

# Data and reflections on access-transition to HE in Portugal

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# Presentation plan

- 1) Data about the transition from upper secondary to higher education in Portugal.
  - Quick context: what happens before upper secondary graduation.
  - How transition rates to HE depend on the type of secondary programme.
  - How transition rates to HE depend on students' characteristics.
- 2) Discussion about regional differences in transition rates to HE.
- 3) Comparability of schools' internal grades used in the national competition to enter HE.

# Transition from secondary to higher education

# Upper secondary graduates in Portugal

Type of programme	Upper secondary graduates 2017/18		
	Number	Average age	% women
Scientific-humanistic	44907	17,2	58%
Vocational	25487	18,1	46%
Technological	1154	17,3	48%
Artistic	734	17,6	72%
Apprenticeship*	< 5000		

\* Apprenticeship programmes are under the Labour Ministry and we don't have good statistics at DGEEC.

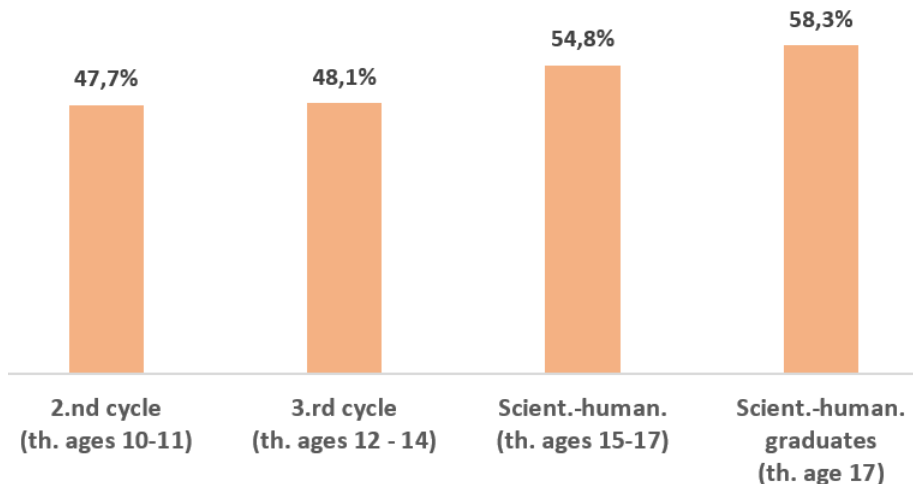
First, lets go back to before graduation...

# Before high school graduation...

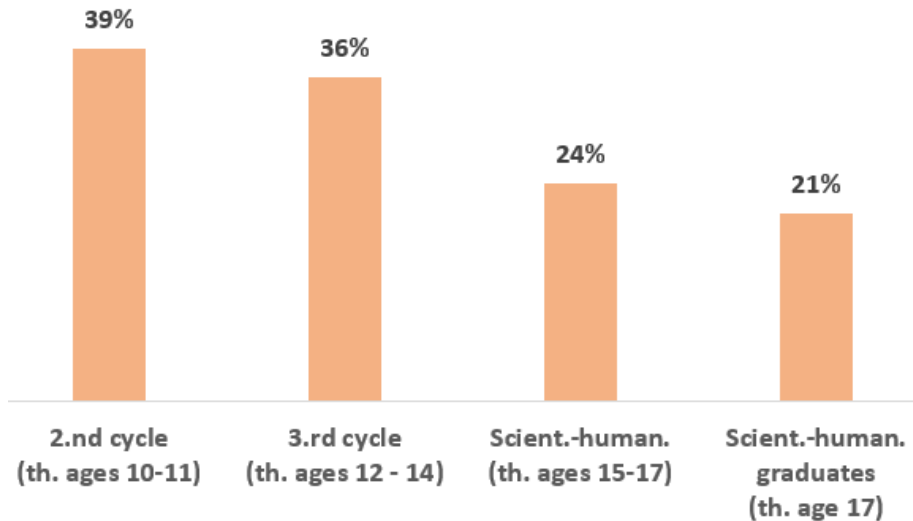
- It is important to remember that the population of **graduates** from Portuguese upper secondary education is quite different from the population of students **enrolled in basic education**.
- For instance, students from disadvantaged socio-economic backgrounds, as well as boys, are **underrepresented** among upper secondary graduates.
- This is especially true for graduates in secondary **scientific-humanistic programmes**, the main recruitment pool for higher education institutions.

## Before high school graduation...

### Female students (%), 2017/18



## Students with social support (%), 2017/18



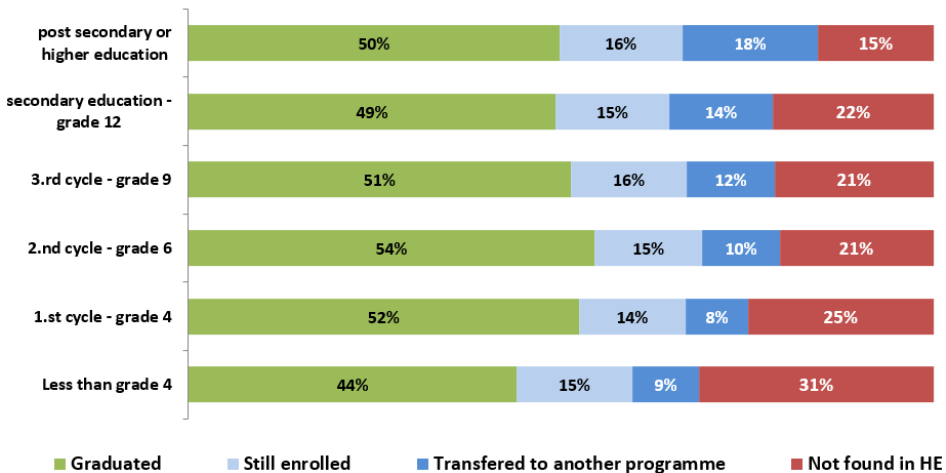


# Before high school graduation...

- Students with disadvantaged socio-economic background conclude **lower secondary education** with significantly **lower grades**, on average, than other students.
- This contributes to different **programme choices** (vocational versus scientific-humanistic) and different **drop out rates** during upper secondary education.
- This socio-economic filter appears to be stronger during basic and secondary education than during higher education.
- **Hypothesis**: the minority of disadvantaged students that reach higher education tend to be **“strong survivors”** so, with the help of social support, they do reasonably well during higher education.

## During higher education...

Situation after 4 years of students enrolled in 3 year bachelor programmes,  
by mother's school level – public HEI, 2014/15



Only around 50% of students obtain their bachelor degree in 4 years...

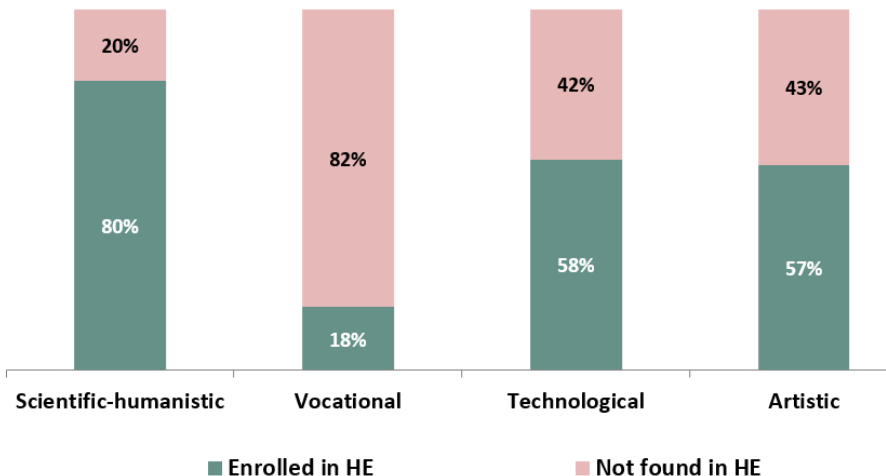
## Transition between Secondary and HE

- dependence on type of upper secondary programme –

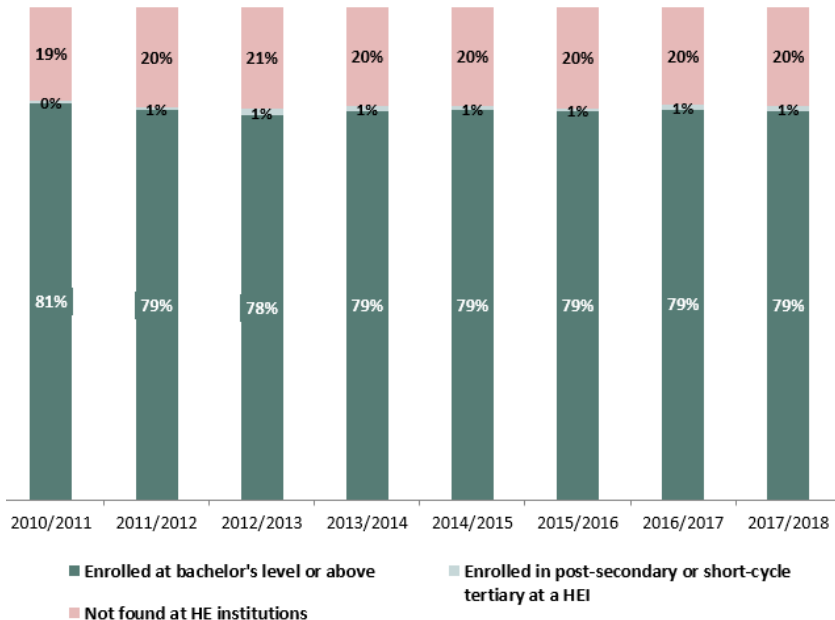
# Transition from Secondary to HE...

- The two main types of upper secondary programmes in Portugal, in number of enrolled students, are the **scientific-humanistic** and the **vocational** education programmes.
- Additionally, there is the artistic education, technological education, apprenticeships, etc., all in much smaller numbers.
- For each type of programme, I will now show the percentage of its graduates that is enrolled in HE studies **1 year after graduating** from upper secondary education.
- These transition rates to HE have been very stable in the last few years.

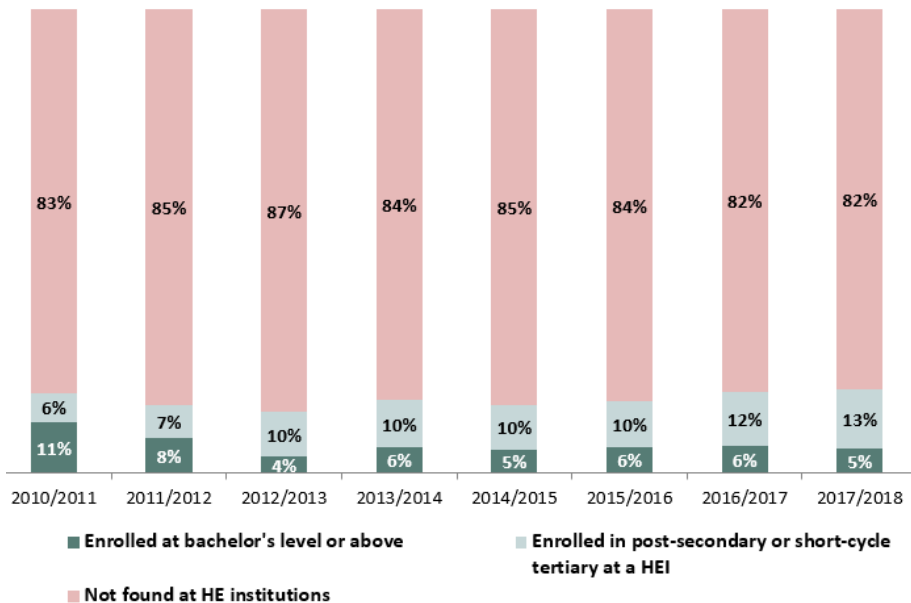
## Situation after 1 year of graduates from upper secondary education in 2016/2017, by type of secondary programme



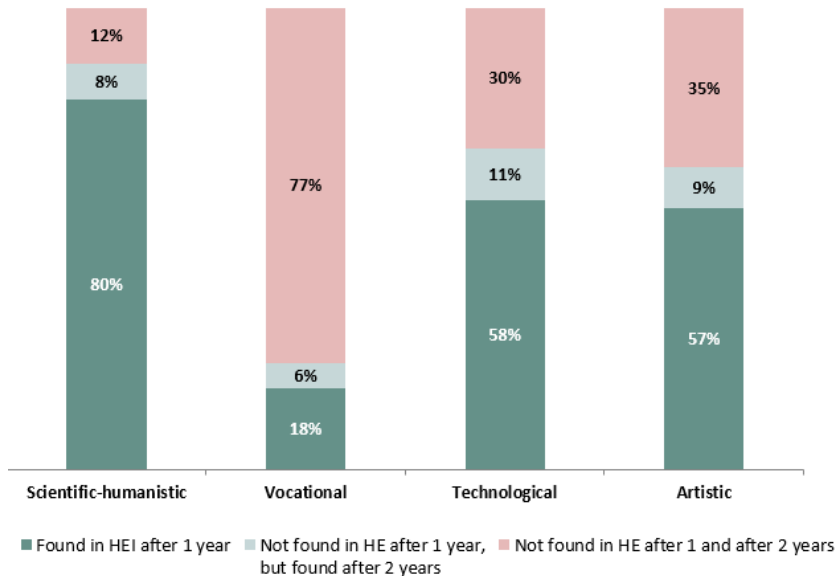
## Situation after 1 year of graduates from secondary scientific-humanistic programmes



## Situation after 1 year of graduates from secondary vocational programmes



## Situation after 2 years of graduates from upper secondary education in 2016/2017, by type of secondary programme





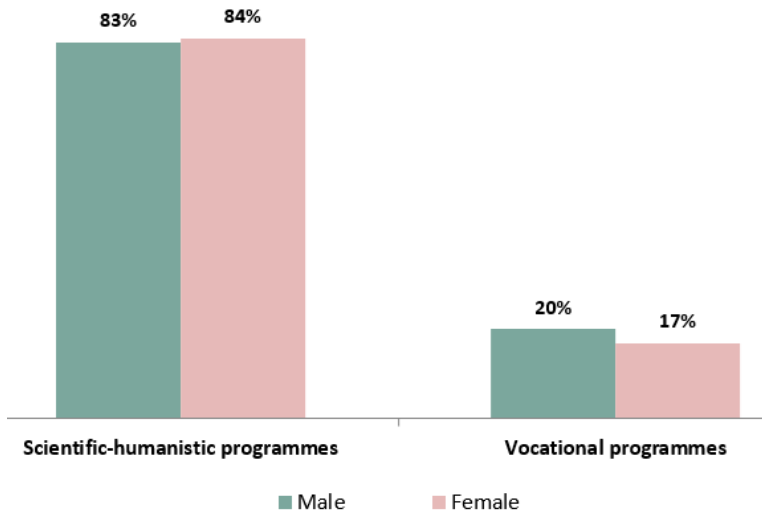
# Transition between Secondary and HE

– dependence on students' characteristics –

# Transition from Secondary to HE...

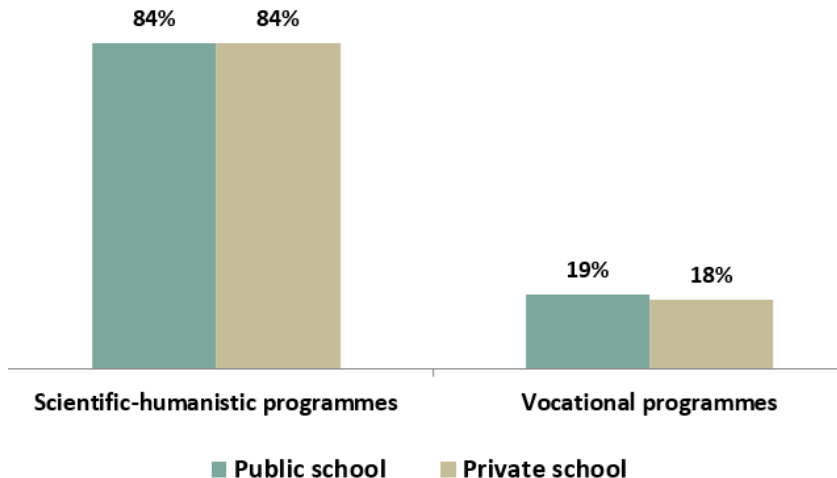
- We will now consider the two main types of upper secondary education graduates: those from scientific-humanistic programmes, and those from VET programmes.
- In each case separately, we will see how the transition rates to higher education in Portugal depend on:
  - **Gender** of the student;
  - **Public/Private** nature of the **high school** where the student graduated;
  - **Social-economic** status of the student;
  - Student's previous **academic results**.

## Secondary education graduates that pursued further studies (%), by type of secondary programme and gender



But more women graduate in S-H programmes, so they transition more to HE...

## Secondary education graduates that pursued further studies (%), by type of secondary programme and type of school, 2014/15

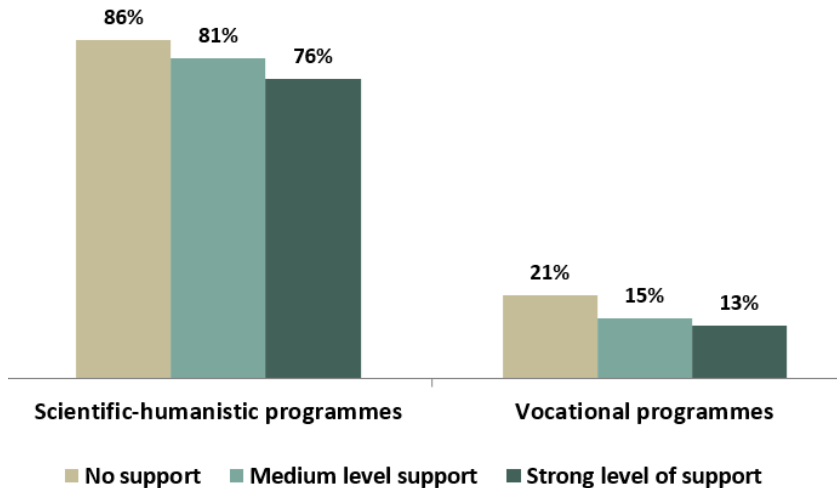


Public schools, though, have lower S-H graduation rates than private ones...

## Transition between Secondary and HE

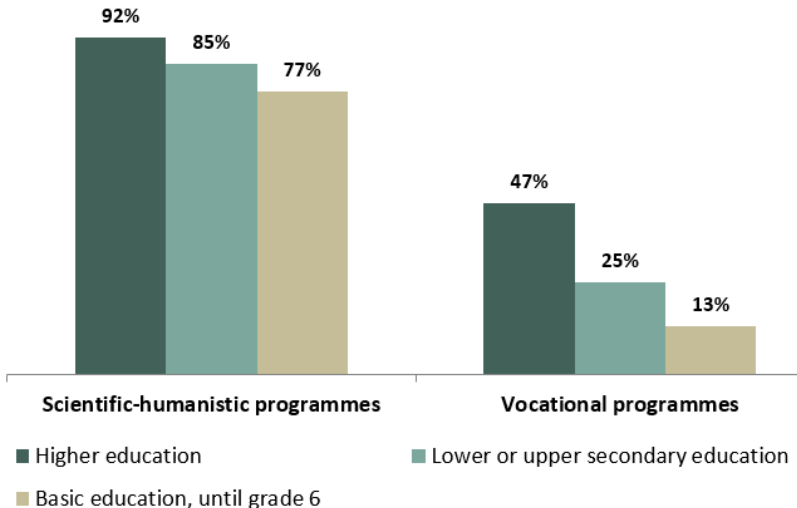
– dependence on socio-economic status –

## Secondary education graduates that pursued further studies (%), by type of secondary programme and level of social support, 2014/15



Within each type of programme the difference is not so big, but disadvantaged students disproportionately enroll in vocational... (\* Only includes graduates from public schools)

## Secondary education graduates that pursued further studies (%), by type of secondary programme and mother's school level, 2014/15



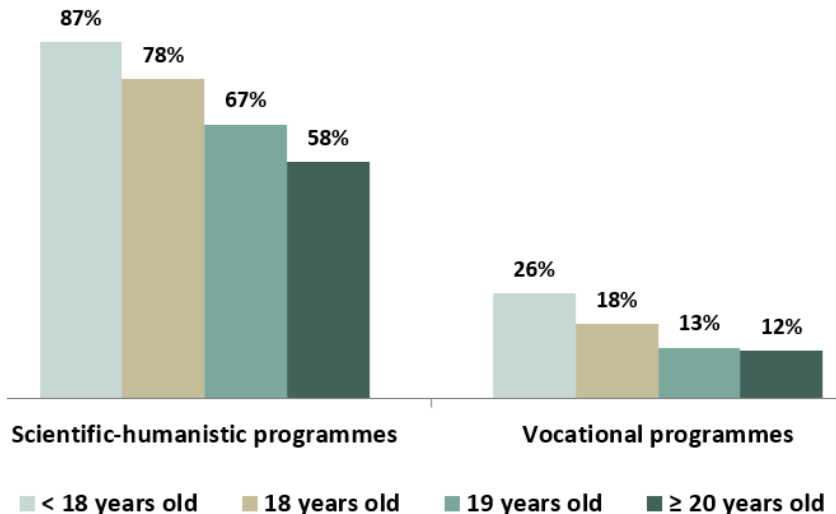
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## Transition between Secondary and HE

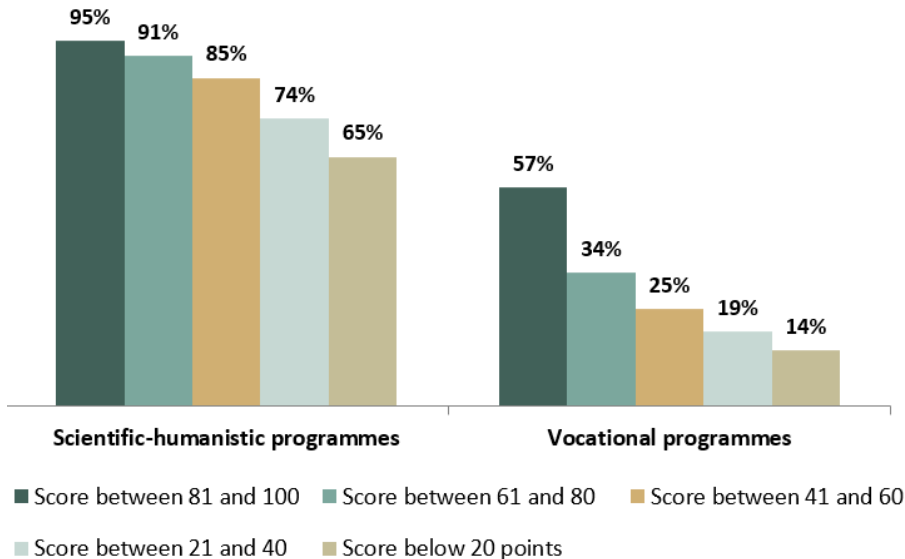
– dependence on previous school results –



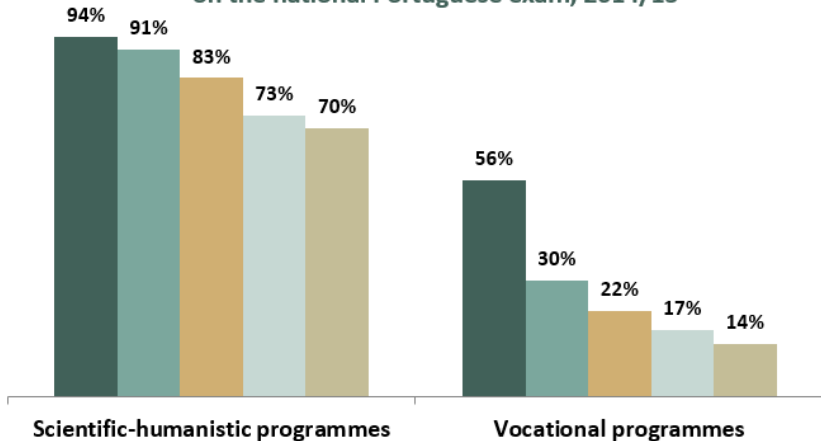
## Secondary education graduates that pursued further studies (%), by type of secondary programme and age at year of graduation, 2014/15



Secondary education graduates that pursued further studies (%),  
by type of secondary programme and score obtained 3 years earlier  
on the national mathematics exam, 2014/15



## Secondary education graduates that pursued further studies (%), by type of secondary programme and score obtained 3 years earlier on the national Portuguese exam, 2014/15



- Score between 81 and 100
- Score between 61 and 80
- Score between 41 and 60
- Score between 21 and 40
- Score below 20 points

# Transition from Secondary to HE...

- Even VET graduates that **scored very high** in the national exams at the end of the 9th grade, 3 years before, have **lower transition rates to HE** than the scientific-humanistic graduates that **scored low** in the same exams.
- This big difference between VET and scientific-humanistic graduates should happen for two kinds of reasons, whose relative weight we cannot measure at DGEEC:

# Transition from Secondary to HE...

A) Because there are some **barriers to transition** from VET to HE:

- When you graduate from VET, you had **less preparation to take the national admission exams** to bachelor HE programmes than when you graduate from secondary scientific-humanistic;
- Short-cycle HE is open to VET graduates, but it is **still recent in Portugal**, still growing and not yet widely known by students or offered by HEI.

B) Because some VET graduates **do not want** to pursue HE:

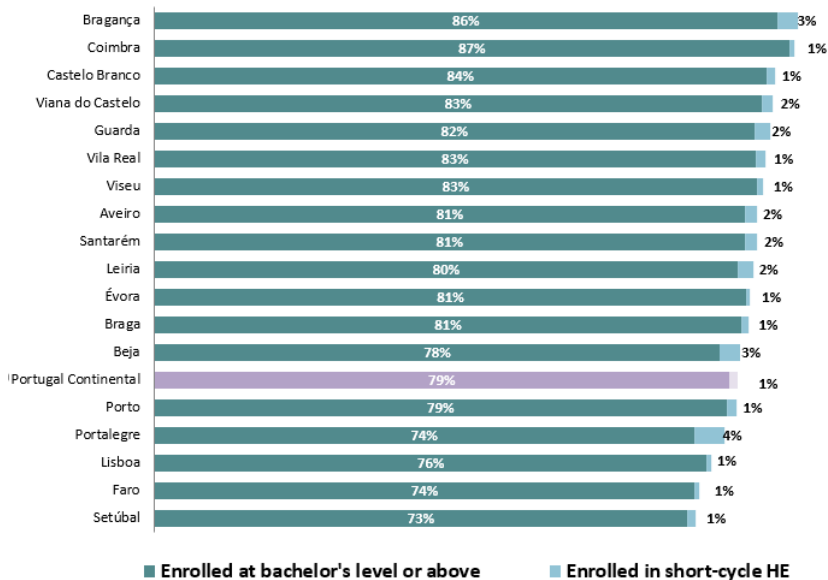
- Students that enroll in VET programmes at the beginning of secondary education are **less inclined to pursue academic-style studies**, on average, than their colleagues that enroll in scientific-humanistic programmes, even if they have high grades.
- Not pursuing bachelor HE at the end of secondary VET is a decision consistent with the **students' previous preferences and choices**.

# Regional differences in transition to HE

## Regional differences...

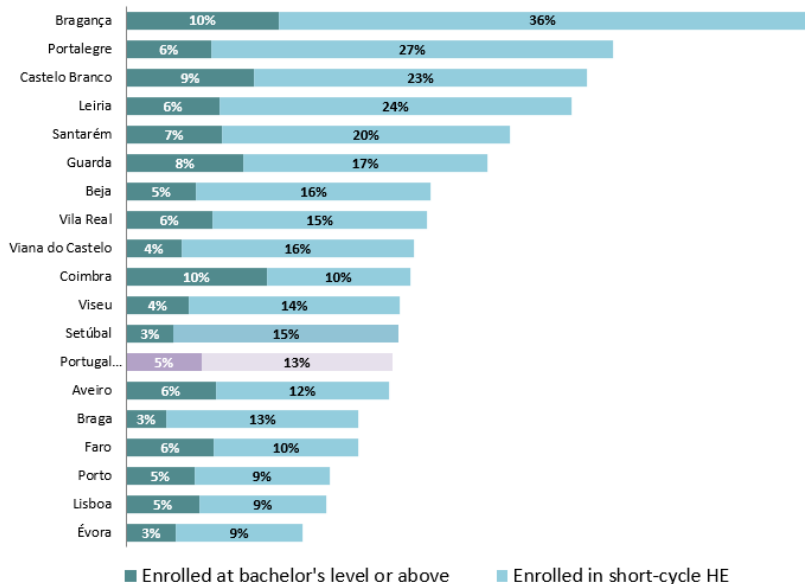
- There are clear differences in the transition rates to HE among upper secondary graduates from distinct Portuguese regions.
- Regional differences are **stronger for graduates of secondary vocational programmes** than for graduates of secondary scientific-humanistic programmes.
- Generally, graduates from the metropolitan areas of **Lisbon** and **Porto** appear to have comparatively **low transition rates** to HE.

## Graduates from secondary scientific-humanistic programmes that pursued HE studies after 1 year, by district of secondary school, 2017/18





## Graduates from secondary vocational programmes that pursued HE studies after 1 year, by district of secondary school, 2017/18



# Regional differences...

- There could be several, non-exclusive, explanations for the regional differences in transition rates to HE:
  - 1) Different **labour market conditions** across regions, since the labour market competes with HE for high school graduates;
  - 2) **Rates of graduation in secondary education** vary across the country. Regions with low graduation rates may have higher transition rates to HE among graduates, because the “selection” was done upstream.
  - 3) Higher education programmes and **vacancies in HEI are not equally accessible to local students** throughout the country.
  - 4) Some regions may attribute, **culturally**, more value to a HE degree.

## Regional differences...

- Based on the the scarce published data about regional labour market conditions, **reason 1** does not seem to be a complete explanation for the observed pattern in transition rates to HE. It is also largely beyond the control of Higher Education institutions and the ministry.
- **Argument 2** can be roughly evaluated using data we have at DGEEC, as we know the graduation rates in secondary education, for each region, within the regional age cohort. It seems to have very low, or even negative, explanatory power.
- We cannot evaluate **argument 4** at DGEEC (cultural differences between regions).
- I will now discuss in greater detail **argument 3**.

Point of discussion:

Accessibility of HE for VET students unwilling,  
or unable, to move across the country

## Discussing the regional differences...

- Portugal has a **fairly distributed network of HEI** across the territory. You should always have a HEI (either a university or a polytechnic institution) relatively close to your region.
- However, traditionally, for a number of reasons, **public HEI in Lisbon, Porto** and the **northwest coast** tend to be considered **more attractive** by students.
- These HEI tend to receive **more applications per open vacancy** than HEI in the interior and southern Portugal. It is therefore more difficult, on average, to be accepted there as a student.
- If you are a high school graduate from the “attractive” regions, it is more difficult to get into your local HEI, because you can be **crowded out by students from other regions**. If you are unwilling to move to another region to study, you may well not go to HE at all.

# Discussing the regional differences...

- If real, this local “crowding out” effect should:
  - **Depress transition rates to HE** among students that graduated from secondary education in **“attractive” regions**.
  - **Be stronger for students with lower socioeconomic status** and lower motivation to pursue HE, such as graduates from secondary VET programmes, since they are less willing or less able to move to another region to pursue HE, on average.
- Both consequences coincide with what is observed.

## Discussing the regional differences...

- For graduates from secondary VET programmes, who typically are less mobile, there is one more reason for the regional differences in transition rates to HE: the lack of available public offer of short-cycle tertiary programmes in certain regions.
- Among secondary VET graduates, the lowest transitions rates to HE are observed in the regions of Évora, Lisbon and Porto.
  - Évora has no public Polytechnic HEI and no offer of public short-cycle tertiary programmes;
  - Lisbon has a large public Polytechnic HEI, but it does not offer short-cycle tertiary programmes.
  - Porto has a large public Polytechnic HEI, for several years it scarcely offered short-cycle tertiary programmes, and has now started offering them in greater numbers.

# Discussing the regional differences...

- So secondary VET graduates from these regions that wish to pursue short-cycle tertiary education can either:
  - Enroll in a **private HE institution** (more expensive);
  - **Move to another region** to pursue short-cycle HE (more expensive and inconvenient);
  - Apply to a **bachelor level HE** programmes in their region (more difficult to be accepted and possibly not adjusted to their vocational profile);
- They also seem to **renounce HE at higher rates** than VET graduates from other regions.



# Equity in the national competition to enter HE

- comparability of schools' internal grades -

# Comparability of schools' internal grades

- Among the new entrants to Higher Education in Portugal each year, the majority of young students uses the so called “national competition” to enter bachelor-level programmes.
- In this competition, students apply to a maximum of six programmes and HE institutions of their choice.
- If there are more candidates than vacancies, the candidates are selected using a score (scale 0-20) based on two components:
  - School grades in upper secondary education;
  - Scores in national exams in programme-related subjects;
- Both components have approximately the same weight in the final seriation score to enter HE, although the weights can vary.

## New entrants to ISCED 5 and 6, in 2018/2019

(excluding international mobility)

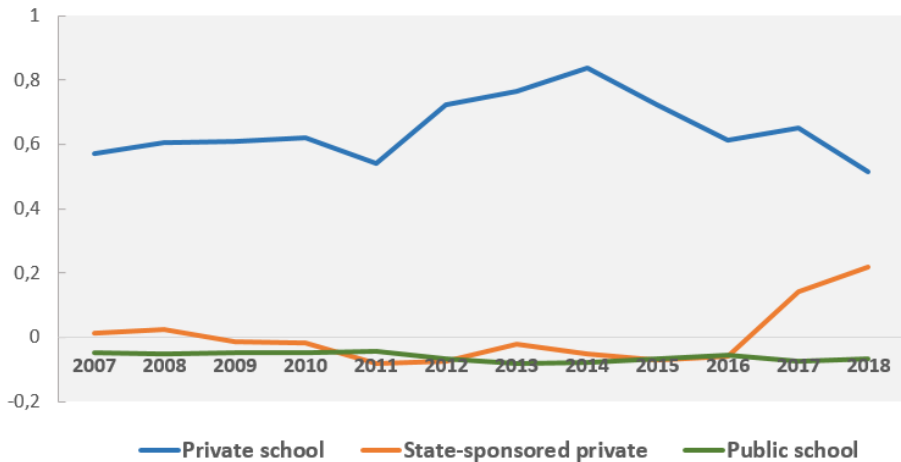
Type of competition	Number of new entrants	% of total
General Access Regime		
National Competition (mostly for public HEI)	43 346	<b>54%</b>
Local/Institutional Competition (mostly for private HEI)	10 718	<b>13%</b>
Access to tertiary short-cycle	8 444	<b>10%</b>
Institutional competition for over 23 years old	4 945	<b>6%</b>
Institution change or course change	4 511	<b>6%</b>
Special competitions to International Students	4 144	<b>5%</b>
Other access regimes (many others)	4 797	<b>6%</b>
<b>Total</b>	<b>80 905</b>	<b>100%</b>

# Comparability of schools' internal grades

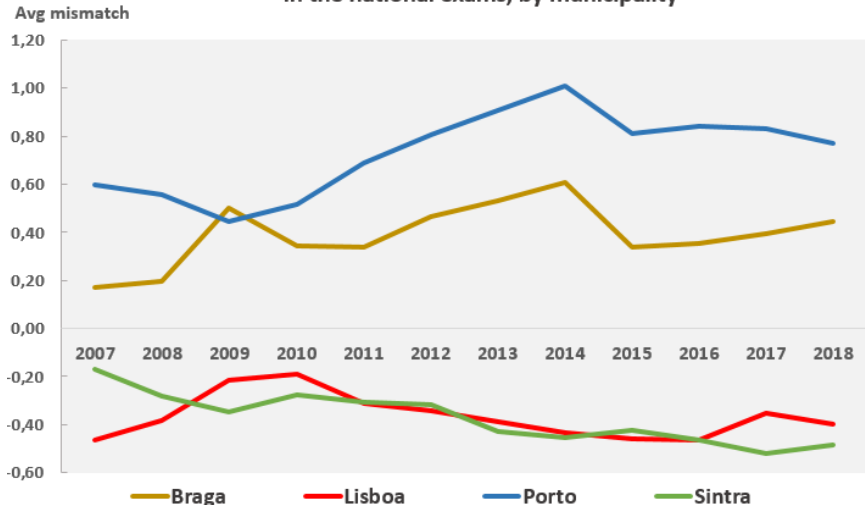
- For the seriation score to be fair, it is important that different schools use **approximately the same criteria** when attributing internal grades to their students.
- However, there are signs that some schools tend to give more “generous” grades than others, **systematically**, for students with comparable ability, as measured by scores in the national exams.
- This may give their students a systematic and unfair edge in national competition to enter HE.
- The “generous” schools also tend to attract the enrolment of many students in the region, in search of the “edge”. So other schools may **feel compelled to follow the same standards**, in order not to lose students and not to put them at disadvantage to enter HE.

## Mismatch of internal grades (scale 0-20) for students with the same scores in the national exams, by type of secondary school

Avg mismatch

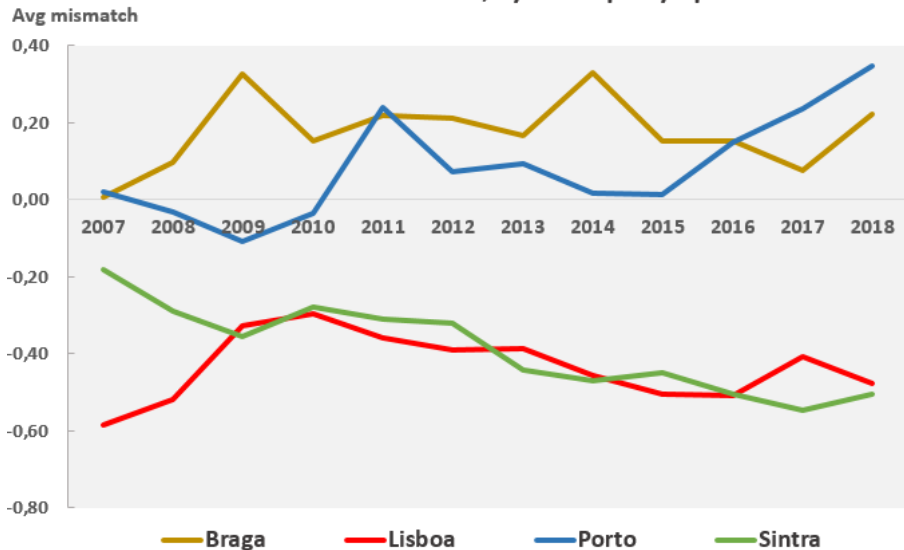


## Mismatch of internal grades (scale 0-20) for students with the same scores in the national exams, by municipality



In 2014, the average mismatch of school grades between students with the same exam scores from Porto and Lisbon was about **1.44 points out of 20**.

## Mismatch of internal grades (scale 0-20) for students with the same scores in the national exams, by municipality - public schools



## Repeated mismatches in consecutive years

Number of schools with average positive mismatch above X points (scale 0-20), in two consecutive years

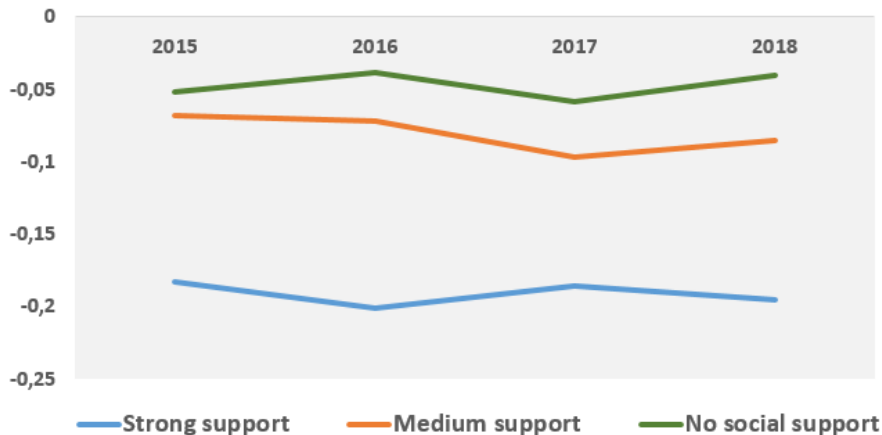
Consecutive years	Number of analyzed schools	Number of schools with positive mismatch above X				
		X = 0,75	X = 1	X = 1,25	X = 1,5	X = 1,75
2018 - 2017	628	52	25	14	6	4
2017 - 2016	630	52	30	20	10	5
2016 - 2015	630	53	33	21	13	7
2015 - 2014	628	61	36	24	16	11
2014 - 2013	627	48	27	17	13	8
2013 - 2012	618	44	28	12	8	6
2012 - 2011	613	42	21	10	5	2
2011 - 2010	610	37	17	11	4	3
2010 - 2009	601	33	16	11	2	1
2009 - 2008	603	43	18	11	3	2
2008 - 2007	605	40	28	13	4	1

Source: DGEEC



## Mismatch of internal grades (scale 0-20) for students with the same scores in the national exams, by level of student social support- public schools

Avg mismatch



For students with the same exam scores, grades attributed by schools to disadvantaged students are slightly lower.

# Data source and references

- All the data presented here has been produced by DGEEC.
- Most of the data presented here is available in the following publications:
  - Transição entre o Secundário e o Superior, DGEEC, 2016.  
<http://www.dgeec.mec.pt/np4/348/>
  - Comparação das classificações internas no ensino secundário, DGEEC, 2016.  
<http://www.dgeec.mec.pt/np4/365/>
  - Transição entre o Secundário e o Superior, 2017/18 -> 2018/19, DGEEC, 2019.  
<http://www.dgeec.mec.pt/np4/EstatVagasInsc/>

Thank you for the attention!