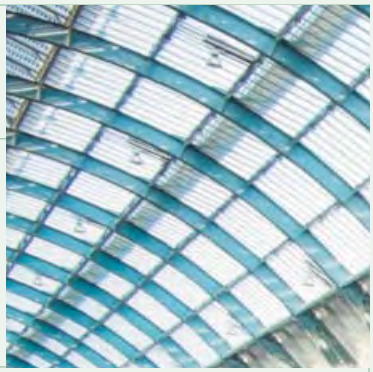
European Foundation for the Improvement of Living and Working Conditions

Eurofound Working Conditions Survey

Computer programming, consultancy and related activities: Working conditions and job quality

'*Work plays a significant role in people's lives, in the functioning of companies and in society at large. But what is work? How can we describe it? Is it changing, and if so, is it for better or for worse? Is it fulfilling the numerous and at times conflicting expectations we have of it? How can we take steps to improve work for the well-being of all?*'

Eurofound, *Fifth European Working Conditions Survey:* Overview report, 2012



This report gives an overview of working conditions, job quality, workers' health and job sustainability in the computer programming, consultancy and related activities sector (NACE 62).[1] It is based mostly on the fifth European Working Conditions Survey (EWCS), which gathers data on working conditions and the quality of work across 34 European countries. Additional information on the structural characteristics of the sector is derived from Eurostat data. The fifth EWCS contains responses from 349 workers in this sector. This report compares aspects of work in the sector with the EU28 as a whole.

Structural characteristics

In 2010, 1.2% of European workers worked in the computer programming, consultancy and related activities sector. The sector saw a 2.8% increase in employment between 2008 and 2010, with an even more pronounced 10.6% increase from 2010 to 2012. Countries where the computer programming, consultancy and related activities sector is relatively large are the Netherlands (2.0%), Sweden (2.0%), Ireland (2.0%) and Denmark (2.1%) The sector has relatively little prominence in Cyprus (0.6%), Bulgaria (0.6%), Greece (0.4%) and Romania (0.2%) (Eurostat, 2013).

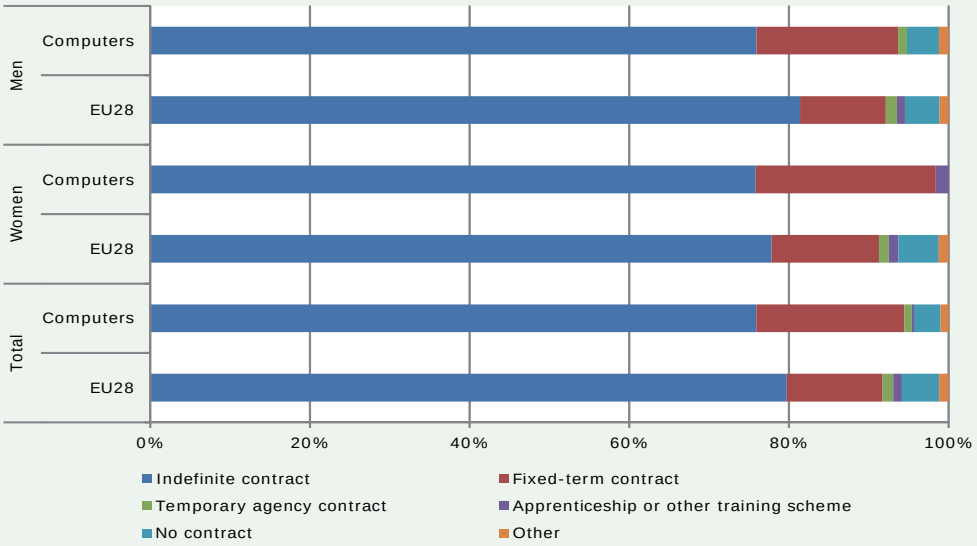
A relatively large proportion of workers in computer programming, consultancy and related activities (15%) work in large workplaces (250+ employees), compared to 12% of workers in the EU28. Consequently, the percentages of workers in computer programming, consultancy and related activities who work in micro-workplaces (1–9 employees, 40%) and small and medium-sized enterprises (SMEs, 10–249 employees, 44%) are slightly smaller than in the EU28 (42% and 46% respectively). The sector is male-dominated: 78% of the sector's workers are men. Workers aged 25–39 years are overrepresented, with 54.6% of the workforce falling into this age group, compared to 36.4% in the EU28 (Eurostat, 2013). In computer programming, consultancy and related activities, 4% are self-employed with employees and 16% self-employed without employees, compared to 4% and 11% respectively in the EU28. Figure 1 shows that among employees, fixed-term contracts are more prevalent in computer programming, consultancy and

Computer programming, consultancy and related activities in a nutshell

- The sector is male-dominated and younger workers (25–39 years) are overrepresented
- There is an above-average incidence of restructuring and the introduction of new technology
- Work–life balance is better than in the EU28 as a whole
- There is a high incidence of employer-paid training
- The majority of workers have high levels of both work intensity and job autonomy
- Exposure to physical risks is low
- Job quality is above the EU28 average

[1] Nomenclature statistique des activités économiques dans la Communauté européenne (statistical classification of economic activities in the European Community).

Figure 1: Employment status, by gender



related activities than in the EU28 as a whole and, within the sector, these contracts are more prevalent among women than among men.

Among men, part-time work is as prevalent in the sector (12%) as in the EU28 (12%), while women in the sector (27%) are much less likely to work 34 hours or less than women in the EU28 (38%).

Working conditions

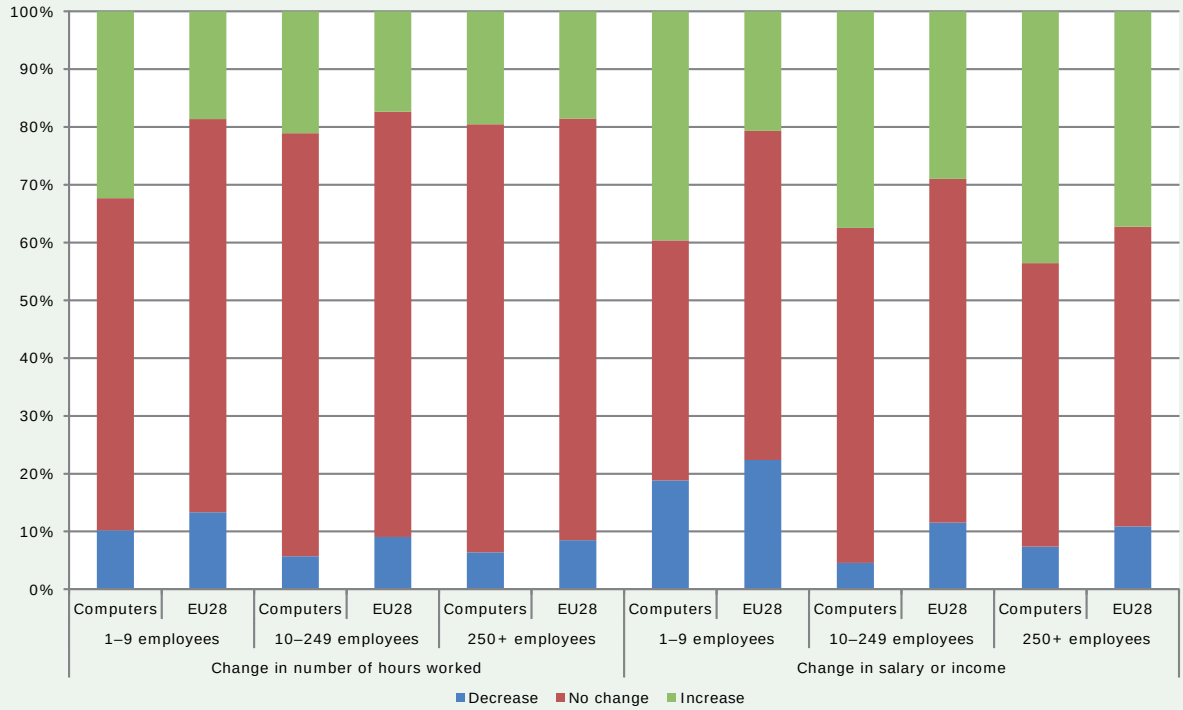
Changes since the crisis

The proportion of workers in the computer programming, consultancy and related activities sector reporting a decrease in the number of hours worked in the three years prior to the survey is lower than EU28 averages (Figure 2). Workers in the sector were also more likely than the EU28 average to report an increase in hours worked. The difference is particularly large between micro-workplaces in the sector and the EU28 for the proportion of workers reporting an increase in working hours (32% and 19%, respectively).

The proportion of workers in computer programming, consultancy and related activities reporting a decrease in salary in the three years before the survey is lower than the EU28 average. The proportion reporting an increase in salary is higher (Figure 2).

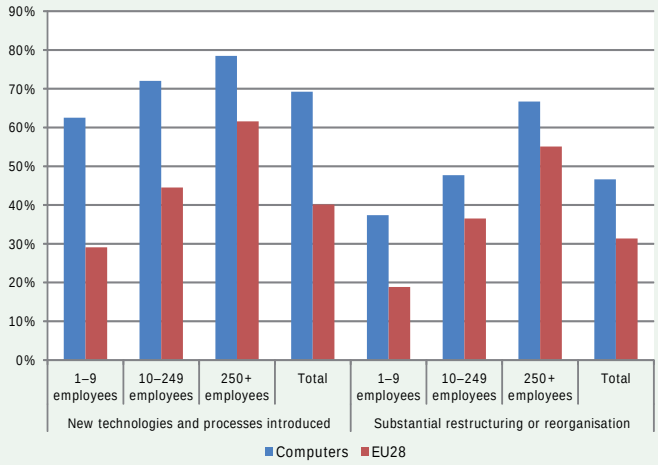
Workers in the computer programming, consultancy and related activities sector in general were much more affected by restructuring and the introduction of

Figure 2: Percentage of employees reporting changes in number of hours worked and salary or income in past year, by workplace size



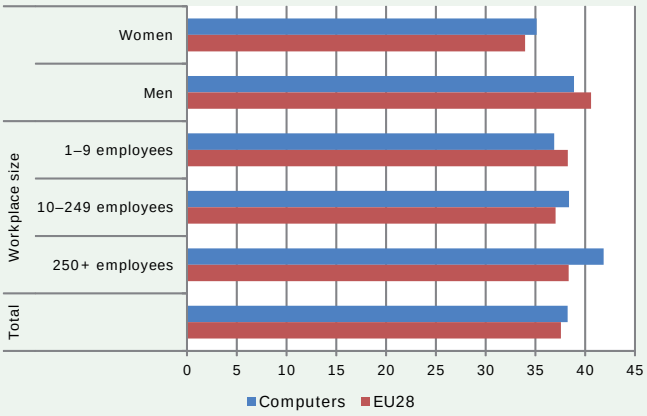
new technologies than workers in the EU28 (Figure 3). The sector follows the same pattern as the EU28, where the proportion of workers reporting the introduction of new production processes or technologies and substantial restructuring or reorganisation increases with workplace size.

Figure 3: Restructuring and introduction of new technologies in past three years, by workplace size



in the EU28 does not show a clear pattern across different workplace sizes, in computer programming, consultancy and related activities workers in large workplaces on average work four hours more per week than those in SMEs, and five hours more than those in micro-workplaces.

Figure 4: Average working hours, by gender and workplace size



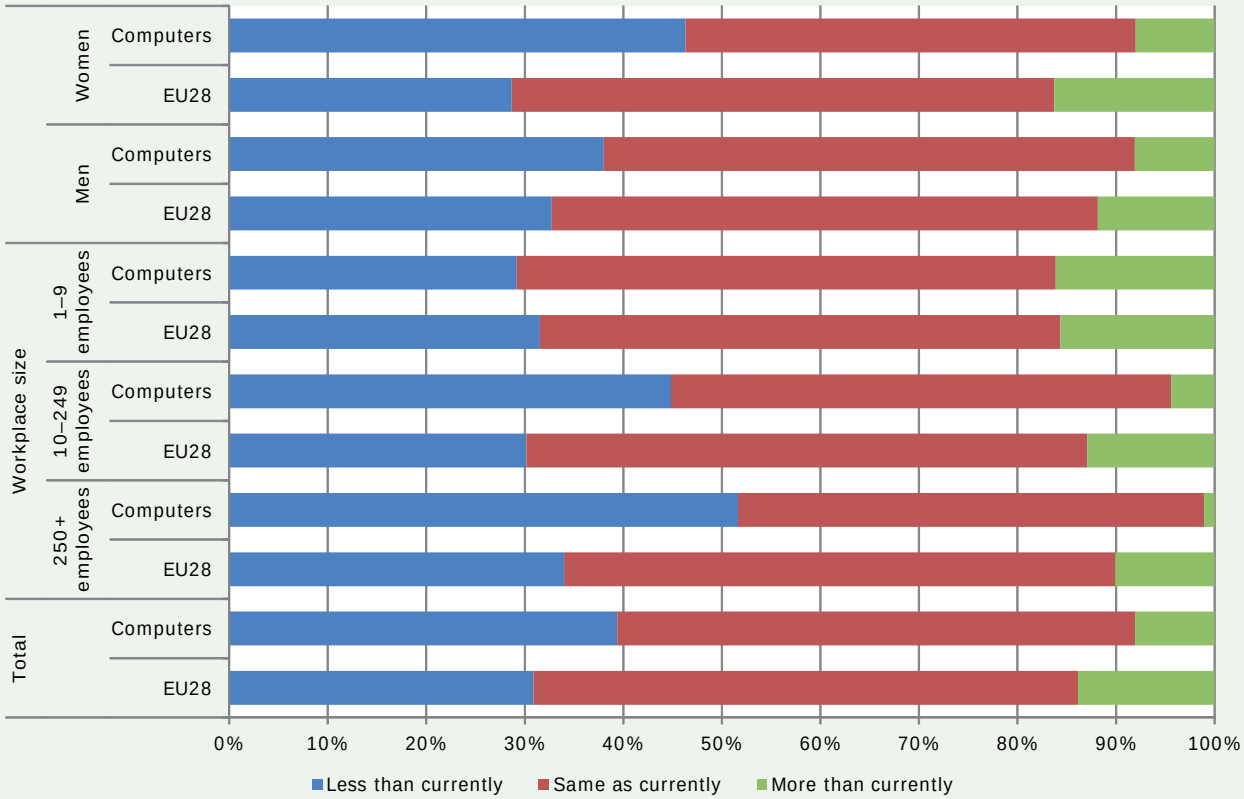
Working time and work–life balance

Workers in computer programming, consultancy and related activities on average work 38 hours per week, the same as the EU28 average. As in the EU28, men in computer programming, consultancy and related activities tend to work more hours on average than women (Figure 4). Whereas the average working time

Roughly the same proportion of workers in the sector is satisfied with their current working hours as in the EU28 as a whole (53% and 55%, respectively) (Figure 5).

A higher proportion of workers in computer programming, consultancy and related activities report a preference for fewer working hours than currently, and at the same time the proportion of

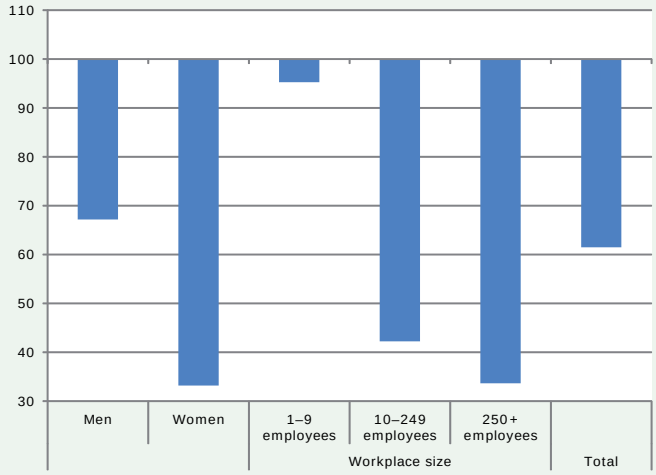
Figure 5: Working time preferences, by gender and workplace size



workers in the sector who prefer to work more hours is smaller than in the EU28 as a whole. This trend of higher preference for working fewer hours is the same for both men and women, with the exception of workers in micro-workplaces who are more satisfied with their working time than similar workers in the EU28. Considering that the average weekly working hours in large workplaces are 4 hours longer than in large workplaces in the EU28 as a whole, the high rate of workers expressing a preference for fewer working hours (52%) is noteworthy.

Figure 6 shows that working atypical hours (weekends, evenings or nights) is much less prevalent in the sector than in the EU28 as whole, particularly for women. Atypical hours in the sector are most prevalent in micro-workplaces and least common in large ones.

Figure 6: Index of working atypical hours (EU28=100), by gender and workplace size



Working time regularity (working the same number of hours each day and the same number of days each week) in computer programming, consultancy and related activities differs from the EU28 (Figure 7). Working times for men are less regular than the EU28 average. A similar proportion of women in the sector, however, report regular working times as the EU28 average. By workplace size, working times are less regular in micro-workplaces than the EU28 average, and in small, medium and large workplaces regularity of working times is similar to the EU28.

Computer programming, consultancy and related activities is a sector where work–life balance (the fit between working hours and family or social commitments) is better than EU28 average (Figure 8). Only 11% of workers in the sector report a poor work–life balance, independently of gender or workplace size, which is considerably lower than the average of 18% for the EU28 as a whole.

Figure 7: Index of regularity of working time (EU28=100), by gender and workplace size

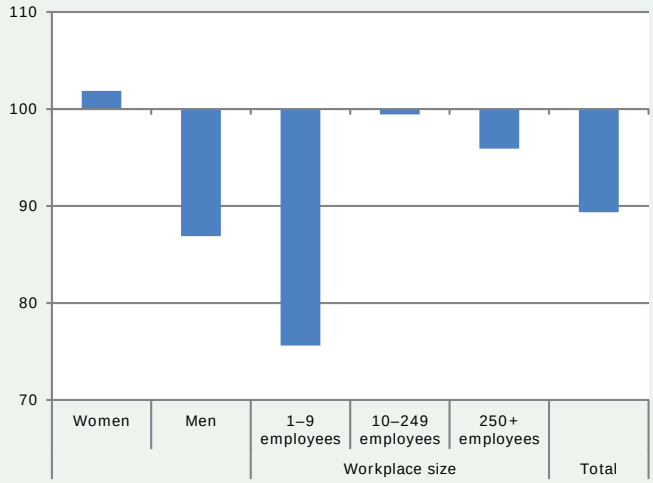
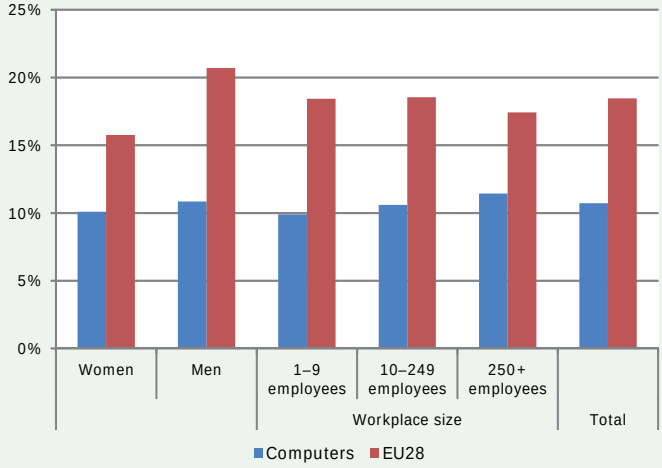


Figure 8: Poor work–life balance, by gender and workplace size



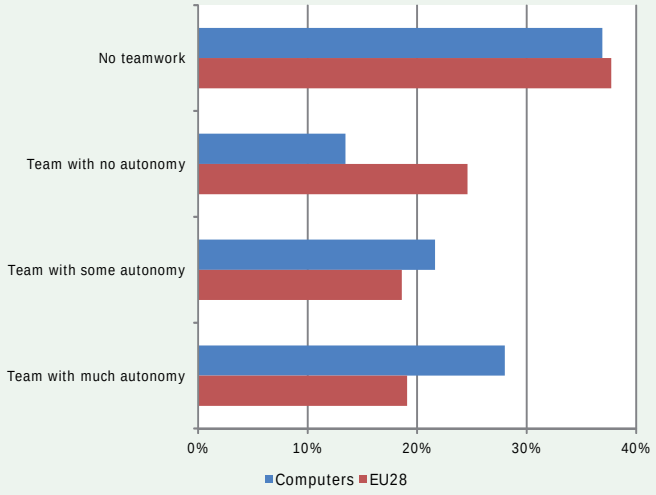
Work organisation

Teamwork

Teamwork has been proposed as an alternative to work organisation models based on high levels of labour division. As teamwork reflects a variety of practices, it can also assume a variety of forms. Different types of teamwork can be identified using the EWCS by looking at the level of autonomy within the teams. Teamwork for clerical workers in computer programming, consultancy and related activities (65%) is as prevalent as in the EU28 (64%) (Figure 9).

Workers in the sector tend to report teamwork with no autonomy less frequently and teamwork with much autonomy more frequently than workers in the EU28.

Figure 9: Teamwork and team autonomy



Task rotation

Task rotation is also an important feature of work organisation. Depending on how it is implemented, task rotation may require different skills from the worker ('multiskilling') or may not ('fixed task rotation') and is either controlled by management or by the workers themselves ('autonomous'). Task rotation has been shown to be beneficial for workers' well-being, and autonomous multiskilling systems in particular are associated with higher worker motivation as well as better company performance.

Task rotation and multiskilling are as prevalent in computer programming, consultancy and related activities as in the EU28 (Figure 10). Moreover, management-controlled fixed task rotation is less common in the sector than in the EU28, with the exception of micro-workplaces. Autonomous multiskilling, however, is much more prevalent in the sector than in the EU28 as a whole.

Female bosses

Computer programming, consultancy and related activities is a male-dominated sector and the percentage of workers with a female boss (8%) falls well below the proportion of women working in the sector (22%). However, the percentage of women working in the sector who report having a female boss (30%) is higher than the proportion of women working in the sector.

Skills and training

Overall, the majority of workers in computer programming, consultancy and related activities say that their present skills correspond well with their duties (Figure 11). In the sector, workers are slightly less likely to be 'over-skilled' than in the EU28, but more likely to be 'under-skilled'. Within the sector, younger workers are most likely to be under-skilled, while workers between the age of 35 and 49 are more likely to be over-skilled.

The percentage of workers in the sector who report having received employer-paid training is much higher than in the EU28 across all age groups and all workplace sizes (Figure 12).

Figure 10: Prevalence of task rotation, by workplace size

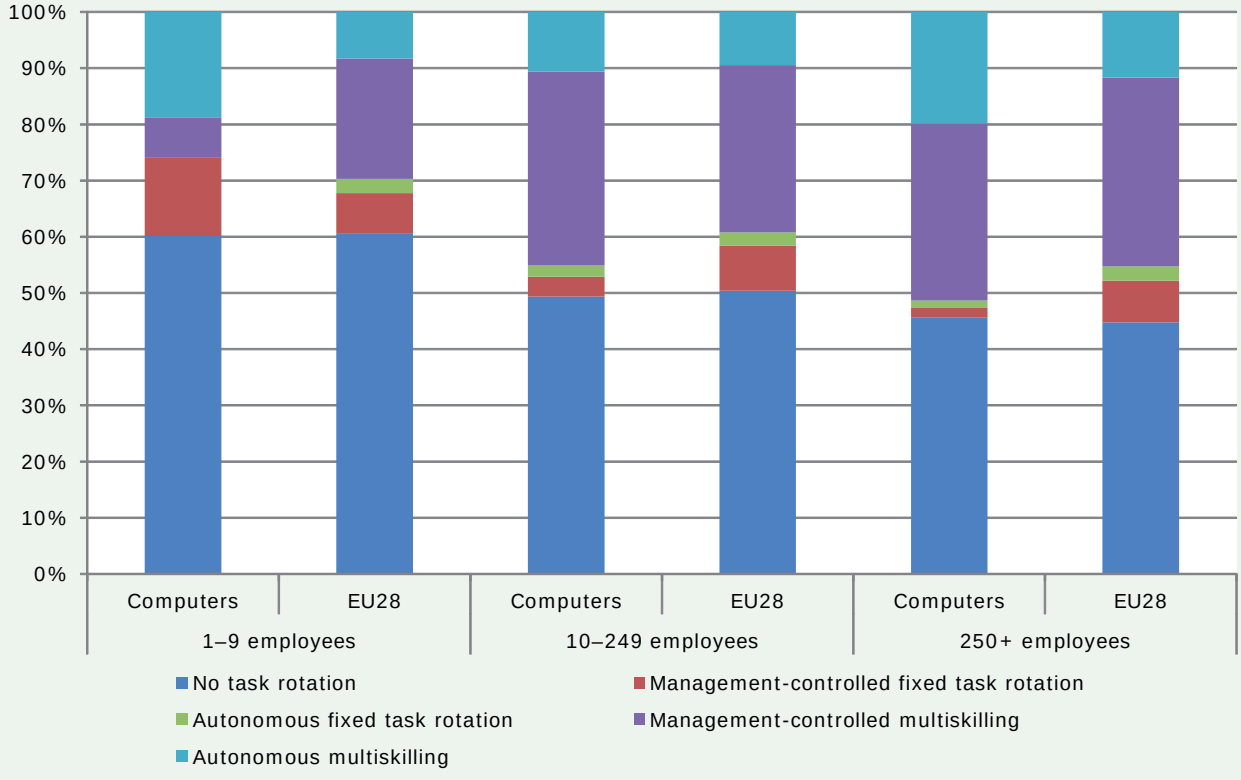


Figure 11: Match between skills and tasks, by gender and age

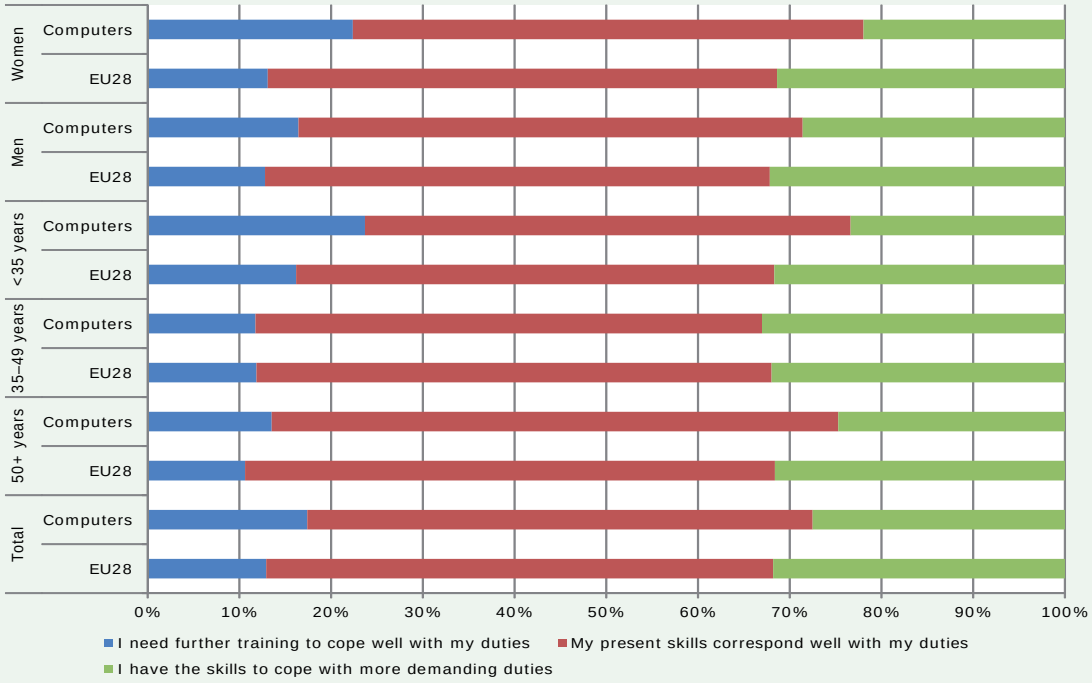


Figure 12: Employer-paid training, by workplace size and age

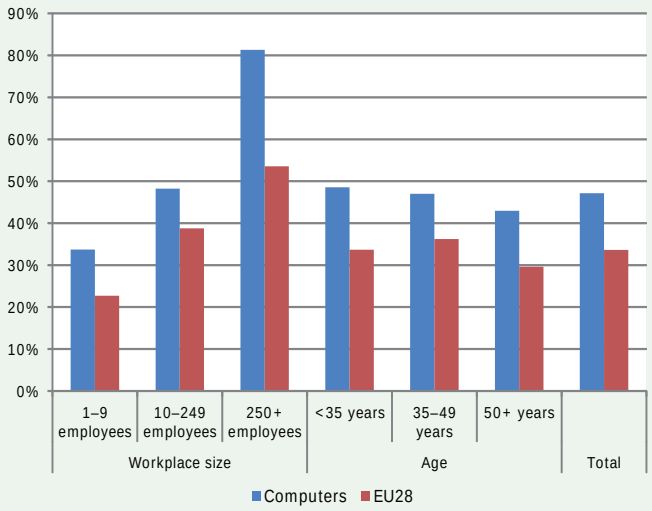
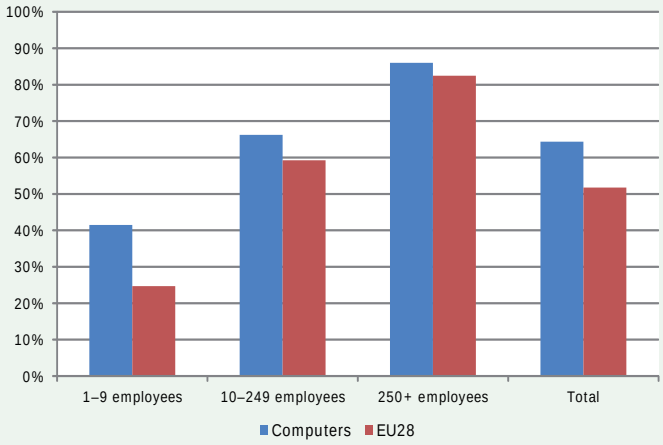


Figure 13: Availability of an employee representative at the workplace, by workplace size



Workers in large workplaces in the sector – as in the EU28 – receive more employer-paid training than those in smaller workplaces, as the level of training increases with workplace size.

Employee representation

The EWCS contains fairly limited information on formal employee representation. It asks whether an employee representative is present at the workplace and whether workers have raised an issue with an employee representative in the past year. Figure 13 shows the combined results of these questions (an employee representative has been considered to be 'available' if they were present at the workplace or when an issue was raised).

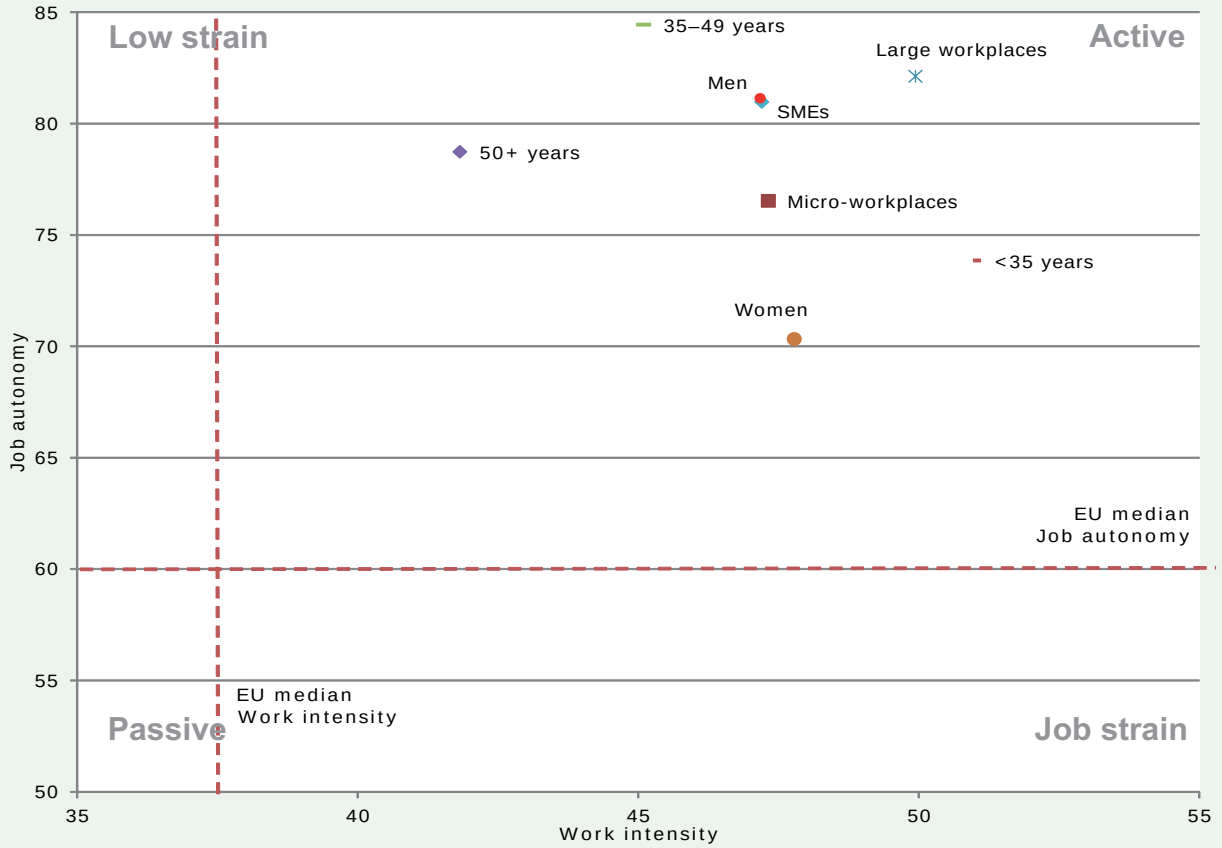
In 2010, 64% of employees in computer programming, consultancy and related activities reported that an employee representative was available, compared to 52% of workers in the EU28. Employee representation varies according to workplace size. The larger the workplace is, the more likely an employee representative is available. A much higher proportion of workers in micro-workplaces in the sector report the availability of an employee representative (42%) than the EU28 average for these workplaces (25%).

Psychosocial and physical environment

Job autonomy and work intensity

The psychosocial and physical environment impacts heavily on workers' well-being. According to the job demand and control model of the American sociologist Karasek (1979), workers are more likely to

Figure 14: Distribution of groups of workers by average levels of job autonomy and work intensity



suffer from work-related stress when they are faced with a high level of demand while being limited in the control they have over the way in which they carry out their job.

Figure 14 shows the likelihood of workers in computer programming, consultancy and related activities suffering from work-related stress. Groups of workers are plotted along two axes: job autonomy and work intensity.

The top-right quadrant in Figure 14 contains the averages for all categories in the sector. Workers in this quadrant tend to be in 'active' jobs with relatively high levels of work intensity and relatively high levels of job autonomy. Although their jobs can be very demanding, they have sufficient discretion to choose the way in which they do their job as well as the ability to develop coping strategies through active learning: and hence they are challenged into developing their potential to the full.

The top- and bottom-left quadrants of Figure 14 are empty. Workers in the bottom-left quadrant are likely to be in 'passive' jobs, characterised by relatively low levels of intensity and relatively low levels of autonomy. Their jobs are not sufficiently challenging: while workers in these types of jobs are not at high risk of work-related stress, they can be prone to frustration and low motivation as they are not in a position to change what they do and how they do it. The top-left quadrant indicates 'low strain' jobs, characterised by relatively low levels of work intensity and relatively high levels of job autonomy. Workers in this category are usually at low risk of stress, and are not as likely to suffer from frustration and loss of motivation as those in passive jobs. However, their jobs might not challenge them to realise their full potential.

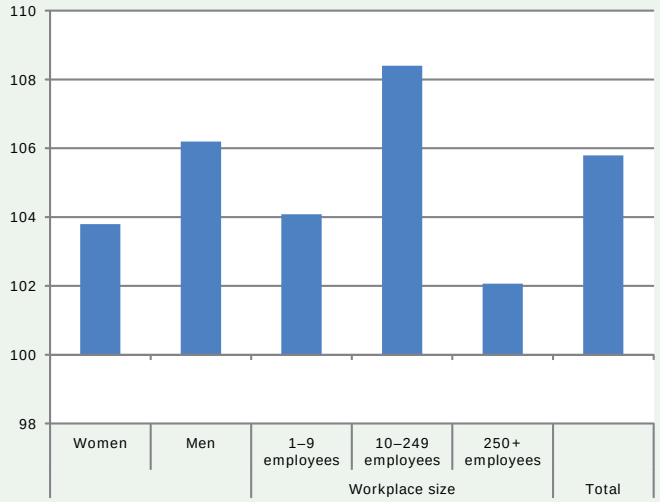
Finally, the most problematic category is 'job strain' in the bottom-right quadrant, similarly empty for computer programming, consultancy and related activities. Jobs falling into this quadrant are characterised by higher than average levels of intensity as well as lower than average levels of autonomy. Therefore, workers run the risk of accumulating high levels of unresolved strain, which can cause unhealthy stress levels and consequently a range of stress-related illnesses such as cardiovascular disease and mental health problems.

Social environment

A good social environment is characterised by the existence of social support and the absence of abuse at work. Social support can help workers deal with high levels of work intensity. The social environment in workplaces in the computer programming,

consultancy and related activities sector tends to be better than in the EU28 as a whole (Figure 15).

Figure 15: Index of good social environment (EU28=100), by gender and workplace size



Within the sector, men report a slightly better social environment than women, and the social environment tends to be better in SMEs than in micro- and large workplaces.

Physical risks

Workers in the computer programming, consultancy and related activities sector report much lower exposure to physical risk than the EU28 average. This trend holds for both male and female workers in the sector (Figure 16).

Among workers in the sector, 8% report they were not very well or not at all well informed about workplace risks, compared to 10% in the EU28 (Figure 17). A greater proportion of the sector's workers in SMEs report not being properly informed about workplace risks (13%) than in the EU28 as a whole (10%).

Figure 17: Not very well or not at all well informed about health and safety risks at work, by workplace size

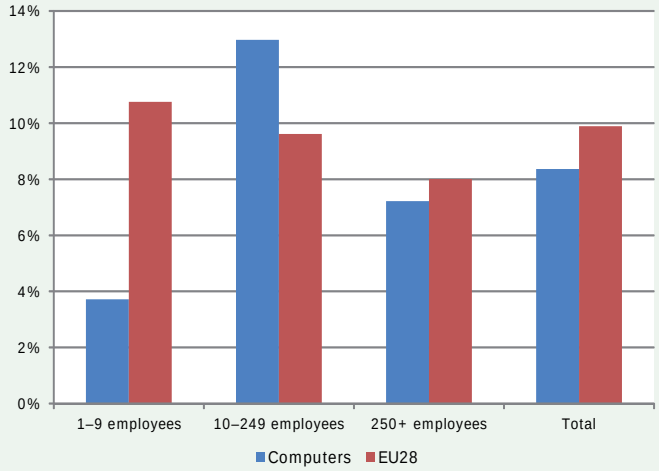


Figure 16: Indices of exposure to physical risks (EU28=100), by gender

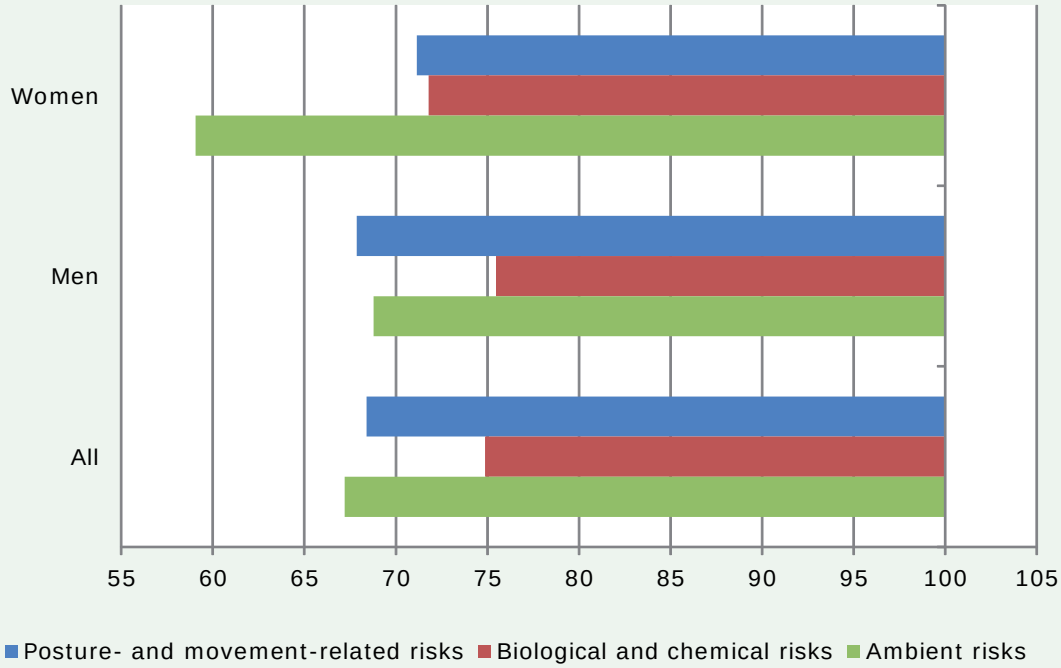
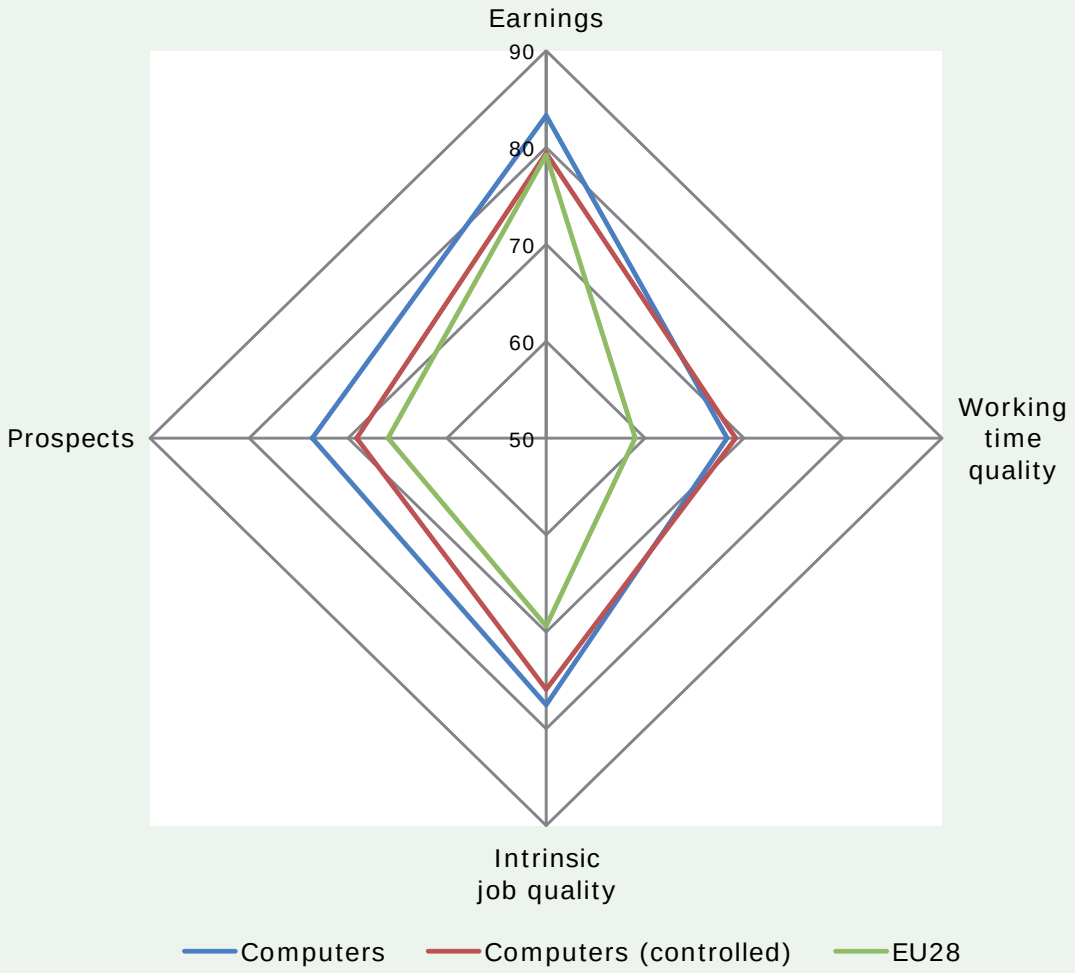


Figure 18: Job quality in industrial cleaning compared with the EU28



Note: Scores on all four indicators range from 0 to 100

Job quality

In the report *Trends in job quality in Europe*, the authors constructed four indices of job quality: earnings, prospects, intrinsic job quality and working time quality. The indices are built using job characteristics that are unambiguously associated with workers' well-being.

Figure 18 summarises job quality in the sector. It shows the average score for the sector on each of the indicators, with and without controlling for the structural characteristics of the sector's workers (age, gender, workplace size, education level and country), and for the EU28.

Job quality in the computer programming, consultancy and related activities sector on all dimensions is better than in the EU28. When controlling for background characteristics, the difference between the EU28 and the sector in terms of earnings, intrinsic job quality and prospects decreases; conversely, the score for working time quality increases, and so does the difference between the sector and the EU28. The differences also remain significant, indicating that the superior scores on all job quality dimensions are not caused by structural characteristics, but by the sector itself.

Health and sustainability of work

Working conditions can have both a positive and negative impact on the health of workers and on the sustainability of their jobs.

Figure 19 shows that computer programming, consultancy and related activities compare very favourably with the EU28. The incidence of absenteeism due to accidents in the sector is lower than in the EU. There is also a lower frequency of poor self-reported health and a lower percentage of workers reporting that their health is at risk because of work or that work affects their health negatively in the sector. Presenteeism (working when sick), however, is higher than in the EU28 as a whole. A higher proportion of workers in the sector think that they will be able to do their job at age 60 compared with the EU28. The less favourable higher rate of presenteeism does not remain significant after controlling for the structural characteristics of the workforce. While the low rate of poor self-reported health in the sector similarly does not remain significant, the other aspects remain significant, indicating overall good health and work sustainability for the sector.

Figure 19: Health and sustainability of work

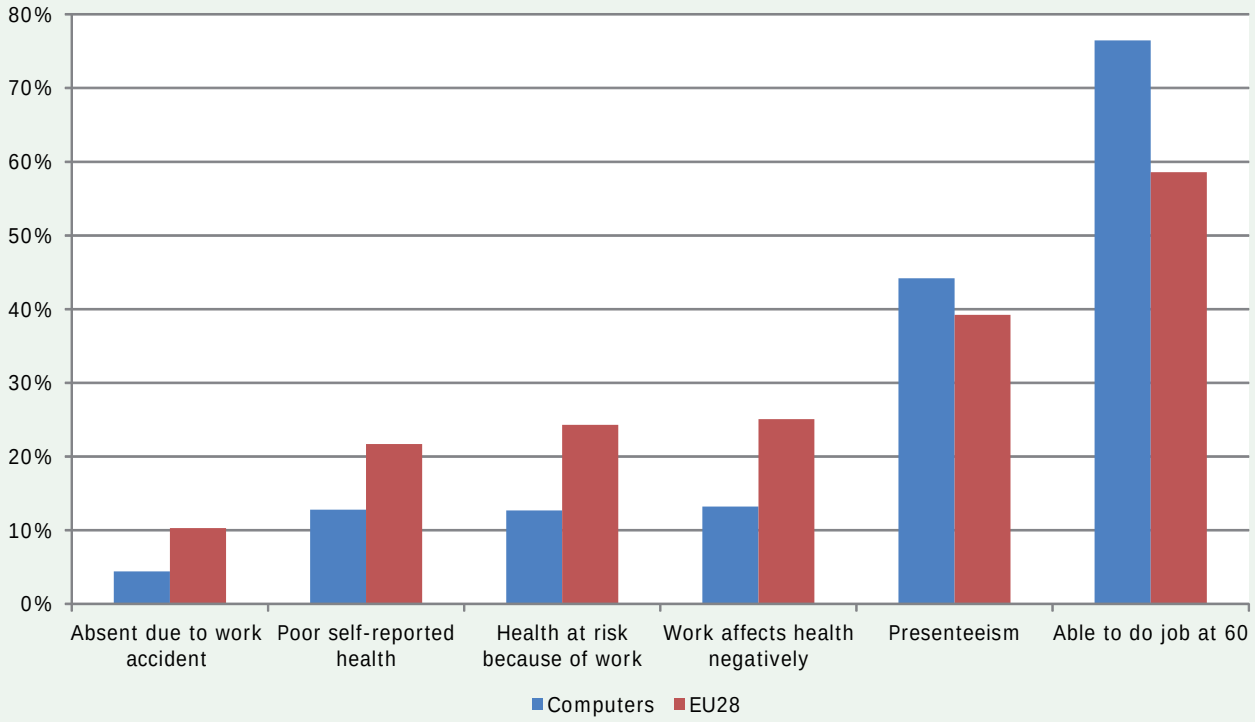
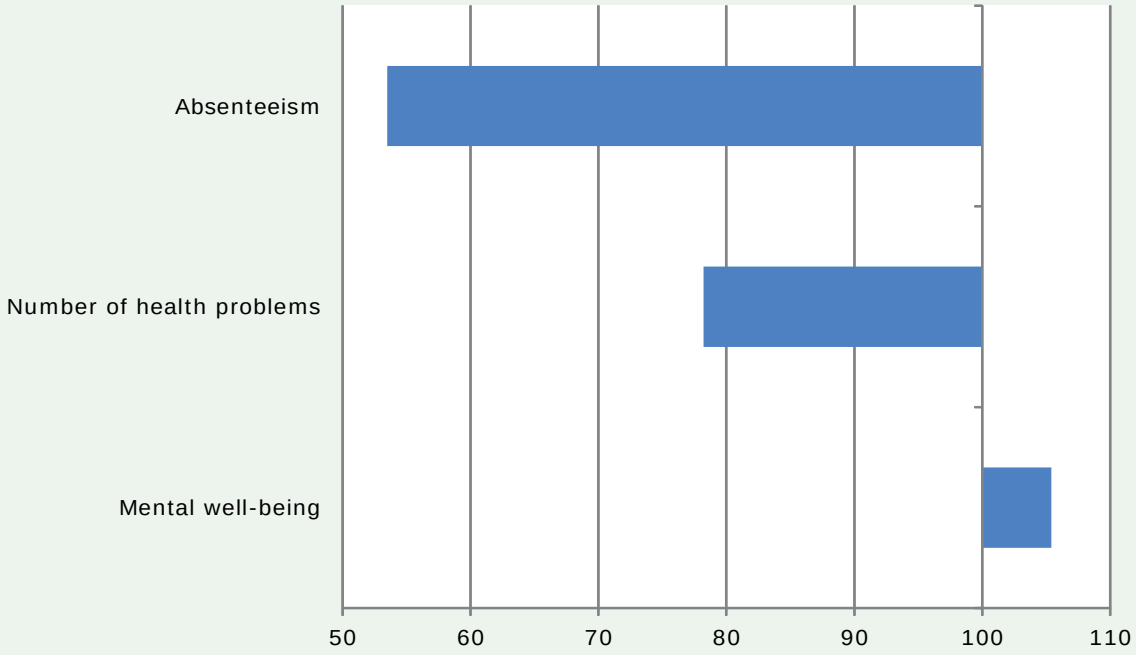


Figure 20 again shows a very favourable picture of the computer programming, consultancy and related activities sector, with mental well-being not differing significantly from the EU28 average, and absenteeism and the average reported number of health problems being less prevalent. However, the relatively low score of absenteeism does not remain significant after controlling for the structural characteristics of the sector's workforce. The low rate for the number of health problems in the sector remains significant and can be accounted for by sectoral characteristics.

It is important to keep in mind that the impact of work on health is a very gradual process that can take a long time and cannot be fully captured in a cross-sectional survey. The results in this section are likely to underestimate the often negative health effects that physically and psychologically strenuous working conditions can have.

Figure 20: Indices of health symptoms, mental well-being and absenteeism (EU28=100)



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European Working Conditions Survey

Eurofound developed its European Working Conditions Survey (EWCS) in 1990 in order to provide high-quality information on living and working conditions in Europe. Five waves of the survey have been carried out to date, enabling long-term trends to be observed and analysed.

The EWCS interviews both employees and self-employed people on key issues related to their work and employment. Fieldwork for the fifth EWCS took place from January to June 2010, with almost 44,000 workers interviewed in their homes in 34 countries – EU28, Norway, the former Yugoslav Republic of Macedonia, Turkey, Albania, Montenegro and Kosovo. The 5th EWCS was implemented by Gallup Europe, who worked within a strong quality assurance framework to ensure the highest possible standards in all data collection and editing processes.

The questionnaire covered issues such as precarious employment, leadership styles and worker participation as well as the general job context, working time, work organisation, pay, work-related health risks, cognitive and psychosocial factors, work-life balance and access to training. A number of questions were included to capture the impact of the economic downturn on working conditions.

For more information on the EWCS, see http://eurofound.europa.eu/european-working-conditions-surveys-ewcs

Sectoral analysis

The report *Working conditions and job quality: Comparing sectors in Europe* and the series of 33 sectoral information sheets aim to capture the diversity prevalent across sectors in Europe in terms of working conditions and job quality. The report pinpoints trends across sectors in areas such as working time and work–life balance, work organisation, skills and training, employee representation and the psychosocial and physical environment. It identifies sectors that score particularly well or particularly poorly in terms of job quality and sheds light on differences between sectors in terms of health and well-being.

For more information, see http://eurofound.europa.eu/comparing-working-conditions-across-sectors-in-europe

Further information

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