for low-wage workers. These various issues are in turn linked to the Lisbon Strategy objectives in that fostering wider use and development of ICTs and mobility.

In this first analysis and summary findings of the EU statistics and Eurobarometer study on mobility a very important issue of the difference between mobility and fixed-term employment has been highlighted. Another important issue absent from the debate and data analysed and summarised in the previous chapter is the impact that new technologies have had on the organisation of work and the hierarchies (or lack of them) in firms creating or applying ICTs. A further point to investigate is the position of women within the ITC sectors as far as the occupations, content and the level of education and pay that women in this sector

have. Although we will not deal in depth with these issues in our project they must be kept in mind.

As we already noted above in the section briefly analysing the job-to-job mobility data the patterns found in our three study-countries points to the need of building on a theoretical model or models that can help us understand the specific factors leading to a change in jobs for young women in the ICT sector. Labour market models: segmentation, explanations of mobility and in particular of those in ICT sectors who are low paid, etc. can be used to find a correct balance that covers the objectives of our project.

The very brief analysis of the mobility rates above indicates the importance of having a clear model taking into account the push and pull factors behind the mobility decision including personal, cultural and institutional factors and in a given labour market context, in particular different flexibility patterns and firm organisational issues. These factors will have different effects on women and men that must be taken into account. Although there is a great number of job-to-job mobility literature by economists and sociologists there are few specific analysis of the gender dimensions. Curiously there are many analyses for

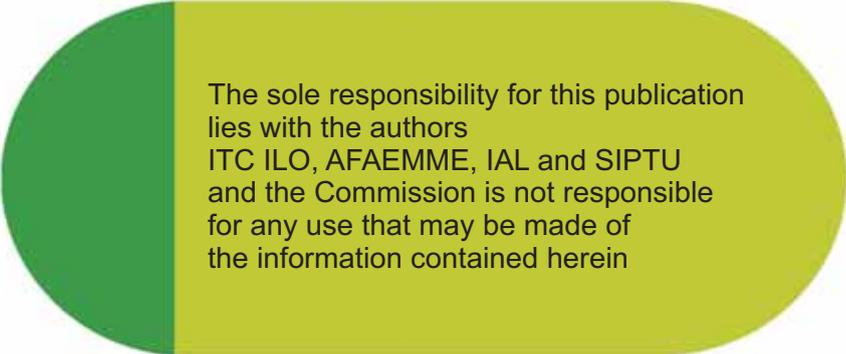
job-to-job mobility of young men and most of the studies are centred on how this affects individual wages: the theory is that young people move frequently during their first years in paid work in order to get better conditions, especially wages.

There are fewer studies on the impact on firms, but in general it is accepted that high turnover rates are costly and inefficient for firms, and that workers with more experience from other sector or from the same sector are an asset to the firm. However, in the knowledge economy it has also been shown that knowledge is an asset of the worker, not the firm and that this leads to different ways of training as well as different recruitment and retention practices. Also, mobility is associated with economic cycles: during low unemployment periods, as wages theoretically rise, workers decide to change jobs; while during high unemployment periods workers tend to stay put. Although these are very general trends, separate trends for women and men are not usually analysed. In principle, during high unemployment periods women's activity rates rise as men become workless (they are more active searching for jobs, but not necessarily find them and if they do they tend to be low paid jobs).

The work by Cappellari also points to the difficulties of low wage workers affected by high mobility which does not increase their

chances of finding higher paying jobs, i.e. a low-wage trap results as the more time a low-paid worker remains in low paid jobs the harder it will be to transit to higher paying jobs. On the other hand Tidjens has found that a large proportion of persons with low educational levels and minor users of ICT in fact carry out tasks demanding a high educational and professional competency level.

Finally, specific sector effects must also be taken into account as specific labour market surpluses or shortages of workers can also explain mobility as workers identify opportunities for improving their conditions, especially wages, and firms can engage in stealing workers from other firms (so-called tight labour markets). In the case of the ITC sector in the three countries included in our project there can be strong differences in how these specific labour markets work given the differences in institutions and firm culture and the ways how women interact in these markets. We have tried to expound on these differences in the section above dealing with cultural and institutional aspects that were mentioned in the study based on the Eurobarometer on mobility. In addition off-shoring or relocation can also be used by firms affecting the number and the quality of jobs with different outcomes for women and for men.



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“Women and Job Mobility: Obstacles and Solutions for Women in the ICT Sector”

co financed by the European Commission,
Employment, Social Affairs and Equal Opportunities DG
within the framework of the
European Year of Worker's Mobility 2006

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