

GENDER DIFFERENTIATION AND EARLY LABOUR MARKET INTEGRATION ACROSS EUROPE

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ABSTRACT: This paper examines gender differentiation in early labour market outcomes across twelve European countries. In spite of the fact that the educational attainment of women has now surpassed that of men in many countries, differences persist in the type of educational courses taken by young women and men. Countries differ in the extent of educational segregation by gender but certain regularities are evident, with health/welfare, education and arts courses dominated by women and engineering courses dominated by men. Gender differences in field of study are found to play an important role in channelling young people towards gender-typical careers. Thus, countries with higher levels of educational segregation by gender are found to have higher levels of occupational segregation by gender. However, gender continues to have a strong direct effect on labour market outcomes in both track-differentiated and general educational systems.

Key words: gender; school to work transitions; education; field of study

1. Introduction

Recent decades have seen an expansion in educational attainment among young women to the point where female educational attainment surpasses that of young men in many European countries (OECD 2002; Müller and Wolbers 2003). However, considerable gender differentiation persists in the kinds of courses taken by young people within the full-time educational system. This paper explores the nature of gender differences in field of study and the impact of these differences on young people's early labour market careers across a range of European countries.

The causes underlying gender differences in field of study are the subject of much debate. From a rational choice perspective, gender differences in the kinds of courses taken have been viewed as reflecting the

difference between occupations, and hence fields of study, in facilitating potential career interruptions for child-rearing (Breen and Goldthorpe 1997) and/or as the outcome of different comparative advantages for males and females in particular subject areas (Jonsson 1999). However, Jonsson (1999) found that such comparative advantage differentials account for only a small proportion of the educational segregation by gender found within secondary education. Nor does this approach explain why gender differences are still apparent within very specific fields of study (for example, the well-documented higher take-up of Physics subjects among males compared with higher take-up of Biology among females). In contrast to rational choice theorists, feminist theorists view educational segregation as reflecting the gendered nature of different types of knowledge with many accounts focusing, for example, on the construction of scientific and mathematical subject areas as 'male' (see, for example, Kelly 1985). However, such explanations tend to neglect the way in which the gender-typing of subjects can vary over time and between societies. A more useful approach would appear to involve a greater focus on the institutional context within which young women and men make educational decisions (about the type of education as well as the stage at which they leave the system). Studies in the sociology of education have identified a broader set of factors which may influence choice of field of study, including school organisation and process, peer influences, curricular content and teaching methods (see, for example, Dekkers 1996; Dryler 1999; Smyth and Hannan 2002).

From a comparative perspective, the extent of gender differences in type of education will also be influenced by the nature of the educational system itself. European educational systems differ in the extent of 'track differentiation', that is, in the distinction between (different types of) academic and vocational routes or tracks within the secondary system (see Hannan *et al.* 1996; Smyth *et al.* 2001). Countries like The Netherlands and Germany are characterised by a relatively high degree of track differentiation while systems like Ireland are more 'general' in nature.¹ There are fewer cross-national differences at the tertiary level with a high degree of track differentiation found across European countries. The extent of track differentiation, and the time-points at which young people select different tracks, can be expected to have an influence on the trajectories taken by male and female students.

In addition to the persistence of segregation in field of study, gender differences are still evident in the kinds of occupations entered by young

1. It should be noted, however, that even within general educational systems, gender differences may emerge in the academic subjects taken by young men and women (see Smyth and Hannan 2002).

people on leaving full-time education (Smyth 2001). Studies of occupational segregation have tended to focus on adult workers with gender segregation found to vary across countries and over time (see, for example, Rubery and Fagan 1995; Blackwell 2001). However, much attention has been focused on the appropriate measure of occupational segregation (see, for example, Siltanen *et al.* 1995) with a relative neglect of the processes shaping (cross-national variation in) segregation levels.

A number of different theoretical perspectives have been used to explain the persistence of occupational segregation by gender. From a human capital theory perspective, occupational segregation is taken to reflect the fact that women choose jobs which will not penalise (anticipated) labour market discontinuity (Mincer and Polacheck 1974). However, this perspective has generally not specified the empirical relationship between 'penalties' for interruptions and (changes in) the feminisation of particular occupations. In fact, research from the United States indicates that women in predominantly female occupations do not experience lower wage depreciation as a result of career interruptions than those in male-dominated occupations (Marini 1989). In contrast to the individualistic focus of human capital theory, the institutional perspective explores the interaction between education and labour market systems and the way in which these systems shape the pathways taken by young (and adult) workers (see for example, Maurice *et al.* 1986; Shavit and Müller 1998). However, initial formulations of this perspective have been criticised for being 'gender-blind' and analyses of national systems from a gender perspective have tended to focus more on overall levels and patterns of female labour force participation rather than gender differences in types of employment (O'Reilly 1996). A Dutch study has indicated the role of one aspect of the institutional structure, differentiation into different tracks or fields of study, in shaping occupational segregation levels with gender-typing of field of study found to be significantly associated with gender-typing of occupation (Borghans and Groot 1999). Applying a comparative perspective, Buchmann and Charles (1995) propose that, where educational choices are made at an early age, they are more likely to be gender-typical and that this feature, coupled with strong education-labour market linkages, means that segregation is likely to be more pronounced in countries with highly differentiated, vocationally-oriented systems. However, Buchmann and Charles were unable to empirically test their hypothesis.

This paper sets out to examine the extent to which an institutional perspective yields insights into the processes shaping gender differences in early labour market integration in general and occupational segregation in particular. It uses data from the Eurostat Labour Force Survey (2000) *ad hoc* module on school to work transitions to explore differences in the level

and nature of education achieved by young women and men across European countries and the extent to which gender differentiation in early labour market integration processes is due to these educational differences.

Firstly, it is hypothesised that the type of differentiation evident within the education/training system will influence the nature of gender differences in educational outcomes. More specifically, in systems with a high level of track differentiation, clear gender differences are likely to be apparent in the type of education received by women and men. Secondly, the type of differentiation evident within the education/training system is likely to influence the nature of gender differences in transition outcomes. More specifically, occupational segregation by gender is expected to be more evident in track-differentiated systems if strong gender differences are apparent in the field of education followed. In track-differentiated systems, gender segregation in labour market outcomes will tend to be mediated by the type of course taken. Thus, young women will enter female-typed occupations or industries because they have taken part in courses oriented towards such outcomes. In contrast, in more general systems, gender differences on entry to the labour market will emerge from the interaction between occupational choice on the part of young people and employer preferences for different kinds of labour. Thus, direct gender effects on occupational allocation should be stronger in general than in track-differentiated systems. Thirdly, it is hypothesised that different dimensions of gender differentiation are not necessarily interrelated. For example, gender segregation may act as a protection against unemployment for female labour market entrants in a context where unemployment rates are lower in 'female' occupations. Conversely, young women entrants may be excluded from the labour market if the occupational structure is highly segregated and 'female' jobs are already over-crowded.

The following section describes the data and measures used in the remainder of the paper.

2. Data and methodology

The paper draws on data from the Eurostat *ad hoc* module on school to work transitions which was included in the Labour Force Survey in the second quarter of 2000. This module was administered in fourteen European Union member states and six Eastern European countries. The target group for the module was young people aged between fifteen and thirty-five years of age who had left continuous education in the five- or (preferably) ten-year period prior to the survey. The module was designed to collect information on patterns of leaving education, first significant job

and period of job search on a comparable basis across very different institutional systems. An innovative feature of the *ad hoc* module on transitions was the collection of information on the field of study taken by young people before leaving education.

Although the module was based on a common template, some differences arose in the implementation of the module within different countries. These differences centred on the selection of the target group (with some countries differing in the period of time since leaving education), the definition of first significant job, the definition of job search and the collection of information on social background (see Iannelli 2001). More importantly, from the point of view of this paper, differences were evident in the way in which information on field of education was collected. In Denmark, Italy, Portugal and the United Kingdom, the information on field of education related to the highest level of education completed rather than to the level when leaving education for the first time (Iannelli 2001). For this reason, analyses in this paper exclude these countries. Furthermore, because of discrepancies in the definition of educational completion, educational level and/or small sample size, data on Ireland, Latvia, Lithuania and Luxembourg are not presented in this paper. Table 1 indicates the sample size across the countries included in the analyses presented in this paper. It is clear that there is considerable variation in sample size across the countries, ranging from 1,318 young people in The Netherlands to 19,481 in France.

The paper focuses on two educational measures: level of education when leaving the educational system for the first time, and field of study at the time of leaving education. Analyses focus on two main labour market 'outcomes' among young women and men. Firstly, the proportion of young people who have obtained a first significant job by the time of the

TABLE 1. Sample sizes for the *ad hoc* module by country

<i>Country</i>	<i>Size of target group</i>
Austria (AT)	4,740
Belgium (BE)	2,929
Spain (ES)	15,120
Finland (FI)	3,646
France (FR)	19,481
Greece (GR)	7,576
Hungary (HU)	8,739
Netherlands (NL)	1,318
Romania (RO)	4,836
Sweden (SE)	1,877
Slovenia (SI)	1,749
Slovakia (SK)	3,832
Total cases	75,843

interview is taken as an indicator of successful labour market integration. 'First significant job' refers to a job that has lasted at least six months and is more than twenty hours a week. For the purposes of the paper, young people who described themselves as not having had a first significant job but who had been in employment for six months or more are reclassified as having had a first significant job. Analyses of labour market integration are supplemented with analyses of labour force participation and current unemployment to explore the processes shaping the failure of some young people to integrate into the labour market. Secondly, the nature of the first significant job is explored in terms of status and gender mix. Occupational status is measured using Ganzeboom and Treiman's International Socio-economic Index (ISEI) scale. This scale measures the attributes of occupations that convert a person's education into income; this focus on resources rather than social prestige is seen as better capturing the stratification process (see Ganzeboom and Treiman 1996). The extent to which young women and men enter predominantly male, mixed or predominantly female occupations is determined on the basis of the gender mix within specific occupational categories in particular countries.

In the analyses of the factors shaping labour market outcomes, the focus is not on country differences *per se* but rather on the relative size of gender differences across the different European countries analysed. At the country level, measures of educational and occupational segregation are derived using an index of dissimilarity in order to compare the levels of segregation across countries. The index of dissimilarity captures the extent to which women (or men) would have to 'move' occupational categories in order to achieve a similar distribution of male and female workers across occupational groups (see Siltanen *et al.* 1995). In theory, the value of an index of dissimilarity can range from 0, indicating no segregation by gender, to 100, indicating complete segregation by gender.

The paper opens by discussing differences across European countries in the level and type of education obtained by young women and men.

3. Educational characteristics of young people

Recent decades have been characterised by considerable educational expansion across Europe, particularly among young women. In some European countries, female educational attainment (in terms of educational level) has now surpassed that of men (Müller and Wolbers 2003). Figure 1 indicates female representation by lower secondary and tertiary levels in the countries concerned. This is derived from the ratio between the proportion of females at a particular educational level and the proportion of males at that level. A ratio greater than one indicates the

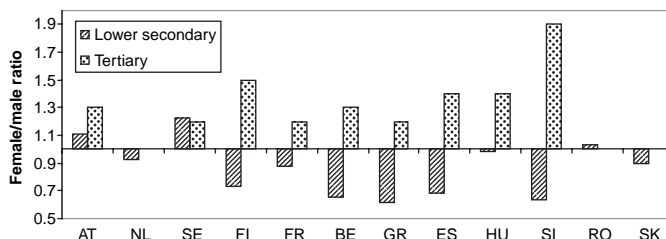


Figure 1. Female representation by level of education (ratio of females to males in particular educational categories).

over-representation of women in a particular educational category while a ratio below one indicates under-representation.

Three groups of countries emerge from the data. In the first group, female leavers are relatively advantaged in terms of their educational attainment; that is, they are significantly underrepresented among lower secondary leavers and over-represented among tertiary leavers. Countries in this group include Slovenia, Belgium, Spain, Finland and Greece. In the second group, a higher proportion of females than males leave at the tertiary level but there is no significant difference in their distribution between the lower and upper secondary levels. This group includes France and Hungary. In the remaining countries (Austria, The Netherlands, Romania, Slovakia and Sweden), no significant gender differences are found in the educational attainment levels of system leavers.

In all of the countries considered, significant gender differences are evident in the field of education studied at both upper secondary and tertiary levels.² The extent of gender differentiation in type of education can be analysed using an index of dissimilarity measure which indicates the proportion of males (or females) who would need to 'change' fields in order to achieve an equal distribution across categories by gender.³ Indices of dissimilarity tend to be sensitive to the number of categories considered with more aggregated classifications often concealing gender segregation. Indices are also likely to be sensitive to sample size, in particular to the greater clustering in certain categories potentially found using small samples.

Field of education was classified into twenty-five detailed categories which could be aggregated into nine broad categories. Indices of dissimilarity at upper secondary and tertiary levels were calculated for

2. Lower secondary education was usually more general in nature so field of education is not considered for those who left from this level.

3. This is calculated by summing the absolute differences in the proportion of males and females in each educational field and dividing the total by two.

both classifications: firstly, to allow for the existence of gender segregation within broader categories (for example, the physical sciences may differ in their gender profile from the life sciences); secondly, to increase comparability across countries as in Romania and Sweden only the broader classification was employed; and thirdly, to allow for the fact that apparent segregation at the more detailed level may reflect sampling variation (especially where sample sizes are relatively small) rather than gender segregation per se.

The indices of dissimilarity for both the more detailed and broader classifications are presented in Table 2. At upper secondary level, gender segregation was found to be greatest in Austria, France and Hungary, with the lowest levels found in Greece and Romania. In the case of Greece, the low degree of gender segregation reflects the fact that the majority (63%) of students had taken general courses. In overall terms, gender segregation is somewhat lower in countries where a greater proportion of young people leave the upper secondary level having taken general courses. A correlation of $r = -0.74$ is found between the proportion of young people in general tracks at upper secondary level and the degree of gender segregation found at this level. At tertiary level, gender segregation was greatest in Austria, Finland and Hungary, and lowest in The Netherlands and Belgium. In general, segregation was found to be greater using the more detailed classification, indicating that broad categories of educational field may encompass subject areas with very different gender profiles.

Fields of education were classified in terms of their 'female-intensity'; the original intention was to divide fields into 'female-intensive' (> 60% female), 'mixed' (40–60% female) and 'male-intensive' (< 40% female)

TABLE 2. Gender segregation by field of education (index of dissimilarity)

<i>Field categories</i>	<i>Upper secondary</i>			<i>Tertiary</i>	
	<i>Broad</i>	<i>Detailed</i>	<i>% in general courses</i>	<i>Broad</i>	<i>Detailed</i>
Austria	58.9	60.2	9.4	44.5	52.2
Netherlands	38.8	42.2	20.4	26.9	32.1
Sweden	37.8	n.a.	13.9	41.0	n.a.
Finland	35.6	38.1	34.2	44.2	50.1
France	57.6	59.0	2.3	33.1	34.5
Belgium	32.4	33.0	43.5	28.4	35.7
Greece	16.7	17.4	62.9	31.4	32.6
Spain	32.1	32.9	51.5	38.2	40.3
Hungary	47.7	57.7	11.5	41.8	42.4
Slovenia	47.1	54.2	0.4	37.3	46.0
Romania	22.7	n.a.	14.3	38.6	n.a.
Slovakia	43.3	47.2	8.2	38.9	40.5

subject areas. However, as countries differ in their female representation at the different educational levels, the cut-offs were adjusted accordingly. General courses were assigned to a separate category. There are certain commonalities across European countries in the gender-typing of subject areas. In all countries considered, engineering courses at upper secondary level tend to be male-intensive while health/welfare, arts/humanities, education courses and social science/business courses are female-intensive.⁴ Science and agriculture courses tend to be either male or mixed in profile. In the case of agriculture, the profile appears to be somewhat less male-dominated in the Eastern European countries than in the Western European countries. The gender profile of those taking general and services courses varies by country, although the profile is predominantly female in the majority of countries. At tertiary level, health/welfare, arts/humanities and education remain female-intensive while engineering courses remain male-intensive. Social/business courses become more mixed in profile than at upper secondary level while service courses become somewhat more divergent in their gender profile than at upper secondary level. Therefore, in spite of differences across countries in the type of education taken by leavers, there are certain commonalities in the gender-typing of certain subject areas. In other cases, however, the gender-typing of educational fields is societally specific.

Previous research has emphasised the strong influence of educational level on early labour market outcomes across European countries (Shavit and Müller 1998; Müller and Gangl 2003). A number of studies have examined not only the impact of educational attainment but also the differences between those taking vocational and academic tracks within the educational system (see, for example, Müller and Shavit 1998). However, there has been a general neglect of the impact of more detailed field of study on labour market outcomes in general and on gender differentiation in particular. The following section examines the way in which field of study and educational level influence the pathways taken by young women and men in their early careers.

4. Gender differences in labour market integration

For the purposes of this paper, successful labour market integration was measured in terms of the proportion of young people who had achieved a first significant job by the time of the interview. It should be noted that

4. In the latter case, the exception is France where education courses are mixed in profile. However, this pattern should be interpreted with caution since fewer than 1 per cent of the upper secondary leavers in the sample had taken education courses.

three of the countries (Finland, The Netherlands and Sweden) differ from the others in taking a time-span of five years since leaving education for the first time (compared with a time-span of ten years), a pattern which will have implications for the degree of labour market integration observed. Compared with other countries, those in Romania (male and female) are less likely to have obtained a significant job within ten years of leaving education. In Austria, Belgium, Spain, France, Greece and Hungary, young women are significantly less likely to have entered stable employment than young men. However, as the nature of gender differences varies across the countries examined, multivariate analysis is needed to disentangle the effects of gender from those of educational level and type.

Table 3 presents a binary logistic regression model predicting the chances of having obtained a first significant job by the time of the interview. A positive coefficient indicates increased chances of obtaining a first significant job while a negative coefficient indicates reduced chances. Thus, in Table 3 young women are less likely (-0.439) to obtain a first significant job than young men who have spent a similar amount of time on the labour market (Model 1). This coefficient can be transformed into an odds ratio whereby young women are seen to be 0.6 times as likely to obtain a first significant job as young men. Due to the shorter time span on the labour market observed in Finland, The Netherlands and Sweden, a variable representing time since leaving education (measured in months) is included in the model to correct for these differences.

Young women are less likely to have obtained a job by the time of the interview than their male counterparts, even controlling for gender differences in educational level, field, family status and educational participation. As might be expected, educational level is strongly predictive of labour market integration with tertiary leavers 1.9 times more likely to have obtained a job than upper secondary leavers (see Model 2, Table 3). Those leaving at the lower secondary level are much less likely to have obtained a first significant job; this pattern is especially marked for young women. Field of education is predictive of labour market integration but the effects of field are found to vary by gender. For both women and men, taking a social science, science, health or services course enhances employment chances compared to taking a general course. The returns to taking a social science/business or health course are higher for women than for men while the returns to taking an engineering or agriculture course are lower for women. Young women who have a child are much less likely than other groups to have obtained a first significant job, perhaps because they have already withdrawn from the labour market (see below). Having taken part in an educational course in the previous

TABLE 3. Likelihood of obtaining a first significant job (binary logistic regression model)

	(1)	(2)
Intercept	0.057	− 0.206***
Female	− 0.439***	− 0.476***
(Base: male)		
Time since leaving education (months)	0.017***	0.020***
Educational level:		
Lower secondary		− 0.538***
Tertiary		0.663***
(Base: Upper secondary)		
Gender × Educational level:		
Female × Lower secondary		− 0.208**
Female × Tertiary		− 0.097
Educational field:		
Education		0.273
Arts		0.009
Social Science		0.230***
Science		0.226**
Engineering		0.482***
Agriculture		0.423***
Health		0.214*
Services		0.651***
(Base: General)		
Gender × Educational field:		
Female × Education		0.248
Female × Arts		0.171
Female × Social science		0.242**
Female × Science		0.131
Female × Engineering		− 0.334***
Female × Agriculture		− 0.389**
Female × Health		0.432***
Female × Services		− 0.182
Family status:		
Has child		− 0.074
(Base: no child)		
Female × Family status		− 0.590***
Educational participation:		
Participated in past 4 weeks		− 0.651***
(Base: did not participate)		
Female × Educational participation		− 0.007
−2 log likelihood	77082.06	66341.46
N		55,881

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

Note: In the above models, dummy variables were included for country and for the interaction between country and gender in order to estimate the gender gap in the likelihood of obtaining a first significant job in each of the countries. The estimated coefficients were used to derive the values presented in Figure 2.

four weeks is associated with lower chances of having integrated into the labour market, an effect which is similar for males and females.

The pattern of labour market integration varies by country with the lowest levels found in Southern Europe (Spain and Greece) and two of the Eastern European countries (Slovakia and, in particular, Romania); the highest levels of integration are found in Belgium and Hungary (analyses not reported here). However, the concern of this paper is with the way in which gender differences in labour market integration may vary across countries. Figure 2 represents gender differences across countries with the four lines representing the size of these differences (1) without controls, (2) controlling for educational level, (3) controlling for level and field, and (4) controlling for level, field and family factors, respectively. These effects are presented in the form of odds ratios, which indicate the likelihood of young women in a particular country obtaining a first significant job relative to their male counterparts. A value of one indicates that women and men have equal chances of obtaining a job, all else being equal; values above one indicate that women are more likely than men to have obtained a job while values less than one indicate that women are less likely than men to have obtained a first significant job. There is very little gender differentiation in labour market integration in the Scandinavian countries, The Netherlands and the Eastern European countries (with the exception of Slovakia). In contrast, there are very marked gender differences evident in Belgium and the Mediterranean countries. These differences are not explained by gender differences in educational level, field of education or family status. In fact, the gender gap within these countries increases when these factors are taken into account.

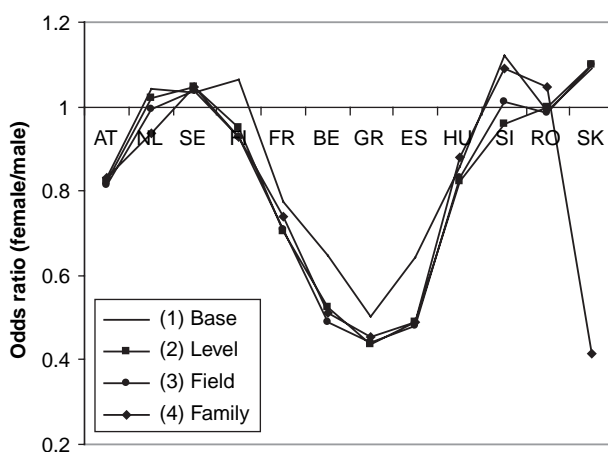


Figure 2. Country variation in gender differences in obtaining a first significant job.

The relative disadvantage of young women in making the transition to a significant job found in some European countries (especially Belgium, Greece and Spain) may be due to a number of factors including gender differences in withdrawal from the labour force, gender differences in unemployment rates and gender differences in concentration in temporary or intermittent employment. These dimensions are explored in the remainder of this section.

With the exception of The Netherlands and Slovenia, male labour force participation rates were significantly higher than female rates in all of the countries studied.⁵ The factors influencing labour force participation rates were analysed using a binary logistic regression model (see Table 4). Female participation rates are found to be lower than male rates, even controlling for educational level and field. Participation is strongly associated with educational level with the lowest levels found among those with lower secondary education and the highest levels found among those with tertiary education. The positive effect of having a tertiary education is found to be somewhat less for women than for men (see Model 2). The highest participation rates are found among those who have taken social science or health courses. The effects of field of education vary somewhat by gender, however, with women who had taken engineering, agriculture or service courses having much lower participation rates than their male counterparts. Having a young child is associated with lower activity rates, but only for women. Similarly, having taken an educational course in the previous four weeks is associated with lower participation rates, indicating that a number of young people have returned to full-time education.

Figure 3 indicates cross-national variation in gender differences in labour force participation levels, controlling for educational level, field of study and family factors. Female labour force participation levels are lower than male levels across all European countries, with the exception of Slovenia. The greatest gender gaps are found in the Mediterranean countries, Hungary and the Northwestern countries (Belgium and France). In the case of Belgium, Greece and Spain, therefore, it would appear that the lower levels of labour market integration among young women (indicated above) are, at least in part, due to the greater tendency for young women to withdraw from the labour force.

Gender differences in labour market integration patterns may also reflect gender differences in unemployment patterns. In Spain, France, Greece and The Netherlands, female unemployment rates are, on average, significantly higher than those found among their male counterparts. The binary logistic regression model presented in Table 4 analyses the

⁵ Those in military service are excluded for the purposes of this analysis.

TABLE 4. Likelihood of (a) labour force participation and (b) unemployment among those in the labour force

	<i>Labour force participation</i>		<i>Unemployment</i>	
	(1)	(2)	(1)	(2)
Intercept	3.111***	– 2.980***	– 1.131***	– 1.035***
Female	– 0.801***	– 0.395***	0.563***	0.834***
(Base: male)				
Time since leaving education (months)	– 0.001	0.004***	– 0.011***	– 0.013***
Educational level:				
Lower secondary		– 0.519***		0.518***
Tertiary		0.876***		– 0.792***
(Base: upper sec.)				
Gender × Educational level:				
Female × Lower secondary		– 0.049		– 0.053
Female × Tertiary		– 0.275**		0.049
Educational field:				
Education		0.275		0.273
Arts		0.338*		0.554***
Social Science		0.512***		0.198***
Science		0.132		0.022
Engineering		0.666***		– 0.157
Agriculture		0.761***		– 0.127
Health		0.725***		0.001
Services		0.687***		– 0.021
(Base: General)				
Gender × Educational field:				
Female × Education		0.041		– 0.427
Female × Arts		– 0.183		– 0.542***
Female × Social science		– 0.059		– 0.304**
Female × Science		0.137		– 0.202
Female × Engineering		– 0.636***		0.414***
Female × Agriculture		– 0.656**		0.391
Female × Health		– 0.288		– 0.311
Female × Services		– 0.365*		– 0.037
Family status:				
Has child		– 0.085		–
(Base: no child)				
Female × Family status		– 1.420***		–
Educational participation:				
Participated in past 4 weeks		– 2.179***		–
(Base: did not participate)				
Female × Educational participation		0.929***		–
–2 log likelihood	50340.76	40228.95	52229.368	49371.245
N		55,732		51,919

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

Note: In the above models, dummy variables were included for country and for the interaction between country and gender in order to estimate the gender gap in the likelihood of being in the labour market and being unemployed in each of the countries. The estimated coefficients were used to derive the values presented in Figures 3 and 4, respectively.

likelihood of being unemployed as opposed to employed among those who are in the labour force. It indicates that young women are more likely to be unemployed than young men, even when gender differences in educational

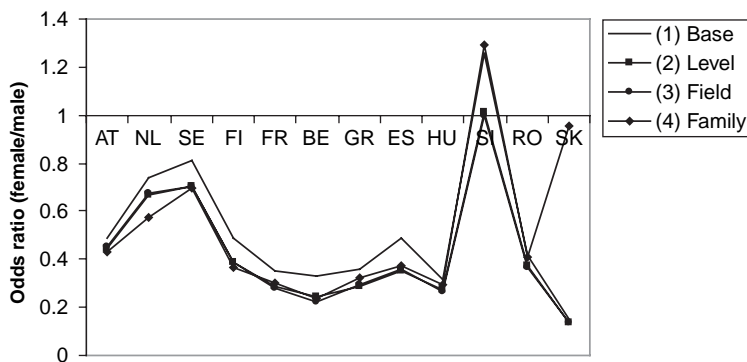


Figure 3. Country variation in gender differences in labour force participation.

level and field are taken into account.⁶ Unemployment is found to decrease with amount of time since leaving education indicating the gradual absorption of more and more young people into paid employment over time. Lower secondary leavers have the highest unemployment rates while the lowest rates are found among tertiary leavers; the pattern by educational level is similar for males and females. The effect of field of study on unemployment rates varies by gender. An arts or social science background is associated with higher unemployment for males only while women with an engineering background have higher unemployment rates than their male counterparts.

Figure 4 presents the likelihood of women being unemployed relative to men in the same country; values greater than one indicate that women are more likely to be unemployed than their male counterparts. Female unemployment rates are the same as, or lower than, male rates in the Eastern European and Scandinavian countries, all else being equal (see Figure 4). In contrast, female rates are much higher than male rates in The Netherlands, Austria, France, Belgium and the Mediterranean countries. In Belgium and the Mediterranean countries, gender differences actually increase when educational level and field is taken into account. In overall terms, the lower chances of labour market integration found among young women reflect not only lower labour force participation rates but also higher rates of unemployment among those who remain within the labour force. The pattern may also be explained by gender differences in the proportion in intermittent employment. Unfortunately, complete work history information indicating the prevalence of inter-

6. Family status and educational participation are not included in this model because they are expected to influence decisions about remaining in the labour market rather than 'success' within the labour market per se.

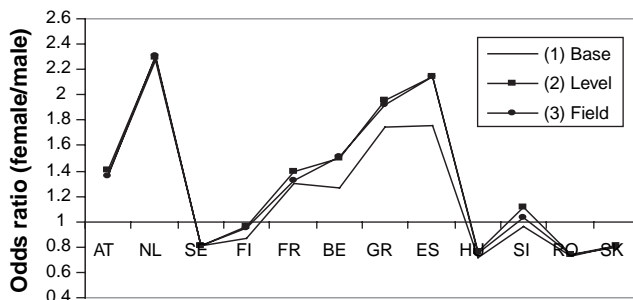


Figure 4. Country variation in gender differences in current unemployment.

mittent employment is not available from the *ad hoc* module. However, young women in Greece and Belgium are more likely to be on a temporary contract at the time of the interview than their male counterparts (analysis not shown here), indicating that some of the gender difference in labour market integration may be related to the over-representation of young women in precarious employment.

5. Occupational status and gender differentiation

The previous section has explored gender differences in successful labour market integration and the extent to which these differences were due to varying labour force participation levels or unemployment rates. Making a smooth transition to paid employment does not, however, mean that young people secure 'high quality' jobs or jobs commensurate with their educational qualifications. This section explores the kinds of jobs achieved by young women and men in terms of their occupational status while the following section will examine the extent of gender segregation in these jobs. Occupational status (ISEI) scores were assigned to the occupational groups reported by the sample of young people. These scores were based on the scale developed by Ganzeboom and Treiman (1996), a scale which ranges from 16 to 90 with higher values indicating higher status occupations. The ISEI scale has an advantage over social class-based measures in exploring gender differences in labour market outcomes since it captures quite fine differences between occupational categories. On average, in all countries except The Netherlands, women have higher average status scores than men. This may be related to the greater concentration of women in non-manual jobs which tend to be assigned higher status scores than manual occupations. It should be noted, however, that higher occupational status scores do not necessarily translate into

higher pay and mobility opportunities for women (see Smyth 2001). Given that women tend to have higher educational attainment levels than men (see above), gender differences in educational level and field may also account for variation in occupational status.

Table 5 presents an ordinary least squares (OLS) regression model of the factors predicting occupational status of the first significant job. Young women are found to enter higher status occupations, controlling for their educational level. Lower secondary leavers enter lower status occupations,

TABLE 5. Factors influencing occupational status of first job (ordinary least squares regression model)

	(1)	(2)
Intercept	39.111	34.796
Female	6.074***	2.665***
(Base: male)		
Educational level:		
Lower secondary		− 6.306***
Tertiary		18.249***
(Base: upper secondary)		
Gender × Educational level:		
Female × Lower sec.		− 0.114
Female × Tertiary		− 4.045***
Educational field:		
Education		0.924
Arts		0.889
Social Science		0.834
Science		4.501**
Engineering		− 3.595***
Agriculture		− 6.832***
Health		5.532***
Services		− 4.359***
(Base: General)		
Gender × Educational field:		
Female × Education		4.036***
Female × Arts		3.123***
Female × Social science		2.436***
Female × Science		1.638**
Female × Engineering		1.609***
Female × Agriculture		5.683***
Female × Health		− 6.257***
Female × Services		− 0.439
Adjusted R square	0.029	0.394
N		40,752

*** $p < 0.001$; ** $p < 0.01$.

Note: In the above models, dummy variables were included for country and for the interaction between country and gender in order to estimate the gender gap in occupational status. The estimated coefficients were used to derive the values presented in Figure 5.

and tertiary leavers enter higher status occupations, than those with upper secondary education. However, the status returns to tertiary education are significantly lower for women than for men. Educational field is strongly predictive of occupational status. However, the effect of educational field is found to vary by gender. In general, women achieve higher occupational status than men who had studied the same type of course, with the exception of those who had taken health/welfare courses. For men, the status returns are highest for health and science courses and lowest for engineering and agriculture courses. For women, the status returns are highest for science, education, arts and social science/business courses.

Figure 5 indicates the gap between female and male occupational status scores across countries, all else being equal. A good deal of young women's advantage in occupational status terms is due to their higher educational levels and the type of courses they study; in other words, the gap between male and female scores is reduced when educational level and field of education are taken into account (see Figure 5). The gender gap in occupational status levels is found to vary by country with the greatest advantage to young women found in the Mediterranean and Eastern European countries.

In addition to allowing us to explore gender differences in the occupational status of first job, data from the *ad hoc* module allow us to assess the extent to which young men and women experience occupational upgrading in their early career. Young people who were in a higher status occupation in their current job than in their first significant job were considered as having experienced an occupational upgrading, regardless of the 'size' of this shift. With the exception of The Netherlands, women are less likely to have experienced occupational upgrading than men; this

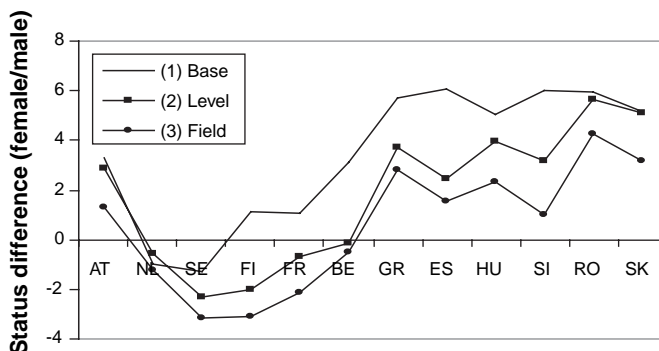


Figure 5. Country variation in gender differences in occupational status.

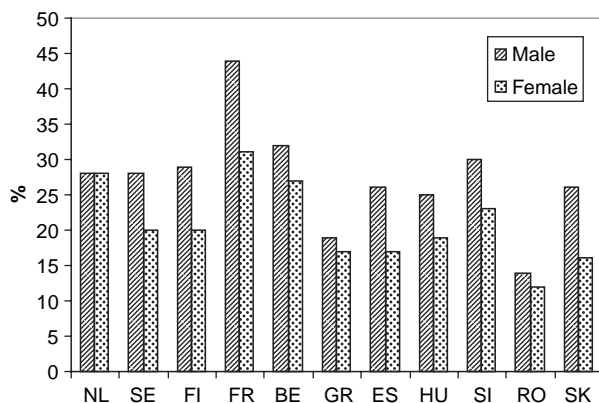


Figure 6. Occupational upgrading by gender and country.

difference is found to be statistically significant in Spain, Finland, France, Greece, Hungary and Slovakia (see Figure 6).⁷

In sum, young women tend to obtain higher status occupations on entering the workforce, a pattern that is mainly related to their higher educational level and the type of course they studied. However, young women are less likely to experience occupational upgrading over the first ten years in the workforce.

6. Occupational segregation by gender

The previous section explored the extent to which young women and men differ in the status of their first job. The primary focus of this paper is, however, on the extent to which gender differences are evident in the type of employment obtained. This section explores the level of occupational segregation by gender across European countries and the extent to which this segregation reflects prior choices concerning field of study. In all of the countries, the distribution across occupational groups differs significantly for males and females. As with educational field, occupational groups were divided into 'female-intensive', 'mixed' and 'male-intensive' categories, adjusting the cut-offs for the representation of women in the workforce in each country. In all countries, senior managerial, craft and machine operator jobs tend to be dominated by men while females tend to predominate in clerical and service jobs. In half of the countries studied, professional jobs are female-intensive, being mixed in profile in the

⁷ Austria is not included here because information is available on current job only.

remainder; a similar profile is evident in relation to technical jobs. Countries are divided between those where agricultural and elementary (unskilled) occupations are male dominated and those where they are mixed in profile.

There has been some debate about the appropriate measure of occupational segregation (see, for example, Siltanen *et al.* 1995; Kalter 2000). Here indices of dissimilarity are used and were calculated for ISCO one-, two- and three-digit occupational groupings.⁸ Table 6 indicates that the level of segregation is found to be higher when more detailed occupational groups are used; this reflects the fact that broader occupational groups often contain occupations with very different gender profiles. The three measures of segregation are significantly correlated with each other ($r = 0.7$ between one- and two-digit measures and $r = 0.5$ between one- and three-digit measures), indicating that segregation tends to be greater in certain countries, regardless of the measure used. Gender segregation is found to be highest in Austria,⁹ Hungary, Slovakia and France, and lowest in Sweden, Belgium and The Netherlands.

It had been hypothesised that occupational segregation would be greatest in the countries with the highest levels of educational segregation by gender with young people being 'pre-sorted' into gender-typed occupations on the basis of their educational experiences (see Borghans and Groot 1999). Figure 7 shows the measures of segregation for both occupation and education (in the latter case, combining segregation measures at upper secondary and tertiary levels). In the case of occupation, the measure based on the three-digit ISCO classification is used; for Romania, the one-digit measure is used because of the lack of information on more detailed occupational groupings. It is apparent that educational and occupational segregation are interrelated at the country level (with a correlation of $r = +0.7$) with Austria and Slovenia showing the highest levels of segregation and Romania and Greece showing the lowest levels of segregation. The location of The Netherlands is somewhat surprising given previous research on the strong levels of gender segregation within the Dutch educational system (see Borghans and Groot 1999; Smyth 2001). It may be that the broad groupings of educational field available in the *ad hoc* module obscure some of the segregation happening at a more detailed level of aggregation.

8. As with the measure of educational segregation, these were calculated by summing the absolute differences in the proportion of males and females in each occupational group and dividing the total by two.

9. The data for Austria are not fully comparable with the other countries since they relate to current rather than first job. However, analysis does reveal Austria as an outlier in segregation terms.

TABLE 6. Occupational segregation by gender in first significant job (index of dissimilarity)

	<i>1-digit ISCO</i>	<i>2-digit ISCO</i>	<i>3-digit ISCO</i>
Austria	45.5	56.8	64.3
Netherlands	32.3	38.6	52.9
Sweden	30.8	40.9	51.4
Finland	35.6	51.2	56.1
France	37.3	47.5	51.7
Belgium	31.6	44.3	51.6
Greece	36.1	41.2	48.8
Spain	42.1	47.5	53.7
Hungary	37.7	49.0	58.5
Slovenia	34.9	42.3	57.9
Romania	36.4	n.a.	n.a.
Slovakia	37.6	55.4	66.1

The purpose of this paper is not to examine the ‘matching’ between educational field and occupational group (see Wolbers 2003) but it is useful to explore the ways in which participation in a gendered educational track influences the type of occupation entered. The gender-typing of educational field (general, male-intensive, mixed and female-intensive) is significantly related to the gender-typing of first significant job¹⁰ in all of the countries considered. For the purposes of this and subsequent analysis, those leaving from lower secondary education are assigned to general tracks because of the considerable cross-national variation in the existence of track differentiation at this level.

Table 7 presents a multinomial logistic regression equation predicting the likelihood of entry to predominantly male and predominantly female occupations relative to entry to mixed jobs. Young women are significantly less likely to enter predominantly male jobs and more likely to enter predominantly female jobs, even controlling for gender and educational field. Thus not all gender segregation is attributable to educational segregation with gender continuing to have a direct effect on the ‘sorting’ of young men and women into gendered jobs. Having a lower secondary education increases the chances of entering a male job and reduces the chances of entering a female job; this is likely to reflect the strongly male profile of manual jobs. Having a tertiary education increases the chances of entering a mixed occupation. Females with a tertiary education have reduced chances of entering female occupations.

Leavers from a male track are much more likely to enter a male track and leavers from a female track are much more likely to enter a female

10. The measure of gender-typing of occupation is based on one-digit ISCO classifications because of the possible influence of small sample sizes at the more detailed level of occupational aggregation.

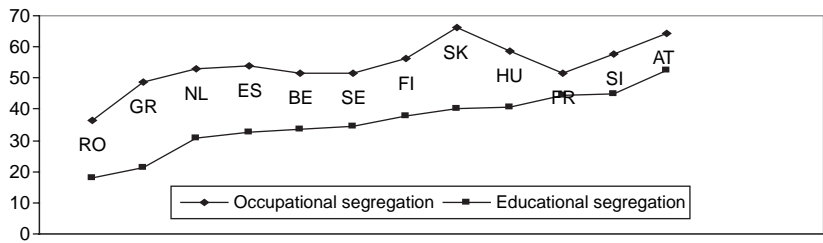


Figure 7. Measures of educational and occupational segregation by country.

track. However, there is also a considerable amount of movement from mixed tracks into gender-typed occupations. This may be due to the fact that occupational segregation is somewhat stronger than educational segregation (see Figure 7) so that there is more room for potential movement from mixed tracks into gender-typed jobs. There is no evidence

TABLE 7. Multinomial logistic regression model of gender-typing of first significant job (contrasted against entry to mixed occupations)

	'Male' job	'Female' job
Intercept	1.087***	1.024***
Female	− 0.614***	0.922***
(Base: male)		
Educational level:		
Lower secondary	0.596***	− 0.355***
Tertiary	− 2.177***	− 0.547***
(Base: upper secondary)		
Gender × Educational level:		
Female × Lower sec.	0.420***	0.267
Female × Tertiary	0.106	− 0.663***
Educational field:		
Male-dominated	1.264***	0.276***
Mixed	1.268***	1.244***
Female-dominated	0.083	1.023***
(Base: General)		
Gender × Educational field:		
Female × Male-dominated course	0.251	− 0.107
Female × Mixed course	0.494***	0.256
Female × Female-dominated course	0.130	− 0.089
−2 log likelihood	7,108.598	
N	41,179	

*** $p < 0.001$.

Note: In the above model, dummy variables were included for country and for the interaction between country and gender in order to estimate gender differences in the chances of entering 'male' or 'female' jobs in each of the countries. The estimated coefficients were used to derive the values presented in Figure 8.

that the effect of educational field differs for men and women; the exception is a greater tendency to enter male occupations among women from mixed tracks.

It was hypothesised above that, in track-differentiated systems, gender segregation in labour market outcomes will tend to be mediated by the type of course taken, whereas direct gender effects on occupational allocation should be stronger in general than in track-differentiated systems. For the purposes of comparison, the predicted probabilities of leavers from male-dominated courses entering male-dominated occupations (termed 'male course-male job' in Figure 8) and of leavers from female-dominated courses entering female-dominated occupations (termed 'female course-female job' in Figure 8) were calculated for Austria (a country with a high level of educational and occupational segregation by gender), Greece and Romania (countries with low levels of educational and occupational segregation by gender). It is apparent that in Austria there are strong gender differences in occupational destination, even among those who have taken similar educational tracks. Of those who have taken male-dominated courses, all else being equal, over 70 per cent of males but fewer than a third of females enter male-dominated occupations. Of those who have taken female-dominated courses in Austria, almost 60 per cent of young women enter female-dominated jobs but this is the case for only a third of young men. Thus, higher levels of occupational segregation in the Austrian youth labour market reflect not only marked gender differences in the type of courses taken but marked differences in occupational outcomes for women and men taking 'male' (or 'female') tracks.

Gender differences in occupational outcomes are also apparent among those taking male and female tracks in the lower segregation countries of

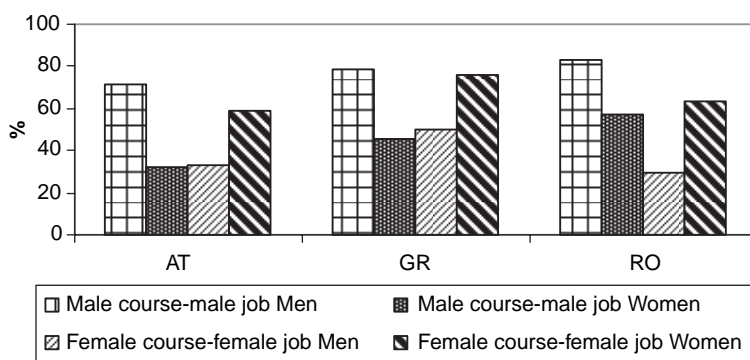


Figure 8. Predicted probabilities of entering male and female-dominated occupations for selected countries (upper secondary leavers).

Greece and Romania. However, in some instances gender differentiation is less marked than in the Austrian situation; for example, a relatively high proportion (57 per cent) of young women taking male courses in Romania subsequently enter male-dominated occupations. In overall terms, occupational segregation in the youth labour market tends to reflect both 'presorting' into different educational fields and 'post-sorting' into different occupational destinations among those in the same field of education. The degree to which this takes place is likely to reflect the complexity of institutional, social and economic factors operating at the country level.

7. Summary and conclusions

This paper has considered gender differentiation in early labour market outcomes across a range of European countries. As Table 8 illustrates, there are certain commonalities in gender differences across European countries. Young women tend to have lower labour force participation rates than their male counterparts and, where they have remained in the labour market, they are less likely to have experienced occupational upgrading. However, there is also cross-national variation in the nature of gender differentiation; this variation is particularly evident in relation to unemployment rates with higher rates among women than men in many central European and Mediterranean countries and lower rates among women than men in many Eastern European and Scandinavian countries.

In spite of the fact that the educational attainment of women has now surpassed that of men in many countries, differences persist in the type of educational courses taken by young women and men. Countries differ in the extent of educational segregation by gender but certain regularities are evident, with health/welfare, education and arts courses dominated by women and engineering courses dominated by men. It had been hypothesised that, at the country level, educational segregation would be positively associated with occupational segregation by gender. It is, indeed, apparent that countries with higher rates of gender segregation within the educational system tend to have higher rates of gender segregation within the labour market. Thus, occupational segregation reflects, at least in part, the way in which the different kinds of courses taken by young women and men channel them into gender-typed occupations. However, it is also apparent that marked gender differences persist among those who have taken similar courses across all countries, both those characterised by differentiated, gender-tracked systems and those characterised by more general systems. Thus, labour market

TABLE 8. Summary of country variation in gender differences in early labour market outcomes (controlling for educational level)

	<i>Educational segregation (outlier)</i>	<i>Occupational segregation (outlier)</i>	<i>Labour market integration</i>	<i>Labour force participation</i>	<i>Unemployment</i>	<i>Occup. status</i>	<i>Occup. upgrading</i>
Austria	+	+	–	–	+	+	n.a.
Netherlands			0	(–)	+	(–)	(–)
Sweden			(+)	(–)	–	–	–
Finland			(–)	–	(–)	–	–
France	+		–	–	+	–	–
Belgium			–	–	+	(–)	–
Greece	–	–	–	–	+	+	–
Spain			–	–	+	+	–
Hungary			–	–	–	+	–
Slovenia	+		0	(+)	0	+	–
Romania	–	–	0	–	–	+	(–)
Slovakia		+	(+)	–	–	+	–

Note: + , higher among women; (+) , slightly higher among women; 0 , no gender difference; (–) , slightly lower among women; – , lower among women.

segregation also reflects 'post-sorting', whereby women and men with the same kinds of qualifications enter quite different occupational arenas.

As Table 8 illustrates, there is no necessary relationship among the labour market outcomes considered. For instance, women's unemployment is higher than men's in both Austria, a more segregated youth labour market, and Greece, a less segregated youth labour market. Thus, there is no evidence that greater segregation within the youth labour market necessarily hinders or facilitates the integration of young women into stable employment. The complexity of the relationships among the outcomes analysed must be seen as reflecting distinct aspects of the particular societal context, such as the type of employment available to young workers, the extent of employment regulation, the welfare régime and the nature of the family system.

More generally, it is clear that there is no straightforward pattern of female labour market 'advantage' or 'disadvantage' in particular national contexts. There is no instance where young women are systematically excluded from employment and confined to segregated, lower status occupational niches. Neither is it the case that young women make a significantly smoother transition into the labour market and are concentrated in female-dominated, high status jobs. An attempt to assess the extent of such labour market 'advantage' is also partly hindered by the somewhat limited measures of employment outcomes available in the *ad hoc* module of the Labour Force Survey. The module does not allow us to explore the relationship between the gender-type and status of the occupations entered and other characteristics such as pay and long-term career opportunities. It would be important to be able to capture a more comprehensive range of employment characteristics in order to fully assess the relative employment positions of young women and men across different European countries.

To date, much research on gender differentiation and segregation within the labour market has focused on adult workers. This paper indicates the need to investigate the way in which gender differentiation emerges early in the labour market career and the impact of early employment experiences on subsequent career trajectories. It shows that field of study, often a neglected topic in research on school to work transitions, is an important influence on the early labour market career and on gender differentiation in the youth labour market. Gender differences in trajectories within the educational system play an important role in channelling young people towards gender-typical careers. However, gender continues to have a strong direct effect on labour market outcomes in both track-differentiated and general educational systems. An account which explores the way in which segregation patterns are shaped by the interaction between a differentiated labour supply (in terms of gender,

educational level, field of study and social background) and a differentiated demand for labour on the part of employers would appear to provide a fruitful direction for future research. To date, such an analysis has been hindered by the lack of information on the attributes sought by employers in recruitment to particular types of jobs. Studies of the factors shaping segregation have been carried out in particular occupations and industries (see, for example, Scott 1994) but have not yielded a satisfactory (or empirically testable) framework for wider analysis. The need to take account of both individual characteristics and employer practices is not just of relevance to the analysis of employment segregation but has wider implications for our understanding of the way in which both gender and social class differences are reproduced within the labour market (see Erikson and Goldthorpe 2002).

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