From Sciences Po to the ENA, the Narrow Path to the Top of the Public Service

Crossing Gender and Social Background

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June 14, 2023

1. General context
2. From Sciences Po to the ENA
3. The data
4. Descriptive statistics
5. Results
6. Concluding remarks

General context

Diversity and the elite in France

- lack of diversity among the elites (public and private sectors) : gender, social background, ethnicity...

- in France -> key role of the *Grances écoles* (X, HEC, Sciences Po, ENA ...) :
  - main providers of the ruling class (Benveniste, 2021)
  - the recruitment base of the *Grandes écoles* is very narrow (Bonneau, Charousset, Grenet & Thebault, 2021):
    - 2/3 of their students have a high social background
    - 1/3 comes from the Paris region
    - male students represent nearly 60% of this pool of students

Focus on Sciences Po and the ENA

- Women represents around 60% of students in Sciences Po Paris
- Around 70% students who succeed in the ENA entrance examination went through Sciences Po during their studies
- Women represents around 1/3 of the students in the ENA
- Low representation of students with low social background

Objectives of the paper

- analyze the selective mechanisms in the examination entrance in the ENA
- quantify the interaction between gender and social background
- do anonymous tests ensure equal opportunities ?
- how to diversify the senior civil service?

Contribution to the litterature

Inequalities of opportunities in higher education :

- social background -> school achievement, success in selective exams for the most prestigious schools (Fack et Grenet, 2015 ; Guyon et Huillery, 2020 ; Bonneau et al., 2021 ; Oberti, 2013 ; Albouy et Wanecq, 2003; Benveniste, 2021)

- gender bias in educational choices in particular in stem (Porter & Serra, 2020 ; Boring & Brown, 2021) and in terms of outcomes (Azmat, Calsamiglia & Iriberri, 2016)

- few research focus on both social background and gender (Blanchard et al., 2016; Favier, 2020; Bonneau et al., 2021)
  - none with a quantitative approach AND crossing simultaneously these two dimensions

From Sciences Po to the ENA

How integrate the ENA ?

- The **external entrance exam**: for students with a master degree (or equivalent), the most prestigious way to integrate the ENA (49% of the laureates)
- The **internal entrance exam**: for professionals already in the public service (39% of the laureates)
- the **third entrance exam**: for professionals from the private sector and civil society (10% of the laureates)
- the **PhD entrance exam**: (2% of laureates)

The external entrance exam

- Admissibility is the most selective step (1 in 10 students is retained) -> 5 **anonymous** written tests
  - *finances publiques* (coef.3); *droit public* (coef.4); *questions sociales* (coef.4); *questions contemporaines* (coef.4); *économie* (coef.4)

- Admission is less selective (1 person out of 2 is retained) -> 5 oral tests:
  - *questions internationales* (coef.3); *questions européennes* (coef.3); *anglais* (coef.3); *épreuve collective* (coef.4); *entretien individuel* (coef.4)
- Three applications maximum until 2021

The preparatory class of Sciences Po

This track prepares students for several selective exams:

- INSP-ex ENA (+ Talents), INET (+ Talents), EHESP (+ Talents), EN3S, MAE, DGSE, AN, Senat etc..

All students enrolled in a master's degree at Sciences Po have access to this track

- no fees during the master, since 2018 tuition fees have been introduced
- since 2018, students external to Sciences Po can applied for this track

Students in the preparatory class can :

- be enrolled in the PCA several times
- whether or not to apply for the ENA exam at the end of their preparatory year

The data

EGALE research project

EGALE -> *Etude sur le Genre et Analyse Longitudinale des Entrées à l'ENA*

The database matches administrative data from Sciences Po and those from the ENA:

- 5 years of exams from 2016 to 2020
- several entries in the database: individuals/applications and ENA/Sciences Po

Description of the database

From the ENA:

- 7,943 applications (for several types of entrance exams) -> 435 laureates in all ENA entrance processes, 37% of whom are women
- 5,046 applications for the external exam, 39% of whom were women and 37% were Sciences Po students (48% of those present for all written tests)
- 212 in the external entrance, including 33% women and 72% Sciences Po students

From the preparatory class of Sciences Po (PCA):

- 2,951 preparations, 44% of whom are women (for several administrative selective exam) & 2,043 individuals
- 1,854 applications for the ENA external entrance exam, i.e. 63% of PCA students)

Résultats des scpistes

Information available

Socio-demographic information:

- gender
- occupation of both parents -> typology based on the **PCS** of the household is built (following Amossé et al., 2020);
- *CROUS* scholarship -> having received a CROUS scholarship for a semester
- amount of tuition fees paid -> average fees paid during schooling at Sciences Po (None/Inf.median/Sup. median/High)

Educational information:

- the track students have followed at Sciences Po, their grades in all fields
- the number and grades they obtained at the different **mock exams** they choose to take during their preparation year (those of the ENA written exam)

Descriptive statistics

Diversity in the PCA Sciences Po

- women represent 60% of Sciences Po students
- they represent only 44% of PCA Students.
- 1/3 of women out of 320 students who register directly in the PCA without having gone through Sciences Po (possible since 2018)

Parents'occupation of students versus the general population				
	Students PCA			Tot. pop
	N	% tot	%	%
Households with managers				
Manager & manager	1087	36,7%	42,7%	4,9%
Manager & middle manager	275	9,3%	10,8%	5,7%
Households with middle managers				
Manager & employee or blue-collar w.	158	5,3%	6,2%	3,5%
Manager & inactive or without partner	305	10,3%	12,0%	8,9%
Middle manager or manager & self employed	91	3,1%	3,6%	2,6%
Middle manager & middle manager	100	3,4%	3,9%	4,4%
Households with employees / middle managers				
Middle manager & employees or blue-collar w.	101	3,4%	4,0%	8,9%
Middle manager & inactive or without partner	50	1,7%	2,0%	11,0%
Employees & employees	45	1,5%	1,8%	2,5%
Households with independants				
Self employed & self employed or inactive or without partner	77	2,6%	3,0%	4,1%
Self employed & employee or blue-collar w.	34	1,1%	1,3%	2,7%
Households with blue-collar w.				
Blue-collar w. & employee	76	2,6%	3,0%	7,5%
Blue-collar w. & blue-collar w.	43	1,5%	1,7%	2,1%
One earner households blue-collar w. or employees				
Employee & inactive or without partner	39	1,3%	1,5%	13,4%
Blue-collar w. & inactive or without partner	37	1,2%	1,5%	10,7%
Households with inactives				
Inactive & inactive or without partner	28	0,9%	1,1%	74,0%
Non available				
NA	419	14,1%	-	-

PCA students % : in % of anwsers; Tot. pop : households excluding retired and inactive above 60y

Source : EGALE, cohorts 2016-2020

Strategy & preparation to different exams

At the master level, the speciality *Administration publique* in the EAP is the **main track** to prepare the ENA exam.

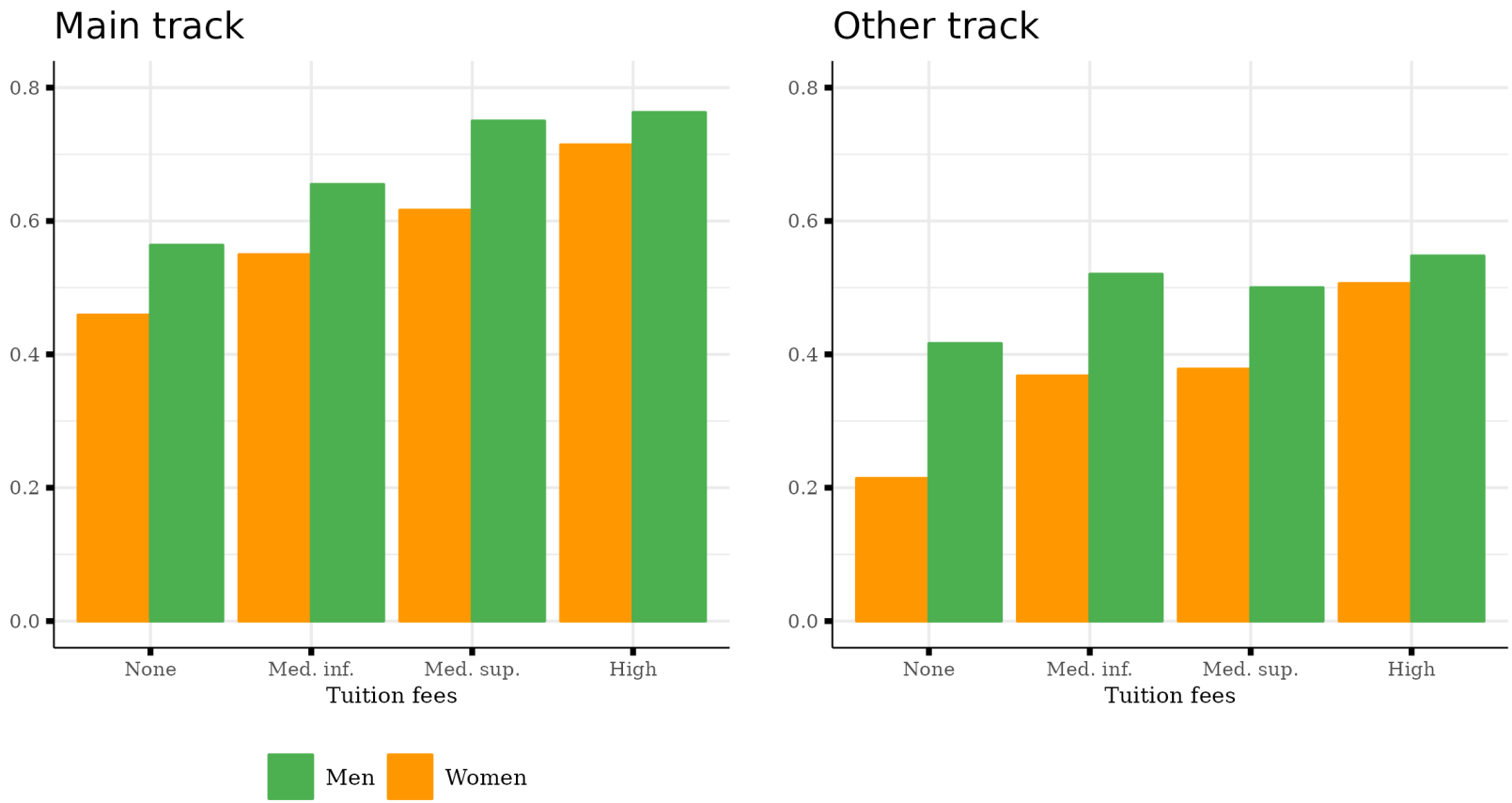
- Strategies differ by gender and social background
  - which exams are prepared? how many ?
  - planned/possible year of preparation -> direct cost/opportunity cost/risk and chance to integrate a most prestigious school ?
- We observe who register to the ENA exam, when and how many times:
  - men are **1.68 more likely** to apply compared to women
  - students without CROUS scholarship are **1.63 more likely** to apply compared to students with a CROUS scholarship
  - in average (for the 2017 cohort) men apply **1.85 times**, women apply **1.73 times**, women with low social background apply **1.5 times** (1.8 for men)

Results

Who apply for the ENA exam?

Inscription to the ENA exam according to the curriculum at Sciences Po

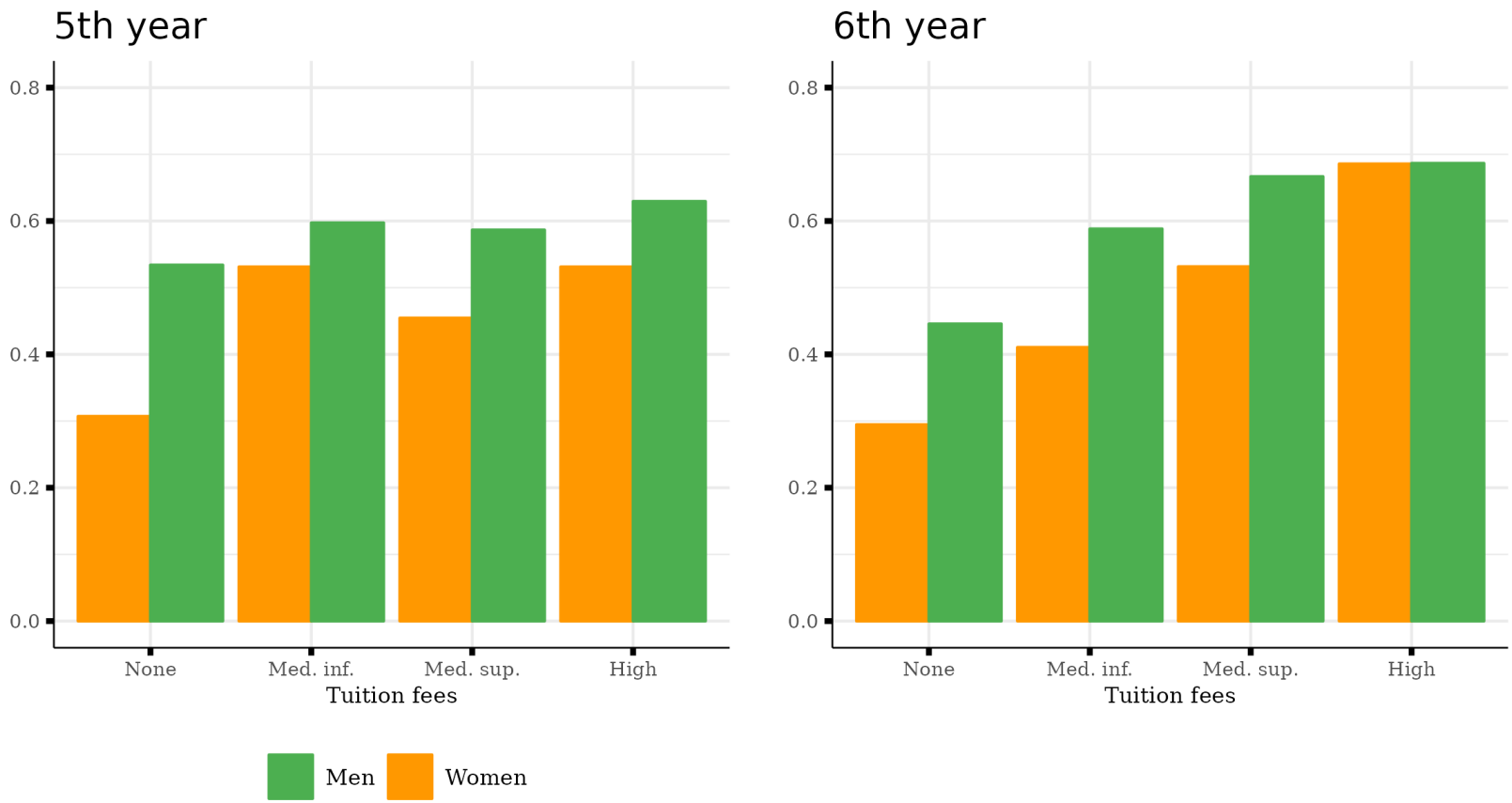
according gender and social background



Source: EGALE, cohorts 2016-2020

When register for the ENA exam?

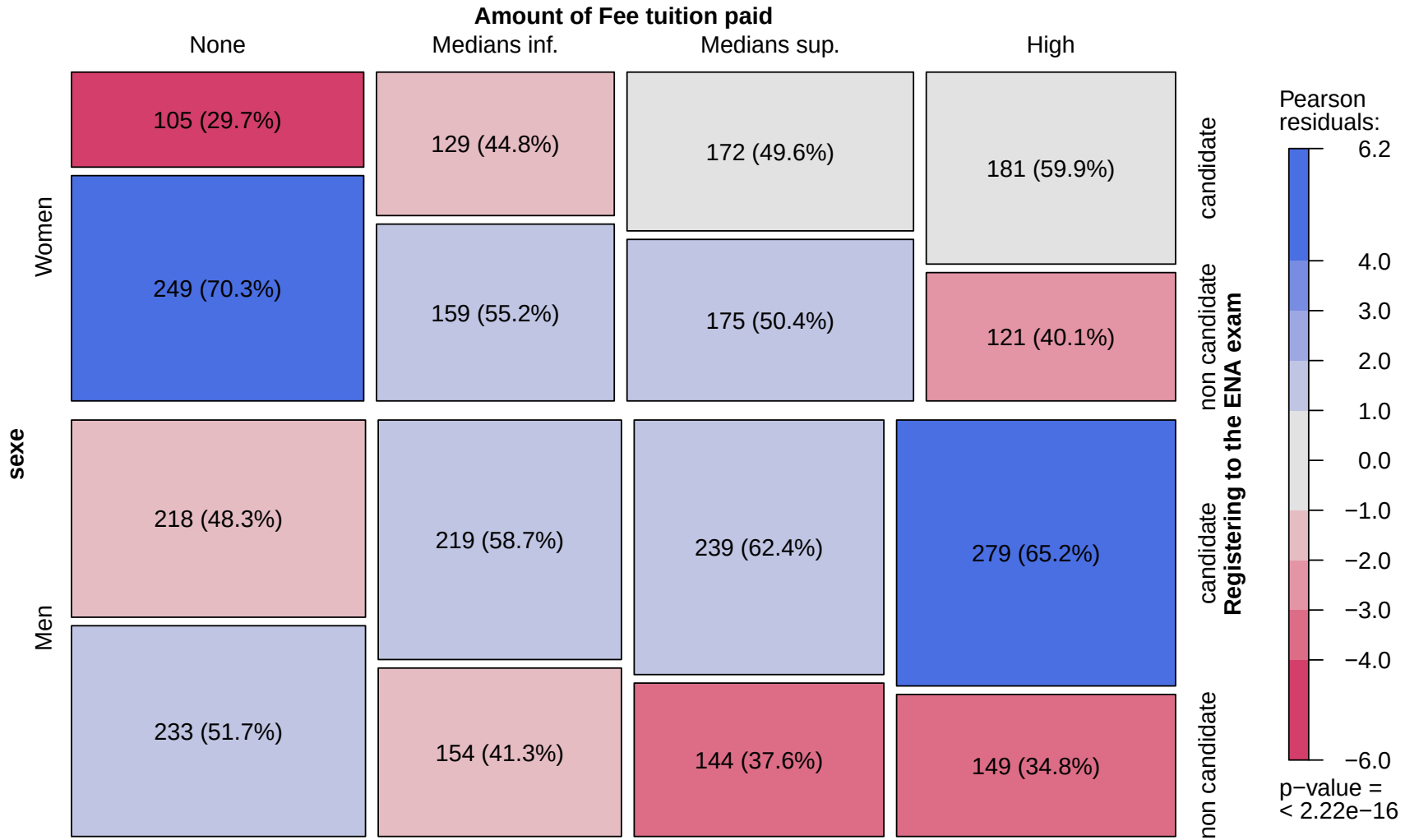
Inscription to the ENA exam at the 5th or 6th year in the curriculum
according gender and social background



Source: EGALE, cohorts 2016-2020

Mapping the profil of the candidates

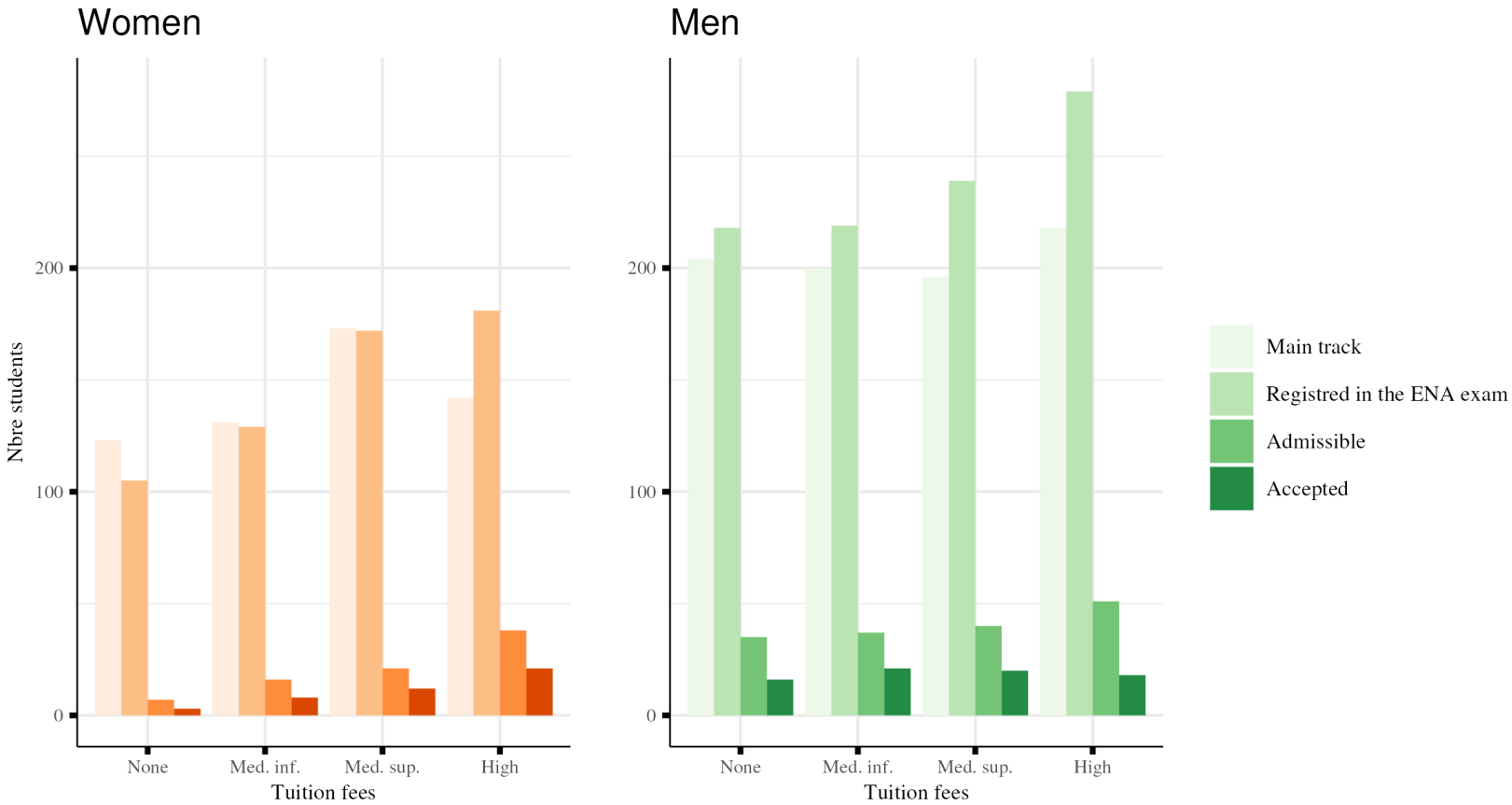
Registration to the ENA exam according to gender and social origin



Result 1 ->The leaky pipeline

Number of students at the different steps

according gender and social origin



Source: EGALE, cohorts 2016-2020

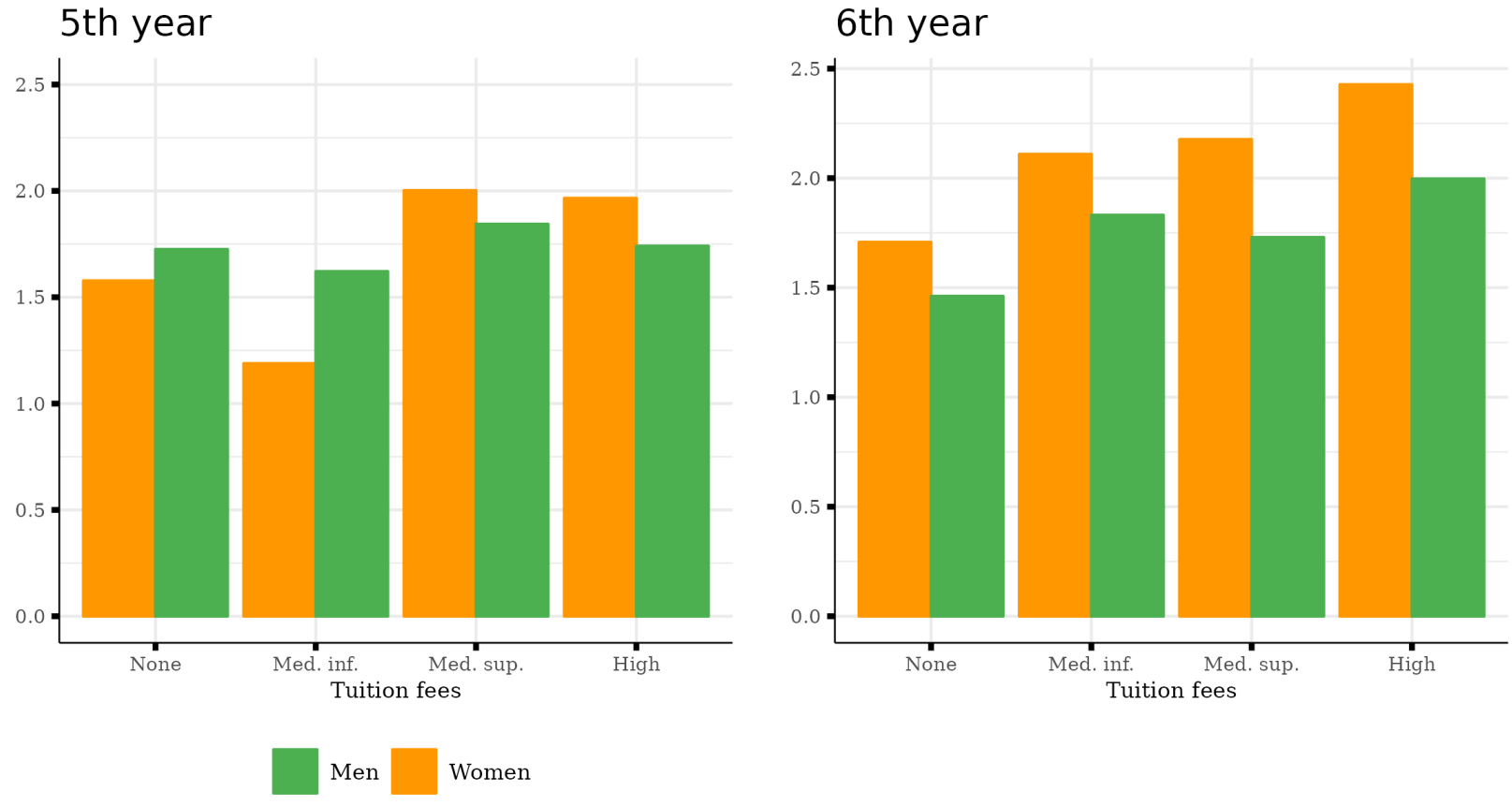
Training and level achieved

We build variables to approximate the degree of preparation and the level of candidates:

- *general training degree* : average number of *mock exams* taken during the year of preparation in each subject weighted by the gain provided this training on the mark in the real exam for each subject
- *relative level achieved* per field: weighted average of grades obtained at *mock exams* per field during the year of preparation in the different fields.
  - for each field the distribution of grades in the PCA is adjusted to the distribution of grades observed at the real exam -> the level of the individual relatively to the level of the other applicants for each field.
- *general level achieved*: weighted by the coef. of each field of the *relative level achieved* per field

Degree of training among students of the PCA who apply for the ENA exam

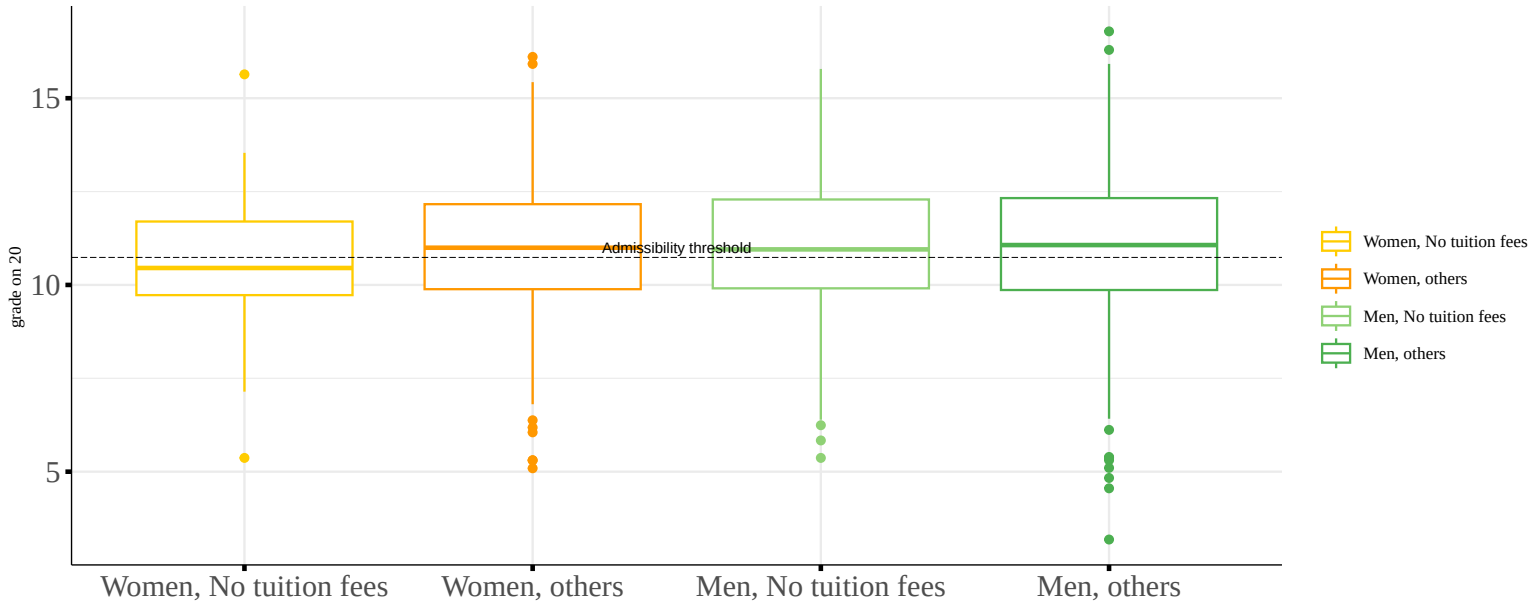
according gender, social background and the year in the curriculum



Source: EGALE, cohorts 2016-2020

Distribution of general level achieved by students

according gender and social background



Source: EGALE, cohorts 2016−2020

Who pass the written exams ?

Admissibility is the most selective step of the process (1 in 10 candidates are selected, compared with 1 in 2 for the oral admission tests)

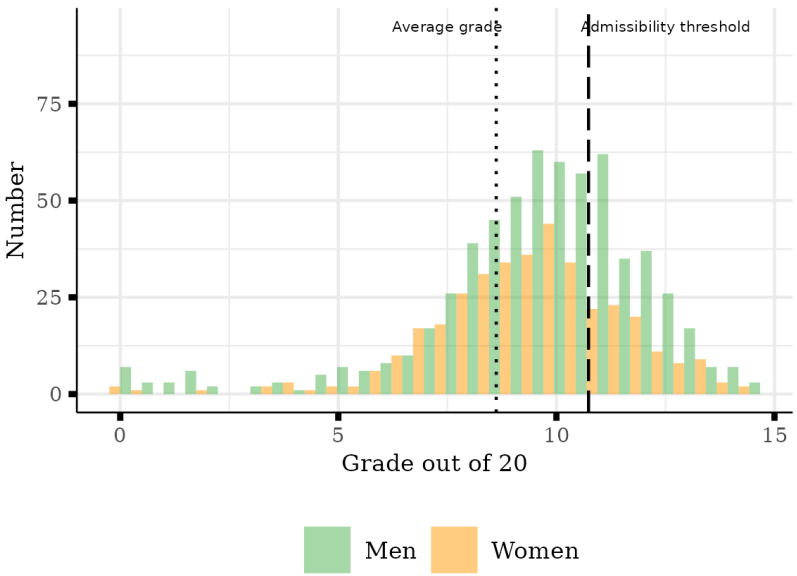
- men are **1.25 times** more likely to qualify than women
- students who have never received a CROUS scholarship during their study at Sciences Po are **1.66 times** more likely to be eligible than others.

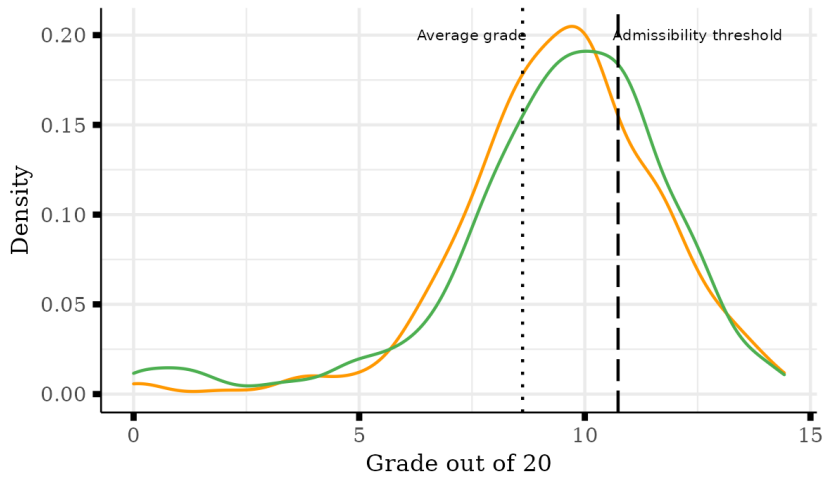
Epreuves admission

Total grade at written tests by gender

Distribution of the total grade obtained at written tests

External entrance exam, Sciences Po students



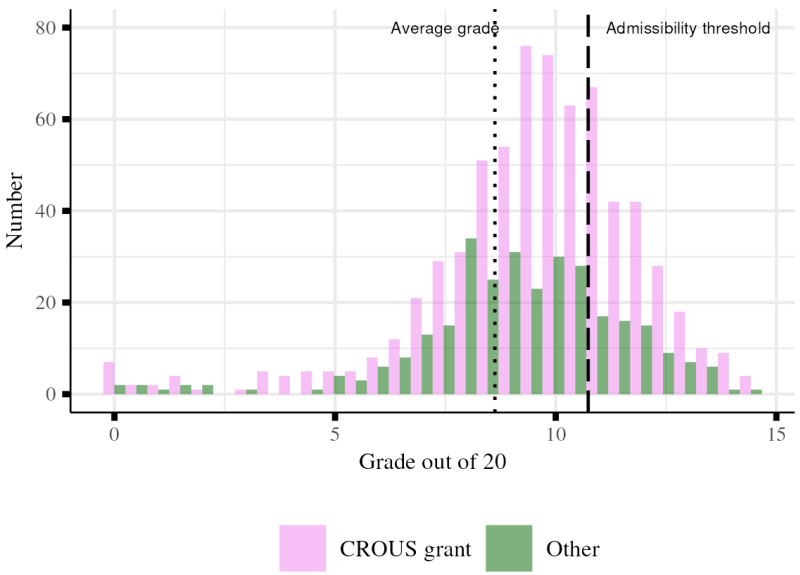


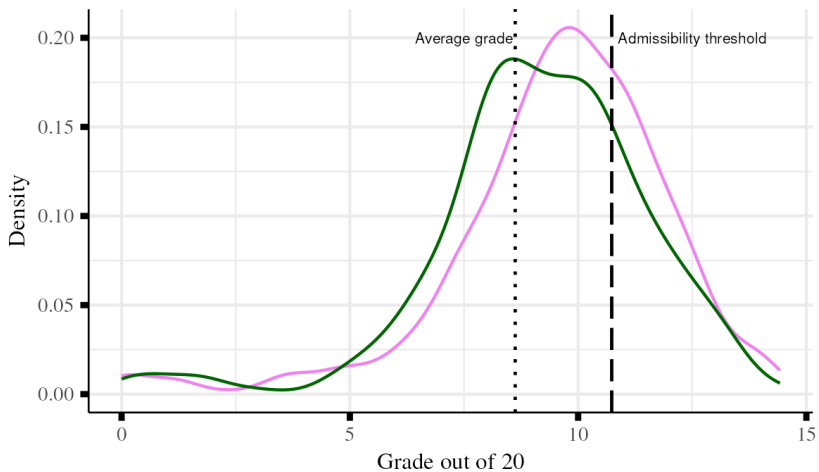
Source: EGALE, cohorts 2016-2020

Total grade at written exams by social origin

Distribution of the total grade obtained at written tests according social background

External entrance exam, Sciences Po students





Source: EGALE, cohorts 2016-2020

Logistic regression of the probability of admissibility

Table 1: Probability of admissibility to the ENA exam

	Dependent variable:			
	Admissibility			
	(1)	(2)	(3)	(4)
Sex (ref. Women)	1.25***	1.40***	1.39***	1.47***
	(0.44)	(0.49)	(0.50)	(0.50)
Social origin	0.39***	0.38***	0.38***	0.40***
	(0.12)	(0.13)	(0.13)	(0.13)
Relative level achieved		0.25***	0.25***	0.27***
		(0.06)	(0.06)	(0.06)
General training degree		0.45***	0.45***	0.41***
		(0.05)	(0.05)	(0.05)
Year in the diploma			−0.02	
			(0.16)	
Rank of the application				0.29***
				(0.08)
Gender and social origin	−0.35**	−0.38**	−0.38**	−0.41***
	(0.14)	(0.16)	(0.16)	(0.16)
Constant	−2.95***	−8.53***	−8.42***	−8.73***
	(0.39)	(0.76)	(1.12)	(0.76)
Observations	1,542	1,276	1,276	1,276
Log Likelihood	−667.87	−536.49	−536.48	−530.36
Akaike Inf. Crit.	1,343.74	1,084.97	1,086.96	1,074.73

Note: *p<0.1; **p<0.05; ***p<0.01

Predicted probability of admission by sex and social origin (model 4)

1rst application, Relative level achieved and General training degree of the 9th decile

Source: EGALE, cohorts 2016-2020

Linear regression of the total grade

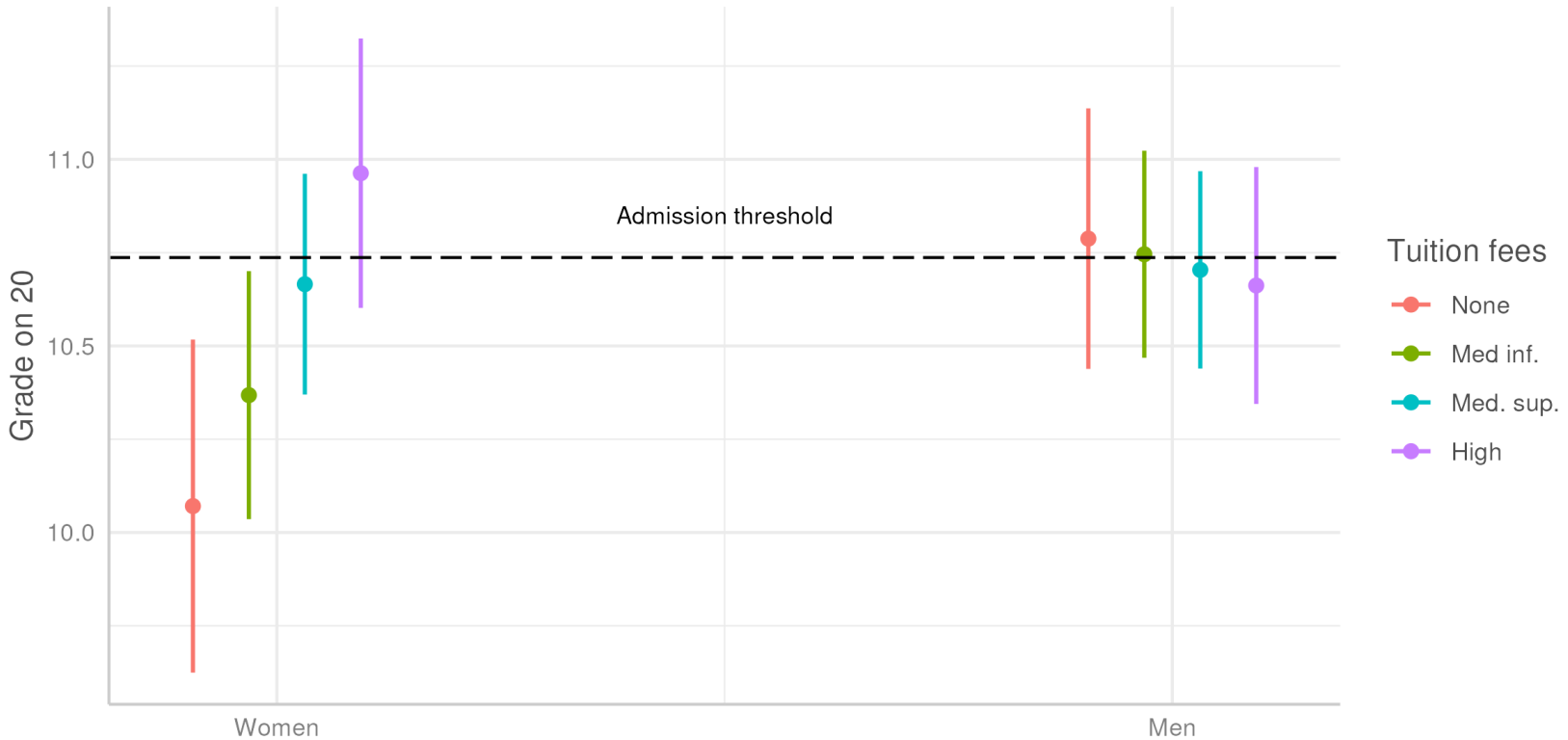
Table 2: Total grade at written exam

	Dependent variable:		
	Grade		
	(1)	(2)	(3)
Gender (ref. Women)	1.24^{***}	1.02^{***}	1.06^{***}
	(0.43)	(0.35)	(0.34)
Social origin	0.40^{***}	0.28^{***}	0.30^{***}
	(0.12)	(0.09)	(0.09)
Relative level achieved		0.53^{***}	0.49^{***}
		(0.04)	(0.04)
General training degree		0.27^{***}	0.30^{***}
		(0.05)	(0.05)
Year in the diploma			0.30^{***}
			(0.07)
Rank of the application	-0.47^{***}	-0.33^{***}	-0.34^{***}
	(0.14)	(0.12)	(0.12)
Gender and social origin	8.32^{***}	2.24^{***}	2.09^{***}
	(0.34)	(0.49)	(0.49)
Observations	976	855	855
R^2	0.01	0.25	0.27
Adjusted R^2	0.01	0.25	0.26
Residual Std. Error	2.41 (df = 972)	1.83 (df = 849)	1.81 (df = 848)
F Statistic	4.25^{***} (df = 3; 972)	56.43^{***} (df = 5; 849)	51.36^{***} (df = 6; 848)

Note: *p<0.1; **p<0.05; ***p<0.01

Predicted total grade at written tests (model 3)

1rst application, Relative level achieved and General training degree of the 9th decile



Source: EGALE, cohorts 2016-2020

Result 2 -> a performance effect

- students who performed well during the *mock exam* during the preparation year obtain the best results
- the degree of training also helps to improve their result
- having already competed increases the total score.
- with a *general relative level* and *general degree of training* equal-> women with low social background perform worse in written anonymous tests than all other categories

How to understand this result? We analyze the details of the scores obtained by subject by gender and social origin

Linear regression of the grade per field

Table 3: Grade on 20 pts in the following fields:

	economics	public law	social issues	current issues	public finance
Gender (ref. W.)	−0.35 (0.49)	−0.97** (0.46)	−0.07 (0.47)	−1.23*** (0.47)	−1.44*** (0.5
Social origin	0.02 (0.10)	0.08 (0.10)	−0.005 (0.10)	−0.003 (0.10)	−0.05 (0.11)
Level eco.	0.35*** (0.04)				
Training eco.	0.24*** (0.06)				
Level public law		0.30*** (0.03)			
Trainig public law		0.39*** (0.07)			
Level social issues			0.30*** (0.04)		
Training social issues			0.13* (0.07)		
Level current issues				0.16*** (0.04)	
Training current issues				0.34*** (0.07)	
Level public finance					0.31*** (0.03
Training public finance					0.30*** (0.08
Rank application	0.18* (0.10)	0.35*** (0.09)	0.21** (0.10)	0.38*** (0.10)	0.33*** (0.10
Gender and social	0.12 (0.16)	0.24 (0.16)	0.02 (0.16)	0.27* (0.16)	0.34* (0.17)
Constant	4.55*** (0.53)	3.59*** (0.51)	5.81*** (0.53)	7.46*** (0.54)	5.90*** (0.47
Observations	951	993	989	974	897
R^2	0.11	0.14	0.07	0.07	0.15
Adjusted R^2	0.11	0.13	0.07	0.07	0.15
Residual Std. Error	2.66	2.60	2.64	2.66	2.73
F Statistic	20.26***	26.29***	13.25***	12.86***	27.12***

Note: *p<0.1; **p<0.05; ***p<0.0

Return of level, training and rank of the aplication on the total grade

Normalized Coeff. of the effect of the level, the training and the rank of the application on the grade obtained at the exam for each field

	Economics	Public law	sociale issues	Current issues	Public finances
Level	0.81	0.68	0.63	0.36	0.86
Training	0.41	0.57	0.20	0.49	0.41
Rk application	0.16	0.31	0.18	0.33	0.29

Source : EGALE, cohorts 2016-2020

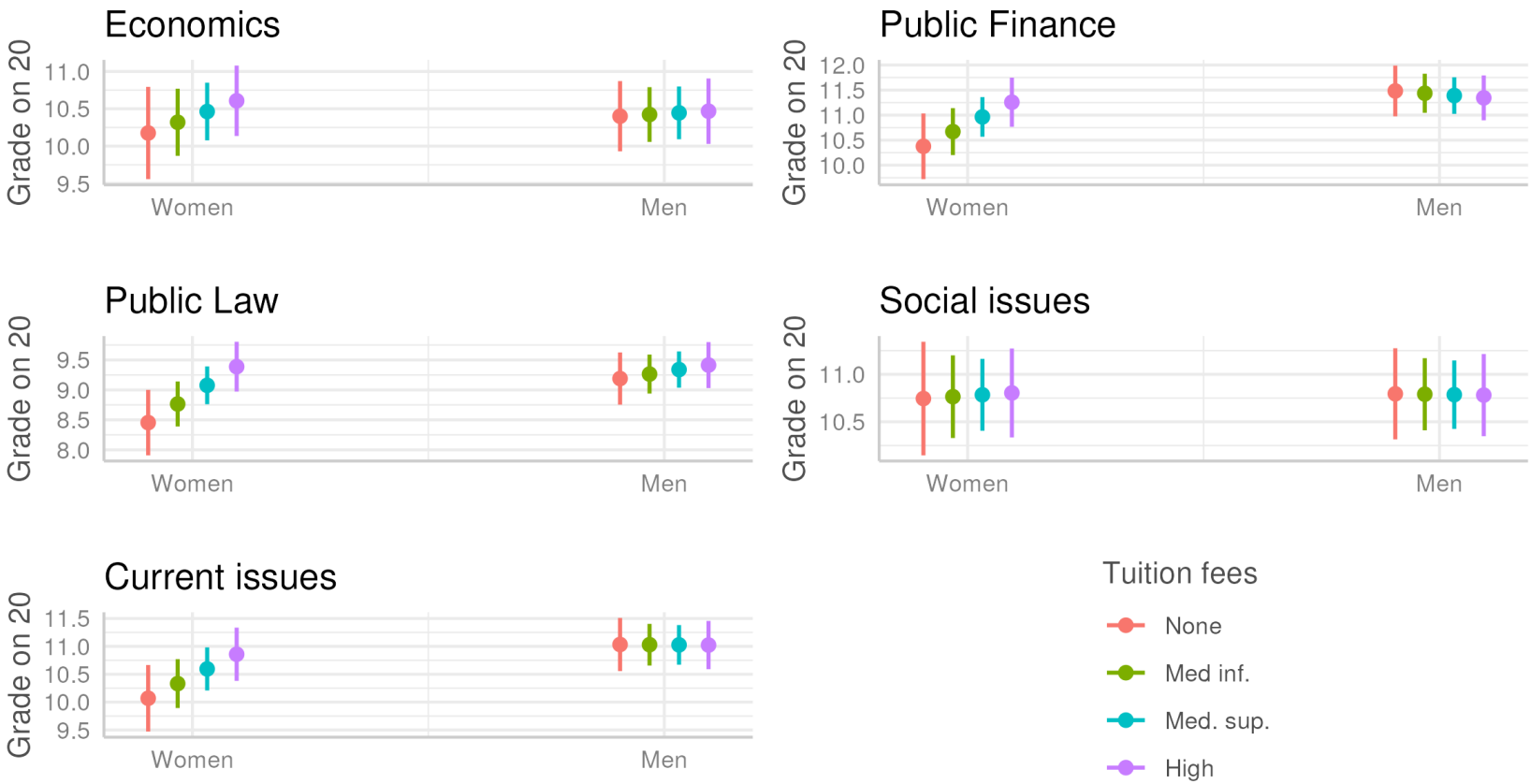
Who benefit from this?

- the level reached during the PCA is the most important factor to succeed at the exam, followed by the level of training, then the rank of the application.
  - EXCEPT for *Current issues*
- the level counts particularly for *economics* and *Public finances*
  - advantage for those who have followed the main track

- the rank of the application is important for the tests of *Current issues*, *Public law* and *Finances public*
  - advantage students who are focused on the ENA and who apply several times
  - THEREFORE rather favorable to students with high social background, and men in particular.

Predicted grades for each field by gender and social origin

1rst application, Relative level achieved and General training degree of the 9th decile



Source: EGALE, cohorts 2016-2020

Concluding remarks

Main results

The lack of diversity within the ENA is the result of a long process in terms of anticipation, preparation, and finally the decision to register for the exam, then success in the written tests. We show two different effects :

- a **leaky pipeline** during the study at Sciences Po
- a **performance effect** that affect the less represented category -> women with low social background
  - gender bias affects the performance of women chen the stake is high (Azmat et al., 2016)
  - The ENA created in 1946 is a masculine school that leads to power, women with high social background are suported by their family when they apply (Favier, 2020)
  - this might change with the INSP (introduction of **Classes talent**)

Some recommandations

From the INSP side

- implement a limit for the number of applications per student
- mentoring for women with low social background at the m1 level

du côté de Sciences Po

- mentoring for women with low social background at the m1 level to encourage them to register in the main track for the ENA prepraration
- create a more inclusive environment during the studies

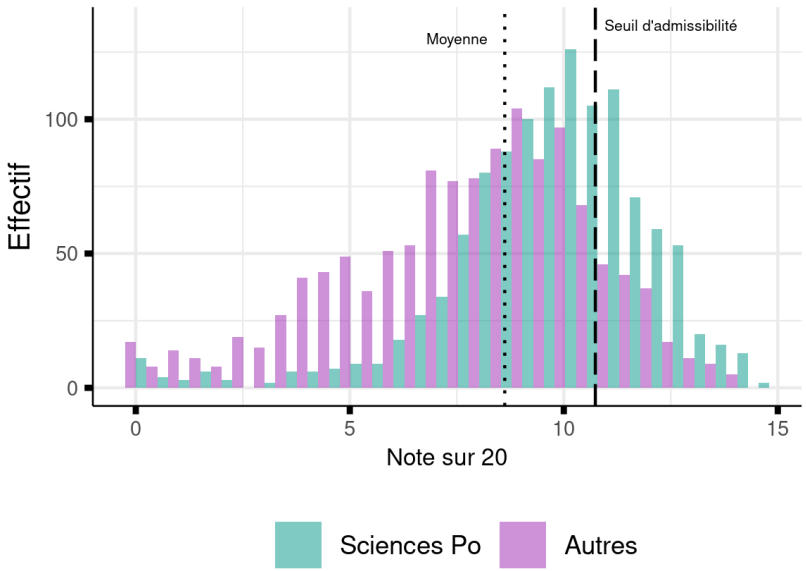
- Les préparationnaires de la PCA de Sciences Po ont 3.7 fois plus de chance d'être admissibles que les autres

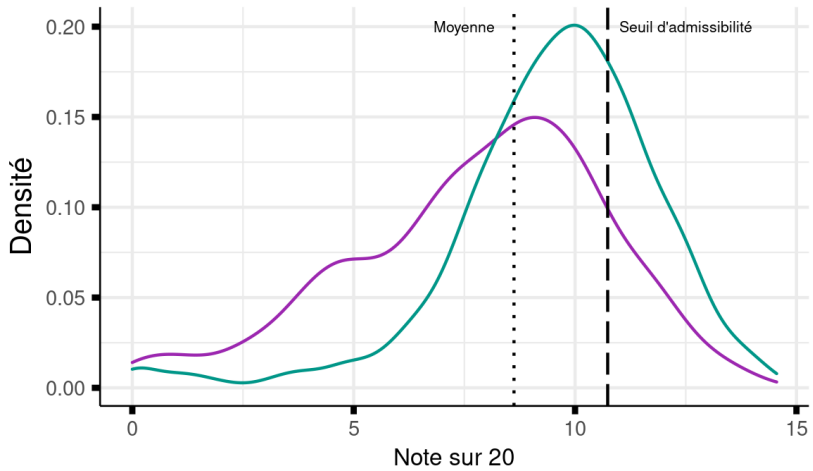
- Les préparationnaires de la PCA de Sciences Po admissibles ont 1.7 fois plus de chance d'être admis que les autre personnes admissibles

Note totale à l'écrit

Distribution de la note totale à l'écrit selon le passage par Sciences Po

Concours externe, ensemble des candidats



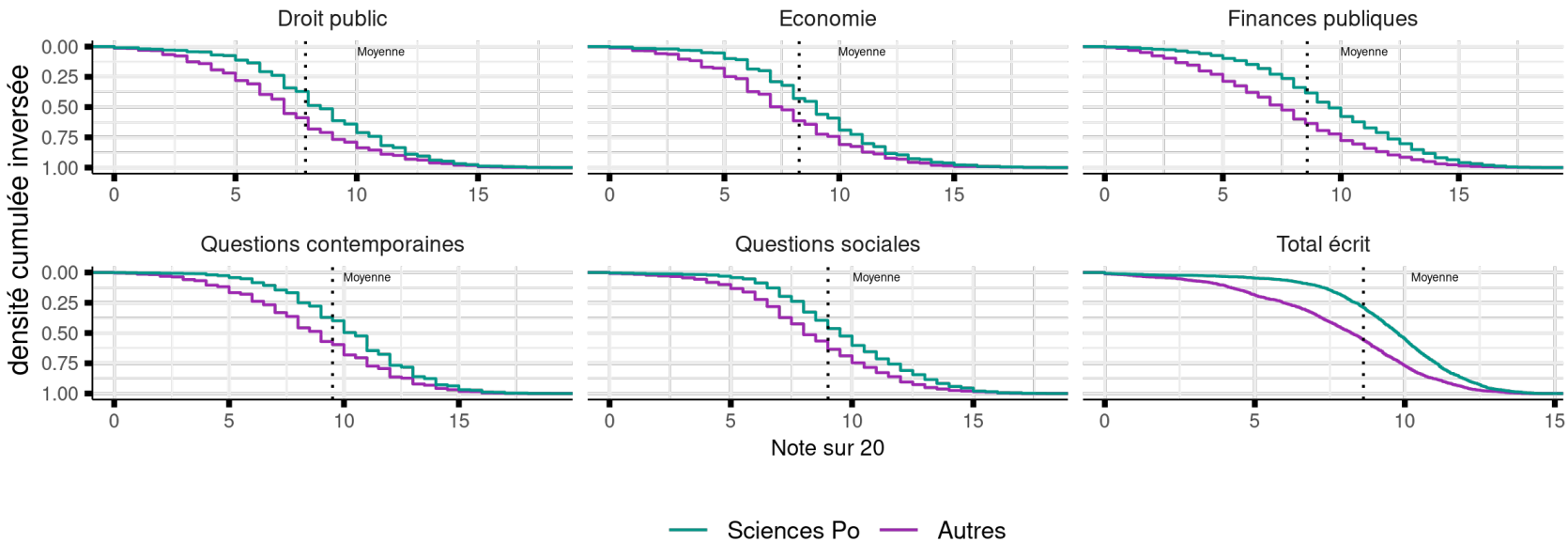


Source: EGALE, cohortes 2016-2020

Détail des notes à l'écrit par matière

Distribution cumulées de la note totale à l'écrit selon le passage par Sciences Po

Concours externe, ensemble des candidats



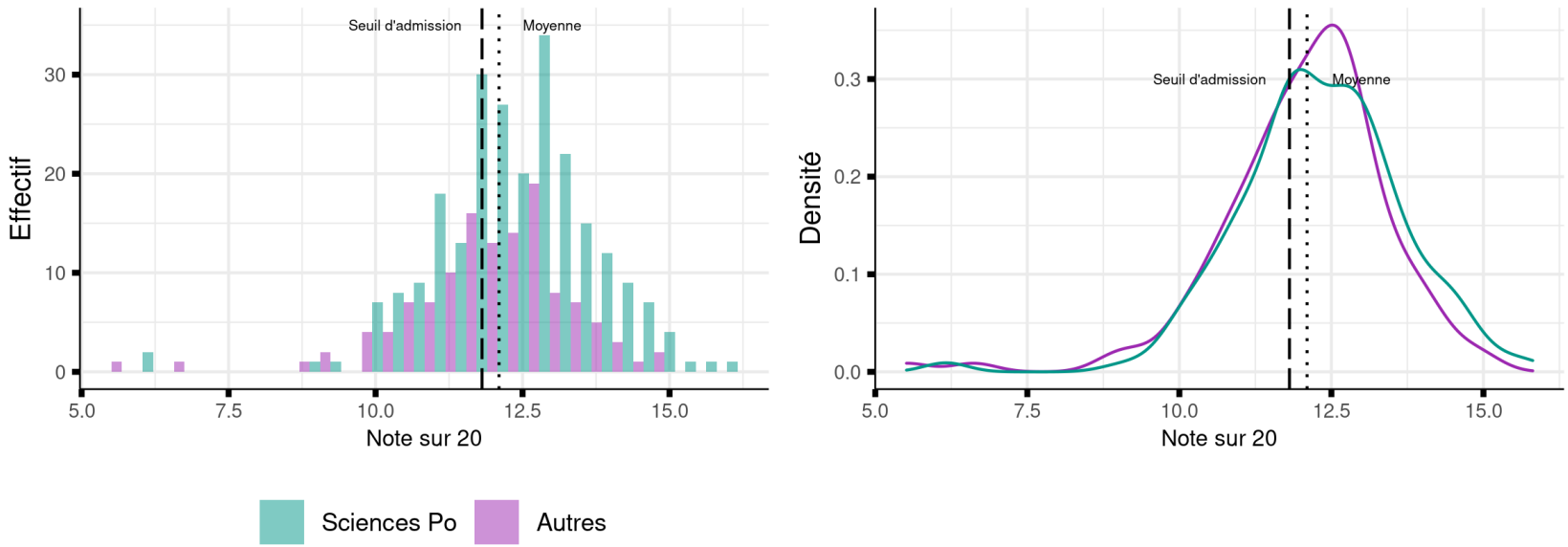
Source: EGALE,cohortes 2016-2020

Go back

Note total au concours

Distribution de la note totale (écrit et oral) selon le passage par Sciences Po

Concours externe, ensemble des candidats admissibles

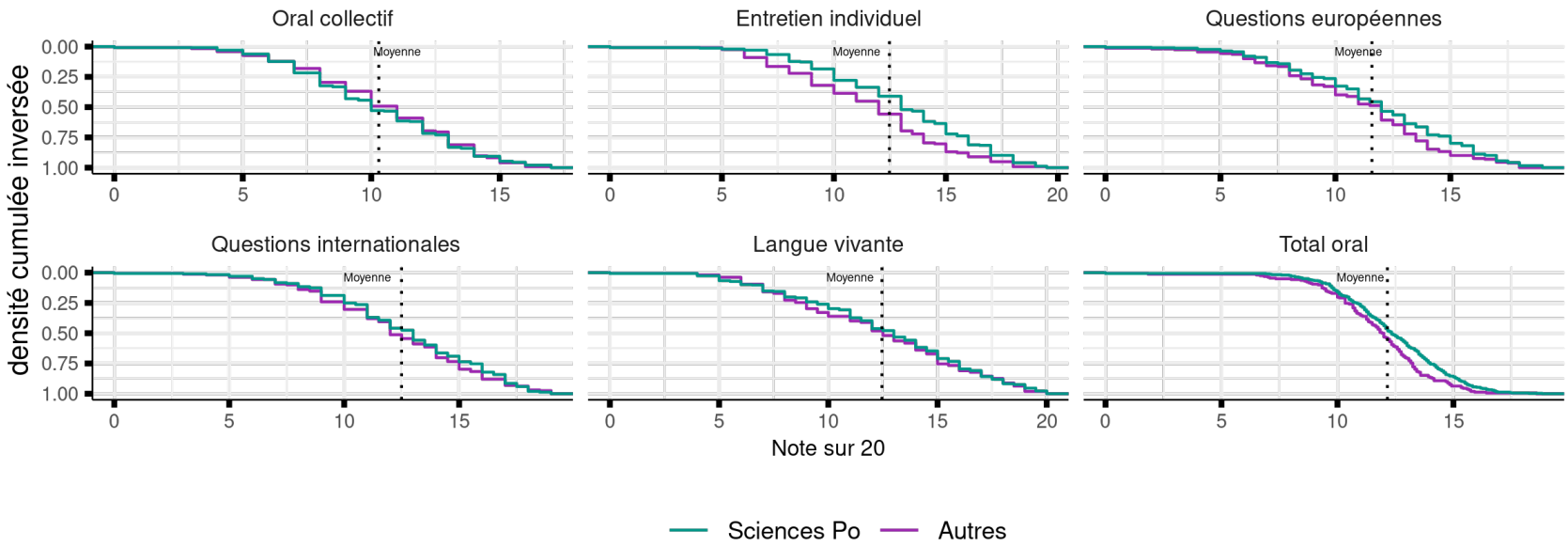


Source: EGALE, cohortes 2016-2020

Détail des notes à l'oral par matière

Distribution cumulées de la note totale à l'oral selon le passage par Sciences Po

Concours externe, ensemble des candidats admissibles



Source: EGALE,cohortes 2016-2020

Go back

Les épreuves d'admission

Epreuves admission

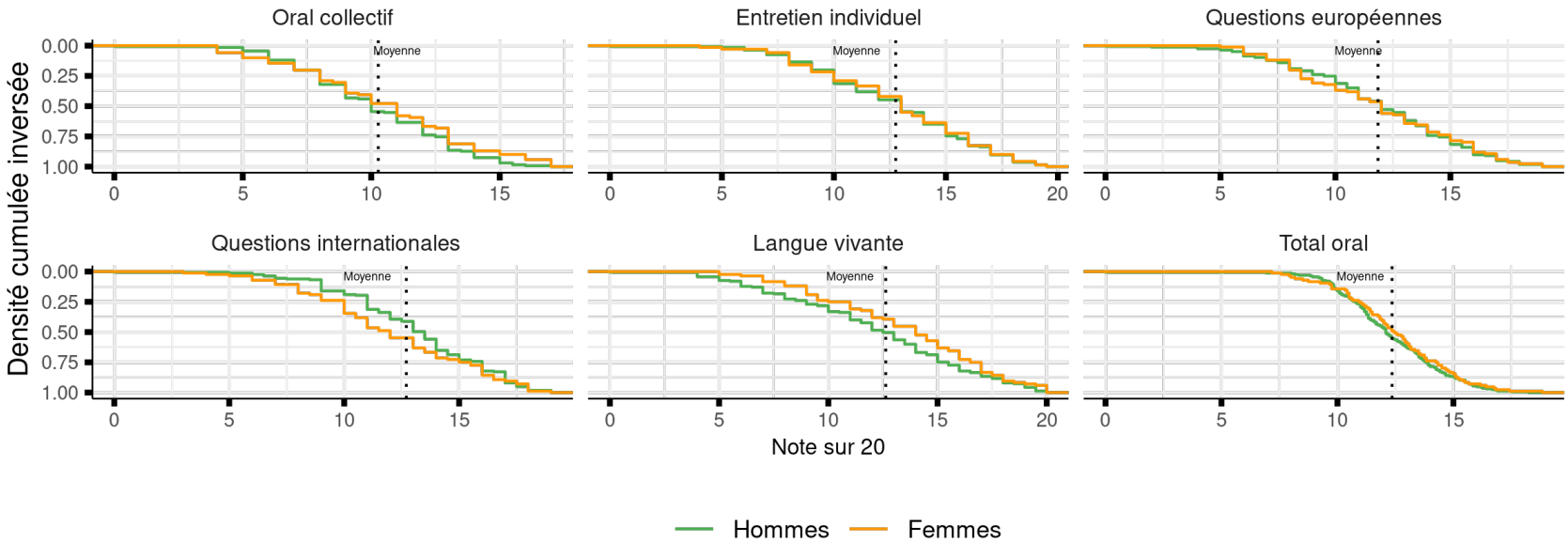
- Questions relatives à l'Union européenne (coef. 3)
- Questions internationales (coef. 3)
- Entretien individuel (coef. 6)
- Epreuve collective d'interaction (coef. 3)
- Anglais (coef.3)

Notes épreuves orales selon le sexe

Epreuves admission

Distribution cumulée des notes obtenues à l'écrit selon le sexe

Concours externe, candidats de Sciences Po



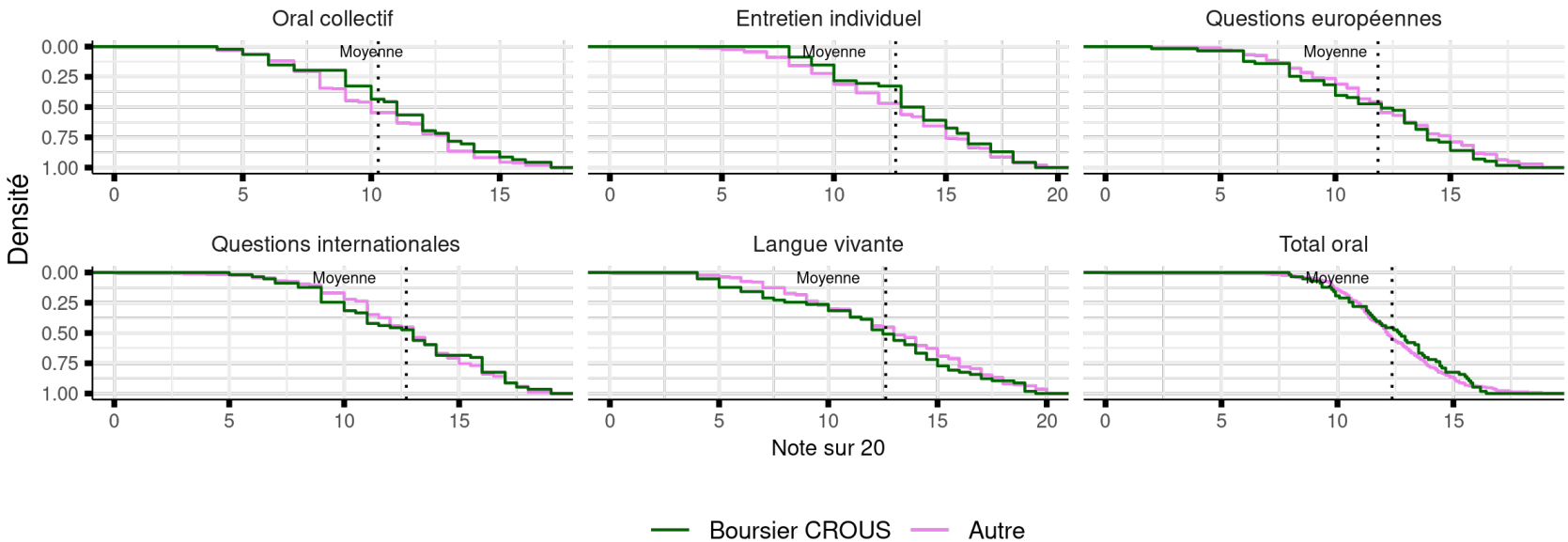
Source: EGALE,cohortes 2016-2020

Notes épreuves orales selon l'origine sociale

Epreuves admission

Distribution de la densité de la note d'oral par matière selon l'origine sociale

Concours externe, candidats de Sciences Po



Source: EGALE,cohortes 2016-2020

Go back