

Subject choice and gender inequality.

The effect of skills and competences on the labour market.

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In the past 50 years women have gradually caught up with, and even surpassed, men in educational achievement. Nevertheless, women seem to lose their advantageous position as soon as they enter the labour market. Compared to men they earn less, work fewer hours a week and are more often employed with temporary contracts. These differences are frequently attributed to a differential career investment made by men and women. Previous studies on labour market outcomes mostly focus on the effect of the level of education. Nevertheless, this can not explain gender differences as women are generally higher educated than men. It is well-established, however, that men and women tend to choose different subjects in school. While men are over-represented in the 'harder' and more technical subjects, women dominate the 'softer' subjects like health and welfare. The subject choices young people make in secondary and/or higher education might explain the lower labour market opportunities of women since these different subjects lead to the acquisition of different skills and competences. Using data from the longitudinal SONAR-survey, which registers the transition from school to work of Flemish youth, we examine to what extent different subject choice influences the gender differences in labour market positions in both the first job and at the age of 26. Since previous analyses have shown that patterns of family formation have an effect on the labour market position, we control our models for these patterns.

Together with freedom and solidarity, social equality belongs to the foundations of all constitutions in modern democracies. However, equality as a modern value does not mean that inequality is not tolerated. On the contrary, we have an aversion to certain equalities. We do not want everybody to earn the same salary, to have a university degree, nor for every football team to be the champion in the competition. In fact there are strict hierarchies in our society: income, status and power are not equally divided. These inequalities are considered equality if they are 'merited'. Our ideal of an equal society is a meritocracy, in which inequalities are based on achievement (even though Michael Young pointed out almost 50 years ago that the realisation of this meritocratic ideal would be a hell – cfr. Young, 1963 [orig.1958]). In this type of society, school is by far the most important institution for sorting out those who merit the best positions. Education is a long process of sorting. We expect everyone to enter school equally and to leave school with a certain degree, diploma, certificate and so on, that determines future possibilities and opportunities on the labour market. School makes people unequal, but we call it equality if the sorting process is based on talent and achievement.

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There is a long tradition in social sciences studying processes of status attainment and the effects of 'ascribed' characteristics on the opportunities for social mobility. Ascribed traits falsify the competition. While they can not be held responsible for these traits some people are disadvantaged simply because they are immigrants, women or come from lower social backgrounds. We do not think this is fair; this is inequality. Research on social mobility has traditionally focused on the effects of social background or class of origin on attained professional status. The role of gender, as an ascribed characteristic, has largely been neglected. Research into social mobility originally considered particularly the correlation between the position of fathers and sons (see for example Blau & Duncan, 1967; Kohn, 1969; Goldthorpe, 1980). The analysis of women was left aside because it was reasoned that the status of women is mainly derived from the status of the husband (Acker, 2000). For example, the wife of a physician is 'ascribed' the social position of her husband despite the fact that she is a teacher. The assumptions that lead to the neglect of women in status theory and research are no longer accepted as valid. In particular the increased labour market participation of women has urged the inclusion of women in analysing social mobility (Korupp, 2000).

Women not only took their place in the labour market, but also in the field of education girls have now caught up with boys. In most Western countries there are as many girls in school as boys (Gallagher, 1997). Since cultural barriers and traditional role patterns no longer seem to impede girls in their school careers, there seems to be more attention for differences in the school performances of boys and girls. In this context the poorer achievements of boys at school came to the foreground (Boaler, 1998). In Flanders the problematic character of boys' school careers is clearly visible in educational statistics. Also in recent studies of differential school achievement the better performance of girls in education is clearly illustrated (Derks and Vermeersch, 2001, 2002). While one would expect that in a meritocracy better performances at school lead to better positions in the labour market, this does not seem the case. There are no indications (yet) that women have caught up with men in the labour market. It is still uncommon to find women at the top of big companies (see Meulders & Plasman, 2002; Glorieux and Vandeweyer, 2002). In Belgium, only 20 per cent of the executive staff in the 30,000 biggest companies of the country is female and only five per cent of these companies have a woman at the top. The picture is the same at universities, where women are well represented at lower levels (45 per cent of the assistants at Flemish² universities in 2000 were female), yet women rarely occupy top positions (7 per cent of full professors in Flanders are women) (Stegmans & Van Haegendoren, 2003).

In this paper we focus on the discrepancy between the good performance of girls in school and their unfavourable position in the labour market. In 1999 the interuniversity research group SONAR (Dutch acronym for Study Group on the Transition from Education to the Labour Market) conducted a survey among a random sample of 3,000 Flemish 23-year-olds born in 1976 [C76(23)]. This survey was designed to study the transition from school to work in detail. The questionnaires included an extensive registration of the educational and professional career of the respondents. This data collection in 1999 was the first in a longitudinal project in which several cohorts of young people were interviewed at different ages. In 2001 and 2003 two new cohorts, born in 1978 and 1980, have been interviewed at the age of 23 [C78(23) and C80(23)]. In the mean time both the 1976-cohort as well as the 1978-cohort were re-interviewed at the age of 26 (in 2002 [C76(26)] and in 2004 [C78(26)] respectively). The final stage in the data collection – the interviewing of the 1976-cohort at the age of 29 [C76(29)] – is planned for the fall of 2005. The whole project is funded by the Flemish government in the context of the Program of Policy-oriented Research and since 2000 SONAR is part of the Policy Support Centre 'Pathways through education and the transition from school to work' (for further details, see SONAR, 2000a and 2000b).

2 Flanders is the part of Belgium where people speak Flemish. The inhabitants of Flanders are called Flemings.

Table 1: Overview of SONAR-surveys

	Survey age at 23	Survey age at 26	Survey at age 29
Year of birth 1976	C76 (23) 1999	C76 (26) 2002	C76 (29) 2005
Year of birth 1978	C78 (23) 2001	C78 (26) 2004	
Year of birth 1980	C80 (23) 2003		

Using the SONAR-data, we shed light on the transition from school to work in order to discover why young women are not able to convert the advantage they have built up in education into a more favourable position on the labour market. More specifically we want to find out whether a gender specific subject choice can offer an explanation for the disadvantaged position of women on the labour market (see for example Elchardus, Huysseune & Scheys, 1992; Brown & Corcoran, 1997). The subject choice made by students during their education greatly affects the skills and competences these students have when they enter the labour market. Since not all skills are equally appreciated on the labour market we can assume that certain fields of study, within the same level of education, do better on the labour market than others. According to this hypothesis, the numerical overrepresentation of men in the ‘harder’ domains (science and technical studies) and women in the ‘softer’ domains (educational, medical and social fields of study) could largely explain the gender differences on the labour market since the skills acquired in these harder domains are usually valued higher on the labour market than ones acquired in the softer domains.

This is, however, not the only hypothesis that will be tested in this paper. We also focus on the influence of family formation on the transition from school to work. Oddly enough, relatively little research has been carried out on this topic. Gaskell (1992) attributes this neglect to the fixation of male researchers on typical male life courses. In studies on occupational attainment, cohabitation and parenthood are often perceived as an impediment for women in the development of their professional career (see for example Tijdens & de Ru, 1988; Peters & du Bois-Reymond, 1990; Gaskell, 1992; van der Lippe & van Doorne-Huiskes, 1995; Carrier, 1995; Waldfogel, 1997; Dykstra & Fokkema, 2000; Mason & Goulden, 2004), while these events hardly influence the career of men (see for example Mortelmans, Van Ourti & Verstreken, 2002). Most studies of the (negative) effects of family formation on the professional career of women focus on long term consequences. In this paper we will examine whether or not patterns of family formation can explain differences between men and women already at an early stage of their professional paths. This is an important question since research by, for example, Blossfeld (1985) indicates that this is a crucial period in the further development of a career and that it is more difficult for women to make up for their disadvantaged position than for men.

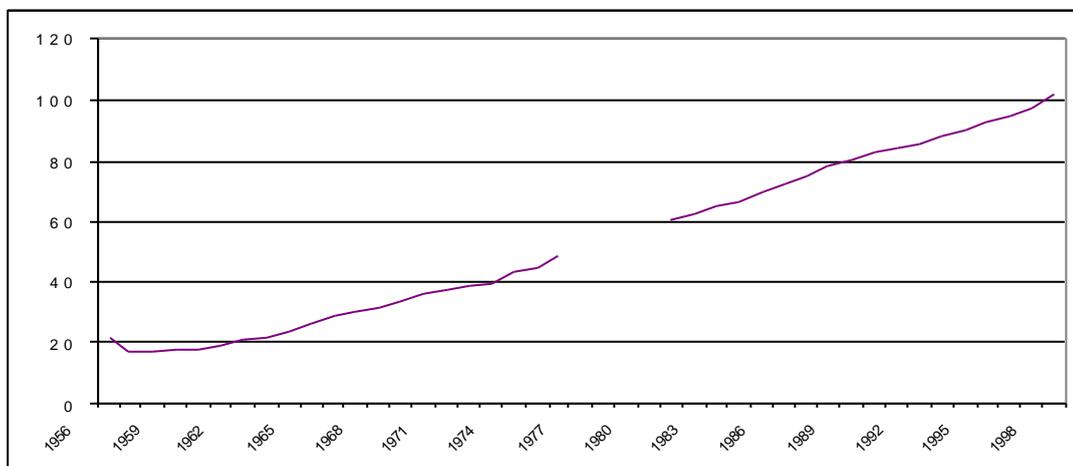
In the first section of this paper we use the SONAR-data, together with official statistics, to compare the school performance of boys and girls. In the second section we focus on the transition from school to work. The SONAR-data demonstrates clearly that women, despite their level of school achievement, are already at the age of 23 confronted with some serious obstacles on the labour market. Differences between men and women with regards to study choice and family formation are the focus of the following sections (respectively section 3 and 4). In the final section of this paper we examine to what extent study choice and mechanisms of family formation can explain the backward position of women on the labour market at the age of 26. Unless otherwise mentioned all analyses for the 23 year-olds are based on data from the three cohorts (C76[23], C78[23] and C80[23]) (N=9010), while the analyses for the 26 year-olds are based on the data of C76[26] (N=2060). In order to obtain a higher degree of representativeness in our descriptive analyses, we weighed our cases using data from the Belgian National Census (‘Volkstelling’) of 2001 on sex, region and educational attainment.

1 Girls take the lead in education

1.1 Girls overrun school

Over the last 50 years, girls in Flanders have gradually caught up in terms of participation rates (as proportions in full time education). Claes, Lambrecht and Schuttringer (1984) have analysed Flemish participation rates for the period 1956-1983 (see also Derks and Vermeersch, 2001, 2002). For the age bracket 14-15, the differences between boys and girls have never been very big. In 1956 60 per cent of girls between 14 and 15 years went to school, against 63 per cent of boys. This small difference was eradicated by 1969 when about 90 per cent of the boys and girls of this age group went to school. It took until 1974 for girls from 16-17 years to make up arrears with boys. In that year the participation rate of both sexes in this age group reached 65 per cent. The age group 18 to 21 years – the group eligible to enter higher education – had to wait until 1980 for equal participation rates between the sexes. Thirty-four per cent of young men and women between 18 and 21 were still in education at that time. In the age bracket 22-23 years, even in 1982 there was still a substantial difference between males and females, the participation rates being respectively 13 and 8 per cent. Even in the SONAR-data this difference persists: from the 1976-, 1978- and 1980-cohorts 17 per cent of the boys and 16 per cent of the girls are still in school at the age of 23. The lower participation ratio of women at this age cannot be explained by their lower participation in higher education. Recent figures clearly show that women have fully made up their relative arrears in higher education. In 1998, for the first time, there were more women studying at Flemish universities than men. In 1956 for each 100 male students, there were only 22 female students at the universities. By 1998 this amount of female students increased to 102. Figure 1 shows that this process of overtaking followed a linear direction. The small gender difference in participation ratio at the age of 23 is probably a result of the more successful educational careers of women, and the larger proportion of boys who fall behind during theirs. Whereas most women finish their higher studies ‘on time’ – that is three or four years after they started at the age of 18, thus getting their degrees at the age of 21 or 22 – a higher proportion of men have still not gained their degrees by the age of 23 (see section 1.2).

Figure 1: Evolution of women studying at universities in Flanders: number of women to 100 men (1956-1998)



Source: NIS, 1967; 1977 and data from the Vlaamse Interuniversitaire Raad (Flemish Interuniversity Council, VL.I.R.). Data from 1977 to 1980 are not available. Calculations made by Derks and Vermeersch (2001, 2002).

1.2 More successful school careers for girls

Women in Flanders not only participate as much as men in formal education, there are also clear indications that they perform much better.

A simple indicator of school success can be found in the phenomenon of having to repeat school years. Pupils with insufficient achievement can be compelled to stay down a class. In Flanders repeating is not uncommon. In the three researched SONAR-cohorts (see table 2) approximately one out of three students was held back at least once during their secondary education. The difference between boys and girls is striking: about 40 per cent of the boys repeat a year at least once compared to 25 per cent of the girls.

Table 2: Percentage of repeaters in (full time) secondary education for boys and girls

	<i>Boys</i>	<i>Girls</i>	<i>Total</i>
<i>Never</i>	60,6%	74,5%	67,5%
<i>Repeating once</i>	26,6%	19,9%	23,3%
<i>Repeating twice</i>	10,2%	4,7%	7,5%
<i>Repeating more than two times</i>	2,6%	0,9%	1,8%
Total	100,0%	100,0%	100,0%

Pooled, weighted SONAR-data: C76(23), C78(23), C80(23), $N=8904$

Using the detailed information on school careers in the SONAR-data, we can compare the different pathways boys and girls follow through secondary education. In Flanders, it is possible to switch between different types of secondary education. Switching and especially frequent switching between types is often considered detrimental for future school success. Our analyses show that girls more often stay in the same type of education than boys (74 per cent versus 71 per cent). They are also overrepresented in *general secondary education*, the track that is frequently believed to be more beneficial for further higher education and labour market entry.

Looking at the attained educational level of 26-year olds (table 3) we can see that approximately 15 per cent of them drop out of secondary school before obtaining a diploma. About 25 per cent have a diploma of secondary education³ but did not try to get a higher degree. The next group differs from the previous one because they started higher education after their secondary education, but have not (yet) completed this higher study. This applies to 15 per cent of the respondents. A final group has a diploma of higher education. About 46 per cent of the respondents belong to these highly educated people.

Men and women are clearly distributed differently along these four levels. It is apparent that men drop out of secondary school more often than women (respectively 18 per cent and 12 per cent). The gender differences in secondary schooling seem to persist at the start of higher education: 67 per cent of the girls continue their studies after secondary education compared to only 55 per cent of the boys. Women have, at the age of 26, also graduated from higher education more often than men: 54 per cent as compared to 39 per cent. It is noteworthy to mention that this difference is especially apparent for non-academic higher education (33 per cent versus 20 per cent).

3 This category also comprises young people who had completed the 6th year vocational secondary education, and who – strictly speaking – have no diploma but a certificate of secondary education (to obtain this diploma they are required to follow a 7th year).

Table 3: Attained educational level at the age of 26

	<i>Boys</i>	<i>Girls</i>	<i>Total</i>
<i>Secondary education not completed</i>	17,9%	11,8%	14,8%
<i>Maximum diploma or certificate secondary education</i>	27,2%	21,5%	24,4%
<i>Started in higher education, but not (yet) finished with a diploma or certificate</i>	16,4%	13,2%	14,8%
<i>Diploma higher education of 1 cycle</i>	19,6%	33,4%	26,4%
<i>Diploma higher academic⁴ education</i>	19,0%	20,0%	19,5%
<i>Total</i>	100,0%	100,0%	100,0%

Weighted SONAR-data: C76(26), N=2049

It is obvious that girls made up their arrears in education, if they have not even surpassed the boys. They repeat their years less often and because of this, fewer girls than boys lag behind. Girls less frequently drop out of secondary education without a degree, they participate in higher education more often and generally have a higher educational level at the age of 26 than boys. In the next section we focus on the transition from school to work to find out whether the better performances of girls in school and their higher educational levels are also translated in better positions in the labour market.

2 Labour market entry

2.1 Finding work?

Young people are assumed to enter the labour market and look for a job as soon as they leave school. Table 4 gives an overview of whether or not boys and girls have a job, or still go to school at the age of 26.

Table 4: Activity at the age of 26 (in %)

	<i>Working⁵</i>			<i>Non-working⁶</i>			<i>Studying</i>		
	<i>Boys</i>	<i>Girls</i>	<i>Total</i>	<i>Boys</i>	<i>Girls</i>	<i>Total</i>	<i>Boys</i>	<i>Girls</i>	<i>Total</i>
<i>No diploma</i>	80,3	60,0	72,5	17,4	40,0	26,1	2,3	0,0	1,4
<i>Secondary education</i>	88,5	78,2	84,0	9,8	16,7	12,9	1,7	5,1	3,2
<i>Higher education of 1 cycle</i>	92,1	91,4	91,7	5,4	8,0	7,0	2,5	0,6	1,3
<i>Academic education</i>	91,4	87,6	89,5	7,1	7,9	7,5	1,5	4,5	3,0
<i>Total</i>	87,8	81,8	84,9	10,3	15,5	12,9	1,9	2,7	2,3

Weighted SONAR-data: C76(26), N=2060

Among 26-year olds, studying at this age is rather rare. While 16 per cent of young people still study at the age of 23, this is only 2 per cent three years later. Approximately 85 per cent of the 26-year olds work while 13 per cent do not work. Table 4 clearly marks that more men than women have a paid job (88 and 82 per cent respectively). For men, but especially for women, we can see that the proportion of workers increases with educational attainment. Except for respondents who completed university, higher educated people tend

4 This category comprises both higher education at a college ('hogeschool') of two cycles as well as education at a university.

5 'Workers' are considered to be those with a paid job of at least one working hour a week during at least two weeks.

6 'Non-workers' refers to unemployed and non-active people.

to find a job much more easily. At all educational levels except for those who finished higher education of one cycle, the activity rate is somewhat lower for women than for men. These gender differences are particularly strong for the lower-educated respondents, while rather small for the higher-educated respondents.

2.2 Job characteristics⁷

Having or not having a job gives us an indication of labour market opportunities, but it is also worthwhile to take the quality of the job into account. By looking at a few objective job characteristics – monthly wage, full-time or part-time position and permanent or temporary contract – we notice that men have a better position on the labour market than women⁸ (see table 5). In the first job as well as the job at age 23 (in some cases this is the first job) as well as the job at age 26, men have a higher monthly wage than women, despite having an in general lower educational level. While the average wage increases with age, the gender gap remains at the same level. Women earn about 90 per cent of the wage of men. We also find that women are less employed with permanent labour contracts and work in part-time positions more often (which explains a part of the wage gap, see further).

Table 5: Job characteristics by sex

	<i>First job</i> *		<i>Job at the age of 23</i> **		<i>Job at the age of 26</i> ***	
	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Women</i>
Monthly wage (in euro)	992,0	889,2	1030,4	936	1185,9	1051,9
Full-time position	92,1%	76,8%	94,8%	77,0%	96,0%	81,0%
Permanent contract	47,9%	39,2%	73,9%	58,4%	86,0%	74,9%

All men-women differences are significant at 0,001 level.

Source:

° Pooled, weighted SONAR-data: C76(23), C78(23), C80(23) , $N=6822$

°° Weighted SONAR-data: C76(23), $N=2341$

°°° Weighted SONAR-data: C76(26), $N=1882$

The gender gap with regard to wage and having a full-time or a part-time position is mainly situated among the lower-educated. The difference between higher-educated men and women is smaller, but remains substantial (see table 6). Gender differences in whether or not being employed with a permanent contract are relatively stable.

7 Our analysis was limited to respondents with paid jobs of at least one hour per week during at least a month. For the first job these job characteristics refer to the beginning of this job, while for the jobs at age 23 and at age 26 these characteristics refer to job characteristics at the moment of the survey or if the respondent was not working at that time to the situation at the end of the last job the respondent had before the survey.

8 In this paper we focus on objective job characteristics. In previous reports (Belet & Laurijssen, 2002; Belet, Glorieux & Laurijssen, 2004) we have already shown that men also do better with regard to other job characteristics.

Table 6: Job characteristics at the age of 26 by sex and educational attainment: averages

	Wage		Full-time position		Permanent contract	
	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Women</i>	<i>Men</i>	<i>Women</i>
<i>No diploma</i>	1108,5	806,9	99,6%	59,5%	84,6%	76,3%
<i>Secondary education</i>	1130,6	918,1	94,9%	75,0%	90,5%	77,3%
<i>Higher education of 1 cycle</i>	1225,5	1124,5	96,0%	89,9%	83,1%	74,6%
<i>Academic education</i>	1354,9	1281,1	94,1%	87,5%	80,6%	71,0%
Total	1185,9	1051,9	96,0%	81,0%	86,0%	74,9%

All men-women differences are significant at 0,001 level.

Source: weighted SONAR-data: C76(26), $N=1882$

While women perform well during their educational careers, they do not perform as well on the labour market. The transition from school to work progresses less smoothly for women than for men. Our analyses have shown that the activity rate at the age of 26 is lower for women than for men. Once working, women more frequently end up in jobs where they earn less, they are more often employed in part-time positions and with a temporary labour contract.

3 Male and female fields of study: gendered acquisition of skills and competences

Data presented in the previous sections clearly indicate that something odd is happening in the transition from school to work, as the gender differences in educational performance seem to shift when entering the labour market. An explanation for this could be that this shift is the result of the acquisition of the ‘wrong’ skills and competences by girls during their (successful) educational career.

According to the theory of human capital (Becker, 1964) an investment in education increases someone’s productive capacity, which in turn increases their labour market income. People are seen as rational actors who want to maximise their lifetime outcome by investing in the augmentation of their own productive capacities. In other words, people invest in education in order to obtain certain skills and competences that are valuable on the labour market and expect this investment returned in their future professional career. According to this theory persons with a high educational attainment are characterized by a higher productivity and employers are, thus, willing to pay higher wages to these potential employees. Following this line of thought, a large body of research has emerged. As a result, the effect of educational *level* on labour market outcomes of young people is well documented. Scientific attention for the specific effect of fields of study, regardless of educational level, however, only emerged at the end of the 1980s. The concept of human capital was re-addressed. While the first approach only considers the effect of the *amount* of human capital on labour market outcomes, the latter focuses on the effect of the specific *type* of human capital. Van der Velden & Wolbers (2000) have argued that by not looking at subject choice, an important aspect of the effect of education on labour market outcomes is missed, resulting into the frequent underestimation of this effect.

Since different subject choices lead to the acquisition of different skills and competences we can assume that not all fields of studies (from the same educational level) are equally appreciated on the labour market and thus give way to different labour market outcomes. It is obvious that not all classes teach students the same skills. The fields of study students follow during their education greatly affects the skills and competences these students have when they graduate and enter the labour market. These taught abilities determine to a certain extent the labour market opportunities of young people since employers are more likely to hire potential employees that already possess certain skills needed for the job than jobseekers whose skills do not match the kind of work to be done and who would require a more intensive training.

In recent years, a lot of research was done on the relation between the subject choice of young people during their education on the one side and labour market outcomes (mainly wage differences) on the other side. For example, a study by Finnie and Frenette (2003) came to the conclusion that the choice for certain majors in Canadian colleges was more beneficial for later labour market outcomes than other fields of study. Both men

and women with a degree in health care, engineering and computer science, commerce and mathematics/physics have higher earnings than graduates in arts and humanities, education and social sciences. Findings from other studies (for example Daymont & Andrisani, 1984; Altonji, 1994; Dronkers & Bros, 1995) support the hypothesis that the subject choice has an important influence on future wages and job status. A recent Dutch study (van de Werfhorst, 2002) has also shown more specifically that the different skills and competences acquired in different fields of study have a positive impact on the wages, but only in jobs that match the scope of these studies.

It is not easy to construct a good classification of fields of study that is independent of educational level. The classification we used for our analyses is based on the ISCED-classification of study fields from Unesco (1997), that was later broadened in depth by CEDEFOP (Andersson & Olsson, 1999). The main advantage of this classification is that it distinguishes educational disciplines into coherent fields of study that are independent from educational level. The ISCED-classification distinguishes 25 fields of study that are merged together into nine broad categories of study domains. In our analyses we use a variant of this classification with five fields of study and one ‘other’ category (see table 9)⁹. Based on the discipline the respondents were in when obtaining their highest degree, every respondent was assigned to one of these fields of study.¹⁰

Table 7: Overview of the different fields of study

<i>Name</i>	<i>Examples</i>
Education	Teacher training, pedagogy, ...
Arts, humanities & social sciences	Languages, audio-visual techniques, fine arts, theatre, graphic design, jewellery, history, psychology, journalism, ...
Business & law	Business administration, retailing, marketing, accounting, administrative and secretarial services, insurance, law, ...
Technical studies & science	Electricity, automotive engineering, bakery, shipbuilding, shoemaking, woodwork, building construction, computer science, biology, industrial engineer, architect, agriculture, veterinary, ...
Health, welfare & services	Medicine, nursing, physiotherapy, child care, social work, hairdressing, hotel services, tourism, domestic science, transport services, police work, ...
<i>Other</i>	<i>General programmes, unknown programmes</i>

Although this classification was not designed to make a distinction between male and female fields of study – and can definitely be refined in this respect – we find significant gender differences in the distribution of fields of study.

9 In order to obtain groups that are large enough the study domains ‘Science’, ‘Engineering, manufacturing & construction’ and ‘Agriculture’ were merged. The same happened for the domains ‘Health & Welfare’ and ‘Services’. The component ‘Social Sciences’ was separated from ‘Business & Law’ and attached to ‘Humanities & Art’.

10 This means the field of study in higher education if the respondent graduated from higher education. If this was not the case, we looked at the (last) field of study the respondent was in during full-time secondary education. For respondents that did not obtain a diploma or certificate of secondary schooling, but did in part-time secondary schooling, the field of study during part-time secondary schooling was given priority.

Table 8: Distribution of fields of study by sex (at the age of 26)

	<i>Men</i>	<i>Women</i>	<i>N</i>
<i>Education</i>	26,2%	73,8%	145
<i>Arts, humanities & social sciences</i>	43,2%	56,8%	192
<i>Business & law</i>	41,3%	58,7%	416
<i>Technical studies & science</i>	82,3%	17,7%	622
<i>Health, welfare & services</i>	22,9%	77,1%	419
<i>Rest</i>	57,1%	42,9%	266

Source: weighted SONAR-data: C76(26), *N*=2060

Table 10 shows that men are overrepresented in ‘technical studies & science’ (82 per cent), while women are overrepresented in the fields of ‘health, welfare & services’ (77 per cent) and education (74 per cent). Several recent studies have documented a similar gendered subject choice (e.g. Van Aerschot, Hermans & Verhoeven, 2004; Smyth, 2003; Finnie & Frenette, 2003; Joy, 2000; Sociaal en Cultureel Planbureau, 1998; van der Lippe & van Doorne-Huiskes, 1995): boys more frequently choose for technical and scientific disciplines, while girls are more inclined to choose medical, social and educational disciplines. Two remarks are important here. First, the gender differences on subject choice seem to have diminished over the past decades (Sociaal en Cultureel Planbureau, 1998; van der Lippe & van Doorne-Huiskes, 1995). Secondly, not all groups of girls seem to choose a typical ‘female discipline’ to the same extent. Research by Dryler (1998) concludes that children from higher social backgrounds are more inclined to make ‘atypical’ subject choices than the ones from lower social backgrounds.

Explanations for the gender differences typically centre on traditional gender socialization. The perceptions boys and girls have about certain educational disciplines and their own capabilities play an important role in this gendered subject choice. Boys perceive the typical ‘female disciplines’ as rather boring, while they find the ‘male disciplines’ interesting. Girls, on the other hand, perceive the ‘male disciplines’ as rather difficult and the ‘female disciplines’ as easy. Furthermore, gender differences on career aspirations exist. Boys hope to end up in more technical jobs and feel that making a lot of money is important in selecting a job or career. Girls on the other hand value the monetary return less and would like to have a job where they can help others and where they can work with people rather than things (Daymont & Andrisani, 1984; Davies & Guppy, 1997; Colley, 1998). Elchardus, Huysseune & Scheys (1992) argue that the differences in subject choice between men and women are relatively stable because they are based on a specific cultural encoding of ‘masculinity’ and ‘femininity’ in terms of an ‘external’ versus an ‘internal’ orientation. As a result of their ‘natural’ connection with children (through childbearing) the female role is more aimed towards the internal family life, and more specifically towards the upbringing of children and household work, while the traditional male role is embedded in the external (professional) life and the income he gathers there to provide for his family (Parsons, 1956). Because of this, men would be inclined to choose the more ‘external-oriented’ disciplines – aimed at the control of the natural environment – and women the more ‘internal-oriented’ disciplines – aimed at ‘the construction of culture’ and the regulation of human behaviour and social interaction. As a result of these different socialization processes of men and women, both sexes acquire different types of skills: women develop better non-market skills, while men develop better market skills. Because men and women choose different subjects during their education we can assume that they acquire different skills and competences. Since not all skills are equally rewarded on the labour market, it is possible that the backward labour market position of women can thus be attributed to these different subject choices: by choosing the ‘wrong’ study disciplines women curtail their labour market opportunities. The results of international studies testing this hypothesis are not unambiguous. While Joy (2000) found that the gendered subject choice hardly has any influence on labour market gender differences, other studies (for example Gerhart, 1990; Marini & Fan, 1997; Brown & Corcoran, 1997; Davies & Guppy, 1997; Kalmijn & van der Lippe, 1997) concluded that this choice explains a rather large part of the gender gap in salary. In Flanders this hypothesis was tested by Elchardus, Huysseune & Scheys (1992). Their analyses indicate that the gendered subject choice is very disadvantageous for women: by disproportionately choosing ‘internal-oriented’ disciplines, women also choose disciplines that lead to professions with lower labour market opportunities. So they come to the conclusion that gender roles, through the gendered choice for certain fields of study, offer a partial explanation for gender differences on the labour market.

Another often heard explanation for gendered subject choice is that boys and girls choose different fields of study because they have different ‘life plans’ (for example Jonsson, 1999). Girls would anticipate their role as being responsible for the family and thus choose disciplines that lead to professions where they can combine their future professional and family career more easily. So before we test the hypothesis that subject choice influences the gender gap on the labour market, we first focus on the differences between men and women with regard to family formation.

4 Gender differences in family formation

Previous analyses (Belet, Glorieux & Laurijssen, 2004) have shown that gender differences in the pace of family formation play an important role in explaining the disadvantaged position of women on labour market entry. In this section we present some evidence about differences in family formation between women and men. In the last section of this paper we examine to what extent the backward position of women in the labour market can be explained by their earlier involvement in family formation.

Young men and women differ significantly in family formation at the age of 23 as well as at the age of 26. Almost one out of three (30 per cent) young adults cohabit with a partner – married or unmarried – at the age of 23. Women live in couples more than men: almost 40 per cent of the women compared to only 20 per cent of the men. At the age of 26 this gender difference remains despite the doubling of the number of young adults cohabiting: more than two out of three women live with a partner compared to only half of the men.

Looking at the timing of first-time cohabitation, women start cohabiting with a partner at an earlier age than men, and sooner after leaving school. At each educational level women are living in couples more than men. This does not mean, however, that there are no differences in cohabiting by educational attainment. Young adults with higher educational qualifications are less frequently living as a couple. This is very obvious at the age of 23, but also noticeable at the age of 26 (see table 7). This can be attributed to the age one leaves school since our analyses have shown that the timing of leaving the parental home does not seem to differ much when the duration is expressed as the time since leaving school.

Table 9: Cohabitation with a partner at the age of 26 by educational attainment

	<i>Men</i>	<i>Women</i>	<i>Sign.</i>	<i>Total</i>
<i>No diploma</i>	56,5%	81,9%	***	66,3%
<i>Secondary education</i>	51,2%	68,2%	***	58,6%
<i>Higher education of 1 cycle</i>	47,7%	65,6%	***	59,0%
<i>Academic education</i>	47,4%	62,4%	*	55,1%
<i>Total</i>	50,9%	67,9%	***	59,3%

Levels of significance: *** $p < 0,001$, * $p < 0,05$

Source: Weighted SONAR-data: C76(26), $N=2032$

Women also have their first child at an earlier age than men. Almost 10 per cent of the respondents have one or more children at the age of 23. Women of this age are almost three times more likely to have children than men (14 per cent compared to 5 per cent). Having children is more prevalent among the less educated, especially among women with low qualifications. More than half of the women (53 per cent) without a diploma of secondary education have a child at the age of 23, while motherhood is an exception for higher-educated 23-year old women¹¹.

At the age of 26, parenthood is more common among Flemish youngsters than at the age of 23: about a quarter of them have children (see table 8). The gender difference remains spectacular: 33 per cent of the women are mothers at 26, while only 16 per cent of the men are fathers at that age.

11 Only about 1 per cent of men and women with a diploma of higher education have children at the age of 23.

Table 10: Having children at the age of 26 by educational attainment

	<i>Men</i>	<i>Women</i>	<i>Sign.</i>	<i>Total</i>
<i>No diploma</i>	28,6%	69,7%	***	44,7%
<i>Secondary education</i>	20,1%	45,6%	***	31,3%
<i>Higher education of 1 cycle</i>	5,9%	21,8%	***	15,9%
<i>Academic education</i>	4,6%	7,9%		6,3%
<i>Total</i>	16,1%	33,0%	***	24,5%

Levels of significance: *** $p < 0,001$

Source: Weighted SONAR-data: C76(26), N=2051

Both for men and women, there is a strong association between their age at the birth of their first child and their educational level. This could well be because the more highly educated leave the educational system at an older age. But this does not seem to be the case, because the timing of having the first child *after having left school* also increases with the educational level. So the more highly educated postpone having children longer, whereas the less educated start having children much more rapidly after leaving school. At all educational levels women have children earlier than men, but for 26-year old graduates from higher academic education this gender difference is not statistically significant.

From the evidence presented, we can conclude that women start family formation earlier. They leave the parental home to cohabitate sooner than men and start having children much sooner as well, both with reference to their age at these events and to the duration since leaving school. Our finding that women start family formation at an earlier age than men fits with the results from previous Belgian research (e.g. Cliquet & Callens, 1993; Iacovou & Berthoud, 2001). It is also clear that the association of family formation with the educational level is stronger for women than men. Living with a partner and having children is more prevalent among young adults with relatively low educational qualifications, and is most prevalent among young women with poor qualifications.

These different family formation processes might explain why women, who in general perform better than men during their educational career, are characterized by lower labour market outcomes. Several studies (e.g. Tijdens & de Ru, 1988; Peters & du Bois-Reymond, 1990; Gaskell, 1992; van der Lippe & van Doorne-Huiskes, 1995; Carrier, 1995; Waldfogel, 1997; Dykstra & Fokkema, 2000; Mason & Goulden, 2004) concluded that family formation hinders women with regard to the development of a successful professional career. Mothers are less frequently employed, work in part-time positions more often, have in general a job with less status, have a lower income, and feel less committed to their job than other women. Often the focus of these studies is on the negative effects of a 'career break'. Dutch studies (Tijdens & de Ru, 1988; van der Lippe & van Doorne-Huiskes, 1995) have demonstrated that most women leave the labour market to take care of family duties at least once during their lifetime and that this retreat is very detrimental for the future development of their professional career. After this retreat, women have a lower chance of finding a job and if they do find a job they often have to work under harsher working conditions, in lower positions or only part-time. According to Waldfogel (1997) the negative influence of family formation did not decline the past years, but got even stronger. This influence varies strongly by sex. While family formation negatively affects the labour market opportunities of women, it has little or no effect on these opportunities for men (see e.g. Dykstra & Fokkema, 2000; Mortelmans, Van Ourti & Verstreken, 2002).

5 The role of subject choice and family formation?

In this section we analyse to what extent both the graduation from different fields of study as well as the different pace of family formation can explain the different labour market position of men and women. These analyses will be limited to job characteristics at the age of 26¹². Using multivariate analyses we tested which effects are statistically significant, and which effects differ for men and women. Both logistic regression as well as ANOVA-variance analyses were applied¹³. A summary of the effects can be found in the table below. In order to interpret the acquired results, the effects from the variance analysis models are graphically illustrated in the following figures.¹⁴

Table 11: Overview of statistical models for the explanation of job characteristics

	<i>Temporary</i>			<i>Part-time</i>			<i>Earnings</i>			
	Log.	Var.	Eta	Log.	Var.	Eta	Var.	Eta	Var.	Eta
Sex	***	***	0,09	***	***	0,20	***	0,15	***	0,14
Field of study	***	***	0,30	***	***	0,15	***	0,15	***	0,11
Family type	*	*	0,07		**	0,09		0,03		0,02
Diploma ¹⁵			0,02		**	0,08	***	0,32	***	0,31
Sex * diploma	-	-	-	***	***	0,13	**	0,08	-	-
Sex * family type	-	-	-		***	0,09	***	0,11	***	0,09
Full-time / Part-time	-	-	-	-	-	-	-	-	***	0,33
R ²	0,15	0,11		0,20	0,12		0,17		0,26	

Log.: logistic regression; Var.: variance (anova) analysis; Eta: partial eta

R²: logistic regression: Nagelkerke; Anova analysis: adjusted.

Levels of significance: *** $p < 0,001$; ** $p < 0,01$; * $p < 0,05$

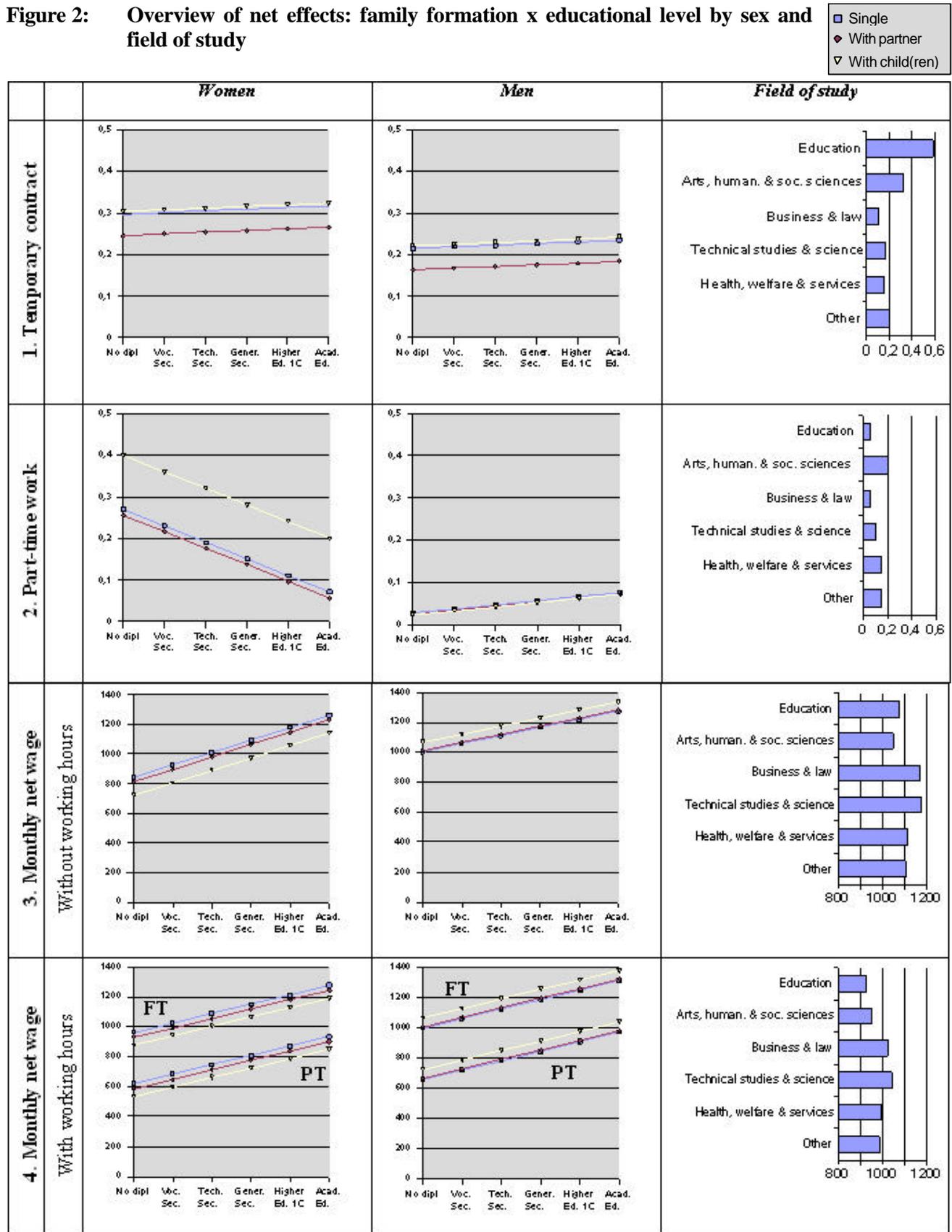
12 Using these job characteristics is preferred over the ones at the age of 23 or the first job because of two reasons. First, it allows us to study the impact of family formation better since the group of respondents that has children or is living in a couple at the age of 23 is very selective, while the group that has started family formation is larger at the age of 26. Second, also labour market participation is distributed more equally over the population at the age of 26, while at the age of 23 a rather large group is still studying.

13 In fact ANOVA is not really suitable for binary dependents (this is the case with part-time/full-time position and temporary/permanent contract). The results of these analyses, however, did not differ greatly from the results of the logistic regression analyses: only the statistical significance of some of the effects are less strong using logistic regression. In case of doubt with regard to what interaction effects to incorporate, we gave priority to the logistic regression indications. The correspondence in predicted values between both techniques of analysis is strong, with Pearson correlation coefficients of 0,994 and 0,965 for temporary contract and part-time position respectively. The main advantage of using the ANOVA-results in the illustrations is the comparability with the results concerning the net wages.

14 The mean predicted values in the illustrations are the ones that are calculated with ANOVA. These are estimated marginal means, thus illustrating the effects after control for other effects. For the illustrations with regard to 'men' and 'women' this means, for example, the mean of the different categories of the fields of study (hereby assuming an equal distribution). The means for the different fields of study assume an equal distribution over family formation types (and possibly full-time/part-time position) and an average educational level.

15 In our analyses we used a ranking of educational attainment levels, from respondents without a diploma high school diploma to respondents with a degree in higher academic education. Within the group of respondents with a diploma of secondary education, we made a distinction between a diploma from each of the three main types and ranked them accordingly: general secondary education (regularly considered the 'highest' type), technical secondary education and vocational secondary education (generally considered the 'lowest' type).

Figure 2: Overview of net effects: family formation x educational level by sex and field of study



5.1 Temporary contract

More women than men are employed with a temporary contract: at the age of 26 this is the case for 14 per cent of the men compared to 25 per cent of the women. Whether or not young people are employed with a temporary contract is greatly influenced by subject choice during their education and this can then mainly be attributed to the high proportion of respondents with 'education' as field of study who are not (yet) employed with a permanent contract. About 60 per cent of both men as well as women that studied 'education' have a temporary contract. The difference between men and women can thus partially be attributed to the fact that women choose the subject 'education' much more often than men (see earlier).

The influence of family formation on working with a temporary contract is also statistically significant, but rather small. Single people and parents are more often employed with this kind of contract than young people cohabitating without children. The effect of educational level seems to be slightly positive, but it is not statistically significant.

Comparing men and women in figure 2.1 we detect that men are always less often employed with a temporary contract than women, even if we take into account the different family formation and subject choice (the level of the lines is, regardless of educational level, higher for women than for men).

5.2 Full-time/part-time position

Almost all men (96 per cent) work full-time at the age of 26, so there is not a lot of variance to explain. Neither educational level nor family formation has a significant effect on whether men work part-time or not.

The field of study, however, does have an effect and this both for men as well as for women. A higher proportion of part-time workers can be found among 'arts, humanities & social sciences' (15 per cent of the men and 25 per cent of the women from this field are employed with a part-time contract) and to a slightly lesser degree in the field 'health, welfare & services'. Probably it is no coincidence that these are fields of study that (still) lead to female labour market sectors, where the possibilities for part-time work are higher.

In contrast to the men, educational level and family formation, next to field of study, do have an important effect on part-time work for women. The strength of the influence of educational attainment and family formation is pretty much equal. The strong effect of educational level can be deduced from the sharp descending lines in figure 2.2: the likelihood of part-time work decreases with educational attainment. The highest proportion of part-time work can be found among women without a diploma and to a lesser extent among women with only a diploma of secondary schooling (approximately 1/3 and 1/4 respectively), while only 10 to 15 per cent of the higher educated women work part-time. Figure 2.2 also demonstrates the large proportion of part-time working mothers (the top line). Compared to single and cohabitating women without children (the bottom lines) these women are, regardless of educational attainment, more often employed in part-time work at the age of 26.

We can conclude that educational attainment, field of study and family formation influence whether women work full-time or part-time, and this affects their future labour market opportunities and income. This is not the case for men, for them part-time work is an exception. Consequently obtaining a diploma or having children hardly makes a difference with regard to part-time work. It is also important to point out that there are only limited gender differences in part-time work among higher educated men and women without children; after controlling for the different effects, the largest gender gap is still situated among the lower educated young adults.

5.3 Monthly net wages

From the first job on, women have in general a lower income than men and this on all educational levels. On the whole, women earn an average of approximately 100 euro per month less than men during the first job. At the age of 26 this wage gap has increased to 134 euro per month.

Educational attainment has the strongest effect on the income of young people. This, however, does not explain the wage gap between the two sexes since women are generally better-educated than men. Controlling for educational attainment the wage gap only widens: an average of 154 euro per month. We do find a linear decrease of the wage gap with a higher educational level: from a gender gap of more than 300 euro among 26-year olds without a diploma to approximately 70 euro per month for university graduates. Like in part-time work, the differences among higher educated men and women are rather limited, while the gender gap is much larger for the lower educated young adults. Can this wage gap be explained by family formation and subject choice?

For men as well as for women, there is a noticeable effect of family formation and subject choice on the monthly net income. These two effects explain about an equal amount of the wage gap at the age of 26. The effect of subject choice is similar for men and women: the 'male' field of study ('technical studies & science') generally leads to a high-income job, while the lowest earning fields are the more 'female' fields (especially 'education' and 'arts, humanities & social sciences'). Family formation, however, affects men and women differently. Mothers have lower earnings than other women, while fathers make slightly more money than the other men. Also cohabitation (without children) has a negative effect on earnings for women, but not for men. It seems like women are being punished for family formation while men are not.

Of course the influence of working hours (full-time or part-time employment) is also important and explains a part of the differences between men and women (women are employed in part-time positions considerably more often than men). The effect of family formation and subject choice decreases sharply when the distribution of full-time/part-time work is held constant, since whether or not working part-time is, for women, strongly associated with having children and field of study. Still, the influences of family formation (only for women) and subject choice on monthly earnings remain substantial. Remarkable is that controlling for working hours explains the differential effect of educational attainment. The largest gender gap in wages is situated among the lower educated respondents, but this is solely because lower-educated women are much more often employed part-time. Taking working hours into account, the differences in effects on wages between the different subjects decrease a little. This, however, does not significantly alter the relative effects of these subjects.

All in all subject choice and family formation explain a part of the wage gap between men and women, even though the amount of working hours especially also plays an important role. After controlling for these factors, together with educational attainment, a wage gap of 85 euro net per month remains (this is still 60 per cent of the original wage gap).

6 Conclusion and discussion

The analyses for each of the three studied job characteristics lead to slightly different explanations for the differences between men and women.

With regard to working with a permanent contract at the age of 26, subject choice is the most important explaining factor: men and women with schooling in 'education' are more often employed with a temporary contract than with a permanent contract. The gender difference can thus be largely attributed to the overrepresentation of women in this field of study. Family formation also plays a role: having children seems to hinder employment with a permanent contract. This holds true for both men as well as women, but since women have children more often than men at the age of 26, they have lower chances of such a contract. Both elements, subject choice and family formation, contribute to the explanation of the greater job security of men. Nevertheless, a significant gender difference remains after controlling for these factors. This difference, however, seems to be less important and more of a statutory nature.

Part-time work is a very important factor in the subordination of women on the labour market, with probably serious important long term consequences. Working less hours is a woman's thing and strongly associated to having children. An important cause of part-time work of young women is thus situated in the practical organisation of child care. A remarkable conclusion here is that not only lower-educated, but also higher-educated women curtail their professional labour due to having small children. Further longitudinal research of family formation processes could attribute to the interpretation of these results. The role of educational

attainment – whereby lower-educated women work part-time more often than higher-educated women (even after controlling for having children or not) – is probably related to more traditional gender role attitudes about who is responsible for family care and household work. While subject choice and family formation explain a considerable part of the gap in permanent/temporary contracts, other effects seem to play a more important role in the explanation of gender differences in full-time/part-time employment: the need for childcare and traditional gender roles seem to encourage women, but not men, to take on part-time work.

It is logical that monthly wages are to a certain extent dependent on the performed amount of working hours. This explains an important part of the higher income of men. Because women work part-time more often, they earn less in general. If the gender inequality stops here, we can understand it and even partly justify it in the light of the meritocratic ideals. However, a wide gender gap in earnings still remains. The lower rewards associated with the studies that lead to typically female economical sectors, contribute to the explanation of this gap. The gender neutral character of this factor argues against a discrimination perspective: the gender differences regarding monthly income are not so much the result of different rewards for a certain field of study, but rather the result of the choice of large groups of women for subjects that (whether or not justifiable) are not well-appreciated in the labour market. While the effect of subject choice is gender neutral, the same can not be said of the effect of family formation patterns. Our analyses have shown that parenthood has a manifest detrimental influence on wages – but only for women. This differential effect of family formation *and* the lasting gender differences indicate a real subordination of women on the labour market; a subordination that does not fit within our meritocratic ideal of differences that can only be the consequence of ‘achievement’ and not ‘ascription’.

An important conclusion is also that education is rewarding, especially for women. Our analyses have shown that lower-educated women are also among young people the weakest group on the labour market. The job characteristics of higher educated men and women are all in all not very different, at least not at the age of 26. The largest gender gap on the labour market is situated among the lower-educated young adults.

In the past, several policy initiatives have been taken to avoid gender specific subject choices. Since our analyses indicate that gender differences can partially be attributed to the ‘wrong’ subject choice of women, it seems worthwhile to continue these initiatives. A more equal distribution of men and women over the different fields of study would probably reduce the existing gap on the labour market. Equally important, but at least equally difficult, will be to break down the existing traditional gender roles. These roles are not only the foundation of gender specific subject choices, but also of traditional views on the division of tasks within the family. A situation in which a woman goes (back) to work full-time after childbearing while the men cuts back in working hours should be just as normal as the opposite. As long as this is not the case, our meritocratic ideal is not more than that: an ideal, but definitely not reality.

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