



A New Method to Understand Occupational Gender Segregation in European Labour Markets

Dr Brendan Burchell, Mr Vincent Hardy,
Professor Jill Rubery and Dr Mark Smith

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FGB - Fondazione Giacomo Brodolini

Via Solferino 32
00185 Rome
Italy
Tel +39 064424 9625
Fax +39 0644249565
www.fondazionebrodolini.it



IRS - Istituto per la Ricerca Sociale

Via XX Settembre 24
20123 Milano
Italy
Tel. +39 2467 641
www.irs-online.it



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Table of Contents

Executive Summary	7
Résumé	13
Zusammenfassung	19
Introduction	25
1. Conceptual and theoretical review	27
1.1 Defining segregation	27
1.2 How and why does segregation matter?	28
1.3 Identifying the causes and moderating the consequences of segregation	31
2. Data analyses	37
2.1 Data	37
2.2 Patterns of segregation	39
2.3 Trends in country-level segregation	44
2.4 Exploring segregation in the Top 20 occupations	49
2.5 Job quality in the Top 20 occupations	60
2.6 Occupations and workforce characteristics	62
2.7 Segregation and working conditions	71
2.8 Gender segregation by sector	87
2.9 Segregation in 2012	93
2.10 Pay and occupational segregation	96
3. Conclusions, implications and future directions	105
References	109
Appendices	115

List of Figures

Figure 1. Percentage of women in mixed (40%-60% female), female-dominated and male-dominated occupations – EU-26, 2010	39
Figure 2. Percentage of men in mixed (40%-60% male), female-dominated and male-dominated occupations – EU-26, 2010	40
Figure 3. Distribution of part-time and full-time work by gender and country – EU-27, 2010	41
Figure 4. Percentage of full-time, female employees working in mixed, male-dominated or female-dominated occupations – EU-26, 2010	42
Figure 5. Percentage of part-time female employees working in mixed, male-dominated or female-dominated occupations – EU-26, 2010	42
Figure 6. Difference in share of employment when men have child under 15, by country – EU-26, 2010	43
Figure 7. Difference in segregation, male employees 2010 – 25-34 and 35-44 age groups	44
Figure 8. Hakim index for women by country – EU-26, 2010	45
Figure 9. Hakim index for men by country – EU-26, 2010	46
Figure 10. Percentage point change in women's share of employment – EU-26, 2005-2010	46
Figure 11. Percentage point change in men's share of employment – EU-26, 2005-2010	47
Figure 12. Women in female-dominated occupations, 1995-2010	48
Figure 13. Women in mixed occupations, 1995-2010	48
Figure 14. Women in male-dominated occupations, 1995-2010	49
Figure 15. Percentage of female employees by Top 20 occupations – EU-26, 2010	50
Figure 16. Top occupations by gender share and volume – EU-26, 2010	5151
Figure 17. Percentage of women employed as <i>Corporate managers</i> and occupation's share of total employment – EU-26, 2010	52
Figure 18. Percentage of women employed as <i>Food, wood and textile workers</i> and occupation's share of total employment – EU-26, 2010	53
Figure 19. Percentage of women employed as <i>Teaching professionals</i> and occupation's share of total employment – EU-26, 2010	54
Figure 20. Percentage of women, Top 20 occupations – EU-26, 2005-2010	56
Figure 21. Evolution of male and female employment, by occupation – EU-26, 2005-2010	57
Figure 22. Percentage of women, Top 20 occupations – EU-12, 1995-2010	58
Figure 24. Share of temporary and permanent contract by gender and occupation – EU-26, 2010	60
Figure 25. Percentage of men and women with supervisory responsibilities by occupation – EU-26, 2010	61
Figure 26. Percentage of men by occupation and age group – EU-26, 2010	62
Figure 27. Percentage of men by occupation and age group – EU-26, 2005	63
Figure 28. Percentage point difference in male share of employment 2005-2010, 25-34 age group – EU-26, 2010	64
Figure 29. Over and under-representation of women living with a child under 15 years of age by occupation – EU-26, 2010	65
Figure 30. Percentage of men with higher, upper secondary and lower secondary education by occupation – EU-26, 2010	66
Figure 31. Percentage of women with higher, upper secondary and lower secondary education by occupation – EU-26, 2010	66
Figure 32. Percentage point difference in share of employment between men and women with lower secondary education by occupation – EU-26, 2010	67
Figure 33. Percentage point difference in share of employment between men and women with higher education by occupation – EU-26, 2010	68
Figure 34. Volume of men and women with higher education by Top 20 occupations – EU-26, 2010	69
Figure 35. Difference in job tenure, men and women (months), 25-34 age group – EU-26, 2010	70
Figure 36. Difference in job tenure, men and women (months) 45-54 age group – EU-26, 2010	71
Figure 37. Distribution of part-time and full-time work across occupations, men and women – EU-26, 2010	72
Figure 38. Mean hours usually worked by occupation, men and women – EU-26, 2010	73
Figure 39. Difference in working hours between men and women (12-50h per week) – EU-26, 2010	74
Figure 40. Men, very long and very short hours by occupation – EU-26, 2010	74
Figure 41. Women, very long and very short hours by occupation – EU-26, 2010	75
Figure 42. Difference between hours usually worked and hours wished by occupation and gender – EU-26, 2010	
Figure 43. Difference between hours usually worked and hours wished by occupation (0-19h usually worked) – EU-26, 2010	77
Figure 44. Difference between hours usually worked and hours wished by occupation (48+ hours usually worked) – EU-26, 2010	77
Figure 45. Irregular hours index, male and female averages by occupation – EU-26, 2010	78
Figure 46. Accidents resulting in injury over the last 12 months, all employees – EU-26, 2007	79
Figure 47. Accidents resulting in injury over the last 12 months – EU-26, 2007	80
Figure 48. Illnesses caused or made worse by work over the last 12 months, all employees – EU-26, 2007	81
Figure 49. Illnesses caused or made worse by work over the last 12 months – EU-26, 2007	81
Figure 50. Exposure to psychological risks, by occupation – EU-26, 2007	82
Figure 51. Percentage point difference in men and women's exposure to violence, harassment, bullying – EU-26, 2007	83
Figure 52. Percentage point difference in men and women's exposure to overwork – EU-26, 2007	84
Figure 53. Exposure to physical risks, by occupation – EU-26, 2007	85

Figure 54. Percentage point difference in exposure to environmental risks, men and women – EU-26, 2007	86
Figure 55. Percentage point difference in exposure to difficult postures and heavy loads, men and women – EU-26, 2007	86
Figure 56. Percentage of female employees by industrial sector – EU-27, 2010	87
Figure 57. Difference in women's employment between private sector and public services (percentage point) – EU-26, 2010	88
Figure 58. Segregation by sector and country, women – EU-27, 2010	89
Figure 59. Segregation by sector and country, men – EU-27, 2010	90
Figure 60. Women and men with higher education by sector – EU-27, 2010	90
Figure 61. Women and men with secondary education by sector – EU-27, 2010	91
Figure 62. Women and men with primary education by sector – EU-27, 2010	92
Figure 63. Percentage of female employees by Top 20 occupations – EU-26, 2012	93
Figure 64. Percentage of female employees by Top 30 occupations – EU-26, 2012	94
Figure 65. Percentage of women in mixed, female-dominated and male-dominated occupations – EU-26, 2010	94
Figure 66. Proportion of men in mixed, female-dominated and male dominated occupations – EU-26, 2012	95
Figure 67. Ratio of men and women's pay to male average pay – EU-27, 2010	96
Figure 68. Ratio <i>Sales workers</i> female pay to average male pay, by country – EU-27, 2010	101
Figure 69. Ratio <i>Cleaners and helpers</i> female pay to average male pay, by country – EU-27, 2010	102
Figure 70. Ratio <i>Teaching professionals</i> female pay to average male pay, by country – EU-27, 2010	102
Figure 71. Ratio <i>Business administration associate professionals</i> female pay to average male pay, by country – EU-27, 2010	103

List of Tables

Table 1. Gender segregation: The five Vs	30
Table 2. Trends in gender segregation indices for occupation and sector in 2007 and 2012	34
Table 3. Percentage of non-standard employees in the Top 20 and in all occupations	39
Table 4. Relationship between occupation's share of total employment and percentage of women employed in occupation – EU-26, 2010	55
Table 5. Percentage of women and men employed in mixed, male, and female-dominated occupations 2010 and 2012	95

Country Abbreviations

AT	Austria	FR	France	NL	Netherlands
BE	Belgium	EL	Greece	NO	Norway
BG	Bulgaria	HU	Hungary	PL	Poland
CY	Cyprus	IE	Ireland	PT	Portugal
CZ	Czech Republic	IS	Iceland	RO	Romania
DE	Germany	IT	Italy	SE	Sweden
DK	Denmark	LT	Lithuania	SI	Slovenia
EE	Estonia	LU	Luxembourg	SK	Slovak Republic
ES	Spain	LV	Latvia	UK	United Kingdom
FI	Finland	MT	Malta		

Executive Summary

This report presents a **new way of investigating gender segregation by occupation**. The analyses show conclusively that **the nature of the occupation itself is important, above and beyond whether an occupation is male-dominated, female-dominated or mixed**, and above and beyond whether an occupation is blue-collar or white-collar. In other words, occupation matters! In this report we demonstrate how it is not only the gender of the worker but also the gender characteristics of the occupation – male-dominated, female dominated or mixed – that may lead to different working experiences.

What is Gender Segregation?

Gender segregation – the tendency for men and women to do different jobs – is pervasive across Europe. Nevertheless it may take different forms and changes over time, declining in some occupations but emerging in new guises. It is most commonly considered at the occupational level, but also applies by sector, workplace and form of employment contract. The **interest in segregation arises mainly from the role it plays in gender inequality**, through its effects in shaping opportunities for women and men and on earnings and working conditions.

The **effects of segregation are not always negative for women**; not all female-dominated jobs are low paid or involve poor working conditions. Higher rates of female employment may even be associated with higher levels of segregation and segregation may provide some protection against job loss in economic downturns. Yet **segregation also limits employment choices and access to higher-level jobs and may lead to higher risks of job loss under austerity policies** to reduce public sector jobs where women predominate. It may also facilitate the undervaluation of female-dominated occupations. This relationship between segregation and undervaluation of women's work has been attributed to the five Vs: **visibility** (skills may not be recognised), **valuation** (skills may not be highly valued), **vocation** (caring skills are not rewarded as they provide high satisfaction), **value-added** (women's jobs are concentration in low-value added or labour intensive occupations) and **variance** (jobs that do not comply with a male norm of full-time work may be less valued).

Why does Segregation Persist?

Explanations for the prevalence and persistence of gender segregation tend to emphasise either supply-side or demand-side factors. **Supply-side explanations tend to emphasise either the impact of women's role as mothers on their**

career “choices” or notions of differences in women’s talents and orientations compared to men. Research suggests that the **“choices” women make are conditioned by actual employment and childcare support options** in specific labour markets. **On the demand side, employer behaviour helps create and sustain gender segregation** through their employment and recruitment practices that may exclude women or men from certain jobs.

How should we Monitor Segregation?

Definitions and **measures of segregation vary for both conceptual and methodological reasons**. One methodological challenge is the level of disaggregation of occupational classifications: too much aggregation leads to male- and female-dominated occupations being present within the larger occupational categories while with too little aggregation segregation is easily lost in a high level of detail. **The traditional use of indices to measure segregation does not capture interactions between segregation and various working conditions and worker outcomes**. Furthermore, changes in the value of indices may disguise divergent trends for women and men. Our analysis shows that there is a heavy price to pay in terms of lost detail whenever occupations are aggregated together into statistically convenient groups or when single indices are used to capture segregation.

What is the Current State of Segregation in Europe?

If we first consider all occupations, we find that **just 18% of women work in mixed occupations (60-40% men & women)**, 69% in female-dominated occupations (>60% female) and only 13% in male-dominated occupations (>60% male). In contrast, only **15% of male employees worked in mixed occupations** and 59% in male-dominated occupations. This means more men- 26%- work in occupations where they are a minority- that is female-dominated occupations.

How does the New Measure Work?

By building on previous work for EuroFound (2013), **we focus our analysis of segregation on the 20 most common occupations**, ranked from the most male-dominated (building workers) to the most female-dominated (personal care workers). In 2010 the Top 20 ISCO-88 2-digit occupations account for 95% of all the employed across the EU-27 (minus Malta). **This approach, provides a more illuminating and insightful framework for studying the nature of segregation and its impact**. In this report we apply this new measure using **five different European-wide data sets**.

Women tend to be virtually shut out of certain occupations among the 20 - accounting for less than 5% of *Mechanics and metal workers; Building workers and miners; and Drivers*. **Men are not excluded from any occupation to the same extent** but account for less than a quarter of *Associate nurses and healthcare assistants* occupation, *Teaching associate professionals* and *Customer service clerks*.

Over time the segregation of the top 20 occupations has remained fairly stable. Nevertheless **large variations in segregation by occupation exist across EU countries**. These include differences in levels of segregation within the same oc-

cupations and different proportions of the male-dominated, female-dominated and mixed occupations in different countries.

What is the Impact of Segregation?

One of the **strengths of this approach to exploring segregation is the possibility to analyse the interaction between segregation and job quality outcomes**. For example, in the case of supervisory responsibilities we find that **opportunities for supervisory responsibilities are highly concentrated in certain occupations for both women and men** and these opportunities tend to be low in female-dominated occupations. **Men are also more likely to be supervisors than women in every single occupational group**, even the most female-dominated ones. Similarly gender **pay gaps in favour of men exist in almost all occupations** but average pay levels within female-dominated and male-dominated occupations vary according to the nature of the work. This means that some female-dominated occupations provide average pay levels for women as well as men that exceed men's average pay in the labour market as a whole.

Which Workers are Segregated?

We can also see the effects of worker characteristics on segregation and occupational position. For example we see that men **tend to increase their share of better-paying occupations as they get older while women become increasingly excluded from the professional, white-collar occupations** associated with higher pay and more concentrated in more female-dominated, less skilled occupations with shorter hours. Similarly we find that **mothers of children under 15 are under-represented in male-dominated occupations** while for fathers there is a clear tendency to be over-represented in male-dominated occupations and under-represented in female-dominated occupations.

How does Segregation Impact on Time at Work?

The link between segregation and working time is strong. There is a clear tendency for the proportion of women working part-time to increase as the occupation becomes more female-dominated. **Three quarters of women employees working part-time are found in female-dominated occupations** and 45% of male part-timers work in female-dominated occupations compared to just 26% of all men. On the other hand, **men's average working hours are longer than women's in every occupation but gender gaps are smallest in mixed occupations**, with much longer hours for men in both male-dominated and female-dominated occupations. We find **female-dominated occupations also have lower levels of irregular scheduling of working hours** but men in female-dominated occupations experience high levels of irregularity, particularly in *Service, personal care and security workers* occupation. **Men and women in mixed occupations have the most regular schedules.**

How does Segregation shape Risks at Work?

The relationship between gender, type of occupation, segregation and risk is complex. Our analyses show that **both men and women in male-dominated, and especially blue-collar, occupations face a much greater risk of accidents at work and environmental risks**. However, the **highest proportions of workers reporting health problems from their employment are found in female-dominated occupations**. Similarly **exposure to harassment, bullying, violence or the threat of violence increases as the occupation becomes more female-dominated**. Risks to posture, heavy loads and overwork appear in both male- and female-dominated occupations and are less clearly related to the gender segregation by occupation.

What about Segregation by Sector?

Segregation also applies by sector. Women have higher shares of total employment in the public services than in the private sector. Moreover, within almost all occupations, **women have a higher share of the jobs in public services sectors** compared to other industrial sectors. **Public services sectors provide more opportunities for women in high-paid occupations**, including as *Corporate managers* and even in male-dominated occupations such as *Engineering and computing technicians* than are available to women in private sectors.

What does this Mean for Policy?

These analyses provide a number of **important insights for policy makers**. Firstly, the new approach represents **an innovative framework for monitoring inequalities**. The multiple interactions between segregation, occupational characteristics and working conditions mean that it is only through a disaggregated analysis by individual occupation that we can investigate these effects. We are able to show two effects of occupational segregation: **effects which appear to be related to the gender of the job holder** and **effects which are associated with the gendering of the occupational category**, and impact upon both male and female job holders in the occupation. These effects shed light on the dynamics of occupational segregation and also provide some important pointers for understanding how to address gender gaps. Furthermore the evidence that both **men and women benefit from working in mixed occupations provides a new lever for policy makers** to address segregation by occupation.

Secondly, the approach provides **a framework for assessing policies**. Tackling gender inequality in European labour markets is inherently difficult, particularly in light of the pervasive effects of gender stereotyping even before women and men enter the labour market. Raising awareness of the **interaction of segregation with working conditions, job quality and other job characteristics underlines the consequences of the sex segregation of women and men**. The results highlight the interactions between segregation by occupation and sector and by extension the risks to good quality employment, particularly for women, of **policy measures threatening pay and conditions in European public services**. Furthermore the analyses underline the link between the worker characteristics and the types of job they do. Many of the patterns we see in the labour market data used in this report are in part **the product of the unequal gender divisions of cooking, cleaning and caring work within the household**. A better understand-

ing of these interactions offers the opportunity to **develop of more effective and focused policies to reduce both gendered occupational segregation** and also the inequalities that arise out of occupational gender segregation

In short these analyses give us the **best mechanism yet to evaluate policy proposals and assess their probable effects on gender inequality** by taking into account of gender, gender segregation and occupation alongside other characteristics of both workers and jobs.

Résumé

Le présent rapport illustre une **nouvelle façon d'étudier la ségrégation professionnelle hommes-femmes**. Les analyses démontrent de manière concluante qu'en tant que telle **la nature du métier est importante, au-delà du fait que ce dernier soit un métier à prédominance masculine, féminine ou mixte** et du fait qu'il s'agisse d'une profession de col bleu ou de col blanc. Dans le cadre du présent rapport, nous établirons que ce n'est pas uniquement le genre du travailleur, mais aussi les caractéristiques sexospécifiques du métier (à prédominance masculine, féminine ou mixte) qui peuvent être à la base d'expériences professionnelles diverses.

Qu'est-ce que la ségrégation hommes-femmes?

La ségrégation hommes-femmes (à savoir, la tendance, pour les hommes et les femmes, à embrasser des métiers différents) est omniprésente dans l'ensemble de l'Europe. Néanmoins, elle peut adopter des formes diverses et elle change au fil du temps, pour décliner concernant certains métiers et émerger sous de nouveaux aspects. En général, elle est appréciée au niveau professionnel, mais elle existe également en fonction des secteurs, des lieux de travail et des types de contrat de travail. **L'intérêt suscité par la ségrégation découle, principalement, du rôle que celle-ci joue sur l'inégalité des sexes**, dans la mesure où elle façonne les opportunités qui s'offrent aux femmes et aux hommes, en termes de salaires et de conditions de travail.

Les **effets de la ségrégation ne sont pas toujours négatifs pour les femmes** ; tous les métiers à prédominance féminine ne sont pas sous-payés ou n'impliquent pas des conditions de travail peu satisfaisantes. Les taux plus élevés d'emploi chez les femmes peuvent même être associés à des niveaux accrus de ségrégation, et la ségrégation peut représenter une certaine protection vis-à-vis des licenciements en période de récession économique. Néanmoins, **la ségrégation limite aussi les choix professionnels, ainsi que l'accès à des postes de plus haut niveau, et elle peut comporter un risque plus marqué de perte d'emploi dans le cadre des politiques d'austérité** visant à réduire les emplois dans le secteur public, au sein duquel les femmes sont majoritaires. De même, elle peut contribuer à la sous-évaluation des métiers à prédominance féminine. Le rapport entre la ségrégation et la sous-évaluation du travail des femmes a été imputé aux cinq V, à savoir : la **visibilité** (les compétences peuvent ne pas être reconnues), la **valorisation** (les compétences peuvent ne pas être considérées comme élevées), la **vocation** (les compétences dans le domaine des soins à la personne ne sont pas récompensées, car elles procurent une haute satisfaction), la **valeur ajoutée** (les postes de travail occupés par les femmes se concentrent dans les métiers à faible valeur ajoutée ou à forte intensité de main-d'œuvre) et la **variance** (les emplois qui ne se conforment

pas à la norme masculine du travail à plein temps peuvent se voir attribuer une moindre valeur).

Pourquoi la ségrégation persiste-t-elle?

Les explications de la prévalence et de la persistance de la ségrégation entre les hommes et les femmes tendent à mettre en avant soit les facteurs tenant à l'offre, soit ceux tenant à la demande. **Les explications fondées sur l'offre tendent à souligner soit l'impact du rôle joué par les femmes en tant que mères sur leurs « choix » professionnels**, soit des notions tenant aux différences quant aux talents et aux orientations des femmes par rapport aux hommes. Les recherches menées suggèrent que les « **choix** » faits par les femmes sont en réalité conditionnés par les options d'emploi et de prise en charge des enfants existantes sur les marchés du travail spécifiques. Pour ce qui est des facteurs tenant à la demande, le comportement des employeurs contribue à la création et au maintien de la ségrégation de genre, par l'intermédiaire de leurs pratiques d'embauche et de recrutement, susceptibles d'exclure les femmes ou les hommes de certains postes de travail.

Comment mesurer et analyser la ségrégation?

Les définitions et les **mesures de la ségrégation varient, et cela aussi bien pour des raisons conceptuelles que méthodologiques**. Le niveau de désagrégation des classifications professionnelles constitue un défi méthodologique majeur : trop d'agrégation induit le risque d'inclure de métiers à prédominance masculine et féminine au sein des catégories professionnelles plus larges, tandis qu'avec trop peu d'agrégation l'analyse de la ségrégation se perd souvent dans un degré élevé de détail. Le **recours traditionnel à des indices pour mesurer la ségrégation ne saisit pas les interactions entre la ségrégation et les conditions de travail variées ou les résultats pour les travailleurs**. Par ailleurs, les modifications de la valeur des indices peuvent occulter des tendances divergentes pour les hommes et pour les femmes. Notre analyse met en évidence qu'il existe un prix élevé à payer en termes de déperdition de détails lorsque les métiers sont rassemblés au sein de grandes classes de métiers, plus pratiques du point de vue statistique, ou lorsque des indices isolés sont utilisés pour saisir la ségrégation.

Quel est l'état actuel de la ségrégation en Europe?

Si nous nous intéressons, en tout premier lieu, à l'ensemble des métiers, nous constatons que **seulement 18 % des femmes exercent des professions mixtes (60-40 % d'hommes et de femmes)**, 69 % des métiers à prédominance féminine (>60 % de femmes) et uniquement 13 % des professions à prédominance masculine (>60 % d'hommes). En revanche, seulement **15 % des salariés de sexe masculin exercent des métiers mixtes** et 59 % des professions à prédominance masculine. Cela implique que plus d'hommes (26 %) exercent des professions dans lesquelles ils sont minoritaires, à savoir, des métiers à prédominance féminine.

Comment fonctionne la nouvelle mesure?

Nous nous sommes fondés sur notre étude précédente pour EuroFound (2013), pour **concentrer notre analyse afférente à la ségrégation sur les 20 métiers les plus communs**, allant de ceux à la prédominance masculine la plus marquée (les ouvriers de la construction) à ceux à prédominance éminemment féminine (professionnels des services à la personne). En 2010, le top 20 des professions à codes à deux chiffres de la CITP-88 représentait 95 % de l'ensemble des salariés de l'UE-27 (à l'exception de Malte). **Cette approche fournit un cadre plus instructif et éclairé pour l'étude de la nature de la ségrégation et de ses impacts.** Dans le cadre du présent rapport, nous appliquerons cette mesure en utilisant **cinq ensembles de données différents à l'échelle européenne.**

Les femmes tendent à être virtuellement exclues de certains métiers parmi ceux du top 20, dans lesquels elles représentent moins de 5 % des travailleurs, à savoir : les *mécaniciens et les ouvriers de la métallurgie*, les *ouvriers du bâtiment et les miniers et les conducteurs*. **Les hommes ne sont exclus d aucun métier dans une mesure équivalente**, mais ils représentent moins d'un quart des *cadres infirmiers et des assistants médicaux*, des *spécialistes de l'enseignement* et des *employés de réception et d'information de la clientèle*.

La ségrégation professionnelle constatée dans les métiers du top 20 est demeurée relativement stable dans le temps. Néanmoins, **dans les États membres de l'UE, il existe des variations de taille en fonction des métiers.** Ces variations comportent, selon les pays, des différences quant aux niveaux de ségrégation au sein des mêmes métiers, ainsi que des proportions variables concernant les professions à prédominance masculine, féminine ou mixtes.

Quel est l'impact de la ségrégation?

L'un des **points forts de l'approche que nous avons adoptée pour étudier la ségrégation est constitué par la possibilité d'analyser les interactions existant entre la ségrégation et les résultats en termes de qualité de l'emploi.** C'est ainsi, par exemple, que s'agissant des fonctions de supervision, on constate que les **opportunités d'emploi en la matière se trouvent hautement concentrées au sein de certains métiers, et cela tant pour les femmes que pour les hommes**, et que ces opportunités tendent à être rares dans les professions à prédominance féminine. **De même, les hommes ont plus de chances d'occuper des postes de supervision que les femmes, et cela au sein de chacun des groupes professionnels**, y compris dans ceux à prédominance éminemment féminine. D'une manière similaire, **des écarts de rémunération en fonction du sexe au profit des hommes existent dans la plupart des métiers**, mais les niveaux moyens des salaires au sein des professions à prédominance féminine ou masculine varient en fonction de la nature du travail accompli. Cela implique que certains métiers à prédominance féminine proposent des niveaux moyens de salaire plus élevés, aussi bien aux femmes qu'aux hommes, supérieurs aux salaires payés aux hommes sur le marché du travail dans son ensemble.

Quels sont les travailleurs victimes de ségrégation?

On peut également observer les effets des caractéristiques des travailleurs dans la ségrégation et la catégorie professionnelle. On constate ainsi que les hommes **tendent à être plus nombreux à occuper des emplois mieux payés avec l'âge, alors que les femmes dans la même situation se retrouvent progressivement exclues des emplois de col blanc**, associés à de plus hauts salaires, et concentrent leur activité dans des métiers à prédominance plus féminine, moins qualifiés et impliquant un temps de travail plus court. D'une manière similaire, on constate également que les **mères d'enfants âgés de moins de 15 ans se trouvent sous-représentées dans les métiers à prédominance masculine**, alors que pour les pères se dégage une tendance claire à être surreprésentés dans les mêmes métiers, et sous-représentés dans les professions à prédominance féminine.

Quelles sont les répercussions de la ségrégation sur le temps de travail?

Le lien entre la ségrégation et le temps de travail est fort. Le taux de femmes qui travaillent à mi-temps tend clairement à être plus élevé dans les métiers à prédominance féminine. **Les trois quarts des salariées qui travaillent à mi-temps occupent des emplois à prédominance féminine** et 45 % de leurs homologues masculins exercent des métiers à prédominance féminine, contre seulement 26 % de l'ensemble des hommes. Par ailleurs, **en moyenne, les hommes travaillent plus d'heures que les femmes dans tous les métiers, mais les écarts entre les sexes sont plus faibles dans les professions mixtes**, le nombre d'heures travaillées étant bien plus élevé, pour les hommes, dans les métiers à prédominance masculine ou féminine. Nous avons constaté que les **professions à prédominance féminine présentaient également des degrés inférieurs d'irrégularité des horaires de travail**, mais que les hommes qui occupent des emplois à prédominance féminine se voient confrontés à des niveaux plus élevés d'irrégularité, notamment dans le secteur des *services, des services à la personne et de la sécurité*. **Ce sont les hommes et les femmes qui font des métiers mixtes qui présentent les horaires les plus réguliers.**

Comment la ségrégation configure-t-elle les risques sur le lieu de travail?

Les rapports entre le sexe, le type de métier, la ségrégation et le risque sont complexes. Les analyses que nous avons menées mettent en évidence qu'aussi bien **les hommes que les femmes qui occupent des emplois à prédominance masculine, et notamment les postes de col bleu, se voient confrontés à des niveaux de risque d'accident ou environnementaux bien plus marqués sur le lieu de travail**. Néanmoins, **les taux plus élevés de travailleurs à signaler des problèmes de santé d'origine professionnelle sont enregistrés dans les métiers à prédominance féminine**. D'une manière similaire, **l'exposition au harcèlement, à l'intimidation, à la violence ou aux menaces de violence augmente dans les professions à prédominance féminine**. Les risques liés aux postures de travail, aux charges lourdes et au surmenage sont présents aussi bien dans les métiers à prédominance masculine que dans ceux à prédominance féminine, et ils sont moins clairement corrélés à la ségrégation professionnelle liée au sexe.

Qu'en est-il de la ségrégation en fonction des secteurs?

La ségrégation s'applique également par secteurs. Les femmes présentent des taux plus élevés d'occupation dans le secteur des services publics que dans le secteur privé. Par ailleurs, dans presque tous les métiers, les **femmes occupent un taux plus régulier d'emploi dans les services publics** que dans d'autres secteurs industriels. **Les secteurs des services publics offrent plus d'opportunités aux femmes dans les emplois à salaire élevé**, et notamment pour les postes de *direction de société*, y compris dans les métiers à prédominance masculine, tels que ceux de *techniciens d'ingénierie et informatiques*, ouverts aux femmes dans les secteurs privés.

Quels sont les implications de ces constats pour les politiques?

Les analyses que nous présentons offrent des **aperçus importants aux décideurs politiques**. Premièrement, la nouvelle approche que nous proposons constitue **un cadre novateur pour le suivi des inégalités**. Les interactions multiples qui existent entre la ségrégation, les caractéristiques professionnelles et les conditions de travail impliquent que ce n'est qu'en ayant recours à une analyse ventilée par métier que nous pourrons enquêter sur ces effets. Nous sommes en mesure de montrer deux effets de la ségrégation professionnelle, à savoir : les **effets qui semblent avoir trait au sexe du salarié**, d'une part, et d'autre part, les **effets associés au caractère sexospécifique de la catégorie professionnelle**, ainsi que les impacts sur les hommes et les femmes qui exercent les professions en cause. Ces effets nous éclairent sur les dynamiques de la ségrégation professionnelle et nous fournissent plusieurs pistes importantes pour comprendre comment s'attaquer aux disparités hommes/femmes. En outre, le constat que tant **les hommes que les femmes tirent un avantage de l'occupation d'emplois mixtes** fournit un nouveau levier aux **décideurs politiques** pour combattre la ségrégation professionnelle.

Deuxièmement, notre approche apporte **un cadre d'évaluation des politiques**. S'attaquer à l'inégalité entre les sexes sur les marchés du travail européens est difficile par définition, notamment à la lumière des effets diffus des stéréotypes sexospécifiques qui précèdent l'entrée même des hommes et des femmes dans le monde professionnel. Le renforcement de la sensibilisation sur les **interactions de la ségrégation avec les conditions de travail, la qualité de l'emploi et d'autres caractéristiques du métier souligne les conséquences de la ségrégation** entre les hommes et les femmes. Les résultats de notre travail mettent en lumière les interactions existant entre la ségrégation professionnelle et sectorielle, et par extension, les risques en termes de bonne qualité de l'emploi, notamment pour les femmes, des **mesures politiques qui menacent les salaires et les conditions professionnelles dans les services publics européens**. En outre, nos analyses mettent en évidence le lien entre les caractéristiques du travailleur et le type d'emploi occupé. De nombreux modèles observés à travers les données du marché du travail contenues dans le présent rapport constituent, en partie, **le résultat du partage inégal entre les sexes de la cuisine, des tâches ménagères et de la prise en charge au sein des foyers**. Une meilleure compréhension de ces interactions permettrait de **développer des politiques plus efficaces et ciblées en vue de la réduction tant de la ségrégation professionnelle sexospécifique** que des inégalités qui en découlent.

En bref, les analyses menées nous fournissent le **mécanisme le plus approprié pour évaluer les propositions de politiques et apprécier leurs effets pro-**

bables sur l'inégalité entre les sexes, en tenant compte du sexe, de la ségrégation hommes/femmes et de l'emploi, ainsi que des caractéristiques tant des travailleurs que des métiers.

Zusammenfassung

Dieser Bericht stellt eine **neue Art der Darstellung von Geschlechtersegregation nach Berufen** vor. Die Untersuchungen zeigen, dass die **Art des Berufes eine wichtig Rolle spielt, unabhängig davon, ob der Beruf männer- oder frauendominiert oder gemischt ist**, ob es sich um Arbeiter oder Angestellte handelt. In diesem Bericht zeigen wir, dass nicht nur das Geschlecht der Arbeitnehmer sondern auch die „Gender“eigenschaften des Berufes selbst – männerdominiert, frauendominiert oder gemischt – zu verschiedenen beruflichen Erfahrungen beitragen können.

Was ist Geschlechtersegregation?

Geschlechtersegregation am Arbeitsplatz – die Tatsache, dass Frauen und Männer zu unterschiedlichen Berufen neigen – ist in ganz Europa verbreitet. Dennoch kann sie, über einen Zeitraum hinaus, in verschiedenen Formen und Varianten auftreten, in bestimmten Berufen abnehmen, aber in anderen Erscheinungsformen wieder auftauchen. Die Geschlechtersegregation wird meistens hinsichtlich der Beschäftigungsquote analysiert, sie betrifft aber auch Branchen, Arbeitsplätze und Arbeitsverträge. Das **Interesse an Geschlechtersegregation hängt hauptsächlich mit der Rolle zusammen, die sie bei der Geschlechterdiskriminierung spielt**, denn diese wiederum hat Auswirkungen auf Berufschancen, Einkommen und Arbeitsbedingungen für Frauen und Männer.

Geschlechtersegregation hat für Frauen nicht immer negative Folgen. Nicht alle Berufe, die vorwiegend von Frauen ausgeübt werden, sind schlecht bezahlt oder bieten schlechte Arbeitsbedingungen. Manchmal ist eine hohe Beschäftigungsrate bei Frauen mit einem höheren Maß an Segregation verbunden, was jedoch in Zeiten wirtschaftlichen Abschwungs einen gewissen Schutz vor Arbeitslosigkeit bedeutet. Dennoch **werden durch Segregation die Berufswahl und der Zugang zu höheren Positionen für Frauen erschwert**. In Zeiten der Sparpolitik, in denen vor allem Arbeitsplätze im öffentlichen Sektor gefährdet sind – in dem Frauen in der Überzahl beschäftigt sind, kann Segregation zudem zu einem höheren Arbeitslosigkeitsrisiko führen. Die Geringschätzung von hauptsächlich weiblichen Berufen kann ebenso steigen, denn sie sind häufig mit weniger geschätzten, weniger offensichtlichen sowie mit schlechter bezahlten Fähigkeiten, einer geringeren Wertschöpfung und einer größeren Unregelmäßigkeit (z.B. Teilzeitarbeit) verbunden.

Warum gibt es weiterhin Geschlechtersegregation?

Bei Erklärungen für die Verbreitung und Beständigkeit von Geschlechtersegregation werden häufig entweder Angebots- oder Nachfrageaspekte in den Mittelpunkt gestellt. **Angebotsorientierte Erklärungen heben oft die Rolle der Frau als Mutter bei ihrer Berufs„wahl“ hervor** oder beziehen sich auf vermeintlich unterschiedliche Begabungen und Neigungen von Männern und Frauen. Untersuchungen zu diesem Thema legen nahe, dass die **Berufs„wahl“ von Frauen** durch die **aktuelle Beschäftigungslage auf dem jeweiligen Arbeitsmarkt und die Möglichkeit zur Kinderbetreuung** bedingt sind. **Auf der Nachfragenseite trägt das Verhalten der Arbeitgeber zur Entstehung und Fortsetzung von Geschlechtersegregation bei**, indem bei der Jobvergabe Männer und Frauen jeweils von bestimmten Berufen ausgeschlossen werden.

Wie kann Geschlechtersegregation gemessen und analysiert werden?

Definitionen und **Messwerte von Geschlechtersegregation schwanken aus sowohl begrifflichen wie methodologischen Gründen**. Eine methodologische Herausforderung ist, inwieweit Berufsklassen unterteilt werden sollen: Bei einer zu feinen Unterteilung verliert sich die Segregation in zu vielen Detaildaten; bei einer Grobgliederung kann es passieren, dass in einer Kategorie sowohl frauen- als auch männerdominierte Berufe enthalten sind. Die **traditionelle Verwendung von Indexen erlaubt es nicht, die Wechselwirkungen zwischen Segregation und verschiedenen Arbeitsbedingungen und Folgen für Arbeitnehmer zu erfassen**. Darüber hinaus können Änderungen der Indexwerte gegenläufige Trends bei Frauen und Männern verschleiern. Unsere Untersuchung zeigt, dass ein hohes Maß an Detailgenauigkeit verloren geht, sobald Berufe in statistisch vorteilhafte Klassen gruppiert werden oder einzelne Kennziffern genutzt werden, um Segregation darzustellen.

Wie ist die aktuelle Lage der Segregation in Europa?

Wenn man zunächst alle Berufe betrachtet, stellt man fest, dass **gerade mal 18% der Frauen in gemischten Berufen (60–40% Männer & Frauen)** beschäftigt sind, 69% in frauendominierten (d.h. >60% Frauenanteil) Berufen und lediglich 13% in männerdominierten (d.h. >60% Männeranteil) Berufen. Dagegen arbeiten nur **15% der männlichen Arbeitnehmer in gemischten Berufen** und 59% in männerdominierten Berufen. Dies bedeutet, dass mehr Männer – 26% – in Berufen tätig sind, in denen sie sich in der Minderheit befinden, d.h. in Berufen, in denen vorwiegend Frauen beschäftigt sind.

Wie funktioniert die neue Messmethode?

Wir beziehen uns auf vorangegangene Arbeit für EuroFound (2013). **Unsere Untersuchung konzentriert sich auf die 20 häufigsten Berufe**, die nach den am stärksten männerdominierten (Bauarbeiter) zu den am stärksten frauendominierten (Kosmetikbranche) Berufen geordnet sind. 2010 machten die 20 ersten 2-Ziffern-Berufsklassen der ISCO-88 mehr als 95% aller Arbeitnehmer in den EU-27-Ländern (Malta ausgeschlossen) aus. **Diese Herangehensweise bildet einen aufschlussreicheren Rahmen für die Untersuchung von Segregation und deren Folgen**.

In vorliegendem Bericht wird diese neue Messmethode auf **fünf verschiedene europaweite Datensätze** angewandt.

Frauen werden tendenziell aus einigen der 20 Berufsgruppen praktisch ausgeschlossen und sind unter *Metallarbeitern und Mechanikern*, Beschäftigten in *Mineralgewinnungs- und Bauberufen* sowie *Fahrern* zu weniger als 5% vertreten. **Männer werden von keinem Beruf so stark ausgeschlossen**, machen aber weniger als ein Viertel der *Krankenpfleger und medizinischen Assistenten*, *Lehrkräften* sowie *Büroangestellten mit Kundenkontakt* aus.

Die Segregation in den 20 häufigsten Berufen war im Laufe der Zeit relativ konstant. Dennoch gibt es **zwischen den EU-Ländern starke Unterschiede in der Segregation per Beruf**, darunter unterschiedliche Segregationsniveaus innerhalb der gleichen Berufsgruppen und einen unterschiedlich hohen Anteil an männerdominierten, frauendominierten und gemischten Berufen.

Welche Folgen hat Segregation?

Eine der **Stärken dieses Ansatzes ist die Möglichkeit, die Wechselwirkung zwischen Segregation und Ergebnissen bei der Arbeitsqualität zu untersuchen**. Zum Beispiel stellt man im Fall der Aufsichtsverantwortung fest, dass **die Chance auf eine verantwortungsvolle Position** für Frauen wie für Männer in manchen Berufen stark konzentriert und in frauendominierten Berufen sehr gering ist. Männer **befinden sich in allen Berufsgruppen mit einer höheren Wahrscheinlichkeit auf Stellen mit Aufsichtsverantwortung** – auch in den am stärksten frauendominierten Berufsgruppen. In ähnlicher Weise sind **Lohnunterschiede zugunsten der Männer in fast allen Berufsgruppen** vorhanden, wobei das durchschnittliche Lohnniveau in frauen- und männerdominierten Berufen je nach Art der Arbeit unterschiedlich ist. Dies bedeutet, dass in manchen frauendominierten Berufen die Durchschnittslöhne sowohl der Frauen als auch der Männer höher sind als die der Männer auf dem Arbeitsmarkt insgesamt.

Welche Arbeitnehmer sind von Segregation betroffen?

Auch die Eigenschaften der Arbeitnehmer wirken sich auf Segregation und die berufliche Stellung aus. Zum Beispiel steigt **tendenziell der Anteil an Männern in besser bezahlten Positionen mit zunehmendem Alter, wogegen Frauen zunehmend aus fachlich anspruchsvoller und besser vergüteten Berufen verdrängt werden** und stärker in eher frauendominierten Berufen oder solchen mit geringeren Ausbildungsanforderungen und kürzeren Arbeitszeiten anzutreffen sind. In ähnlicher Weise sind **Mütter von Kindern unter 15 Jahren in männerdominierten Berufen untervertreten**, wohingegen bei Vätern festgestellt wurde, dass sie tendenziell in männerdominierten Berufen über- und in frauendominierten eher untervertreten sind.

Welche Folgen hat Segregation auf die Arbeitszeit?

Zwischen Segregation und Arbeitszeit besteht eine starke Verbindung. Der Anteil an Frauen, die teilzeitbeschäftigt sind, steigt tendenziell, je stärker ein Beruf von Frauen dominiert ist. **Drei Viertel der Frauen, die teilzeitbeschäftigt sind, arbeiten in frauendominierten Berufen**, und 45% der männlichen Teilzeitbe-

beschäftigen arbeiten in frauendominierten Berufen, wogegen der Anteil bei allen Männern bei 26% liegt. Auf der anderen Seite **arbeiten Männer in allen Berufen durchschnittlich mehr Stunden als Frauen, aber die Unterschiede zwischen den Geschlechtern sind in gemischten Berufen am geringsten**, wobei Männer sowohl in männer- wie in frauendominierten Berufen länger arbeiten. Es wurde festgestellt, dass in **frauendominierten Berufen unregelmäßige Arbeitszeiten seltener sind**, aber Männer in frauendominierten Berufen stärker davon betroffen sind als Frauen, vor allem in den *Dienstleistungs-, Kosmetik- und Sicherheitsbranchen*. Männer und Frauen in gemischten Berufen haben die **regelmäßigsten Arbeitszeiten**.

Welchen Einfluss hat Segregation auf Risiken bei der Arbeit?

Das Verhältnis zwischen Geschlecht, Berufsart, Segregation und Risiken ist komplex. Unsere Analysen zeigen, dass **sowohl für Männer als auch für Frauen in männerdominierten Berufen – vor allem bei Arbeitern im Gegensatz zu Angestellten – die Unfallgefahr und das Umweltrisiko am Arbeitsplatz wesentlich höher sind**. Dennoch befindet sich **der höchste Anteil von Arbeitnehmern, die berufsbedingte Gesundheitsprobleme melden, in frauendominierten Berufen**. Vergleichbar steigt die **Häufigkeit von Belästigungen, Mobbing, Gewalt oder Gewaltandrohung, je stärker ein Beruf von Frauen dominiert wird**. Haltungsprobleme, schwere Lasten und Überarbeitung sind sowohl in männer- wie auch in frauendominierten Berufen ähnlich verbreitet und sind weniger eindeutig mit der Geschlechtersegregation in einzelnen Berufsgruppen korreliert.

Wie verhält sich Segregation nach Wirtschaftsbranchen?

Segregation betrifft auch Wirtschaftsbranchen. Frauen stellen im öffentlichen Dienst einen höheren Anteil der Beschäftigten als im Privatsektor. Darüber hinaus sind **Frauen in fast allen Berufsgruppen häufiger im öffentlichen Sektor angestellt** als in anderen Wirtschaftsbranchen. **Der öffentliche Dienst bietet Frauen höhere Chancen auf gut bezahlte Stellen als der Privatsektor** – auch in Positionen als *Geschäftsleiter und Geschäftsbereichsleiter* und sogar in männerdominierten Berufen wie *Ingenieur oder Informatiker*.

Was bedeutet das für die Politik?

Diese Analysen bieten eine Vielzahl **wichtiger Erkenntnisse für die Politik**. Erstens stellt dieser neue Ansatz **einen innovativen Rahmen für die Überwachung von mangelnder Gleichstellung dar**. Die zahlreichen Wechselwirkungen zwischen Segregation, Berufsmerkmalen und Arbeitsbedingungen bewirken, dass deren Auswirkungen nur durch eine nach einzelnen Berufen aufgeteilte Analyse untersucht werden können. Wir sind in der Lage zwei Folgen von Segregation im Beruf aufzuzeigen: **Folgen, die mit dem Geschlecht des Beschäftigten zusammenhängen, und Folgen, die mit der genderbedingten Prägung einer Berufsgruppe verbunden sind** und sich sowohl auf männliche wie weibliche Beschäftigte auswirken. Diese Auswirkungen ermöglichen Einsichten in die Dynamik von Geschlechtersegregation und geben auch Hinweise darauf, wie geschlechtsbedingte Unterschiede behoben werden können. Darüber hinaus gibt die Erkenntnis, dass so-wohl **Männer als auch Frauen von der Beschäftigung in gemischten Berufs-**

gruppen profitieren, einen neuen Impuls für die Politik, sich dem Problem der Segregation im Beruf zu widmen.

Zweitens stellt dieser Ansatz **einen Rahmen für die Auswertung von Maßnahmen zur Verfügung**. Die Überwindung der mangelnden Gleichbehandlung der Geschlechter auf den europäischen Arbeitsmärkten ist grundsätzlich schwierig, vor allem angesichts der tiefgreifenden Stereotypisierungen von Männern und Frauen vor Eintritt in den Arbeitsmarkt. Das höhere Bewusstsein der **Wechselwirkungen zwischen Segregation und Arbeitsbedingungen, Berufsqualität und anderen Merkmalen einer Beschäftigung unterstreicht die Folgen der Geschlechtersegregation** von Frauen und Männern. Die Ergebnisse heben die Wechselwirkungen zwischen Segregation nach Berufsgruppen und Wirtschaftsbranchen hervor und zeigen im weiteren Sinne die Risiken für hochwertige Beschäftigungsverhältnisse, speziell für Frauen. Außerdem machen sie auf die **Gefahren politischer Maßnahmen für Lohn- und Arbeitsbedingungen im öffentlichen Sektor in Europa** aufmerksam. Darüber hinaus unterstreichen die Untersuchungen den Zusammenhang zwischen Eigenschaften der Arbeitnehmer und der Art des Berufes, den sie ausüben. Viele der Muster, die sich in den für diesen Bericht verwendeten Arbeitsmarktdaten abzeichnen, sind zum Teil **das Ergebnis einer ungleichen Geschlechterverteilung beim Kochen, Putzen und Pflegetätigkeiten innerhalb der Haushalte**. Ein besseres Verständnis dieser Wechselwirkungen bietet die Möglichkeit, **wirksamere und gezieltere Maßnahmen zur Bekämpfung von Geschlechtersegregation in Beruf** und der damit verbundenen Ungleichbehandlung der Geschlechter bei der Arbeit zu entwickeln.

Zusammenfassend liefern uns diese Untersuchungen **die bislang besten Mechanismen, um politische Vorschläge in diesem Bereich zu bewerten und deren wahrscheinliche Auswirkungen auf die Geschlechterungleichheit einzuschätzen**, indem man Geschlechtersegregation und Beschäftigung zusammen mit anderen Merkmalen von Arbeitnehmern und Berufen bewertet.

Introduction

Gender segregation, or the tendency for men and women to do different jobs, is pervasive across Europe (Bettio and Verashchagina 2009; Emerek et al. 2002; Rubery et al. 1999) and across the world (Anker 1997, 1998). Segregation is most commonly considered at the occupational level, but also applies by sector, workplace and form of employment contract. The degree of segregation varies; it ranges from situations in which workplaces or occupations are dominated by one sex, to weaker forms of segregation where one sex is over-represented relative to their share of total employment. The increasing integration of women into employment has been associated with some reduction in segregation and the growth of more mixed occupations and workplaces (Bettio and Verashchagina 2009) but also with new and emerging forms of segregation, for example, in re-segregation of some occupations or in greater differentiation within an occupation between female and male-dominated specialisms (Bettio and Verashchagina 2009; Crompton and Sanderson 1990; Grimshaw and Rubery 2007; Reskin and Roos 1990).

Segregation may thus take different forms and emerge in new guises so that our first task is to discuss and clarify what is understood by segregation and the different ways in which it can be captured. Interest in segregation arises from the role it plays in gender inequality, through its effects in shaping women's opportunities, earnings and work experiences. However, not all the effects of segregation are negative for women; for example, not all female-dominated jobs are low paid or involve poor working conditions, and gender segregation may also in certain time periods provide protection for women's employment. The second issue we thus discuss is why and to what extent segregation matters for gender equality. This provides the basis for potential policy interest in combating segregation, both horizontal and vertical, but to target policies we also need to understand the causes of segregation and its interactions with gender inequality.

This report is structured around three sections. In section 1 we provide a conceptual and theoretical overview of segregation of women and men on the labour market. We explore the competing explanations for the durability of segregation and the implications for gender inequality. The section also provides an introduction to the measurement of segregation. In short we underline why segregation matters for women and men on European labour markets today. Section 2 carries out a systematic data analysis of segregation and its impacts based upon the 20 largest occupations. Using five different datasets we demonstrate the advantages of examining the Top 20 occupations over time, across sectors and across countries. Furthermore the approach permits a detailed analysis of working conditions within segregated occupations and the implications for job holders who find themselves working in

female-dominated, mixed and male-dominated occupations. Section 3 provides a conclusion to the analyses and draws out the implications and potential agendas for research, based on the methodology and approach to segregation developed in this work.

1. Conceptual and theoretical review

1.1 Defining segregation

Definitions and measures of segregation vary because patterns of segregation can be considered in absolute terms – that is, the actual dominance of one sex in a particular occupation or workplace – or in relative terms, that is the share of a sex relative to the expected share, as women tend to be under-represented at an aggregate level among the employed population. Both approaches appeal to common-sense understandings of segregation; the absolute female or male share relates to the literal meaning of gender segregation at work, that is, whether men and women do work alongside each other or work in occupations or workplaces dominated by their own sex. Considering the female share relative to women's aggregate representation in employment regards segregation as occurring when actual female employment shares are higher or lower than the female share that could be expected if women were distributed in the same way as men across all occupations or workplaces. This can be considered a reasonable starting expectation if gender did not matter in allocation across categories of employment. However, the appropriateness of this approach may be called into question once it is realised that the main reason why women tend to account for less than 50% of the employed workforce is found in another aspect of the gendered division of labour, namely, women's disproportionate share of unpaid care and domestic work. This might suggest that a reasonable starting expectation for gender equality should be that women should hold 50% of all jobs, which of course is in practice the same as the absolute approach, as segregation is then measured by whether one sex or the other is in the majority in an occupation or workplace. Nevertheless, as both approaches resonate with intuitive understandings of segregation, we will use both in this report.

So far we have referred to segregation by occupation and by workplace as the two potentially most important forms of segregation. However, there are many different types of division in the employment structure, each of which may be associated with under- or over-representation by gender. Which dimension is of most importance depends on the question that is to be explored and the key characteristics of the particular labour market in which segregation is to be studied. Most attention has been paid to occupation as employment and associated education and training choices may be made primarily with respect to occupation, and occupation captures horizontal divisions by type of job but also hierarchical or vertical divisions. Workplace or type of employer has relevance in relation to the consequences of segregation, particularly pay and working conditions, which are set by employers and may

differ for the same occupation across workplaces. Workplace may take on more relevance when there are wide differentials among employers in setting pay and conditions for similar occupations. Sectoral and workplace segregation also matters more where there are strong pay differentials and where firms use internal labour market systems, so that access to occupations through the hierarchy depends on access to entry-level positions. Segregation between the public and the private sector also takes on more relevance when there are sizeable pay differentials or differences in job security or other conditions between these forms of employment (mostly in favour of public sector employment but not always (Rubery 2013).

Segregation by employment contract – particularly part-time, temporary or self-employment – matters most when these employment forms are not well integrated into employment areas with more standard contracts, such that part-timers are concentrated in a narrow range of occupations or workplaces, or those on temporary contracts have limited opportunities to move into more permanent employment. Disaggregation by type of self-employment – for example, between employers versus own account self-employment or family helpers – matters most where self-employment is an important employment form (Rubery et al. 1999). In this report, we primarily discuss occupational segregation, particularly in relation to varieties of employment contracts and sectors, including public versus private. Occupational segregation has significance across all labour markets but it should be remembered that it does not capture all aspects of labour market advantage or disadvantage associated with segregation. Indeed, one of the advantages of the new method that we describe in this report is that it permits the simultaneous analysis of multiple sources of gender segregation and associated advantages and disadvantages.

A final problem in defining segregation is the choice of occupational classification and the level of disaggregation adopted, as we discuss in more detail in section 4 below. At too aggregate a level (for example one digit), male- and female-dominated occupations are often present within the larger occupational category (Burchell 1996), while at too disaggregated a level, segregation is easily lost in too high a level of detail. This detailed classification is also less useful for exploring women's employment opportunities as it is well known that occupational classification systems are reflective of the pattern of gender segregation (Blackwell 2001a, 2001b). Thus women's employment areas tend to be treated as rather undifferentiated aggregate occupations, while men's employment areas are more finely disaggregated, reflecting the historical bargaining power attached to men's specific skills. Another problem is that, as occupations desegregate, they may also in practice subdivide into female-dominated and male-dominated segments within occupations (Reskin and Roos 1990). However, these new subdivisions may not be picked up by the occupational classification and only case-study evidence reveals the processes of resegregation around new subdivisions associated with an aggregate pattern of desegregation.

1.2 How and why does segregation matter?

While combating segregation is included as standard in European and national equality policies, the role played by segregation in generating or maintaining gender inequalities is far from straightforward or unidirectional (Bettio 2002, 2008; Emereck et al. 2002; Jarman, Blackburn and Racko 2012). Segregation, for example,

has been found to be positively associated with high female employment rates (Mandel and Semyonov 2006; Mandel and Shalev 2009) even though long-term trends are towards lower rates of segregation as women become more integrated into wage employment. Segregation may even increase with women's employment if new job opportunities are concentrated in female-dominated jobs areas (Bettio and Veraschchagina 2009). Segregation is also found to be higher where there are high levels of part-time working (Dolado et al. 2002). Segregation has also often provided some degree of protection for women's employment across the economic cycle (Bettio 1988; Milkman 1976, Rubery 1988), in part due to women's concentration in public services. However, under the current austerity, this traditional protection has disappeared and women are now more vulnerable, as a consequence of segregation, to austerity policies aimed at cutbacks in the public sector (Bettio et al. 2013; Karamessini and Rubery 2013; Rubery and Rafferty 2013).

Segregation is neither static nor always associated with disadvantage. As women have entered higher education in large numbers, now normally exceeding the entry of men, both the subjects studied and the types of jobs in which women are located have changed. Women now account for a high share or even a majority of students in subjects that previously were the domain of men, such as medicine, law, accountancy, economics and business studies. Consequently women's share of the associated professions is also increasing. Even jobs done almost exclusively by women can be relatively advantaged jobs, and some male-only jobs are associated with poor working conditions and low wages (Eurofound 2013). Segregation can also be considered a reflection of gender differences in orientations and preferences (Fortin 2005), as well as differences in contribution to the economy and society by gender. The objective of gender equality policy should not necessarily be an entirely homogenised labour market by gender; it may be more important and more realistic to aim to ensure that gendered roles are equally valued and remunerated. Thus many of the jobs that women undertake are vital for a vibrant and caring economy but they may be undervalued, in large part because they are undertaken by women.

However, even if the goal of gender equality may not imply the end of all segregation, it is important to recognise that segregation is associated with creating and perpetuating gender inequalities in and beyond the labour market. Segregation may generate inequalities in four main respects.

I. Segregation, by definition, narrows employment choices and reinforces gender stereotypes, and these tendencies reappear even when women make entry into new professional areas as gender-specific specialisms emerge limiting women's options.

II. Segregation may limit access to higher level jobs, that is, segregation has a hierarchical or vertical dimension (Blackburn et al. 2001) (the tendency for men to hold more senior and better paid jobs) as well as a horizontal dimension (the tendency for men and women to hold different, but equivalent types of jobs).

III. Segregation may be the outcome of a scarcity of jobs where it is possible to combine work and family responsibilities or where those following non-linear careers may be recruited. Only a limited range of occupations, workplaces or contracts may provide working arrangements where work is compatible with caring responsibilities or may provide paths back into employment for returners from care work.

IV. Segregation facilitates the undervaluation of women's work, and of skills and competences associated with women, as it may be more acceptable to have variations in the value attached to different workplaces, occupations or contracts than variations in pay for workers in the same workplace, in the same occupation or on the same contracts.

The relationship between segregation and undervaluation of women's work has been attributed to the five V's of visibility, valuation, vocation, value-added and variance (Grimshaw and Rubery 2007).

Table 1. Gender segregation: The five Vs

The five Vs	Relationship to undervaluation	Relationship to segregation
Visibility	Women's skills may not be visible.	Female-dominated jobs tend to be aggregated into large and undifferentiated pay and grading bands, with limited recognition of skills within these large occupations.
Valuation	Women's skills often not valued.	More likely to apply to female-dominated jobs in formal pay and grading structures which are still often based on male-type skills.
Vocation	Women's skills are often treated as 'natural', deriving from women's essence as mothers and carers, and do not require rewards due to the high job satisfaction derived from the work.	Segregation may be explained by vocation; also, segregation allows employers not to reward skills in caring jobs.
Value added	Women are more likely than men to be found in low-value added or labour intensive occupations.	If segregation facilitates low wages, employers have less incentive to invest and raise productivity. Fewer paths exist out of female-dominated jobs to higher level jobs.
Variance	Jobs that do not comply with a male norm of full-time work may be less valued.	Segregation into non-standard jobs may allow for differences in pay by type of employment contract, rather than by skills, experience etc.

The combined effects of these processes are to promote exclusion and marginalisation of women and the undervaluation of women's work, even though the range of jobs now done by women has expanded. Restricted employment and earnings opportunities also reinforce the gender division of labour in the household, and this higher burden of caring taken on by women perpetuates at least in part these processes of segregation. Women's lack of access to jobs involving high-level decision making in the workplace may also have spin-off effects on women's position in public and political life. A segregated labour market may also restrict the options available to individual couples to change the gender division of labour in the household as women may still have less access to higher paid jobs than their male partners.

1.3 Identifying the causes and moderating the consequences of segregation

Explanations for the prevalence and persistence of gender segregation tend to emphasise either supply-side or demand-side factors. Supply-side explanations tend to be based on either the impact of women's role as mothers on their career choices or on notions of differences in women's talents and orientations compared to men. Within these broad categories, there are many variations and differences in approach.

Human capital theorists such as Becker (1964) originally explained both segregation and the gender pay gap by women's rational decisions not to invest as much in human capital as men and to opt for a range of occupations which imposed lower penalties on career interruptions and/or allowed more reconciliation between wage work and care responsibilities. The rationality of this argument was challenged at an early stage by England (1982) who argued that women might still be better off choosing higher paid men's occupations even if these did impose penalties, as the female-dominated occupations that were chosen neither gave the expected higher initial pay nor offered the family-friendly working conditions that were assumed to go with women's choices. The human capital investment argument has been further undermined by women's increased investments often now exceeding men's (Bettio and Verashchagina 2009).

Another major debate is between those who see women's employment choices as shaped by preferences and orientations towards motherhood and domestic roles that are formed at an early stage in adolescence independently of actual labour market experiences (Hakim 1991), and those who see women's choices as more conditioned by actual employment and childcare support options in a specific labour market (Crompton and Lyonette 2005; Fagan and Rubery 1996; Rubery and Fagan 1995; Tomlinson 2006). For the former, women can be divided into careerists and non-careerists before they make educational choices or enter the labour market, while the latter see segregation as arising more out of limited choices when women are actually confronted with problems of combining work and family. For these latter authors, an individual's preferences are shaped also by limited childcare, lack of flexible working opportunities or discrimination against mothers. These conditions may lead women to accept moves to lower status and often segregated jobs at the point at which they have children. If one takes preferences as reflective of actual options as well as of gender and social norms, then welfare policies may be a major factor shaping preferences and behaviour. There has been extensive empirical research examining the impact of parental leave, childcare and flexible working options on the employment patterns of mothers (see Budig and England 2001; Budig et al. 2011; Davies and Pierre 2005; Del Boca et al. 2009; Gangl and Ziefle 2009; Hegewisch and Gornick 2011; Keck and Saraceno 2013; Korpi et al. 2013; Mandel and Semyonov 2006; Mandel and Shalev 2009; Pettit and Hook 2009; Waldfogel et al. 1999). Most research has found that policies that increase support for parenthood also increase women's participation, but it is less clear that there is any major impact on segregation. Indeed, some argue that extensive welfare support increases segregation (Mandel and Shalev 2009). It is, however, also important to distinguish between segregation in relatively well-paid occupations and segregation in relatively low-paid occupations. Where welfare support is poor, women upon becoming mothers may find themselves unable to keep their place in the former

type of job and instead have to seek a low-paid and lower-status job, which offers part-time hours or opportunities to re-enter the labour market after an employment interruption (Connolly and Gregory 2008). The provision of childcare and flexible working options might not lead to any major change in segregation but may reduce occupational downgrading within the range of female-dominated jobs.

The explanations stressing ‘orientations to motherhood’ may also combine with another set of supply-side explanations which focus on the inherent or socially-constructed differences in women’s and men’s talents and orientations. Here the stress is on women’s better achievements in arts and languages and their choice of subject at university rather than their level of investment in education (Chevalier 2007). Women’s under-representation in mathematics, IT and physical sciences is held to explain their exclusion from higher level male-dominated jobs. While this might have relevance for some issues of vertical and horizontal segregation, perhaps more notable is the evidence of convergence in subject choices and indeed the increasing feminisation of some higher-level subject areas such as medicine, law and accountancy (Bettio and Verashchagina 2009). It is in fact far from the case that women’s educational choices have remained static. The notion of different attitudes and orientations has been developed within the more psychological literature to explain differences in women’s presence in managerial and other highly competitive occupations. However, while on average women have been found to pay more attention to people than to money and to favour less competitive orientations and behaviours, according to Manning and Swaffield (2008:1017) ‘gender differences in personality variables can help to explain at most a few percentage points of the gender pay gap’. While not directly measuring gender segregation, it is indicative that personality factors and differences in preferences are only one element in the explanation of gendered difference in both work location and rewards.

While much of the literature argues that gender segregation is primarily explained by women’s need for more family-friendly working time, others argue that the causes of gender segregation need to be considered separately from motherhood, with both gender segregation and motherhood penalties exerting negative but separate impacts on gender equality (Budig and England 2001; England 2005). There is in fact considerable evidence that it is employer practices that create and sustain gender segregation. Employers are the gatekeepers to employment and their recruitment practices may tend to exclude women from non-traditional jobs areas; for example, there is evidence of discrimination when the same CV is sent to employers but with different genders as the man may be more likely to be called for interview, particularly in male-type and higher level jobs (Riach and Rich 1987 2006). This discrimination may intensify for mothers (Correll et al. 2007; Fuegen et al. 2004), particularly where labour markets are organised around continuous full-time careers, creating barriers to labour market returners. Some have argued these barriers are greater in labour market systems where employers make significant investments in firm-specific skills and training. Women may be discriminated against due to their likelihood of quitting (Estevez-Abe 2005, Estevez-Abe et al. 2001). Another argument has been made that employer discrimination on hiring is increased where women enjoy substantial rights to paid leave and flexible working, even when funded by the state, as employers in the private sector are unwilling to accept the disruption. Thus, measures that facilitate more women entering and staying in work may have some perverse effects by encouraging segregation into the public sector and creating barriers to women entering higher-level private sector jobs (Mandel and Seymenov 2006; Mandel and Shalev 2009). However, this

argument has been challenged on both theoretical and empirical grounds by Korpi et al. (2013), who found no evidence that smaller proportions of the full cohort of women were entering higher-level jobs (as opposed to the proportion of employed women). Moreover, while these arguments have been developed to explain the apparent paradox of high female employment and high segregation in the Nordic countries, it is precisely these countries that have been most rapidly desegregating recently (Bettio and Verashchagina 2009), particularly in relation to young graduates (Dolado 2002, 2003).

Other debates relate the degree of segregation to the specific institutional arrangements and prevailing norms in the labour market. We have already discussed the possible impact of both training systems and welfare support for working parents on employer behaviour. Incentives to employers to promote segregation may be higher in deregulated economies where there is more scope to pay low wages to disadvantaged workers, particularly if segregated by occupation or workplace. Employers' working time practices may also affect segregation; in occupations or workplaces where very long or unpredictable hours are common, women and particularly mothers may find these incompatible with family commitments, thereby reinforcing segregation (Cha 2013; Nielson et al. 2004). Employers have also been found to exercise varying degrees of discrimination across societies (Gangl and Ziefle 2009); where there are strongly defined gender roles, particularly with respect to women's roles as mothers, then employers may draw on these norms and sex-role stereotypes to reinforce both horizontal and vertical discrimination.

As there are demand and supply-side elements at play in the gendering of labour market organisation, it is important that policy addresses both dimensions. Support for working parents is clearly vital in enabling women's employment participation and their continuity in their pre-motherhood jobs. The impact on segregation may not be that significant in the short term but, by reducing risks of occupational downgrading, it may also provide the basis for longer-term reductions in segregation, both horizontal and vertical (Bettio and Verashchagina 2009). However, policies to support working parents will have much greater impact on gender equality if they are enacted in labour market environments that are supportive of gender equality; for example, environments which do not impose high wage penalties for gender segregation (Blau and Kahn 1992), where working time arrangements are not incompatible with family life, and where there are effective measures taken against employer discriminatory practices in hiring, training and promotion.

1.4 Measuring segregation: Existing approaches and a new method

Although segregation has multi-faceted and dynamic impacts on gender equality, both positive and negative, much of the research on gender segregation has focused on creating single indices of segregation to capture change. In practice, the indices are influenced by a range of developments in labour markets including: changes in the occupational structure; changing female participation rates; changes in intensity of segregation in already-segregated occupations; desegregation of occupations; changes to male occupations etc. (Bettio and Verashchagina 2009; Rubery et al. 1999). In addition, they are also sensitive to the occupational classification systems used, even though these classification systems are themselves influenced by gendered differences in recognition of skills and in pay and status attached to occupa-

tions (Blackwell 2001a, 2001b). Although changes in indices can be decomposed into different elements, the tendency to focus on trends in the aggregate index is strong even though evidence of limited change overall may hide significant changes in occupational structure, female participation and women's representation within occupational groups. The problem is that these changes may operate in different directions on the value of the index leading to overall limited or no change. For example, Table 2 shows that, over the period of the recession and austerity (2007-2012), there was a slight fall in the aggregate occupational index and a slight rise in the sector index. The changes across countries were primarily towards lower levels of segregation (16 recorded decreases of at least 0.3 percentage points, 9 increases of 0.3 or more and only 2 remained relatively stable with recorded changes of less than 0.3). There was some evidence of the countries with the highest scores reducing segregation but this applied only to 9 of the 13 with indices of 27 or above, while three, with already high indices, recorded positive increases. However, what is important to remember is that a high share of these changes will be driven by what has been happening to men's jobs, particularly the destruction of male-dominated jobs in construction and manufacturing.

Table 2. Trends in gender segregation indices for occupation and sector in 2007 and 2012

	Gender segregation in occupations		Gender segregation in economic sectors	
	2007	2012	2007	2012
EU-27	25.1	24.5	18.2	18.7
AT	26.3	26.9	18.5	19.1
BE	25.2	26.0	18.1	19.7
BG	29.3	28.6	20.5	20.9
CY	29	28.7	20.1	19.4
CZ	28.5	28.4	19.4	21.0
DE	26.3	25.7	18.3	19.5
DK	25.4	24.9	18.1	19.5
EE	32.2	30.9	25.6	25.2
ES	27.3	25.7	20.8	19.4
FI	29.6	28.7	22.7	24.1
FR	26.3	25.9	18	18.9
GR	22.4	19.3	16	14.5
HU	28.7	28.2	19.8	20.6
IE	27.9	26.3	23	20.7
IT	23.6	24.7	17.7	19.7
LT	29.2	29.5	23.3	22.3
LU	27.2	23.8	18.9	17.1
LV	28.7	29.1	22.4	24.0
MT	23.1	24.3	15.8	16.3
NL	25.1	25.5	18.1	14.5
PL	25.8	26.7	19.4	21.1
PT	26.7	25.6	21.1	21.3
RO	22.8	22.8	16.3	17.4
SE	27	25.7	21.3	21.4
SI	26.4	25.8	17.5	19.9
SK	30.1	30.6	23	24.5
UK	25.1	24.1	18.4	19.0

Source: European Commission (2013) based on Eurostat, EU LFS.

Gender segregation in occupations is calculated as the average rational share of employment for women and men applied to each occupation, differences are added up to produce the total amount of gender imbalance expressed as a proportion of total employment (ISCO classification)

Moreover, a single indicator of how women are faring on the labour market with respect to gender segregation does not necessarily provide useful information when the patterns of women's employment from different classes, educational levels, age cohorts (Dolado et al. 2002, 2003) or with different caring responsibilities may vary significantly. Single indices may be able to compare measures of segregation across groups but they provide no information on whether the segregation involves the higher or the lower quality female-dominated jobs or indeed the higher or lower quality male-dominated or mixed jobs. Much recent research is focusing on these issues of intersectionality – that is, gender inequality combined with other dimensions of advantage or disadvantage – to provide a more rounded picture of what is happening within the labour market. Furthermore, employment conditions are not linearly related to segregation (i.e. gender share of occupations or other dimensions such as workplaces (Eurofound 2013) and may vary across countries (for example, pay levels in public services vary significantly (Rubery 2013)). A more disaggregated approach enables some mapping as to whether increasing or decreasing segregation is associated with occupations offering good or bad working conditions (measured along a variety of dimensions). For all these reasons, investigation using only single indices of segregation does not provide much insight into differences in patterns of segregation over time or across countries.

However, taking all occupations together is either too complex (if 2, 3 or 4-digit classifications are used) or too aggregated (if 1-digit classification is used instead). Many of the smaller occupations are likely to be male-dominated, reflecting the construction of occupational classification systems that reflect the historically more differentiated recognition of training and skills in male occupations. These smaller, male-dominated occupations are both more likely to be declining and less likely to be desegregating; thus their exclusion from the analysis can be expected to have limited effects. Instead, by focusing on the largest occupations – in practice, those accounting for more than nine-tenths of all in the labour force – we have a manageable number of occupations to consider and to track differences in patterns over time and between countries, or to provide the basis for more occupation-specific analyses of levels of segregation across time or countries.

This new method for analysing the separate effects of gender and occupational gender segregation was developed for the *Gender and working conditions* report of the 2010 European Working Conditions Survey (Eurofound 2013). This concentrated on the 20 most common International Standard Classification of Occupations (ISCO-08) 2-digit occupations, and ranked them on a continuum from the most male-dominated (building workers) to the most female-dominated (personal care workers). This overcomes the problem associated with other methods that combine, say, female-dominated non-manual occupations including both teachers and sales workers which have very different working conditions. The approach furthermore facilitates a focus on the nature of the relationship of gender and gender segregation on outcomes such as pay, job quality and well-being. For instance, men in female-dominated occupations benefit from shorter average working hours compared to men in male-dominated occupations. Working at this level of specificity, and using a transparent method that is accessible to non-specialist policy makers, the important features of occupational gender segregation can be communicated in a manner that makes them amenable to policy debates.

2. Data analyses

2.1 Data

To illustrate the novel method of analysis to be used in this report, a number of analyses will be demonstrated using the Labour Force Surveys (LFSs) of EU member states^{1,2}. The main advantage of the LFSs over other datasets is the size of the samples in each country, typically an order of magnitude of two larger than other EU labour market datasets such as the European Working Conditions Survey (EWCS) and the European Social Survey (ESS). There are disadvantages too in using the LFS. It tends to be less detailed in variables on the more subjective aspects of job quality, and the standardisation of the LFS in different countries and the quality of the questions is poorer than other European datasets.

The following five datasets were used in the report:

- The 2012 LFS for EU-27, Main Questionnaire, was used for the most up-to-date estimates. This survey also used the latest ‘International Standard Classification of Occupations’ ISCO-08 occupational classification while all other waves used the older ISCO-88.
- The 2010 LFS for EU-27, Main Questionnaire.
- The 2007 LFS for EU-27, using both the Main Questionnaire and ad hoc module ‘Workplace accidents and health’.
- The 2005 LFS for EU-27, Main Questionnaire.
- The 1995 LFS for EU15, Main Questionnaire³.

By using these five datasets, changes in the nature of occupational gender segregation, and in the job quality of gendered and mixed occupations, will be examined

¹ Unfortunately, Malta only provides LFS coded to 1 digit, so cannot be used in this analysis. Also, the LFS data for Croatia were unavailable at the time of preparing this report.

² We are grateful to Francesca Gagliardi for the initial construction of these datasets.

³ LFS data for Germany is not available prior to 2002.

over a five-year period for the EU-27, and over a 15-year period for the EU-12. This choice of years has the further advantage that ISCO-88 was used as in all of these waves, before the updated ISCO-08 was used from 2011 onwards. While this report focuses on the EU-level dynamic, readers interested in occupational segregation for specific countries are invited to consult Appendix G where tables and figures summarizing segregation patterns across the Top 20 occupations are provided.

The analyses will also be repeated for employees of all ages and for employees in all age bands, to examine whether more recent entrants to the labour market, associated with an increased educational attainment for women, show different patterns of occupational segregation than do older employees.

The approach used to study patterns of gender segregation in the European Union is sensitive to gender dynamics across the labour market and within occupations with varying levels of job quality, skill use, working hours and income. While single indices of segregation combine occupations with very different characteristics, focusing on the Top 20 occupations of the ISCO-88 classification takes into account the interaction between gender and working conditions, and allows for data to be presented in a clear and intuitive manner. In keeping with this objective, occupational categories were given more intuitive names in order to facilitate understanding for policy-makers and non-specialists. The new occupational titles along with their ISCO-88 equivalents are listed in Appendix C. While a new classification of occupations was released by the ILO in 2008 (ISCO-08), ISCO-88 2-digit categories are used for all of the analyses presented, with the exception of the 2012 analyses in section 2.9, as they cover a longer period of time. The Top 20 occupations are selected on the basis of the absolute number of employees within the EU-27⁴. In 2010, the Top 20 occupations accounted for 95% of all the employed across the EU-27 (minus Malta). These occupations covered 97% of all female employees and 93% of male employees. We define an occupation as 'male-dominated' if more than 60% of the employees in that occupation are male, 'female-dominated' if more than 60% are female, and 'mixed' if the proportions of men and women are between 40% and 60%. The first series of analyses focuses on country-level dynamics with regard to an occupation's definition as being mixed, female-dominated or male-dominated. From this broader point of view, the analysis will then study in more detail segregation across the Top 20 occupations and the implications that this has for several working conditions and job quality indicators. Table 3 summarises some differences in the workforce composition when using the Top 20 occupations.

⁴ Malta is not covered by the ISCO at the 2 digit level and is thus excluded from the analysis herein. A section dedicated to Malta looking at gender segregation at the 1-digit level is included in the Appendix G.

Table 3. Percentage of non-standard employees in the Top 20 and in all occupations

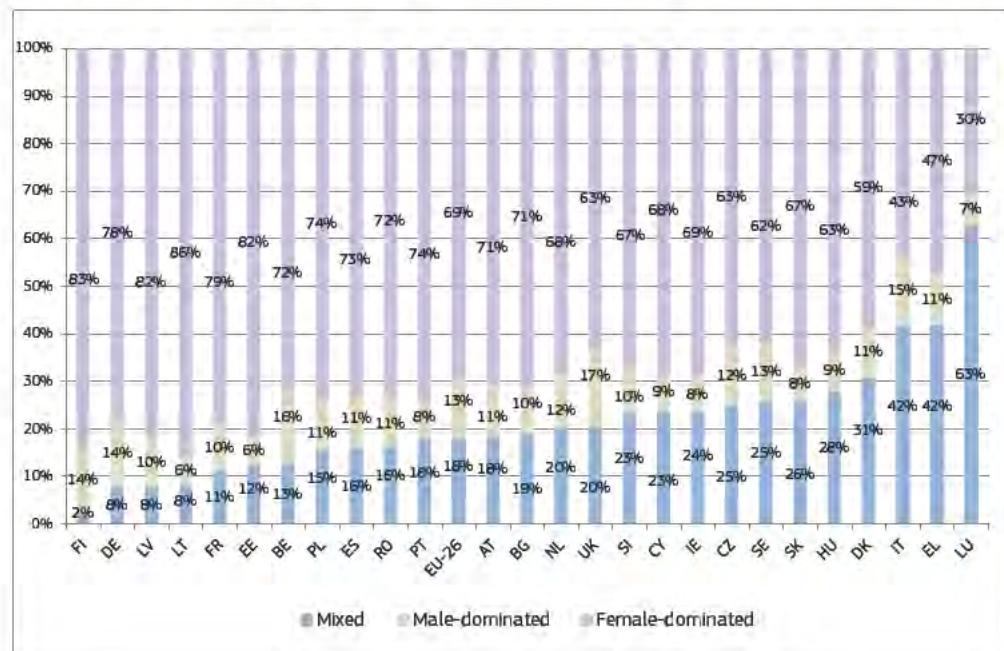
	All occupations			Top 20		
	% of Men	% of Women	% Within all	% of Men	% of Women	% Within all
All	52.3%	47.7%	-	51%	49%	-
Temporary employment	13.2%	14.5%	13.8%	12.6%	14.1%	13.4%
Part-time employment	7.9%	32.2%	19.4%	7.8%	32.4%	19.8%
Self-employed*	19.3%	10.2%	15.2%	14.2%	6.9%	10.8%

* Proportions for the self-employed are calculated for all ILO-employed individuals, while the other figures are for employees only.

2.2 Patterns of segregation

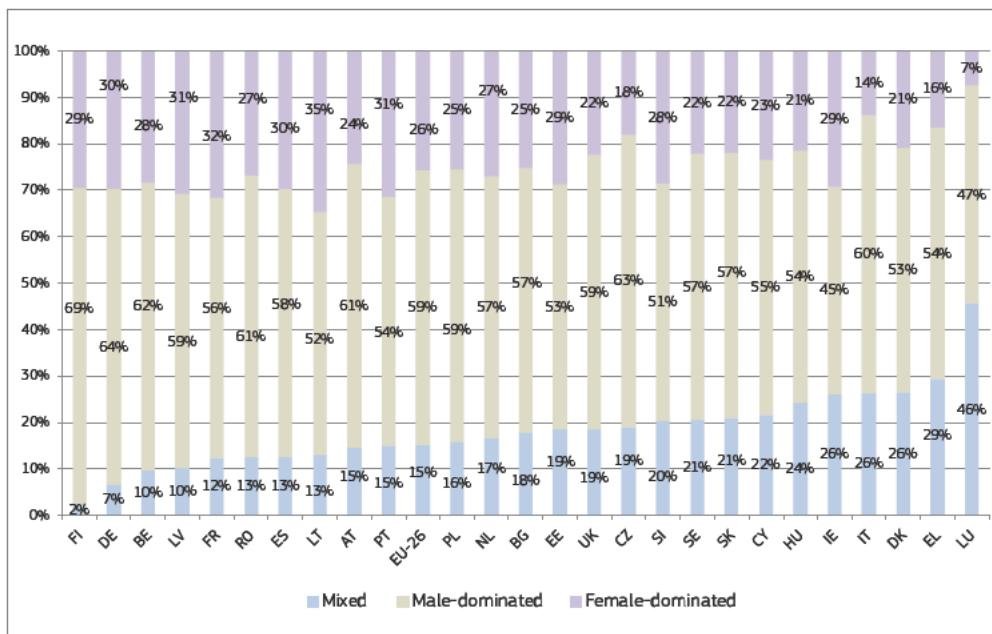
2.2.1 Mixed, male-dominated and female-dominated occupations by country

In this first section, we explore the percentage of mixed, female-dominated and male-dominated occupations in each of the member states. The purpose is to study variations in the patterns of segregation between countries and over time. Note that in this section we are using all occupations, not just the Top 20. The cut-off points of 40% and 60% are chosen for two reasons. First, this is a commonly used division in the literature. Second, it is intuitively reasonable; if the cut-off points are shifted to 30% and 70%, then an occupation could have more than twice the number of men as women and still be labelled as "mixed". However, for comparability, we also provide the graph for the 30%-70% cut-off points in Appendix F; as expected, doubling the size of the mixed category has a considerable effect.

Figure 1. Percentage of women in mixed (40%-60% female), female-dominated and male-dominated occupations – EU-26, 2010

For women, the most consistent characteristic across countries is the proportion of female employees who are working in male-dominated occupations. This varies only from a high of 16.7% in the UK to a low of 5.9% in Lithuania, and most countries are between 10% and 14%. In contrast, the proportion of men working in female-dominated occupations is much greater, varying between France at 31% and Italy at 14%, with Luxembourg being an outlier at 7%. While the composition of the male-dominated occupations varies by country, this observation indicates that, across Europe, women's access to male-dominated occupations is much more limited than men's access to female-dominated occupations.

Figure 2. Percentage of men in mixed (40%-60% male), female-dominated and male-dominated occupations – EU-26, 2010



Men, on the other hand, are less likely to work in mixed occupations than women (15% at the European level vs. 18% for women). Italy, Greece and Luxembourg have by far the largest shares of women working in mixed occupations but this reflects a low share of women found in female-dominated occupations, at under 50%. At the other end of the spectrum, four countries have more than four out of five women working in female-dominated occupations: Finland, Latvia, Lithuania and Estonia.

These results can be interpreted in the light of the very different rates of female and male employment, as shown in Appendix A and B, respectively. In the Baltic countries, female employees even outnumber male employees, while Italy and Greece are the countries with the lowest shares of women among all employees. However, this relationship between women's share of employment and concentration in female-dominated occupations is not straightforward, as section 2.3 will illustrate.

For men, the distribution of countries according to employees working in mixed occupations is similar to that for women, with Luxembourg, Greece, Italy and Denmark at the high end and Finland and Germany at the low end. Here, the Baltic countries

differ significantly from each other. The UK, the Netherlands and Austria are, again, median countries, along with Bulgaria, a country in a very different socio-economic situation in the recent and longer-term past.

2.2.2 Country-level segregation for full-time and part-time employees and for individuals with children in the household

Figure 3. Distribution of part-time and full-time work by gender and country – EU-27, 2010

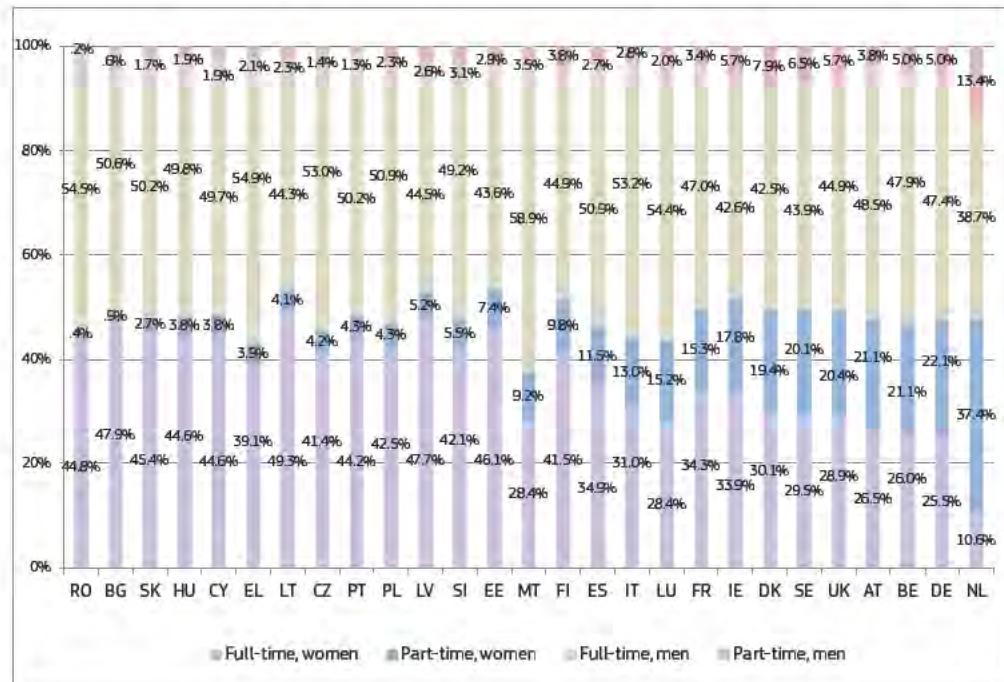


Figure 3 illustrates a clear split appearing in 2010 between western European or EU-15 countries with higher rates of part-time employment, and new accession members with lower rates of part-time employment (Greece being the exception here, with part-time female employees representing only 3.9% of the labour force). The Netherlands is an outlier, with a high proportion of both male and female part-time work. The impact of part-time work on segregation can be gleaned from Figures 4 and 5. Here it appears that, across the EU-26 – with the exception of the UK, Bulgaria, Slovenia and Romania – full-time women employees work more often in mixed occupations than their part-time counterparts, while only in Romania are full-time women more likely to work in female-dominated occupations. Moreover, with the exception of Bulgaria, full-time female employees are present in greater proportion in male-dominated occupations than are part-time employees. These observations clearly indicate that female employees working part-time are more concentrated in female-dominated occupations than are full-time female employees.

Figure 4. Percentage of full-time, female employees working in mixed, male-dominated or female-dominated occupations – EU-26, 2010

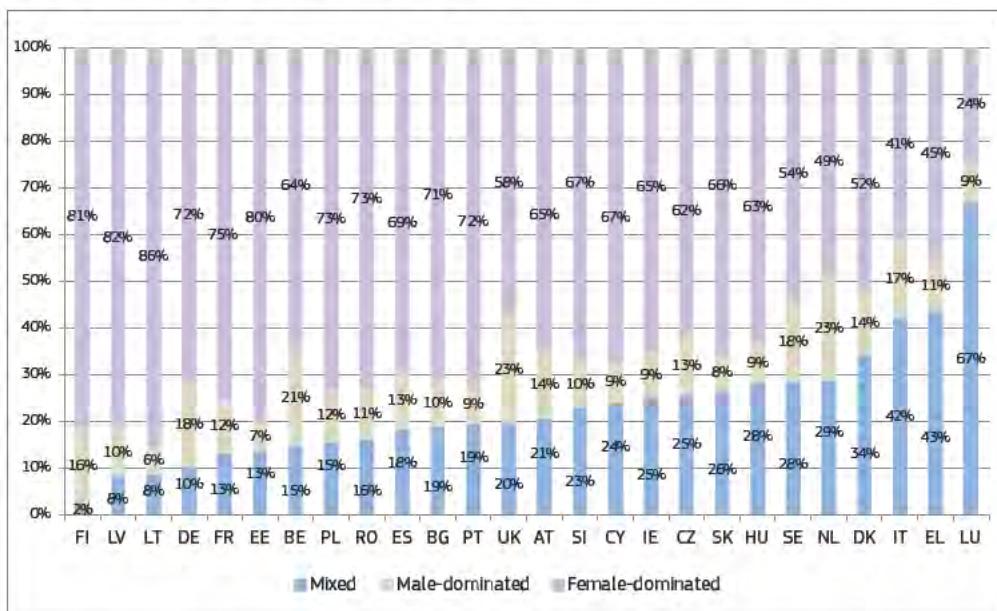
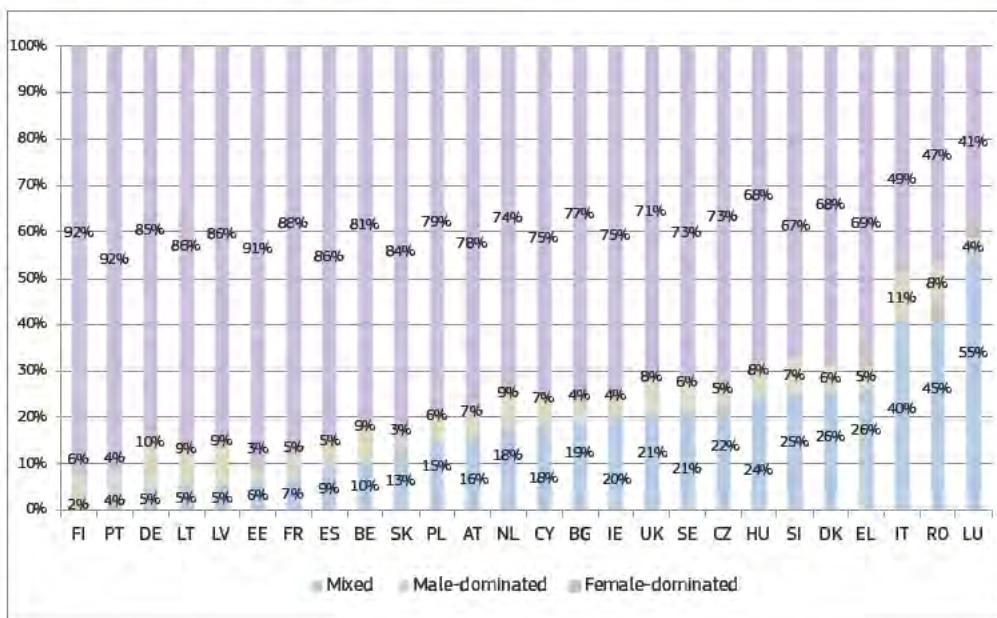


Figure 5. Percentage of part-time female employees working in mixed, male-dominated or female-dominated occupations – EU-26, 2010

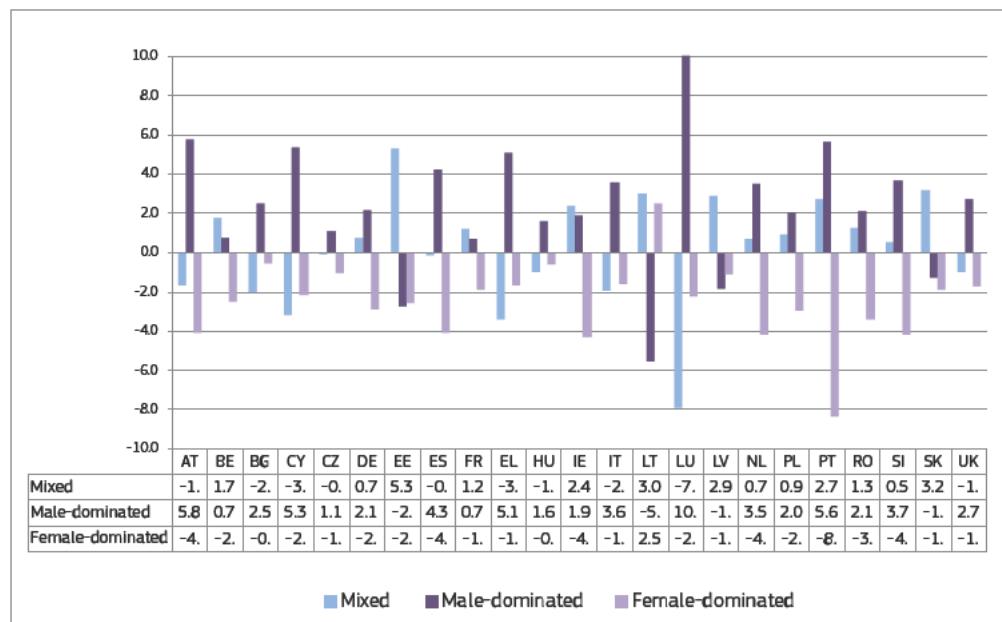


For women, part-time work is strongly associated with the period in the lifecourse when they may have responsibilities for childcare, but this is not the case for men, for whom part-time work is more prevalent among young men (still in education) and older pre-retirement men. However, if we examine the presence of children (up to the age of 15) in the household, we find effects of children on the gendering of their fathers⁵ occupations. Figure 6 illustrates the difference in the proportion of male employees working in mixed, female-dominated and male-dominated occupations based on whether or not the men have at least one child under age 15 living

5 Or, in some cases, their step-fathers or male guardians.

in their household.⁶

Figure 6. Difference in share of employment when men have child under 15, by country – EU-26, 2010



The effect of having children shows little or no pattern for women, but is pronounced for men. With the exception of only four countries – the Baltic States and Slovakia – men with children work in greater proportions in male-dominated occupations than those without children. This is consistent with the finding that men tend to work longer hours as the number of children in their households increases (Eurofound 2007); later in this report, the association between male-dominated occupations and longer working weeks is explored (see section 2.7.1). There is no clear dynamic with regards to the interaction between mixed occupations and the presence of children in the household for men.

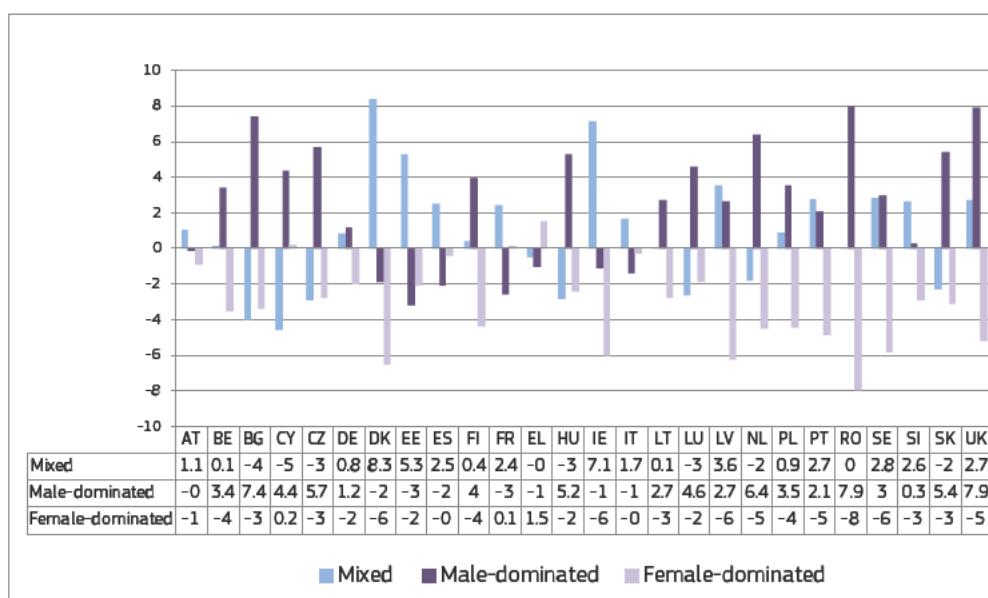
⁶ To introduce some element of controlling for age, only individuals aged 25-54 years are selected for the analysis.

2.3 Trends in country-level segregation

2.3.1 Differences in age groups

Similar observations can also be made with regard to age groups. Figure 7 represents differences in segregation levels in 2010 between the 25-34 and 35-44 age groups for men. While comparing age groups in such a fashion provides interesting observations about potential life-course-dynamics, variations might also be explained by ‘cohort effects’, the fact that these groups are drawn from different cohorts who will have entered the labour market under different conditions

Figure 7. Difference in segregation, male employees 2010 – 25-34 and 35-44 age groups



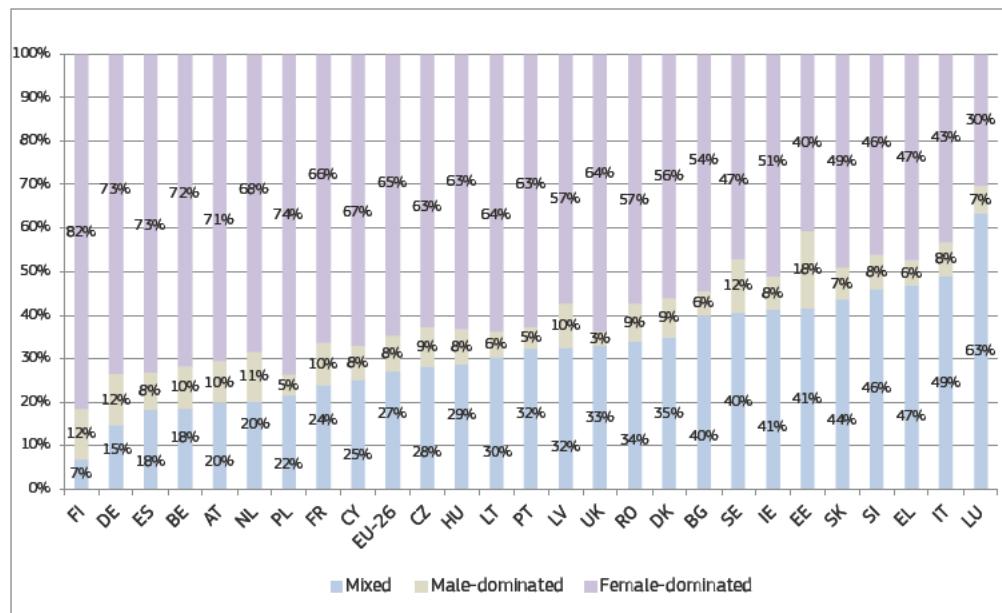
It is difficult to discern any clear differences in the occupational distributions of younger women compared to that of older women. However, patterns of male employment segregation are fairly universal across European countries when comparing age groups. If differences between 25-34 and 35-44 year-olds are considered, younger men are more represented in the female-dominated occupations; in only one country, Greece, are older men employed in a greater proportion in female-dominated occupations than are younger men. In contrast, older men are more represented in both mixed and male-dominated occupations.

2.3.2 Segregation and employment levels of women

In the introduction, we argued that there are two ‘natural’ benchmarks for perfectly mixed occupations. One is a 50:50 split (as we have used in most of the analyses in this report). However, another possibility, also with merit, is to take the proportion of women in employment out of all employees as the benchmark (i.e. referring to variations between countries in the extent to which gender inequality in household division of labour and the gender inequality in family norms keep women’s labour

force participation lower than that of men's). One common operationalisation of this approach was proposed by Hakim (1993), who suggested that occupations that were within plus or minus 15% of the sex ratio of all employees in a country could be termed mixed (or 'integrated' in Hakim's terminology).

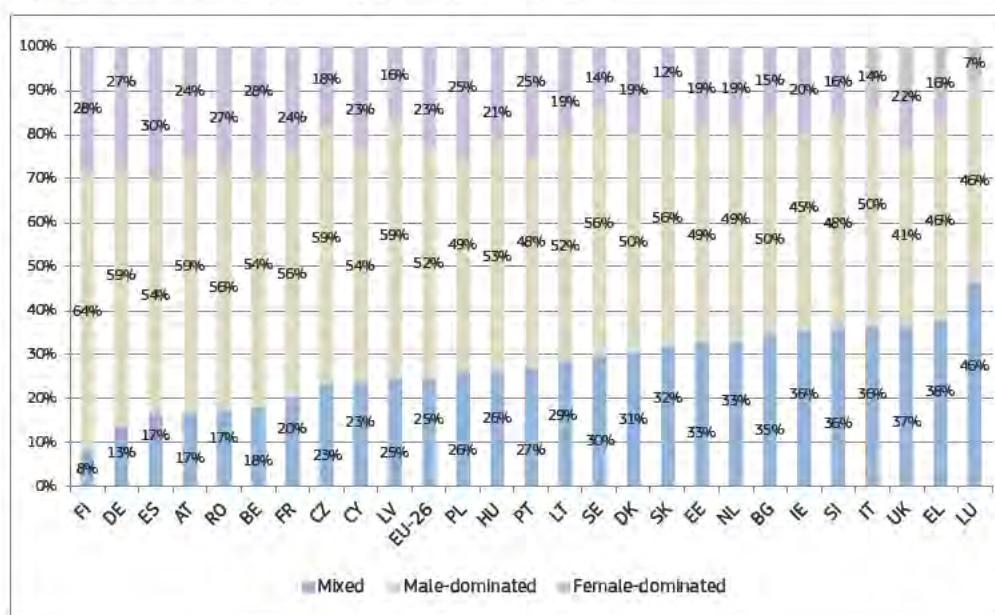
Figure 8. Hakim index for women by country – EU-26, 2010



In Figures 8 and 9, the divisions are relative to women's overall share of employment with male-dominated being those in which the female share is 15 percentage points or more below the average female shares and female-dominated occupations being those at least 15 percentage points above the average female share. The ranking of countries on this definition of mixed, female- and male-dominated occupations can be compared to the absolute measures used in section 2.2.1, Figures 1 and 2.

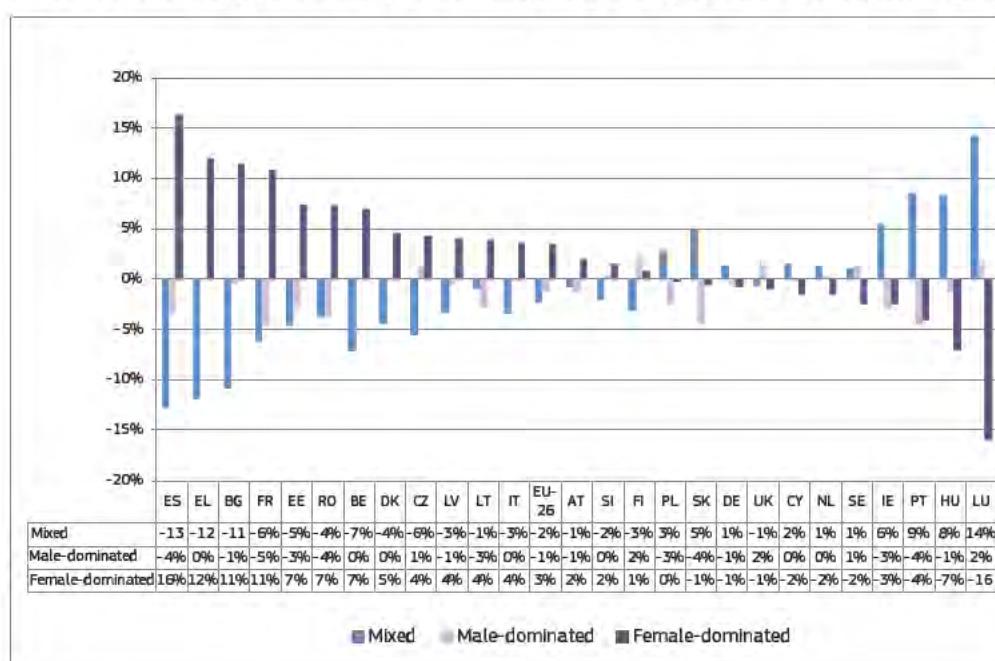
In all countries, when controlling for levels of employment in such a manner, the proportion of women working in 'mixed' occupations increases, and, with a few exceptions, decreases in *both* female-dominated and male-dominated occupations (this is to be expected: Hakim's suggested middle band is 30 percentage points wide; the 60%/40% division used in this paper is only 20 percentage points wide). Men's patterns of employment in these three types of occupations follow the same pattern in each country as that of women, with more men working in mixed occupations if they are defined by Hakim's measure of segregation.

Changes in the ranking of countries according to the level of women's employment by share in mixed occupations cannot easily be interpreted as they depend on the specific occupational structure of a member state's labour market. Some countries, such as Estonia, appear less segregated to a much greater degree than others. As will be discussed later, however, this does not mean that an increase in female employment would result in lesser segregation, but simply that if a looser definition of segregation is used, labour market segregation measures will necessarily reduce.

Figure 9. Hakim index for men by country – EU-26, 2010

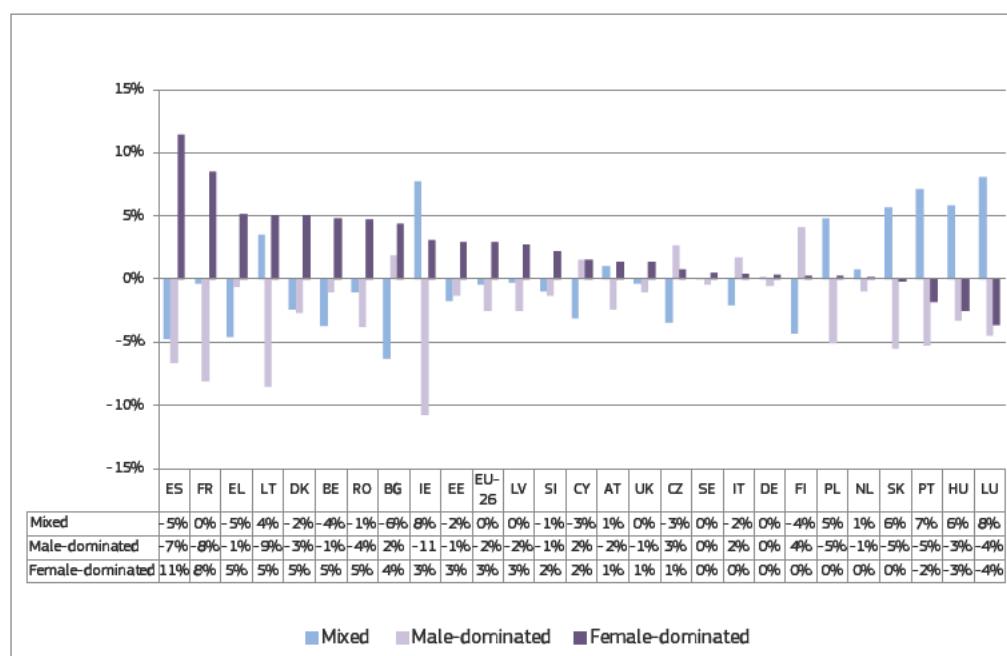
2.3.3 Changes in country-level segregation 2005-2010

Observing changes by country over time brings about a clearer picture of segregation patterns in specific economies. First, changes in the shares of male and female employees working in mixed, male-dominated and female-dominated occupations between 2005 and 2010 are reported in Figures 10 and 11. Although, overall, the trend in women's employment situation has been towards greater segregation – with a 5% decrease in male-dominated occupations and a 1% decline in employment in mixed occupations – this does not apply to all countries. Spain, a country in which women's proportion of all employees increased by just under 5%, witnessed this growth overwhelmingly in the female-dominated occupations.

Figure 10. Percentage point change in women's share of employment – EU-26, 2005-2010

In the case of men, a similar pattern emerges as the majority of countries witnessed an increase in men's employment in female-dominated occupations and a decline in both mixed and male-dominated occupations. Caution should be used in interpreting these figures as this may be explained just as much by the effects of the recession following the 2008 financial crisis, as by the fast rates of employment growth in the years leading up to the recession. Within each economy, the patterns of change are quite similar for both men and women, indicating that much of the observed variation has to do with structural changes in countries' occupational structure. It may also be that there are more jobs in those service sectors already dominated by women in 2005, rather than an actual increase in segregation as these figures may indicate if taken at face value.

Figure 11. Percentage point change in men's share of employment – EU-26, 2005-2010



Finally, taking a longer-term perspective allows for the effects of business cycles to be reduced. In Figures 12, 13 and 14, the percentage point change in women's share of all employees is plotted against the percentage point change in the share of women working in mixed, female-dominated and male-dominated occupations between 1995 and 2010. Only 12 EU Member States are used for this analysis on the basis of data available in the 1995 Labour Force Survey. Although a relationship between the proportion of female employees and the three types of occupations is visible, in only one case (the tendency for women's employment in male-dominated sectors to decrease as their share of all employees increases) is the relationship statistically significant at the 95% level. On average, for each percentage point increase in women's employment level, women's share of male-dominated sectors decreases by 1.3%. This could represent either a re-definition of certain occupations as either mixed or female-dominated as the employment levels of women increase, or as an increased concentration of women in certain sectors. Section 2.4.3 may provide more clues as to the relation between changes in an occupation's size over time and male and female shares.

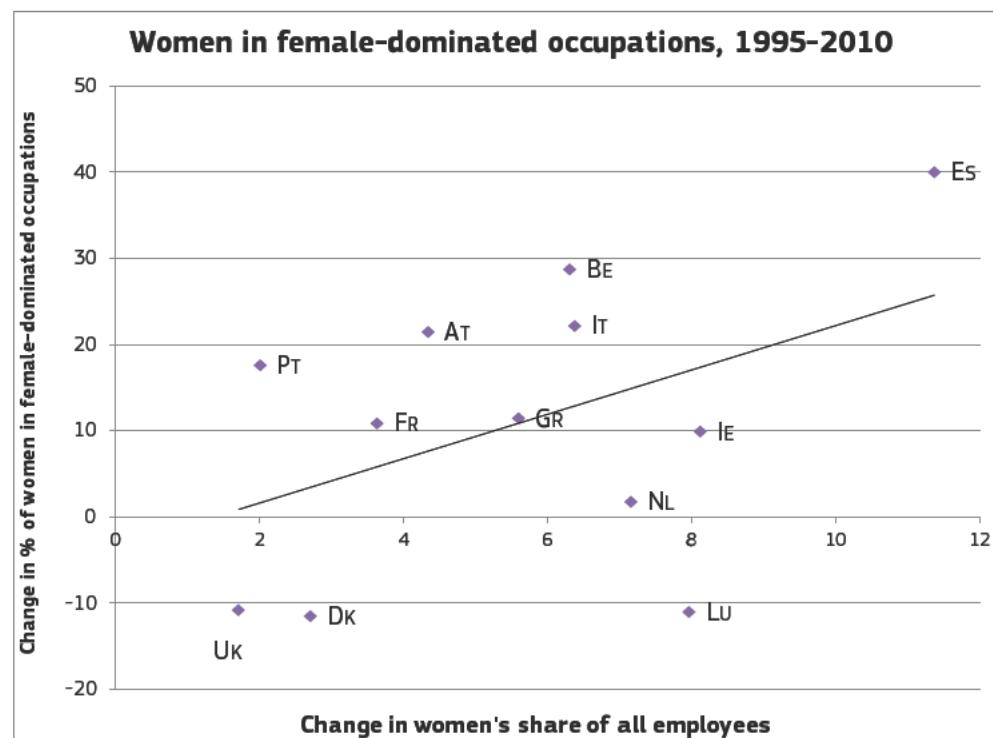
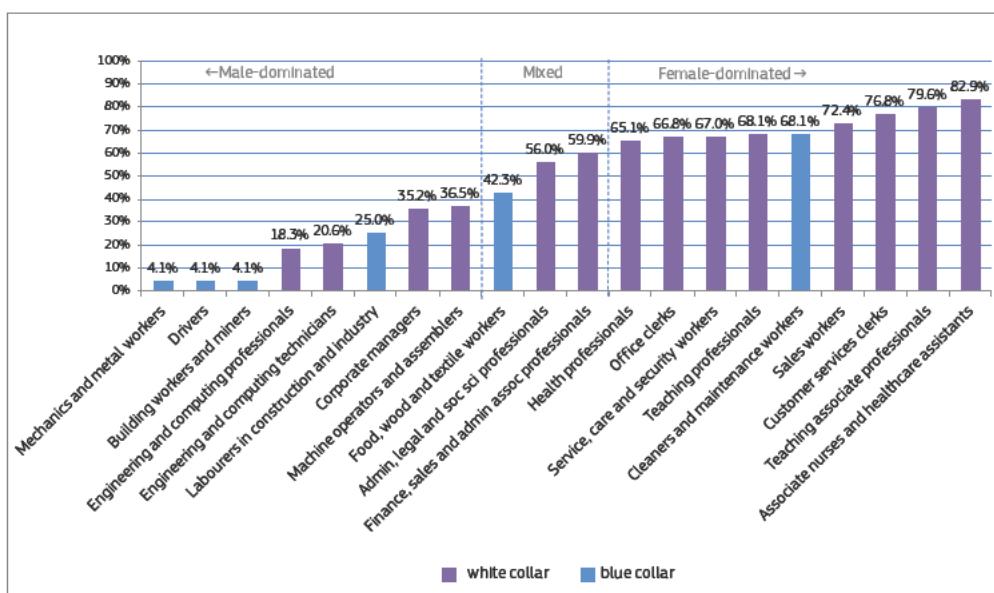
Figure 12. Women in female-dominated occupations, 1995-2010**Figure 13. Women in mixed occupations, 1995-2010**

Figure 14. Women in male-dominated occupations, 1995–2010

2.4 Exploring segregation in the Top 20 occupations

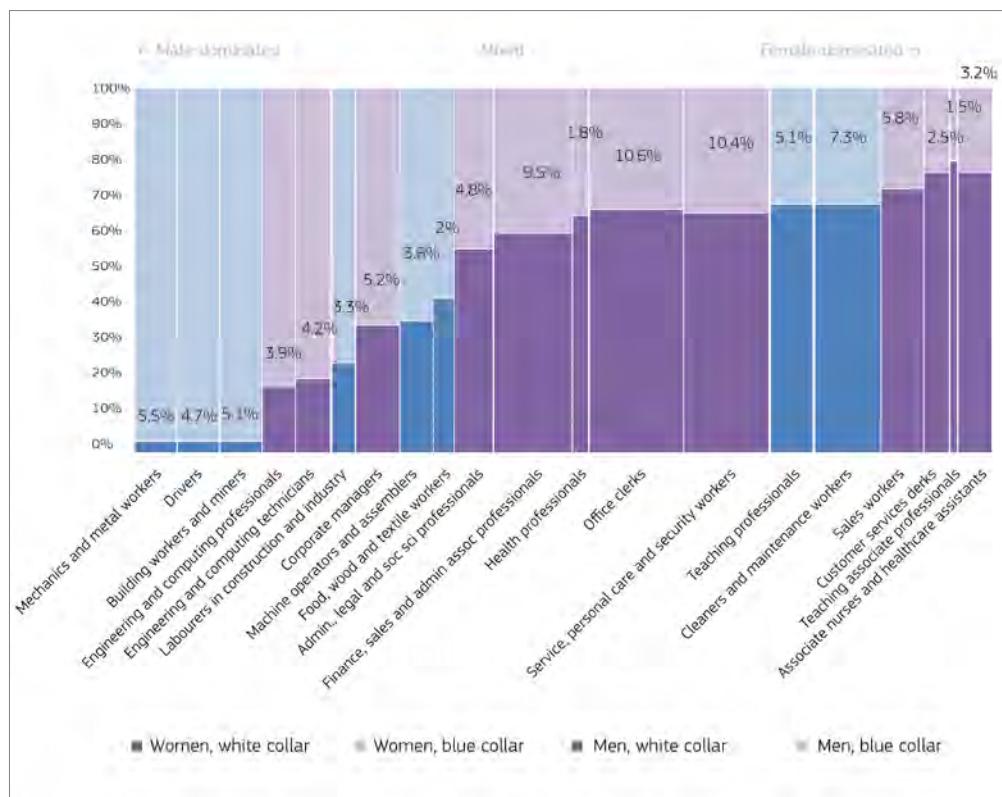
2.4.1 Occupational segregation for the EU-26

While the above analysis provides some indications of the patterns of gender segregation that can be observed in Europe, it takes no account of the actual nature of the occupations themselves. In the following sections, we aim to demonstrate how, using only the Top 20 most common occupations across Europe (at the ISCO 2-digit level) – but analysing the data so that each of the 20 occupations remains distinct and visible – provides a more illuminating and insightful framework for studying the nature of segregation and its impact.

Figure 15. Percentage of female employees by Top 20 occupations – EU-26, 2010

Within the Top 20 occupations in 2010, 18% of women worked in mixed occupations, 69.4% worked in female-dominated occupations and 12.6% worked in male-dominated occupations. In contrast, only 15.3% of male employees worked in mixed occupations, 25.6% in female-dominated occupations and 59.1% in male-dominated occupations. Furthermore, as Figure 15 illustrates women tend to be virtually shut out of certain occupations, with three having a strikingly similar female proportion of only 4.1%: *Mechanics and metal workers*; *Building workers and miners*; and *Drivers*. Men are not excluded from any occupation to the extent that women are excluded from these three occupations; the three lowest proportions of men can be found in the *Associate nurses and healthcare assistants* occupation (17.1%), *Teaching associate professionals* (20.4%) and *Customer service clerks* (23.2%).

The size of each of these occupations varies, as represented by the widths of the columns in Figure 16. The female share of each occupation is represented by the darker, lower portion of each column, while the blue-collar and white-collar occupations are represented by the blue and green shading respectively. The graph clearly demonstrates how men are concentrated in smaller occupations but have much higher shares of employment, while the two largest occupational groups, *Office clerks* and *Service, personal care and security workers* are mildly female-dominated. The third most common occupation (*Finance, sales and admin associate professionals*) is also mildly female-dominated, but in this analysis it is just within the ‘Mixed’ category definition. Note that the omitted occupations each account for less than 1.5%, and are thus not considered so that the main focus is on the larger occupations.

Figure 16. Top occupations by gender share and volume – EU-26, 2010

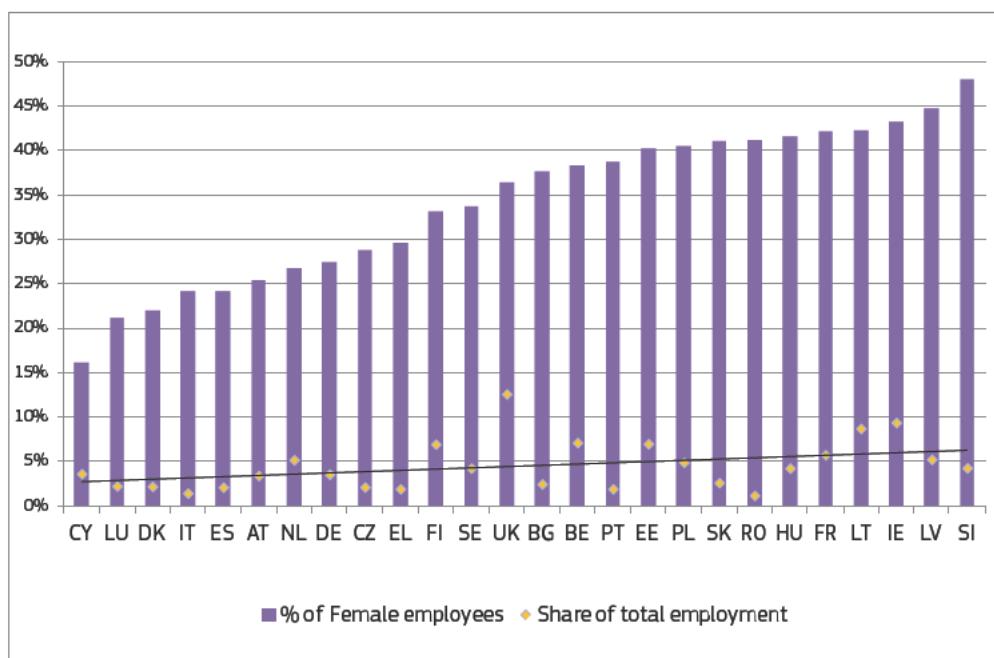
For the volume that each occupation represents within all the employed, see Appendix D.

2.4.2 Differences in segregation by country: Three examples

Large variations in segregation by occupation exist across EU countries. Two important ways in which countries differ are (1) through different levels of segregation within the same occupations in different countries and (2) through different sizes of the male-dominated, female-dominated and mixed occupations in different countries. This section illustrates these variations by focusing on just three occupations, one female-dominated (*Teaching professionals*), one mixed (*Food, wood and textile workers*) and one male-dominated (*Corporate managers*).

Figure 17 illustrates a male-dominated occupation in which such variation occurs: *Corporate managers*. Investigating this occupation in more detail is particularly telling for vertical segregation as it is relatively well-paid across all European countries and also includes jobs where the employee has responsibility for management.

Figure 17. Percentage of women employed as *Corporate managers* and occupation's share of total employment – EU-26, 2010



Although there is a mixture of countries at either extreme, it can be observed that, of the 10 countries with the largest share of women in this occupation (where we would classify it as a mixed occupation), eight are former socialist regimes from eastern and central Europe (Ireland and France are the exceptions). Slovenia has the highest proportion of women amongst the women employed as *Corporate managers*, nearly reaching parity at 48%. In the 10 countries in which women have the smallest shares of *Corporate managers*, four are from southern Europe (CY, IT, ES, GR) and five are from northern and western Europe (LU, DK, AT, NL, DE). These differences in the proportion of *Corporate managers* who are female vary greatly (a threefold difference), but these variations tend to get lost in aggregate measures of occupational gender segregation.

The proportion of all employees who are classified into this particular occupational group (represented on the graphs by yellow diamonds) varies even more dramatically, from just 1% in Romania and Italy to 9% in Ireland and an outlying 13% in the UK. For other occupations, the national variations can be more easily understood in terms of industrial structures, but in this case it also reflects the liberal or restrictive norms found in different countries in usage of the term ‘manager’ for lower management tiers. Nevertheless, this becomes important, not only for how we measure (or mis-measure) occupational gender segregation, but it also has the potential to create its own reality in the way in which women and men win or lose by being labelled as ‘managers’.

A small but positive correlation exists at the country-level between the size of the *Corporate managers* category and the share of women in that category. On average, for each one-point increase in the percentage of *Corporate managers* within all employees, women’s share of this occupation increases by 1.25%. However, this simple correlation should be treated with caution as it represents only a preliminary univariate finding. Nevertheless it shows how the important details of occupational

gender segregation might be overlooked if one deals at too high or too low a level of aggregation.

Figure 18. Percentage of women employed as *Food, wood and textile workers* and occupation's share of total employment – EU-26, 2010



The only blue-collar, mixed occupation is the *Food, wood and textile workers* category. In this category a country-level relationship can also be established between the size of this occupation as a proportion of all employment and the share of women employed in this occupation as shown in Figure 18. There is even greater variation between countries in the relative size of this occupation, from just over 20% in several of the more affluent western EU countries, to over 60% in several of the transition economies. The proportion of the national workforces employed in these groups also varies greatly, from less than 1% in Denmark and the UK to 6% in Portugal and Romania.

The relationship between size and female share is even stronger for this occupation; for a one percentage point increase in proportion of all employees, the female share of employment increases by eight percentage points. Such a simple model is able to explain nearly 65% of variation found across countries. Again, this analysis describes significant differences between countries and clear patterns in that relationship, but more detailed drilling down into the data would be needed to begin to understand the processes that are producing these relationships. In this case, these variations in gender segregation between countries is probably in part an artefact of the broad nature of this occupation, with women unevenly distributed between more specific *Food, wood and textile* branches.

Figure 19. Percentage of women employed as *Teaching professionals* and occupation's share of total employment – EU-26, 2010



The female-dominated occupation under focus is that of *Teaching professionals* (Figure 19). The percentage of men in this occupational category is less than 20% in many transition economies, but over 40% in Denmark and Luxembourg. Here, there is no relationship between the size of the occupation within each country and the female share of teaching professionals, suggesting that it is more to do with differences in social norms.

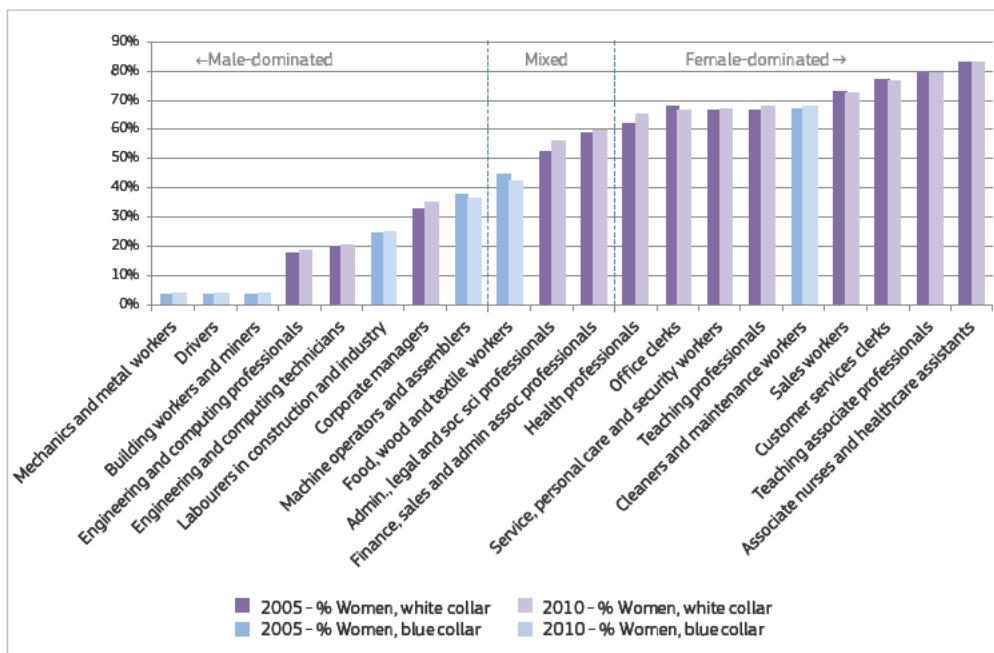
Table 4 classifies all of the Top 20 occupations according to whether there is a positive relationship between the employment volume represented by an occupation and the proportion of women employed in that occupation (with blue-collar occupations in the lighter typeface).

Table 4. Relationship between occupation's share of total employment and percentage of women employed in occupation – EU-26, 2010

Positive	No relationship	Negative
Corporate managers	Teaching professionals	Drivers
Food, wood and textile workers	Building workers and miners	Engineering and computing technicians
Mechanics and metal workers	Engineering and computing professionals	Customer service clerks
Machine operators and assemblers	Labourers in construction and industry	
Health professionals	Admin, legal and social science professionals	
Service, personal care and security workers	Finance, sales and admin assoc professionals	
Cleaners and maintenance workers	Office clerks	
Associate nurses and health-care assistants	Sales workers	
	Teaching associate professionals	

2.4.3 Aggregate changes in segregation in the Top 20 occupations 2005-2010

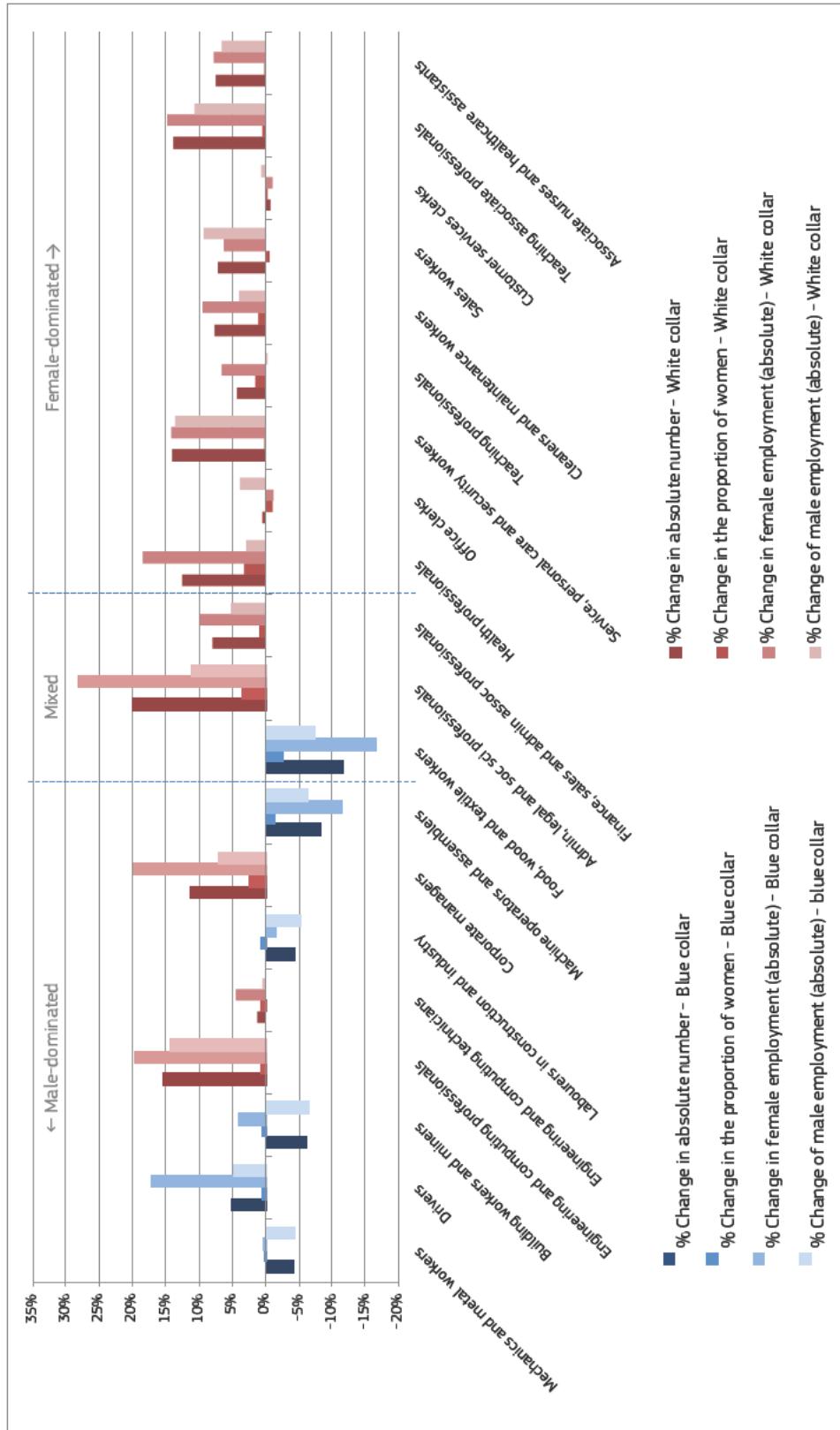
Taking again the same Top 20 occupations, in 2005 these represented 94.6% of all employees in the EU-26 (95% in 2010). The order remains fairly stable, with the top 3 occupations being *Office clerks*, *Service, personal care and security workers* and *Finance, sales and admin associate professionals* in descending order. Blue-collar employment and especially manufacturing employment declined substantially between 2005 and 2010, presumably strongly influenced by the onset of the financial crisis. Consistent with these changes, *Stationary plant and related operators* dropped from the 20th most important occupation to the 21st, to be replaced by a service occupation, *Teaching associate professionals*. However, to allow for comparability across both years, the Top 20 occupations from 2010 are retained.

Figure 20. Percentage of women, Top 20 occupations – EU-26, 2005-2010

Little change occurred with regard to patterns of segregation at the EU-26 level between 2005 and 2010. Figure 20 demonstrates how women decreased their share of employment in only five occupations: *Customer services clerks*, *Machine operators and assemblers*, *Food, wood and textile workers*, *Sales workers* and *Office clerks*.

Figure 21 places these changes in perspective. While female-dominated occupations performed much better relative to male-dominated occupations over the course of the financial crisis until 2010, this is largely a function of women being concentrated in white-collar employment. Only one blue-collar occupation saw an increase in its absolute number of employees, that of *Drivers*, where the occupation grew by 5.15%.

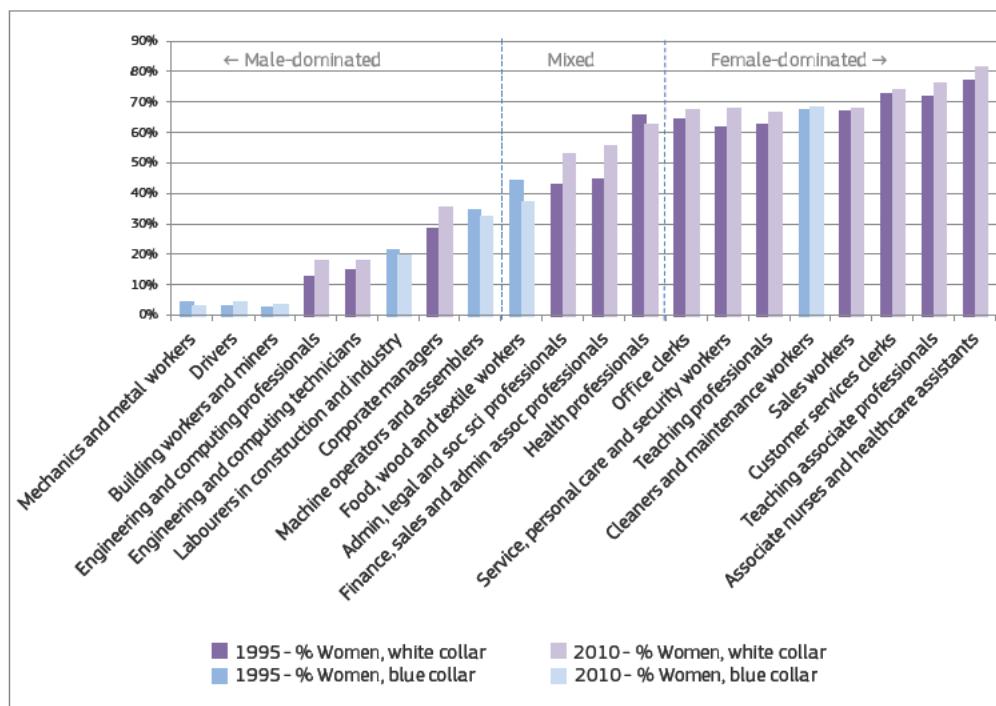
On the other hand, female employment in *Machinery and related trades* and *Building workers and miners* also increased, while male numbers declined. Overall, female employment growth outpaced that of men in almost all occupations with the exception of the five mentioned above. The highest increases in the female share of employment were for *Corporate Managers* where women increased their share from 32.7% to 35.2%, *Health professionals* (61.8% to 65.1%) and *Admin, legal and social science professionals* (52.5% to 56%). It is important to note that most increases of the female share cannot be explained by a decline of male employment but rather by faster rates of female employment growth in each occupation. Blue-collar work follows a completely different dynamic whereby increases in the proportion of women are most often explained by faster declines for men and slower declines or stable employment for women.

Figure 21. Evolution of male and female employment, by occupation – EU-26, 2005-2010

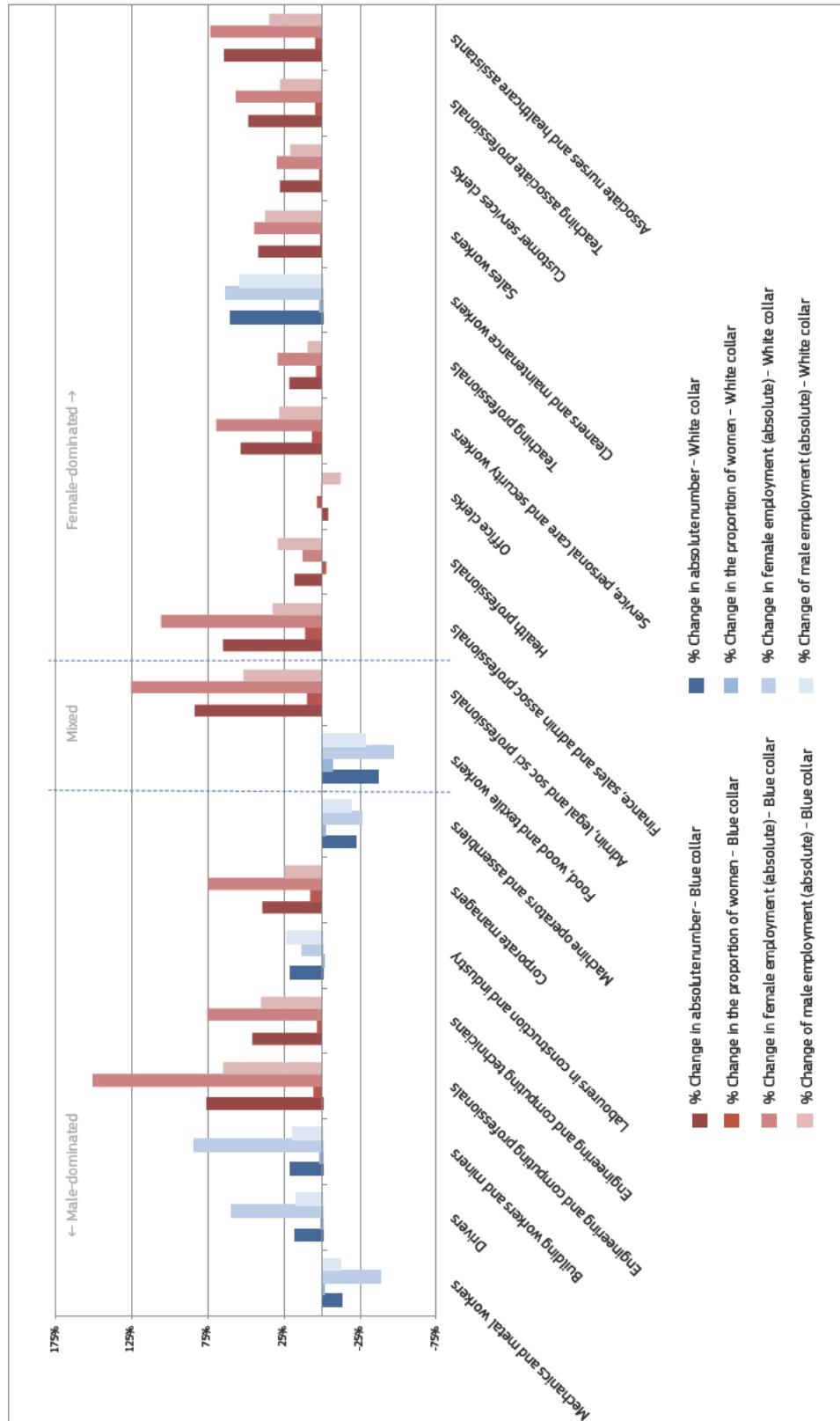
2.4.4 Aggregate changes in segregation in Top 20 occupations 1995-2010

In order to link the findings of this report with trends over a longer time period, changes in the female share of employment in each occupation are measured between 1995 and 2010. Only data for 12 countries are available for study in 1995⁷. The Top 20 occupations are the same as in 2005, with *Stationary plant and related operators* being the 20th most important occupation. Focusing on the Top 20 occupations from 2010 again, in almost all ISCO categories women increased their share of employment, with the exception of many blue-collar occupations in which female shares declined (see Figure 22). The most important declines in female share occurred for *Food, wood and textile workers* (7.1 percentage points) followed by *Machine operators and assemblers* (1.9 percentage points), *Labourers in construction and industry* (1.4 percentage points) and *Mechanics and metal workers* (1.3 percentage points). Only one white-collar occupation witnessed a decrease in its share of female employment: *Health professionals* (-3.2 percentage points).

Figure 22. Percentage of women, Top 20 occupations – EU-12, 1995-2010



⁷ France, Denmark, Ireland, Austria, Belgium, Spain, Greece, Italy, Luxembourg, The Netherlands, Portugal, the United Kingdom.

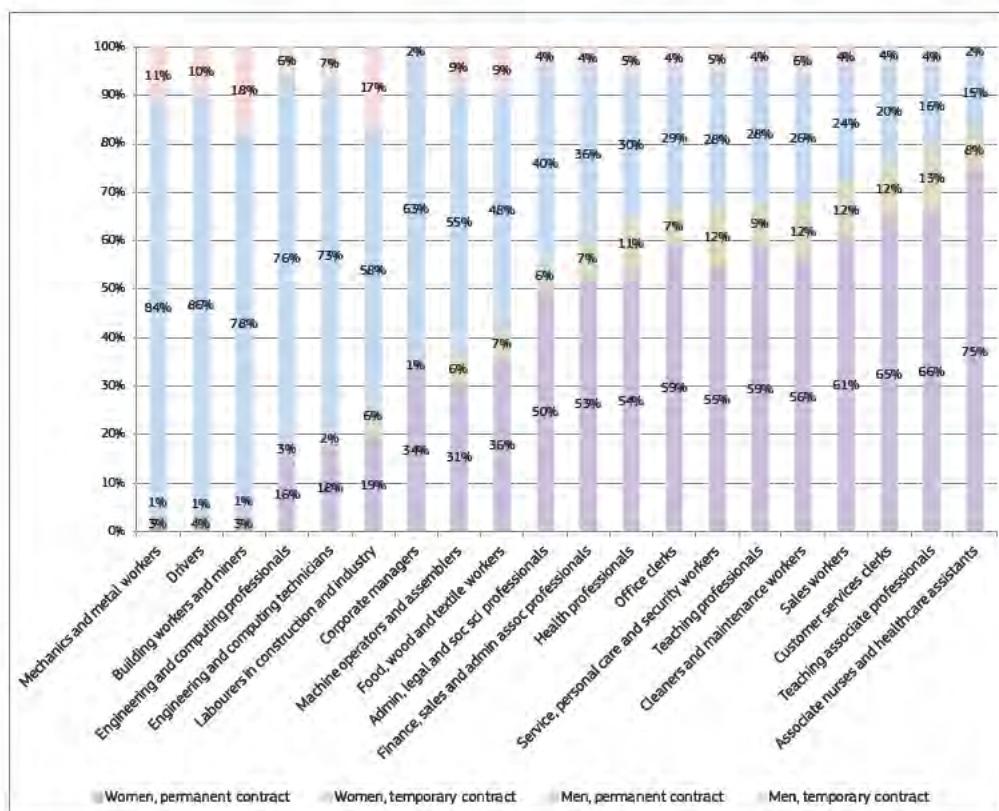
Figure 23. Evolution of male and female employment by occupation – EU-26, 1995-2010

To better understand the changes over time, these figures are again compared to growth in the number of employees in each occupation for men and women. As with the observed changes for 2005–2010, many of the increases or decreases in female shares of employment within occupations occur because of faster increases in the number of women's jobs than in men's jobs. Figure 23 shows that growth in the number of female employees in each occupation was faster than the growth of men's jobs in all occupations with the exception of *Health professionals* and *Labourers in construction and industry*. In the other occupations in which women decreased their share of employment – *Office clerks, Food, wood and textile workers, Machine operators and assemblers* and *Mechanics and metal workers* – this occurred because of faster declines in women's jobs compared to men's. Thus, within the overall trend of declining manufacturing-related blue-collar employment, in most occupations female employees increased in greater numbers than male employees, suggesting a dynamic affecting the European economy at large.

2.5 Job quality in the Top 20 occupations

2.5.1 Temporary and permanent employment

Figure 24. Share of temporary and permanent contract by gender and occupation – EU-26, 2010



Women are at slightly greater risk of being in temporary employment in the EU-27. As reported above in Table 3, 14.1% of women and 12.6% of men in the Top 20

occupations are currently on a temporary contract (Figure 24). Patterns of gender segregation scarcely differ between temporary and permanent employment and in most occupations women have a slightly higher share of temporary than permanent employment. In general, the proportion of women working on temporary employment contracts is greater the more female-dominated the occupation, but this trend reverses in the two most female-dominated professions, *Teaching Associate professionals* and *Associate nurses and healthcare assistants*. Men on temporary contracts represent greater proportions of employees in the male-dominated occupations. Two male blue-collar occupations stand out for their high rates of male temporary work: *Labourers in construction and industry* and *Building workers and miners*. In contrast, proportions of women working on temporary contracts vary much less across female-dominated occupations.

2.5.2 Supervisory responsibilities

One way in which we can examine the level of seniority for occupations, and for men and women within those occupations, is by looking at the proportion of employees who report that they have supervisory responsibility for other employees – a question that is asked in the main LFS questionnaires. These proportions are given in Figure 25. First it can be observed that supervisory responsibilities are highly concentrated in certain specific occupations, with the most prominent being the previously mentioned *Corporate managers* category where 83.7% of men and 74.6% of women report being in a supervisory role. For men, this is followed by the *Health professionals* category (54.7%), *Admin, legal and social science professionals* (44.1%) and *Engineering and computing professionals* (43.6%). The same opportunities for supervisory work appear for women, but at much lower rates (33.2%, 30.6% and 32.1% respectively).

Figure 25. Percentage of men and women with supervisory responsibilities by occupation – EU-26, 2010

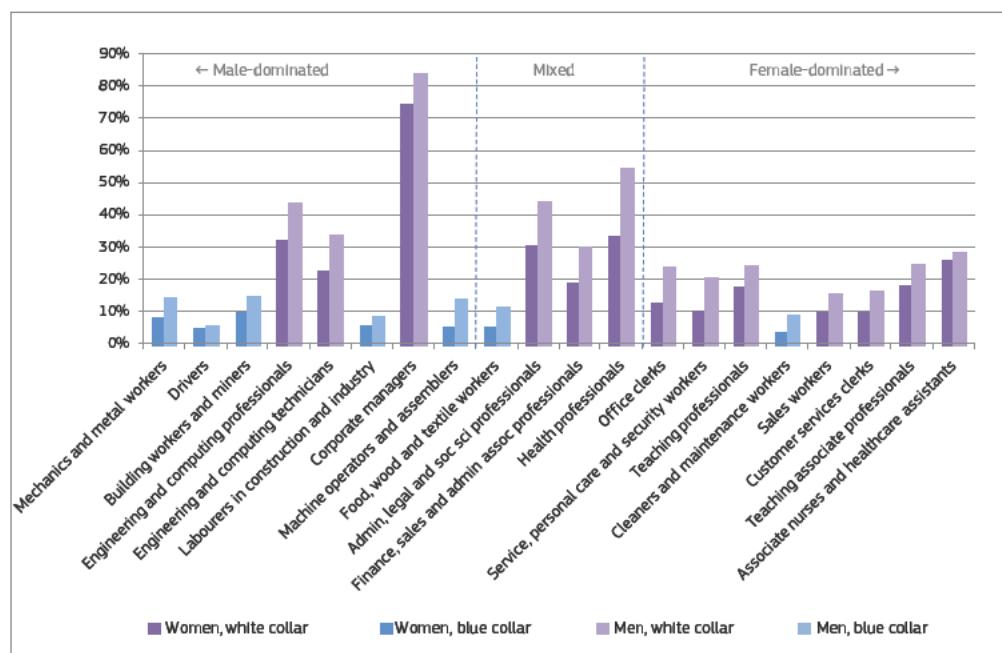


Figure 25 is an example of how higher job quality among men, as well as vertical segregation, can be very clearly understood by examining the graph of the Top 20 occupations. Most strikingly, men are more likely to be supervisors than women in every single occupational group without exception. Furthermore, it is clear from the graph that female-dominated occupations (with the exception of *Health professionals*) do not offer many opportunities for supervisory responsibilities compared to some of the male-dominated and mixed occupations.

2.6 Occupations and workforce characteristics

2.6.1 Age and occupational segregation

Figure 26. Percentage of men by occupation and age group – EU-26, 2010

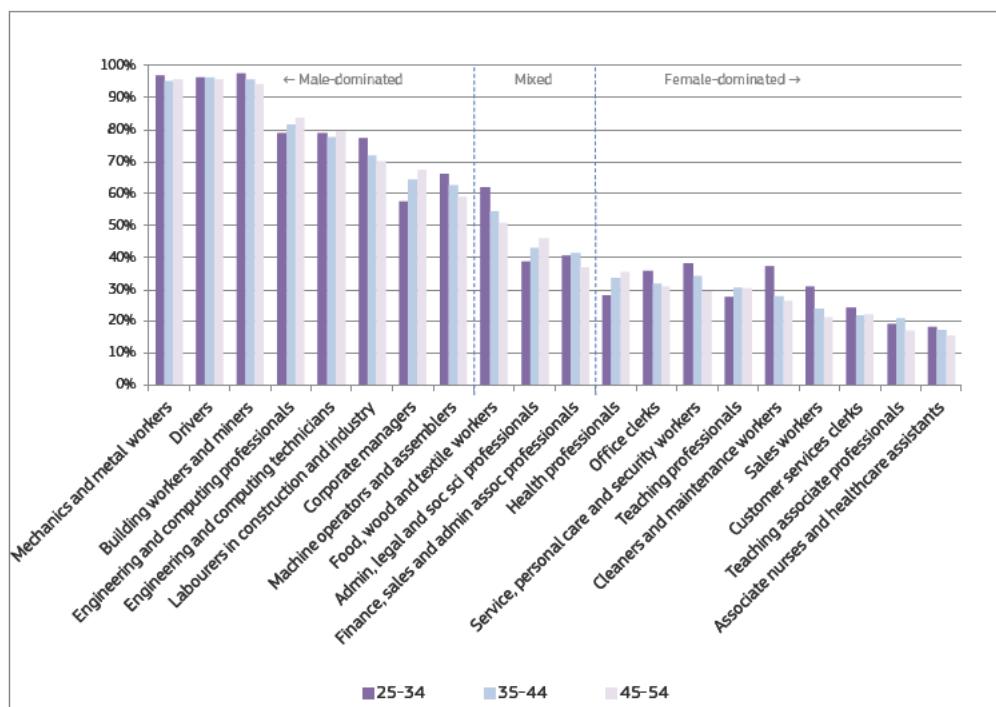
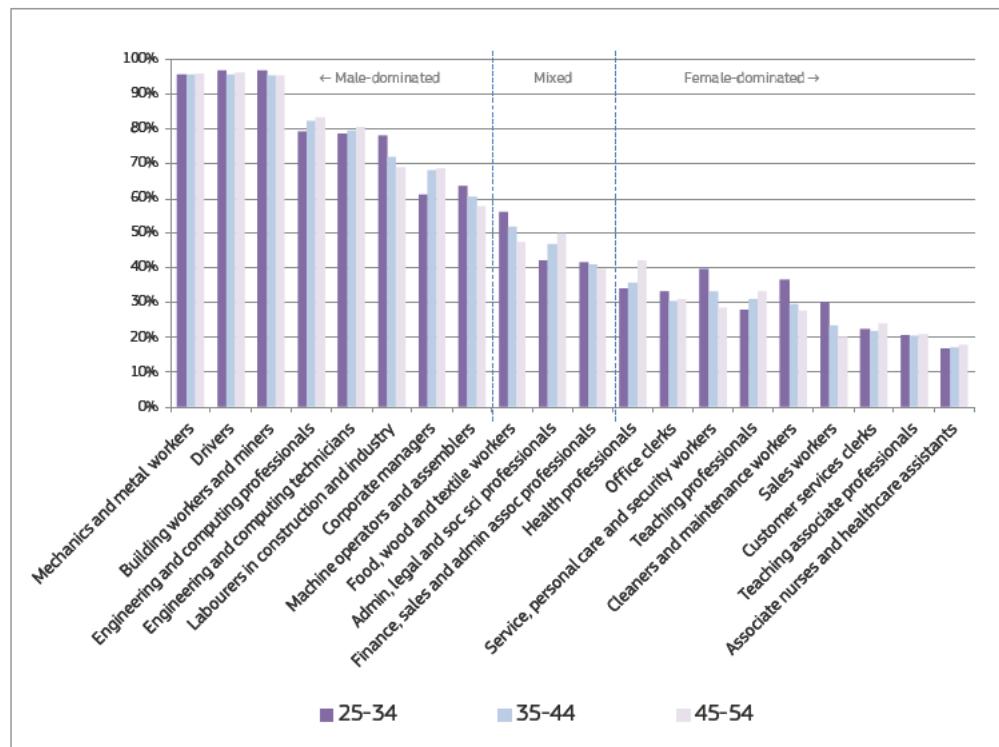


Figure 26 shows how the distribution of men and women across occupations differs significantly by age group as men and women pass through different stages of the life-course and their careers. In order to circumvent the fact that a significant proportion of the population is either studying or retired at younger and older ages, only three age groups are compared here: the 25-34, 35-44 and 45-54 year-olds. While in a number of occupations little difference between age groups is found, in professional, white-collar occupations, men's share of jobs increases in older age groups. For instance, while men already represent 57.3% of *Corporate managers* in the 25-34 age group, this increases to 64.3% for the 35-44 age group and 67.5% in the 45-54 group. Such a tendency is also observable for the *Admin, legal and social science professionals*, *Health professionals* and *Engineering and computing professionals*, and to a lesser extent for *Teaching professionals*.

Using 2005 data provides a way of attempting to distinguish between cohort and lifecourse effects. Figure 27 shows that similar patterns are indeed observable five years earlier, with the male share of *Corporate managers* increasing from 61.2% in the 25-34 age group to 68.7% in the 45-54 age group. Similarly, the proportion of men in the *Health professionals* category increased from 34.2% to 42.1% between the two same age groups.

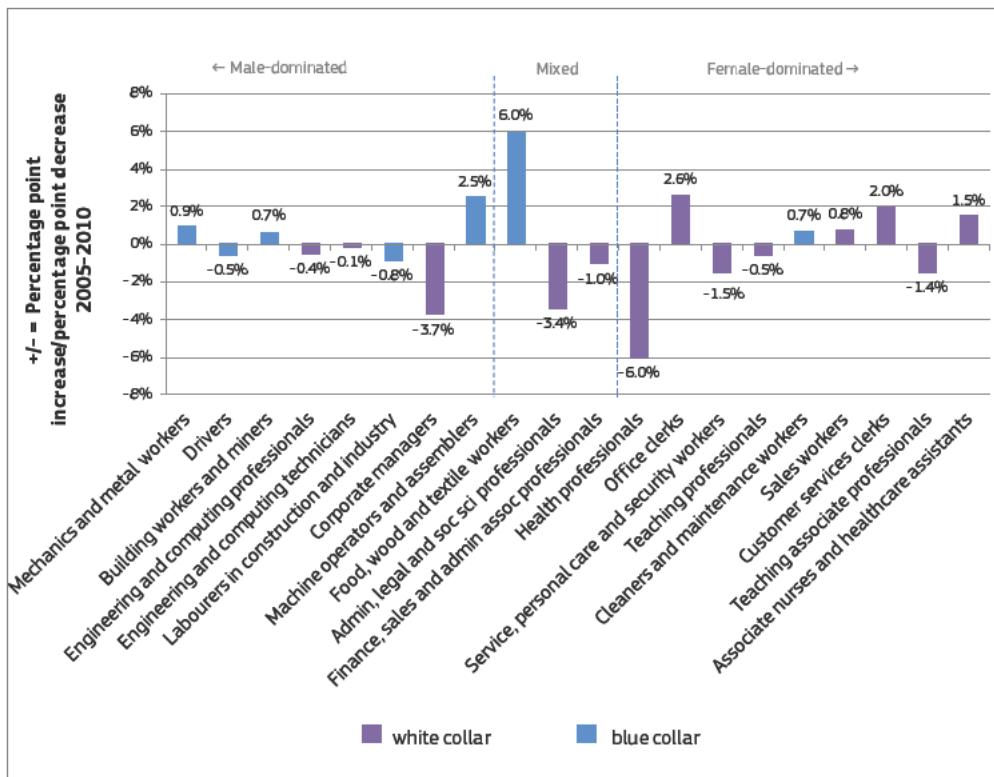
Figure 27. Percentage of men by occupation and age group – EU-26, 2005



For women, the implications of such an observation is that, as the individual moves through the life course, gendered realities increasingly exclude women from the professional, white-collar occupations associated with higher pay but longer hours, in favour of more female-dominated, less skilled occupations with shorter hours. Given that this tendency is observable in both 2005 and 2010, this suggests that the observation reflects more than a single cohort or is simply the effect of the economic crisis. This suggests that, during their careers, men not only integrate faster into the professions than women do but also sustain and increase their presence over the life course, while women's presence declines, associated with career breaks for childcare and eldercare.

Closer observation of changes between 2005 and 2010 for the 25-34 age group provides clues as to the effects of the economic crisis on gender segregation, all the more important given the much higher levels of unemployment faced by young people than other age groups across the European Union.

Figure 28. Percentage point difference in male share of employment 2005–2010, 25–34 age group – EU-26, 2010



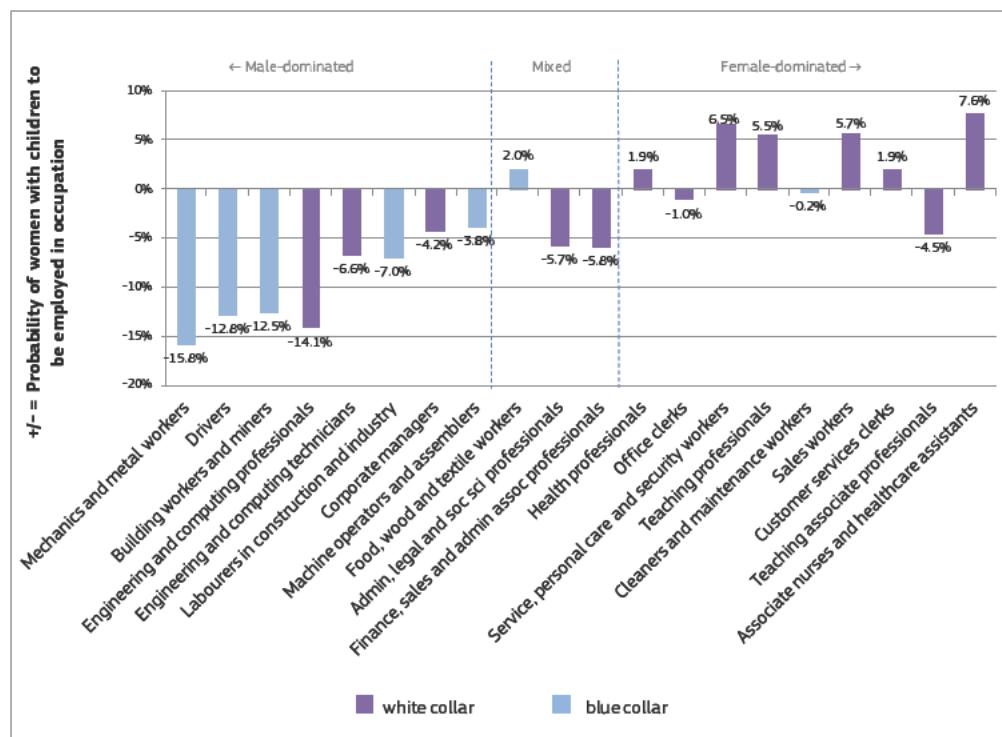
Generally, between 2005 and 2010 there has been a certain tendency for young women (the 25–34 age group) to increase their share of employment across occupations, with the largest increase to be found for *Cleaners and maintenance workers* (10.1%) and *Food, wood and textile workers* (9.3%) (see Figure 28). The exact reasons for this tendency cannot be ascertained by this simple analysis, yet it should be noted that men increased their share of employment in eight occupations as well, including the three most male-dominated, but generally by smaller proportions. Implications for segregation are unclear, but at the very least there is no indication of greater polarisation of women and men across different occupations.

2.6.2 Living with a child under 15 years of age

The presence of children in the household has important consequences with regard to care work and the career patterns of women. Figure 29 illustrates the extent to which men and women with children under 15 are over- or under-represented in each occupation in relation to their share of the Top 20 occupations. It is very clear from Figure 29 that women with children in the household are under-represented in male-dominated occupations. For men with children under 15, there is a clear tendency to be over-represented in male-dominated occupations and under-represented in female-dominated occupations; however, there is also clearly a number of exceptions to this. Men with children are most over-represented in the *Corporate managers* category, perhaps demonstrating a pressure on men to become breadwinners in households with children, while the pressures on women with children is towards part-time jobs and occupations with norms of more family-friendly hours. It is also plausible that there is less employer discrimination against flexible working

hours to accommodate childcare responsibilities in female-dominated occupations. Note also that there were large country-specific effects for the relationship between children and women's jobs, but the effects seemed to be more consistent across the EU for men's jobs.

Figure 29. Over and under-representation of women living with a child under 15 years of age by occupation – EU-26, 2010



2.6.3 Education levels⁸

Figure 30. Percentage of men with higher, upper secondary and lower secondary education by occupation – EU-26, 2010

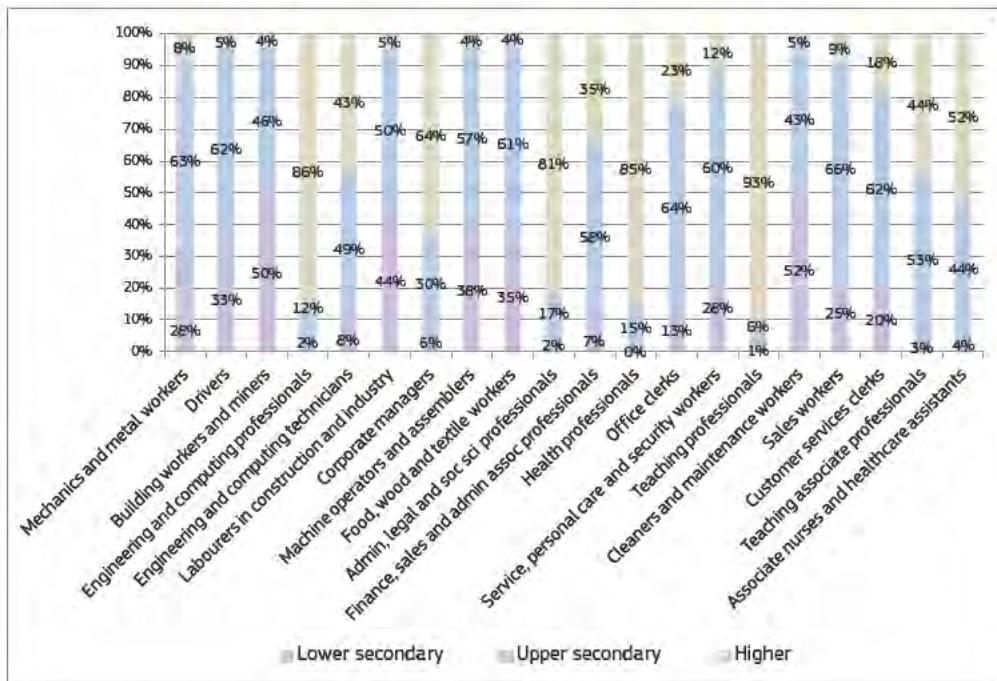
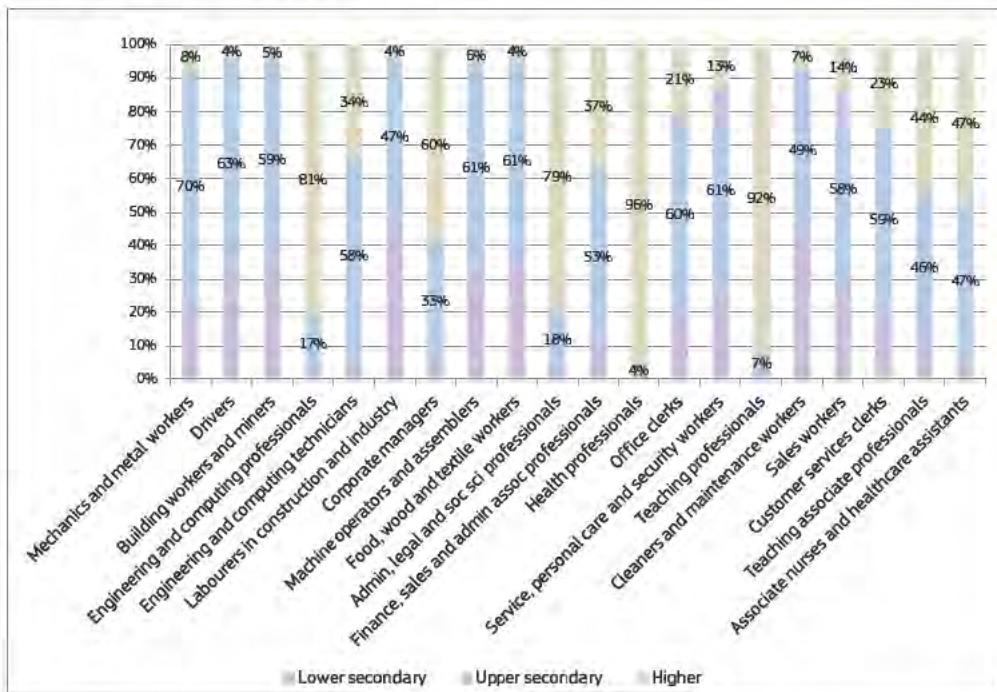


Figure 31. Percentage of women with higher, upper secondary and lower secondary education by occupation – EU-26, 2010

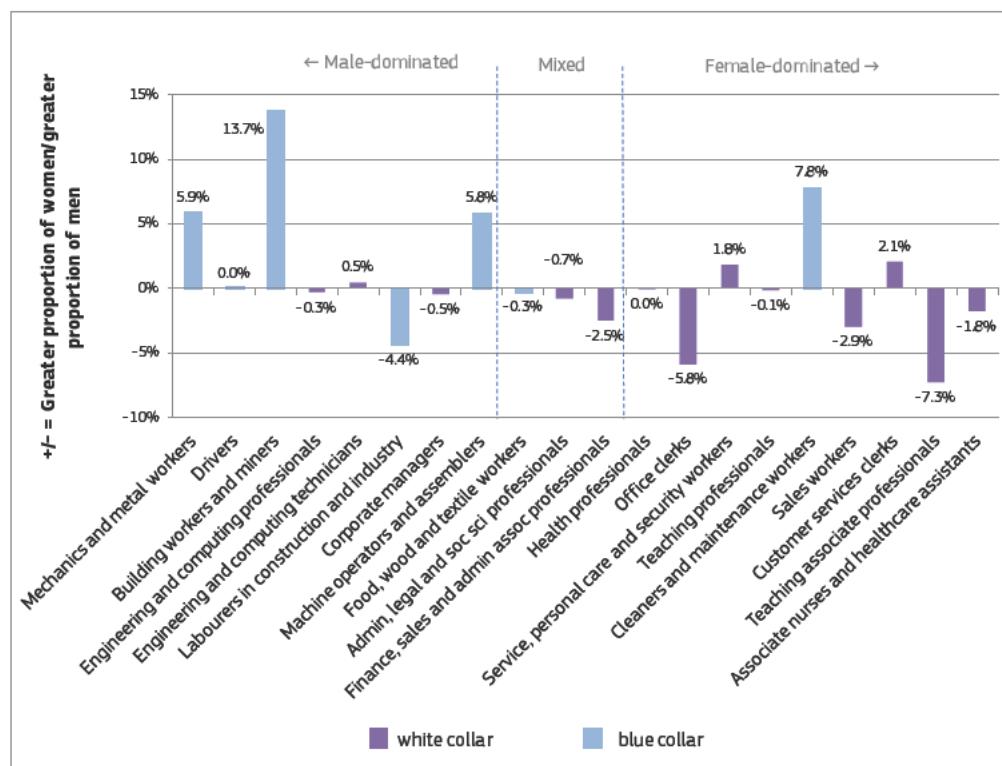


⁸ Lower secondary, upper secondary and higher education levels are derived from the International Standard Classification of Education scheme (ISCED) as coded in the EU-LFS. Generally this refers to highest level of educational qualification attained by an individual.

Figures 30 and 31 show how the educational level of male and female employees varies according to the type of work they are undertaking. Differences within occupations are explored in Figures 32 and 33. For women, it is blue-collar occupations that have much higher shares of women with only lower secondary and upper secondary levels of education; the greatest proportion of women with only a lower secondary level of education is to be found in the Labourers in construction and industry occupation (49%) and Cleaners and maintenance workers (44%). The first is male-dominated while the second is female-dominated; there is no indication that women's level of education within an occupation is linked to the level of segregation.

The occupational distribution of male employees by level of education again varies according to the nature of the work, with workers with lower secondary levels of education comprising even larger proportions of blue-collar occupations. The percentage of employees with higher education is greater than 50% in six occupations, for men and for five occupations for women. Figures 32 and 33 compare the levels of education of men and women within each occupation.

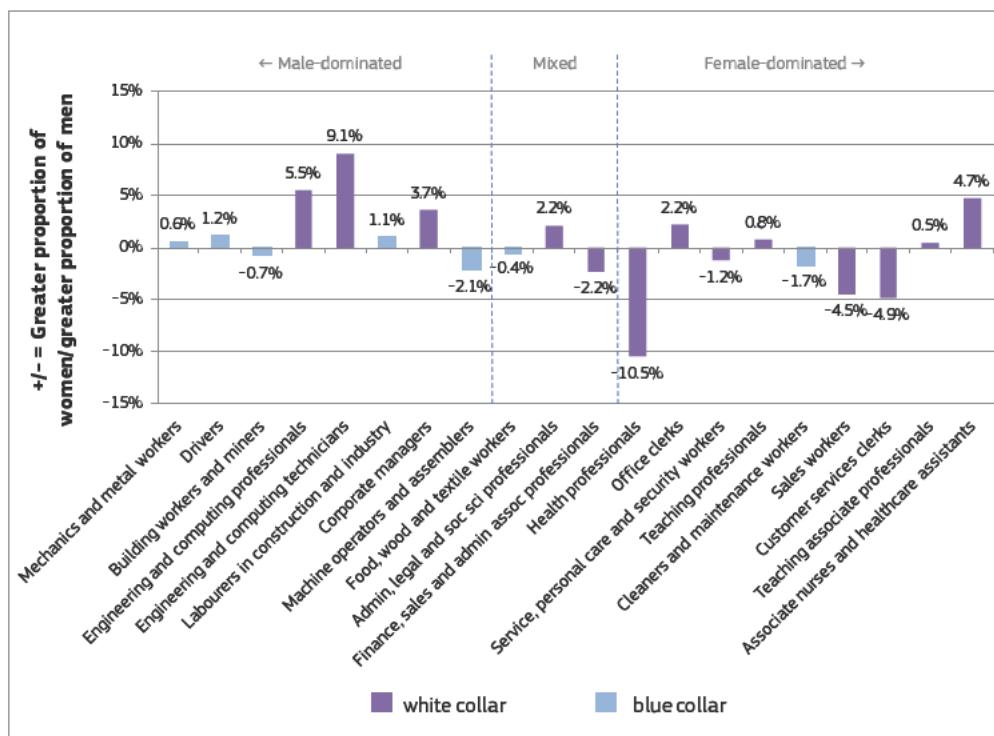
Figure 32. Percentage point difference in share of employment between men and women with lower secondary education by occupation – EU-26, 2010



If we inspect the proportions of men and women with only lower secondary education in each of the Top 20 occupations, one occupation stands out from the rest: men with lower secondary education are over-represented in the *Building workers and miners* category. This very male-dominated occupational group attracts few women, but the ones who do work in this occupation are there because of their skills and education rather than their physical strength.

Turning to employees with higher education, we again find some clear gender differences. Men in the *Health professionals* category are more highly educated than women, presumably because of the different educational routes into the highly-gendered sub-category of nurses rather than the more educationally-exclusive occupations such as doctors, dentists and veterinary scientists.

Figure 33. Percentage point difference in share of employment between men and women with higher education by occupation – EU-26, 2010



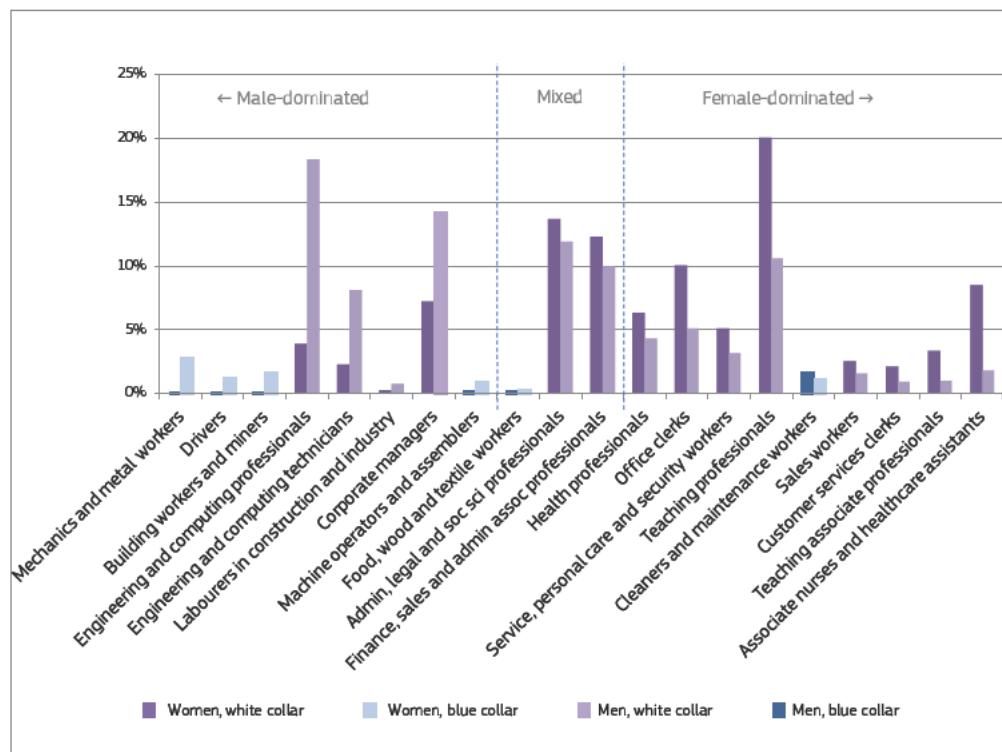
The opposite effect is observed in the two male-dominated occupations of *Engineering and computing professionals* and *Engineering and computing technicians*; the minority of women in these categories are more likely than the men to have higher levels of education.

So far in this section we have focused on the proportions within each occupation who possess higher or lower levels of education. If we turn the question around and ask instead “What happens to the men and women who have higher levels of education?”, we find a different picture. As Figure 34 illustrates, individuals with higher education are not necessarily *concentrated* according to education in occupations in which their gender dominates.

Here it is possible to note that men with higher education are concentrated mainly in five occupations, *Engineering and computing professionals*, which accounts by far for the greatest number of men with higher education at 18.4%, *Corporate managers*, *Admin, legal and social science professionals*, *Teaching professionals* and *Finance, sales and admin associate professionals*. For women, four occupations have 10% or more of highly educated women: *Teaching professionals* (20%), *Admin,*

legal and social science professionals (13.7%), *Finance, sales and admin associate professionals* (12.3%) and *Office clerks* (10%). These three occupations together represent 56% of all women with higher education. In other words, highly educated men have access to a wider variety of occupations, but for highly educated women their choice of occupations is more constrained.

Figure 34. Volume of men and women with higher education by Top 20 occupations – EU-26, 2010

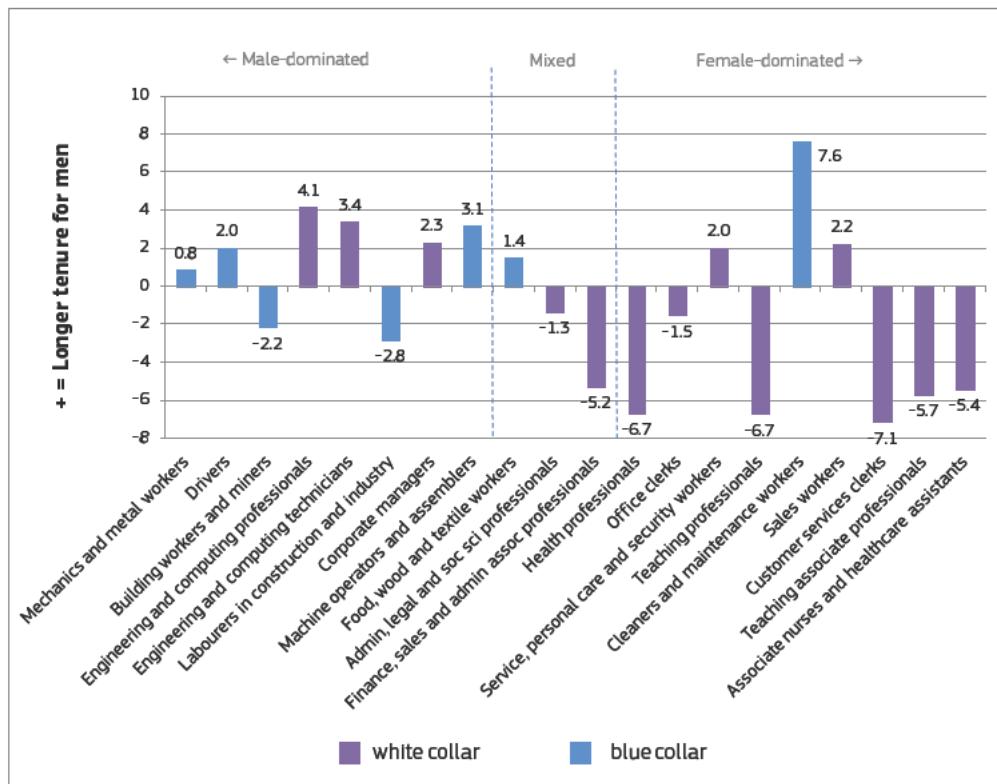


2.6.4 Job tenure

The Labour Force Survey asks all respondents when they started working for their current employer.⁹ The length-of-tenure data, that can be derived from this, is often taken as a measure of the stability of employment. Yet this cannot be taken as a clear measure of job quality; short average tenure for a group can be a sign of job insecurity, or of a group that is experiencing rapid upward career trajectories. Long tenure can be associated with lower secondary sector employment, or with employees who are stuck with their current employer and are constrained in their other options, for example, due to childcare restricting them to local employers (Burchell and Rubery 1990).

⁹ Please consult Appendix E for more details.

Figure 35. Difference in job tenure, men and women (months), 25-34 age group – EU-26, 2010

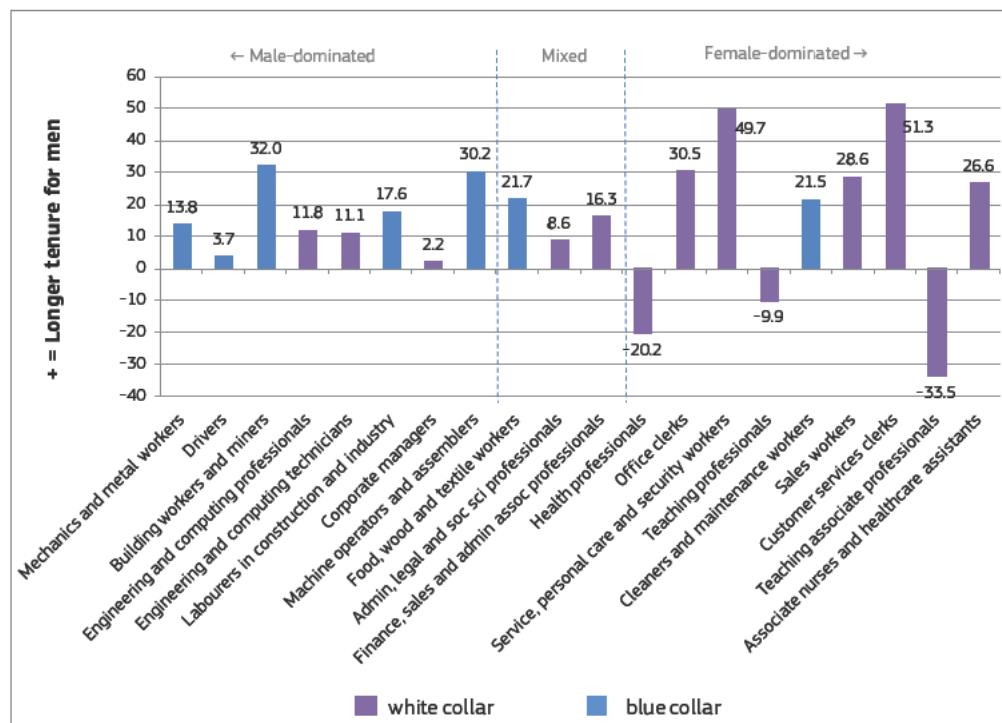


It is nevertheless interesting to examine differences in average tenure between genders and gendered occupations as depicted in Figure 35. With women facing more frequent and longer career breaks due to child-bearing and traditional gender roles, job tenure may be an indicator as to whether employers offer flexibility in working hours to allow employees to keep their jobs through life transitions. Job tenure for men and women is compared for three age groups: 25-34, 35-44 and 45-54, as job tenure is very highly correlated with age. The clearest patterns are for the youngest and oldest age bands, so they will be shown here.

In the 25-34 age group, there tends to be little gender difference in tenure in male-dominated occupations. However, for many of the higher paid mixed and female-dominated occupations that tend to be associated with good careers, women have notably longer tenure than men. Yet the opposite is true for the low-skill, low-paid Cleaners and maintenance workers where women seem to be more mobile between jobs.

For 35-44 year olds, men increase their advantage in job tenure, with 13 out of 20 occupations registering longer tenure for male employees in comparison to 10 out of 20 for the 25-34 age group. The differences in job tenure for men and women are also greater in the older age group.

Figure 36. Difference in job tenure, men and women (months) 45-54 age group – EU-26, 2010



This gender gap increases further for the 45-54 age group; Figure 36 shows that men have longer tenure than women in 17 of the Top 20 occupations. The three occupations where women stay with their employers for longer are *Health professionals*, *Teaching professionals*, and *Teaching associate professionals*. These are all occupations associated with the public sector in which greater opportunities for career continuity may be available. Differences between men and women in job tenure appear to be larger in female-dominated occupations, perhaps reflecting men's greater tendency to move on to higher positions in organisational hierarchies.

2.7 Segregation and working conditions

2.7.1 Working time

With only 7.8% of male employees working part-time, compared to 32.4% of female employees, it is essential to take into account part-time working in understanding the dynamics of women's trajectories over their life course – although these dynamics apply primarily in the northern and/or western European countries where part-time work is a common employment form. Figure 37 shows that the dynamics of gender segregation are significantly different for part-time and full-time workers. Part-time work is more heavily segregated, as fully 76% of women employees working part-time can be found in female-dominated occupations compared to 69.4% of all women in employment.

The general tendency for female part-timers to be in female-dominated professions is true for men also: 45% of male part-timers work in occupations dominated by women compared to just 26% of all men.

Figure 37. Distribution of part-time and full-time work across occupations, men and women – EU-26, 2010

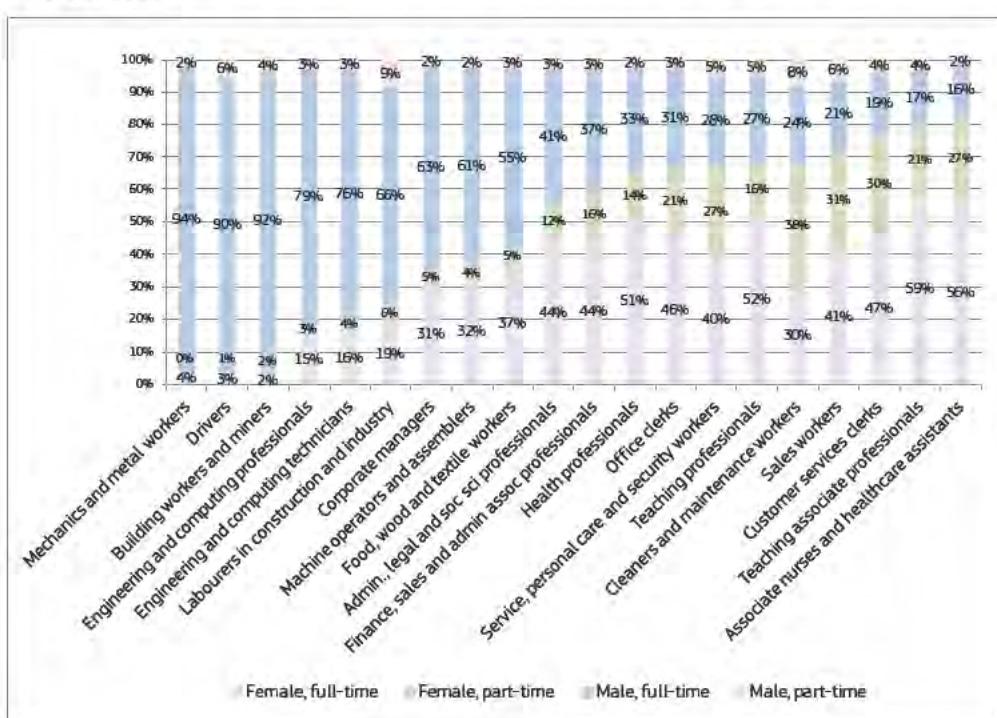
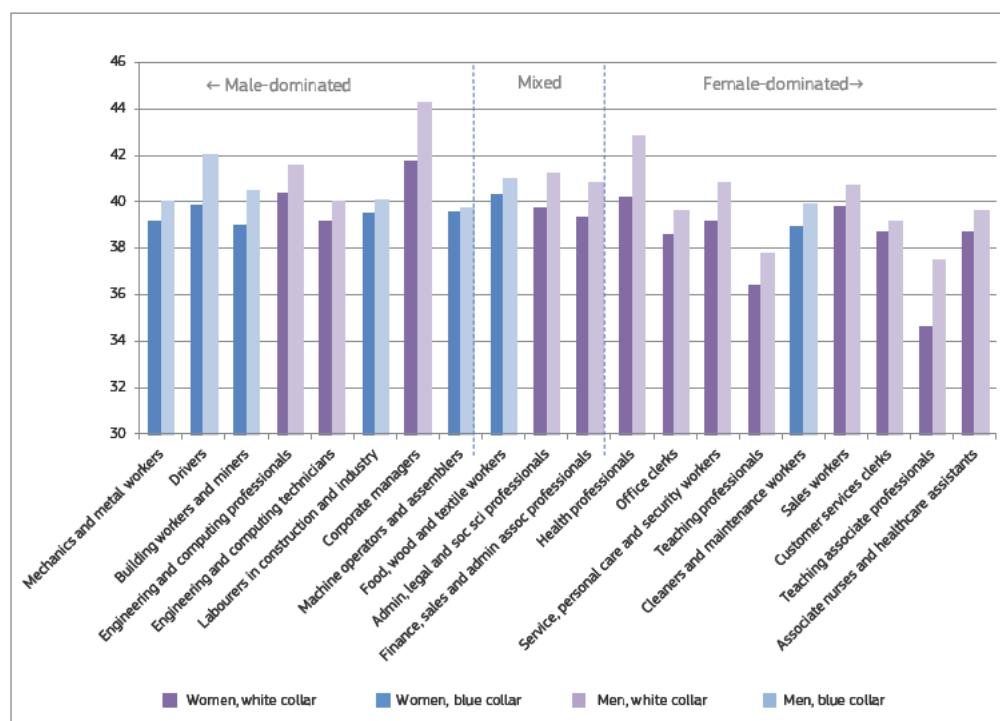


Figure 37 shows the share of part-time and full-time work for men and women in each occupation. There is a clear tendency for women working part-time to appear in greater proportions as the occupation becomes more female-dominated. The exception to this trend is that the largest share of female part-time work is to be found in *Cleaners and maintenance workers*, where female part-time employees represent 38.5% of all workers, while this occupation is only the fifth most female-dominated.

Male part-time work has its largest share of the employed in two blue-collar occupations: *Cleaners and maintenance workers*, and *Labourers in construction and industry* where it represents 7.8% and 8.7% of all employees respectively. Male part-time work seems to be a function of specific conditions within certain occupations rather than a function of the gendering of occupations.

Figure 38. Mean hours usually worked by occupation, men and women – EU-26, 2010

Men's average working hours are longer than women's in every occupation (Figure 38). This is partly due on the one hand to higher rates of part-time work amongst women and on the other hand to male full-timers working longer hours on average than full-time women. Within the same Top 20 occupations, women report that they usually work 33 hours on average while men work 39. Hours tend to be longest for men and women in more mixed occupations, while men also work longer hours in male-dominated occupations. Taking out the extremely short and extremely long hours to remove outliers and extreme cases (i.e. the bottom and top 5% of the distribution), we find that men continue to work longer hours than women in every occupation. If the differences between these hours are considered, it is clear that the smallest differences are to be found in mixed occupations, with much longer hours for men in both male-dominated and female-dominated occupations. Figure 38 illustrates that the biggest gaps between average hours for men and women are in some of the blue-collar and lower-paid white-collar jobs, where overtime would tend to be paid, often at premium rates.

Perhaps even more significant for working and family life are the very long and very short hours (0-19 and 48+ hours) that some individuals find themselves working. For men, very long hours are most common in three occupations: *Corporate managers*, where 28% of employees work over 48 hours per week, *Health Professionals* (21%) and *Drivers* (16%). While long hours are generally quite rare in female-dominated occupations, there is no straightforward relationship between the percentage of men working very long hours and the gender composition of an occupation. On the other hand, proportions of men working very short hours are much higher in female-dominated occupations.

Figure 39. Difference in working hours between men and women (12-50h per week) – EU-26, 2010

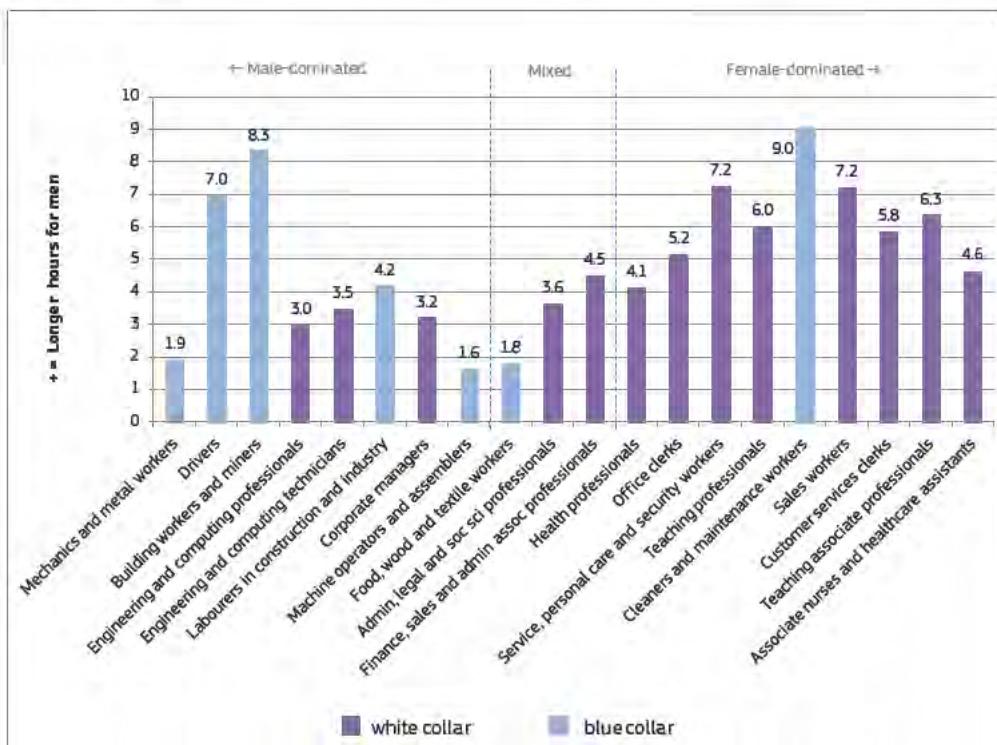


Figure 40. Men, very long and very short hours by occupation – EU-26, 2010

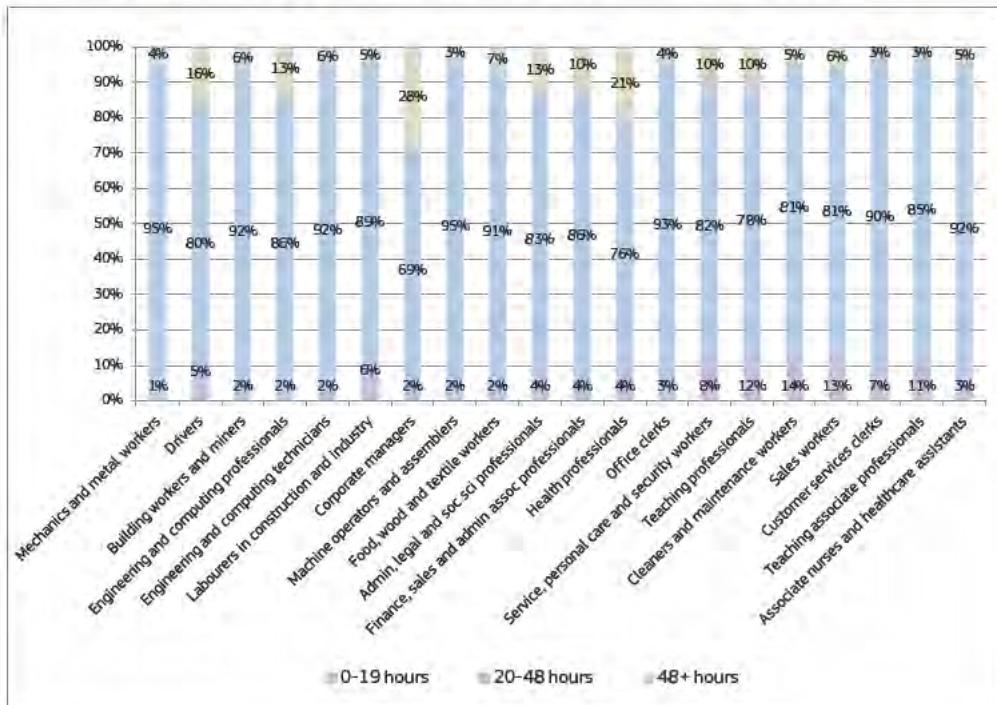
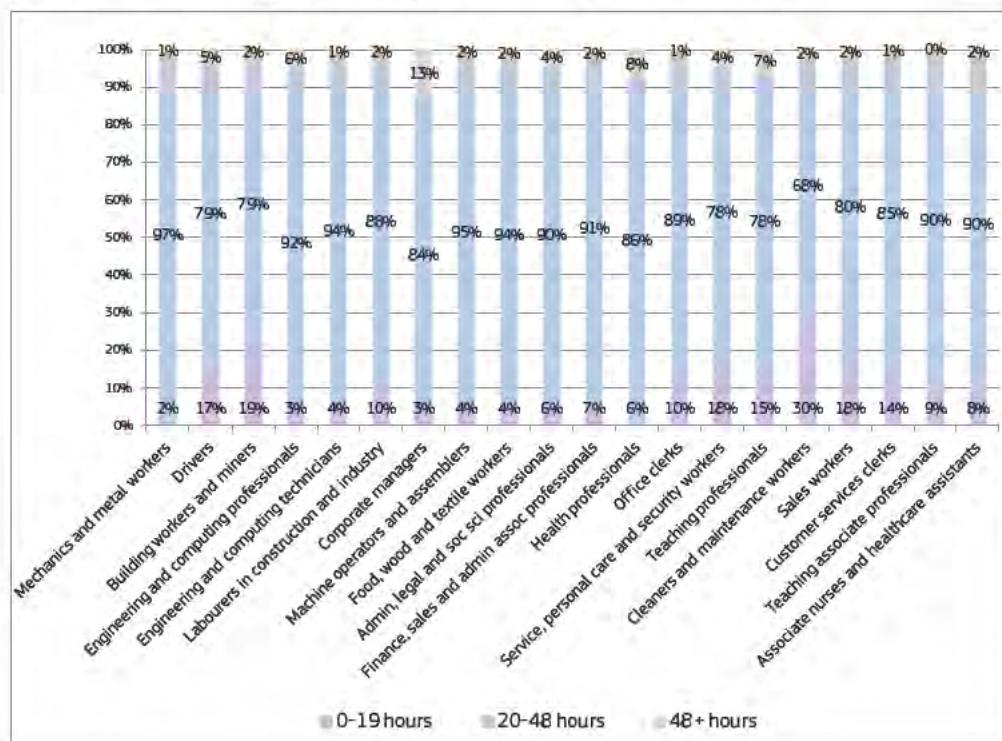
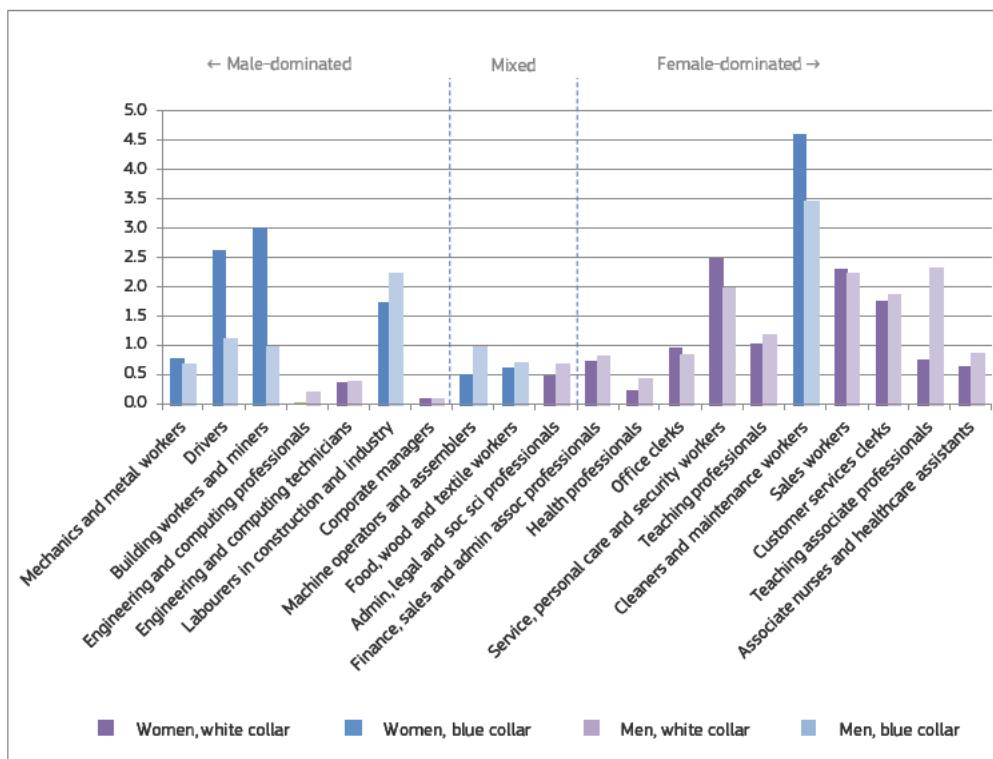


Figure 41. Women, very long and very short hours by occupation – EU-26, 2010

The proportion of women working very long hours is much smaller than men in all occupations; the highest proportions can be found in *Corporate managers* (13%), *Health professionals* (8%) and *Teaching professionals* (7%) (Figure 41). Long hours are very rarely worked by women employed in the most female-dominated occupations. Similarly, the proportion of women working very short hours is larger than men's across all occupations with the exception of *Teaching associate professionals*. Although the proportion of women usually working between 0-19 hours per week tends to be greatest in female-dominated occupations such *Cleaners and maintenance workers* (30%) and *Sales workers* (18%), for two male-occupations, and especially within *Building workers and miners*, the share of women working very short hours is also high.

Figure 42. Difference between hours usually worked and hours wished by occupation and gender – EU-26, 2010



An indicator of whether individuals are satisfied with their working hours is the difference between the number of hours usually worked and the number of hours employees would like to work¹⁰. For employees in the Top 20 occupations, women wish they worked, on average, 34.6 hours per week while men wished they worked, on average, 39.9 hours; these are both higher figures than the hours usually worked by both sexes. Male employees wished they worked approximately 0.88 hours more while women desire to work 1.6 hours more. Differences by occupation and gender shown in Figure 42 can be largely explained by

the presence of very long and very short hours, yet it is interesting to note that women in blue-collar occupations have the largest differences between hours worked and hours desired. A possible explanation may be a comparison to the reference group of men who all work much longer hours within these occupations.

¹⁰ Please consult Appendix E for the formulation of this questionnaire item: there appears to some inconsistency between countries on the exact question asked.

Figure 43. Difference between hours usually worked and hours wished by occupation (0-19h usually worked) – EU-26, 2010

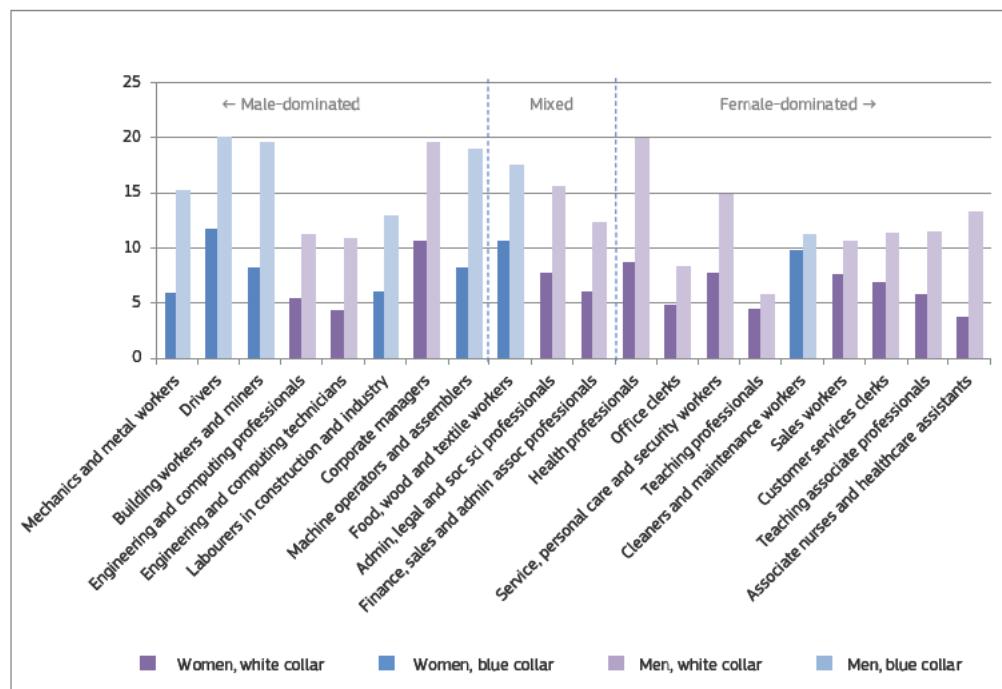
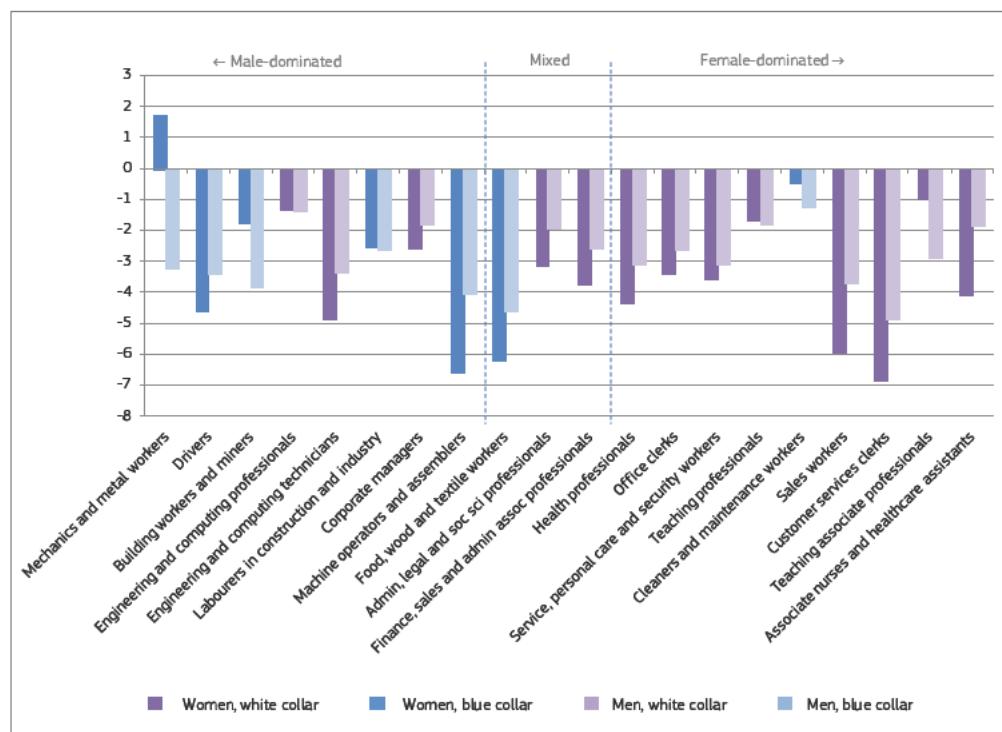


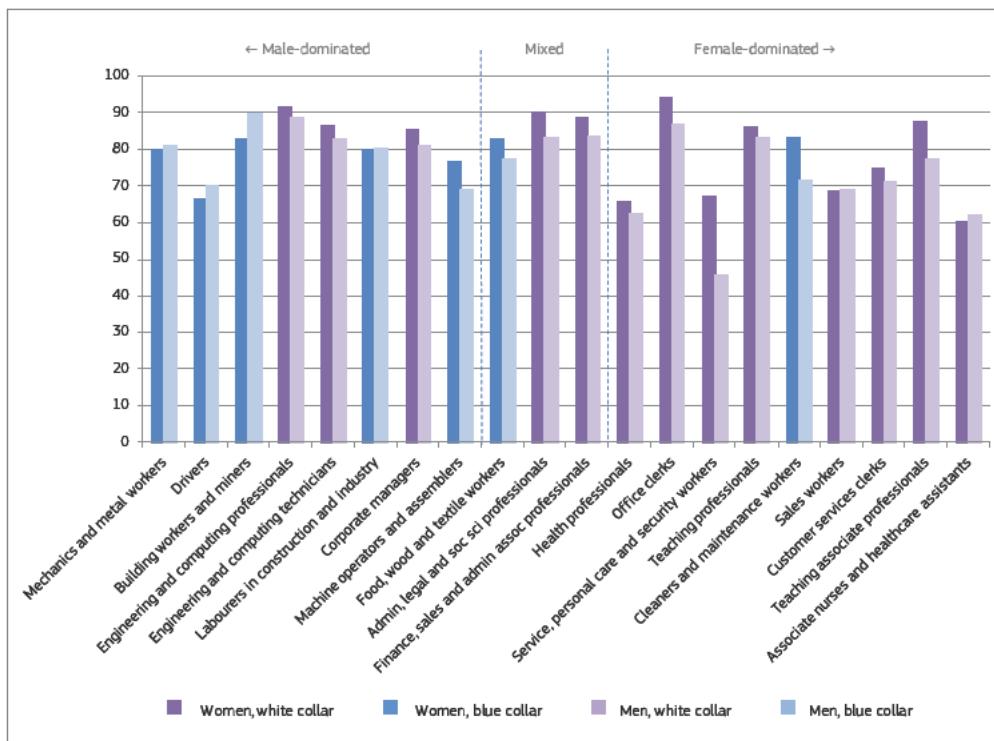
Figure 44. Difference between hours usually worked and hours wished by occupation (48+ hours usually worked) – EU-26, 2010



Among employees working 0-19 hours per week, both men and women desire to work more hours across all occupations for (Figure 43). Moreover, men would like to work more additional hours than women. Men working short hours in male-dom-

inated occupations are especially likely to desire much longer hours, perhaps reflecting the fact that part-time work in these occupations is very rare and probably undesirable. In the very long hours category shown in Figure 44, men and women all wish to work, on average, fewer hours than their usual hours, and, in the majority of occupations, this desire appears to be stronger for women.

Figure 45. Irregular hours index, male and female averages by occupation – EU-26, 2010



2.7.2 Irregular scheduling

An index for irregular hours is constructed based on Green and Mostafa's Working Time Quality sub-index (Eurofound 2012). Given that the Labour Force Survey is not as exhaustive in its measures of job quality as the European Working Conditions Survey on which the original index was based, this limited index provides only one indication of working time quality throughout the EU-27 (minus Malta). The index used in Figure 45 is constructed from five items: evening work, night work, Saturday work, Sunday work and shift work.¹¹ Four occupations have statistically insignificant differences between men and women on this measure: *Mechanics and metal workers*, *Labourers in construction and industry*, *Sales workers* and *Associate nurses and healthcare assistants*. Although, overall, women have slightly more regular working hours¹², there are some exceptions: *Drivers* and *Building workers and Miners* have more regular hours for male employees. But, in addition to differences within occupations, there are clearly trends across occupations with female-dominated oc-

¹¹ The first four questions in the index are coded in the following manner: 1 = usually works in the evening, 2 = sometimes works in the evening, 3 = never works in the evening, while shift work is either 1 = does shift work or 2 = never does shift work. Items are given equal weight and the index is coded from 0-100, with 100 indicating the absence of any irregular hours and 0 representing the presence of all irregular scheduling practices in an individual's job.

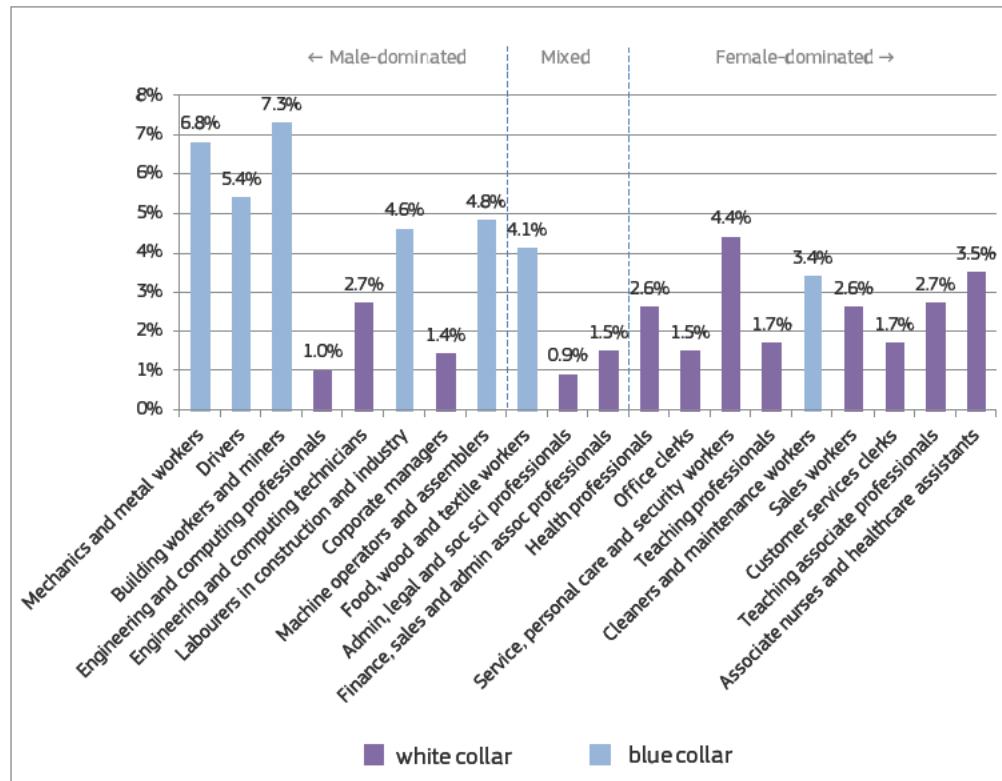
¹² ($t=-20.021$, $p<0.05$)

cupations having especially low scores on the index. Gender segregation does not appear to be explicable by access to regular working hours, even though regular hours of work are typically very important for employees with childcare responsibilities. Men in female-dominated occupations score the lowest on the index (i.e. the worst) out of any group (with a score of 70). This is explained partly by the *Service, personal care and security workers* occupation, which includes jobs such as security guards. Yet even when removing this category, men in female-dominated occupations continue to be the most disadvantaged group. In contrast, men and women in mixed occupations have the most regular schedules, averaging 87.3 on the index for women and 81.7 for men. Men and women in male-dominated occupations are only slightly worse off, scoring 80.4 and 81.2 respectively.

2.7.3 Accidents

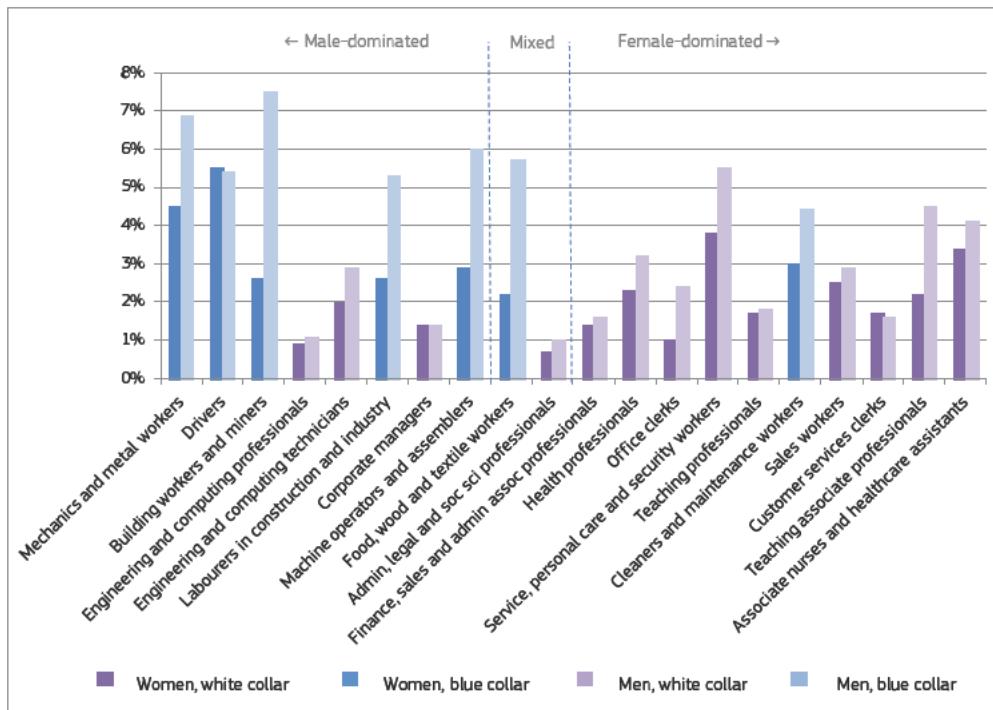
As Figure 46 demonstrates, employees in male-dominated, and especially blue-collar occupations face a much greater risk of accidents at work that result in injury. In the three most male-dominated occupations, *Mechanics and metal workers*, *Drivers* and *Building workers and miners*, 6.8%, 5.4% and 7.3% of the workforce respectively report experiencing an accident resulting in an injury over the last twelve months. Beyond these three occupations, there appears to be little relationship with occupational gender segregation, there being both safe and hazardous occupations in male-dominated, female-dominated and mixed occupations.

Figure 46. Accidents resulting in injury over the last 12 months, all employees – EU-26, 2007



With regards to the differences between men and women in accidents resulting in injury as presented in Figure 47, men are exposed to higher rates of accidents across all occupations bar two where there is a very slight reversal: *Drivers* and *Customer service clerks*. Accidents do not appear to follow a dynamic linked to gender segregation as this gender gap occurs equally in female-dominated, male-dominated and mixed occupations. Professional occupations tend to have smaller gaps between men and women in rates of accidents over the last 12 months, but in other occupations men seem to be at more than twice the risk experienced by women.

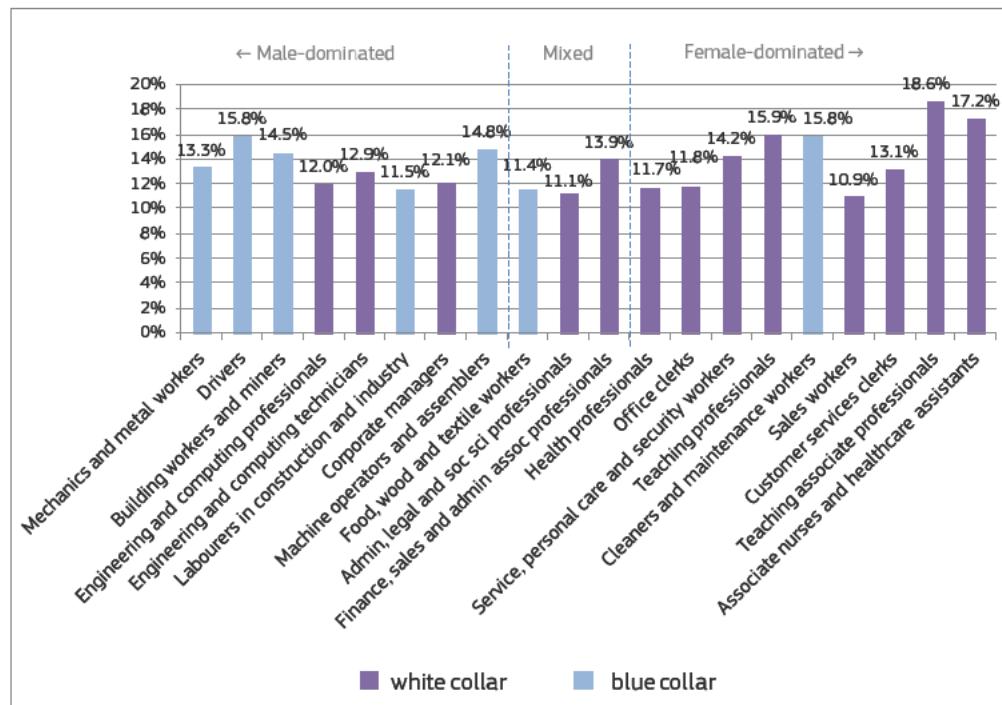
Figure 47. Accidents resulting in injury over the last 12 months – EU-26, 2007



2.7.4 Illnesses

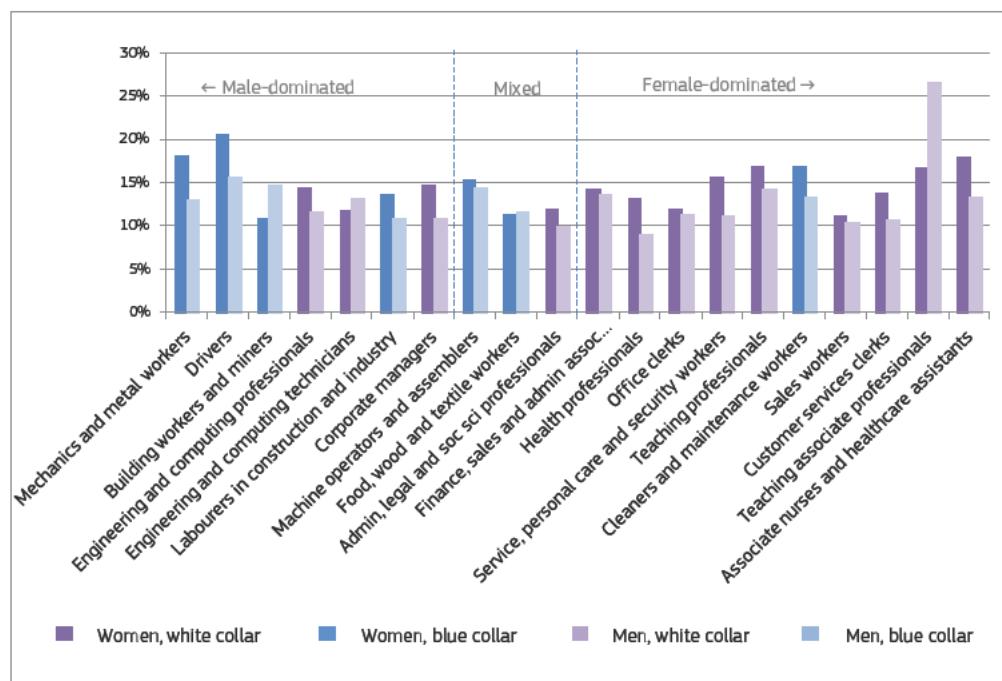
The pattern of illness caused or made worse by work over the last 12 months in relation to gender segregation is the opposite to that found for accidents causing injuries: Figure 48 illustrates how the highest proportion of workers having experienced such a health problem are to be found in female-dominated occupations; 17.2% of *Associate nurses and healthcare assistances*, 18.6% of *Teaching associate professionals* and 15.9% of *Teaching professionals*. This is followed by a blue-collar male occupation, *Drivers* (15.8%) and another female-dominate occupation, *Cleaners and maintenance workers* (15.8%). Mixed occupations appear to have the lowest risk for workplace-related illnesses.

Figure 48. Illnesses caused or made worse by work over the last 12 months, all employees – EU-26, 2007



The gender gaps for illness between men and women within occupations are also reversed compared to the pattern for accidents; Figure 49 shows that in sixteen occupations women are more at risk than men and in only four occupations are men more at risk of illness than women: *Teaching associate professionals, Engineering and computing technicians, Building workers and miners* and *Food, wood and textile workers*. Teaching associate professionals have a very large gender gap but with male employees in this group having much higher rates of illness than any other group. Mixed occupations not only create a lesser risk of illness, but the gap between men and women is also smallest within this group of occupations.

Figure 49. Illnesses caused or made worse by work over the last 12 months – EU-26, 2007



2.7.5 Exposure to psychological risks¹³

A difficulty with this measure of illnesses caused or made worse by work is that it does not differentiate between challenges to mental health and challenges to physical health. Another question in the LFS concerning exposure to different psychological and physical risks in the workplace provides clues as to the mechanisms at play.

Figure 50. Exposure to psychological risks, by occupation – EU-26, 2007

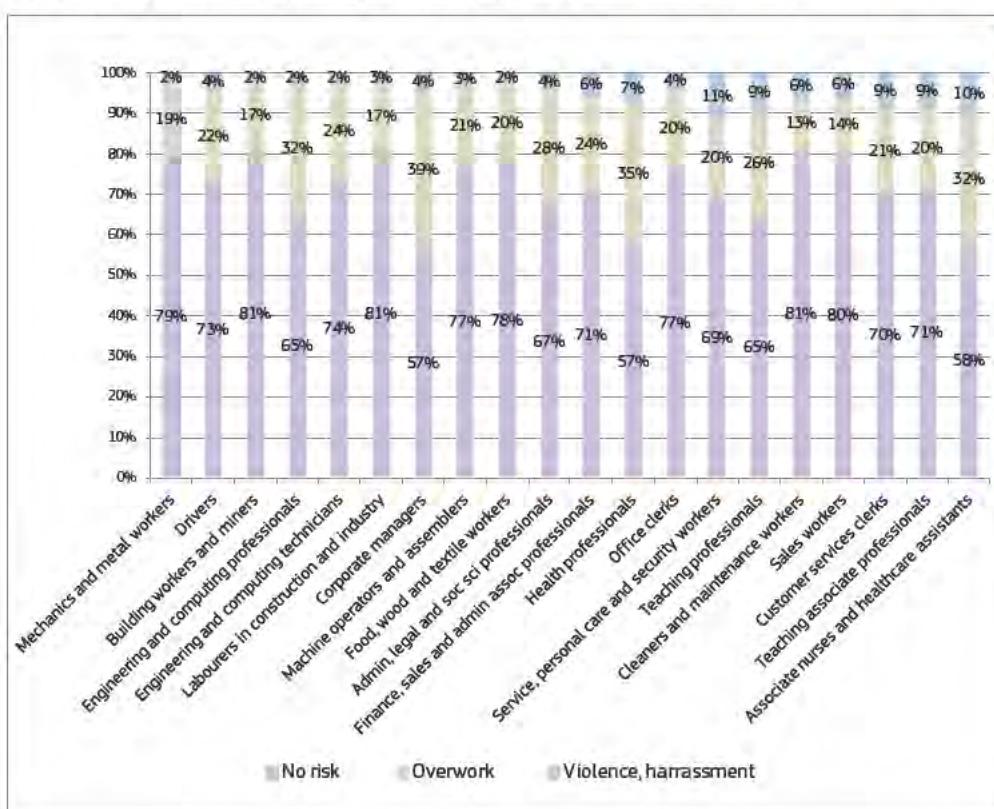
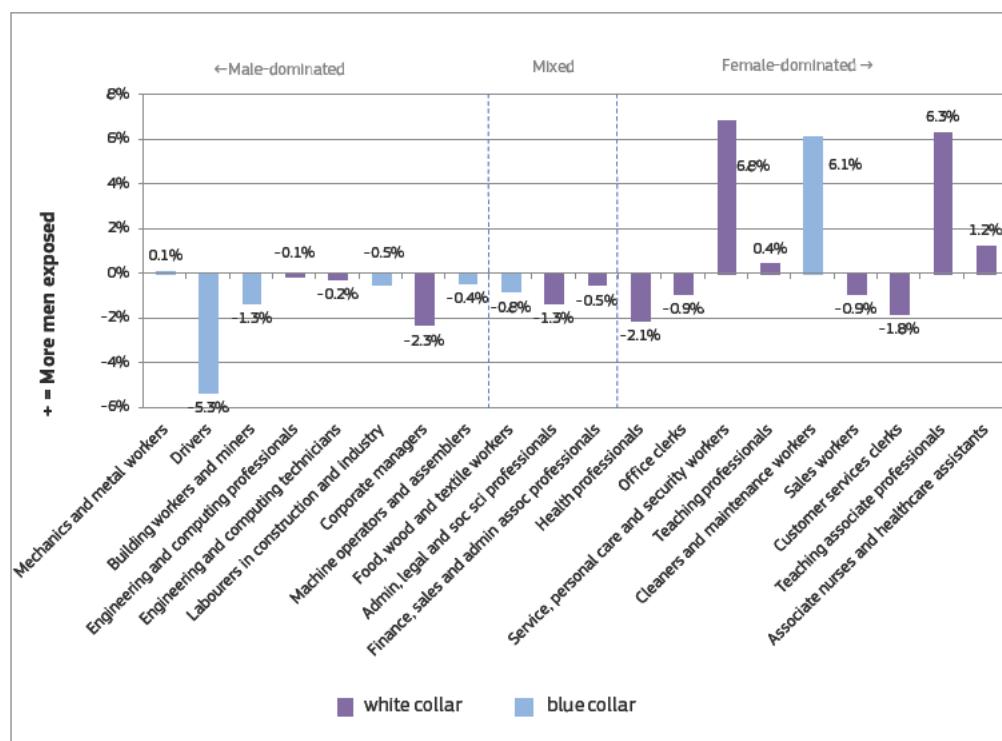


Figure 50 clearly shows that exposure to harassment, bullying, violence or the threat of violence increases as the occupation becomes more female-dominated. The highest rates are to be found in *Service, personal care and security workers* (11%), *Associate nurses and healthcare assistants* (10%), *Teaching professionals* (9%), *Teaching associate professionals* (9%), and *Customer services clerks* (9%). These are all occupations with a high exposure to clients or to the public. The two male-dominated occupations with the highest rates are *Drivers* and *Corporate managers*, each with a 4% exposure to violence and harassment. Again, these occupations can be public-facing, particularly drivers such as coach and taxi drivers.

¹³ The LFS asks respondents to select the psychological risk to which they are most exposed. These risks are not mutually exclusive, but the question permitted only one risk to be reported. A worker facing overwork could also be facing harassment, yet not at a level sufficient for it to be deemed the "main" psychological risk. Respondents were asked about exposure at work to various risk factors that could affect mental well-being; they could choose one of the following that they considered to be the greatest risk to their wellbeing: 1 – Yes, mainly to severe time pressure or overload of work; 2 – Yes, mainly to violence or threat of violence; 3 – Yes, mainly to harassment or bullying; None of the list below.

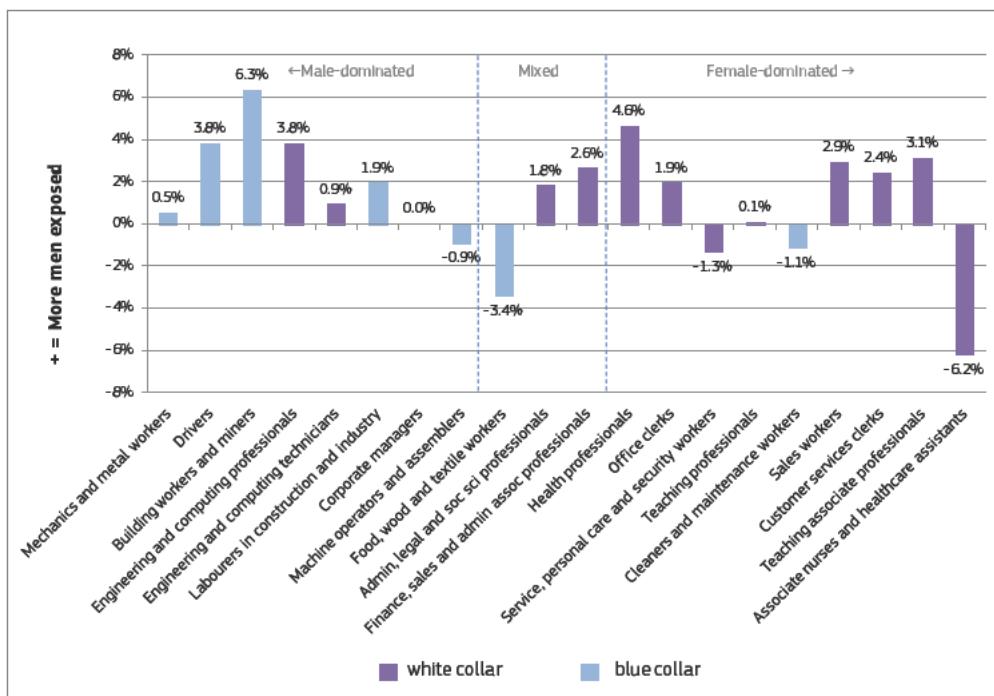
Exposure to overwork is distributed according to a logic which does not correspond to the percentage of men or women working in a particular occupation. Individuals working in professional occupations are the most likely to report exposure to this type of risk, and it is probably associated with the long working hours in many of those professions, as noted above in this report. Indeed, *Corporate managers* (39%), *Health professionals* (35%) and *Engineering and computing professionals* (32%) have higher exposure rates, followed by *Associate nurses and healthcare assistants* (32%).

Figure 51. Percentage point difference in men and women's exposure to violence, harassment, bullying – EU-26, 2007



Gender differences within occupations in exposure to violence, harassment and bullying are also evident in Figure 51. While women tend to be more exposed than men to this risk factor (in 15 out of 20 occupations) this is especially the case in male-dominated occupations, with differences in gender risks being particularly high for *Drivers* (with women having a 5.1 percentage points higher risk). The trend reverses completely for three female-dominated occupations, *Service, personal care and security workers*, *Cleaners and maintenance workers* and *Teaching associate professionals* where men are exposed to greater psychological risks of the order of 6.8, 6.1 and 6.3 percentage points respectively, more than the rate identified for women. With the exception of the *Teaching associate professionals* occupation, this is largely explained by the different jobs done by men and women within these ISCO-88 categories. For instance, *Service, personal care and security workers* include such categories as police officers and prison guards, in which men are concentrated, along with care workers, hair dressers and waiters, in which greater shares of women can be found.

Figure 52. Percentage point difference in men and women's exposure to overwork – EU-26, 2007



The opposite dynamic appears when men and women are compared across occupations in terms of their propensity to report overwork as the main psychological risk faced in their job (see Figure 52). Here, in almost all occupations, men report overwork as a problem more often than women. The largest differences appear in *Building workers and miners* (6.3 percentage point gap) and *Health professionals* (4.1 percentage point gap). In only one occupation do women report being exposed to this risk much more often than men: *Associate nurses and healthcare assistants*.

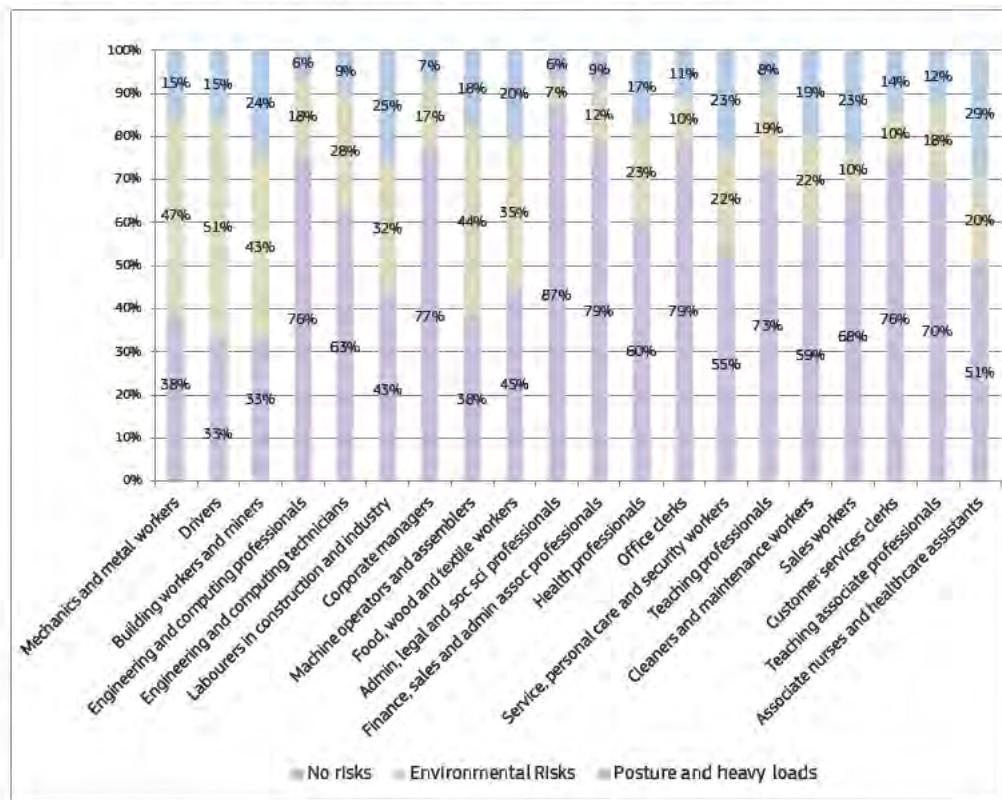
2.7.6 Exposure to physical risks

Another element of importance in evaluating working conditions is the degree of exposure to physical and environmental risks¹⁴, which increase the likelihood of injury or illness for employees. In Figure 53, physical risks are divided into two categories. The first combines risk of accidents with exposure to chemicals and other agents as well as noise or vibrations in a category dubbed 'Environmental risks', while the other includes only one category, 'Posture and heavy loads'. Professional, white-collar occupations have the lowest presence of physical risks, with only 13% of *Finance, sales and administrative associate professionals* exposed to any risk. By contrast, only 33% of *Building workers and miners* and 34% of *Drivers* are not exposed to any physical risks. The most hazardous female-dominated occupation is *Associate nurses and healthcare assistants* where 49% of employees are exposed to a physical risk; this is also the most hazardous of all the white-collar occupations. While generally female-dominated occupations present less risk to workers,

¹⁴ The variable measuring exposure to physical and environmental risks is constructed in the same way as for psychological risks. In other words, a respondent is never scored as being exposed to more than one risk, but only for what he or she deems is the main one. For further information, please consult Appendix E.

this is more a function of blue-collar employment being male-dominated than the gendered-nature of the occupation. As for the different types of risks, 'Environmental risks' are concentrated in male-dominated blue-collar employment, with 51% of *Drivers* and 47% of *Mechanics and metal workers* being exposed to this type of risk. However, 23% of employees in the female-dominated occupation health professionals reported environmental risks as their main concern. For posture and heavy loads, the most at-risk occupation is in fact female-dominated: *Associate nurses and healthcare assistants*, where injuries from supporting or carrying patients are common. This is followed by two male-dominated occupations – *Drivers* and *Labourers in Construction and Industry*, yet two female-dominated occupations, namely *Office clerks* and *Sales workers*, follow closely behind. Thus, the relationship between gender, collar, segregation and risk is complex: risks are high in male-dominated blue-collar occupations, as well as in female-dominated white-collar occupations.

Figure 53. Exposure to physical risks, by occupation – EU-26, 2007



In relation to gender differences within occupations in reported risks, Figure 54 represents the straightforward pattern for environmental risks, with men reporting that this is the main risk faced on the job to a greater extent than do women in every occupation. The largest differences appear in the blue-collar, male-dominated occupations, yet even in the most female-dominated occupation, *Associate nurses and healthcare assistants*, men report being exposed more often to these types of risks. Such a result suggests that men take on more physically dangerous work within each occupation.

Figure 54. Percentage point difference in exposure to environmental risks, men and women – EU-26, 2007

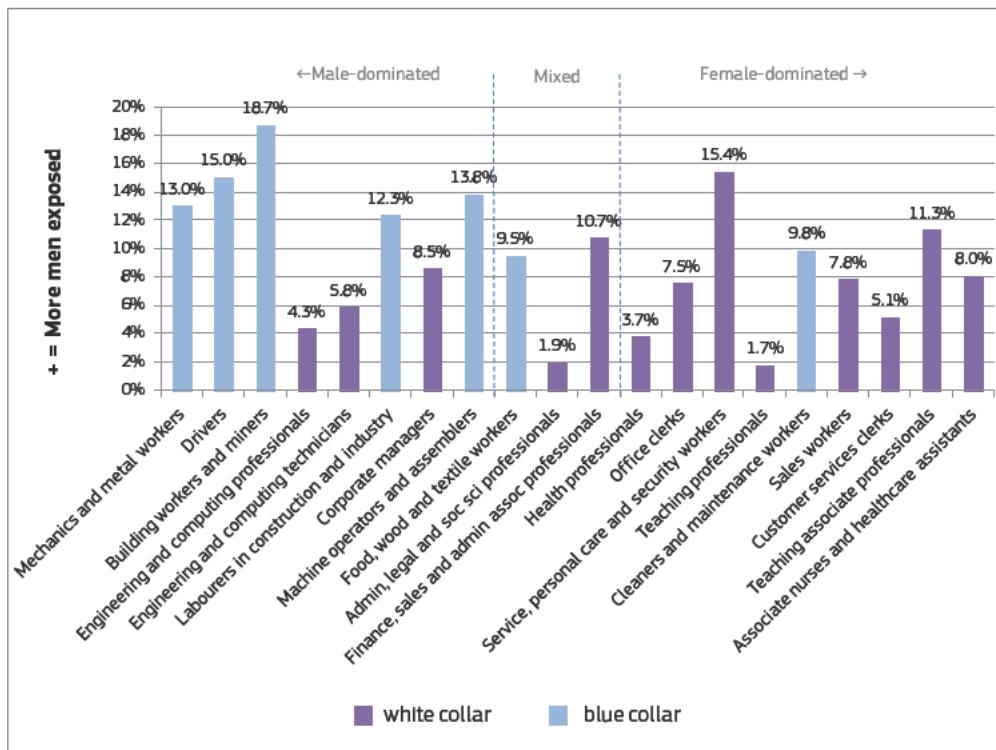
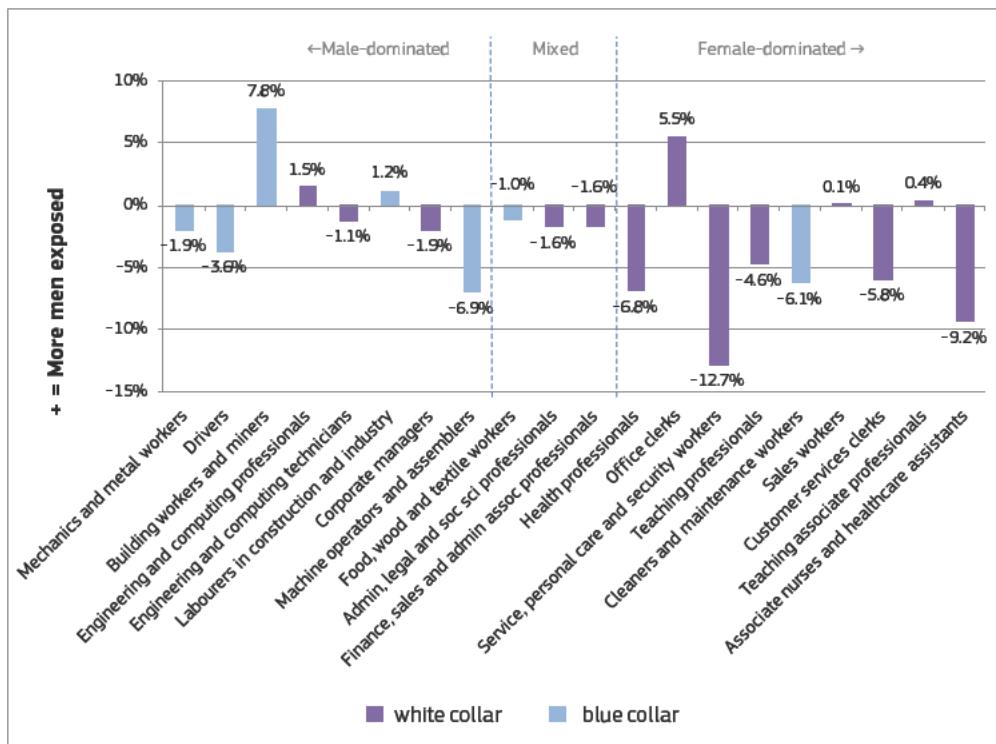


Figure 55. Percentage point difference in exposure to difficult postures and heavy loads, men and women – EU-26, 2007



Women are however generally more affected by exposure to difficult postures and handling heavy loads as Figure 55 illustrates. Women are clearly more exposed to

these risks than men in about half of the Top 20 occupations, with little difference in most of the other occupations. The difference appears to be greatest in female-dominated occupations. The two exceptions, where men are more exposed to these risks, are *Building workers and miners* (where these risks are at their most extreme) and *Office clerks*.

2.8 Gender segregation by sector

2.8.1 Sectoral segregation at the EU-26 level

In the introduction to this report, it was pointed out that occupation is only one of many possible sources of gender segregation; industry, public/private sector, workplace and work group have received less attention. And in some surveys, these drivers of segregation are combined; in the European Working Conditions Survey, respondents are asked about the gender composition of employees doing the same job as them within their workplace. The form of disadvantage that employees might experience through segregation is likely to be specific to the level of segregation. For instance, constraints on future career choices in the external labour market might be most affected by occupational gender segregation, but harassment by colleagues may be related to workplace segregation and may be higher when working in groups dominated by the other sex. The Labour Force Surveys have only restricted questions on other sources of segregation. There is no direct question on public/private sector, but a ‘Public services’ category can be used based on the NACE 1-digit categories: public administration and defence, education, and human health and social work activities.

Figure 56. Percentage of female employees by industrial sector – EU-27, 2010

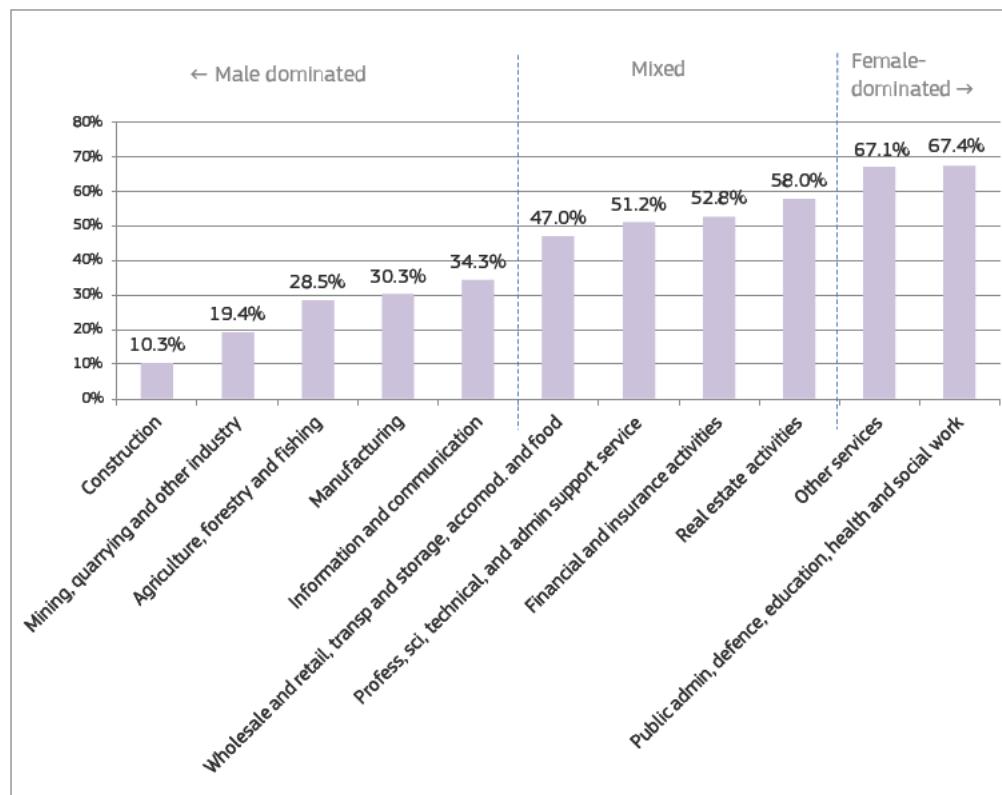
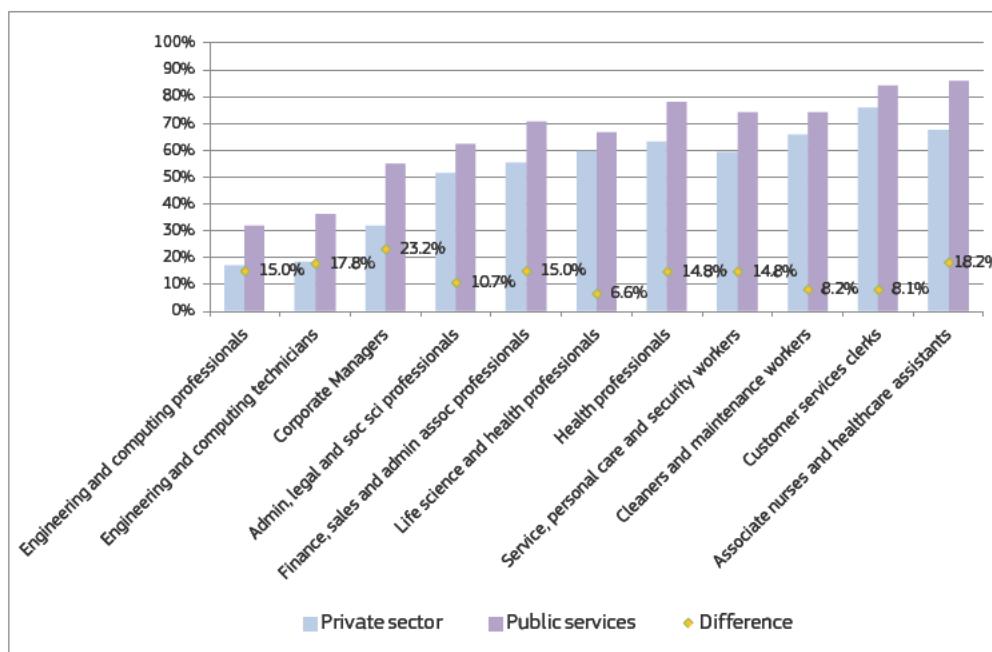


Figure 56 shows clearly that gender segregation occurs not only across occupations but across industrial sectors as well, albeit to a lesser extent. Amongst employed individuals in the EU-27, four sectors are mixed (using the same 40%/60% criterion as for occupations): *Wholesale trade and retail trade, transportation and storage, accommodation and food service activities; Professional, scientific, technical, administration support services; Financial and insurance activities* as well as *Real estate activities*. The sector covering public services has the highest share of female employment at 67.4%, while *Construction* has the lowest at 10.3%. All of the analyses that have been conducted by occupation so far in this report could also have been conducted by industry (and one could, for instance, use a ‘Top 20 industries’ approach to mirror the Top 20 occupations). However, another approach that is facilitated by the Top 20 occupations method is to combine industrial and occupational segregation into the same analysis.

2.8.2 Public services vs private sector

Across almost all occupations, women have a greater share of public services as opposed to other industrial sectors. These figures should be treated with care as certain occupations have very low numbers of public service workers and, in some occupations in some countries, low shares of private sector employees, for example, as teachers. Figure 57 illustrates the importance of public services employment for women, but only for occupations in which at least 10% of employees work in either the public or private sector. In all occupations, women have higher shares of total employment in the public services than in the private sector. The largest differences are to be found for *Corporate managers* where in the public services women represent the majority of employees (51.8%) compared to 31.6% in the private sector, amounting to a difference of 23.2 percentage points. The public services thus appear to provide more opportunities for women in this high-paid occupation. A similar interpretation could be made for *Engineering and computing technicians*, where women are represented in the public services by 17.8 percentage points more than in the private sector.

Figure 57. Difference in women’s employment between private sector and public services (percentage point) – EU-26, 2010



2.8.3 Sectoral segregation by country

Looking at sectoral segregation across the European Union, there is again fairly significant variation by country. The percentage of women working in mixed sectors is significantly higher than for mixed occupations (42% vs. 18%) as is the proportion of women working in male-dominated sectors (16% vs. 12.6%). Relative levels of segregation are similar for some countries such as Finland, which is also the country with the smallest proportion of women working in ‘mixed’ settings. Figure 58 demonstrates that other countries such as Germany and Bulgaria appear much less segregated as far as sector is concerned, while others such as Slovenia appear more sector-segregated than occupationally-segregated relative to other European countries as far as women’s employment is concerned.

Figure 59 shows that for men’s employment, there is again a much higher percentage of men working in mixed sectors as opposed to mixed occupations at the EU level (38% vs. 13%), yet there are fewer men working in a female-dominated sector (20%) than in a female-dominated occupation (26%). Again, countries vary in their patterns of segregation by occupation and sector with Finnish men here appearing to be much less segregated relative to other EU countries when sector as opposed to occupation is considered.

Figure 58. Segregation by sector and country, women – EU-27, 2010

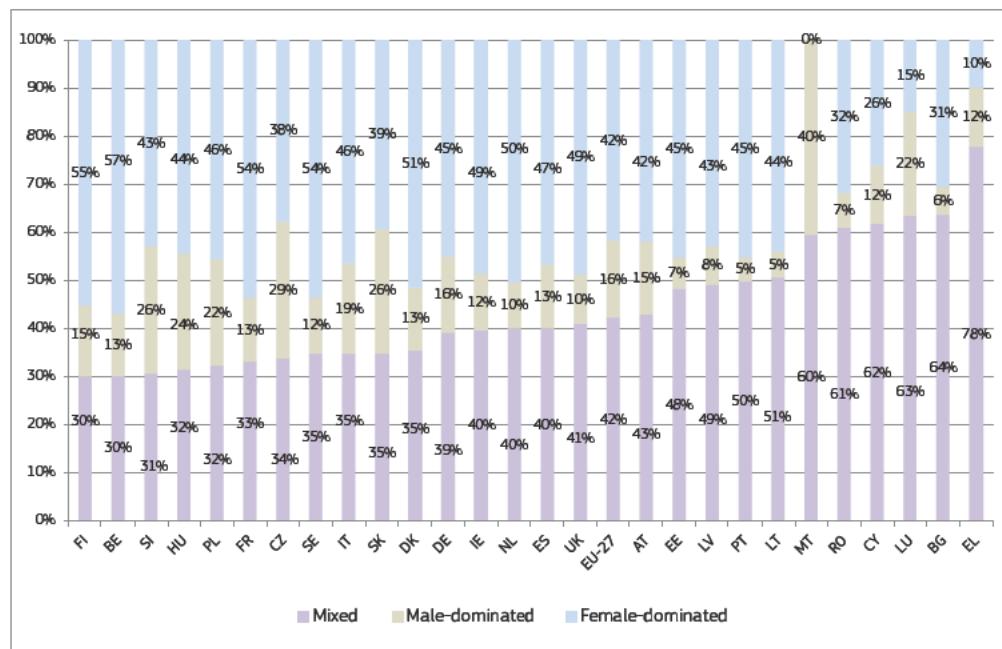
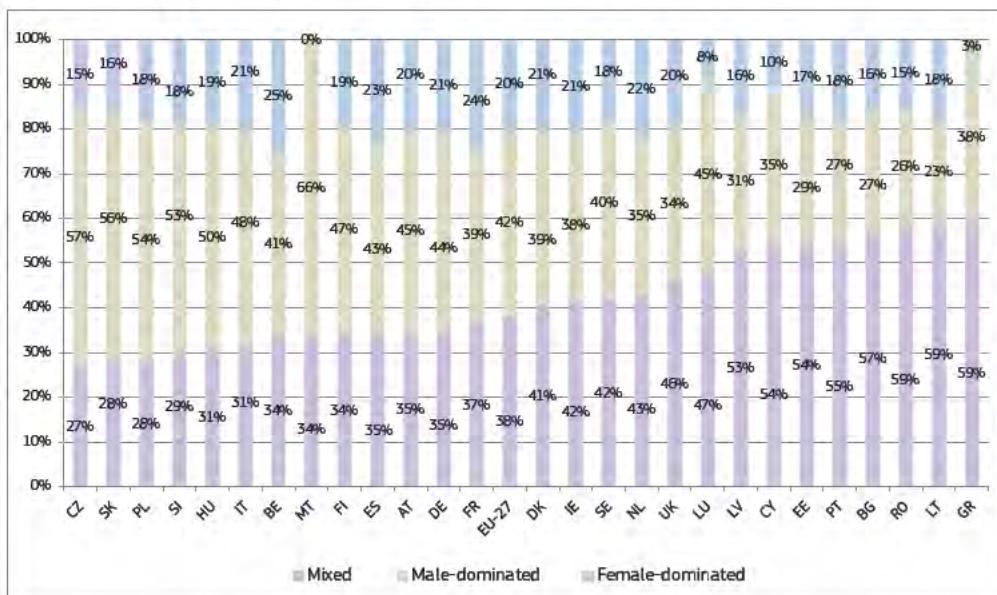
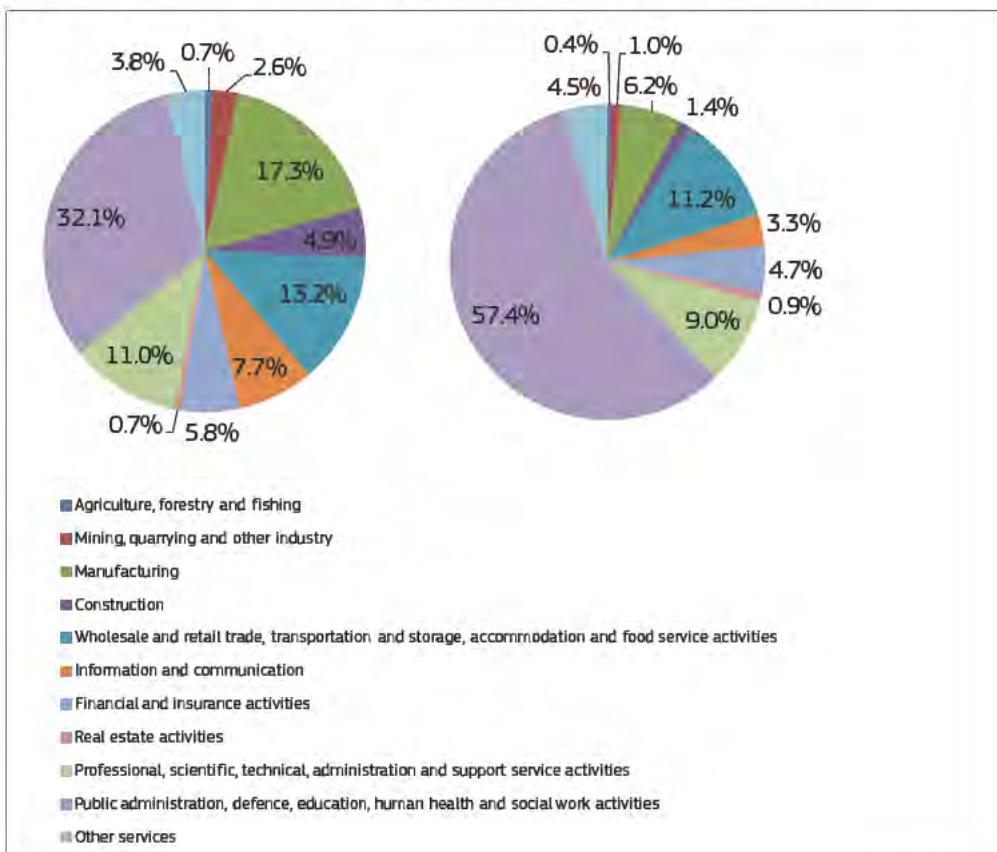


Figure 59. Segregation by sector and country, men – EU-27, 2010

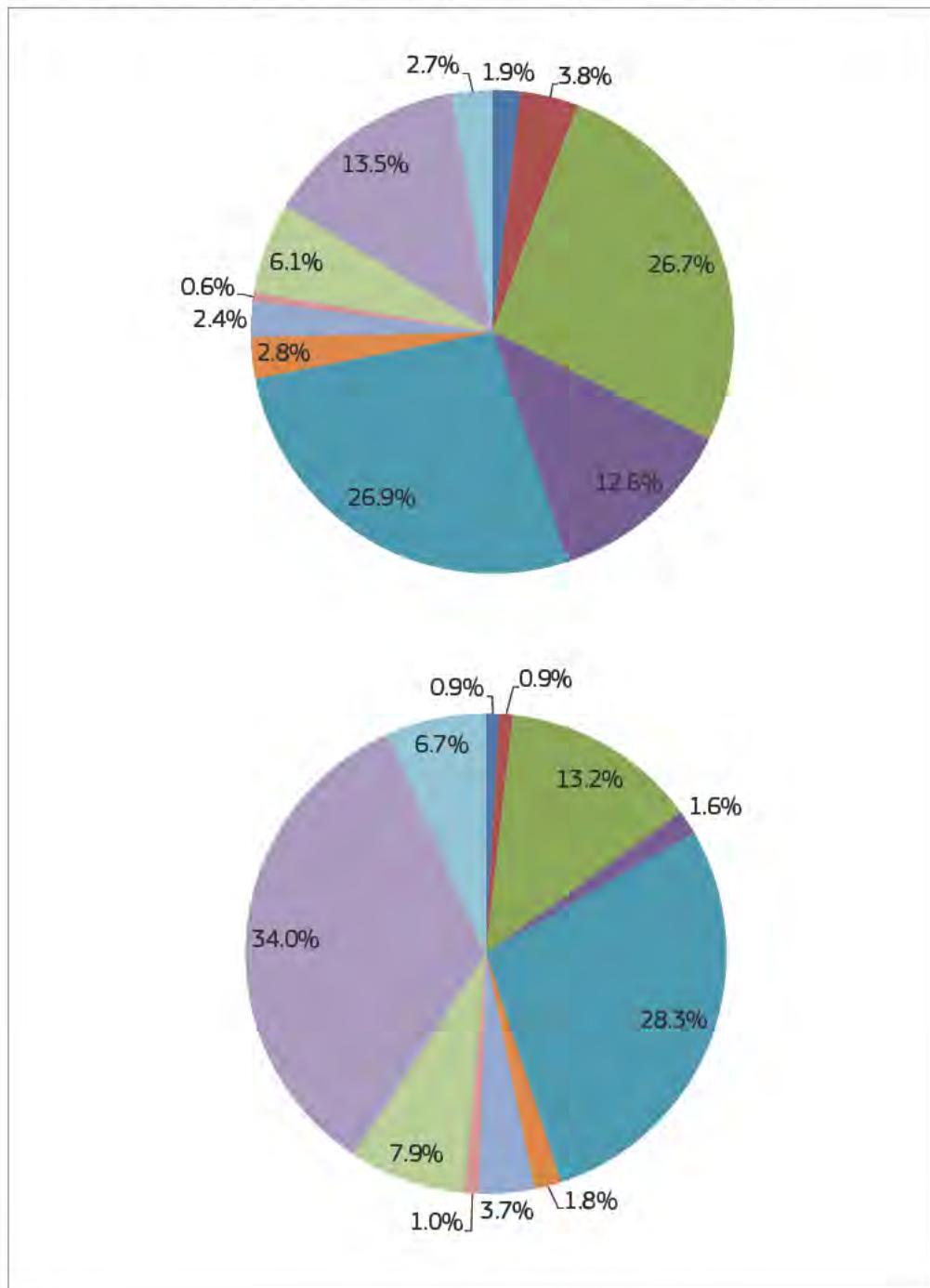
2.8.4 Education and sector of employment

Another interesting dynamic in women's and men's employment by sector concerns distribution of employees according to education. Figures 60 to 62 differentiate men's and women's sector of employment by levels of education.

Figure 60. Women and men with higher education by sector – EU-27, 2010

For men, 32.1% of highly educated employees work in the *Public services* followed by *Manufacturing* (17.3%). For women, on the other hand, 57.7% of employed women with higher education in the EU-27 work in the *Public services with Wholesale and retail trade and related industries* a distant second, accounting for 11.2% of women employees with higher education. This extreme concentration of highly educated women in the public sector makes this group particularly vulnerable to fluctuations in government spending, for instance, through austerity measures (Karamessini and Rubery 2014).

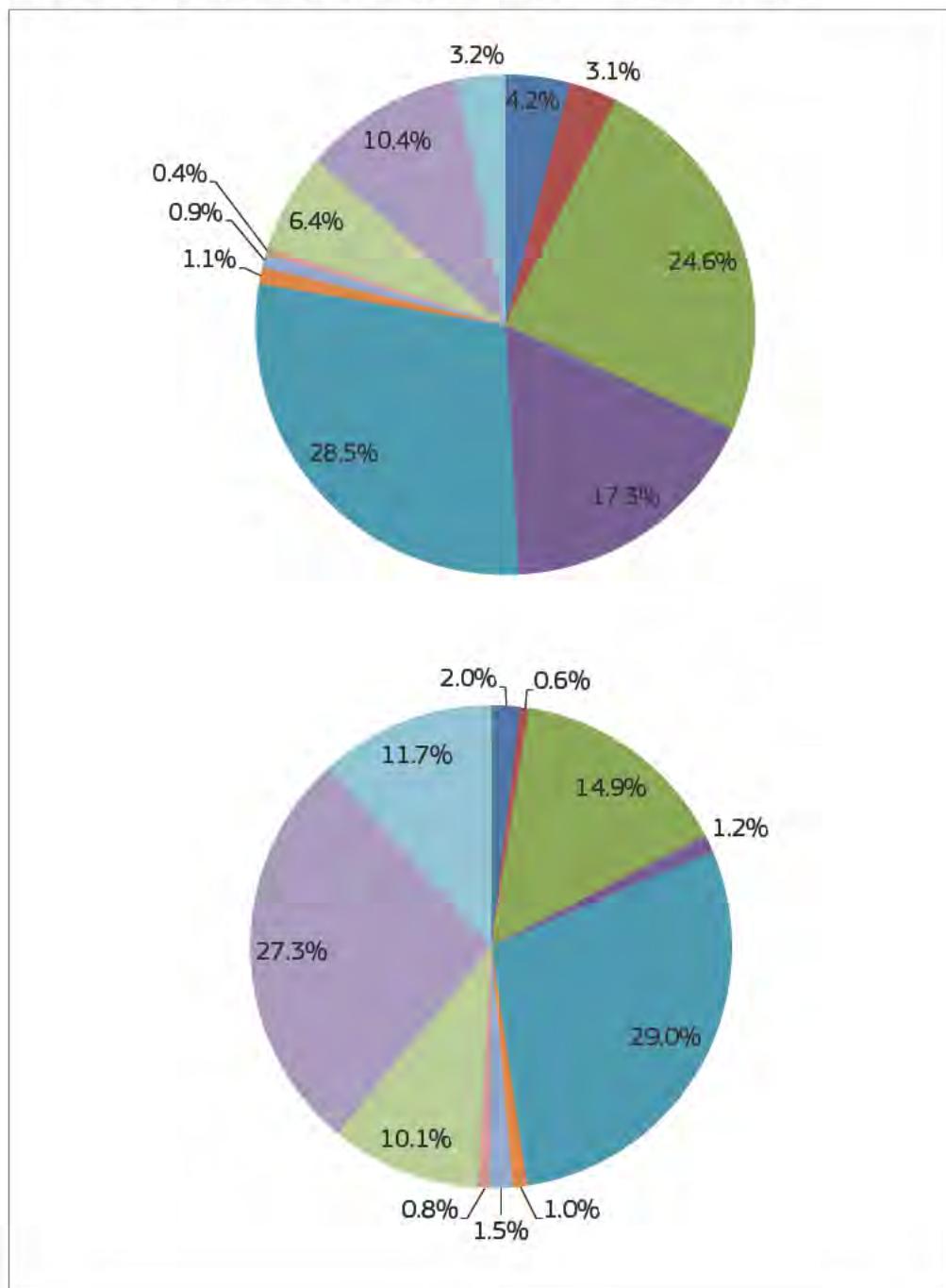
Figure 61. Women and men with secondary education by sector – EU-27, 2010



The importance of public services remains high for women with upper secondary levels of education, but at 34% no longer accounts for an outright majority. The proportion of women working in *Wholesale and retail trade and related industries* is 28.3%, while employment in *Manufacturing* is 7 percentage points higher for women with upper secondary education as opposed to women with higher education (13.2% of women).

A similar pattern emerges for men, with *Public services* being only the third most important sector for employees with upper secondary education. *Wholesale and retail trade and related activities* is the largest (26.9%) followed closely by *Manufacturing* (26.7%).

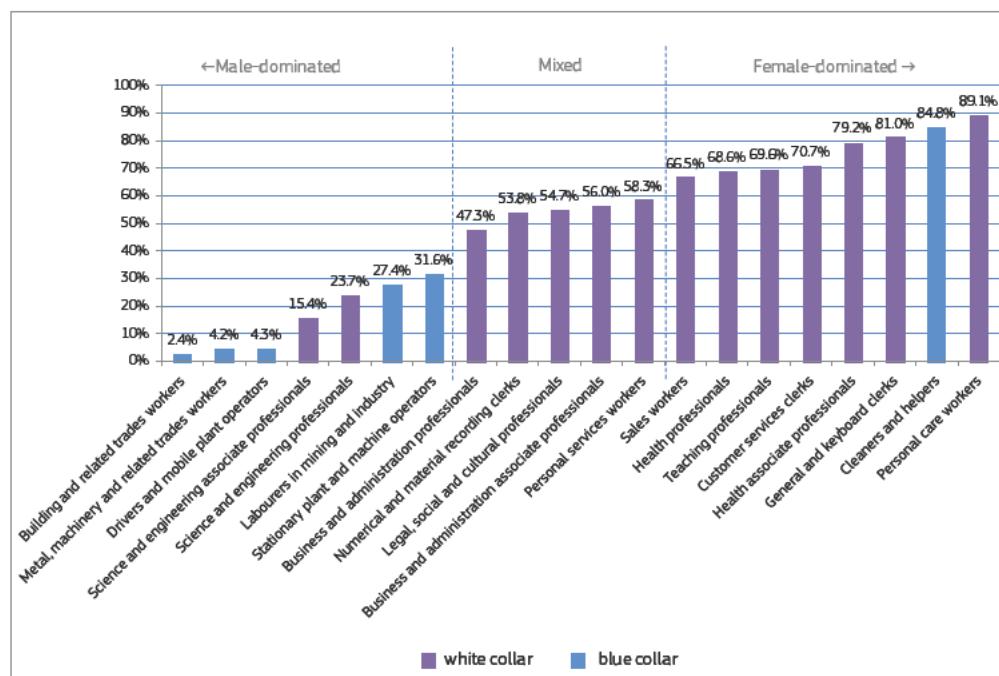
Figure 62. Women and men with primary education by sector – EU-27, 2010



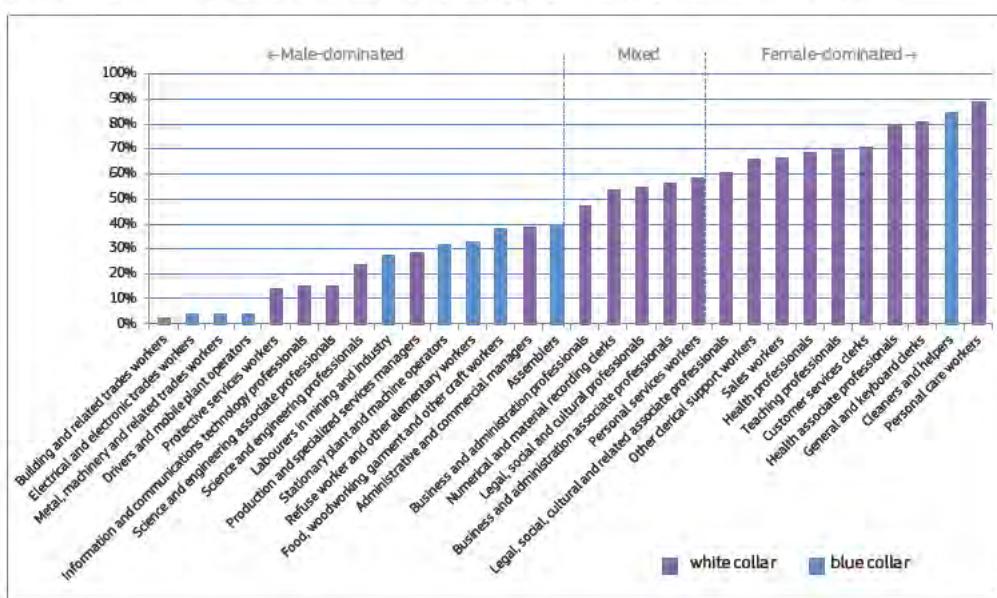
2.9 Segregation in 2012

In 2011, the classification of occupations in the Labour Force Survey was changed from the ISCO-88 to the ISCO-08, making valid comparisons with previous years difficult. However, looking at segregation amongst the Top 20 occupations for this new classification in 2012 provides an idea of the most recent trends in gender segregation by occupation across the European Union. The greater number of occupations in the ISCO-08 2-digit classification means that the Top 20 represent only 77.7% of all employees, compared to 95% for the ISCO-88 in 2010. A graph with the Top 30 occupations is also presented below. The 30 largest occupations in 2012 using the ISCO-08 classification represent 94% of employees. However, each of the occupations not included in the Top 20 represents two percent or less of all employment, so the effect of restricting the sample to the Top 20 is minor. In fact, this 'Top 20' method was first developed using the two-digit ISCO-08 (Eurofound 2013), and all occupations with two percent or less of total employment were excluded; using the ISCO-88, the same criterion would have limited the number of occupations to 18 (Figure 63).

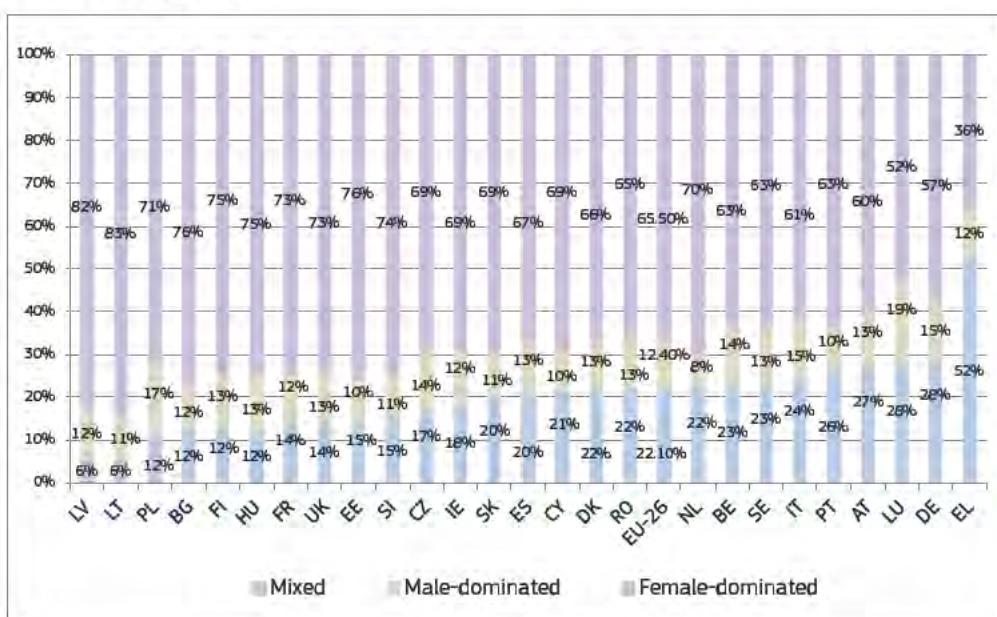
Figure 63. Percentage of female employees by Top 20 occupations – EU-26, 2012



An important difference with this new classification concerns the fact that there are five mixed occupations in the Top 20 compared to three in 2010 for the ISCO-88. Moreover, while one of these occupations was blue-collar in 2010 (*Food, wood and textile workers*), the five occupations are all white-collar in 2012. The number of blue-collar occupations – six – is the same in both 2010 and 2012. In fact adding the next 10 largest occupations does not change the number of mixed occupations, and the majority of occupations added to the graph are male-dominated (Figure 64).

Figure 64. Percentage of female employees by Top 30 occupations – EU-26, 2012

Finally, the distribution of employees by country according to their employment in a mixed, female-dominated and male-dominated occupation is presented below in Figures 65 and 66.

Figure 65. Percentage of women in mixed, female-dominated and male-dominated occupations – EU-26, 2010

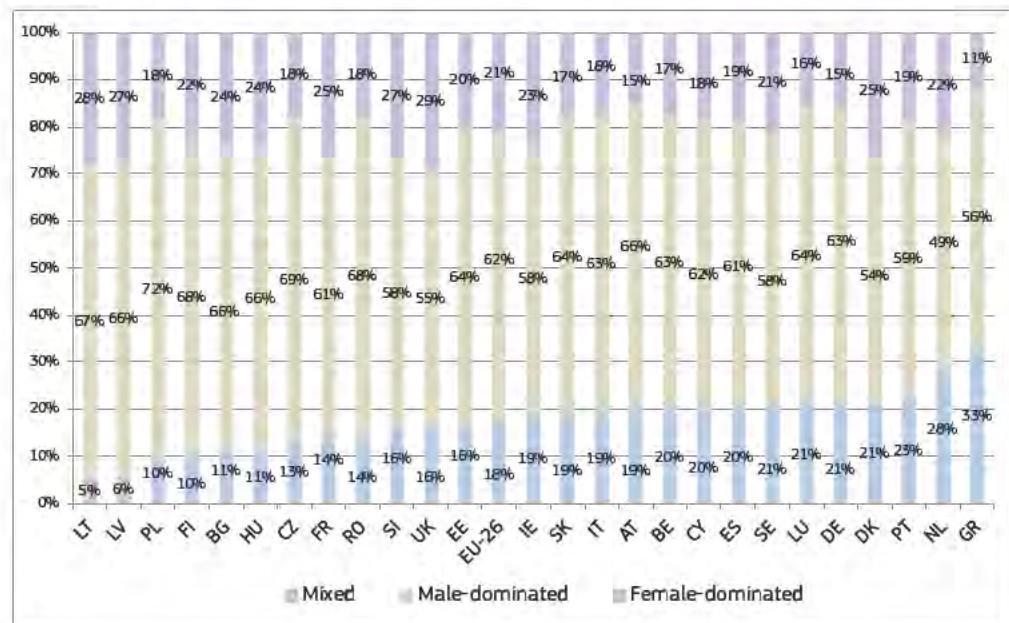
These Figures are not directly comparable to data for 2010, yet it is possible to note that in many cases, the calculation based on a different type of measurement is not overwhelmingly different. For instance, at the EU-26 level, while using ISCO-88 in 2010, 18% of women worked in mixed occupations, while using ISCO-08 in 2012, 22% of female employees worked in mixed occupations. The full figures can be found in Table 5.

Table 5. Percentage of women and men employed in mixed, male, and female-dominated occupations 2010 and 2012

EU-27 (minus Malta)	Women - 2010 (ISCO-88)	Women - 2012 (ISCO-08)	Men - 2010 (ISCO-88)	Men - 2012 (ISCO-08)
Mixed	18.0%	22.1%	15.3%	17.8%
Male-dominated	12.6%	12.4%	59.1%	61.6%
Female-dominated	69.4%	65.5%	25.6%	20.6%

On the other hand, within individual countries these different metrics sometimes result in fairly divergent figures for the two years. For instance, 8% of female employees in Germany work in mixed occupations when measured by the ISCO-88, but this jumps to 28% when occupational segregation is measured using ISCO-08 categories in 2012.

Figure 66. Proportion of men in mixed, female-dominated and male dominated occupations – EU-26, 2012



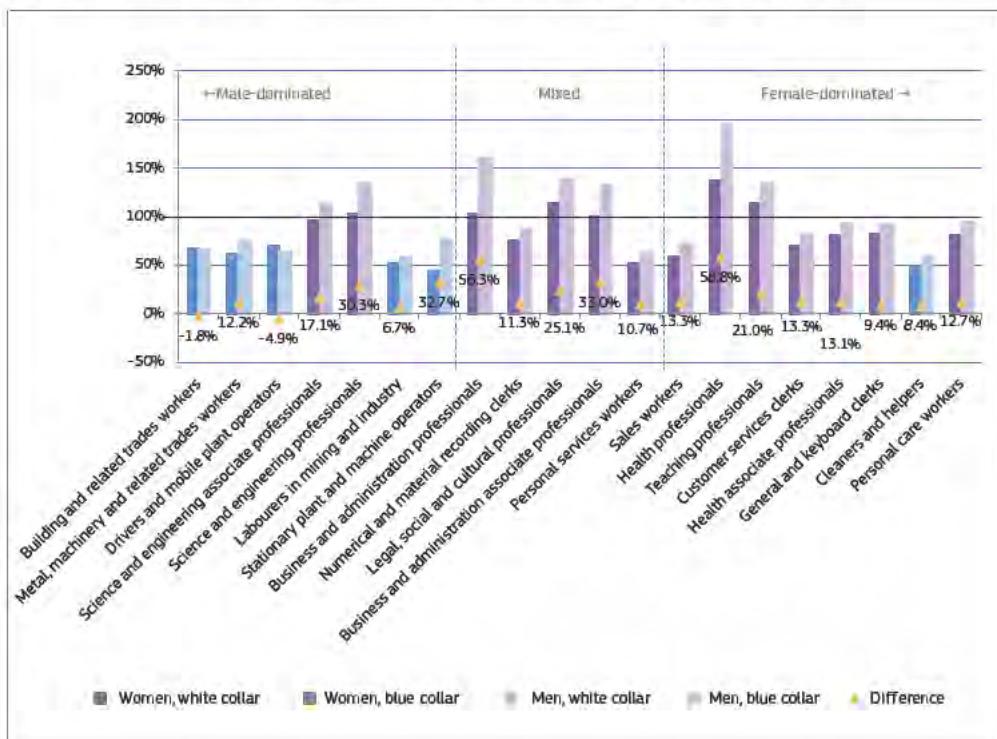
Another big difference occurs for Hungary where 28% of female employees are measured to be working in a mixed occupation in 2010 but only 12% in 2012. It is most probable that such important differences are not to be explained by a radical shift in the country's labour market, but rather as an artefact of the somewhat arbitrary ISCO scheme, as applied in specific countries.

2.10 Pay and occupational segregation

2.10.1 Pay gap, EU-26 and representative countries

This final section which explores the relationship between segregation and pay again uses the ISCO-08 category for the analysis, as the most up-to-date pay data from the Structure of Earnings Survey (2010) uses the ISCO-08 classification at the 2-digit level.

Figure 67. Ratio of men and women's pay to male average pay – EU-27, 2010

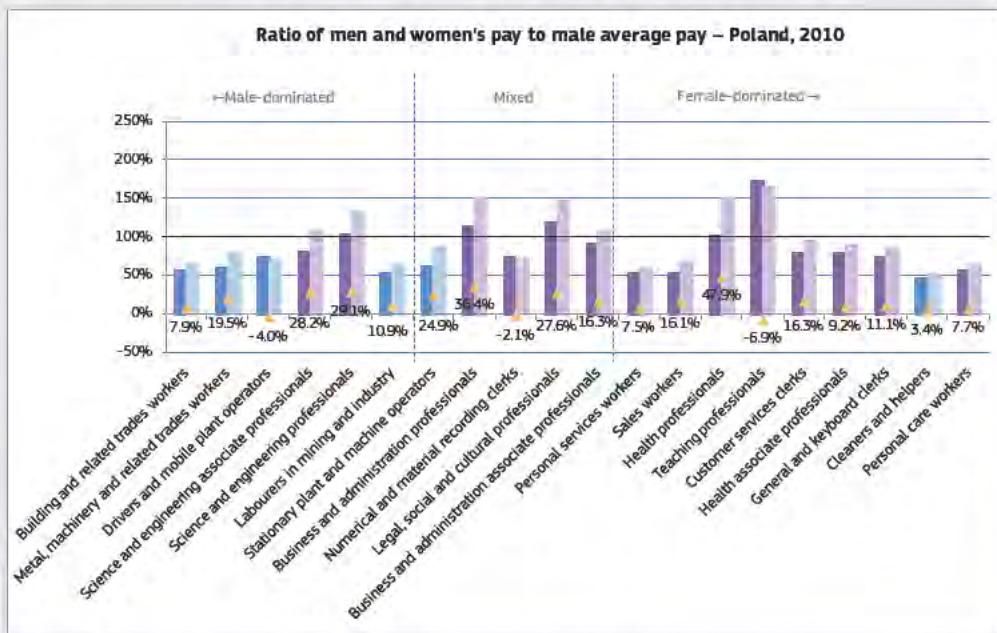


In Figure 67 men and women's pay in the Top 20 occupations are compared to men's average hourly pay at the EU level. Gender pay gaps are traditionally measured as a ratio of men's average pay, and this provides a means of identifying where the Top 20 occupations sit relative to this benchmark. Due to difficulties in the accessibility of data, a weighted average for hourly pay from the Structure of Earnings Survey had to be calculated at the EU-27 level using occupational weights and country weights from the European Working Conditions Survey. In some cases, especially in blue-collar, male-dominated occupations, bias may be introduced as sample sizes are potentially too small to identify the very small percentages of women who are employed in these occupations in some countries (the Labour Force Survey uses much larger samples). Thus, some countries, especially those from northern and western Europe, are potentially over-represented in calculating women's average earnings while some others are missing entirely. Due to problems constructing the EU-27 level average, further analysis is provided for a sample of six countries in Box 1.0: Slovenia and Poland, the two countries with the lowest average gender pay gap; France and Sweden, two countries with an average pay gap; and Austria and

Estonia which have the highest hourly average pay gap between men and women.

There is a gender pay gap in favour of men in all but two male-dominated occupations at EU level. However, this apparent advantage for women applies only to a small proportion of the occupation. Women's hourly average pay is above the overall male average pay in a total of six occupations, while men earn above the male average in seven occupations. This suggests that women can and do earn pay rates in the top half of the pay distribution. However, when women's pay exceeds average men's pay the margins are relatively small, except for health professionals but men's pay often exceeds average male pay by a much larger margin. For example for *Health professionals* this difference is 58.8 percentage points, followed by *Business and administration professionals* at 56.3% and *Business and administration associate professionals* at 33.0%.

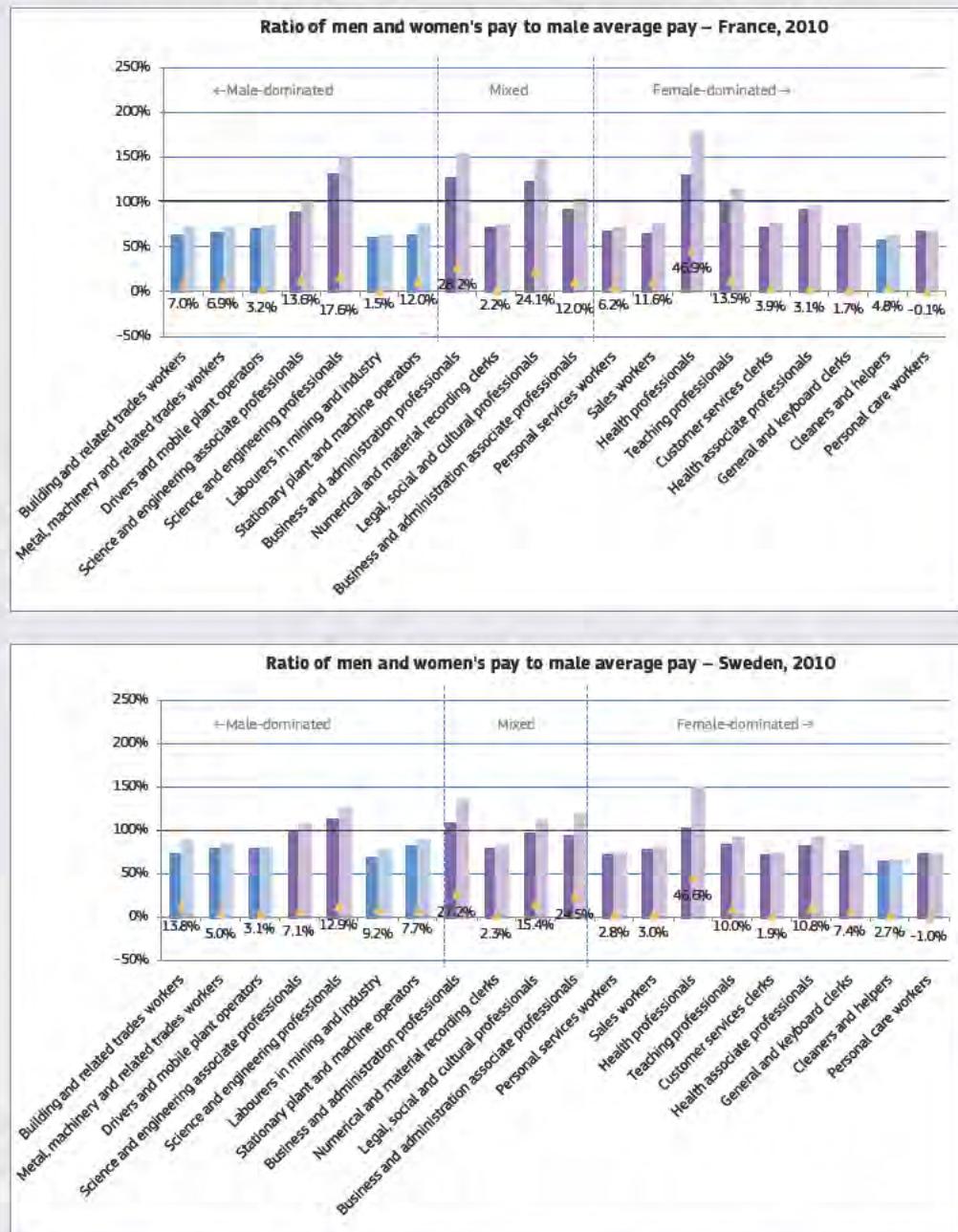
Box 1.0: Pay gap variations in six countries



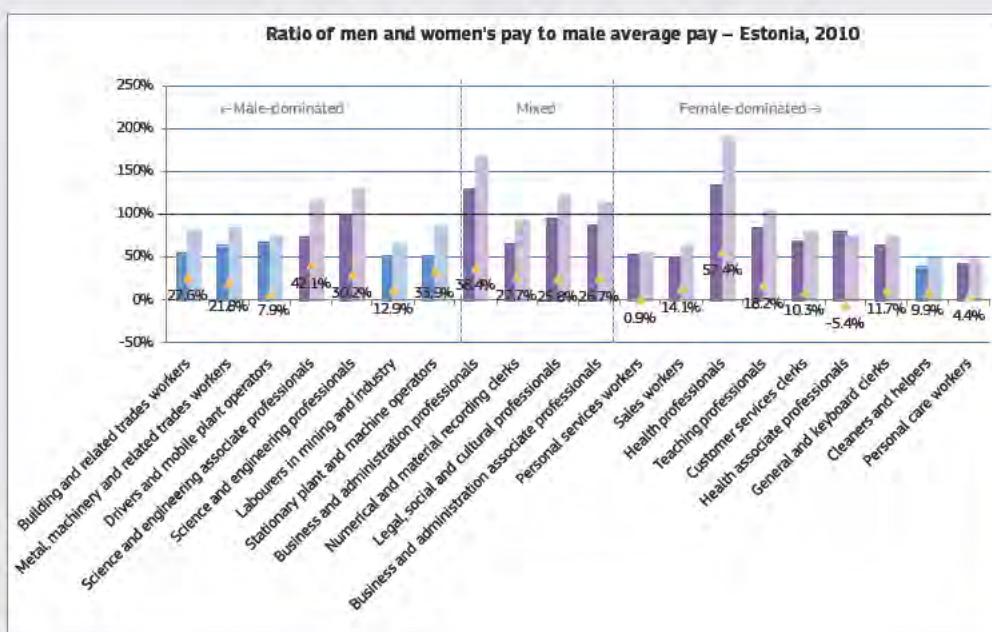
Taking the two countries where the average hourly wage gap is smallest, Slovenia and Poland, we find this smaller gap is not necessarily due to the same reasons. While in Slovenia the pay gap is generally smaller across all occupations than for Europe as a whole – with *Health professionals* the only professional occupation showing a markedly larger male pay in comparison to the male average – in Poland, polarisation is more important, with a good number of occupations having higher female pay, including the *Teaching professionals* occupation, yet with gaps between men and women being quite large in most professional occupations.

Turning to countries where the pay gap is in the middle of the distribution for EU member states- Sweden and France-, we find the difference in the ratio of men and women's pay to

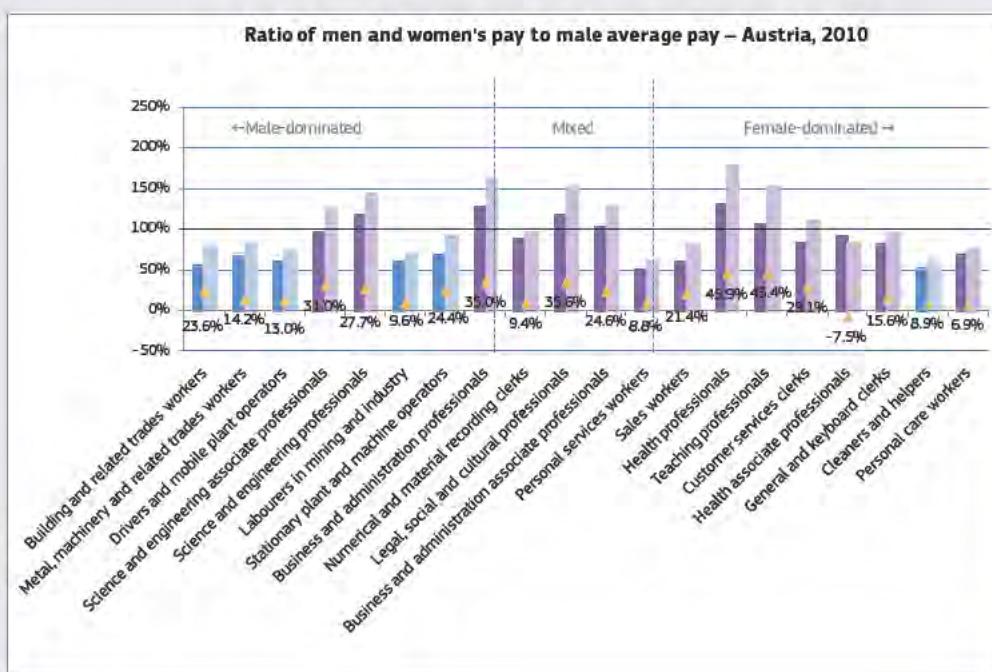
male pay continues to be quite large in professional occupations in both France and Sweden. Moreover, in both countries there is only one occupation where women have higher hourly earnings than men (*Personal care workers*), while in Poland and Slovenia this is the case for three occupational categories. On the other hand, in Sweden and France the difference in the gender pay ratio is smaller across almost all occupations than for the EU-27 as a whole, and more consistently so than in Poland and Slovenia. Sweden and France differ in one respect, however, in that the difference in wages between occupations is especially small in Sweden.



Finally, Estonia and Austria are the two countries in Europe where the gender pay gap is greatest. While there is one occupation in Estonia and Austria (*Health associate professionals*) where women have higher pay, the gap between men and women's ratio to men's pay is fairly large across all occupations and is generally higher than the European average in blue-collar occupations.



On the other hand, the pay gap is not higher than the EU average across all occupations – for instance, for the *Health professionals* where Germany, with a difference in the ratio of 72.1%, is driving the European average upwards. While there are similarities between countries with similar pay gaps, dynamics within specific countries (i.e. very high pay for German male health professionals), suggest that reality is fairly complex and that specific policies can have a unique effect on differences in pay within occupations between men and women.



2.10.2 Relative pay levels in female-dominated occupations: country comparisons

To obtain a better idea of how far gendered patterns of concentration and segregation by occupation underpin both the overall pay gap and variations in the pay gap, the four largest occupations in terms of women's employment are analysed. In each Figure, countries are ranked according to the size of the ratio between female pay in the occupation and overall average male pay in the country. These Figures thus reveal both the tendency or otherwise for the most important occupations for women's employment to display pay penalties vis à vis the male average benchmark and the range of variation in the pay penalties or premiums attached to typical female occupations.

Quite different patterns are found in the relative pay of these four occupations among Member States according to the skill level of the occupation (Figures 68 and 69). Two of the occupations – *Sales workers* and *Cleaners and helpers* – are lower-skilled occupations for which the average pay at EU27 level is only 50% of male average pay for women and only somewhat higher at 58% for men. However, when we look at the ratios by country, we find a wide range in the actual penalties, with cleaners varying from 39% in Estonia to 64% in Denmark and sales varying from 45.3% in the UK to 77.4% in Sweden. As these occupations are typically among the lowest paid in all labour markets the differences in ratios observed are in part likely to reflect the level minimum wages established by either legal or collective regulation. Raising the wage floor is likely to have a major impact on the relative pay in these types of occupations. Indeed the variations observed are consistent with the more compressed pay structures in Scandinavian countries which tend to protect women in lower skilled jobs and the wider wage inequality in less regulated economies such as the UK and Ireland (note the UK has the first and second lowest pay in these two occupations, while Sweden has the first and second highest pay ratios).

Figure 68. Ratio Sales workers female pay to average male pay, by country – EU-27, 2010

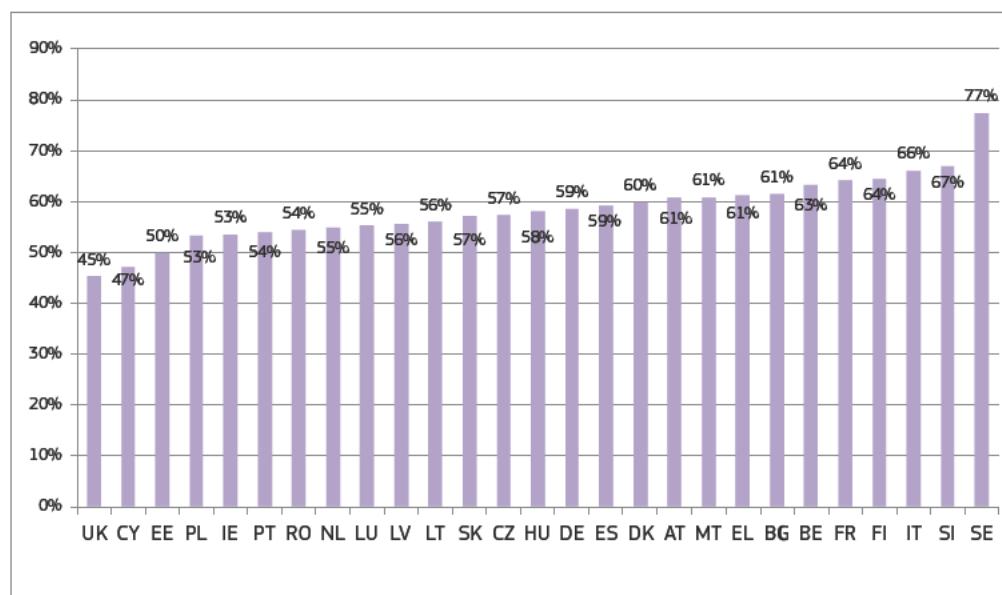
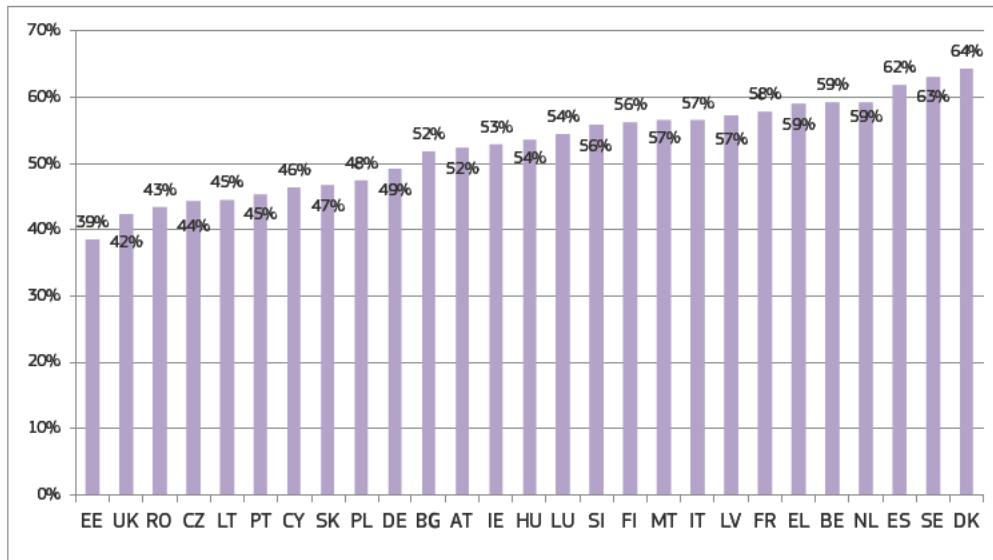
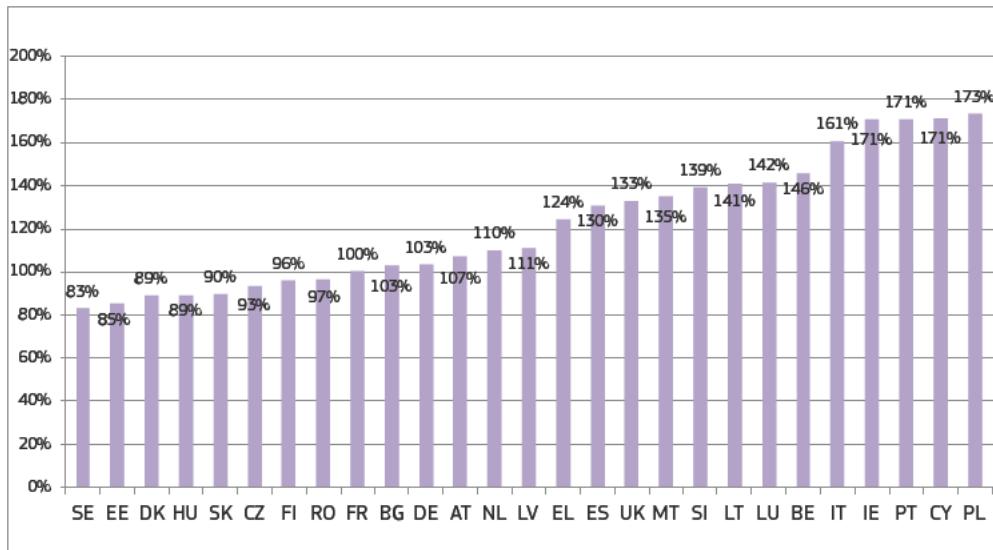


Figure 69. Ratio Cleaners and helpers female pay to average male pay, by country – EU-27, 2010



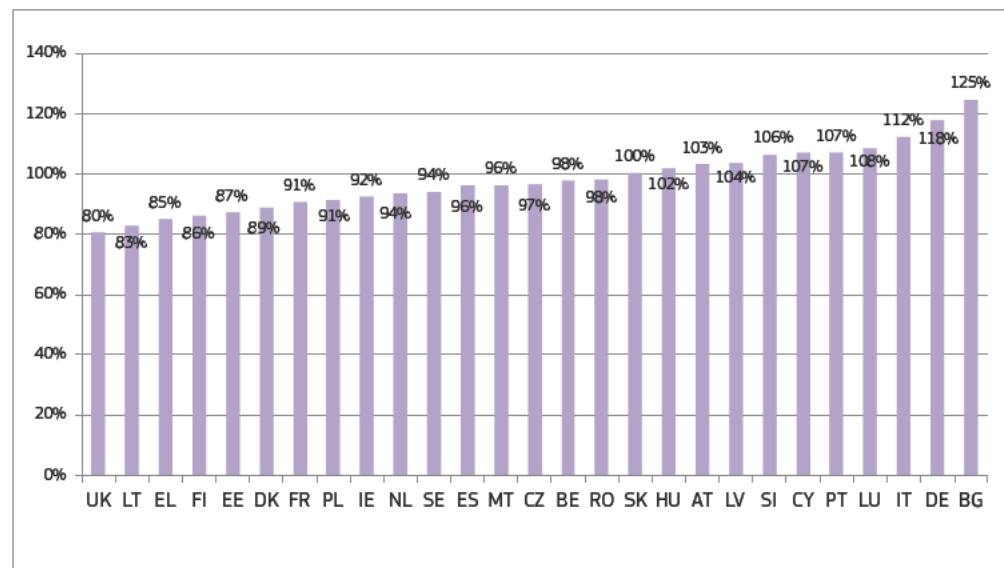
Quite different patterns emerge when we look at a more highly-skilled occupation: *Teaching professionals*. In this case, there is a radical reversal as the Scandinavian countries are now near the bottom with regard to the ratio between female average pay and the overall male average (Figure 70). In these countries, female teaching professionals are paid less than the male average wage. Ranks for Portugal, Ireland and Poland shift in the opposite direction and are now near the top for average relative female pay in this occupation. By contrast, the relative rank of countries such as Estonia and Belgium remains similar. The wide range of variations in this primarily public sector profession indicates the degree of choice that governments exercise over how to reward some typically female occupations (Rubery 2013). This example also shows that the impact of a country's wage distribution may be favourable for some groups of women but negative for others. Thus, professional women in the UK fare better than professional women in Scandinavia, but the reverse applies for women in lower skilled occupations.

Figure 70. Ratio Teaching professionals female pay to average male pay, by country – EU-27, 2010



The final occupation, *Business administration associate professionals*, is a white-collar occupation requiring medium levels of skill. Again a wide range of pay ratios is found, from 80% in the UK to 125% in Bulgaria. Here there is more similarity between the low paying countries of the UK and Estonia and the Scandinavian countries of Denmark and Sweden, as the ratios are below male-average pay in all four cases. As this is a wide ranging occupation, variations may be explained by differences in composition of the workforce across countries but may also arise out of differences in premiums attached to white-collar work.

Figure 71. Ratio *Business administration associate professionals* female pay to average male pay, by country – EU-27, 2010



3. Conclusions, implications and future directions

The nature of the occupation itself is important, above and beyond whether an occupation is male-dominated, female-dominated or mixed, and above and beyond whether an occupation is blue-collar or white-collar. Put simply: occupation matters. The working conditions, the hours of work, the risks and hazards and the pay are, at least in part, determined by the stuff of the occupation itself. For instance, take the occupational category *Associate nurses and healthcare assistants*. In some ways it is characteristic of a very female-dominated white-collar occupation. In other ways, it is distinctive and different from other female-dominated white-collar occupations. For instance, because it often involves helping sick and disabled people to move, and dealing with hazardous substances, it has many physical risks that are more typical of male blue-collar jobs. Therefore, aggregating it with other white-collar, heavily female-dominated occupations hides the specifics of this occupation.

Each occupation also has its own unique history, the outcome of decades or centuries of conflicts and compromises between employers, workers, trade unions, customers, factory inspectors, lawyers, and so on, all of which may vary between countries. Furthermore, those historic processes are themselves highly influenced by the gender mix of the workforce and processes of change in the gender mix. Consequently some of the occupational differences reflect current realities, while others reflect the historic legacies of, for instance, powerful professional associations. In addition, both past and present differences between occupations can be based on cultural norms about gender differences rather than any objective differences between occupations. Moreover, these conditions vary across countries and the pace of change in the integration of women into the labour market as a whole and into traditionally male-dominated occupations has been highly variable (Rubery et al. 1999).

For these reasons, there is a heavy price to pay in terms of lost detail by aggregating together occupations into statistically convenient groups. Yet, if we analyse each occupation separately, we no longer see the combined effect of the gendering of occupations across the whole labour market. The analyses and graphs in this report attempt to walk a middle-road between too much and too little occupational granularity, between over-generalising and under-generalising. Similar reasons underpin

the decision to analyse most of the factors at the aggregate EU-27 level. Furthermore, this report did not set out to provide the definitive picture of occupational gender segregation in 2014, but rather to show, with examples, how the methodological approach could provide additional understanding and policy-relevant descriptions of the importance of occupational gender segregation for the quality of women's and men's working lives, and also to give some ideas of how this style of analysis might be taken further to better understand the simultaneous effects of multiple segregating planes (such as occupation, industrial sector and workplace) and multiple criteria for segregation (such as gender, ethnic group, age and disability) to achieve a genuinely intersectional perspective.

In this report, we have seen how patterns of occupational gender segregation vary significantly between countries. Although there is some consistency between countries, the report demonstrated, with three specific occupations used as examples, that the proportion of employees in specific occupations differs between countries. Much of this is likely to be 'real', reflecting historic or industrial differences between countries, not only in gender segregation but also in the system of work organisation which will give rise to differences, for example, in whether various forms of work are considered professional or associate professional work. These are the kinds of problems that any international classification of occupations has to address as best it can, but in addition there may be linguistic or cultural differences in the way that occupations are described. Furthermore, the gendering of an occupation can be markedly different between countries, so that an occupation that is mixed in some countries can be male- or female-dominated in others.

No analysis of gender and working conditions would be complete without a consideration of the life course, and the cumulative disadvantages that accrue to women as their household circumstances constrain their employment options to a far greater extent than those for men. In this report, we have seen some evidence of this, as men shift towards male-dominated jobs when they have children in their households, and the gender gap opens with age in the highest paying professions. A lot more could be done, through the analysis of the Top 20 occupations, to model the combined effects of gender segregation and the life course on unequal outcomes for men and women.

When we analyse differences in job quality between employees, we can divide the effects into those that seem to be 'simply' attributable to gender, with a clear advantage, usually to men, in all occupational groups; men's greater propensity to supervise other employees is an example of this. On the other hand, the variation in other aspects of job quality seem to be largely attributable to the gendering of the occupational category more than to the gender of the individual employee. For instance, the occupations with a higher proportion of women also typically have shorter working time, even among full-time workers.

Then there are some working conditions that vary dramatically between occupations, regardless of the gender of the employee or the gendering of the occupa-

tion. For instance, although there is a tendency for men to be slightly more at risk of overwork in the majority of occupations, there is also considerable variation between occupations at risk of overwork that seems to affect some occupations regardless of their position on the spectrum from male-dominated to female-dominated occupations.

Many aspects of working conditions and job quality show very marked differences between men and women in the costs of working in various occupations. Men are much more prone to injuries caused by accidents at work, regardless of their occupation. Furthermore, male-dominated jobs seem to have higher levels of injuries from workplace accidents, but this is largely because the male-dominated occupations tend also to be blue-collar occupations, which are in turn more prone to risks. In contrast, women are more likely to have taken time off work because of illness caused by their work, although there are some occupations in which men seem to have a greater risk of illness.

The analyses here show correlations between the gender domination of an occupation and working conditions, but can only suggest how gender segregation by occupation evolves over time, and how it correlates with other aspects of gendered employment. For instance, there is a clear pattern relating the proportion of female employees in any given occupation with the proportion of those women who work part-time. More detailed analysis over longer periods of time could reveal how that correlation has arisen. Were women attracted into occupations where part-time work was more plentiful? Or did part-time work come to be accepted as more normal where there were a higher proportion of women in the workforce?

Our analyses of changes over time between 1995, 2005 and 2010 show that the overall level and pattern of change in gendered occupational segregation has changed remarkably little over that time, despite so many EU policies being aimed at reducing gender segregation and gender inequality. There is, however, some evidence that younger women, representing the cohort of women that have been relatively advantaged compared to men in their education, are making inroads into some of the higher-earning professional occupations that had been even more male-dominated in the past. These analyses could be taken much further in future. For instance, the Labour Force Surveys could be broken down by age and calendar time to follow through specific cohorts as they age, thus separating out cohort and maturation effects.

Finally, the analysis of segregation by pay levels provides some important pointers for understanding what may need to be achieved if the gender pay gap is to be closed or if further widening guarded against. Gender pay gaps in favour of men were generally found in all occupations, but average pay levels in female-dominated as well as male-dominated occupations still reflected primarily the nature of the work, with some female-dominated occupations providing pay for women that on average exceeds average pay for men in the labour market as a whole. However, more detailed analysis by country found a high degree of variation in relative

pay in those occupations most important for women's employment. This applied both to low-skilled occupations such as sales and cleaning, where much higher pay was provided in countries with more compressed and egalitarian wage structures, and much lower pay was provided in societies with wider overall wage inequality. A similar variation in pay was also found for teaching professionals, suggesting there is considerable discretion exercised at the country level regarding the way in which typical female professional jobs are valued. This finding, taken together with the evidence of a very high concentration of women, particularly higher educated women, in public services suggests that policy with respect to pay and conditions in the public sector is likely to have major implications for the gender pay gap. Nearly three out of every five women with tertiary education who is employed in the EU works in the three public services of public administration, education and health. This means that public sector working conditions, pay and career opportunities are very important if women are to have good prospects at the middle to top end of the labour market. Likewise, labour market policies such as minimum wage policy are likely to have major impacts on the pay ratios for the primarily female workforce in the lower skilled occupations of sales and cleaning (Grimshaw 2013).

It is somewhat disappointing that, despite the longstanding policy priorities in the EU to reduce gendered inequalities, occupational segregation by gender has proven to be so resistant to change. However, we hope that the new insights provided in this report will enable the development of more effective and focused policies to reduce both gendered occupational segregation and also the inequalities that arise out of occupational gender segregation.

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A New Method to Understand Occupational Gender Segregation in European Labour Markets

Appendices

Appendix A

Female employment rates and female share of all employees

	1995		2005		2010		2012	
	Employment rate	% All Employees						
EU-27	:	:	60	46.4	62.1	47.7	62.4	47.9
Austria	61.2	43.3	64.9	46.5	69.6	47.7	70.3	47.8
Belgium	49.2	40.8	58.6	45.2	61.6	47.1	61.7	47.5
Bulgaria	:	:	57.1	48.3	61.7	48.8	60.2	49.1
Cyprus	:	:	63.8	47.2	68.8	48.6	64.8	50.9
Czech Republic	:	:	61.3	46.1	60.9	45.6	62.5	45.4
Germany	57.7	:	63.1	46.5	69.6	47.6	71.5	47.6
Denmark	67.8	46.3	73.7	48.4	73	49.6	72.2	49.3
Estonia	:	:	69	52.2	65.7	53.4	69.3	52.4
Spain	34.9	35.0	54.4	41.8	55.8	46.4	54	47.8
Finland	63.3	51.1	70.8	50.5	71.5	51.3	72.5	51.0
France	57	45.8	63.7	48.3	64.8	49.6	65	49.6
Greece	41.7	37.4	49.6	40.8	51.7	43.0	45.2	43.9
Hungary	:	:	55.6	47.8	55	48.3	56.4	47.8
Ireland	46.2	43.7	62.4	47.6	60.2	51.7	59.4	51.6
Italy	38.2	37.6	48.4	42.4	49.5	44.0	50.5	44.9
Lithuania	:	:	66.6	50.4	65	53.5	67.9	52.8
Luxembourg	45.2	36.1	58.4	42.1	62	43.9	64.1	44.4
Latvia	:	:	65.7	49.4	64.9	52.8	66.4	52.4
Malta	:	:	35.1	:	41.5	37.6	46.8	39.3
Netherlands	55.5	41.3	67.6	46.1	70.8	47.9	71.9	48.2
Poland	:	:	51.7	46.3	57.3	46.9	57.5	46.4
Portugal	58.7	46.0	66	47.0	65.6	48.5	63.1	49.8
Romania	:	:	56.9	45.8	55.9	45.2	56.3	44.8
Sweden	74.3	51.2	75.5	50.1	75	49.6	76.8	50.0
Slovenia	:	:	66.2	47.0	66.5	47.6	64.6	47.8
Slovakia	:	:	56.7	47.1	57.4	48.1	57.3	46.9
United Kingdom	63.7	47.7	68.5	48.9	67.9	49.4	68.4	49.2

Source: Employment rates; Eurostat, *Employment rate, by sex*

Share of all employees: EU-LFS, own calculations

Appendix B

Male employment rates and male share of all employees

	1995		2005		2010		2012	
	Employment rate	% All Employees						
EU-27	:	:	76	53.6	75	52.3	74.5	52.1
Austria	81.2	56.7	78.5	53.5	80.2	52.3	80.9	52.2%
Belgium	73	59.2	74.3	54.8	73.5	52.9	72.7	52.5%
Bulgaria	:	:	66.8	51.7	69.1	51.2	65.8	50.9%
Cyprus	:	:	85.5	52.8	81.7	51.4	76.1	49.1%
Czech Republic	:	:	80.1	53.9	79.6	54.4	80.2	54.6%
Germany	77.3	:	75.6	53.5	80.1	52.4	81.8	52.4%
Denmark	82.1	53.7	82.3	51.6	78.6	50.4	78.6	50.7%
Estonia	:	:	75.4	47.8	67.7	46.6	75.2	47.6%
Spain	68.6	65.0	79.9	58.2	69.1	53.6	64.5	52.2%
Finland	69.2	48.9	75.1	49.5	74.5	48.7	75.5	49.0%
France	73.4	54.2	75.3	51.7	73.8	50.4	73.8	50.4%
Greece	79.6	62.6	79.8	59.2	76.2	57.0	65.3	56.1%
Hungary	:	:	69.2	52.2	66	51.7	68.1	52.2%
Ireland	75.5	56.3	82.8	52.4	69.1	48.3	68.1	48.4%
Italy	72.2	62.4	74.8	57.6	72.8	56.0	71.6	55.1%
Lithuania	:	:	74.9	49.6	63.5	46.5	69.1	47.2%
Luxembourg	79.5	63.9	79.4	57.9	79.2	56.1	78.5	55.6%
Latvia	:	:	75.4	50.6	65.1	47.2	70	47.6%
Malta	:	:	80.6		77.9	62.4	79	60.7%
Netherlands	78.5	58.7	82.4	53.9	82.8	52.1	82.5	51.8%
Poland	:	:	65.1	53.7	71.3	53.1	72	53.6%
Portugal	80.6	54.0	78.7	53.0	75.4	51.5	69.9	50.2%
Romania	:	:	70.4	54.2	70.8	54.8	71.4	55.2%
Sweden	77.8	48.8	80.7	49.9	81.1	50.4	81.9	50.0%
Slovenia	:	:	75.8	53.0	74	52.4	71.8	52.2%
Slovakia	:	:	72.5	52.9	71.9	51.9	72.8	53.1%
United Kingdom	78.5	52.3	82	51.1	79.3	50.6	80	50.8%

Source: Employment rates; Eurostat, *Employment rate, by sex*
 Share of all employees: EU-LFS, own calculations

Appendix C

Occupation names – Equivalence table*	
ISCO-88 2 digit	Policy-friendly names
Corporate Mmangers	Corporate managers
Customer services clerks	Customer services clerks
Drivers and mobile plant operators	Drivers
Extraction and building trades workers	Building workers and miners
Labourers in mining, construction manufacturing and transport	Labourers in construction and industry
Life science and health associate professionals	Associate nurses and healthcare assistants
Life science and health professionals	Health professionals
Machine operators and assemblers	Machine operators and assemblers
Metal, machinery and related trades workers	Mechanics and metal workers
Models, salespersons and demonstrators	Sales workers
Office clerks	Office clerks
Other associate professionals	Finance, sales and administrative associate professionals
Other craft and related trades workers	Food, wood and textile workers
Other professionals	Administrative, legal and social science professionals
Personal and protective services workers	Service, personal care and security workers
Physical and engineering science associate professionals	Engineering and computing technicians
Physical, mathematical and engineering science professionals	Engineering and computing professionals
Sales and service elementary occupations	Cleaners and maintenance workers
Teaching associate professionals	Teaching associate professionals
Teaching professionals	Teaching professionals

* Note: The names for the occupations are based on importance of ISCO 3 digit occupations within 2-digit occupations and more commonly used terms for various occupations. The goal is to make occupation names more intuitive and friendly to policy-makers.

Appendix D

Volume of occupation within all employees – EU-26, 2005 & 2010

Occupation (ISCO-88)	% within all employees	
	2010	2005
Office clerks	10.0	10.4
Services, personal care and security workers	9.9	9.1
Finance, sales and admin associate professionals	9.0	8.7
Cleaners and maintenance workers	7.0	6.8
Sales workers	5.5	5.3
Mechanics and metal workers	5.2	5.7
Corporate managers	4.9	4.6
Teaching professionals	4.8	4.8
Building workers and miners	4.8	5.3
Admin, legal and social science professionals	4.6	4.0
Drivers	4.5	4.5
Engineering and computing technicians	4.0	4.1
Engineering and computing professionals	3.7	3.4
Machine operators and assemblers	3.5	3.9
Labourers in construction and industry	3.1	3.4
Associate nurses and healthcare assistants	3.0	2.9
Customer services clerks	2.4	2.5
Food, wood and textile workers	1.9	2.2
Health professionals	1.7	1.6
Teaching associate professionals	1.4	1.3
Stationary plant and related operators	1.2	1.3
Skilled agricultural and fishery workers	1.0	1.0
Armed forces	.8	.8
Managers of small enterprises	.8	.8
Agricultural, fishery and related labourers	.6	.6
Precision, handicraft, craft printing and related trades workers	.5	.6
Legislators and senior officials	.2	.2
Total	100.0	100.0

Volume of occupation within all employees – EU-26, 2012

Occupation (ISCO-08)	% within all employees
	2012
Sales workers	7.3
Business and administration associate professionals	6.8
Teaching professionals	4.9
Personal services workers	4.5
Drivers and mobile plant operators	4.2
Building and related trades workers	4.0
Metal, machinery and related trades workers	3.8
Science and engineering associate professionals	3.7
Cleaners and helpers	3.7
Market-oriented skilled agricultural workers	3.7
Personal care workers	3.5
Numerical and material recording clerks	3.4
Business and administration professionals	3.2
Science and engineering professionals	3.0
Labourers in mining, construction, manufacturing and transport	2.8
General and keyboard clerks	2.8
Health professionals	2.8
Health associate professionals	2.7
Legal, social and cultural professionals	2.6
Stationary plant and machine operators	2.4
Customer services clerks	2.2
Food processing, woodworking, garment and other craft and related trades workers	2.0
Production and specialized services managers	2.0
Legal, social, cultural and related associate professionals	1.8
Hospitality, retail and other services managers	1.7
Administrative and commercial managers	1.6
Protective services workers	1.6
Electrical and electronic trades workers	1.6
Other clerical support workers	1.5
Information and communications technology professionals	1.5
Refuse worker and other elementary workers	1.0
Agricultural, forestry and fishery labourers	.9
Chief executives, senior officials and legislators	.8
Assemblers	.8
Information and communications technicians	.8
Food preparation assistants	.7
Handicraft and printing workers	.6
Armed forces occupations, other ranks	.3
Subsistence farmers, fishers, hunters and gatherers	.3
Non-commissioned armed forces officers	.2
Market-oriented skilled forestry, fishery and hunting workers	.2
Commissioned armed forces officers	.1
Street and related sales and services workers	.1
Total	100.0

Appendix E

Key Questionnaire Items (2010 UK LFS)¹

1. Occupation

What was your (main) job (in the week ending Sunday [date])?
<Enter job title>

What did you mainly do in your job?
<check special qualifications/training needed to do the job.>

2. Industry

What did the firm/organisation you worked for mainly make or do (at the place where you worked)?

<Describe fully probe manufacturing or processing, or distributing etc. and main goods produced, materials used, wholesale or retail etc.>

<Entire a title for the industry>

3. Full time or part-time

In your (main) job were you working...

1 full-time

2 or part-time?

4. Supervisory responsibilities:

In your job, do you have formal responsibility for supervising the work of other employees?

(Do not include people who only supervise:

- children, e.g. teachers, nannies, child minders
- animals
- security or buildings, e.g. caretakers, security guards)

1. yes

2. no

¹ The wording for the UK Labour Force Survey is presented here. Important variations may be present in other country questionnaires.

5. Contract type

Leaving aside your own personal intentions and circumstances, was your job...

1. a permanent job
2. or was there some way that it was not permanent?

In what way was the job not permanent - was it...

- 1 working for an employment agency
- 2 casual type of work
- 3 seasonal work
- 4 done under contract for a fixed period or for a fixed task
- 5 or was there some other way that it was not permanent?

Code in EU-LFS as:

- 1 Person has a permanent job or work contract of unlimited duration.
- 2 Person has temporary job/work contract of limited duration.

6. Job tenure (months)

In which year did you start working continuously for your current employer?

And what month was that?

7. Hours usually worked

Thinking of your (main) job/ business, how many hours per week do you usually work – please exclude meal breaks and overtime?

<Enter>

97 = 97 or more

99 = don't know or refusal

Note: Separate question for overtime, combined in EU-LFS:

00 Usual hours cannot be given because hours worked vary considerably from week to week or from month to month.

01-98 Number of hours usually worked in the main job

99 Not applicable

Note: Hours greater than 80 are aggregated in a single category in the anonymised microdata.

8. Working time preference

*How many fewer hours would you like to work in that / your current job?*²
<Enter>

97 = 97 or more

99 = don't know or refusal

*How many extra hours, in addition to those you usually work, would you like to work each week?*³

<Enter>

97 = 97 or more

99 = don't know or refusal

9. Shift work

Do you do shift work in your (main) job...

- 1 most of the time
- 2 occasionally
- 3 or never?

10. Irregular hours index⁴

a. Evening work

Thinking about the last 4 weeks ending Sunday the [REFDAY], would you say that...

- 1 half or more of the total time you worked was in the evening
- 2 or less than half?
- 3 SPONTANEOUS: No time worked in evening in past 4 weeks

² Only applies if respondent is willing to work less for lower pay, this criteria may not apply in all country questionnaires.

³ Only applies if respondent is willing to work more at same basic rate of pay.

⁴ Note: Variables are coded in the following manner in the EU-LFS:

Shift work

1 Person does shift work

2 Person never does shift work

All others

1 Person usually works...

2 Person sometimes works...

3 Person never works...

b. Night work

Thinking about the last 4 weeks ending Sunday the [REFDAY], would you say that...

- 1 half or more of the total time you worked was in the evening
- 2 or less than half?
- 3 SPONTANEOUS: No time worked in evening in past 4 weeks

c. Saturday work

Thinking about the last 4 weeks ending Sunday the [REFDAY], on how many Saturdays did you work?

- 1 two or more
- 2 one
- 3 none, no time worked on Saturdays in past 4 weeks

d. Sunday work

Thinking about the last 4 weeks ending Sunday the [REFDAY], on how many Sundays did you work?

- 1 two or more
- 2 one
- 3 none, no time worked on Sundays in past 4 weeks

11. Education

Which qualifications do (you think) you have, starting with the highest qualifications?

<List provided of UK qualifications>

12. Presence of a child under 15 living in the household.

Variable is derived from HHCOMP variable in the EU Labour Force Survey. Values in bold are individuals considered to have a child under 15 living in the household, all other cases are placed in reference category.

10 One adult without children

One adult with at least:

11 an own son or daughter aged less than 15

12 else: an own child aged 15 to 24

13 else: another child aged less than 15

20 One couple without children

One couple with at least:

21 an own son or daughter aged less than 15

22 else: an own child aged 15 to 24

23 else: another child aged less than 15

30 Two adults (not a couple) or more without children

Two adults (not a couple) or more with at least:

31 an own son or daughter aged less than 15

32 else: an own child aged less than 15

33 else: another child aged less than 15

Ad hoc 2007 module questionnaire

1. Accidents at work

Thinking of the 12 months since [full date], have you had any accident resulting in injury at work or in the course of your work?

1 yes

2 no

2. Illnesses caused or made worse by work

How many illnesses have you had (in the last twelve months) that have been caused or made worse by your work?

<State the number of illnesses>

3. Exposure to psychological risks

At your workplace or in the course of your work, are you exposed to...

1 harassment or bullying?

2 violence or the threat of violence?

3 time pressures or overloaded with work?

4 None of these

If more than one response is provided to the above question:

Which of these is the greatest risk to your mental well-being?

- 1 harassment or bullying
- 2 violence or the threat of violence
- 3 time pressures or overload of work

In LFS, coded as:

Whether at the workplace the person has particular exposure to selected factors that can adversely affect his/her mental well-being.

- 0 No
- 1 Yes, mainly to harassment or bullying
- 2 Yes, mainly to violence or threat of violence
- 3 Yes, mainly to time pressure or overload of work
- 9 Not applicable

4. **Exposure to physical risks**

And at your workplace or in the course of your work are you exposed to....

- 1 chemicals, dusts, fumes, smokes or gases?
- 2 noise or vibration?
- 3 difficult work postures, work movements or the handling of heavy loads?
- 4 the risk of accidents?
- 5 None of these

Which of these is the greatest risk to your physical health?

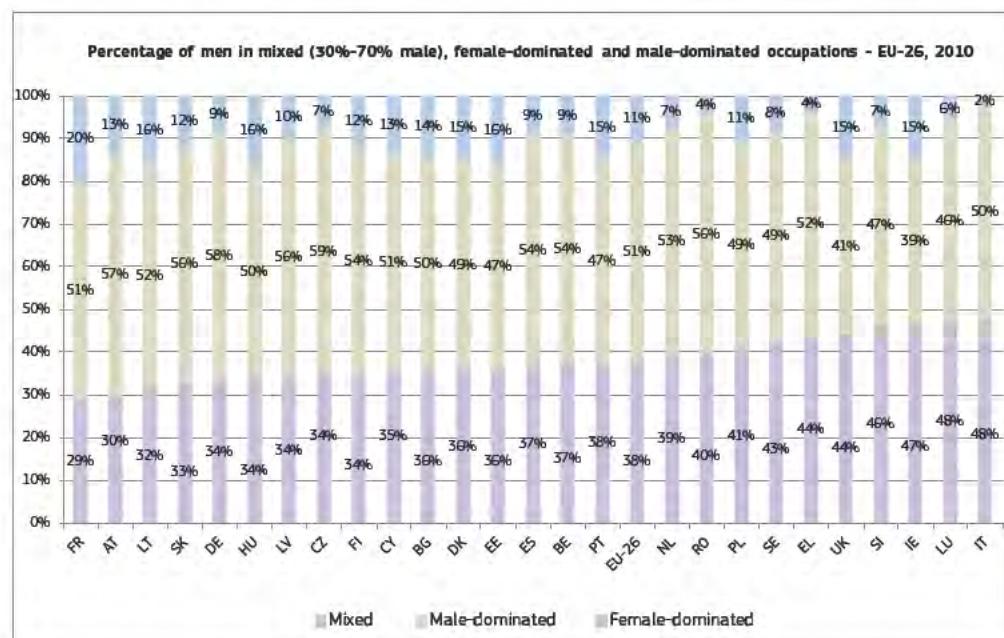
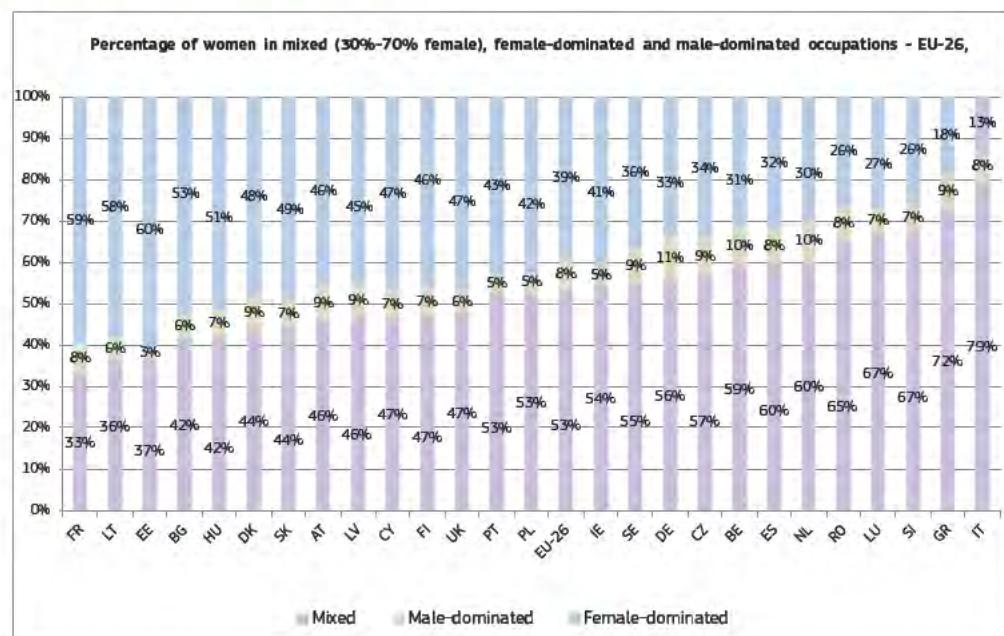
- 1 chemicals, dusts, fumes, smokes or gases?
- 2 noise or vibration?
- 3 to difficult work postures, work movements or the handling of heavy loads?
- 4 the risk of accidents?

In EU-LFS, coded as:

Whether at the workplace the person has particular exposure to selected factors that can adversely affect his/her physical health.

- 0 No
- 1 Yes, mainly to chemicals, dusts, fumes, smoke or gases
- 2 Yes, mainly to noise or vibration
- 3 Yes, mainly to difficult work postures, work movements or handling of heavy loads
- 4 Yes, mainly to risk of accident
- 9 Not applicable

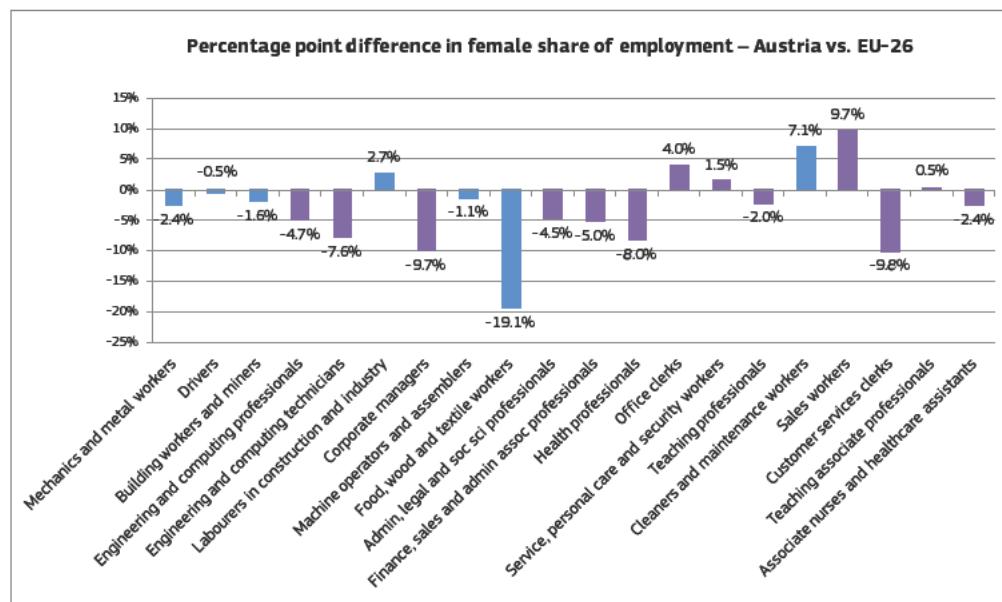
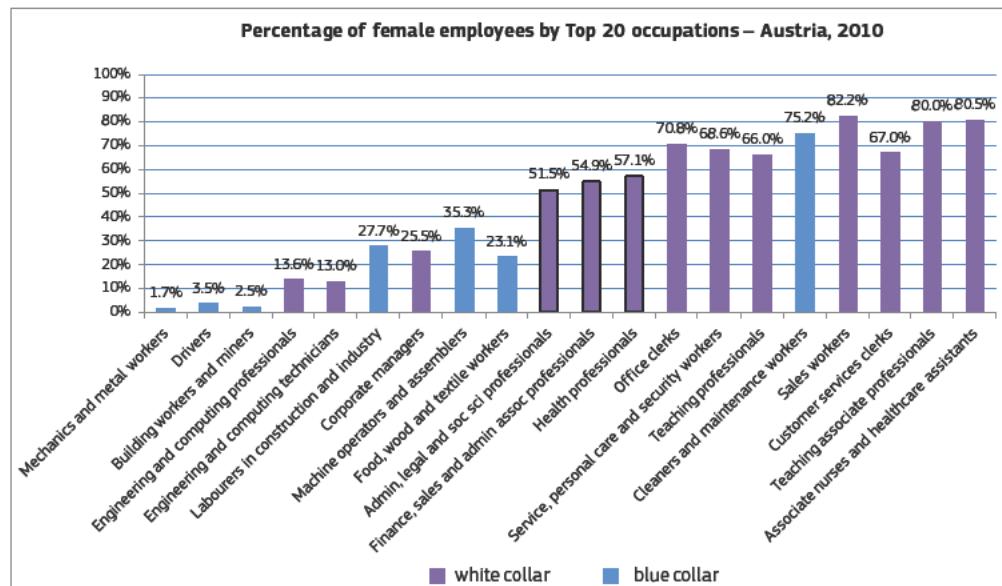
Appendix F



Appendix G – Country Files

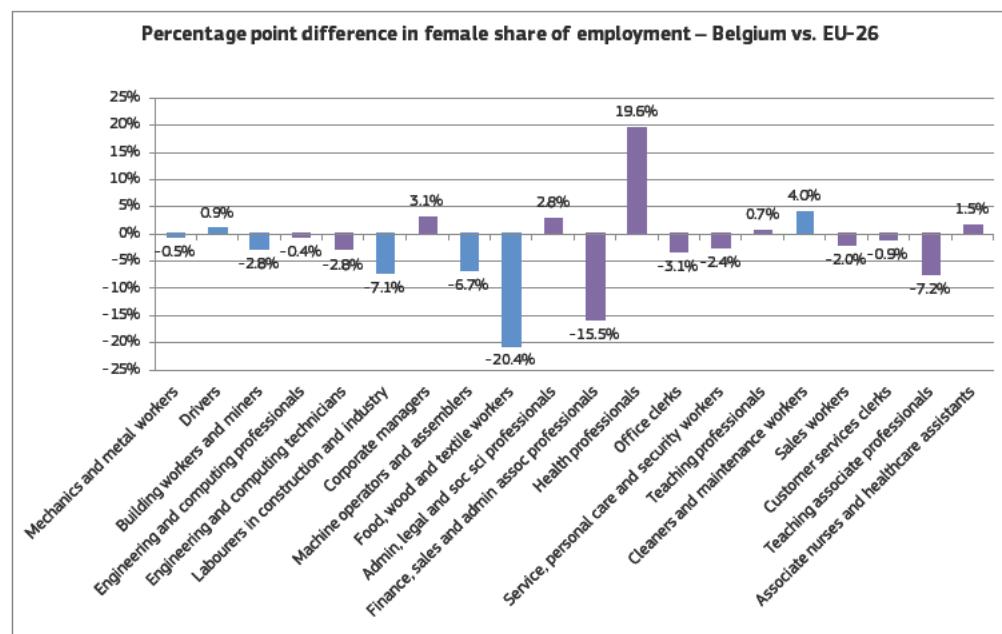
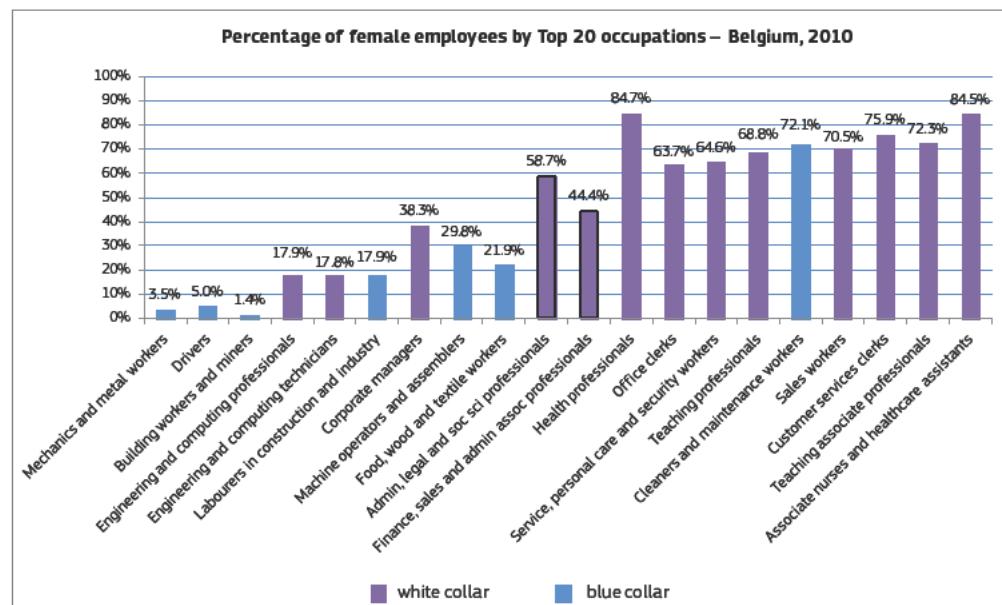
Austria

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Office clerks 2. Service, personal care and security workers 3. Finance, sales and admin associate professionals	1. Office clerks 2. Finance, sales and admin associate professionals 3. Service, personal care and security workers	Admin, legal and social science professionals Finance, sales and admin associate professionals Health professionals



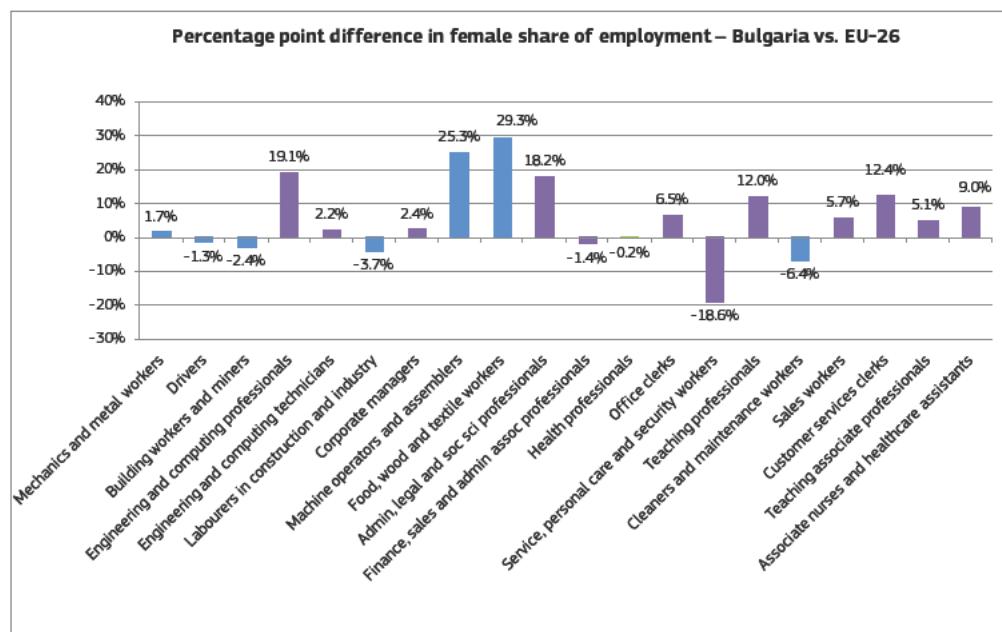
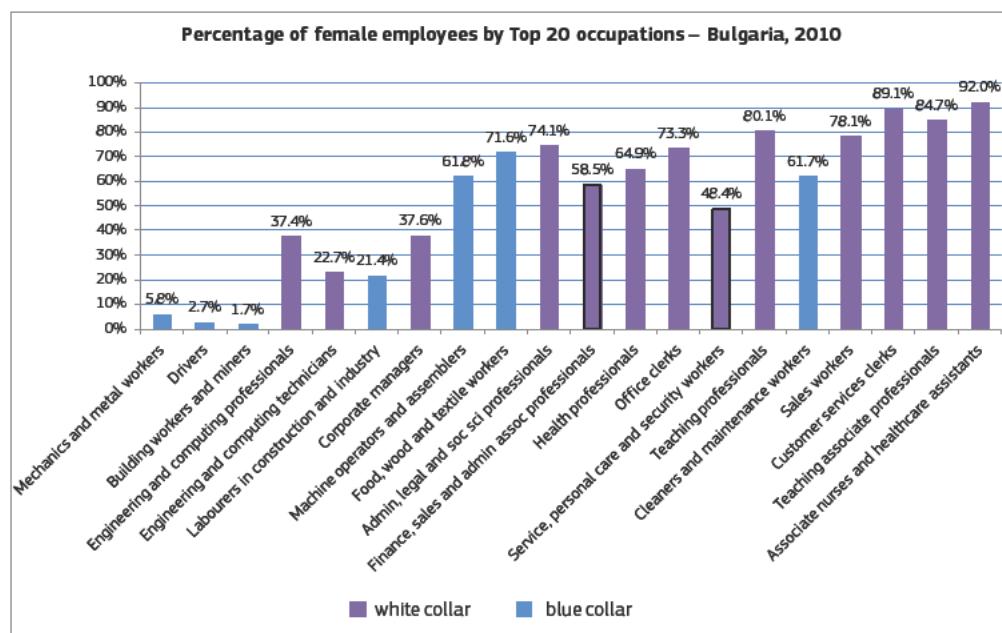
Belgium

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Office clerks	1. Office clerks	Admin, legal and social science professionals
2. Cleaners and maintenance workers	2. Service, personal care and security workers	Finance, sales and admin associate professionals
3. Service, personal care and security workers	3. Cleaners and maintenance workers	



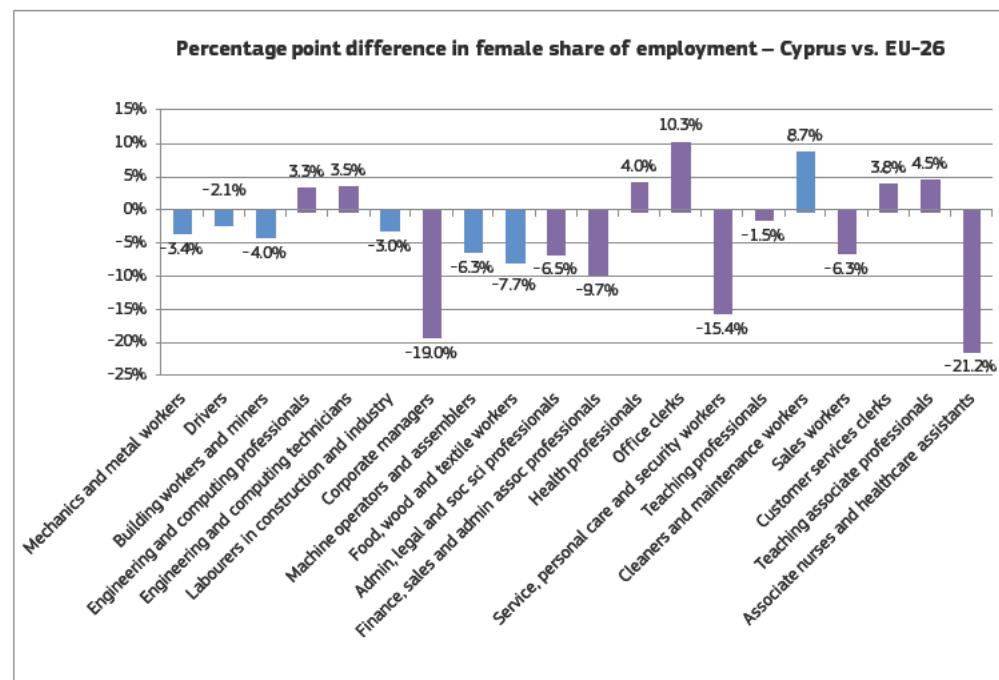
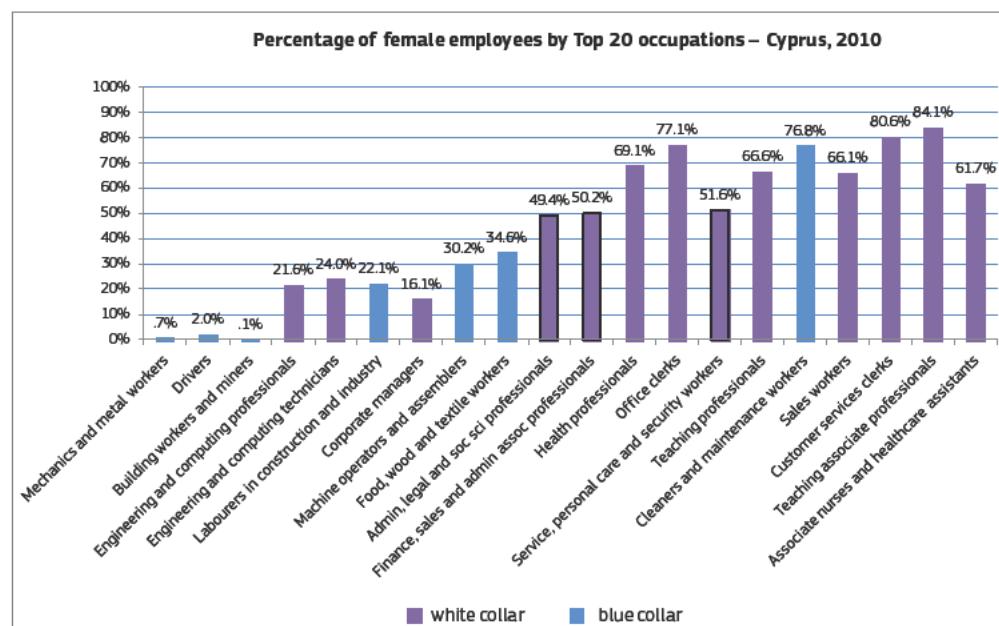
Bulgaria

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Service, personal care and security workers 2. Sales workers 3. Admin, legal and social science professionals	1. Service, personal care and security workers 2. Drivers 3. Cleaners and maintenance workers	Finance, sales and admin associate professionals Service, personal care and security workers



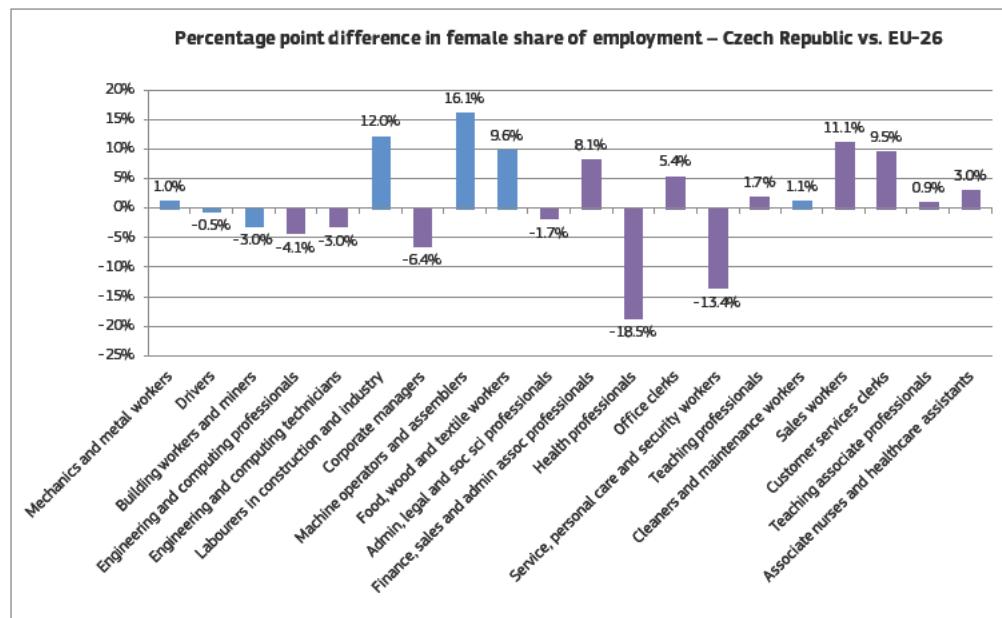
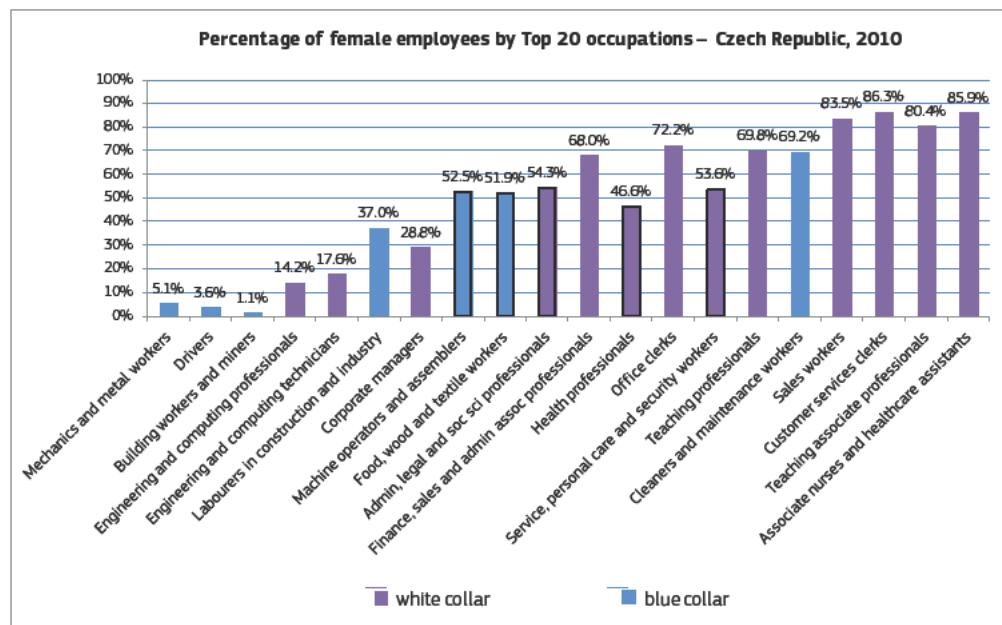
Cyprus

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Cleaners and maintenance workers	1. Cleaners and maintenance workers	Admin, legal and social science professionals
2. Office clerks	2. Office clerks	Finance, sales and admin associate professionals
3. Finance, sales and admin associate professionals	3. Finance, sales and admin associate professionals	Service, personal care and security workers



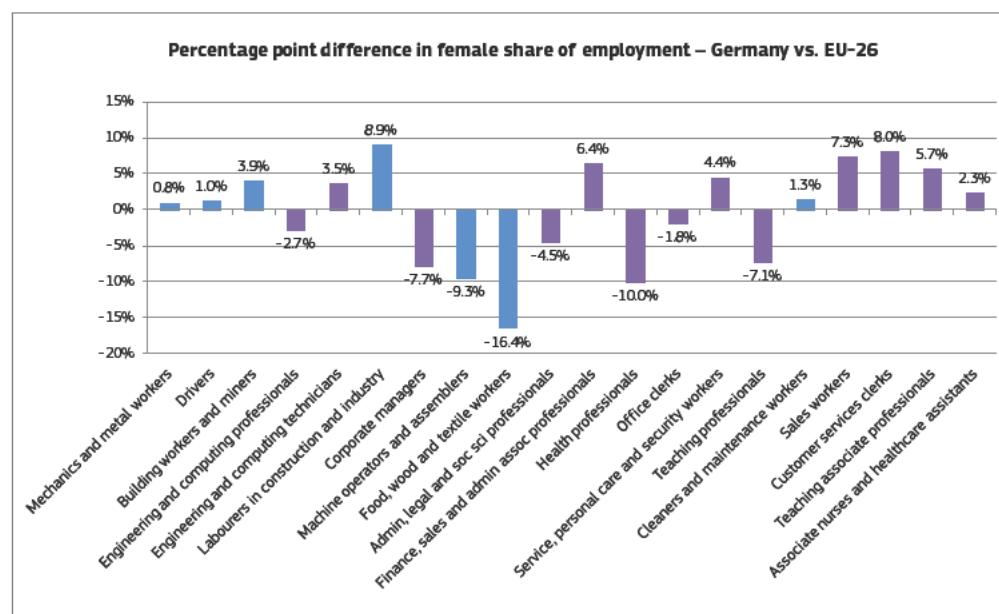
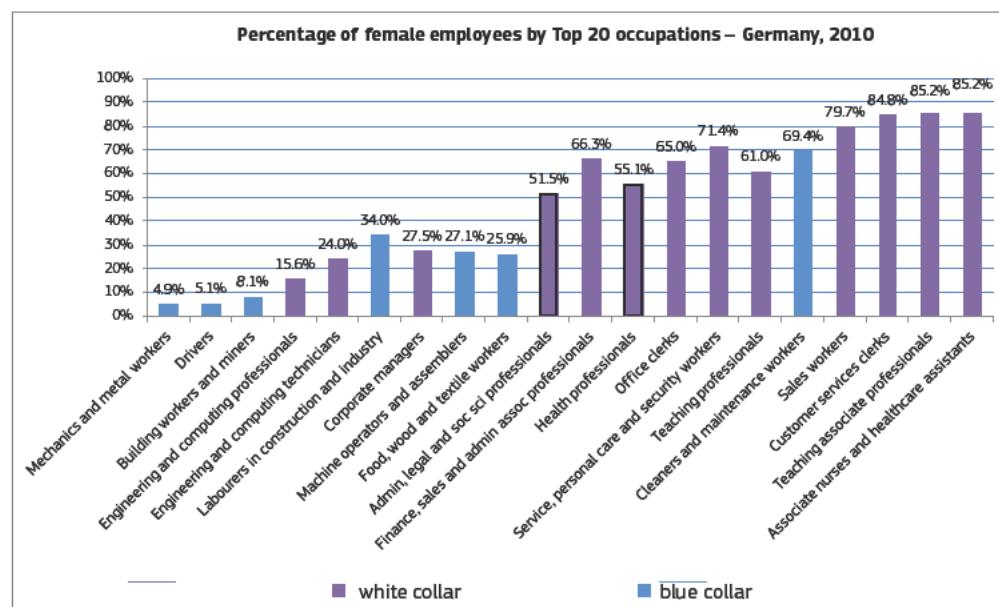
Czech Republic

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Finance, sales and admin associate professionals 2. Office clerks 3. Service, personal care and security worker	1. Finance, sales and admin associate professionals 2. Mechanics and metal workers 3. Engineering and computing technicians	Machine operators and assemblers Food, wood and textile workers Admin, legal and social science professionals Health professionals Service, personal care and security workers



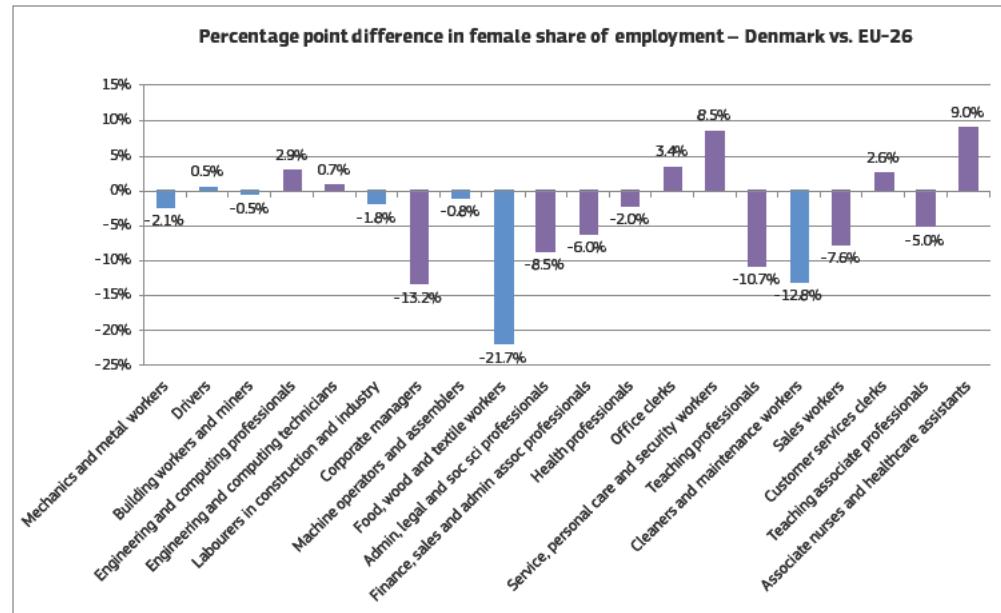
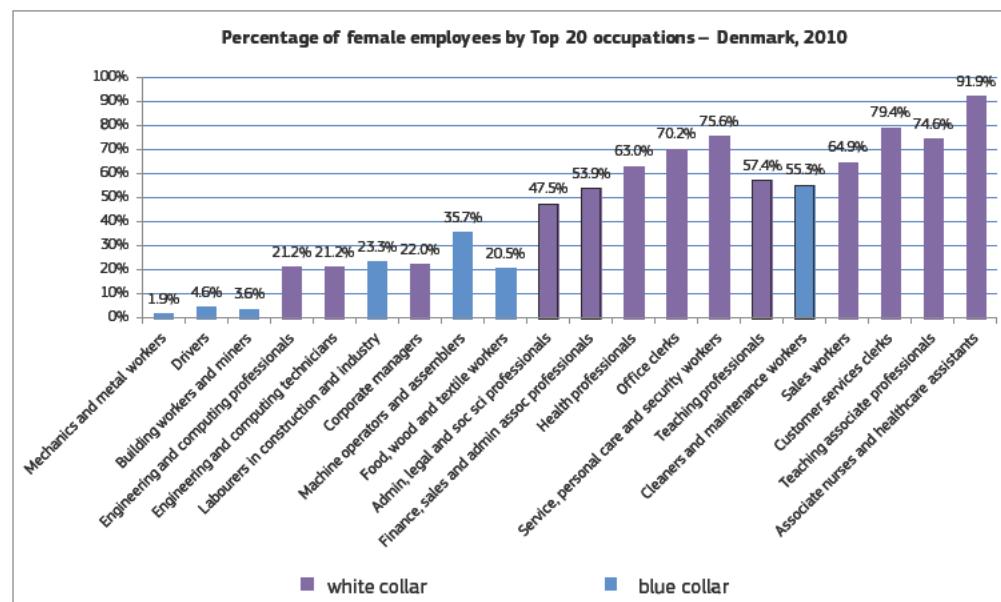
Germany

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Finance, sales and admin associate professionals	1. Office clerks	Admin, legal and social science professionals
2. Office clerks	2. Finance, sales and admin associate professionals	Health professionals
3. Service, personal care and security workers	3. Service, personal care and security workers	



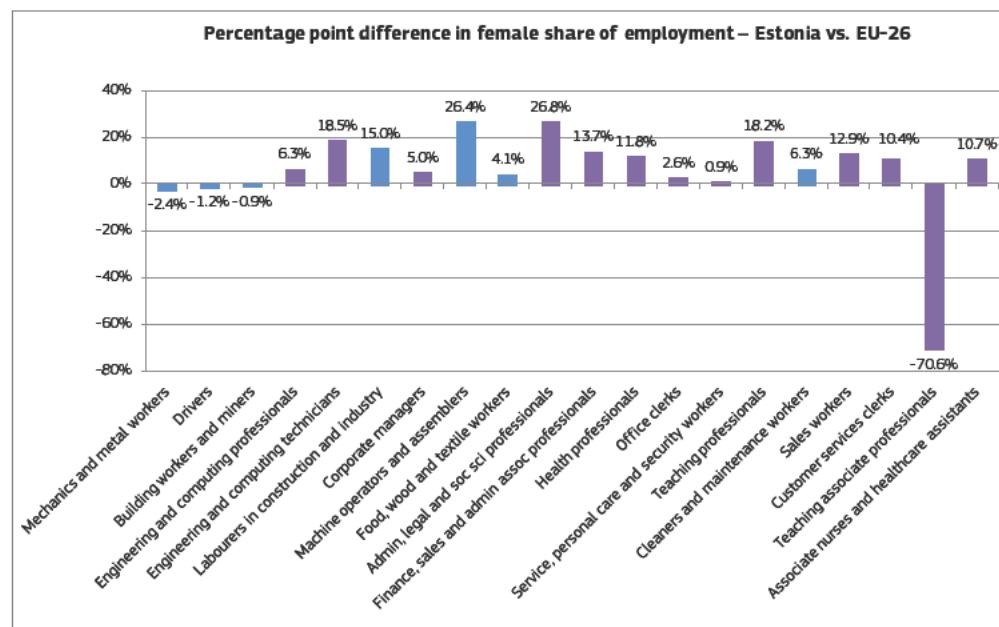
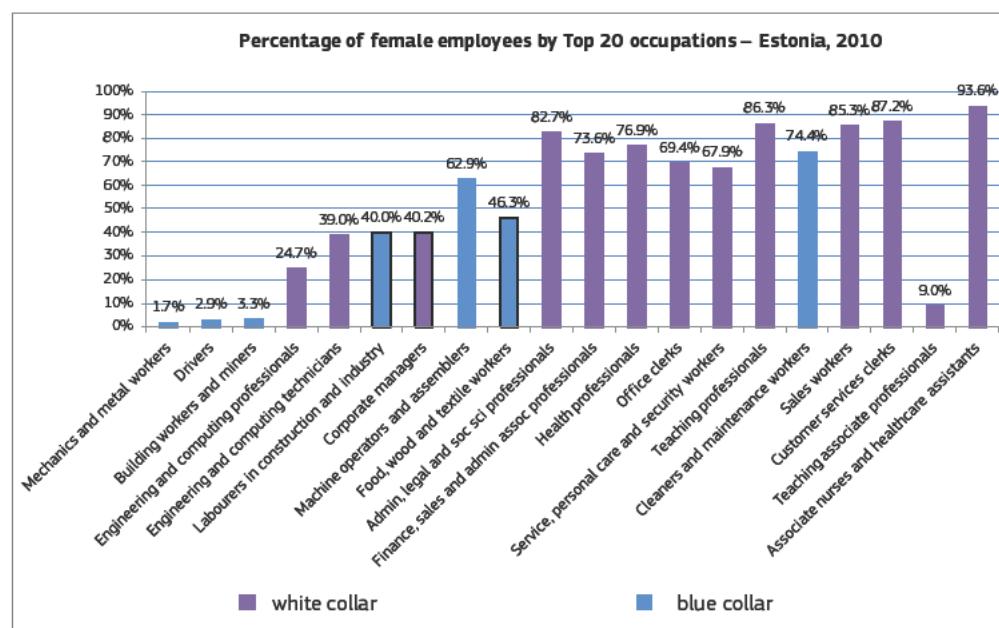
Denmark

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Service, personal care and security workers 3. Office clerks 2. Finance, sales and admin associate professionals	1. Service, personal care and security workers 2. Finance, sales and admin associate professionals 3. Office clerks	Admin, legal and social science professionals Finance, sales and admin associate professionals Teaching professionals Cleaners and maintenance workers



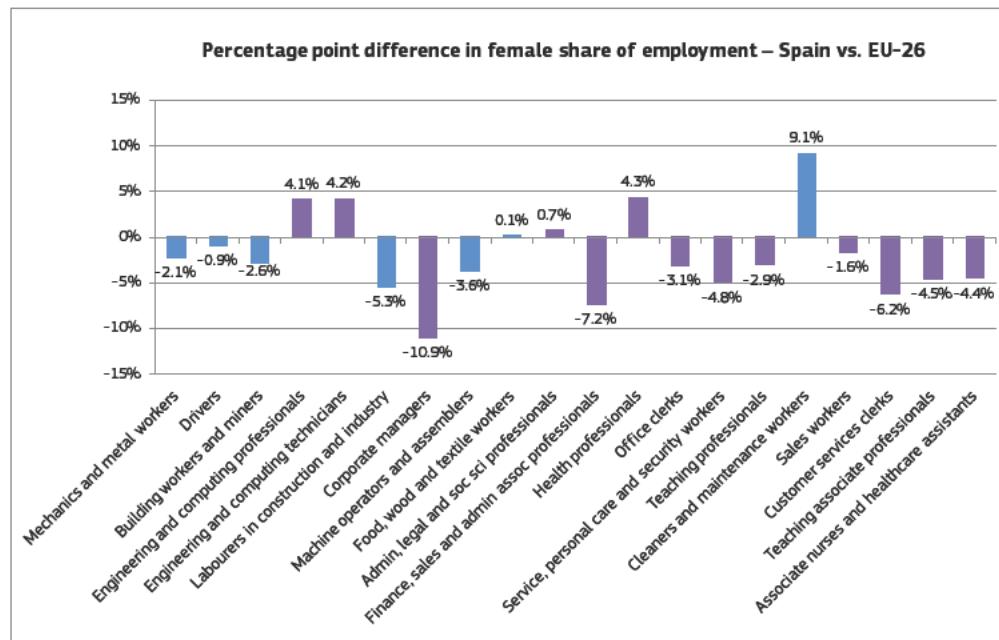
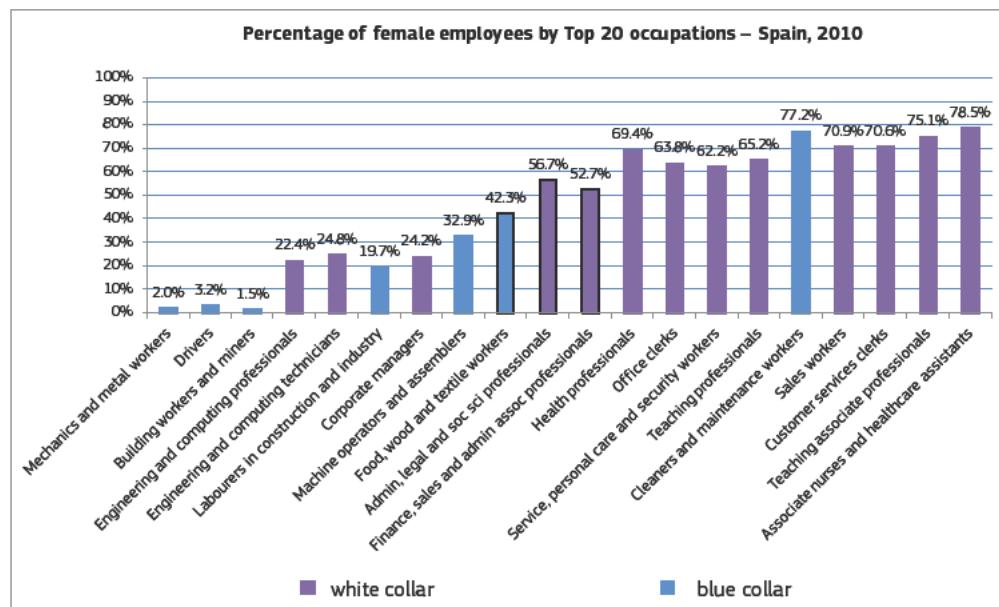
Estonia

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Admin, legal and social science professionals	1. Admin, legal and social science professionals	Labourers in construction and industry
2. Finance, sales and admin associate professionals	2. Finance, sales and admin associate professionals	Corporate managers
3. Teaching professionals	3. Service, personal care and security workers	Food, wood and textile workers



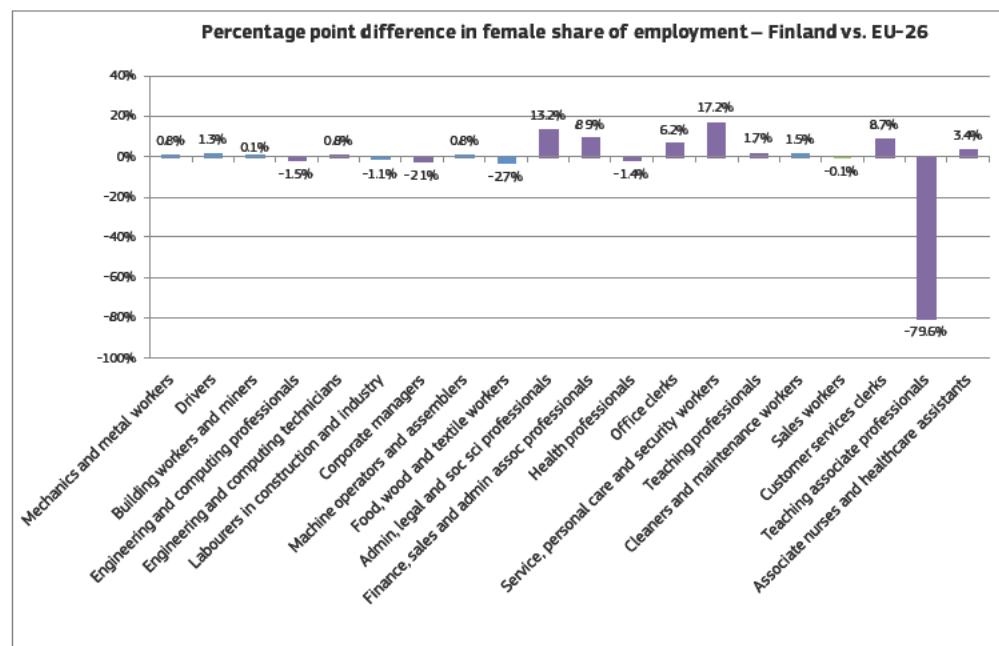
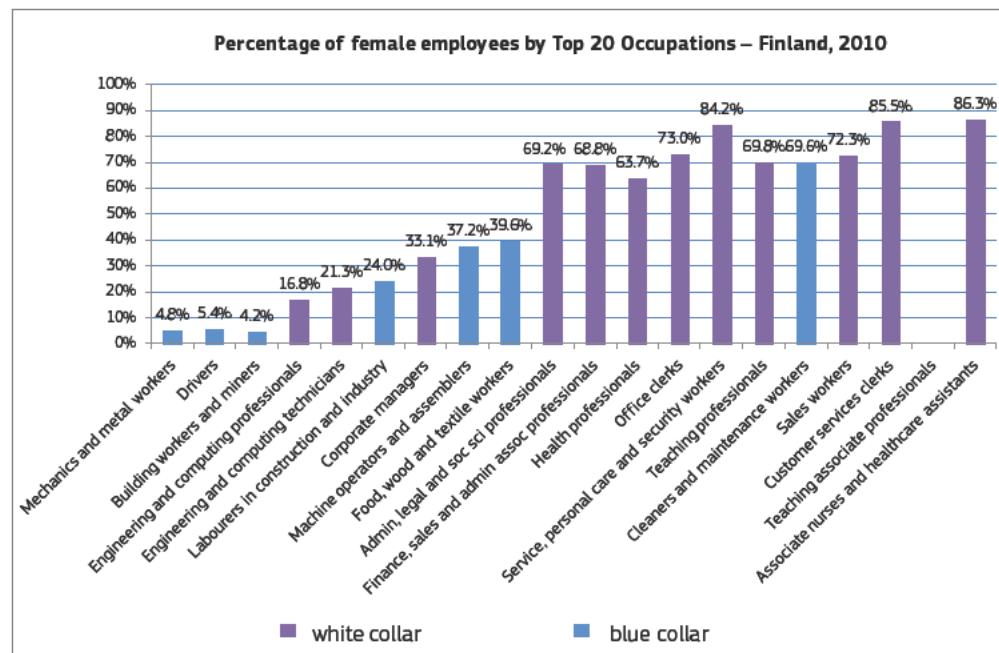
Spain

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Services, personal care and security workers	1. Services, personal care and security workers	Food, wood and textile workers
2. Cleaners and maintenance workers	2. Cleaners and maintenance workers	Admin, legal and social science professionals
3. Office clerks	3. Finance, sales and admin associate professionals	Finance, sales and admin associate professionals



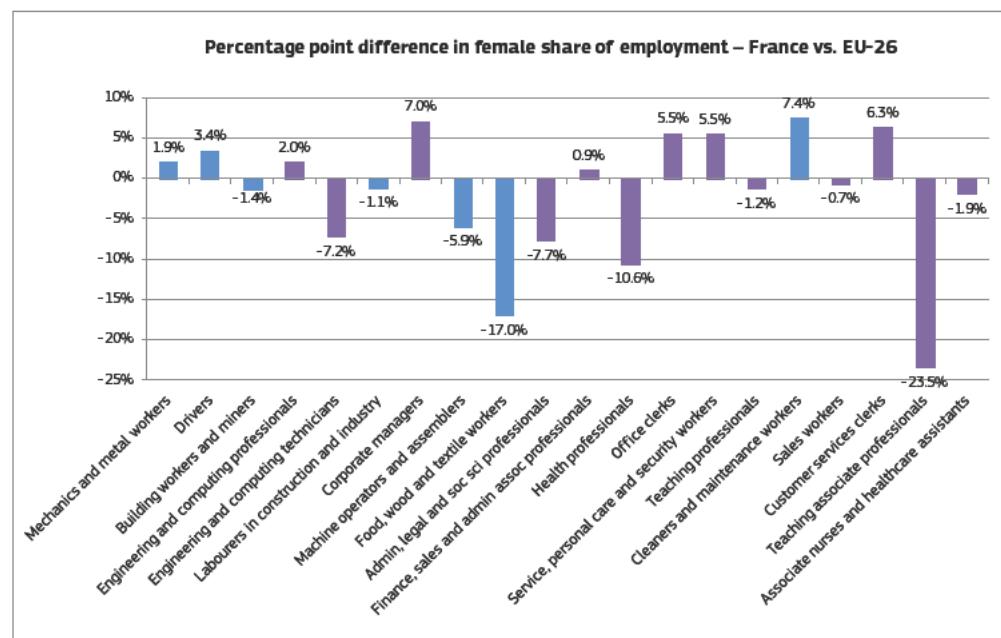
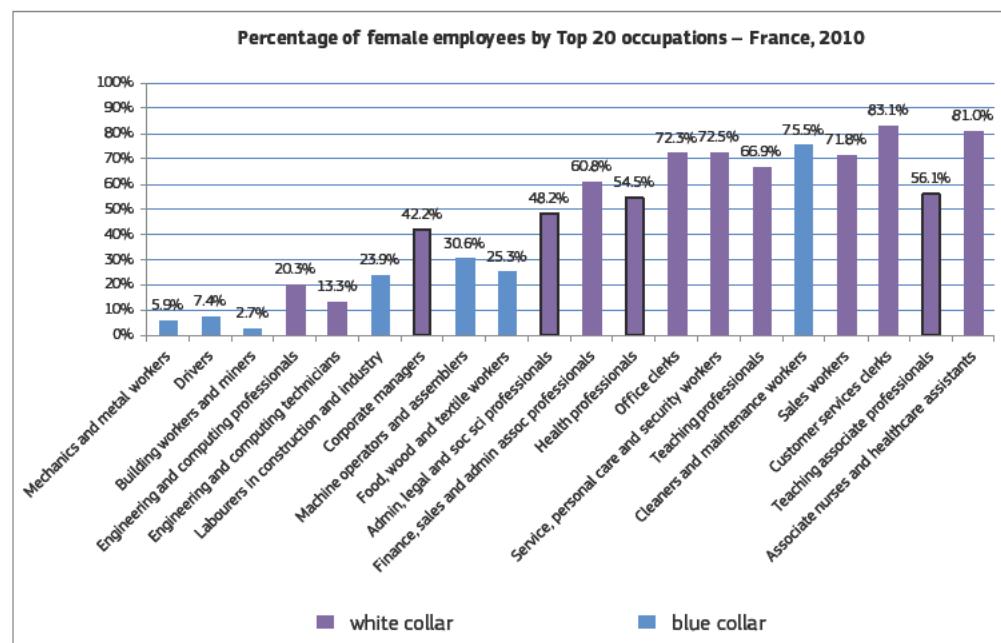
Finland

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Services, personal care and security workers	1. Services, personal care and security workers	
2. Finance, sales and admin associate professionals	2. Finance, sales and admin associate professionals	
3. Associate nurses and healthcare assistants	3. Corporate managers	



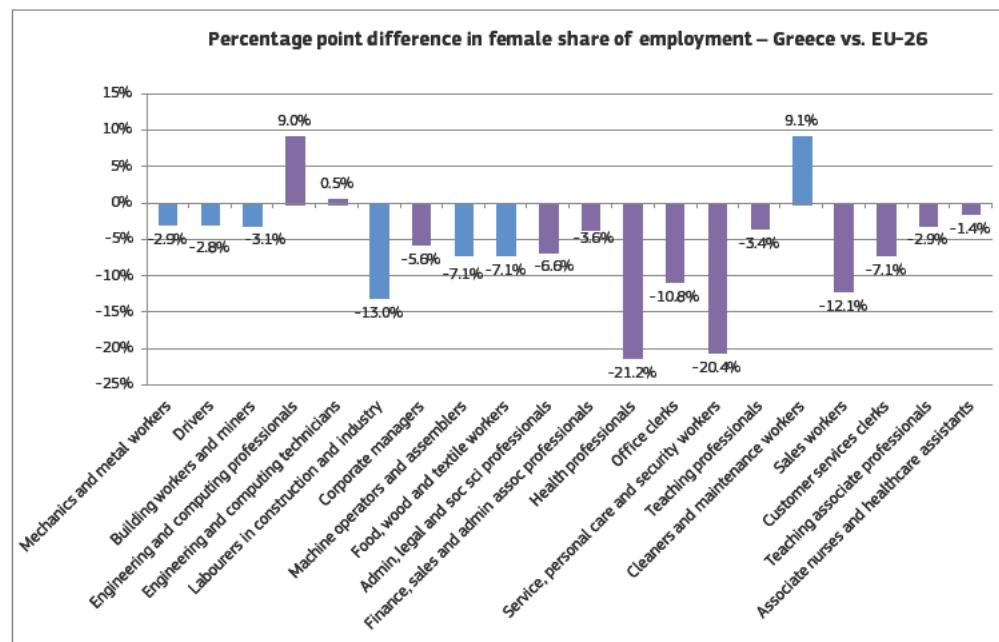
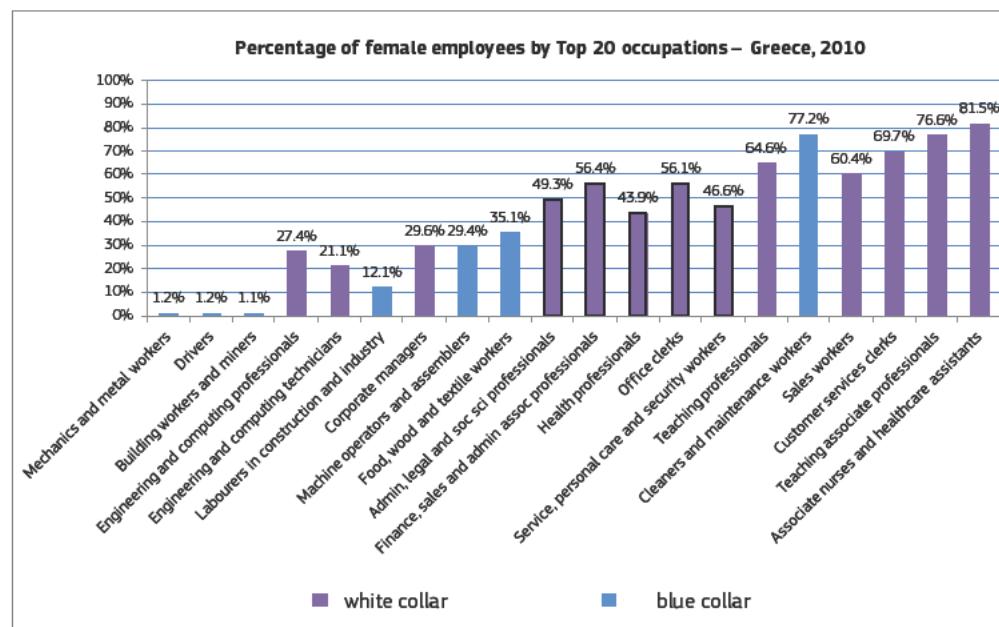
France

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Office clerks	1. Office clerks	Corporate managers
2. Services, personal care and security workers	2. Finance, sales and admin associate professionals	Admin, legal and social science professionals
3. Cleaners and maintenance workers	3. Services, personal care and security workers	Health professionals
		Teaching associate professionals



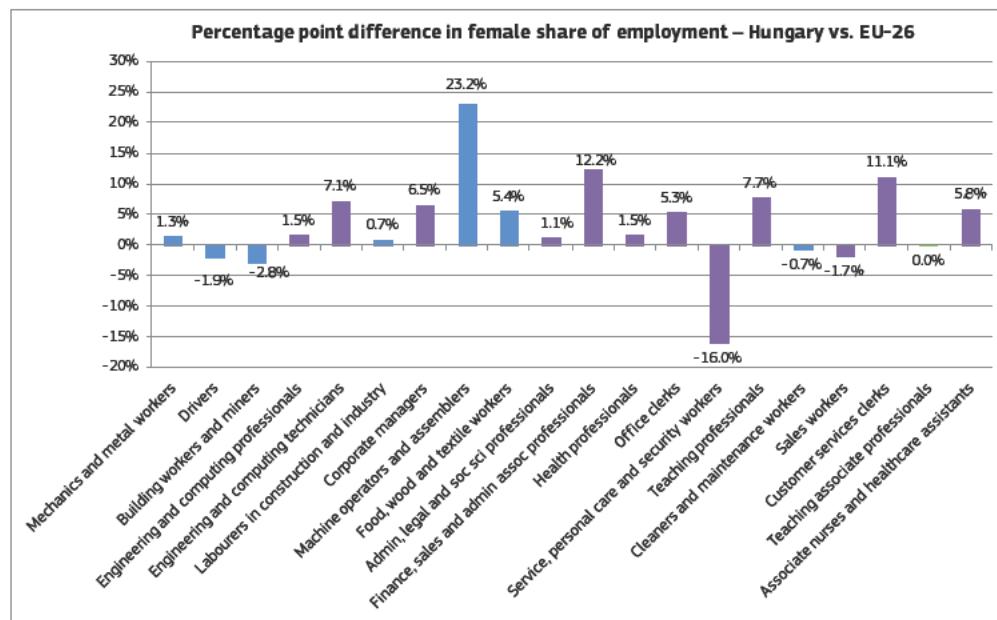
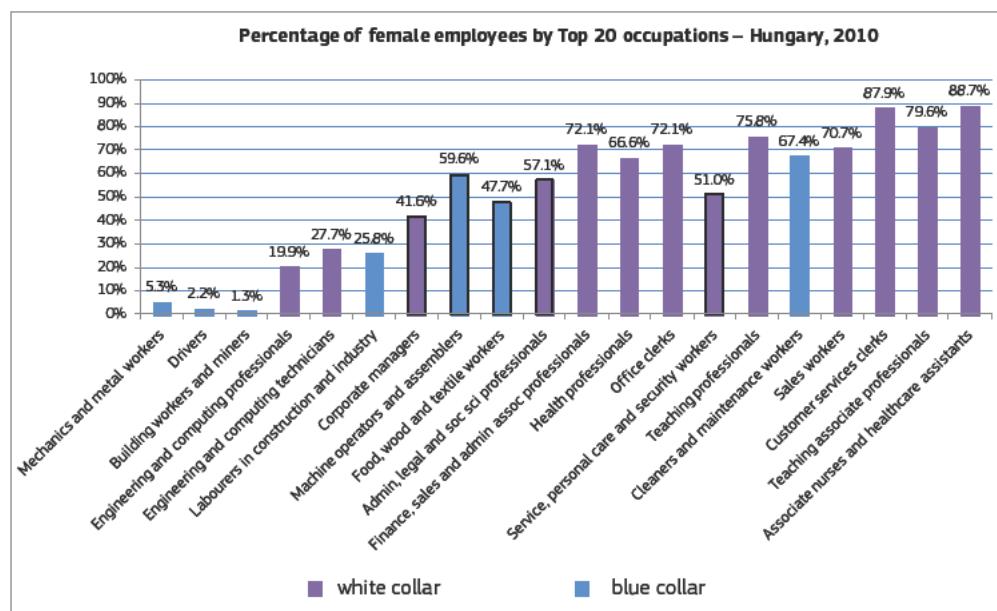
Greece

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Office clerks	1. Office clerks	Admin, legal and social science professionals
2. Teaching professionals	2. Services, personal care and security workers	Finance, sales and admin associate professionals
3. Cleaners and maintenance workers	3. Teaching professionals	Health professionals
		Office clerks
		Service, personal care and security workers



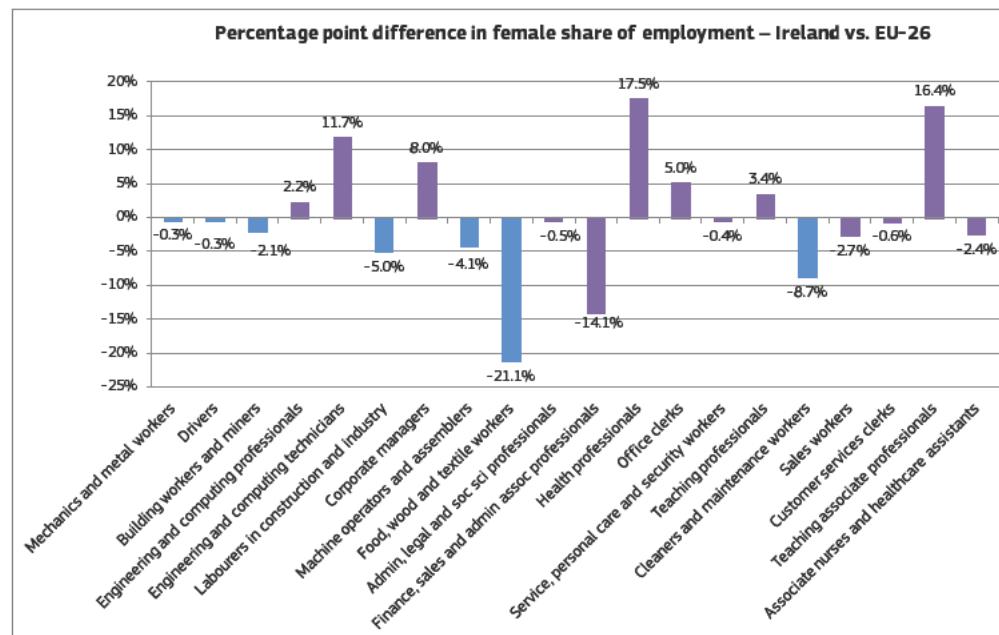
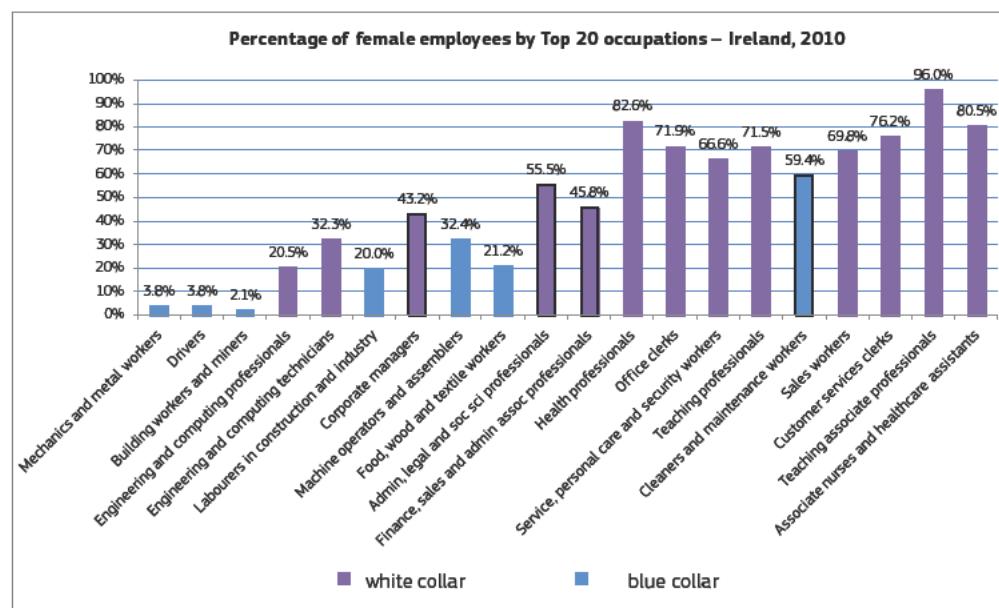
Hungary

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Office clerks	1. Office clerks	Corporate managers
2. Finance, sales and admin associate professionals	2. Services, personal care and security workers	Machine operators and assemblers
3. Cleaners and maintenance workers	3. Mechanics and metal workers	Food, wood and textile workers
		Admin, legal and social science professionals
		Services, personal care and security workers



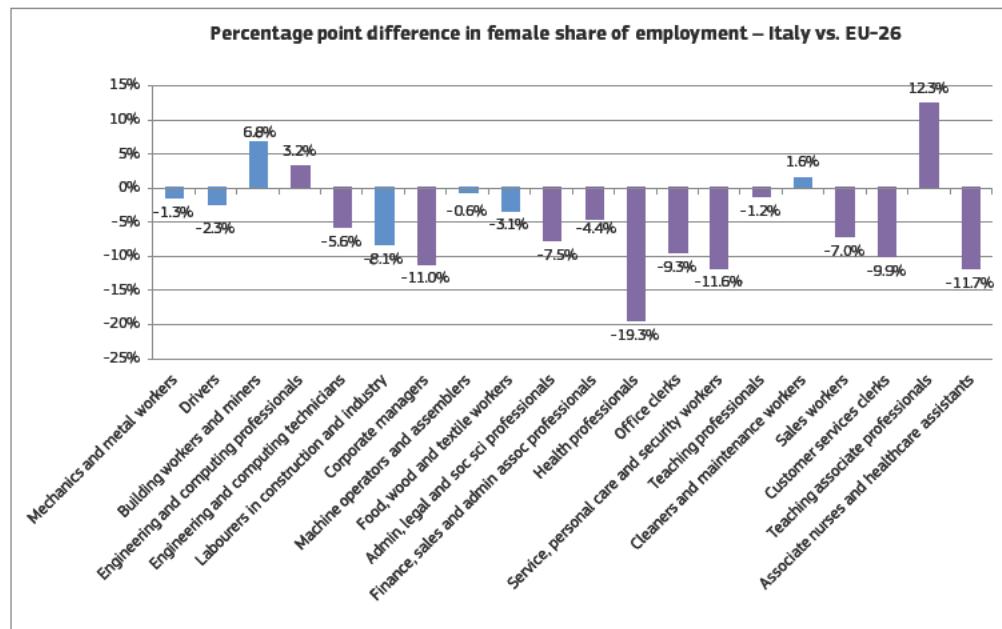
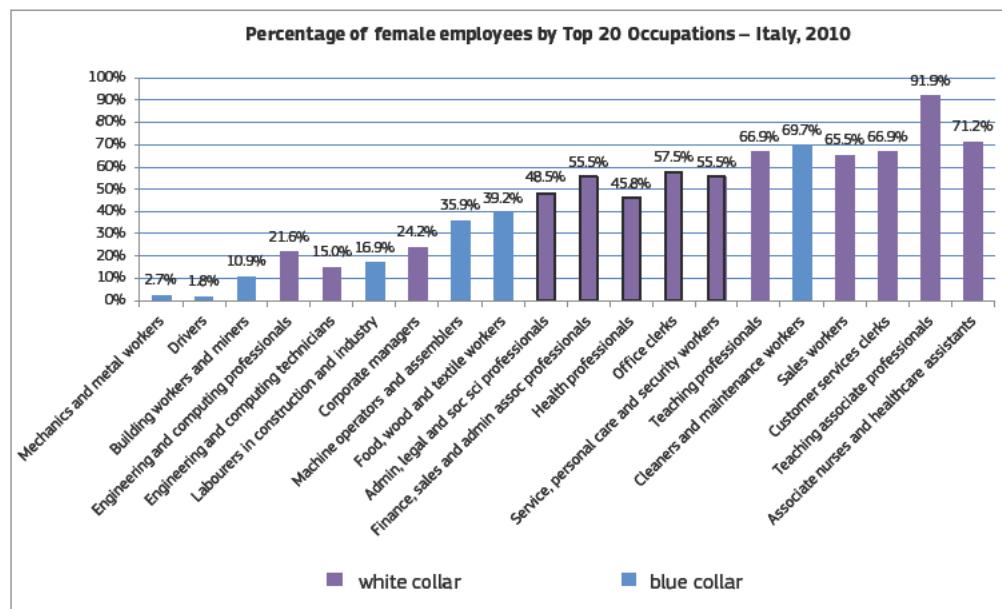
Ireland

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Services, personal care and security workers	1. Services, personal care and security workers	Corporate managers
2. Office clerks	2. Office clerks	Admin, legal and social science professionals
3. Sales workers	3. Corporate managers	Finance, sales and admin associate professionals Cleaners and maintenance workers



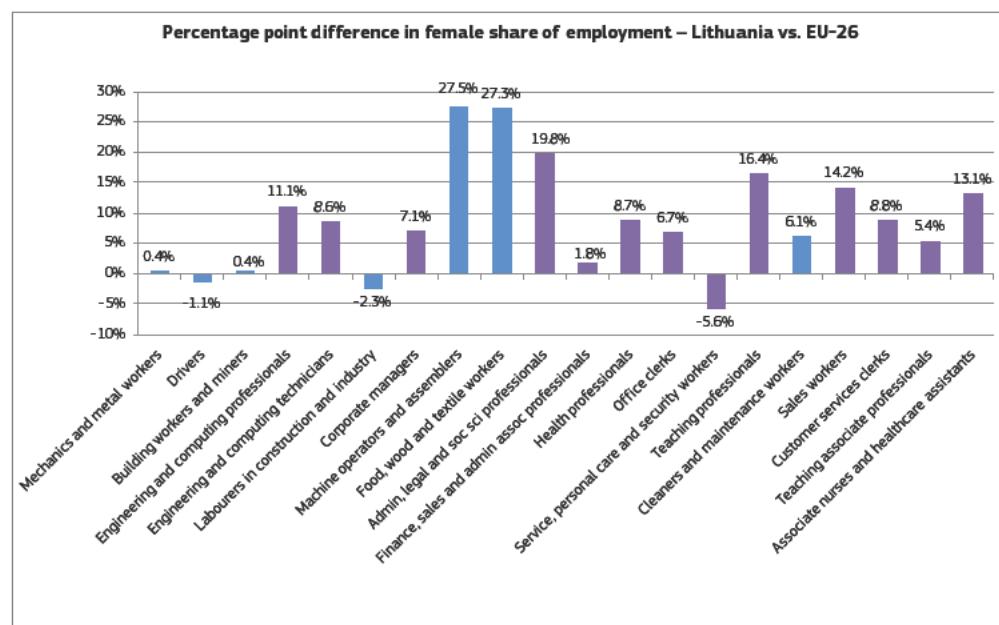
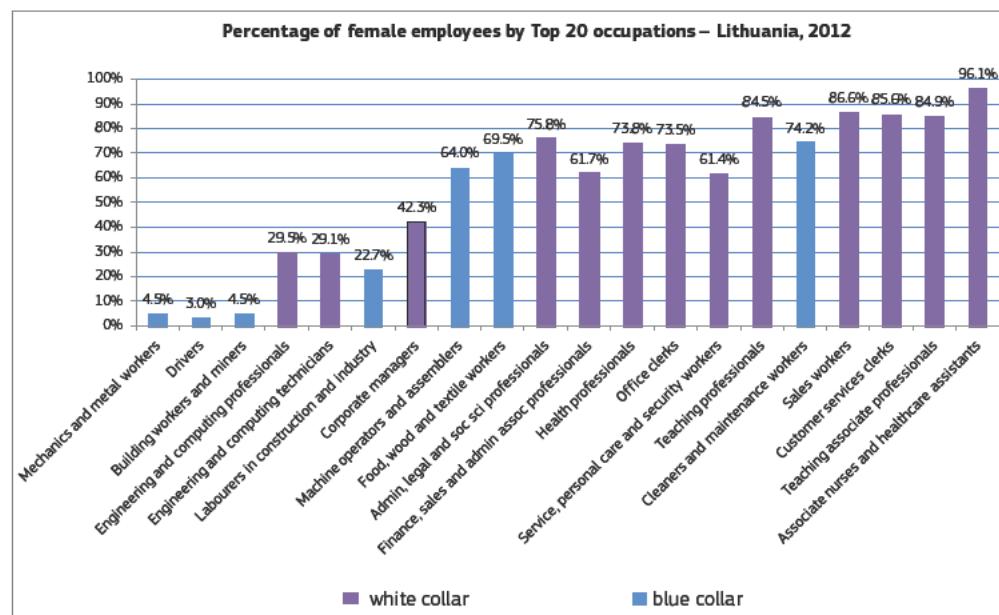
Italy

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Office clerks	1. Office clerks	Admin, legal and social science professionals
3. Cleaners and maintenance workers	2. Finance, sales and admin associate professionals	Finance, sales and admin associate professionals
2. Finance, sales and admin associate professionals	3. Cleaners and maintenance workers	Health professionals
		Office clerks
		Service, personal care and security and workers



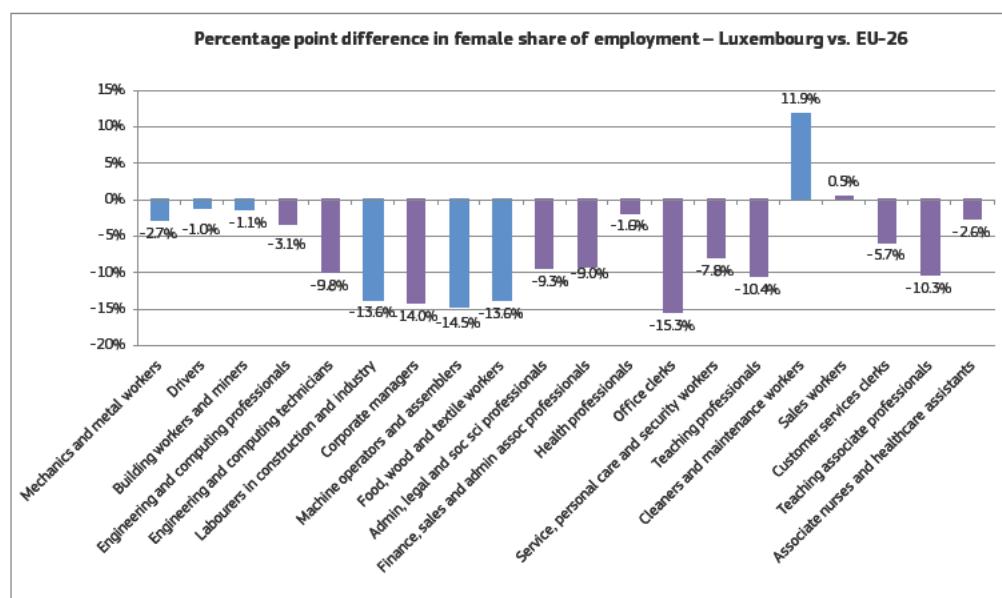
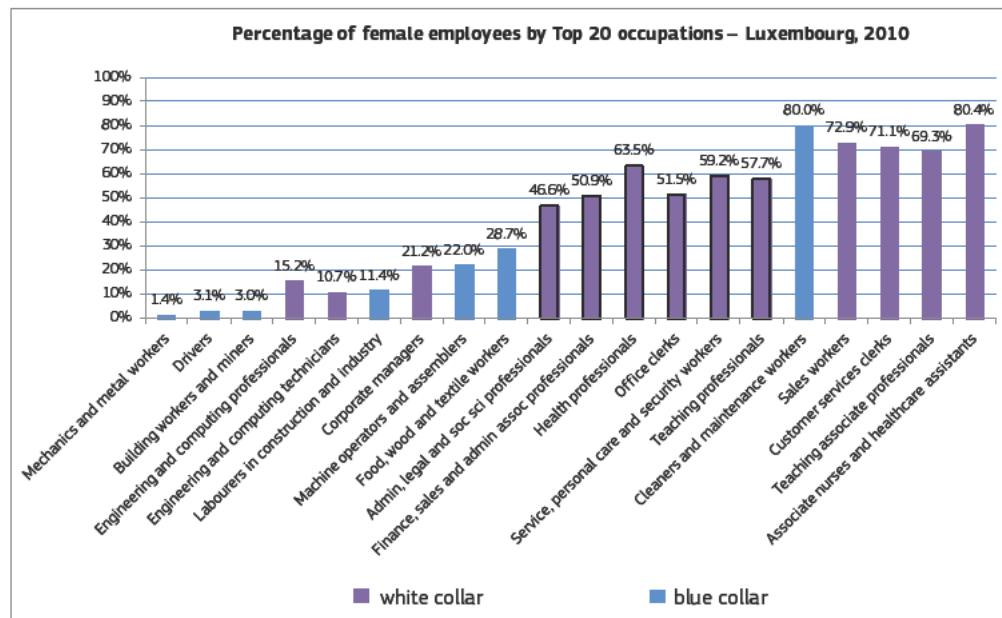
Lithuania

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Admin, legal and social science professionals	1. Finance, sales and admin associate professionals	Corporate managers
2. Finance, sales and admin associate professionals	2. Admin, legal and social science professionals	
3. Teaching professionals	3. Corporate managers	



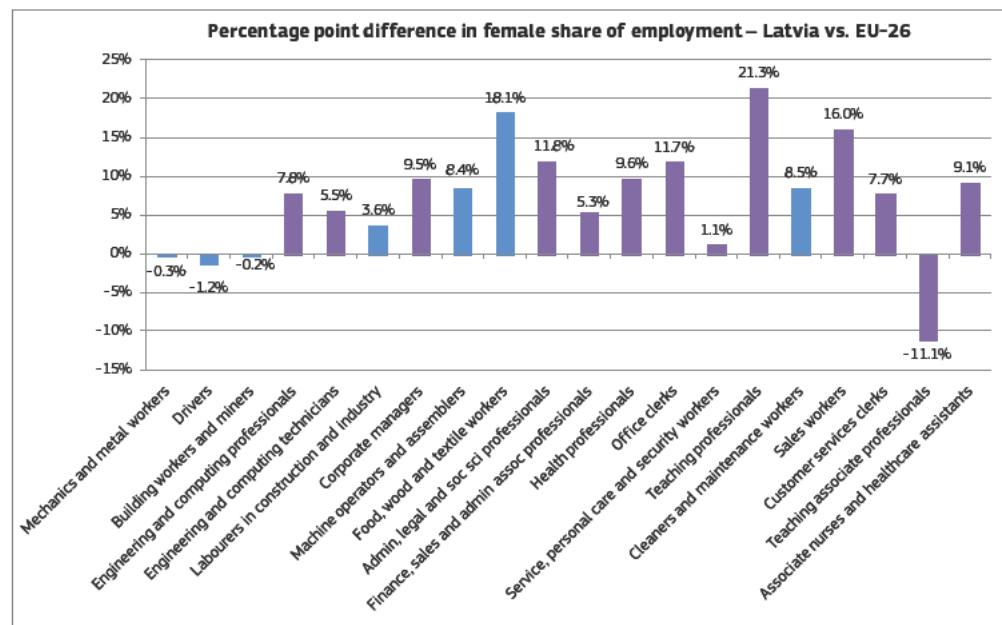
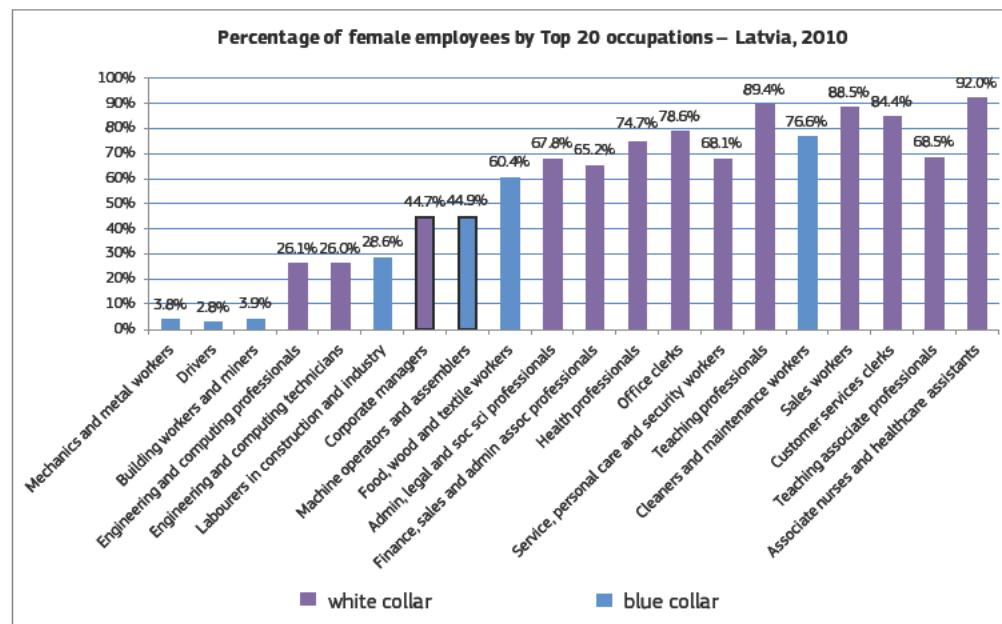
Luxembourg

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Finance, sales and admin associate professionals	1. Finance, sales and admin associate professionals	Admin, legal and social science professionals
2. Admin, legal and social science professionals	2. Admin, legal and social science professionals	Finance, sales and admin associate professionals
3. Cleaners and maintenance workers	3. Office clerks	Health professionals Office clerks
		Services, personal care and security workers Teaching professionals



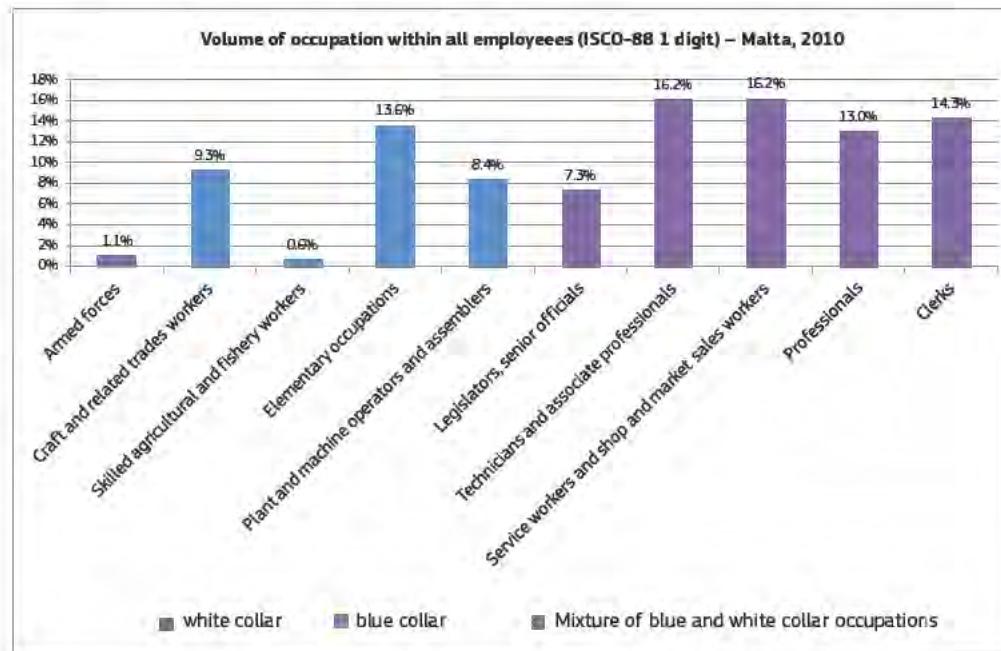
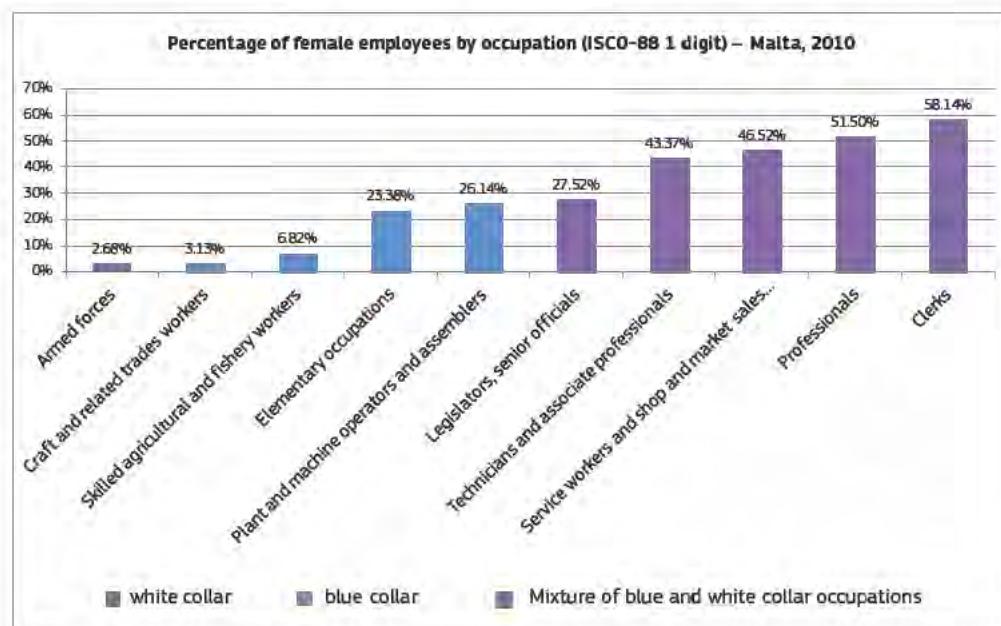
Latvia

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Services, personal care and security workers	1. Services, personal care and security workers	Corporate managers
2. Finance, sales and admin associate professionals	2. Finance, sales and admin associate professionals	Machine operators and assemblers
3. Admin, legal and social science professionals	3. Admin, legal and social science professionals	



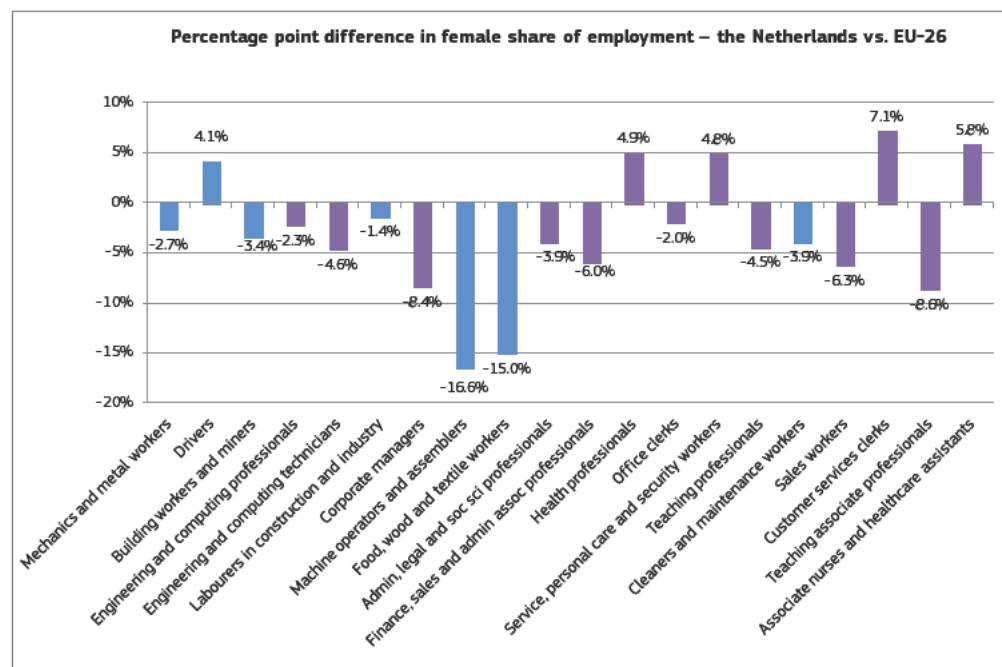
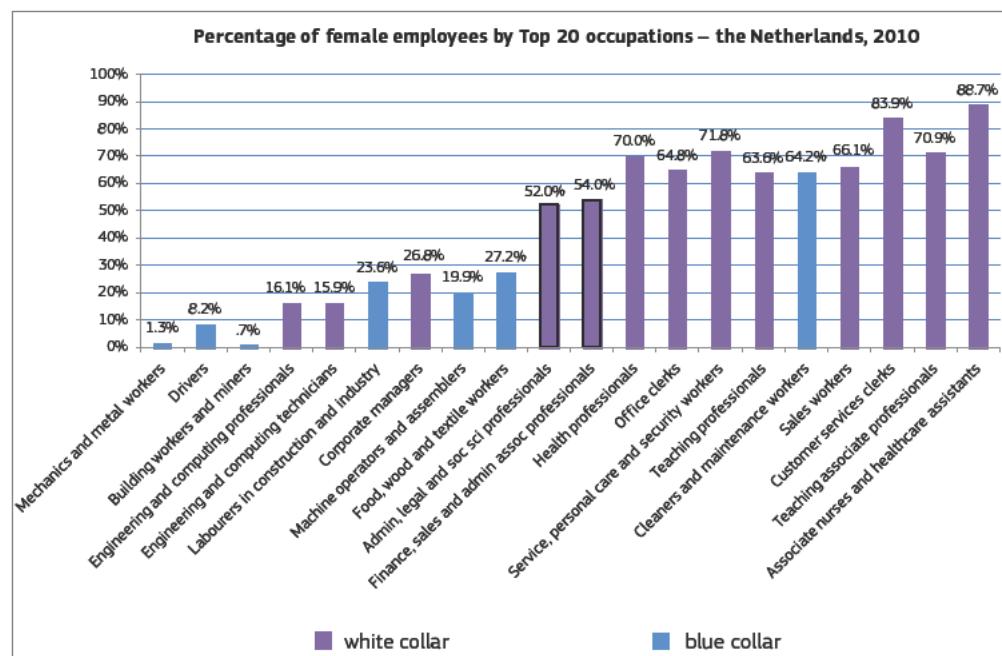
Malta

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
None	1.Technicians and associate professionals 2.Service workers and shop and market sales workers 3.Clerks	Technicians and associate professionals Service workers and shop and market sales workers Clerks Professionals



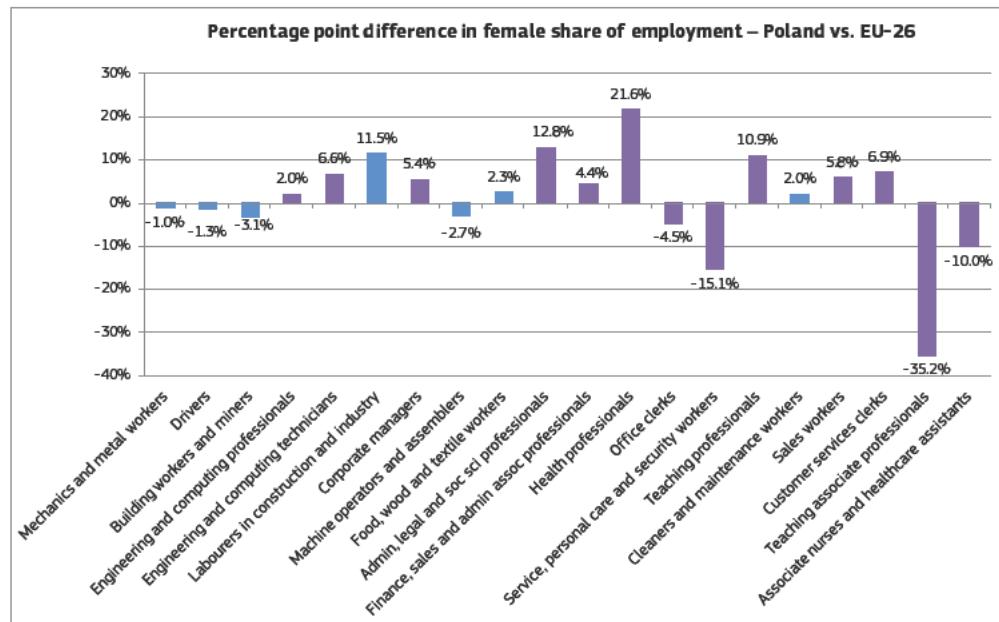
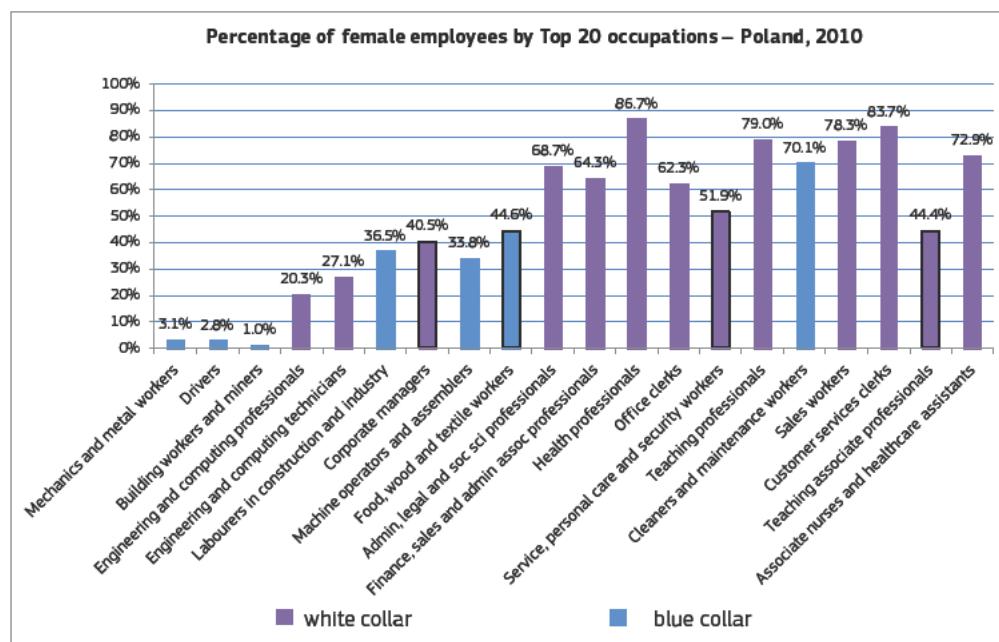
The Netherlands

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Services, personal care and security workers	1. Office clerks	Admin, legal and social science professionals
2. Office clerks	2. Finance, sales and admin associate professionals	Finance, sales and admin associate professionals
3. Finance, sales and admin associate professionals	3. Services, personal care and security workers	



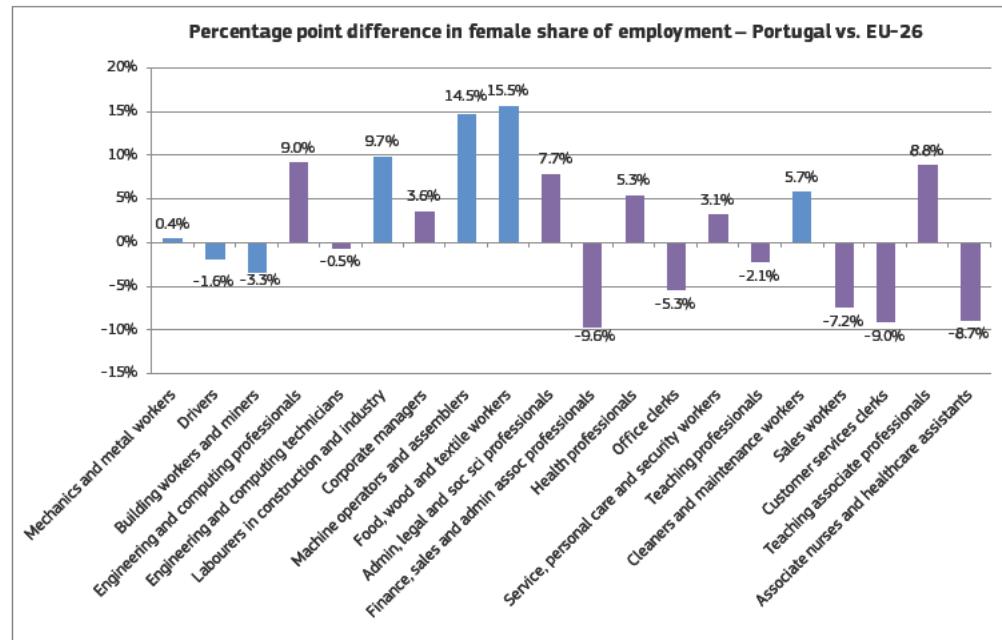
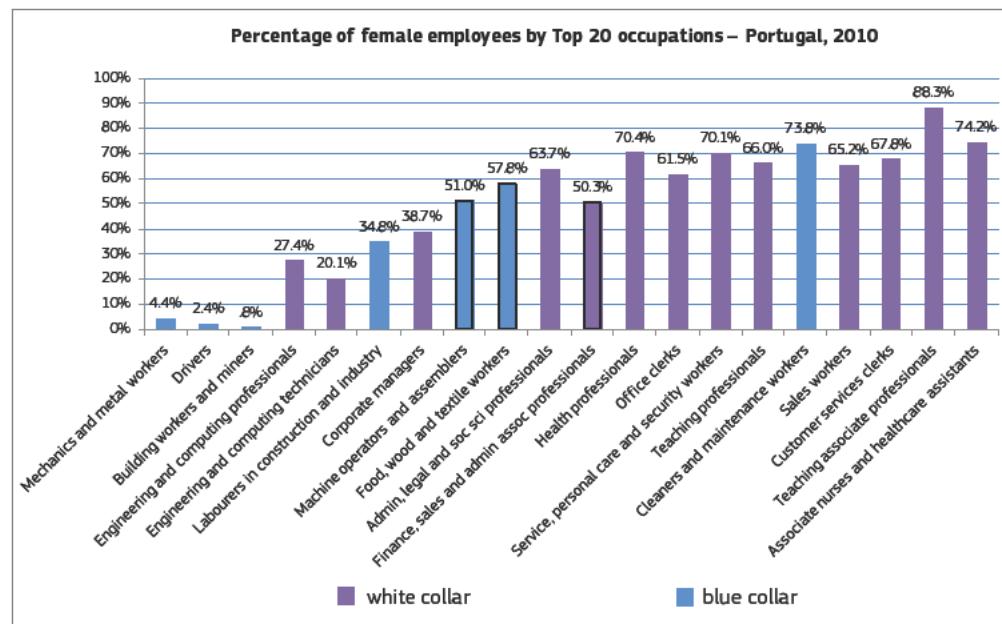
Poland

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Sales workers	1. Finance, sales and admin associate professionals	Corporate managers
2. Finance, sales and admin associate professionals	2. Office clerks	Food, wood and textile workers
3. Teaching professionals	3. Sales workers	Service, personal care and security workers Teaching associate professionals



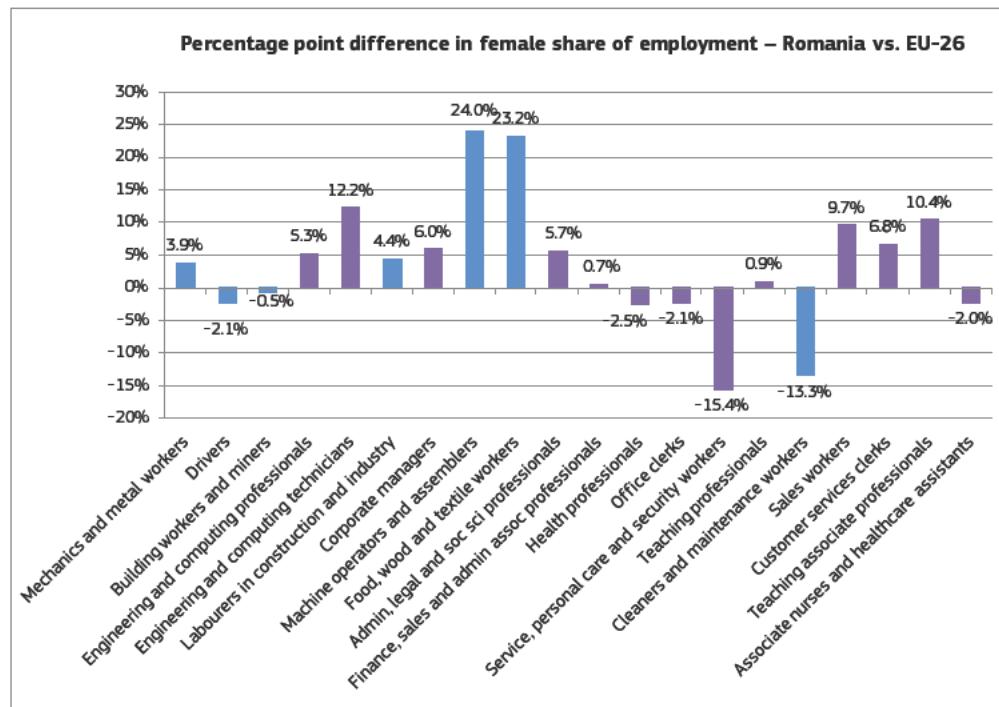
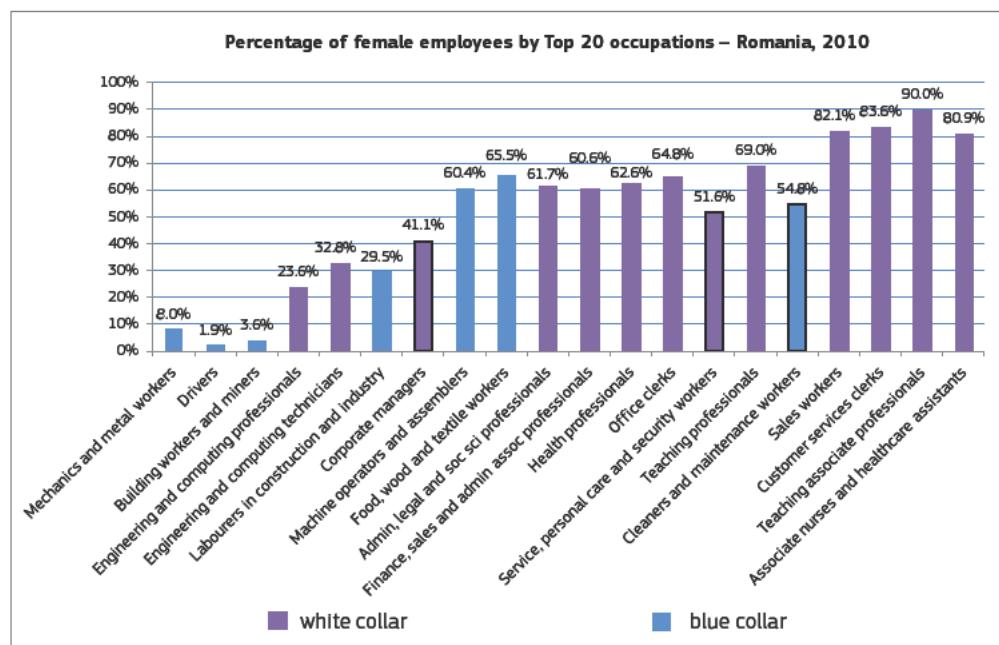
Portugal

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Cleaners and maintenance workers	1. Cleaners and maintenance workers	Machine operators and assemblers
2. Service, personal care and security workers	2. Service, personal care and security workers	Food, wood and textile workers
3. Office clerks	3. Office clerks	Finance, sales and admin associate professionals



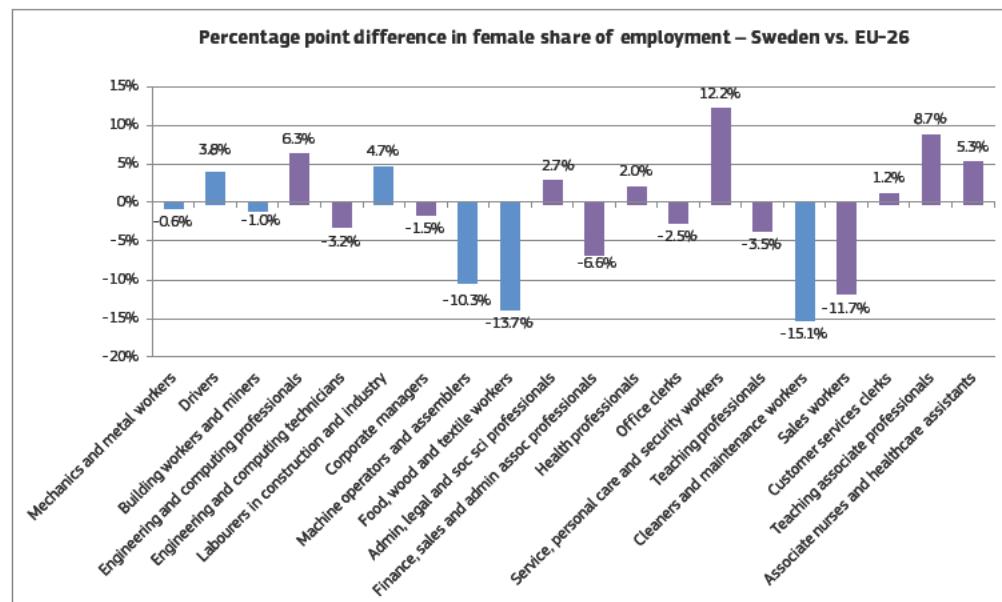
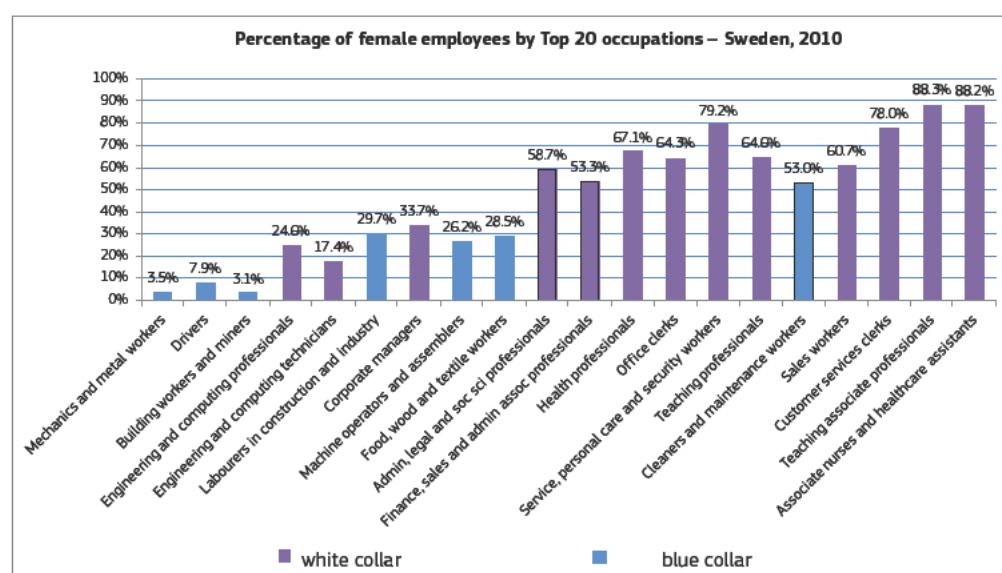
Romania

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Sales workers	1. Mechanics and metal workers	Corporate managers
2. Service, personal care and security workers	2. Service, personal care and security workers	Service, personal care and security workers
3. Admin, legal and social science professionals	3. Drivers	Cleaners and maintenance workers



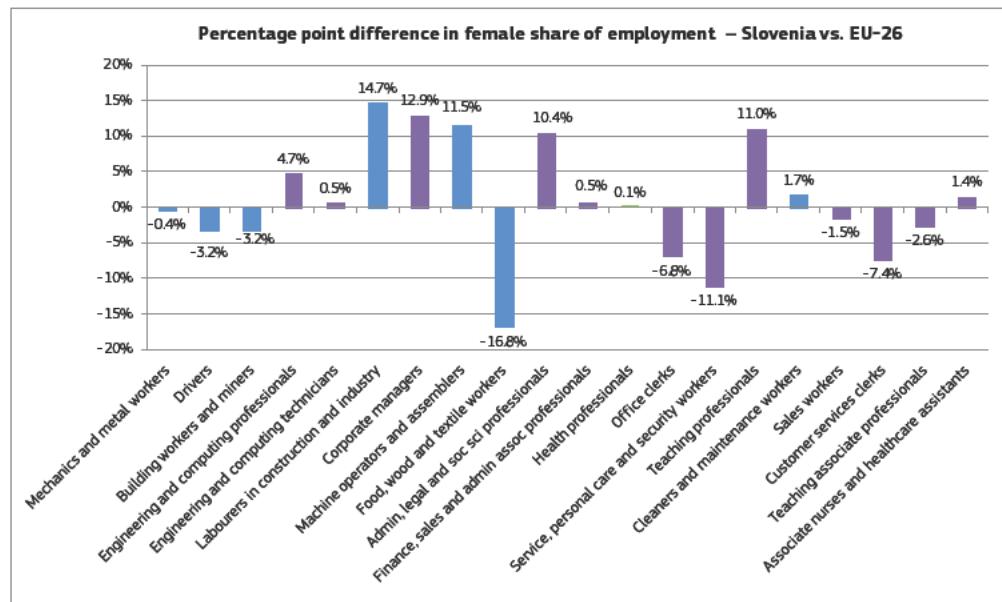
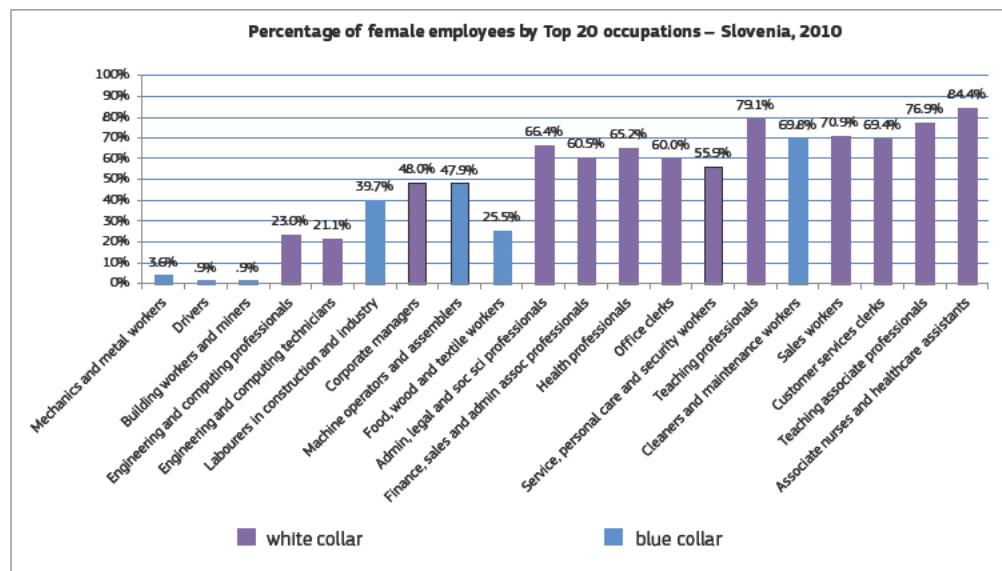
Sweden

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Service, personal care and security workers	1. Service, personal care and security workers	Admin, legal and social science professionals
2. Finance, sales and admin associate professionals	2. Finance, sales and admin associate professionals	Finance, sales and admin associate professionals
3. Office clerks	3. Admin, legal and social science professionals	Cleaners and maintenance workers
3. Drivers	3. Drivers	



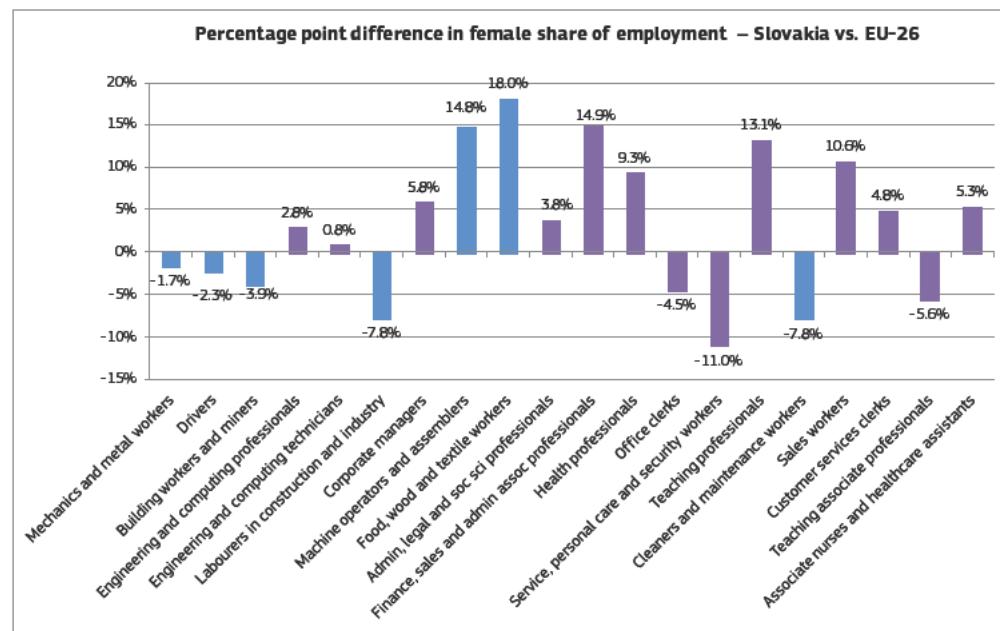
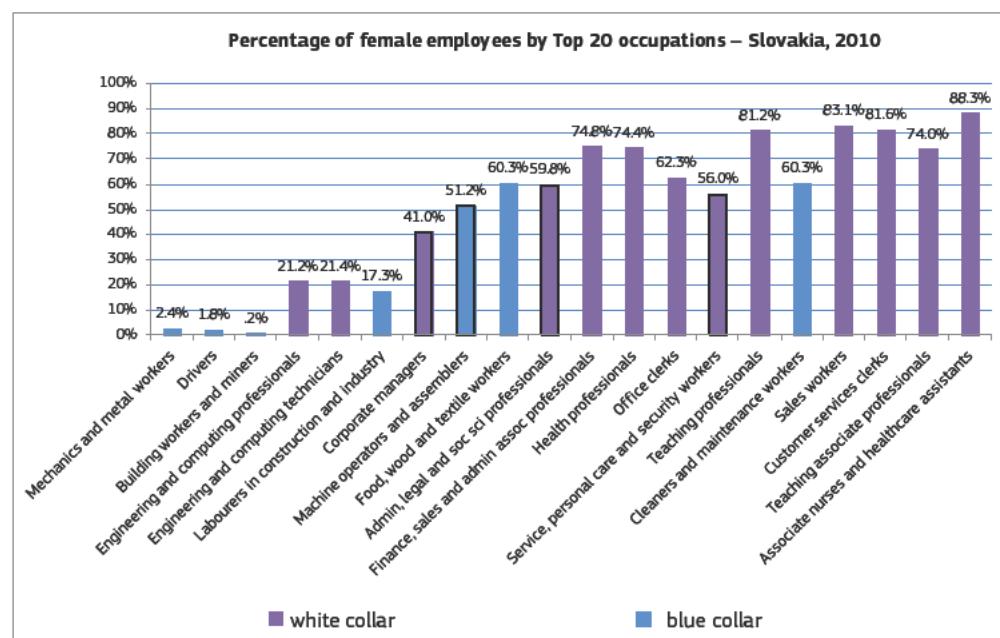
Slovenia

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Finance, sales and admin associate professionals	1. Finance, sales and admin associate professionals	Corporate managers
2. Teaching professionals	2. Machine operators and assemblers	Machine operators and assemblers
3. Office clerks	3. Service, personal care and security workers	Service, personal care and security workers



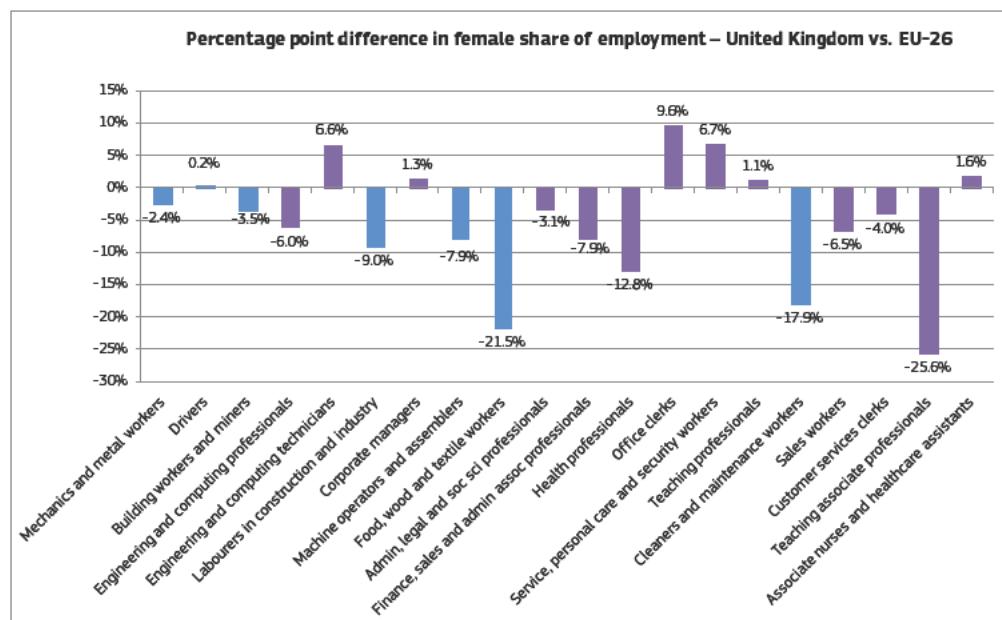
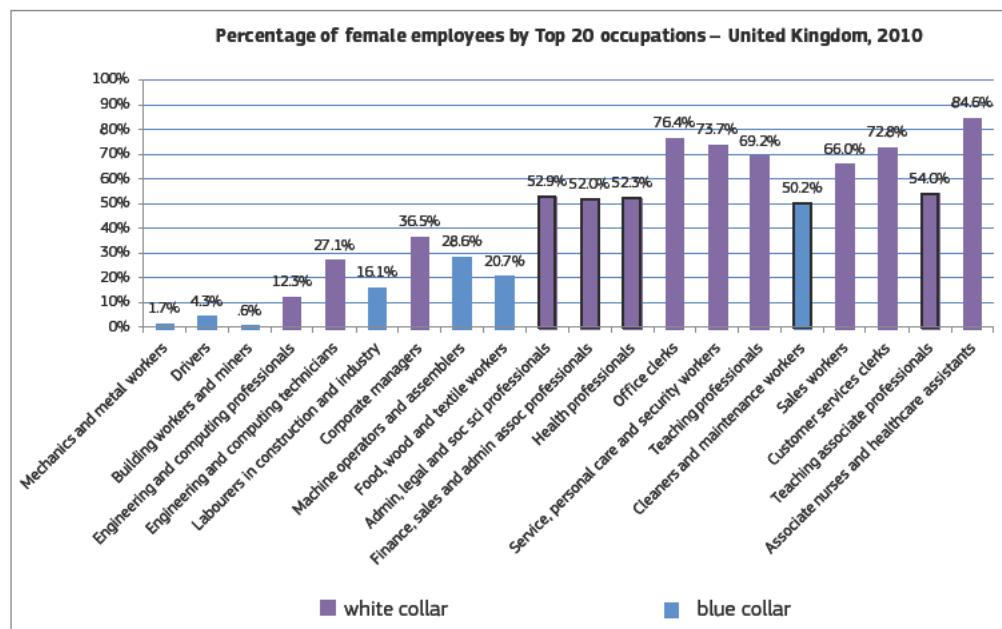
Slovakia

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Finance, sales and admin associate professionals	1. Finance, sales and admin associate professionals	Corporate managers
2. Sales workers	2. Service, personal care and security workers	Machine operators and assemblers
3. Service, personal care and security workers	3. Machine operators and assemblers	Admin, legal and social science professionals Service, personal care and security workers



United Kingdom

Three Largest Female Occupations	Three Largest Occupations	Mixed Occupations
1. Service, personal care and security workers 2. Office clerks 3. Corporate managers	1. Service, personal care and security workers 2. Corporate managers 3. Office clerks	Admin, legal and social science professionals Finance, sales and admin associate professionals Health professionals Cleaners and maintenance workers Teaching associate professionals



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