

**Survey report
on the professional
integration of EPFL
graduates**

Class of 2021

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Survey report on the professional integration of EPFL graduates of the class of 2021

I. Preamble

This report is the result of the analysis of data collected by the EPFL Career Center (now the Transversal Skills and Career Center) regarding the professional integration of graduates who obtained their Master's or PhD at EPFL in 2021.

Graduates of this class were surveyed between mid-August and mid-September 2022, *i.e.* between 9 and 18 months after their exmatriculation.

The data were collected through an online questionnaire, which globally repeats the questions of the questionnaire used for the previous classes. However, for the sake of simplification and clarification, some questions may have been deleted, others added and others reworded from one year to the next.

The 2021 graduates were invited to participate by e-mail. To contact them, we used the private e-mail addresses stored in IS-Academia.

We present most of our results by separating the Master's graduates from the PhDs.

II. Summary of the main results

- One year after graduation, the net employment rate of **Master's** graduates in Switzerland (proportion of graduates not pursuing a doctorate who are employed or self-employed) was **90.9%**, down slightly from 2020's record rate of 92.4%. The net employment rate for all countries combined, at **90.5%**, was also down slightly on the previous year (2020: 91.7%). All countries combined, it took them an average of **8.8 weeks** and **13 applications** to find a job, significantly less than the previous year's class (2020: 11.2 weeks and 19 applications). Their salary at the time of the survey (in Switzerland) averaged **CHF 89,139 in the private sector** (up from CHF 83'882 in 2020) and **CHF 80,732 in the public sector** (up from CHF 75'692 in 2020).
- On average one year after their thesis, **94.3%** of recent **PhDs** based in Switzerland were employed or self-employed (all countries combined: **96.6%**), a stable rate compared to that of the class of 2020 (*Switzerland: 94.5%, all countries combined: 94.9%*). All countries combined, young PhDs found a job in **15.5 weeks**, after an average of **19 applications**, a lower search effort than that of the previous class (*2020: 18.2 weeks and 23 applications*). The average salary in Switzerland at the time of the survey was down to **CHF 106,172 in the private sector** (from CHF 111'507 in 2020), nevertheless still maintained at a high level by international IT companies. By contrast, it rose to **CHF 92,011 in the public sector** (from CHF 88'679 in 2020).
- Switzerland remains the number one job-hunting destination for both Master's graduates and PhDs. The rate of departure from Switzerland dropped slightly for Masters (24.7% vs. 26.2% in 2020). By contrast, the rate for PhDs was up to 40.4% (30.1% in 2020). This increase looks high, but it is measured with large margins of error (see next page for error margin calculations).
- Our graduates were generally satisfied with their first job, and in particular with the interest of the tasks they performed. As in the previous seven surveys, the PhDs working abroad were the most satisfied with the adequacy between their education and the requirements of the job they held (they are academic researchers in the vast majority of cases). For all, the least satisfactory point remained the salary, with no difference on this between Masters and PhDs. This last finding confirms that of all previous surveys.
- Unlike the class of 2020, the graduates of 2021 did not see their professional integration slowed by the COVID-19 pandemic, with a few rare exceptions.
- Post-graduation entrepreneurship has been marking time with this class. The proportion of entrepreneurs among Master's graduates was one of the lowest ever measured, and there were no entrepreneurs or self-employed PhDs among those who responded, an unusual situation.

III. Survey methodology

Our survey aimed at surveying all graduates, living in Switzerland and abroad. Nevertheless, we have separated the answers of graduates working in Switzerland (but not necessarily residing there) from those working abroad, as national situations may vary greatly from one country to another. The results for graduates working in Switzerland appear on a light blue background, those for graduates working abroad on a lilac background. The results for all graduates appear in yellow.

Responses validation

We analyzed the quality and consistency of the responses in order to exclude the outliers. The electronic questionnaire was designed to minimize the risk of errors and blatant outliers. However, 12 responses had to be eliminated.

Response rates

	EPFL graduate population 2021	Total valid responses	Margin of error at p=50 for a 95% confidence level
Master's	1176	502 (43%)	3.3%
PhDs	437	146 (33%)	6.6%

Compared to previous years, the response rate remained stable for Master's graduates (42% for the class of 2020) and decreased significantly for PhDs (from 40% for the class of 2020). The margin of error for the latter remains below the minimum quality criteria commonly accepted for surveys (margin of error of max. 5% at 95% confidence). The results concerning PhDs must therefore be interpreted with caution.

WARNING:

As much as possible, we have compiled statistics that are representative of the overall situation of our graduates. However, as soon as we look at the situation of particular subgroups (e.g. average salary of female microengineering graduates), the statistical reliability of the results is potentially impaired by the small number of responses (due to a lack of responses and/or because the subgroup concerned is itself small). This is why we routinely mention the number of responses on which the results are based next to the results, in brackets, so that the reader can weigh the conclusions he or she might draw from the raw results. **This warning is particularly important when reading tables showing results by section.**

IV. Distribution of respondents by field of study

Master sections	Respondents	Graduates	R/G
Architecture	26	117	22%
Civil Engineering	22	55	40%
Environmental Sciences and Engineering	21	39	54%
Mathematics	27	70	39%
Physics	32	80	40%
Chemistry	20	50	40%
Electrical Engineering	19	56	34%
Mechanical Engineering	62	124	50%
Microengineering	49	110	45%
Materials Science and Engineering	26	56	46%
Computer Science	57	112	51%
Communication Systems	53	106	50%
Life Sciences	56	123	46%
Management of Technology and Entrepreneurship	19	35	54%
Financial Engineering	10	28	36%
Energy Management and Sustainability (EME)	3	13	23%
Digital Humanities	0	2	0%
TOTAL	502	1176	43%

Doctoral programs	Respondents	Graduates	R/G
Architecture and Sciences of the City (EDAR)	3	12	25%
Civil and Environmental Engineering (EDCE)	12	29	41%
Mathematics (EDMA)	5	16	31%
Physics (EDPY)	13	35	37%
Chemistry and Chemical Engineering (EDCH)	18	57	32%
Electrical Engineering (EDEE)	10	45	22%
Mechanics (EDME)	5	15	33%
Microsystems and Microelectronics (EDMI)	8	26	31%
Advanced Manufacturing (EDAM)	2	3	67%
Photonics (EDPO)	5	25	20%
Robotics, Control and Intelligent Systems (EDRS)	6	15	40%
Materials Science and Engineering (EDMX)	18	37	49%
Energy (EDEY)	6	20	30%
Biotechnology and Bioengineering (EDBB)	10	28	36%
Neuroscience (EDNE)	3	16	19%
Molecular Life Sciences (EDMS)	4	7	57%
Computational and Quantitative Biology (EDCB)	0	2	0%
Management of Technology (EDMT)	6	9	67%
Finance (EDFI)	0	3	0%
Computer and Communication Sciences (EDIC)	12	34	35%
Digital Humanities (EDDH)	0	3	0%
TOTAL	146	437	33%

V. Demographic indicators

Citizenship

Respondents	Master's		PhDs	
Swiss citizens	224	44.6%	32	21.9%
Foreigners with C permit (residents)	5	1.0%	1	0.7%
Non-resident foreigners	273	54.4%	113	77.4%
Total	502	100.0%	146	100.0%

Note: dual nationals with Swiss citizenship are counted as Swiss.

Non-resident foreign graduates represent 54.1% of the 1176 Master's graduates of the class of 2021 (source: Registrar's office) and constitute 54.4% of the respondents. The proportion of foreigners to Swiss nationals is therefore fully respected in the sample.

Concerning PhDs, non-resident foreigners represent 80.1% of the 437 graduates of this class and constitute 77.4% of the respondents. They are therefore slightly under-represented in the sample.

Gender

Respondents	Master's		PhDs	
Men	370	73.7%	103	70.5%
Women	132	26.3%	43	29.5%
Total	502	100.0%	146	100.0%

Women represent 27.5% of all Master's 2021 graduates and 29.5% of all PhDs of this class (source: Registrar's office). They are therefore adequately represented in the Masters and Doctoral samples.

1. Master's survey

As their status is specific, we systematically separate PhD students and self-employed / entrepreneurs from employed Master's graduates (except in 1.1.1 and 1.1.2). PhD Students and self-employed / entrepreneurs were the subject of specific questionnaires, the answers to which appear in 1.10 and 1.11 respectively.

1.1 Professional integration main indicators

1.1.1 Place of establishment by origin	Master's living in Switzerland	Master's living outside Switzerland	Inside / Outside Switzerland Class of 2020
Swiss and foreigners with C permit (residents)	207	22	180 / 22
Non-resident foreigners	171	102	158 / 98
Total	378 (75.3%)	124 (24.7%)	74% / 26%

1.1.2 Activity at time of survey	Master's living in Switzerland	Master's living outside Switzerland	Master's living in Switzerland Class of 2020
Professionally active (employed + <u>entrepreneurs</u>)	76.5% (280 + 9)	58.9% (69 + 4)	76.0%
PhD candidates	15.9% (60)	33.9% (42)	17.8%
Job seekers	5.0% (19)	3.2% (4)	4.4%
Not working / not seeking	2.6% (10)	4.0% (5)	1.8%
Total	100% (378)	100% (124)	100%

Note: among the 280 graduates employed in Switzerland, 2 worked remotely for foreign companies
among the 69 graduates employed outside Switzerland, 5 lived in France and worked in Switzerland (cross-border workers)

1.1.3 Salary at the time of survey	Master's working in Switzerland*	Master's working outside Switzerland	Master's working in Switzerland Class of 2020
Private for-profit sector - average salary	CHF 89'139	(not relevant)	CHF 83'882
Private for-profit sector - median salary	CHF 85'000	(not relevant)	CHF 84'500
Public sector and related - average salary	CHF 80'732	(not relevant)	CHF 75'692
Public sector and related - median salary	CHF 84'007	(not relevant)	CHF 77'012

*Includes graduates employed in Switzerland, whether living in Switzerland or abroad. Does not include graduates working remotely for foreign companies

PhD students and entrepreneurs/self-employed were not asked about their salary. Public sector salaries therefore do not include PhD students

1.1.4 Job search efforts (employed graduates)	Master's working in Switzerland	Master's working outside Switzerland	Master's working in Switzerland Class of 2020
Average number of applications (before landing a job)	12.0	15.7	16.4
Average number of interviews obtained	3.0	4.0	3.1
Average number of jobs obtained	1.5	2.1	1.5
Average time to land a job, in weeks	8.5	10.2	10.6

PhD students and entrepreneurs/self-employed were not asked about their job search efforts

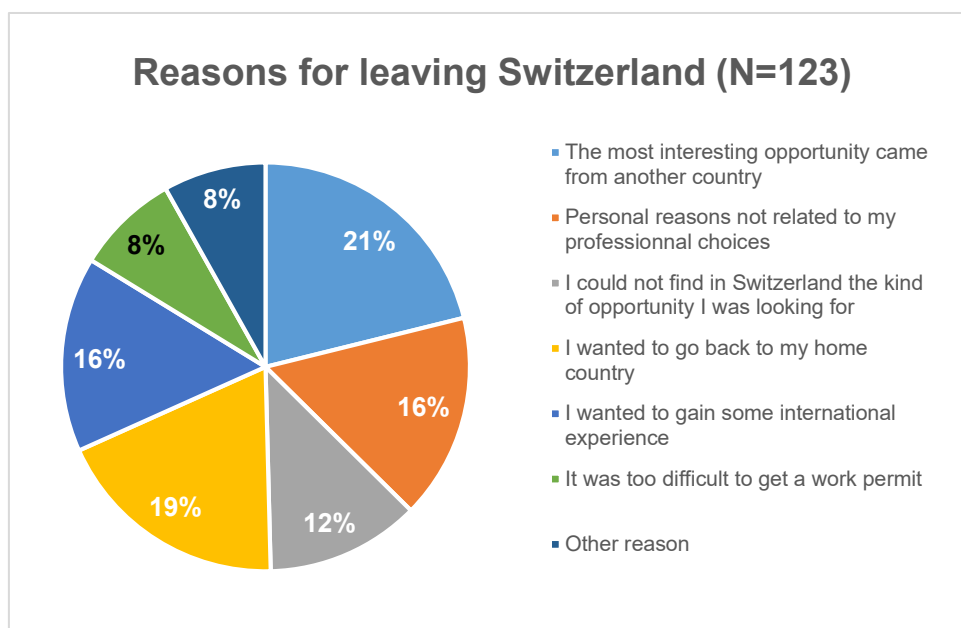
Regarding the **place of residence**, we see that

- **Graduates residing outside Switzerland:** 24.7% of the class of 2021 left Switzerland, a stable rate compared to the two previous classes. It was around 30% in 2016-2018, around 25% for the classes of 2012-2015 and between 15% and 18% until 2011. It is difficult to say at this stage if this is a sustainable trend reversal, especially since the decrease in this rate could be linked to the COVID pandemic, which limited migratory movements.
Those who went abroad did so more often to work (64+4 respondents¹) than to pursue a PhD (40

¹ Cross-border commuters working in Switzerland or doing a PhD there are not counted in these figures, hence the difference with the figures shown in 1.1.2

respondents¹). They chose France first (43 respondents), followed by Germany (11), the USA (10), the UK (9), China (9), Belgium (7), the Netherlands (6) and Spain (5), roughly the same destinations as in the previous year, with the exception of China, which was chosen much less often in 2020. All those who left to live in China in 2021 were Chinese nationals.

The reasons why these graduates left Switzerland are as follows (only one possible answer):



*Answers are not ranked in order of importance to allow for year-to-year comparisons
One graduate did not answer the question*

82% of graduates who left Switzerland are non-resident foreigners, a fairly stable rate: (2020: 82%, 2019: 78%, 2018: 80%, and 2017: 75%).

- **Graduates residing in Switzerland** : Of all respondents who stayed in Switzerland to work as employees (280) or to pursue a PhD (60), 82 employees and 12 PhD students are based in German-speaking Switzerland, a rate of 27.6% (stable). Only 4 respondents work in Italian-speaking Switzerland.
- **Non-resident foreign population**: 171 graduates out of 273 non-resident respondents (63%) remained in Switzerland, a stable rate compared to the previous class (2020: 62%, 2019: 59%, 2018: 46%, 2017 and 2016: 53%). At the time of the survey, these 171 graduates were distributed as follows: 122 were employed², 5 self-employed, 33 PhD students (including 24 at EPFL), 9 job seekers and 2 professionally inactive.

Regarding the **conditions of workplace insertion** (job search efforts + salaries), we see a significant improvement compared to the class of 2020, both in terms of search efforts and salaries. The large increases in the number of applications and job search duration observed for the class of 2020 were primarily due to the hiring freeze following the first wave of COVID-19. At that time, 48 respondents indicated that the pandemic had significantly interfered with their job search, and so did another 27 in the partially impacted class of 2019. There were only 6 such respondents in the class of 2021, which was hence only marginally impacted by the pandemic.

- The average time to find a job in Switzerland (8.5 weeks) decreased significantly from that of the class of 2020 (10.6 weeks), while the median time decreased from 8 weeks in 2020 to 6 weeks in 2021.
- The average salary in Switzerland in the private sector was up compared to the previous year, as was the median salary. In the public sector, both the average and median salaries increased markedly, but one must keep in mind the small number of respondents who work in this sector (about

² The 5 graduates living in France and working in Switzerland are not counted in this figure

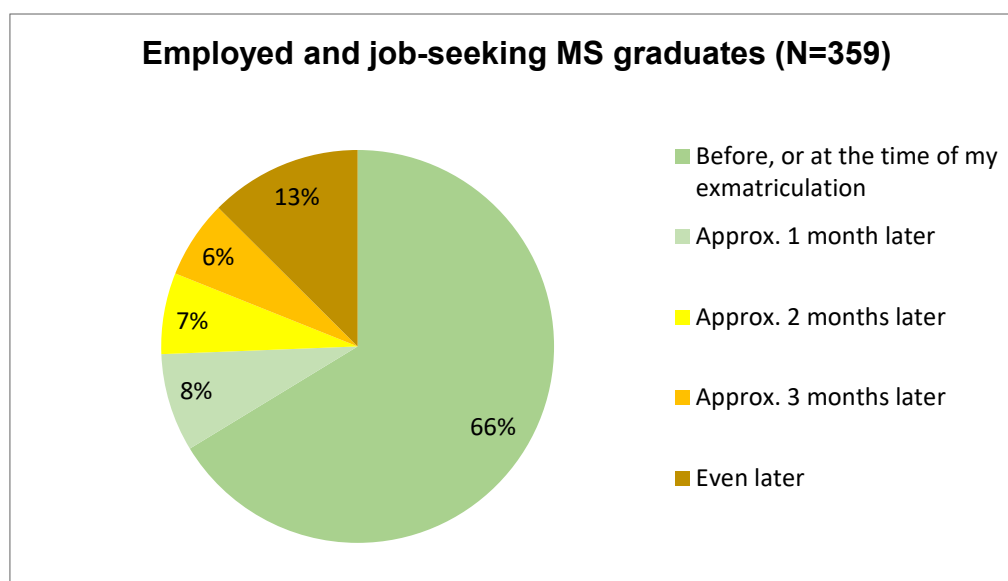
30 in Switzerland), which causes a great deal of variability and makes it difficult to make comparisons from one promotion to another.

- The net employment rate in Switzerland (proportion of Master's graduates established in Switzerland who are not pursuing a doctorate and who are employed or self-employed) was, at 90.9% (289/318), slightly down from the previous year (92.4%). A tracking curve for this measure is presented in chapter 1.9.1.
The net employment rate for respondents from all countries combined was 90.5% (362/400), which is also slightly lower than that of 2020 (91.7%).
- All countries combined, 23 graduates (4.6% of respondents) were seeking employment at the time of the survey (4.4% in 2020).
- 15 graduates were not employed and not looking for a job, either because they were continuing their studies (8), pursuing personal projects (3), or have taken a sabbatical (2). Another one was waiting for a visa to work abroad and the last one was specifically looking for a PhD.

1.2 Job search

- Starting period of the search

Since the class of 2015, we have been asking our graduates when they started their job search. We are interested in knowing when they start looking for work in relation to the end of their studies, as undertaking an activity of a certain length (language stay, sabbatical year, civil service, etc.) between the end of their studies and the beginning of their active search may have, because of the time lag, a direct impact on the rate of graduates not professionally active or looking for work at the time of the survey. The results are as follows:

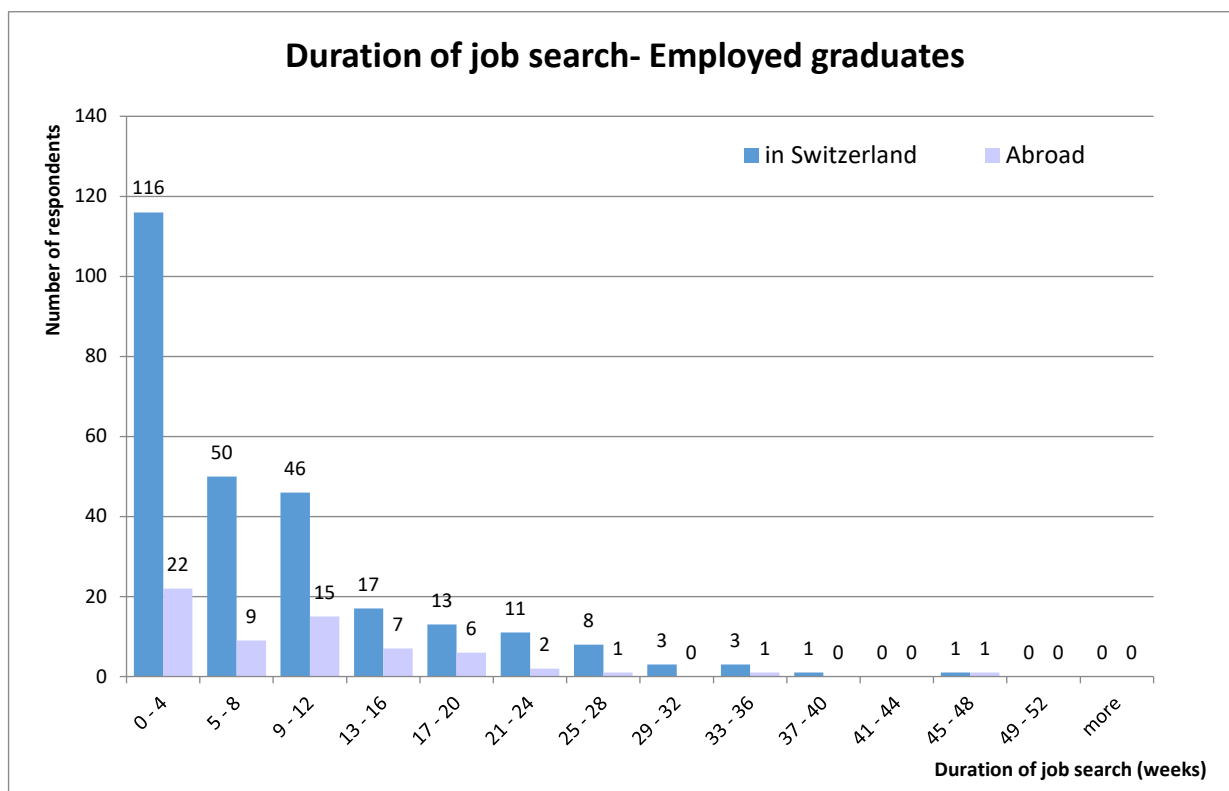


Historically, about half of our graduates start their research before or at the time of graduation. This year, as in 2020, this rate has risen again (66% vs. 60% in 2020), perhaps in anticipation of difficulties linked to COVID. However, the share of graduates who waited more than three months to do so remains stable (13% vs 11% in 2020 and 12% in 2019). The reasons given for postponing their entry in the workplace are usually linked to long commitments (see below), which has a subsequent impact on the time elapsed between graduation and the start of a real professional activity.

The 45 respondents who replied that they had started their job search "even later" were asked what activity, if any, they had engaged in between the end of their studies and the start of their search. The answers were as follows:

- Sabbatical, travel	20
- Military or civilian service	7
- Unpaid work, part-time (<50%) paid work, continuation of Master thesis	9
- Other (short studies, personal projects, illness, etc.)	9

- Duration of job search



The average duration of a successful job search in Switzerland was 8.5 weeks (down from 10.6 in 2020), and the median duration was 6 weeks (down from 8). 78.8% of our 2021 graduates employed in Switzerland found work within the first 12 weeks (71.7% in the previous year).

Abroad, the average search duration was also down, to 10.2 weeks (13.6 weeks in 2020), while the median value remained stable at 9.5 weeks. 71.9% of our graduates there found work within the first 12 weeks (66.2% last year).

The impact of the COVID pandemic was clearly visible in the job search effort figures for 2020. This was no longer the case for the class of 2021.

- Job search area (employed graduates)

Job search area	Master's working in Switzerland	Master's working outside Switzerland	Master's (all)	PhDs working in Switzerland	PhDs working outside Switzerland	PhDs (all)
French-speaking Switzerland	84.9%	36.9%	75.9% →	88.5%	32.8%	64.7% ↓
Rest of Switzerland	55.4%	35.4%	51.5% ↗	64.1%	37.9%	52.9% ↓
One or several European countries	21.8%	79.7%	32.7% ↓	21.8%	69.0%	41.9% →
North America	6.6%	16.9%	8.6% →	9.0%	55.2%	28.7% ↗
Other regions	2.6%	24.6%	6.8% →	2.6%	17.2%	8.8% →

As multiple answers were possible, the total is greater than 100%. Arrows indicate the variation with regards to the class of 2020 (stable (→) means a variation lower than, or equal to +/-2.5 percentage points from the previous year).

We include information on PhDs' job search areas for comparison. For comments on PhDs' figures, see 2.2

French-speaking Switzerland remained the preferred job search area for our Master's graduates. The rest of Switzerland was nevertheless also attractive to our graduates: 51.5% looked for work there, and 30.4% (86/283) of graduates employed in Switzerland ended up working there - almost all in the German-speaking area - compared to 31.0% of the class of 2020. The latter rate rose steadily between 2017 and 2020 (it was only 18.4% for the class of 2017).

The attractiveness of Europe as a place to work declined once again, after a spurt in 2020 which followed two years of decline. Of the 110 graduates who said they looked for work in Europe, 48 were actually working there, while 59 ended up working in Switzerland.

As for North America, whose attractiveness remained stable, only a small minority of the 29 graduates who said they sought employment there worked there (4), while 18 ended up staying in Switzerland.

Looking specifically at Master's graduates working abroad, 47% (31/66) also looked for work in Switzerland (compared to 56% in 2020, 41% in 2019, 53% in 2018, and 40% for the class of 2017).

- Initial step leading to the first job

Initial step leading to the first job	Master's working in Switzerland (N=271)	Master's working outside Switzerland (N=65)	Master's all (N=336)
a. I answered a job advertisement	37.3%	35.4%	36.9%
b. I sent a spontaneous application to my employer	12.5%	16.9%	13.4%
c. I spontaneously sent my CV to a recruitment agency which contacted me	1.5%	6.2%	2.4%
d. I met my employer at Forum EPFL	4.1%	1.5%	3.6%
e. I was offered a position further to a joint project between EPFL and my employer, in which I had participated	4.8%	1.5%	4.2%
f. My employer offered me a job after I did my Master thesis with them (incl. EPFL)	17.7%	10.8%	16.4%
g. I was recommended to my employer (by a friend, a family member, a colleague, etc.)	9.2%	10.8%	9.5%
h. I was contacted / recontacted without having taken any specific steps towards this particular position	8.9%	10.8%	9.2%
i. Other	4.1%	6.2%	4.5%
Total	100.0%	100.0%	100.0%

It is worth noting the importance of in-company Master thesis in the professional integration of our graduates. If we consider that only 489 of the 1'176 graduates, *i.e.* 41.6%, did their Master's thesis in a company (source: Statistiques de la Formation), by applying the survey response rate of 43% to these graduates, we come to the conclusion that 26.2% of them subsequently remained in the company.

The initial steps leading to employment are varied and are distributed in roughly the same proportions from one year to the next. It can be seen that

- In 56% of cases (steps a. to d.), the young graduate found his or her position by actively approaching the employer. The proportion of graduates who found their first job through an active approach has remained stable over time, hovering around 60% since we began measuring this figure (2009).
- In 21% of cases (steps e. and f.), EPFL helped establish a link with the employer (typically through an internship or a Master's Project in industry, but also including academic projects carried out at EPFL in partnership with industry).
- In around 10% of cases (step g.), the initial contact was made through the graduate's network, either inside or outside EPFL.

In addition, **30.7% of employed graduates (103/336) said they had already worked for their current employer.** This was mostly because they carried out their mandatory Master's internship or their Master's Project with them (96/103), but also, in a few cases, because they worked there during their studies (7/103). This high rate, although declining (38.0% in 2020), suggests that a previous professional relationship facilitates professional integration in a large number of cases.

- Minor's role in the job search

We asked our 122 employed respondents who had completed a Minor at EPFL to what extent their Minor had influenced their professional integration.

- 71 of them (58%) considered that having done the Minor was useful in the recruitment process (independently of its usefulness for their day-to-day work). However, 49 of these 71 graduates felt that they could have landed their current position without having done it.
- 48 of them (39%) considered that the field of activity in which they work is related to their Minor (this proportion has traditionally fluctuated between 45% and 54% since we started measuring it). See the table below for details.

Minor	Field of activity is not related	Field of activity is related	Total
Biocomputing		1	1
Biotechnology	1		1
Chemistry and chemical engineering	1		1
Data science		1	1
Integrated design, architecture and sustainability	1	1	2
Urban planning and territorial development	1	2	3
Energy	5	4	9
Civil engineering	2		2
Electrical Engineering		1	1
Mechanical engineering	5		5
Computer science	1	2	3
Financial engineering	2	3	5
Management, technology and entrepreneurship	20	14	34
Microengineering	1		1
Neuroprosthetics	1	2	3
Computational neurosciences	3		3
Photonics	2	2	4
Physics	2		2
Computational science and engineering	1	1	2
Science, technology and area studies (China)	4	1	5
Science, technology and area studies (Russia)	4	1	5
Environmental science and engineering	2		2
Systems engineering	2	4	6
Biomedical technologies	8	2	10
Space technologies	5	6	11
Total	74	48	122

1.3 Type of positions held

- Public and private sectors

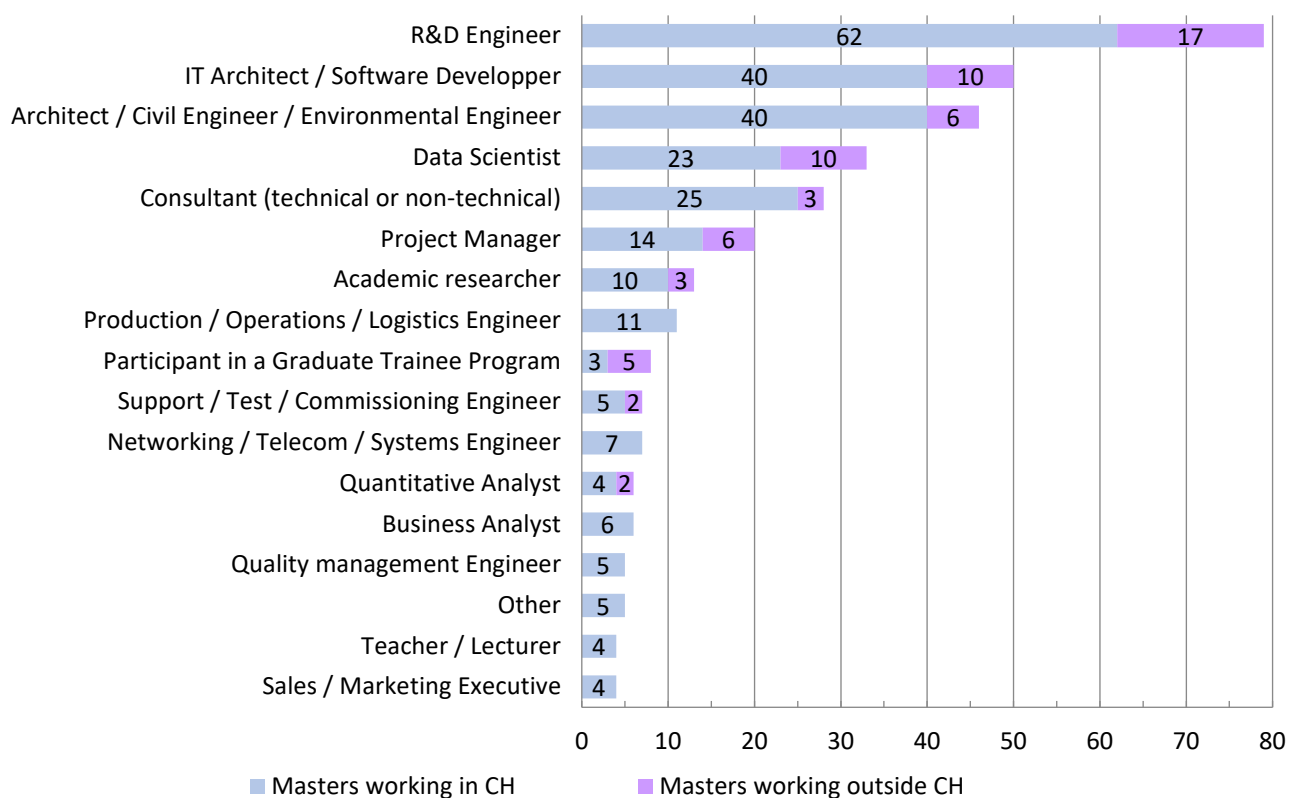
We count NGOs and other non-profit organizations alongside public sector ones.

Sector	Master's Working in Switzerland		Master's Working outside Switzerland		Master's Working in Switzerland Class of 2020
	Count	Percentage	Count	Percentage	
Private, for-profit sector	240	88.9%	53	81.5%	86.4%
Public, non-profit and related	30	11.1%	12	18.5%	13.6%
All	270	100.0%	65	100.0%	100.0%

One graduate did not answer

The vast majority of our Master's graduates chose the private sector. This is a recurring observation, and the split between the public and private sectors is historically stable from one year to the next.

- Position held



- Employer size

Overall (in Switzerland and abroad), 60.9% of Master's graduates chose to work for large companies. This proportion is slightly down on last year (see 1.9.3 for the evolution of this rate over time). There is a recurring difference between the situations in Switzerland and abroad, probably due to the nature of the Swiss economic fabric, which includes many SMEs and technology startups.

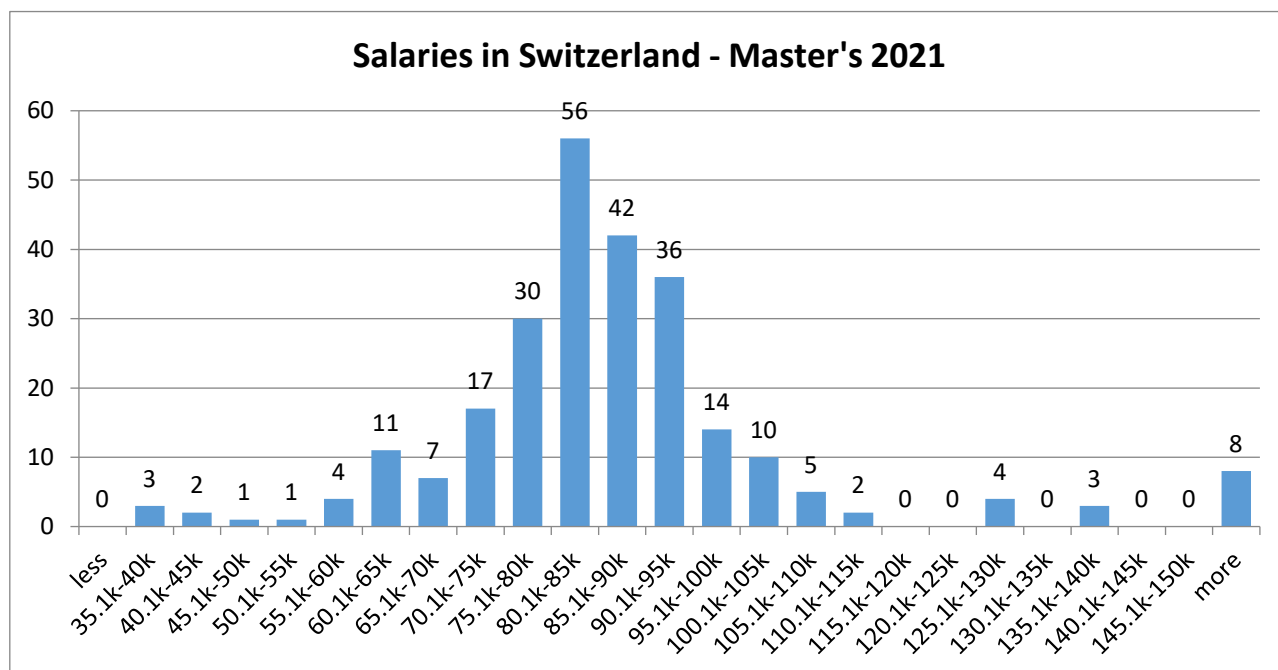
Employer size	Master's Working in Switzerland		Master's Working outside Switzerland		Master's Working in Switzerland Class of 2020
	Count	Percentage	Count	Percentage	
< 250 employees	109	40.4%	22	33.8%	38.3%
> 250 employees	161	59.6%	43	66.2%	61.7%
All	270	100.0%	65	100.0%	100.0%

One graduate did not answer

1.4 Salaries

Our graduates were asked about their salaries at the time of the survey, *i.e.* approx. one year after graduation. For obvious reasons of salary disparities between countries, we have limited our analysis to the salaries of graduates working in Switzerland. These are standardized salaries (annualized, employment rate extrapolated to 100%). Please note that the salaries of doctoral students are not included in the following figures.

The distribution of salaries for the Master's class of 2021 is as follows:



Average salaries at time of survey	Master's Working in Switzerland	Standard deviation	Master's Working in Switzerland Class of 2020	Standard deviation Class of 2020
Private, for-profit sector	CHF 89'139 (230)	-	CHF 83'882	-
Public sector and related	CHF 80'732 (26)	-	CHF 75'692	-
Combined	CHF 88'285 (256)	CHF 21'846	CHF 82'747	CHF 18'777

The number of graduates who responded is shown in brackets. 15 employed respondents did not disclose their salary.

The **average** salary of Master's graduates rose significantly in both the private and public sectors. The **median** salary was up slightly in the private sector (CHF 85,000 vs. 84,500 in 2020), but rose more sharply in the public sector (CHF 84,007 vs. CHF 77,012 in 2020).

As in the past, we noted salary disparities according to employer size, graduate gender, company origin and between Sections.

- By employer size:

Average salaries at time of survey	< 250 employees	> 250 employees	Combined
Private, for-profit sector	CHF 84'424 (102)	CHF 96'084 (128)	CHF 89'139 (230)
Public sector and related	CHF 36'000* (2)	CHF 84'460 (24)	CHF 80'732 (26)
Combined	CHF 79'570 (104)	CHF 94'249 (152)	CHF 88'285 (256)

The number of graduates who responded is shown in brackets. 15 employed respondents did not disclose their salary.

* both respondents were employed by the same public research institute, which only offers low-paid internships to Master graduates

Unsurprisingly, large companies paid higher salaries than small ones - a recurring finding.

- By employer's origin:

Average salaries at time of survey	< 250 employees	> 250 employees	Combined
Headquartered abroad	CHF 90'333 (3)	CHF 110'990 (42)	CHF 109'613 (45)
Headquartered in CH	CHF 79'250 (101)	CHF 87'857 (110)	CHF 83'737 (211)
Combined	CHF 79'570 (104)	CHF 94'249 (152)	CHF 88'285 (256)

The number of graduates who responded is shown in brackets. 15 employed respondents did not disclose their salary.

The gap between the average salaries paid by large Swiss and foreign companies continued to widen, with a difference of +30.9% for this class (+23.8% in 2020, +23.4% in 2019; the gap was between +10% and +20% for previous promotions). This increase was largely driven by a few large IT multinationals, which continued to pay very high wages (of the 15 highest salaries reported, 11 were paid by 3 such companies).

For small companies, no comparison is possible given the low number of graduates working for foreign SMEs.

- By gender:

Average salaries at time of survey	Women	Men	Combined
Architects	CHF 63'442 (12)	CHF 64'625 (4)	CHF 63'737 (16)
Engineers	CHF 88'905 (60)	CHF 90'261 (180)	CHF 89'922 (240)
Combined	CHF 84'661 (72)	CHF 89'703 (184)	CHF 88'285 (256)

The number of graduates who responded is shown in brackets. 15 employed respondents did not disclose their salary.

The average pay gap between men and women, across all Master's graduates is down sharply at -5.6% vs. last year's class (2020: -11.3%). The gap has also narrowed between median salaries (women: CHF 84,000; men: CHF 86,833, gap: -3.3%).

As in previous years, a significant part of the difference can be explained by the over-representation of female architects among female respondents, since architects as a whole are traditionally paid less than engineers. Noticeably, the average pay gap between female engineers and male engineers was only -1.5%.

- Between Sections:

Section		Women	Men
Architecture	CHF 63'737 → (16)	63'442 (12)	64'625 (4)
Civil Engineering	CHF 82'446 ↓ (13)	85'000 (5)	80'850 (8)
Environmental Sciences and Engineering	CHF 80'238 → (14)	82'063 (4)	79'508 (10)
Mathematics	CHF 85'114 ↓ (7)	87'750 (2)	84'060 (5)
Physics	CHF 72'400 ↗ (9)	36'000 (1)	76'950 (8)
Chemistry	CHF 85'060 ↗ (10)	92'850 (6)	73'375 (4)
Electrical Engineering	CHF 97'039 ↗ (10)	100'000 (2)	96'298 (8)
Mechanical Engineering	CHF 85'118 ↗ (34)	86'400 (4)	84'947 (30)
Microengineering	CHF 84'630 ↓ (30)	80'068 (6)	85'771 (24)
Materials Science and Engineering	CHF 82'317 ↗ (13)	88'140 (5)	78'677 (8)
Computer Science	CHF 105'018 ↗ (37)	124'981 (4)	102'598 (33)
Communication Systems	CHF 106'973 ↗ (24)	103'231 (8)	108'844 (16)
Life Sciences	CHF 80'054 → (17)	77'700 (10)	83'416 (7)
Management of Technology and Entrepreneurship	CHF 87'694 ↗ (16)	81'000 (3)	89'238 (13)
Financial Engineering	CHF 105'827 ↗ (4)	- (0)	105'827 (4)
Energy Management and Sustainability	CHF 87'200 ↓ (2)	- (0)	87'200 (2)
Digital Humanities	- (0)	- (0)	- (0)
All sections combined	CHF 88'285 ↗ (256)	CHF 84'661 (72)	CHF 89'703 (184)

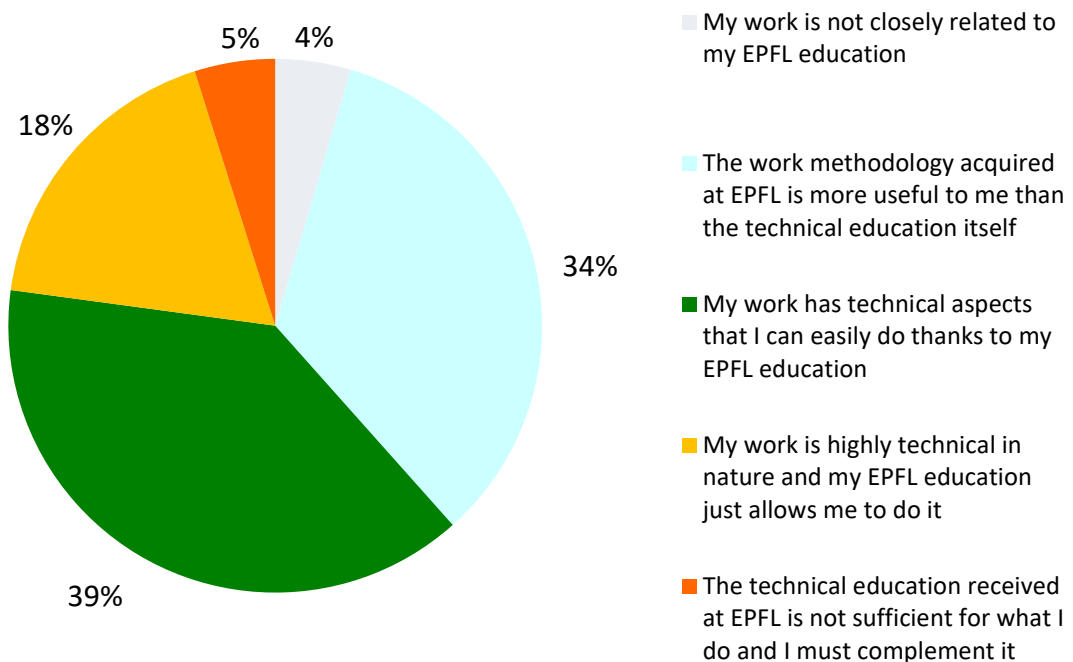
The number of graduates who responded is shown in brackets. 15 employed respondents did not disclose their salary. Arrows indicate the variation with regards to the class of 2020. An average salary that has not varied by more than +/- 2.5% is considered stable (→).

It should be remembered that the number of respondents is too low in some sections to draw any firm conclusions about salaries, and does not allow for truly fair comparisons between the different programs.

1.5 Skills acquired at EPFL in relation to the position (N=328)

Since 2009, we have been looking at the relevance of the technical education acquired at EPFL to our graduates' work, by offering them a scale of responses enabling them to choose the degree of relevance of their technical training to their position. The statistics below include Master's graduates working in Switzerland and abroad.

For the class of 2021, the results remained very similar to those of previous years. 23% of graduates felt that their technical education was "barely sufficient" or "not sufficient" (21% in 2020), while 39% felt that it enabled them to easily meet the technical requirements of their job (33% in 2020).



The 16 graduates who felt that the technical education they received at EPFL is not sufficient and needs to be complemented are spread across 9 sections, the most represented one - with regards to the number of respondents - being Architecture (5 out of 21 architects who answered the question picked that response).

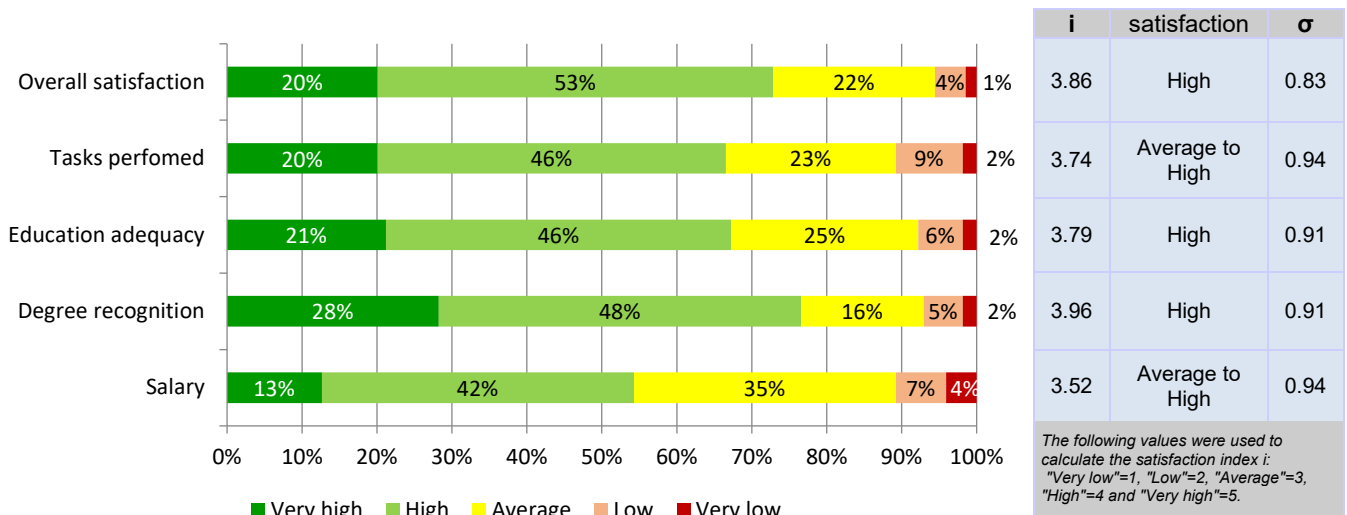
It should also be noted that among the 59 graduates who felt that their technical training barely enables them to do their job (yellow slice), there are 13 computer sciences engineers, 10 communication systems engineers and 10 mechanical engineers

1.6 Job satisfaction

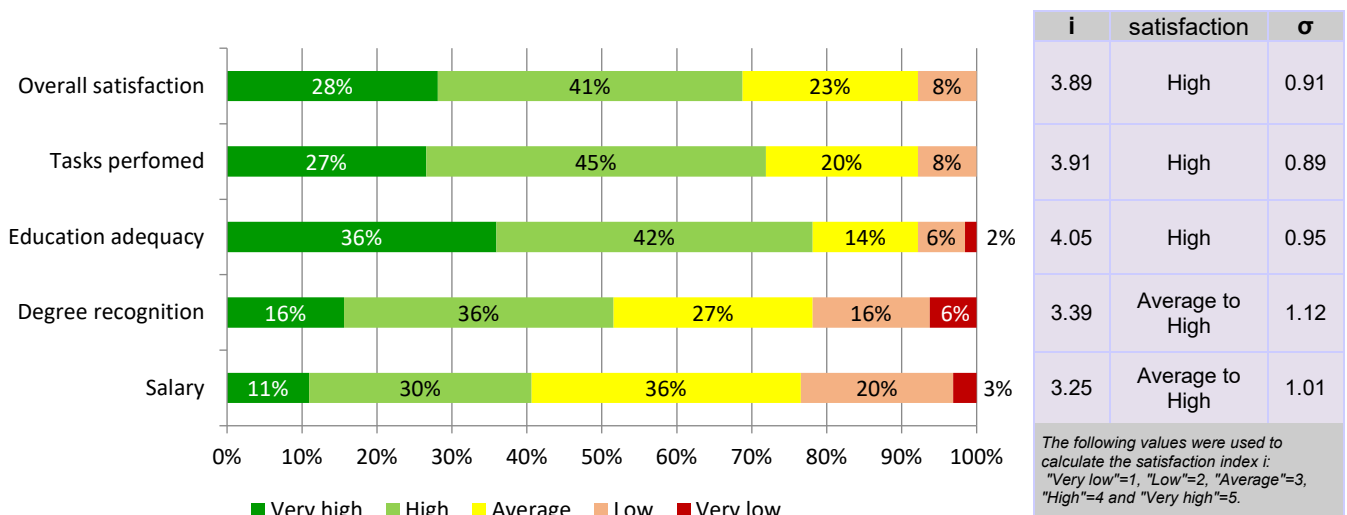
We asked Master's graduates how satisfied they were with their work at the time of the survey, according to 5 criteria:

- **Overall** satisfaction
- Interest in the **tasks** performed
- **Adequacy** of their EPFL education with the job requirements
- EPFL degree **recognition**
- Satisfaction with the **salary**

Master's working in Switzerland (N=269):



Master's working outside Switzerland (N=64):



For Master's graduates working in Switzerland, responses continued to be very similar to those of previous classes. The main areas of (relative) dissatisfaction remained salary and, to a lesser extent, the adequacy of their EPFL education for the job. While other indices remained stable, satisfaction with the tasks performed on the job was down this year.

Responses from graduates working abroad showed greater variability from one year to the next, due to their smaller numbers. Nonetheless, it is a recurring fact that salary and recognition of their EPFL degree remain the main reasons for dissatisfaction.

1.7 Graduates seeking employment

We looked at the situation of the 23 Master's graduates who were looking for work at the time of the survey, in an attempt to understand the reasons. It appears that 19 were based in Switzerland and 4 abroad. 11 were Swiss, 10 were EU nationals and 2 are third-country nationals.

At the time of the survey

- 12 had already had a first job with an activity rate of over 50%, which had ended at the time of the survey. They were therefore looking for their second job.
- Of the remaining 11,
 - 2 had obtained and declined at least one job offer but were continuing their job search.
 - 1 had only been looking for work for 2 weeks.
 - The last 8 seemed to have experienced real difficulties in their job search. The 2 third-country nationals in this group reported that they looked for work in Switzerland, but found that potential employers were unwilling to apply for a work permit. The other 6 all started to look for work fairly late. Nevertheless, they made numerous job applications (45 on average), with a certain degree of success since all of them claim to have obtained interviews for at least 2 jobs (one even claimed 12 - a bit odd!).

1.8 Summary of the main indicators by section (Masters working in Switzerland)

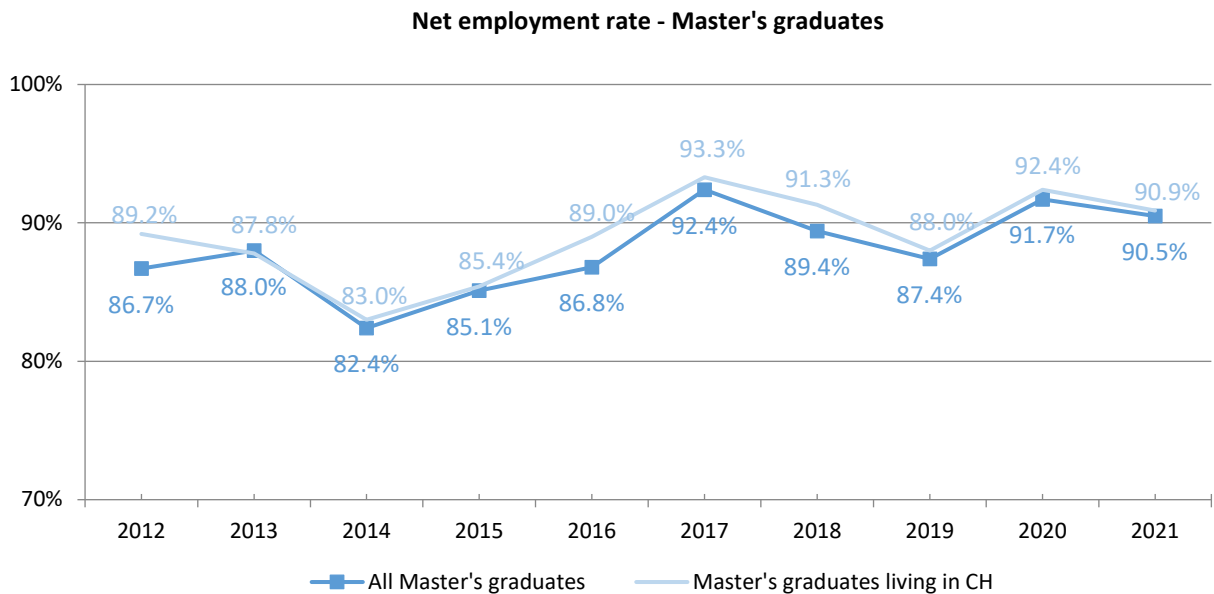
Section	Average number of applications	Average time to land a job in weeks	Average number of jobs obtained	Average salary at the time of survey excluding PhD candidates and entrepreneurs
Architecture	14 (18)	6.2 (18)	1.4 (18)	CHF 63'737 → (16)
Civil Engineering	7 (13)	4.8 (13)	1.8 (13)	CHF 82'446 ↘ (13)
Environmental Sciences and Engineering	7 (15)	7.1 (15)	1.1 (15)	CHF 80'238 → (14)
Mathematics	6 (9)	7.2 (9)	1.4 (8)	CHF 85'114 ↘ (7)
Physics	22 (9)	15.3 (8)	1.2 (9)	CHF 72'400 ↗ (9)
Chemistry	13 (10)	10.8 (10)	1.6 (10)	CHF 85'060 ↗ (10)
Electrical Engineering	9 (10)	10.7 (10)	1.6 (10)	CHF 97'039 ↗ (10)
Mechanical Engineering	12 (36)	9.2 (36)	1.7 (36)	CHF 85'118 ↗ (34)
Microengineering	12 (31)	9.0 (31)	1.4 (31)	CHF 84'630 ↘ (30)
Materials Science and Engineering	16 (14)	9.0 (14)	1.4 (14)	CHF 82'317 ↗ (13)
Computer Science	5 (37)	6.0 (37)	1.4 (37)	CHF 105'018 ↗ (37)
Communication Systems	12 (26)	7.3 (26)	1.8 (26)	CHF 106'973 ↗ (24)
Life Sciences	25 (18)	10.7 (18)	1.6 (19)	CHF 80'054 → (17)
Management of Technology and Entrepreneurship	9 (17)	9.7 (18)	1.3 (18)	CHF 87'694 ↗ (16)
Financial Engineering	17 (4)	9.8 (4)	1.5 (4)	CHF 105'827 ↗ (4)
Energy Management and Sustainability	N/A (2)	N/A (2)	N/A (2)	CHF 87'200 ↘ (2)
Digital Humanities	N/A (0)	N/A (0)	N/A (0)	- (0)
All sections combined	12 (269)	8.5 (269)	1.5 (270)	CHF 88'285 ↗ (256)

The number of graduates who responded is shown in brackets. 15 employed respondents did not disclose their salary. Arrows indicate the variation with regards to the class of 2020. An average salary that has not varied by more than +/- 2.5% is considered stable (→). The average number of applications has been rounded to the nearest whole number.

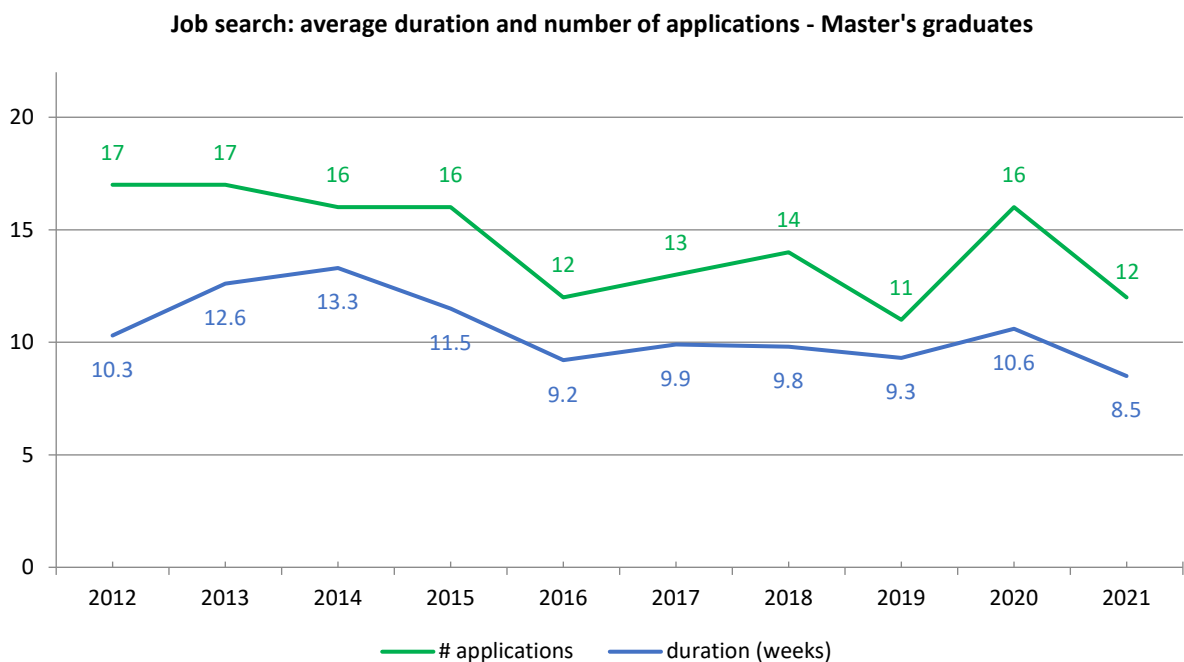
1.9 Evolution of the main indicators over time

1.9.1 Net employment rate

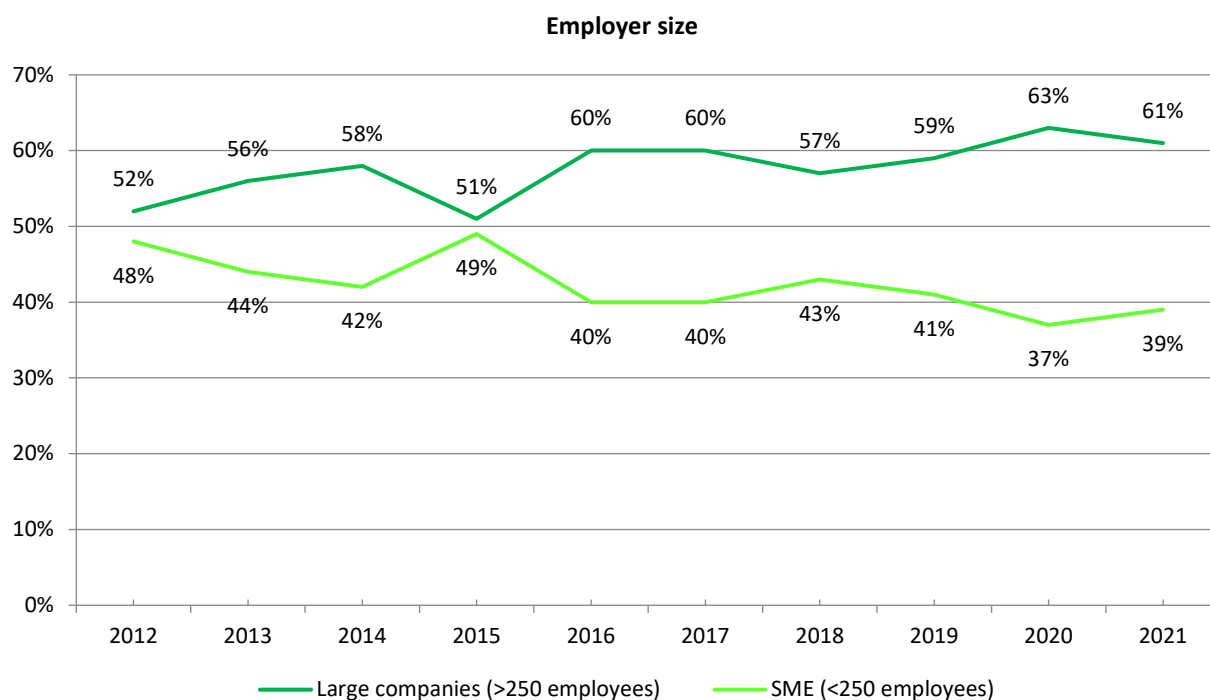
The net employment rate is the proportion of Master's graduates who are not pursuing a doctorate and who are employed or self-employed. It is 90.9% (269/318) for graduates based in Switzerland and 90.5% (362/400) for the entire class of 2021.



1.9.2 Job search (only Master's graduates working in Switzerland)

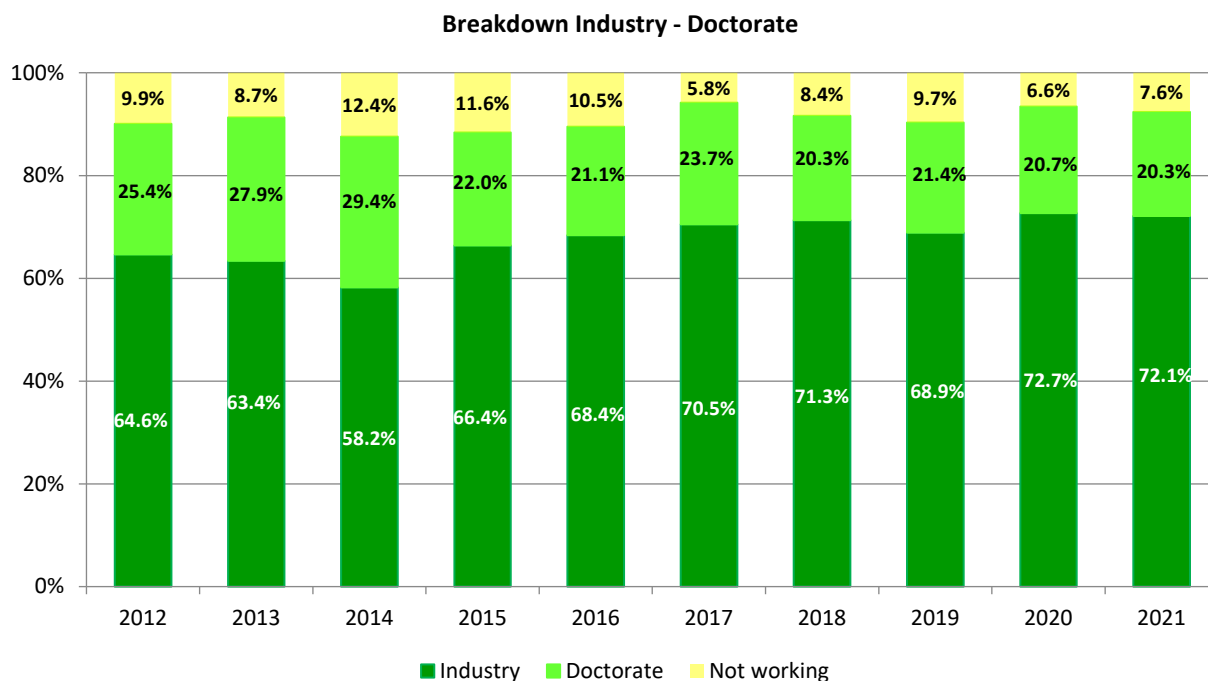


1.9.3 Breakdown SMEs - Large companies (Master's graduates working in Switzerland and abroad)



1.9.4 Breakdown Industry - doctorate (Master's graduates working in Switzerland and abroad)

Since the Class of 2009 survey, we have been looking at the breakdown between Master's graduates working in industry (taken in the broadest possible sense, *i.e.* including the public sector, NGOs, etc.) and those pursuing a doctorate. The "Not working" group includes graduates who are looking for work and those who are not.



1.10 PhD candidates

102 Master's graduates out of the 502 respondents from the class of 2021, i.e. 20.3%, chose to pursue a PhD. As they were not considered to be employed in the usual sense of the term, they were asked to complete a different questionnaire, which did not focus on their integration into the workforce, but rather on their motivations and career expectations.

1.10.1 PhD candidates breakdown

Section of graduation	Pursuing a PhD at EPFL	Pursuing a PhD outside EPFL	Total Vs. respondents in the section	in % Vs. respondents in the section
Architecture	1		1/26	3.8%
Civil Engineering	4		4/22	18.2%
Environmental Sciences and Engineering	2		2/21	9.5%
Mathematics	6	3	9/27	33.3%
Physics	7	12	19/32	59.4%
Chemistry	2	3	5/20	25.0%
Electrical Engineering	3	2	5/19	26.3%
Mechanical Engineering	2	2	4/62	6.5%
Microengineering	2	4	6/49	12.2%
Materials Science and Engineering	2	3	5/26	19.2%
Computer Science	3	2	5/57	8.8%
Communication Systems	1	11	12/53	22.6%
Life Sciences	6	17	23/56	41.1%
Management of Technology and Entrepreneurship	0	0	0/19	0%
Financial Engineering	1	1	2/10	5.0%
Energy Management and Sustainability	0	0	3	0%
Digital Humanities	0	0	0	-
All sections combined	42	60	102/502	20.3%

Respondents pursuing a PhD outside EPFL mainly chose the following universities: ETHZ (10), University of Lausanne (5), TU Berlin (3), MIT (3), University of Geneva (2), University of Tübingen (2) and KU Leuven (2).

1.10.2 Main reason for choosing a PhD

When asked "*What was your main reason for starting a PhD?*", doctoral students answered as follows:

	# respondents	
a. I wanted to increase my knowledge in a particular field	41	41%
b. I intend to pursue an academic career	18	18%
c. A PhD will help on the job market	16	16%
d. I want to give myself some extra time before making career choices	4	4%
e. I could not find a job after my Master	2	2%
f. The PhD title is important to me	2	2%
g. Reason related to my personal situation (family situation, opportunity to go to / to stay in a particular place, ...)	3	3%
h. No particular reason. It looked like a natural choice	14	14%
TOTAL	100	100%

2 respondents did not answer the question

While proposed answers were not mutually exclusive, respondents could only pick one answer in order to encourage them to think about the primary motivation for their choice.

25% of PhD students (answers d. to h.) chose this path for reasons unrelated to a well-thought-out career plan. Bearing in mind that answers to this particular question were probably subject to a social desirability bias³, it is likely that this proportion is actually even higher.

1.10.3 Usefulness of a PhD for their future career

To the question "How useful do you think your PhD will be on the job market?", PhD students responded as follows:

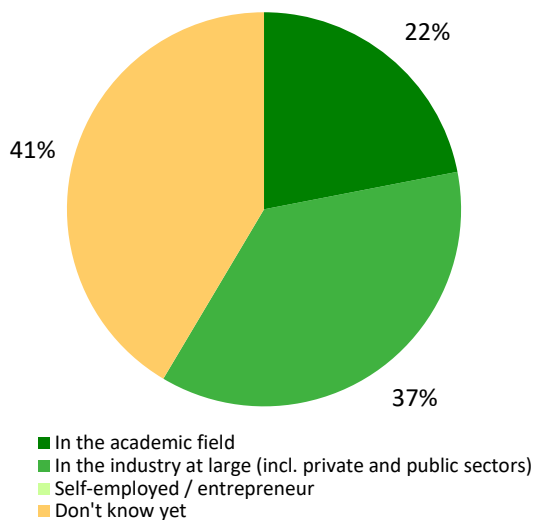
	Total	en % des doctorants
It is a requirement for the kind of career I am considering	39	39%
The skills developed while doing a PhD are very much looked-after by employers. This should give me an edge over non-PhDs	30	30%
It can be a plus with some employers, and a minus with others	25	25%
No particular advantage over a Master degree.	2	2%
I do not know	4	4%
TOTAL	100	100%

2 respondents did not answer the question

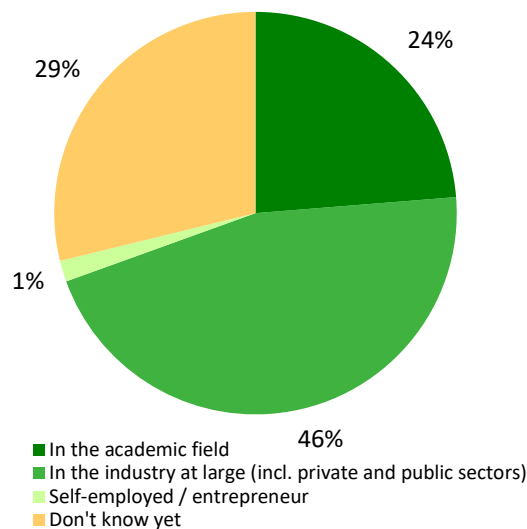
The distribution of responses remained broadly similar to that observed every year since 2011. However, 69% of respondents considered a doctorate to be "a requirement" or "highly looked-after" for their career, a significantly higher rate than usual. This rate has been steadily rising since 2016, with an already significant jump last year (62% in 2020, 55% in 2019, 52% in 2018, 53% in 2017, 44% in 2016).

1.10.4 Future professional sector

PhD candidates at EPFL (N=41)



PhD candidates outside EPFL (N=59)



The majority of respondents already had an idea of their future sector of activity. However, it should be kept in mind that they are only in their first year of doctoral studies, and that their choice is likely to change, as shown by the high undecided rate.

Regardless of respondents studying at EPFL or at another university, there is little change from previous years, although there is traditionally a bit more variability from one year to the next among PhD students outside EPFL.

³ In a survey, the social desirability bias represents the unconscious tendency of some respondents to choose answers that correspond to the most socially acceptable situations, rather than to their own situation.

1.11 Entrepreneurs

Of the 502 Master's respondents, 135 had considered setting up their own business or becoming self-employed. 104 had contemplated the idea but declared themselves "not ready yet". 18 had indeed taken steps but had finally given up. 3 said they were ready to setup their own business within the next six months, and 10 were already self-employed.

With only 13 respondents already or soon-to-be self-employed, or 2.6% of all respondents, the self-employment rate was the lowest measured among Master's graduates since 2010. Traditionally, this rate has oscillated between 3.2% and 4.1%.

We asked the 18 graduates who had planned becoming self-employed but then decided against it to detail the steps they had nevertheless taken, and the reasons why they gave up. The results are shown in the following tables.

Steps taken before giving up?	Total	en %
I took courses in entrepreneurship	9 /18	50%
I/we wrote a business plan	10 /18	56%
I/we approached potential customers	6 /18	33%
I officially requested a self-employed status from the local authorities	2 /18	11%
I/we found financing	3 /18	17%
I/we committed significant expenditures (equipment, licenses, furniture, staff, etc.)	2 /18	11%
I was "in business" for a while but I have stopped since	4 /18	22%

As several answers were possible, the total is greater than 100%.

3 respondents said they had not taken any of the above steps.

Reasons for giving up	Total	en %
I found a more interesting career alternative	9 /18	50%
The business was not viable / The risks were too high	8 /18	44%
I was discouraged by the people around me	3 /18	17%
I/we could not raise enough funds	2 /18	11%
Other reason	5 /18	28%

As several answers were possible, the total is greater than 100%.

Of the 5 graduates who gave another reason for giving up on their entrepreneurial project, one mentioned the possible difficulties of obtaining a work permit as an entrepreneur, another said he didn't want to lose control over his idea by accepting third-party financing, a third said he got bored of entrepreneurship, a fourth found it more personally rewarding to hitchhike around the world, and the last said he had been "lazy".

In the end, as in 2020, there were far fewer aspiring entrepreneurs in the class of 2021 than in previous classes. The same phenomenon is even more pronounced among young PhDs (cf. 2.8), none of whom declared themselves as entrepreneurs for the first time since we started this survey. One possible explanation is the great uncertainty and added risks that the Covid pandemic may have posed for setting up a self-employed activity or business at that time.

2. PhD survey

As their status is specific, we systematically separate self-employed / entrepreneurs from young employed PhDs (except in 2.1.1 and 2.1.2). Self-employed/entrepreneurs are the subject of a specific questionnaire, the answers to which are given in 2.8.

2.1 Professional integration main indicators

2.1.1 Place of establishment by origin	PhDs living in Switzerland	PhDs living outside Switzerland	Inside / Outside Switzerland Class of 2020
Swiss and foreigners with C permit (residents)	24	9	29 / 7
Non-resident foreigners	63	50	80 / 40
Total	59.6% (87)	40.4% (59)	70% / 30%

2.1.2 Activity at time of survey	PhDs living in Switzerland	PhDs living outside Switzerland	PhDs living in Switzerland Class of 2020
Professionally active (employed + entrepreneurs)	94.3% (82 + 0)	100% (59 + 0)	94.5%
Job seekers	4.6% (4)	0% (0)	4.6%
Not working / not seeking	1.1% (1)	0% (0)	0.9%
Total	100% (87)	100% (59)	100%

Note: among the 59 graduates employed outside Switzerland, 2 lived in France and worked in Switzerland (cross-border workers). 1 was employed by a Swiss institution but worked abroad

2.1.3 Salary at the time of survey	PhDs working in Switzerland*	PhDs working outside Switzerland	PhDs working in Switzerland Class of 2020
Private for-profit sector - average salary	CHF 106'172	(not relevant)	CHF 111'507
Private for-profit sector - median salary	CHF 99'840	(not relevant)	CHF 104'500
Public sector and related - average salary	CHF 92'011	(not relevant)	CHF 88'679
Public sector and related - median salary	CHF 88'000	(not relevant)	CHF 87'927

*Includes PhDs employed in Switzerland, whether living in Switzerland or abroad. Does not include graduates working remotely for foreign companies, if any.

Entrepreneurs/self-employed were not asked about their salary

2.1.4 Job search efforts (employed graduates)	PhDs working in Switzerland	PhDs working outside Switzerland	PhDs working in Switzerland Class of 2020
Average number of applications (before landing a job)	24.2	14.9	25.1
Average number of interviews obtained	3.8	4.0	3.8
Average number of jobs obtained	1.8	2.0	1.5
Average time to land a job, in weeks	15.6	15.4	19.1

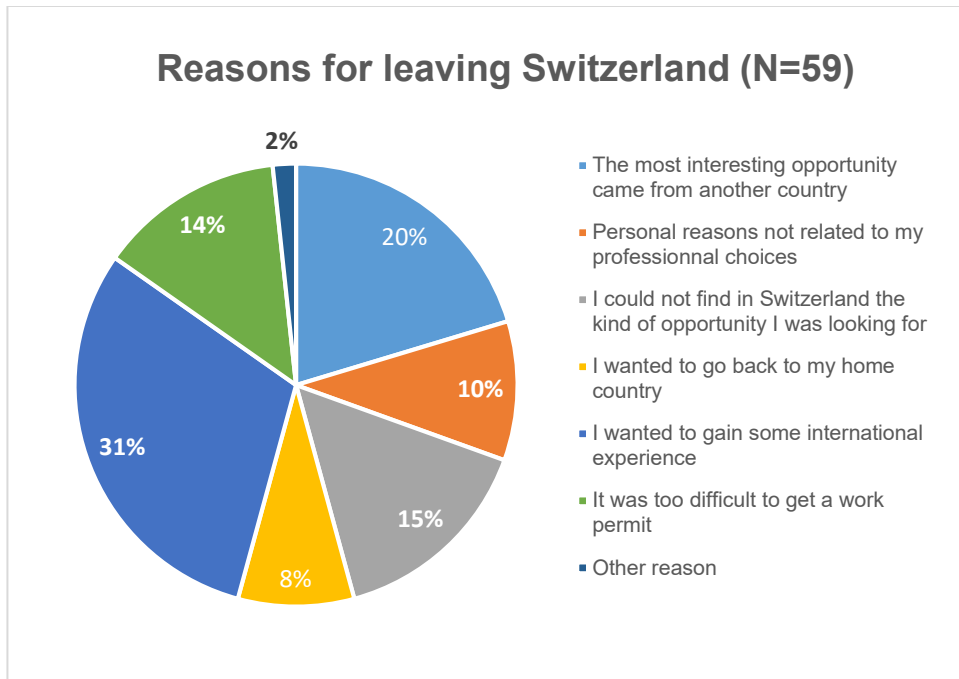
At 40.4%, the total share of PhDs from the class of 2021 leaving Switzerland was up sharply with regards to that measured for the class of 2020 (30.1%). However, this finding must be weighed against the large margin of error that applies (see p.2).

The proportion of non-resident PhDs leaving Switzerland after their thesis also rose sharply after several years of decline (44%, compared with 33% in 2020, 40% in 2019 and 2018, 41% in 2017, 43% in 2016, 44% in 2015). Meanwhile, the expatriation rate of young Swiss and resident PhDs also rose (27%, compared to 19% in 2020, 17% in 2019, 25% in 2018, 23% in 2017 and 31% in 2016), but we need to be cautious about this figure, as their number is very small (9 out of 33 Swiss and resident PhD graduates).

Regardless of citizenship, those who moved abroad chose primarily the USA (16 respondents), followed by the United Kingdom (11), Germany and France (7), and Canada (5).

85% of PhDs leaving Switzerland were non-resident foreigners, a stable figure (2020: 85%, 2019: 91%, 2018 and 2017: 84%).

The reasons why these graduates left Switzerland are as follows (only one possible answer):



The reasons why young PhDs leave the country are slightly more pronounced than those for Master's graduates, with the desire to gain international experience being twice as frequent. 15 out of 18 respondents who chose this reason are academic researchers ("postdocs") at foreign universities.

Unlike last year, when the difficulty of obtaining a work permit was mentioned by only one out of 19 third-country nationals, this year 8 respondents (out of 28 third-country nationals) mentioned it as a reason for leaving Switzerland. However, this increase must be balanced against the fact that 21 third-country nationals remained in Switzerland, 17 of them in industry (where work permits are considerably harder to obtain than in academia, and moreover subject to quotas).

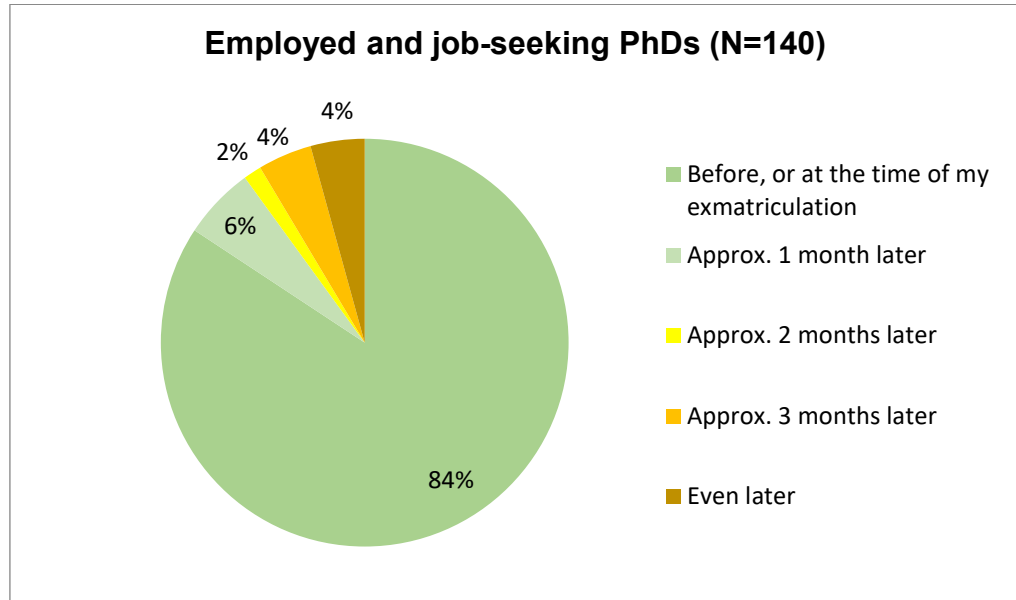
The conditions of workplace insertion (job search efforts + salaries) show a very slight improvement in job search efforts, albeit much less than for Master's graduates, and even a decrease in salaries in the Swiss private sector.

Only 5 respondents mentioned the impact of the Covid pandemic on their job search, compared with 23 in the previous year. It is therefore somewhat surprising that entry conditions have not improved more significantly for PhDs. Nevertheless, they remain good, with a record net employment rate of 96.6%!

2.2 Job search

Starting period of the search

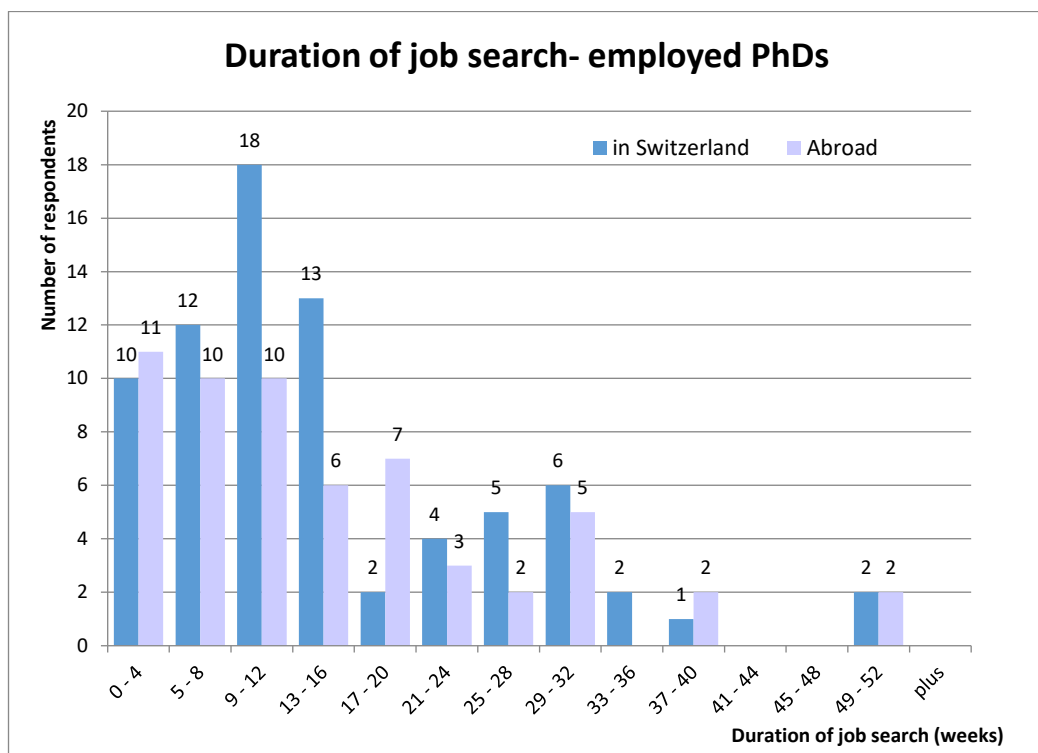
As with Master's graduates, we want to know when our young PhDs began their job search. The results are as follows (5 respondents did not answer):



The vast majority of young PhDs started their job search before completing their thesis. This is particularly true for this year's class (as was the case for the previous one), the usual rate being around 75%.

It seems clear that young PhDs are in a greater hurry to join the workplace than young Master's graduates (see page 7), which is hardly surprising given the different economic and social constraints they face. What's more, it is common for those destined for an academic career to start looking for their future postdoc several months before the end of their thesis.

- Duration of job search



The average duration of a successful job search in Switzerland was 15.6 weeks (vs. 19.1 in 2020), and the median duration was 12 weeks (vs. 16 weeks in 2020). 53% of young PhDs working in Switzerland found their job within the first 12 weeks, compared with 45% in 2020, 67% in 2019, and 62% in 2018 and 2017.

Abroad, the average search time decreased less markedly, with an average job search time of 15.4 weeks (16.4 weeks in 2020), and a median search time of 12 weeks, as in 2020, 2019 and 2018. 72% of young PhDs found work within the first 12 weeks (59% in 2020 and 2019).

- Search area (employed graduates)

We repeat here the table already published above in the Master survey.

Job search area	Master's working in Switzerland	Master's working outside Switzerland	Master's (all)	PhDs working in Switzerland	PhDs working outside Switzerland	PhDs (all)
French-speaking Switzerland	84.9%	36.9%	75.9% →	88.5%	32.8%	64.7% ↘
Rest of Switzerland	55.4%	35.4%	51.5% ↗	64.1%	37.9%	52.9% ↘
One or several European countries	21.8%	79.7%	32.7% ↘	21.8%	69.0%	41.9% →
North America	6.6%	16.9%	8.6% →	9.0%	55.2%	28.7% ↗
Other regions	2.6%	24.6%	6.8% →	2.6%	17.2%	8.8% →

As multiple answers were possible, the total is greater than 100%. Arrows indicate the variation with regards to the class of 2020 (stable (→) means a variation lower than, or equal to +/-2.5 percentage points from the previous year).

We include information on Master's' job search areas for comparison. For comments on Master's figures, see 1.2.

At first glance, Switzerland lost some of its attractiveness to North America for 2021 PhD graduates compared to the class of 2020. However, only a minority of those who sought work in North America (39) ended up working there (16), while 7 finally stayed in Switzerland. Likewise, of the 57 PhDs who said they looked for work in Europe, only just over half (32) ended up working there, while 18 stayed working in Switzerland.

Looking specifically at the 58 respondents working abroad, less than half (26/58, or 45%) also looked for work in Switzerland, although this rate is higher than in 2020 and 2019 (35%). In previous years, the proportion was around 50%.

- Initial step leading to the first job

Initial step leading to the first job	PhDs working in Switzerland (N=79)	PhDs working outside Switzerland (N=58)	PhDs all (N=137)
a. I answered a job advertisement	49.4%	34.5%	43.1%
b. I sent a spontaneous application to my employer	16.5%	36.2%	24.8%
c. I spontaneously sent my CV to a recruitment agency which contacted me	1.3%	1.7%	1.5%
d. I met my employer at Forum EPFL	1.3%	-	0.7%
e. I was offered a position further to a joint project between EPFL and my employer, in which I had participated	-	1.7%	0.7%
f. My employer offered me a job after I did my PhD thesis with them (incl. EPFL)	8.9%	-	5.1%
g. I was recommended to my employer (by a friend, a family member, a colleague, etc.)	16.5%	5.2%	11.7%
h. I was contacted / recontacted without having taken any specific steps towards this particular position	3.8%	5.2%	4.4%
i. Other	2.5%	15.5%	8.0%
Total	100.0%	100.0%	100.0%

4 graduates did not answer the question

As for Master's graduates, the initial steps leading to employment are varied and are distributed in roughly the same proportions from one year to the next. It can be seen that

- In 70% of cases (steps a. to d.), PhDs found a position by actively approaching their employer, with whom they had no prior relationship.
- In 6% of cases (steps e. and f.), EPFL helped establish a link with the employer.
- In 12% of cases (step g.), the initial contact was made through the graduate's network, either inside or outside EPFL.

As observed repeatedly in our surveys, responding to job advertisements is still the best way for young PhDs to land a job, whatever the type of position they will occupy. There is, however, one exception: those intending to become academic researchers (postdocs) are more likely to obtain their position through a spontaneous application (18/45) than by responding to a job advertisement (11/45).

2.3 Type of positions held

- Public and private sectors

We count NGOs and other non-profit organizations alongside public sector ones.

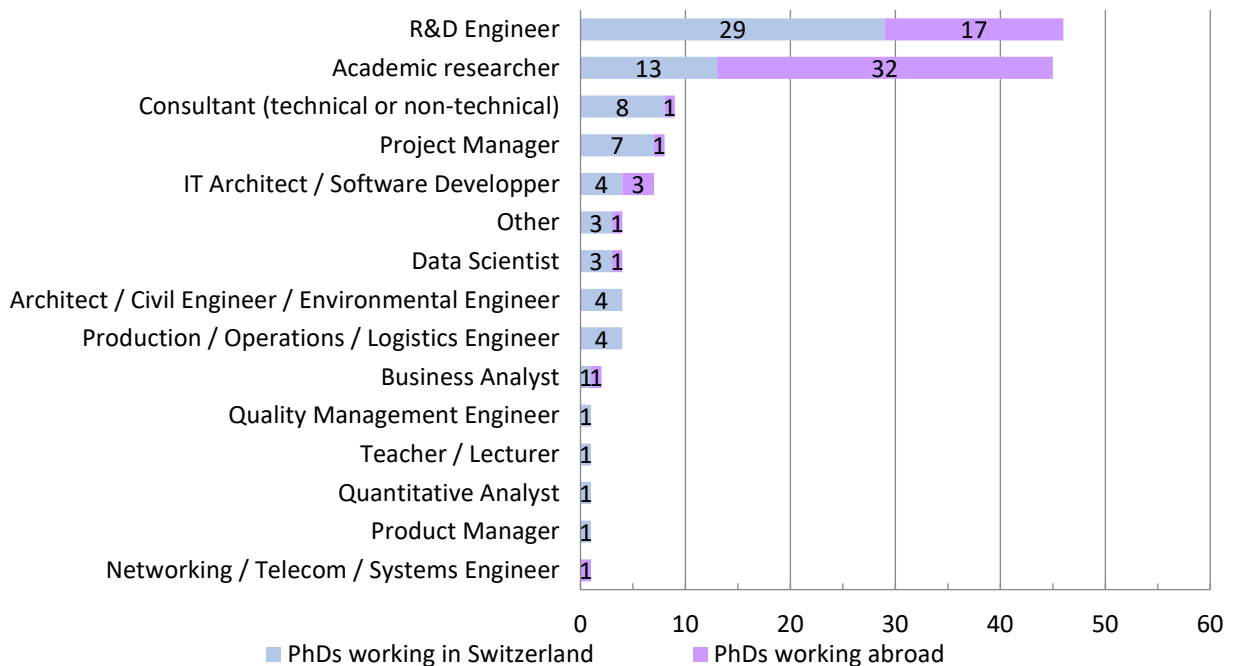
Sector	PhDs Working in Switzerland		PhDs Working outside Switzerland		PhDs Working in Switzerland Class of 2020
	Count	Percentage	Count	Percentage	
Private, for-profit sector	62	76.5%	24	41.4%	63.3%
Public, non-profit and related	19	23.5%	34	58.6%	36.7%
All	81	100.0%	58	100%	100.0%

We included in the public sector respondents working for private American universities which operate on a not-for-profit basis. 2 graduates did not answer the question

In Switzerland, the private sector still accounted for the majority of PhD graduates from one year to the next, albeit in a smaller proportion than that of Master's graduates.

Abroad, the public/private distribution has remained largely in favor of the public sector since 2011, as a direct consequence of the choice of many PhDs to pursue an academic career abroad (31 of the 34 young PhDs working in the public sector abroad are academic researchers or lecturers in a university or a research center).

- Position held



13 PhDs in Switzerland and 32 abroad worked as academic researchers in universities, research centers (CERN, Max-Planck, CNRS, etc.) and public or private research institutions, representing only 33% of all employed respondents in the class of 2021, a relatively low rate compared to those measured previously (39% in 2020, 38% in 2019 and 2018, 34% in 2017, 38% in 2016, 44% in 2015, 43% in 2014, 36% in 2013, 42% in 2012). The drop in this rate compared with previous years is due above all to a sharp decline in the number of PhD graduates who became academic researchers in Switzerland.

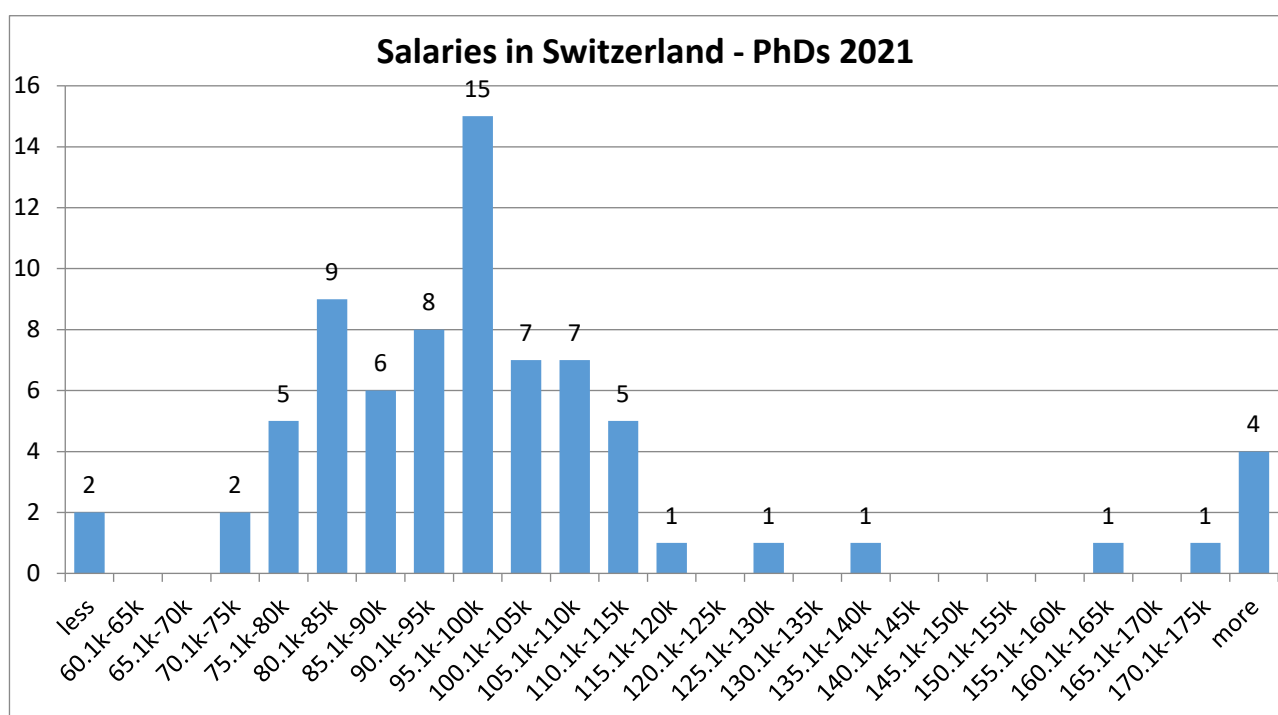
- Employer size

Employer size	PhDs Working in Switzerland		PhDs Working outside Switzerland		PhDs Working in Switzerland Class of 2020
	Count	Percentage	Count	Percentage	
< 250 employees	32	39.5%	9	15.5%	27.6%
> 250 employees	49	60.5%	49	84.5%	72.4%
All	81	100.0%	58	100.0%	100.0%

2 graduates did not answer the question

While in Switzerland, the distribution between large and small employers is similar to that observed for Master's graduates, it remains heavily skewed in favor of large employers abroad, mostly because many PhDs based abroad work in universities.

2.4 Salaries



Average salaries at time of survey	PhDs Working in Switzerland	Standard deviation	PhDs Working in Switzerland Class of 2020	Standard deviation Class of 2020
Private, for-profit sector	CHF 106'172 (59)	-	CHF 111'507 (58)	-
Public sector and related	CHF 92'011 (16)	-	CHF 88'679 (29)	-
Combined	CHF 103'151 (75)	CHF 29'315	CHF 103'898 (87)	CHF 34'927

In brackets, the number of PhDs who responded. 8 respondents did not indicate their salary.

Salaries in the private sector stagnated over the past 2 years, even decreasing slightly in 2021, but continued to gently rise in the public sector. It should be remembered, though, that the latter remained unchanged for 10 years.

As with Master's graduates, there were salary differences according to company size and origin, but also according to the gender of the respondents.

- By employer size:

	< 250 employees	> 250 employees	Combined
Average salaries at time of survey	CHF 93'236 (32)	CHF 110'530 (43)	CHF 103'151 (75)

In brackets, the number of PhDs who responded. 8 respondents did not disclose their salary.

- By employer's origin

	Headquartered in Switzerland	Headquartered abroad	Combined
Average salaries at time of survey	CHF 94'845 (56)	CHF 127'632 (19)	CHF 103'151 (75)

In brackets, the number of PhDs who responded. 8 respondents did not disclose their salary.

The large gap observed between salaries paid by foreign employers (traditionally more generous) and Swiss employers narrowed compared to the class of 2020. The size of this gap depends directly on the proportion of graduates working in the public sector (mainly universities) or in small companies, which pull down the average. However, the salary gap between large private Swiss and foreign companies remained significant (CHF 100,663 vs. CHF 127,632), influenced among other things by the high salaries paid by foreign IT multinationals (the 6 highest salaries in the chart on page 27 are all paid by such companies).

- By gender

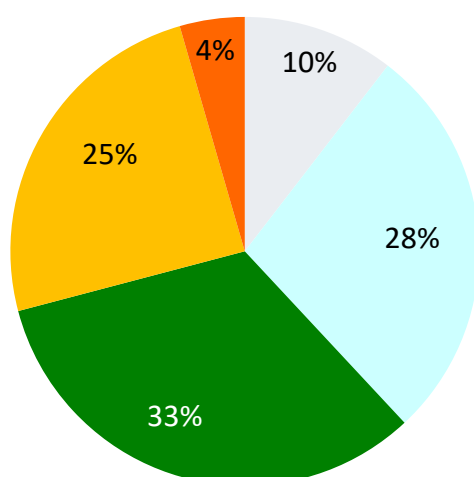
	Women	Men	Combined
Average salaries at time of survey	CHF 93'783 (23)	CHF 107'294 (52)	CHF 103'151 (75)

In brackets, the number of PhDs who responded. 8 respondents did not disclose their salary.

The gap in average salaries between men and women (-12.6%) was twice as wide as the gap measured between Master's graduates (-5.6%). It should be noted that the gap for PhDs is quite variable from one year to the next, due to the very low number of female responses: since 2008, it has fluctuated between 0 and -15%, except in 2019 (-20.2%, a suspicious rate due to a statistical anomaly). The explanation for this difference lies in the fact that men are largely over-represented in the highest salaries paid by the IT multinationals mentioned above. When comparing median salaries, which are much less affected by this over-representation, the gap between men and women is down to -1.8% (women: CHF 96'000, men: CHF 97'750).

2.5 Skills acquired at EPFL in relation to the position

These results include PhDs working in Switzerland and abroad (N=134).



- My work is not closely related to my EPFL education
- The work methodology acquired at EPFL is more useful to me than the technical education itself
- My work has technical aspects that I can easily do thanks to my EPFL education
- My work is highly technical in nature and my EPFL education just allows me to do it
- The technical education received at EPFL is not sufficient for what I do and I must complement it

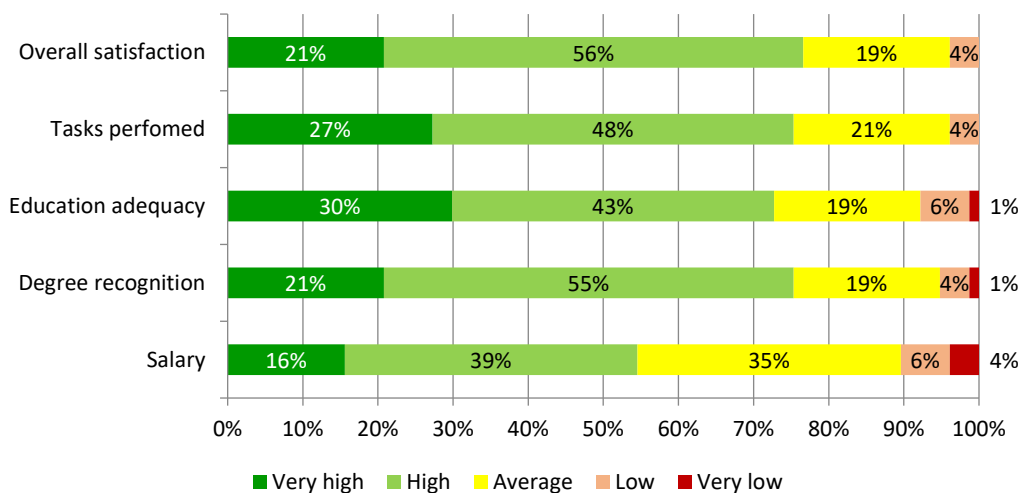
The distribution of responses is very similar to that of previous years. The proportion of respondents who felt that the technical training they received at EPFL "just allows them" or "is not sufficient" to perform their role remained relatively high (29%), as it has been for the previous 8 years (28% for the class of 2020, 26% in 2019, 25% in 2018, 28% in 2017, 30% in 2016, 32% in 2015, 28% in 2014, 33% in 2013, but only 22% in 2012, 20% in 2011 and 15% in 2010).

2.6 Job satisfaction

We asked PhD graduates how satisfied they were with their work at the time of the survey, according to 5 criteria:

- **Overall** satisfaction
- Interest in the **tasks** performed
- **Adequacy** of their EPFL education with the job requirements
- EPFL degree **recognition**
- Satisfaction with the **salary**

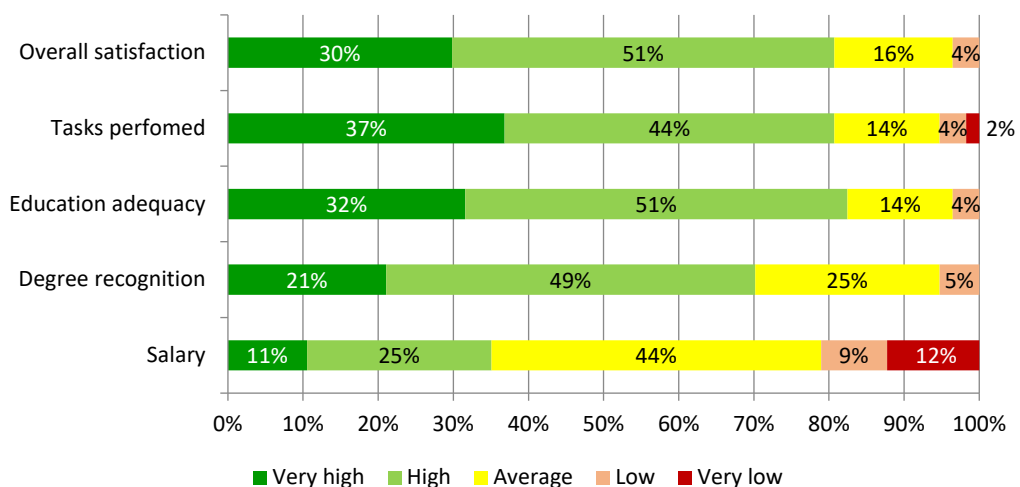
PhDs working in Switzerland (N=77):



i	satisfaction	σ
3.94	High	0.75
3.99	High	0.80
3.94	High	0.94
3.90	High	0.82
3.56	Average to High	0.97

The following values were used to calculate the satisfaction index i: "Very low"=1, "Low"=2, "Average"=3, "High"=4 and "Very high"=5.

PhDs working outside Switzerland (N=57):



i	satisfaction	σ
4.07	High	0.78
4.11	High	0.90
4.11	High	0.77
3.86	High	0.81
3.12	Average	1.12

The following values were used to calculate the satisfaction index i: "Very low"=1, "Low"=2, "Average"=3, "High"=4 and "Very high"=5.

Generally speaking, the satisfaction ratings of young PhDs working in Switzerland were stable from one year to the next. Satisfaction ratings for PhDs working abroad have stabilized after rising steadily since 2012, and were comparable to, or even better than those of PhDs working in Switzerland (salaries aside). They were also consistently higher than those of young Master's graduates working abroad, salaries excepted.

2.7 Graduates seeking employment

4 PhDs out of 146 were looking for work at the time of the survey. All were based in Switzerland. One is Swiss, the other three are EU nationals.

- 2 of them had already had a first professional activity, which had ended at the time of the survey. They were therefore carrying out their second search. They had been looking for 8 and 10 weeks respectively.
- A third one had started his job search very late and had only been looking for 8 weeks. He had already landed and turned down one job during this period.
- The last one was in a more problematic situation: at the time of the survey, he claimed he had been looking for work for 72 weeks and had made over 500 applications.

As of this writing, these four PhDs have found a job in Switzerland.

2.8 Entrepreneurs

Of the 146 respondents, 34 had considered setting up their own business or becoming self-employed. 28 had merely considered it but declared themselves "not ready yet". 6 had taken the first steps but had finally given up. In the end, none of them said they had become an entrepreneur/self-employed or were in the process of becoming one in the next 6 months. This is the first time since we started this survey. One possible explanation for this demotivation could be the great uncertainty and added risks that the COVID-19 pandemic may have posed for setting up a self-employed activity or business at that time.

As for the six graduates who gave up, 2 said they found a more interesting career alternative, 2 others gave up because their business model was deemed unviable and the risks too high, one mentioned "COVID" as the reason (without further explanation) and the last one had "no clear idea" why he gave up.

2.9 Summary of main indicators by Doctoral School

Due to the very small size of the sub-groups concerned and the low response rate, we have decided, as in previous years, not to publish a summary table of indicators by Doctoral School for the class of 2021.