

Higher Education & Research

On leaving university, there are more female than male Masters graduates. The professional integration rate, 30 months after graduating, is similar between men and women. However, women experience less favourable employment conditions than their male counterparts. These differences are primarily due to the subject of the Master's degree. In disciplines in which the number of women is the highest, opportunities in the employment market are less favourable. However, in disciplines with fewer women, professional inequalities are significant. In addition, regardless of the discipline, career paths diverge, with more women in employment in the non-profit and public sectors, where pay is usually lower and contracts less stable. For a given discipline, type of employer and sector of activity, inequalities persist, above all with regard to pay, in which the residual difference is the largest, representing two-thirds of the differences noted.

Male/female inequalities in professional integration of Masters graduates

Gendered university paths lead women towards sectors with less favourable opportunities

The results of the national survey on 2012 Masters graduates (excluding teaching graduates) examines professional integration 30 months after graduation. The job integration process during the months following graduation determines the subsequent professional career. In this context, the type of studies that they have followed is essential to understanding the professional career path of men and women. Higher education has different sectors which do not cater for the same types of students. Thus, 50% of students

in preparatory classes for specialist universities (CPGE) are the children of managers and people working in senior intellectual professions, compared to 30% of university students. This type of difference also exists in Bachelor's degree courses, where there is social segmentation and also gender segmentation according to discipline. However, discipline choices have a strong influence on future professional integration.

Continue studying or seek employment? Initial variations according to gender

On average, 58% of 2012 Masters graduates were women (*table 1*). This over-representation of female Masters graduates

TABLE 1 - Rate of continued studies and job integration by men and women per educational discipline (in %)

Discipline	Share of female graduates	Gender	Continued studies	Job integration
Literature-Language-Arts (LLA)	79	F	43	87
		M	47	85
Humanities and Social Sciences (HSS)	71	F	32	87
		M	41	85
Law-Economics-Management (LEM)	61	F	40	91
		M	38	91
Science-Technology-Health (STH)	39	F	43	88
		M	41	91
Average Masters Graduates	58	-	40	89

Interpretation: 32% of female Human and Social Sciences graduates continued studying, compared to 41% of men.

Field: Mainland France + Overseas Territories (excluding teaching Masters)

Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

is particularly dominant in Law-Economics-Management (61%), Literature-Languages-Arts (79%) and Human and Social Sciences (71%). Women are only in a minority in Science-Technology-Health (39%). The differences are even more marked in terms of subject. For example, women account for 89% of Psychology Masters graduates, but only 4% of Electronics graduates.

Once they have been awarded their Masters, graduates have to make a choice between continuing their studies or immediately entering the job market. On average, the rate of graduates continuing their studies after a Masters is equal for men and women (40%), however there are differences according to the discipline. In the more predominantly female disciplines (LLA and HSS), male graduates are more likely to continue studying. The opposite phenomenon occurs in the sectors with fewer women (LEM and STH), to a lesser extent. This memo will examine professional integration by 2012 graduates who

immediately entered the job market and did not continue their studies (*methodology insert*).

Graduates of the disciplines with most women experience more difficult employment conditions

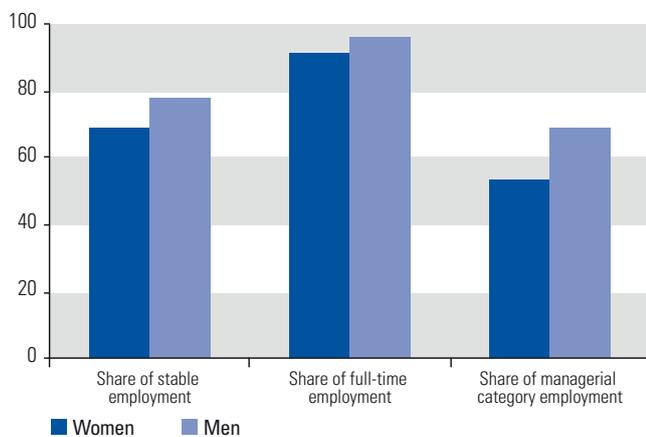
The rate of job integration between women (89%) and men (90%) is similar, 30 months after receiving the Masters degree. However, women experience less favourable employment conditions than their male counterparts. The jobs they hold are less stable and less likely to be full-time or at managerial level (*graph 1A*). In addition, they often earn less pay (*graph 1B*). An initial source for these differences is due to the fact that graduates of the two disciplines with more women (LLA, HSS) experience more difficult employment conditions compared to the two other disciplines (LEM, STH). In other words, women are present in a huge majority in disciplines in which, subsequently, employment

conditions are less favourable. The share of stable employment, for example, reaches 57% for HSS graduates compared to 77% for STH graduates (*table 2*). At the same time, there are significant differences in pay according to Masters discipline, from 310 to 360 euros (in median net monthly salaries).

More gender inequality in disciplines with fewer women

The extent and nature of male/female inequality varies according to the educational discipline. When they graduate in the same educational discipline, men and women do not follow the same career path and obtain different employment conditions and pay. The difference between men and women in obtaining full-time jobs is the greatest among HSS graduates (*table 3*). However, among STH and LEM Masters graduates, there are several other types of inequality: women have less access to stable employment and managerial jobs, and earn less money.

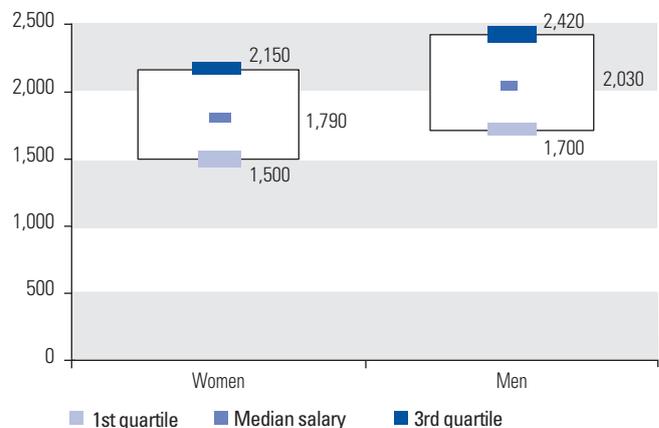
GRAPH 1A - Employment conditions according to gender (in %)



Interpretation: In terms of employment, 78% of men have a stable job compared to 69% of women.

Field: Mainland France + Overseas Territories (excluding teaching Masters)
Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

GRAPH 1B - Net monthly salary according to gender (in euros)



Interpretation: The median net monthly full-time salary for female Masters graduates is €1,790, compared to €2,030 for men.

Field: Mainland France + Overseas Territories (excluding teaching Masters)
Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

TABLE 2 - Employment conditions and pay per discipline and per gender

Discipline	Share of female graduates (in %)	Employment conditions (in %)			Net monthly full-time salaries (in euros)
		Share of stable employment	Share of full-time employment	Share of managerial category employment	Median
Literature-Language-Arts (LLA)	79	65	84	47	1,640
Humanities and Social Sciences (HSS)	71	57	83	58	1,690
Law-Economics-Management (LEM)	61	79	97	56	2,000
Science-Technology-Health (STH)	39	77	96	73	2,000

Field: Mainland France + Overseas Territories (excluding teaching Masters)
Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

TABLEAU 3 - Employment conditions and pay per discipline

Discipline	Gender	Employment conditions (in %)			Net monthly full-time salaries (in euros)		
		Share of stable employment	Share of full-time employment	Share of managerial category employment	1st quartile	Median	3rd quartile
Literature-Language-Arts (LLA)	W	65	84	45	1,370	1,630	1,850
	M	64	84	50	1,400	1,700	2,000
					-2%	-4%	-8%
Humanities and Social Sciences (HSS)	W	56	81	57	1,410	1,640	1,960
	M	59	89	58	1,500	1,800	2,140
					-6%	-9%	-8%
Law-Economics-Management (LEM)	W	77	97	50	1,570	1,900	2,270
	M	82	98	64	1,770	2,130	2,530
					-11%	-11%	-10%
Science-Technology-Health (STH)	W	70	95	62	1,560	1,840	2,200
	M	82	98	79	1,780	2,050	2,400
					-12%	-10%	-8%

N.B.: The largest differences are represented in blue.

Interpretation: An average of 70% of women graduating in Science-Technology-Health are in stable employment, compared to 82% for their male counterparts.

Field: Mainland France + Overseas Territories (excluding teaching Masters)

Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

The disciplines with fewer women are therefore those where gender inequalities are the most marked.

Women are less represented in the private sector where employment conditions are better

Part of the reason for male-female inequality is therefore due to gender differences that can be qualified as educational in origin, as they are related to the subject studied. Other differences are specific to the economic network, in particular the type of employer and the sector of activity in which they operate.

Women are more likely to work in the public or non-profit sector

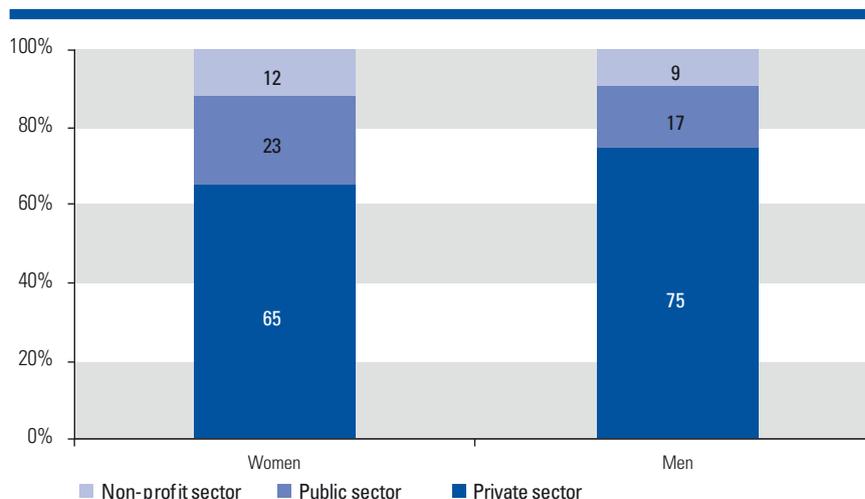
Women are more present in the public sector (23% compared to 17% of men) and the non-profit sector (12% compared to 9%). Men

are more likely to work for private employers (75% compared to 65% for women) (graph 2a).

These differences are noted for each of the four educational disciplines, to variable

extents. Women graduating in STH and HSS are much less likely to work for private employers than men; one female HSS graduate in five works for a non-profit or association (graph 2b).

GRAPH 2A - Breakdown of employers according to gender (in %)

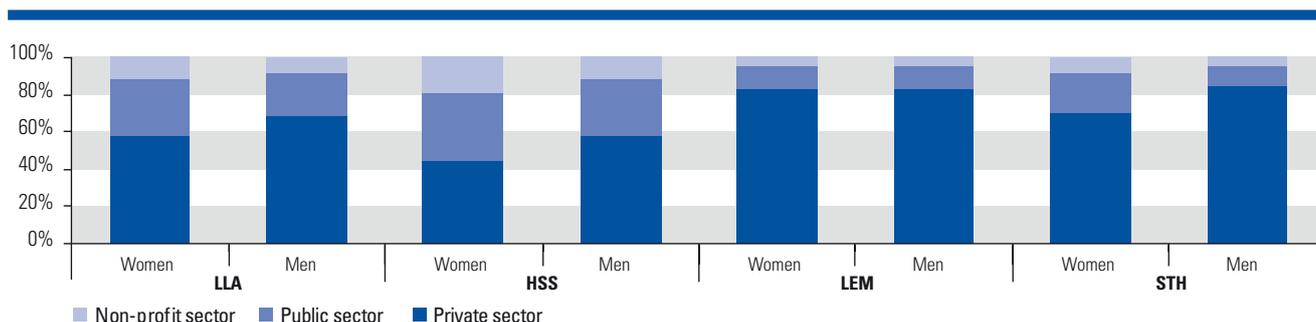


Interpretation: 65% of female graduates in employment work for a private employer, compared to 75% of men.

Field: Mainland France + Overseas Territories (excluding teaching Masters)

Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

GRAPH 2B - Breakdown of employers according to discipline and gender (in %)



Interpretation: The share of female STH Masters graduates working for a private employer is 14 points less than for men.

Field: Mainland France + Overseas Territories (excluding teaching Masters)

Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

The expected correspondence between educational disciplines and the employer's sector of activity is noted less frequently for women than for men. Although many have a Masters in LLA or HSS, women in employment are much less present in the "Information, communication, arts and entertainment" sectors (*graph 3*). STH graduates in employment are much less present in the "Industry, construction, specialist, scientific and technical activities".

Private employers offer better working conditions

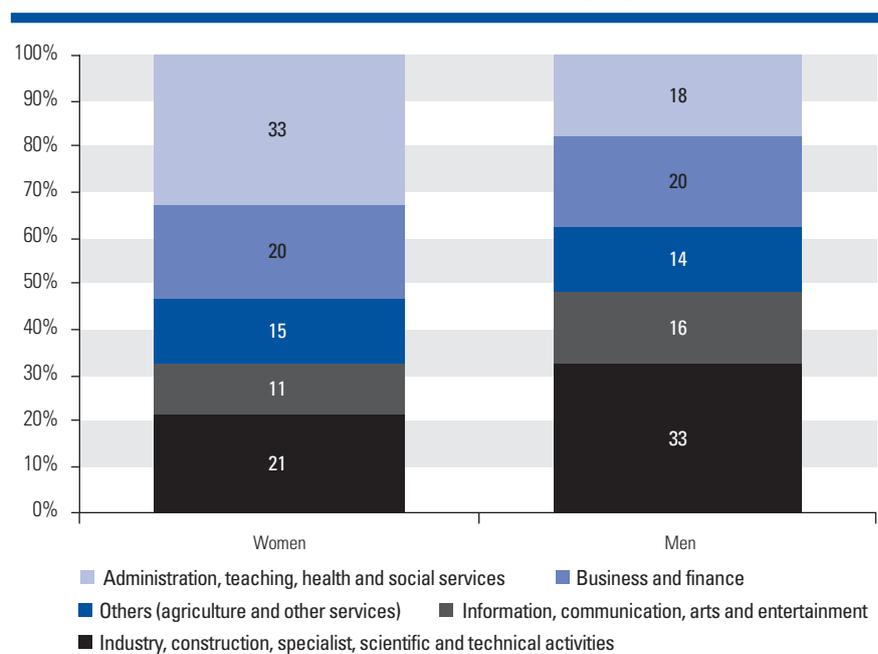
On average, the share of female Masters graduates holding a managerial category job is 62% for private employers and the public sector, but only 42% in the non-profit sector (*table 4*). 83% of privately employed female graduates have a stable job, which is higher than for the public sector (41%) and the non-profit sector (52%). Recruitment of these graduates is most often in the form of a short-term contract, as few are able to pass a public examination within 30 months of graduation. Furthermore, in the public sector and the non-profit sector, full-time jobs are rarer and less well paid. In the private sector, the (median net monthly full-time) salaries of Masters graduates are 330 euros higher than their counterparts working in the public sector (*graph 4*).

The type of employer therefore significantly determines the employment conditions regarding the type of contract offered, the socio-economic category of the job held and the level of income. All the available indicators show that employment conditions 30 months after graduation are more favourable in the private sector.

There are fewer inequalities in the public sector and non-profit sector, and more in the private sector

Women are more likely to work in the public sector and non-profit sector. They are less present in the private sector, where employment conditions are comparatively better, but where inequalities between men and women are greater. In France, these differences between men and women are

GRAPH 3 - Breakdown of the employer's sector of activity according to gender (in %)



Interpretation: 21% of women in employment work in the "Industry, construction, specialist, scientific and technical activities" sector, compared to 33% of men.

Field: Mainland France + Overseas Territories (excluding teaching Masters)

Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

TABLE 4 - Employment conditions per type of employer and gender

	Gender	Share of stable employment	Share of full-time employment	Share of managerial category employment
Private employers	F	67	93	53
	M	86	98	72
Public sector	F	40	88	61
	M	41	91	62
Non-profit sector	F	62	78	41
	M	62	85	44

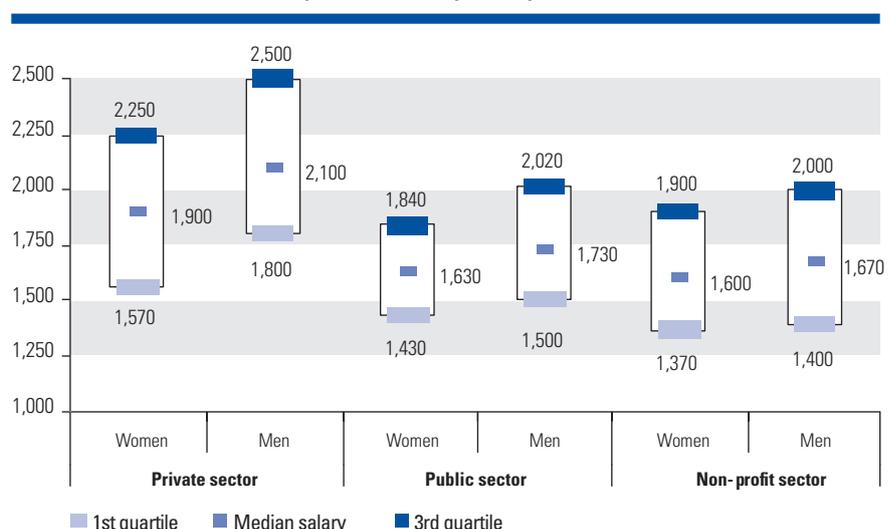
Interpretation: Among graduates employed by a private employer, 72% of men have a managerial category job, 19 points more than for women.

N.B.: The largest differences are represented in blue.

Field: Mainland France + Overseas Territories (excluding teaching Masters)

Source: MENESR-DGESIP/DGRI-SIES Enquête d'insertion professionnelle à 18 et 30 mois des diplômé.e.s de l'université en 2012

GRAPH 4 - Breakdown of salaries per gender and type of employer (in euros)



Interpretation: Among women in employment in the private sector, 50% earn a net full-time salary of over €1,900.

Field: Mainland France + Overseas Territories (excluding teaching Masters)

Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

on average less notable in the public sector (Minni, 2015).

Within the public sector and non-profit sector, the proportion of men and women holding a managerial category job is similar. By contrast, men working in the private sector are more likely to hold managerial category jobs (+19 pts) and stable jobs (+19 pts). Likewise, the median net salary paid to men by private employers is 10% higher than that paid to women, although this difference is only 4% in the non-profit sector.

In certain cases, the male-female differences observed are contingent on the educational discipline. Thus, the share of managerial category jobs is 18 points lower for STH female graduates, and 24 points with regard to the stable employment rate. By contrast, access to stable employment or managerial jobs, for women graduating in LLA or HSS employed in an association or in the public sector, is comparable to that of men.

Regardless of their socio-economic category, women are segregated

Employment conditions vary according to the socio-economic category of the employment. Graduates who state that they are managers are on average more likely to be in stable employment (79% compared to 61% of men and women who state that they are office workers/manual workers). They are more likely to be working full time and earning higher salaries (median net monthly full-time salary 500 euros greater than for the office worker/manual worker category). However, female Masters graduates are more represented in the intermediate and office worker/manual worker categories, in which the terms of employment are not as good. Moreover, the greatest gender differences in pay and access to full-time employment are in the higher socio-economic categories. Pay differences are 5% for office workers/manual workers and 8% for managers (table 5).

A double downgrading is therefore at play. The first is vertical, positioning women in the lower employment categories. The second is horizontal, segregating them within their employment category, even more so when they are in the higher categories.

Persistence of inequalities for the same university and vocational path

Educational paths and professional careers, characterised by the type of employer and sector of activity, seem to be important factors in explaining unequal employment conditions between men and women. But what part do these factors play in inequality? What is the respective influence of each? What is the extent of the residual inequalities observed, in addition to these two factors?

With the same discipline and same employer, women's employment conditions are still worse

To answer these questions, we can look at the employment conditions of Masters graduates according to their gender, at the same time taking into account the diversity of disciplines and jobs declared by the graduates:

- educational characteristics (47 Masters disciplines);
- professional characteristics (7 types of employers and 10 sectors of activity - information declared).

The statistical model used to assess the difference between men and women, while taking into account the differences of structure between disciplines, employers and sectors of activity, is a logistic regression (graph 5A). The net differences in these structural differences correspond to the calculation of "marginal effects" (Afsa, 2016). The average (gross) difference of access to stable employment between men and women is 9 points. Once the dif-

ferent educational and professional characteristics have been taken into account, the net difference is no more than 1 point. Thus, over 85% of the gross difference is explained by the combined effect of the disciplines, type of employer and sector of activity. By contrast, the difference in access to managerial category jobs is only explained to a minor extent by discipline or the type of employer and its sector of activity. The gross difference is 16 points, whereas the net difference is 9 points, after checking the educational and professional characteristics. Discipline, then employer characteristics (types of employer and sectors of activity) are the major determiners in inequality between male and female university Masters graduates, during the process of professional integration. However, even with equivalent employer and discipline specialisation, there is a negative difference in employment conditions for women, not explained by this model. To conclude, the situation in the employment market is more difficult for women due to the combination of three series of factors:

- **Educational segregation:** on their own, the field of study is responsible for two-thirds of the differences between male and female access to stable employment and full-time employment (graph 5B). They are responsible for 29% of differences in access to the highest salaries and one-third of differences in access to managerial category jobs. Disciplines dominated by women offer less good opportunities in the labour market and the employment is of poorer quality.
- **Professional segregation:** with an equivalent discipline, the categories of employer and sectors of activity are responsible for 20% of male/female differences

TABLE 5 - Employment conditions and pay according to socio-economic category and gender

Socio-economic category	Gender	Share of stable employment	Share of full-time employment	Median net monthly full-time salary
		(in %)	(in %)	(in euros)
Executive	F	74	92	2,000
	M	84	97	2,170
Middle manager	F	65	93	1,600
	M	68	95	1,700
Office worker/manual worker	F	61	85	1,470
	M	62	86	1,550

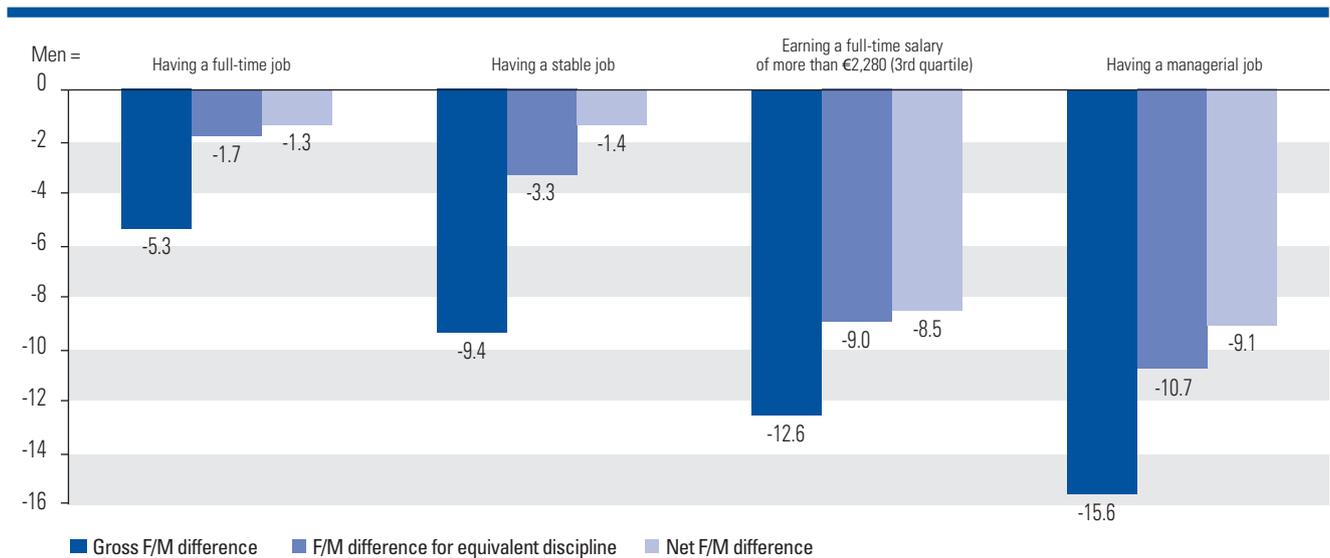
Interpretation: 92% of women in a managerial role work full-time, compared to 97% of men.

N.B.: The largest differences are represented in blue.

Field: Mainland France + Overseas Territories (excluding teaching Masters)

Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

GRAPH 5A - Differences between men and women for different indicators of employment quality (in points)



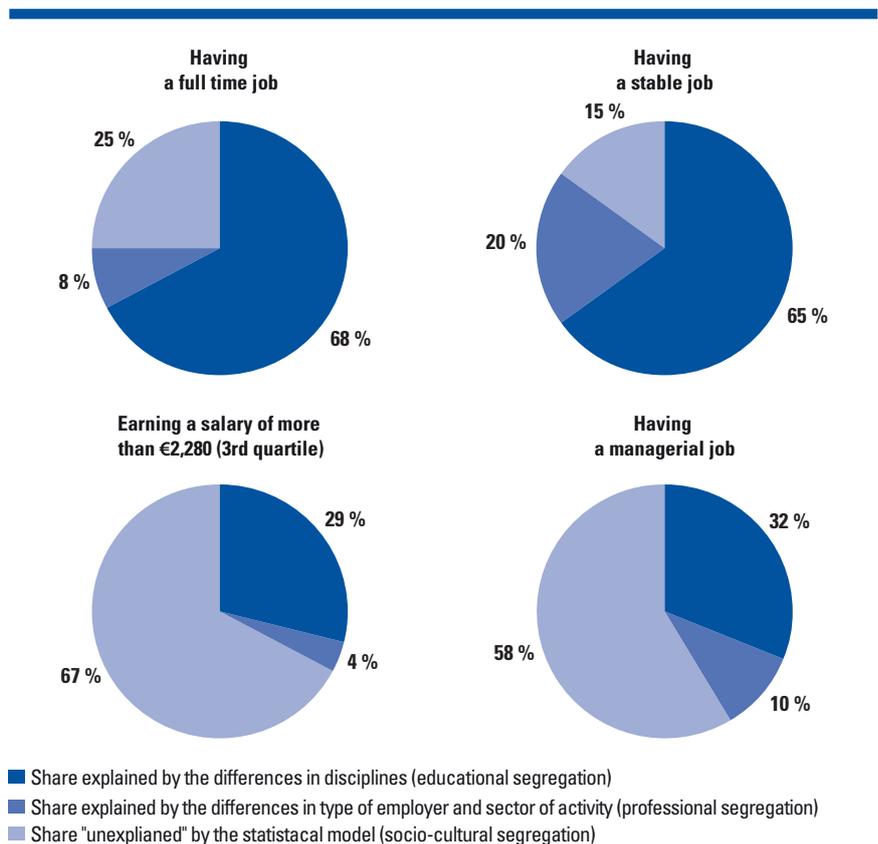
Field: Mainland France + Overseas Territories (excluding teaching Masters)
 Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

in access to stable jobs and 10% of access to managerial jobs. The professional career path towards different sectors or employers according to gender has led to a segregation of graduates (Couppié and Epiphane, 2006).

• **Socio-cultural segregation:** this is the share of inequalities experienced by women that is “unexplained” by the previous factors, i.e. not due to the discipline or type of employer. This segregation accounts for 58% of differences in access to managerial employment and two-thirds of differences in access to the highest salaries. This difference may have its source in various factors: different professions according to gender, due to different preferences, or self-censorship, a devaluation of the skills of female graduates in the employment market, or discriminatory recruitment by employers. Occurring during the first years of employment, these combined phenomena create an immediate situation that is unfavourable to working women, a situation that could be exacerbated during their professional career.

Louis-Alexandre Erb
MENESR DGESIP/DGRI-SIES

GRAPH 5B - Contributions to gross difference in employment quality between men and women



Interpretation: By bringing the gross difference in probability of having a managerial job (15.6 points - see graph 5B) to 100%, the share of this difference due to educational segregation is 31% ((15.6-10.7)/15.6), and the share due to the employer’s characteristics is 10% ((10.7-9.1)/15.6). There is still 58% of difference “not explained” by the model.

Field: Mainland France + Overseas Territories (excluding teaching Masters)
 Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

Female grant-funded graduates: the “double penalty”

The share of Masters graduates who received higher education grants due to social criteria is 29%. This share is 30% for women and 27% for men. The difference varies from 2 to 6 points according to the discipline. Job integration and employment conditions are more difficult for this population.

The job integration rate is 87% for grant-funded graduates compared to 90% for non-grant funded graduates. In employment, they are also less likely to hold a managerial job (-7 points compared to non-grant funded graduates). One-third enter

the public sector and the non-profit sector, compared to one-quarter of non-grant funded graduates. Grant-funded female graduates are less likely to obtain a managerial job (49%) than non-grant funded graduates (56%). This difference is greater than that between grant-funded men (66%) and non-grant funded men (70%).

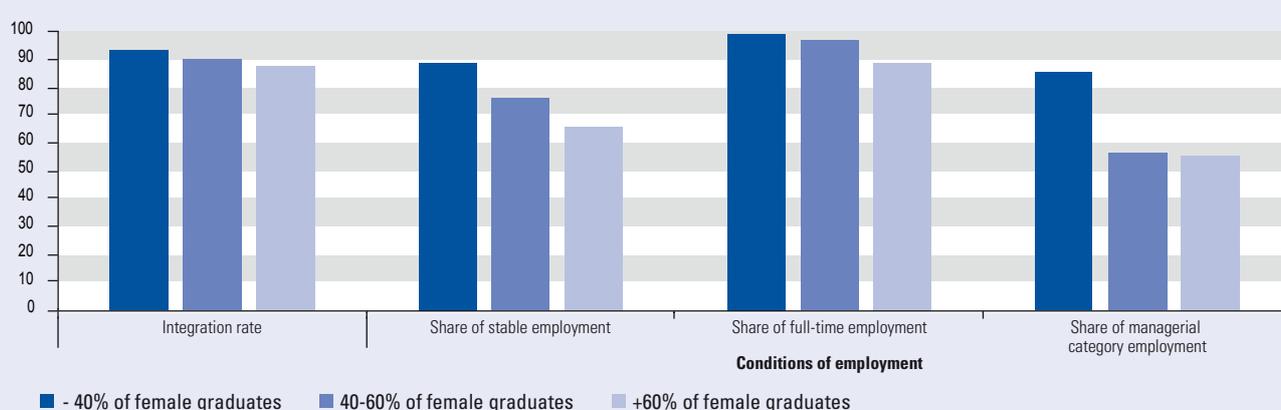
This double phenomenon which works against women is also apparent in terms of access to stable jobs, full-time jobs and pay. Grant-funded women experience two types of segregation, one linked to their gender and the other to their social origin.

Graduates in predominantly feminine disciplines have less opportunities and lower quality jobs

It is possible to distinguish 3 major categories of disciplines according to the share of women graduating in each one. The predominantly masculine group brings together scientific and technical disciplines (mathematics, electronics, IT, etc.). The predominantly feminine group includes a diversity of disciplines that are mostly literary and artistic, or belonging to human and social sciences, but also disciplines such as chemistry (64% women) or life sciences (65%).

In non-diverse disciplines in which women are the majority, the job integration rate is 6 points less than in disciplines where they are in a minority (graph 6). In terms of jobs, the difference in access to managerial jobs is 30 points less in the group of disciplines in which women have the most graduates.

GRAPH 6 - Integration and conditions of employment according to diversity in Masters disciplines (in %)



Interpretation: In the group of disciplines in which men are the majority, the integration rate is 93%, compared to 87% in the predominantly female group.

Field: Mainland France + Overseas Territories (excluding teaching Masters)

Source: MENESR-DGESIP/DGRI-SIES Job integration survey after 18-30 months, 2012 university graduates

Survey methodology and nomenclature

The results of the sixth national survey on professional integration of university graduates were published in December 2015. As part of the inter-ministerial committee for women's rights and gender equality, and the Law of 2013 on higher education and research, for the first time gendered indicators have been published per educational discipline.

The national survey on professional integration of Masters graduates (excluding teaching Masters) gives very precise results per sector and educational discipline at national level and per discipline within an university. Its purpose is to assess the professional situation, 18 and then 30 months after graduating, of French graduates who have completed initial training, and have not continued or resumed their studies within two years of graduation.

The survey provides different types of information:

- indicators on integration and employment conditions;
- declarations on type of employer and the employer's sector of activity;
- original training (4 major disciplines, 53 SISE disciplines);
- social origin and gender (grant due to social criteria, gender).

The integration rate is defined as the net employment rate, i.e. the share of graduates holding a job, regardless of the type of job, out of all the graduates in the employment market (employed or unemployed).

The stable employment rate corresponds to the share of graduates in employment on a permanent contract, employed as a civil servant or a self-employed worker.

The socio-economic category is the result of the graduates' responses on their «level of employment». The answers proposed are adapted from the INSEE's nomenclature on professions and socio-economic categories. They are then grouped into 3 sections.

The sector of activity is adapted from the French industry classification (NAF). The answers are then grouped into 5 sections.

The type of employer is the result of a merger of the 7 answers proposed in the questionnaire to make 3 uniform groups. "Private employers" covers companies (public and private), self-employed people and the liberal professions.

Breakdown of pay is explained in quartiles. These are values which distribute the figures into four equal parts. The **1st quartile** is the figure below which 25% of salaries fall. The 2nd, called the **median**, is the salary which divides the distribution into two equal parts (50% below and 50% above) and the **3rd quartile** is the figure above which 25% of salaries fall.

The control model is logistic regression. The detailed tables are available in the annexes published online on the Ministry's website.

For more information

- Afsa C., "Le modèle Logit : théorie et application" [The Logit model: theory and application], INSEE working document, 2016
- Calmand J. and Epiphane D., "L'insertion professionnelle après des études supérieures : des diplômés plus égaux que d'autres..." [Professional integration after higher education: some degrees are more equal than others...], *Formation emploi*, pp. 11-28, vol. 117, 2012
- Chamkhi A. and Toutlemonde F., "Ségrégation professionnelle et écarts de salaires femmes-hommes" [Professional segregation and pay differences], *Dares Analyses*, n°82, November 2015
- Couppié T. and Epiphane D., "La ségrégation des hommes et des femmes dans les métiers" [Segregation between men and women in employment], *Formation emploi*, n°93, January-March 2006
- Larribeau S., Masclet D. and Peterle E., "Une mesure expérimentale de la discrimination homme-femme à l'embauche" [An experimental measurement of male-female discrimination in recruitment], *Revue d'économie politique*, vol. 123, 2013/3
- Martinelli D. and Minni C., "Fiches thématiques - l'insertion des jeunes" [Topic sheets - youth employment], *Formations et emploi - INSEE Références*, INSEE, pp. 60-84, édition 2013
- Minni C., "Femmes et hommes sur le marché du travail" [Men and women in the job market], *Dares Analyses*, n°17, March 2015
- Peugny C., *Le destin au berceau. Inégalités et reproduction sociale* [Fated from the cradle. Inequalities and social reproduction], Seuil, 2013.
- Rouaud P. and Joseph O., "Quand l'Ecole est finie. Premiers pas dans la vie active" [When school is over. First steps in working life], Céreq, 2014

Sixth national survey on professional integration of 2012 university graduates – MENESR December 2015:
www.enseignementsup-recherche.gouv.fr/pid24624/page.html