

24th Report Occupational Condition of Graduates

2022 Summary Report

Supported by



*Ministero dell'Università
e della Ricerca*

Summary of the 24th Survey on the Occupational Condition of Graduates (the 2022 AlmaLaurea Report)

The 24th AlmaLaurea Survey on Occupational Condition of Graduates involved 660,000 first- and second-level graduates (two-year masters and single-cycle second-level graduates).¹ There are 76 Italian Universities involved in the survey, out of the 80 participating in AlmaLaurea as at June 2022. More specifically, 287,000 are first- and second-level graduates in 2020 involved one year after graduation; 119,000 are second-level graduates in 2018 involved three years after graduation; 114,000 are second-level graduates in 2016 involved five years after graduation; 74,000 and 66,000 are first-level graduates involved three and five years after graduation, in 2018 and 2016 respectively, and who did not continue their university education.

On an annual basis, the respondent graduates represent about 90% of the whole graduates attending Italian Universities. Such a population ensures a more than a meaningful frame of reference for the entire university system, especially if the main characteristics of the observed populations are considered.

The graduates involved in the survey (excluding three- and five-year first-level graduates) were contacted using a dual survey technique, CAWI (Computer-Assisted Web Interviewing) and CATI (Computer-Assisted Telephone Interviewing). Indeed, the necessity to contain survey costs and the wide availability of e-mail addresses suggested contacting graduates via e-mail, and inviting them to fill in a questionnaire hosted on the AlmaLaurea website. The CAWI was combined by the CATI as to contact those who did not respond to the online questionnaire. Such a twofold survey methodology - that is to say CAWI+CATI - led to an overall response rate of 74.2% among first and second-level graduates one year after graduation, 65.8% among second-level graduates three years after graduation and 67.7% among second-level graduates five years after graduation, measured in relation to graduates who were contacted with their consent in accordance with the GDPR (General Data Protection Regulation). First-level graduates at three and five years were exclusively contacted through a CAWI-type survey instead, which achieved response rates of 14.4% at three years and 9.4% at five years out of the total number of e-mails sent. Such rates are obviously lower given the survey methodology used. The results were subject to a special statistical procedure for proportioning adjustments, so as to obtain estimates that were representative of all the graduates of the Italian Universities.

This Summary highlights the most relevant aspects of the employment performance of first- and second-level graduates, the latter being further divided into two-year and single-cycle masters.² However, It should be noted that first-level graduates largely continue their studies by enrolling in a second-level course of study. Indeed, in the 2020 cohort this choice was made by 69.0% of respondents. Among other things, in recent years there was a marked increase in the propensity to continue one's education by enrolling in a second-level course. The increase was 13.8 percentage points compared to

¹ Starting in 2015, AlmaLaurea has also been carrying out annual surveys on the Profile and Occupational Condition of PhD and Academic Master graduates. The results of the most recent surveys are available on www.almalaurea.it/en/our-data/almalaurea-surveys.

² Second-level graduates from 2007 to 2018 include two-year and single-cycle masters as well as graduates from the pre-Bologna Process reform course of study in Primary Education Sciences. The employment outcomes of the latter are not examined in detail on these pages. Indeed, due to its peculiarity and small size this population was excluded from the survey starting with the graduates of 2019. The complete documentation is available at: www.almalaurea.it/en/our-data/almalaurea-surveys/graduates-employment-status.

2014, the year in which the lowest continuation rate in the 2008-2021 observation period was recorded according to AlmaLaurea surveys. Taking into account this evidence, in order to better monitor the employment outcomes of graduates, for first-level graduates it was considered appropriate to limit the analysis to those who did not enrol in another degree course after graduation (30.0% for 2020 graduates after one year).

The survey performed in 2021 shows a substantially positive employment situation, both for new graduates and for those who have been in the market for a longer time. The main indicators examined appear to be on the rise, at least in this respect leaving behind the difficult year of 2020. In this regard, it must be considered that the Covid-19 pandemic hit the Italian economy hard, altering the labour market trends that had been developing before its onset. Specifically, the pandemic has made it difficult to discern which changes in employment indicators can be attributed to contingent factors and which to structural labour market developments. It should also be recalled how the emergence of the health emergency had a greater effect on graduates interviewed one year after graduation than on graduates five years after graduation, and how, among the former, it acted differentially according to the course of study and the industry worked in. For these reasons, it was deemed appropriate to compare the main results of the 2021 survey with those observed in the pre-pandemic period, although for the sake of completeness the figures for the main employment indicators in a time perspective also include the data observed in 2020. In fact, for each analysed indicator, the figures show the historical series of first- and second-level graduates from 2007 to 2020 - interviewed one year after graduation (i.e. surveys from 2008 to 2021), and of first- and second-level graduates from 2007 to 2016 at five years after graduation (i.e. surveys from 2012 to 2021).

However, as emphasised by Governor Ignazio Visco in the Final Considerations to the Annual Report of the Bank of Italy,³ the current exacerbation of geopolitical tensions makes any forecast of the evolution of the world economy difficult.

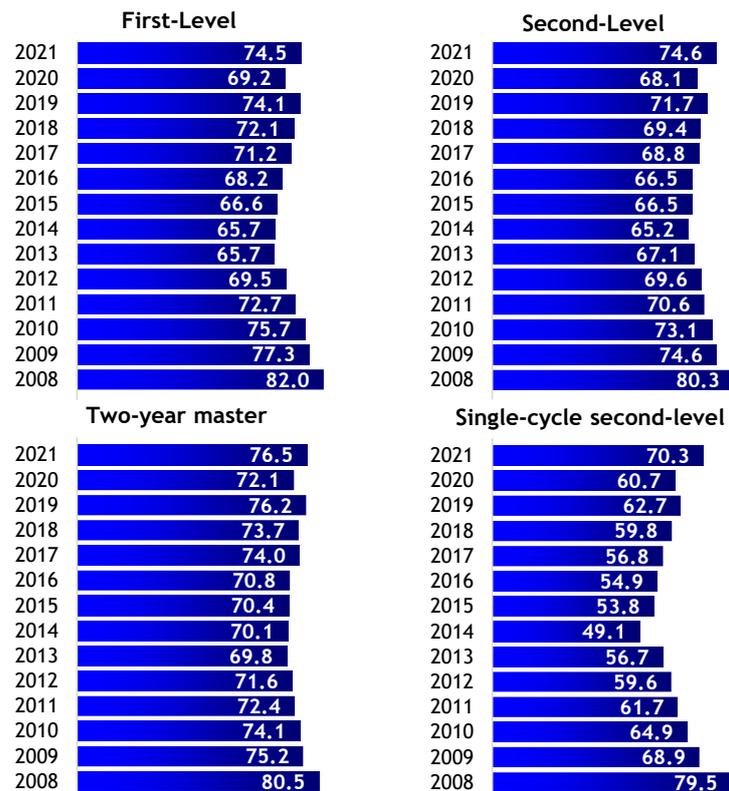
1. Employment rate

In 2021, the employment rate is 74.5% among first-level graduates and 74.6% among second-level graduates in 2020 one year after graduation; among two-year masters, the employment rate rises to 76.5%, while for single-cycle second-level graduates it is 70.3% (Figure 1).

The comparison with previous AlmaLaurea surveys shows improvement in the employment rate. Specifically, the values observed in 2021 are positive because they show an improvement not only with respect to the previous year, but also with respect to what was observed in 2019, when the upward trend of the labour market had not yet been halted by the arrival of the pandemic. These positive signs are especially noticeable for second-level graduates, for whom the employment rate in 2021 was up by 2.9 percentage points compared to the 2019 survey. For first-level graduates, on the other hand, the increase was smaller (+0.4 percentage points).

³ Bank of Italy, *Final considerations of the Governor. Annual report. 2021*. Rome, 31 May 2022.

Figure 1 - 2007-2020 graduates surveyed one year after graduation: employment rate by degree type. Survey years 2008-2021 (percentage values)



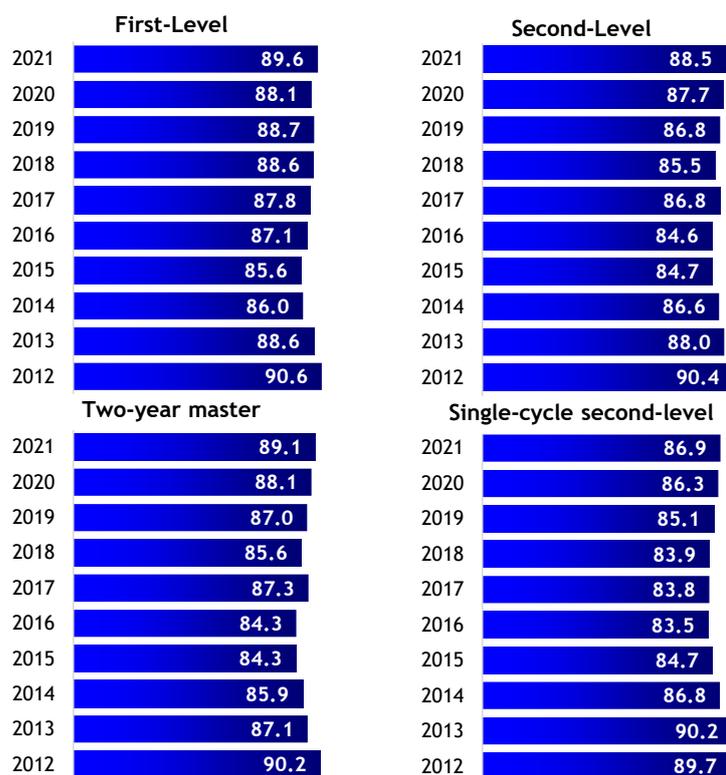
Note: as for the first-level, only graduates not enrolled in another degree course were considered. Until the 2018 cohort, second-level graduates also include graduates from the pre-reform course of study in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

Even graduates three and five years after graduation show some signs of improvement in employment performance, enjoying decidedly high employment levels. In detail, three years after graduation, the employment rate reached 88.3% among first-level graduates and 85.6% among second-level graduates (88.2% for two-year masters and 80.3% for single-cycle second-level graduates).

Five years after graduation, the employment rate was 89.6% for first-level graduates and 88.5% for second-level graduates. By degree type, the employment rate reaches 89.1% for two-year masters, a value higher than the 86.9% recorded for single-cycle second-level graduates (Figure 2). A comparison with 2019's survey suggests that the employment rate increased by 0.9 percentage points among first-level graduates, and by 1.7 points among second-level graduates. These trends are part of a framework characterised by a slow but progressive improvement in the absorption capacity of the labour market, which has been verified for some years now for graduates five years after graduation.

Figure 2 - 2007-2016 graduates surveyed five years after graduation: employment rate by degree type. Survey years 2012-2021 (percentage values)



Note: as for the first-level, only graduates not enrolled in another degree course were considered; second-level graduates also include graduates from the pre-reform course of study in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

1.1. Employment rate insight: outcomes of a logistic regression model

The employment outcomes of graduates highlight remarkable differences, which broadly speaking involve all the degree types examined. In particular, these differences relate to gender, geographic area of residence as well as the completed course of study.

In order to jointly analyse the factors affecting the probability of being employed, a logistic regression model was used again in this report. The 2020 graduates were considered and interviewed one year after obtaining their degree. Such group included both first-level graduates - who did not continue their education by enrolling in another course of study - and second-level graduates - who were interviewed one year after obtaining their degree.⁴

The analysis presented below looks at factors linked to socio-demographic aspects (gender; parents' qualifications; geographic area of residence), university qualifications (degree type; field of study; geographic area of the university; age at graduation; degree completion time; exam marks, geographic mobility for study purposes) and experience and skills acquired during the study period (internships/curricular traineeships; work or study experience abroad; computer skills). Job

⁴ The model does not consider those already working at the time of graduation and those living abroad.

orientation training initiatives were also taken into account.⁵ Finally, emphasis was placed on the aspirations and inclinations declared by graduates on the eve of concluding their studies (intention to continue their studies; willingness to travel for business; expectations regarding the job they intend to seek after graduation, in terms of career prospects; acquisition of professional skills; job security; relevance to cultural interests; involvement and participation in work and decision-making processes; flexibility of working hours).⁶

As Table 1 shows (the only significant variables), the course of study completed has an effect on the employment opportunities of new graduates. In fact, all other things being equal, the most favoured are graduates from the information and communication technologies (ICTs); the health and pharmacy; the engineering and engineering trades; not to mention graduates from the architecture and construction; education; natural sciences, mathematics, physics and statistics. Less favoured graduates are those graduated in psychology, law, as well as art and design.

Furthermore, it can be observed that, all other conditions being equal, second-level degrees show greater employment opportunities one year after graduation. As a result, second-level graduates (which include both two-year masters and single-cycle second-level graduates) are 27.4% more likely to be employed than first-level graduates. However, this result has to be treated with extreme caution, since profoundly different populations are being compared, both in terms of the educational path undertaken and in terms of professional and study prospects. Especially among second-level graduates, there is a notable proportion of those who continue their education by enrolling in activities such as internships or post-graduate schools which, if paid, place them among the employed. These types of activities, which are preparatory to starting freelance activities, are for obvious reasons much less common among first-level graduates. Thus, as might be expected, those who, at the time of obtaining their degree, declared that they did not intend to continue their studies are 36.4% more likely to be employed within a year than those who expressed the intention of continuing their studies.

The gender analysis shows that, all else being equal, men are better off (12.8% more likely to be employed than women). The traditional gender differences in the job market are thus confirmed to be significant, which are also associated with different hiring times, with men once again having an advantage over women.⁷

Territorial differences also remain significant, both in terms of residence and where the students went to school. In detail, those who reside in the North are more likely to be employed (+43.7%) than those who reside in the South. Similarly, as regards the geographical breakdown of where the students went to school, graduates from the North are 35.9% more likely to be employed than those who studied in the South. In addition, those who live in a province other than their place of study are 5.6% more likely to be employed in one year than those who study in the same province of residence.

⁵ Particular consideration was given to the satisfaction expressed by graduates upon graduation with respect to the initiatives organised by the University, including for example help with preparing CVs and company presentations in the classroom.

⁶ Factors related to aspects of pre-university experience (type of diploma and high school/secondary school diploma mark) were taken into account but were not significant, as well as expectations of the job sought with respect to earning prospects, independence and autonomy, leisure time, prestige, place of work (i.e. location and its physical characteristics) and opportunities for foreign contacts. In view of their poor correlation, graduation mark were excluded from the model, as were expectations regarding the job sought with respect to consistency with the studies undertaken, correspondence to cultural interests, social usefulness of the job, relations with co-workers in the workplace and the possibility of making the best use of the skills acquired during studies.

⁷ On the topic of gender differences, in January 2022 AlmaLaurea published the report “Laureate e laureati: scelte, esperienze e realizzazioni professionali”.

Although the analysis leads to the estimation of a limited influence, graduates from families in which at least one parent has a degree show a lower probability of employment (-7.2%) one year after graduation, compared to those who have parents with a non-university degree. The hypothesis embedded in this result is that the family context allows graduates to choose to delay entry into the labour market while waiting for a better placement. This is part of a broader context in which the family of origin influences both the educational and occupational choices of graduates. In this regard, specific studies have compared the university studies of graduates with those of their parents, highlighting how the phenomenon of inheritance of the degree is especially widespread among graduates (i.e. medicine, law and architecture) which give access to the freelance profession. Moreover, such courses of study require a further cycle of specialisation in order to enter into freelance work.

As calculated by taking into account their distribution by university, field of study and degree class, exam marks have a positive effect on employment opportunities. For instance, the chance of being employed one year after graduation increases by 17.4% for those with scores above the median value. Compliance with the deadlines set by the regulations for the completion of the course of study also favours better employment opportunities. Compared to those who graduate at least two years late, graduates who finish their studies within prescribed degree completion time are 13.7% more likely to be employed one year after graduation; those who graduate one year late are 10.1% more likely to be employed. All things being equal, age at graduation has a negative effect (-5.2% for each additional year) on the probability of being employed one year after graduation. This is connected with the fact that those who enter the labour market at a younger age probably have more "attractive" prospects and availability to employers even on a contractual basis.

Work experience, regardless of its nature and continuity, has a positive effect on employment opportunities one year after completion of studies. All other things being equal, studying workers (i.e. those who have had continuous full-time work experience for at least half the duration of their studies) are 43.2% more likely to be employed than students who graduate without any work experience. However, working students (i.e. those who have had other types of work experience) are 35.1% more likely to be employed than those who have no work experience. It is worth emphasising that in this specific study only the employment opportunities of graduates were considered, without taking into account the characteristics of the job found. The results just described suggest that work experience of any kind helps graduates find employment more easily after graduation.

There are also a number of experiences gained during the course of study that increase employment possibilities. Those who have done a curricular internship are, *ceteris paribus*, 7.6% more likely to be employed one year after graduation than those who have not performed such an activity. Similarly, those who have spent a period of study abroad are more likely to be employed than those who have never spent a period abroad, whether through experience recognised by their course of study⁸ (+15.4%) or by their personal initiative (+11.8%).

Computer skills also have a positive effect on the possibility of finding a job within the first year after graduation: the likelihood of being employed among those who know at least five IT tools is 27.4% higher than among those who know at most two tools. Knowledge of IT and digital tools has become

⁸ These are study experiences within the framework of a European Union programme (i.e. Erasmus) and other programmes recognised by the course (i.e. Overseas).

essential in today's society. A specific study carried out by AlmaLaurea investigated knowledge of IT tools at a gender level, which highlighted the existence of differences in employment performance and job characteristics.

There are also initiatives organised by universities to support the university-work transition, which are found to increase the likelihood of employment one year after graduation. This in-depth study focused in particular on job orientation training initiatives organised by the University. Those who upon graduation declared themselves satisfied with such initiatives are more likely to be employed (+12.0%) one year after graduation than those who did not participate. It is also interesting to note that even those who declared themselves dissatisfied with such initiatives are still 6.4% more likely to be employed than those who did not participate.

Some aspects of the job that graduates said were very important to them before completing their studies also have a positive effect on employment. All other conditions being equal, graduates who are about to graduate and therefore to enter the labour market are more likely to be employed one year after graduation if they attribute great importance (answer of "definitely yes") to the acquisition of professional skills (+13.9%), to the possibility of a career (+6.5%) and to involvement and participation in work and decision-making processes (+5.8%). These are aspects for which a direct and faster entry into the labour market is crucial, in order to gain experience and acquire skills. The willingness to travel for work reasons is also rewarding in terms of employment (+17.5% more likely than those who do not declare this willingness), regardless of the frequency. Against this, there is a lower probability of employment for those who consider important to be flexible in their working hours (-11.5%), to meet their cultural interests (-6.1%), and to have a job security (-5.5%); these aspects probably lead graduates to be more selective while searching for a job.

Table 1 - 2020 first- and second-level graduates interviewed one year after graduation: logistical regression model for the assessment the probability of being employed. Survey year 2021

	b	S.E.	Exp(b)
Gender (female=0)			
male	0.121	0.020	1.128
At least one parent with a university degree (no=0)			
yes	-0.075	0.019	0.928
Geographic area of residence (South=0)			
North	0.362	0.033	1.437
Centre	0.145	0.035	1.156
Degree type (First-Level=0)			
Second-Level	0.242	0.023	1.274
Field of study (Politics, social sciences and communications=0)			
Agriculture, forestry and veterinary	0.702	0.063	2.017
Architecture and construction	1.192	0.051	3.292
Arts and design	-0.200	0.057	0.818
Economics	0.599	0.038	1.821
Education	0.902	0.050	2.465
Law	-0.199	0.042	0.819
Information and communication technologies (ICTs)	1.791	0.116	5.996
Engineering and engineering trades	1.708	0.050	5.520
Humanities and literature	0.216	0.052	1.241
Foreign languages	0.170	0.046	1.186
Health and pharmacy	1.772	0.039	5.881
Psychology	-0.610	0.052	0.543
Natural sciences, mathematics, physics and statistics	0.800	0.044	2.226
Sports sciences and physical education*	0.220	0.088	1.246
Geographic area of university (South=0)			
North	0.307	0.034	1.359
Centre	0.270	0.035	1.310
Age at graduation	-0.053	0.003	0.948
Degree completion time (2 or more years late =0)			
on time	0.129	0.027	1.137
1 year late	0.097	0.029	1.101
Exam mark (below the median value = 0)			
mark above or equal to the median value	0.160	0.019	1.174
Comparison between province of residence and of study (same province=0)			
reside in a province other than the place of study	0.055	0.019	1.056
Internships organised by the course of study (no=0)			
yes	0.073	0.020	1.076
Work during studies (no work experience=0)			
studying workers	0.359	0.054	1.432
working students	0.301	0.019	1.351
Studied abroad during the course of study (no experience=0)			
study abroad recognised by the course of study	0.144	0.026	1.154
personal initiative**	0.112	0.067	1.118
Number of known IT tools (almost 2 IT tools=0)			
3 or 4 IT tools	0.104	0.026	1.109
5 or more IT tools	0.242	0.024	1.274
Satisfaction with job orientation training initiatives organised by the university (not participate=0)			
satisfied	0.113	0.021	1.120
not satisfied	0.062	0.024	1.064
Plan to pursue postgraduate studies (yes=0)			
no	0.310	0.019	1.364
Willingness to travel for business (no=0)			
yes	0.161	0.053	1.175
Aspects important for job-seeking: career prospects (no=0)			
yes	0.063	0.023	1.065
Aspects important for job-seeking: acquisition of professional skills (no=0)			
yes	0.130	0.027	1.139
Aspects important for job-seeking: job security (no=0)			
yes	-0.057	0.023	0.945
Aspects important for job-seeking: relevance to cultural interests (no=0)			
yes	-0.063	0.020	0.939
Aspects important for job-seeking: involvement and participation in work and decision-making processes (no=0)			
yes	0.056	0.021	1.058
Aspects important for job-seeking: flexibility of working hours (no=0)			
yes	-0.123	0.021	0.885
Constant	-0.018	0.114	0.982

Note: Correct classification rate of 68.2%; N=74,873; R2 Nagelkerke=0.193.

* Significance at 5% (p<0.05) - ** Significance at 10% (p<0.10) - *** Not significant.

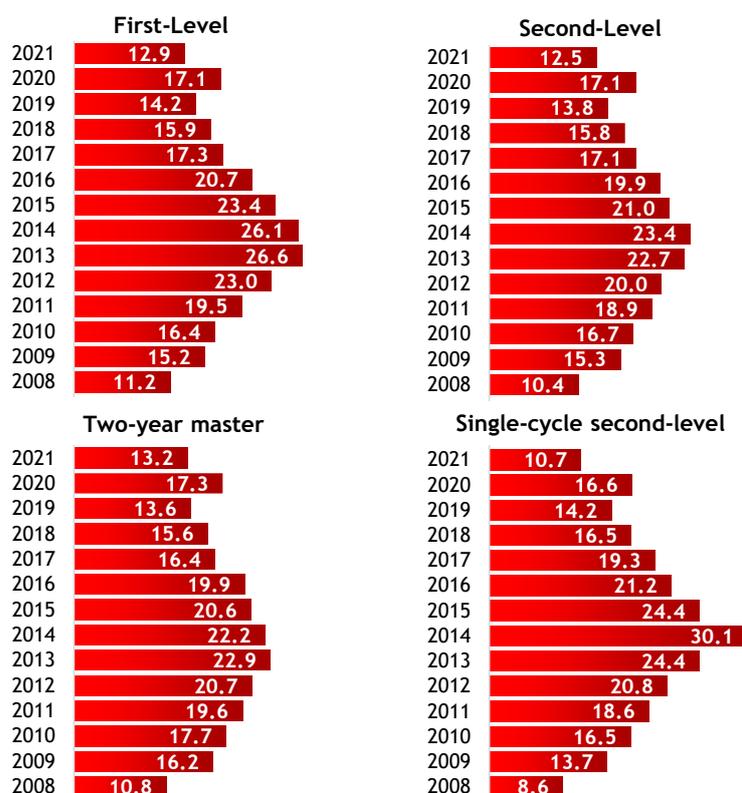
Where not explicitly stated, parameters significant at 1% (p<0.01).

Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

2. Unemployment Rate

The considerations made so far (Figure 3) have been even more clearly confirmed by the analysis of the unemployment rate. One year after graduation, the unemployment rate is 12.9% among first-level graduates and 12.5% among second-level graduates, though with slight differences between two-year masters (13.2%) and single-cycle second-level graduates (10.7%). Compared to the 2019 survey, the unemployment rate is down 1.3 percentage points both for first- and second-level graduates. This result is consistent with the improving trend observed in recent years, the only exception being 2020, characterised as is well known by the outbreak of the Covid-19 pandemic.

Figure 3 - 2007-2020 graduates surveyed one year after graduation: unemployment rate by degree type. Survey years 2008-2021 (percentage values)



Note: as for the first-level, only graduates not enrolled in another degree course were considered. Until the 2018 cohort, second-level graduates also include graduates from the pre-reform course of study in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

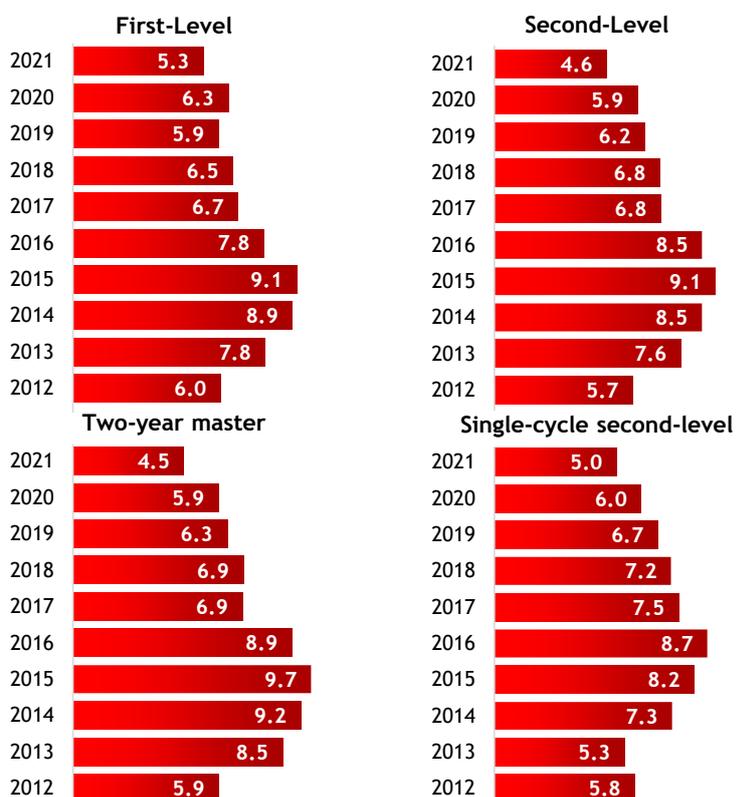
For a complete analysis of the phenomenon, the size of the labour force needs to be considered (i.e. those who have entered the labour market either because they are employed or because they are actively seeking work). In 2021, one year after graduation, 85.6% of first-level graduates and 85.3% of second-level graduates were part of the labour force (for two-year masters, such a figure was 88.1%, while for single-cycle second-level graduates it was 78.7%). Compared to the 2019 survey, the share of the workforce is down 0.7 percentage points for first-level graduates, probably also due to the increasing share of those who decided to continue their studies by enrolling in second-level degrees, while it is up 2.2 points for second-level graduates.

Three years after graduation, the unemployment rate is lower than at one year and is 7.1% for first-level graduates and 6.4% for second-level graduates. In detail, 5.6% for two-year masters and 8.0% for single-cycle second-level graduates.

Five years after graduation, unemployment levels reach around 5% (Figure 4). In 2021, the unemployment rate is 5.3% among first-level graduates and 4.6% among second-level graduates (-0.6 and -1.6 percentage points, respectively, compared to the 2019 survey). Broken down by degree type, the unemployment rate is 4.5% for two-year masters, which is slightly lower than the 5.0% of the single-cycle masters. The 2021 survey confirms the decline in the unemployment rate observed in recent years. Moreover, all the cohorts analysed saw rates at an all-time low, even lower than in 2012.

This positive result acquires further value with the analysis of the labour force which, five years after graduation, shows values of 94.7% for first-level graduates and 92.7% for second-level graduates (93.2% among two-year master's degree graduates and 91.5% among single-cycle second-level graduates). These values have been largely stable in recent years.

Figure 4 - 2007-2016 graduates surveyed five years after graduation: unemployment rate by degree type. Survey years 2012-2021 (percentage values)



Note: as for the first-level, only graduates not enrolled in another degree course were considered; second-level graduates also include graduates from the pre-reform course of study in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

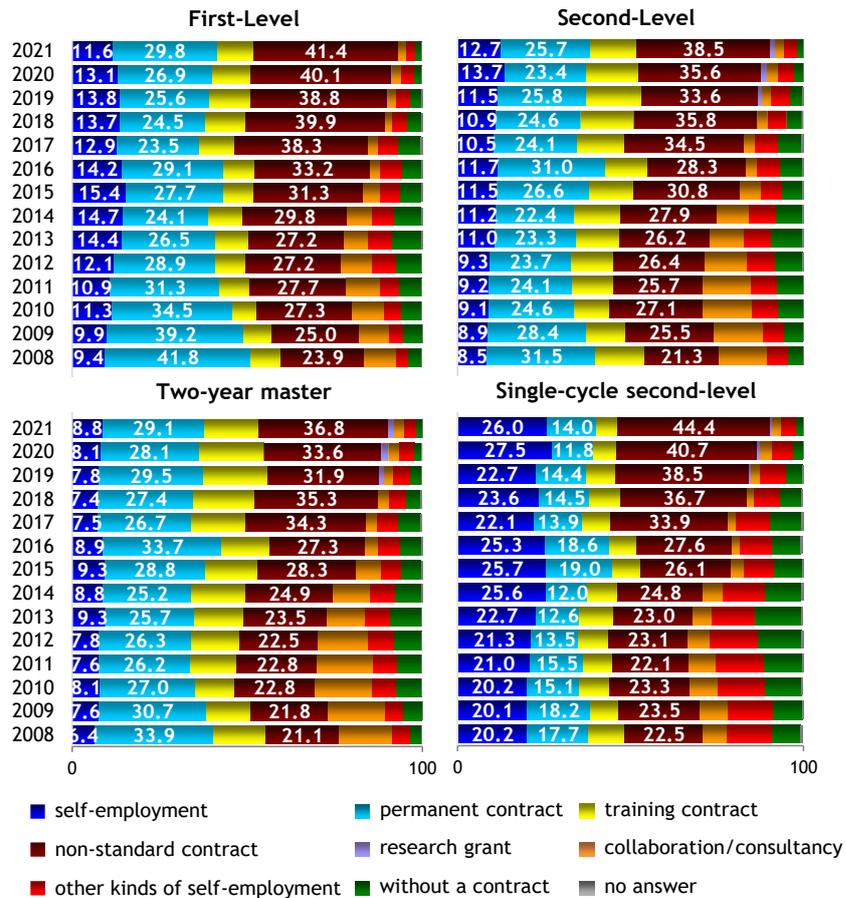
3. Type of work

All in all, one year after graduation, 11.6% of employed first-level graduates and 12.7% of employed second-level graduates were self-employed (Figure 5).⁹ Said value is 8.8% for two-year masters, while it rises to 26.0% for single-cycle second-level graduates due to the very nature of these courses of study, which are oriented towards starting freelance activities. 29.8% of first-level graduates and 25.7% of second-level graduates are employed with permanent contracts. Also in this case the differences between two-year masters (29.1%) and single-cycle second-level graduates (14.0%) are noticeable. In 2021, the prevalent form of employment among graduates employed one year after graduation is confirmed by the non-standard contract (in particular fixed-term employment), which concerns 41.4% of first-level graduates and 38.5% of second-level graduates. Nonetheless, some differences among degree types are identified: 36.8% for two-year masters and 44.4% for single-cycle second-level graduates. On the other hand, those employed with a training contract accounted for 10.4% of first-level graduates and 13.4% of second-level graduates. In particular, 15.6% among two-year masters and 6.1% among single-cycle second-level graduates. Other forms of self-employment - mainly occasional collaboration contracts - involved 2.6% of first-level graduates and 3.6% of second-level graduates (3.4% and 4.3%, respectively, for two-year masters and single-cycle second-level graduates), while semi-subordinate work (collaboration/consultancy) involved 2.4% and 2.9% (2.9% and 2.7%, respectively, for two-year masters and single-cycle second-level graduates). Finally, unregulated work accounts for 1.7% of first-level employed graduates and 1.6% of second-level employed graduates (1.5% for two-year masters and 1.7% for single-cycle masters). A comparison with the surveys of previous years shows trends that are not always linear, often differentiated between first- and second-level graduates and difficult to fully explain given the multiplicity of factors that affect the results. Here we simply highlight that for all the cohorts surveyed there was an increase in non-standard contracts (compared to the 2019 survey, +2.6 percentage points for first-level graduates and +4.9 points for second-level graduates) and a contraction in both training contracts (-1.4 and -2.5 points, respectively) and non-regulated activities (-1.4 and -2.0 points).

Extending the period of observation beyond the first year after graduation allows a more complete assessment of the characteristics of the type of work. Three years after graduation, 9.4% of first-level graduates and 16.1% of second-level graduates were self-employed. This figure was 12.0% among two-year masters and 28.4% among single-cycle second-level graduates. Permanent employment contracts concern 52.6% of first-level graduates and 44.5% of second-level graduates. Such a value rises to 49.3% for two-year masters and falls to 30.2% for single-cycle second-level graduates, for the reasons previously mentioned. Still three years after graduation, non-standard work is widespread, involving 20.9% of first-level graduates and 25.4% of second-level graduates (24.6% for two-year masters; 27.4% for single-cycle second-level graduates).

⁹ Except for training activities, job characteristics are collected on graduates in paid employment.

Figure 5 - 2007-2020 graduates employed one year after graduation: type of work by degree type. Survey years 2008-2021 (percentage values)

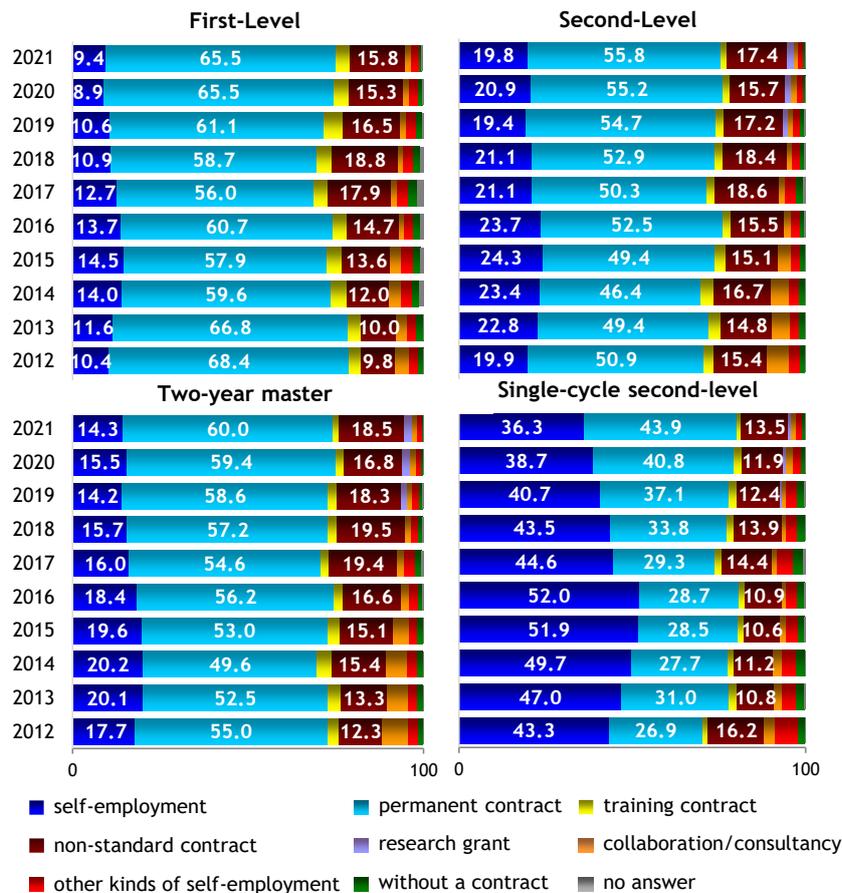


Note: as for the first-level, only graduates not enrolled in another degree course were considered. Until the 2018 cohort, second-level graduates also include graduates from the pre-reform course of study in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

With reference to the 2016 graduates, five years after graduation, self-employment stands at 9.4% among first-level graduates and 19.8% among second-level graduates. The different spread of self-employment between the two populations that coexist in the group of second-level graduates is further accentuated by extending the period of observation to the first five years after graduation. As a result, the values are 14.3% among two-year masters and 36.3% for single-cycle second-level graduates (Figure 6).

Figure 6 - 2007-2016 graduates employed five years after graduation: type of work by degree type. Survey years 2012-2021 (percentage values)



Note: as for the first-level, only graduates not enrolled in another degree course were considered; second-level graduates also include graduates from the pre-reform course of study in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

The share of those hired with a permanent contract exceeds half of the employed and reaches 65.5% among first-level graduates and 55.8% among second-level graduates. The latter value rises further to 60.0% among two-year masters and falls to 43.9% among single-cycle second-level graduates, due to the greater diffusion of self-employment among the latter. 15.8% of first-level graduates and 17.4% of second-level graduates are employed with a non-standard contract (18.5% and 13.5%, respectively, for two-year masters and single-cycle second-level graduates). All other forms of employment are decidedly limited, with percentages always below 5.0%. An increase in permanent employment contracts is recorded compared to the 2019 survey (+4.4 percentage points for first-level graduates and +1.1 for second-level graduates). Non-standard employment saw a slight contraction for first-level graduates (-0.7 points) while it remained substantially stable for second-level graduates. Finally, self-employment is decreasing among first-level graduates (-1.2 percentage points), while all in all it remains at constant levels among second-level graduates (+0.4 points).

3.1. Smart working and other forms to work remotely

Where feasible, the sudden emergence of the Covid-19 pandemic made it inevitably necessary to rely on the so called ‘smart working’, an organisational method that has enabled many companies to provide continuity of work that would otherwise have been impossible, especially during the lockdown. Moreover, ‘smart working’ (more broadly in the form of home working) has also been widely used once the first lockdown was ended, so as to contain the spread of the virus within the workplace. For this very reason, starting with Law Decree no. 6/2020, the Italian Government has strongly encouraged its use, for all those activities that can be carried out remotely, even without a prior individual agreement between employee and employer. It is actually a form of work organisation that, together with ‘telelavoro’, was introduced in Italy some time ago,¹⁰ but which had not previously been particularly valued by Italian companies. In the last two years, however, for the reasons mentioned above, there has been an exponential increase in the number of remote workers, including those in the public administration, which was one of the first entities to have to cope with this different way of performing work, partly because of the provision of certain essential public services. It is also true that the return to the office was regulated differently for the public and private sectors, thus leading to a different intensity of remote working in the two sectors to date. In fact, civil servants returned to the office on 15 October 2021,¹¹ although the possibility of individual agreements pursuant to Italian Law no. 81/2017 remained valid. For private employees, on the other hand, the possibility of using “agile work” in a simplified form will remain in force until 31 August 2022.¹² ISTAT data show that during 2021 there was “a progressive reduction in the share of those who work from home most of the time, while the share of those who work from home less than half of the days remains almost unchanged”. These tendencies lead us to believe that we are moving towards a mixed mode of working, combining work from home and in the office. Moreover, according to a study by the Smart Working Observatory of Milan Polytechnic, hybrid working will become more and more common to allow a better balance between on-site and remote working. Indeed, smart working will remain or will be introduced in 89% of large companies and 62% of public administrations. This share drops to 35% among small and medium-sized enterprises, which have seen a strong push to return to in-person working.

The 2021 survey shows that smart working and, more generally, remote work, involves a total of 18.8% of first-level graduates and 32.2% of second-level graduates employed one year after graduation (36.9% of two-year masters, 16.3% of single-cycle second-level graduates). While these shares are declining compared to what was observed in 2020 (-1.0 percentage points among first-level graduates and -4.8 points among second-level graduates) as a result of a gradual return to normality after the pandemic it seems plausible to assume that this method of working is becoming more consolidated. Suffice it to say that in the 2019 survey, teleworking or other remote work accounted for only 3.1% of the jobs held by first-level graduates and 4.3% of those held by second-level graduates one year after graduation.

¹⁰ The ‘smart working’ or ‘lavoro agile’ was established with reference to Italian legislation (Law no. 81/2017). On the other hand, the so called ‘telelavoro’ (remote working) has been active in our country for longer and has been differentially regulated between the public and private sectors.

¹¹ Italian Ministerial Decree of 8 October 2021.

¹² Italian Law no. 52/2022.

For the ease of reading, we will hereinafter refer to ‘smart working’ as employed or self-employed activities carried out remotely. Here we will limit ourselves to noting that ‘telelavoro’ is definitely less widespread. In fact, it overall concerns 1.1% of first-level graduates and 2.5% of second-level graduates. By contrast, there is a greater use of ‘smart working’ (10.2% and 17.9% respectively) or, for self-employed activities, remote working (7.5% and 11.8% respectively).

Teleworkers more frequently pursue an intellectual and highly specialised profession, as well as in executive jobs, and less likely to work in technical jobs. They work more often in the private sector, less frequently in the public sector. As might be expected, they are employed relatively less in health care and commerce or social and personal services. They work more frequently in IT, professional consultancy, communication, credit and insurance, and education and research. In terms of type of employment, to a greater extent those who work remotely have a permanent employment contract or a training contract, while non-standard contracts are less frequent.

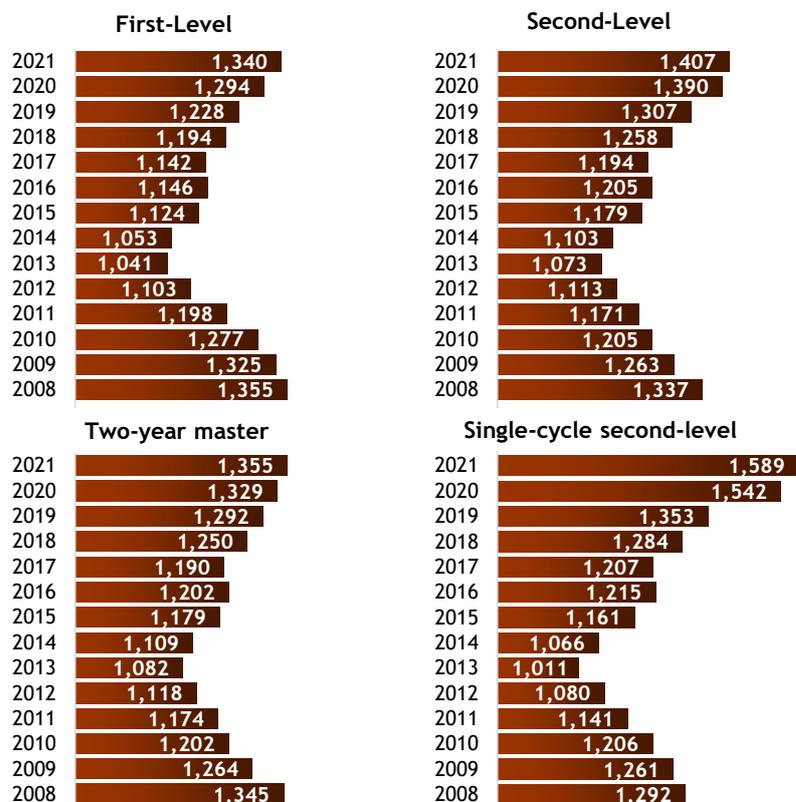
These results are generally confirmed for both first- and second-level graduates. Moreover, the trends are confirmed both at one and five years after graduation.

4. Salaries

On average, the 2021 net monthly salary one year after graduation is equal to €1,340 for first-level graduates and €1,407 for second-level graduates; there are differences among the salaries received by two-year masters, equal to an average of €1,355 net per month, and those of single-cycle second-level graduates, which amount to €1,589 (Figure 7). Overall, there was an increase compared to the 2019 survey (as in the previous paragraphs, the comparison with 2020 has been omitted since it was so strongly distorted by the Covid-19 pandemic): +9.1% for first-level graduates and +7.7% for second-level graduates.¹³ This increase affirms the positive trend observed in recent years, bringing wages to levels in line with or even higher than those observed in 2008. Obviously, these trends are affected by the different incidence of part-time work, which in 2021 involved 19.8% of first-level graduates and 17.5% of second-level graduates. Compared to 2019, these values decreased respectively by 6.8 and 4.4 percentage points. For a better assessment of wage trends, specific analyses were performed that took into account the varying prevalence of part-time work. These analyses showed that the wage trends described above remain valid even if the analysis is limited to full-time employees.

¹³ The temporal analysis of graduate salaries takes into account the changed purchasing power.

Figure 7 - 2007-2020 graduates employed one year after graduation: net monthly earnings by degree type.
Survey years 2008-2021 (values revalued according to ISTAT consumer price indices; average values in euros)



Note: as for the first-level, only graduates not enrolled in another degree course were considered. Until the 2018 cohort, second-level graduates also include graduates from the pre-reform course of study in Primary Education Sciences.

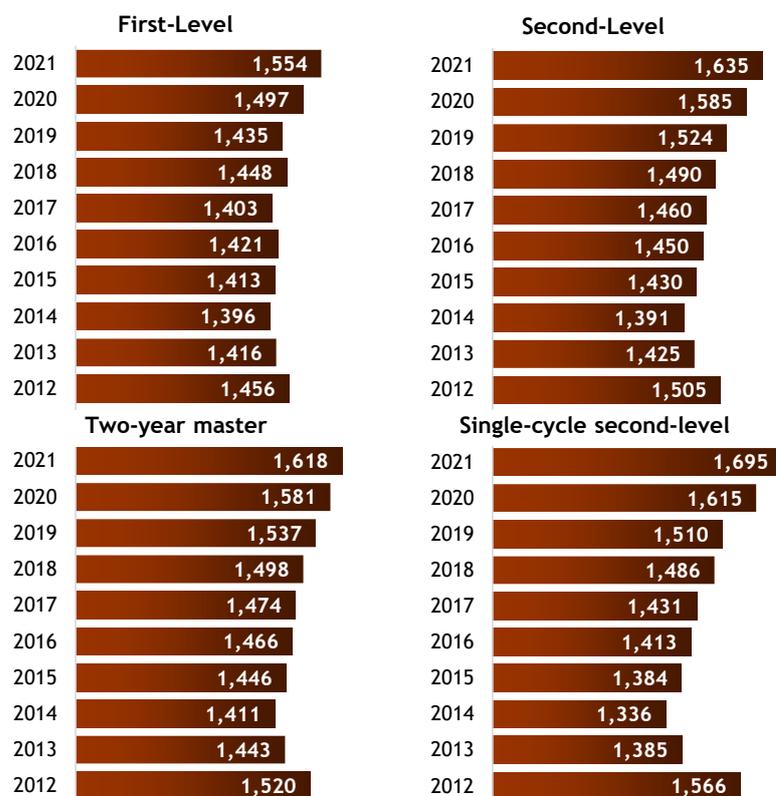
Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

Three years after graduation, the net monthly salary reaches €1,475 for first-level graduates and €1,508 for second-level graduates. No particular differences emerge between two-year master's degree graduates (€1,507) and single-cycle master's degree graduates (€1,510).

Five years after graduation, the net monthly salary is €1,554 for first-level graduates and €1,635 for second-level graduates. If we further differentiate second-level graduates by degree type, we can see that the salaries received are on average equal to €1,618 for two-year masters and €1,695 for single-cycle second-level graduates (Figure 8). Even five years after graduation, there was an increase in salaries compared to the similar survey in 2019: +8.3% for first-level graduates and +7.3% for second-level graduates. This growth is consistent with several years of trending wage increases, leading wage levels to exceed even those observed in 2012 for all the cohorts under review.

Here too, the trends observed are affected by the varying prevalence of part-time work, which in 2021 involved 14.1% of first-level graduates and 8.2% of second-level graduates (compared to 2019, -4.8 percentage points for first-level graduates and -4.6 points for second-level graduates). But it is also true that the wage trends described above remain valid even if the analysis is restricted to full-time employees alone.

Figure 8 - 2007-2016 graduates employed five years after graduation: net monthly earnings by degree type. Survey years 2012-2021 (values revalued according to ISTAT consumer price indices; average values in euros)



Note: as for the first-level, only graduates not enrolled in another degree course were considered; second-level graduates also include graduates from the pre-reform course of study in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

4.1. An additional salary insight. The results of a linear regression model

A linear regression model was used to analyse the multiple factors affecting graduates' net monthly earnings. The approach followed is similar to that described in section 1.1 for the assessment of the probability of being employed, although with some peculiarities related to the different phenomenon under investigation. The 2020 graduates were considered and interviewed one year after obtaining their degree. Such group included both first-level graduates - who did not continue their education by enrolling in a course of study, and second-level graduates - who were contacted one year after obtaining their degree.¹⁴ The analysis jointly considers factors related to gender and university degree (degree type, field of study). Given its descriptive purpose, for a more detailed analysis it was decided to also consider some characteristics of the work carried out, which are closely linked to graduates' earnings (geographic area of work, full/part time, type of work, company's sector and branch of

¹⁴ As with the in-depth study of the probability of being employed, the model does not include those who were working at the time of graduation and those living abroad.

economic activity, profession). These are concomitant factors, which have been included for merely descriptive reasons.¹⁵

The model shown in Table 2 spotted strong differentiations by degree type, which were already highlighted by the descriptive analyses previously discussed. All else being equal, compared to a first-level degree, obtaining a second-level degree allows on average an estimated monthly net bonus payment of €162.

All other things being equal, the field of study also has a decisive effect on the pay differentials of recent graduates. Compared to graduates of the politics, social sciences and communications field of study, graduates receiving significantly higher salaries come from the health and pharmacy (+€275 net per month), information and communication technologies - ICTs (+€158), engineering and engineering trades (+€110), economics (+€77) as well as education (+€74). On the other hand, graduates from architecture and construction (-€136 net per month), psychology (-€67) and agriculture, forestry and veterinary (-€31) are at a greater disadvantage in terms of salary.

The traditional gender differences is noticeable; in fact, the model estimates that, all else being equal, men earn a net average of €91 more per month one year after graduation. Pay differences are also found in geographical terms: compared to those employed in the South, those working in the North earn on average a net €102 more per month, while those working in the Centre earn €51 more. But it is above all among graduates working abroad that the pay advantage is considerably marked (more than €500 net per month more than those working in the South). However, it is worth remembering the differences in the cost of living that characterise different countries and regions within the same country. In fact, this element has an impact on wages, as also underscored in various studies on AlmaLaurea data.

Analysing the specific job patterns, one finds that, all other things being equal, the differences in wages according to the spread of full-time and part-time activities. In particular, the model estimates that employed people working full-time earn on average about a net monthly €412 more than those working part-time.

¹⁵Factors that were considered but found not to be significant include aspects such as the geographic area of the university, geographic mobility for study purposes, willingness to travel for business, knowledge of IT tools, as well as the job expectations sought related to many different variables. That is to say, relations with colleagues in the workplace, independence and autonomy, earning prospects, coherence with the studies completed, free time, workplace (i.e. location and relative physical characteristics), acquisition of professional skills, meeting one's cultural interests, flexibility of working hours, career opportunities, job security, social utility of the job and prestige. On the other hand, excluded from the model due to modest correlation were aspects relating to the family of origin (parents' education level, social class), the geographical breakdown of residence, the declared intention at graduation to continue studies, degree completion time, age at graduation, average exam score, expectations of the job sought linked to involvement in work and decision-making processes, the opportunity for contact with foreign countries, the possibility of making the best use of the skills acquired during studies, as well as work and internship experiences, study abroad experiences gained during university studies and certain factors related to the work carried out (coordination of work done by others and effectiveness of the degree). For the same reasons, a number of variables related to the influence of the Covid-19 pandemic on work were also excluded from the model. Specifically, the suspension or slowing of work, the increase in workload and the postponement of starting one's current job.

Table 2 - 2020 first- and second-level graduates employed one year after graduation: linear regression model for assessing net monthly earnings. Survey year 2021

	b	S.E.
Gender (female=0)		
male	90.616	4.194
Degree type (First-Level=0)		
Second-Level	162.443	4.990
Field of study (Politics, social sciences and communications=0)		
Agriculture, forestry and veterinary*	-30.580	14.706
Architecture and construction	-136.473	12.338
Arts and design***	-11.226	16.473
Economics	76.544	9.868
Education	74.093	12.136
Law***	7.793	13.918
Information and communication technologies (ICTs)	157.984	16.867
Engineering and engineering trades	109.896	10.465
Humanities and literature***	-10.255	13.498
Foreign languages***	-4.758	11.669
Health and pharmacy	275.071	10.288
Psychology	-66.599	15.359
Natural sciences, mathematics, physics and statistics**	20.302	10.993
Sports sciences and physical education***	19.839	21.997
Geographic area of work (South=0)		
North	102.450	4.773
Centre	50.889	5.664
Abroad	505.310	12.315
Full time/part-time (part-time=0)		
full time	411.975	5.611
Type of work (non-standard contract=0)		
self-employment	191.987	6.881
permanent contract	52.191	5.395
training contract	-36.884	6.415
research grant	-72.094	17.294
collaboration/consultancy	-54.569	11.977
other kinds of self-employment	-159.639	11.547
without a contract	-412.212	17.695
Company sector (private=0)		
public	209.351	6.356
not-for-profit***	-18.029	12.371
Company branch (social and personal, recreational and cultural services=0)		
agriculture	70.883	21.614
engineering industries and precision engineering industries	131.961	13.524
building industry*	30.934	14.448
chemistry/energy	166.178	13.351
manufacturing industry	127.068	13.481
commerce***	13.472	11.114
credit and insurance	214.971	13.850
transport, advertising and communications	78.309	13.306
consulting	44.943	11.220
computer science	97.294	13.426
other services for companies	106.579	15.083
public administration, armed forces**	32.914	18.843
education and research	-154.229	11.437
healthcare	295.897	10.767
Profession (other professions=0)		
entrepreneurs, legislators or intellectual, scientific and highly spec. professions	146.603	4.873
Constant	501.749	13.365

Note: R-squared = 0.455 (adjusted R-squared = 0.455), N=42,282

* Significance at 5% (p<0.05) - ** Significance at 10% (p<0.10) - *** Not significant.

Where not explicitly stated, parameters significant at 1% (p<0.01).

Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

Equally important differences in pay are also estimated in terms of contracts: compared to graduates employed on non-standard contracts (mainly fixed-term contracts), those who are self-employed receive over €190 net per month more. Graduates with a permanent contract, on the other hand, receive €52 net per month more. On the contrary, pay differentials show negative values especially for those types of work not regulated by any contractual form, semi-subordinate (see Table 2 "other kinds of self-employment"). In fact, all other conditions being equal, the wage disadvantage compared to non-standard contracts is respectively equal to -€412 and -€160 per month net. Those who work under a research grant, as semi-subordinate workers or with a training contract also earn less than workers employed with non-standard contracts, but in this case the penalty is less marked (-€72, -€55 and -€37 respectively). The findings show that even today in our country precarious fixed-term contracts are not matched by higher wages.

The sector and branch of economic activity have a significant impact on the salaries of graduates. In fact, all other things being equal, compared to the private sector, civil service has an estimated wage advantage of €209. The branches of economic activity with the largest wage differentials compared to social, personal, recreational and cultural services are above all healthcare (+€296)¹⁶ and credit and insurance (+€215). The model also estimates a wage advantage for the chemical and energy industries (+€166), engineering industries and precision engineering industries (+€132) and manufacturing industries (+€127). On the other hand, graduates working in education and research receive lower wages: the wage penalty is -€154 compared with the social and personal, recreational and cultural services branch.

Finally, the profession held by graduates has a positive effect on their earnings. All else being equal, graduates in high professions such as entrepreneurs, legislators or intellectual, scientific and highly specialised professions receive +€147 than graduates in other professions.¹⁷

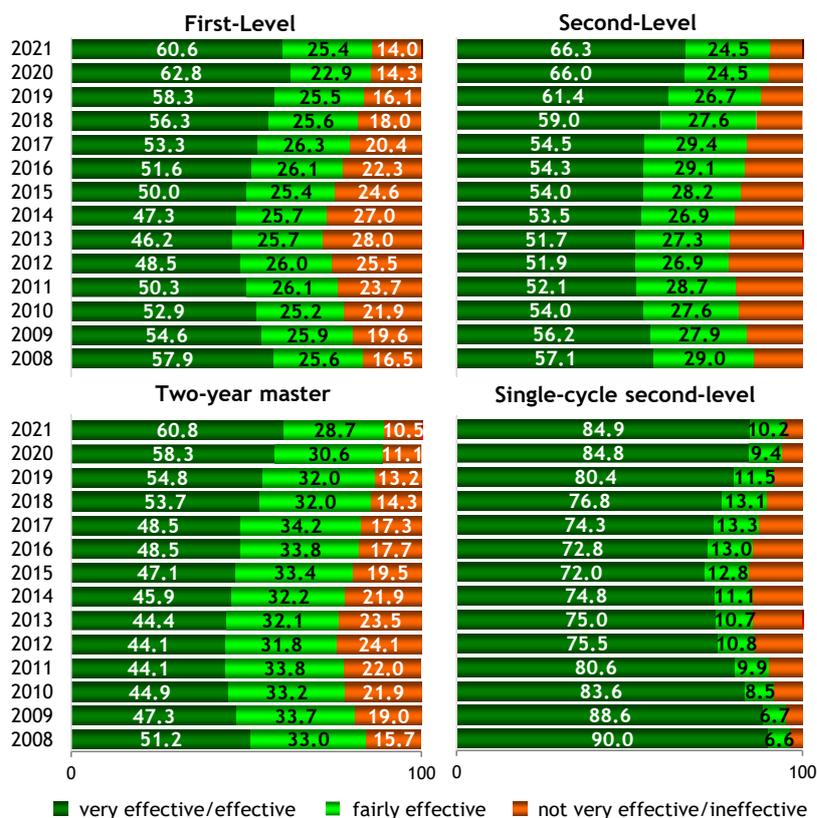
5. Effectiveness of the degree on the job

Graduation effectiveness is a subjective measure of coherence between studies completed and jobs performed, as it is based on evaluations expressed by employed graduates. Together with normative and statistical measures, it is a way of identifying and analysing situations of mismatch, whether horizontal or vertical. As regards graduates' statements on the use of the skills acquired during their studies, as well as on the formal or substantive necessity of the qualification for employment, it is proved that the qualification is "very effective or effective" for about two-thirds of employed graduates at one year: 60.6% for first-level graduates and 66.3% for second-level graduates. Given the different nature of the courses of study and their relative employment opportunities, it is obvious that there are remarkable differences among two-year masters, among whom the degree is "very effective or effective" for 60.8% of those employed, and single-cycle second-level graduates, whose effectiveness value rises to 84.9% (Figure 9).

¹⁶ Although the *ceteris paribus* approach is used in the model, its result is likely to be influenced by the pandemic context of 2021.

¹⁷ 'Other professions' include technical jobs, executive office workers, skilled trades and services, professions related to the armed forces and the remaining non-classified occupations (ISTAT, CP2011).

Figure 9 - 2007-2020 graduates employed one year after graduation: degree effectiveness by degree type. Survey years 2008-2021 (percentage values)



Note: as for the first-level, only graduates not enrolled in another degree course were considered. Until the 2018 cohort, second-level graduates also include graduates from the pre-reform course of study in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

Leaving aside the comparison with 2020 given its peculiarities related to the Covid-19 pandemic, compared to the 2019 survey there has been an increase in effectiveness levels for both first-level graduates (+2.3 percentage points) and second-level graduates (+4.9 points; an increase that rises to +6.0 points among two-year master's degree graduates, while it stands at +4.5 points among single-cycle's degree graduates). These results confirm the positive trend that has been observed for a number of years and reveal even higher levels of effectiveness than those recorded in 2008 (with the exception of single-cycle master's degree graduates, which in any case remained high).

As discussed before, as time goes by, the features of the job performed improve including the effectiveness of the degree.

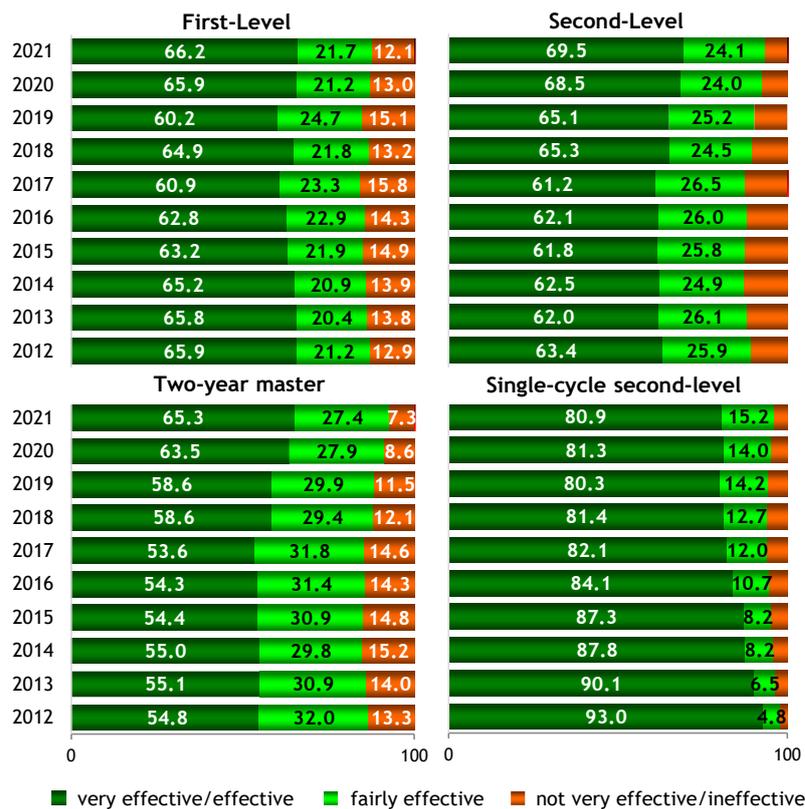
Considering the 2018 graduates after three years, the degree is considered "very effective or effective" for 67.8% of first-level graduates and 65.5% of second-level graduates. In greater detail, it is 60.5% among two-year masters and increases to as much as 80.0% among single-cycle second-level graduates.

At five years these quotas reach, 66.2% and 69.5% of first- and second-level employees respectively. If the effectiveness of the degree for graduates of the two-year masters stops at 65.3%, for single-cycle second-level graduates the levels reach 80.9% (Figure 10). So, even for graduates five years after graduation, 2021 shows an improvement in the levels of effectiveness. Indeed, compared

to 2019, there is an increase of 6.0 and 4.4 percentage points respectively for both first- and second-level graduates. Even at five years, therefore, the increase in degree effectiveness levels saw higher values than those observed in 2012 (again, single-cycle master's degree graduates are an exception).

The picture here outlined is largely confirmed if we separately consider the two components of effectiveness. That is to say, in the job performed, the use of the skills acquired at university and the formal or substantive requirement of a degree for the practice of one's own type of work.

Figure 10 - 2007-2016 graduates employed five years after graduation: degree effectiveness by degree type. Survey years 2012-2021 (percentage values)



Note: as for the first-level, only graduates not enrolled in another degree course were considered; second-level graduates also include graduates from the pre-reform course of study in Primary Education Sciences.

Source: AlmaLaurea, Survey on the Occupational Condition of Graduates.

The complete documentation is available at:

www.almalaurea.it/en/our-data/almalaurea-surveys/graduates-employment-status.

Unless otherwise specified, reproduction for non-commercial purposes with a reference to the source is authorised.

Consorzio Interuniversitario AlmaLaurea

viale Masini, 36 - 40126 Bologna

tel. +39 051 6088919

fax +39 051 6088988

www.almalaurea.it



Viale Masini, 36 - 40126 Bologna
Tel. +39 051 6088919 Fax +39 051 6088988

supporto.laureati@almalaurea.it
servizio.aziende@almalaurea.it
supporto.universita@almalaurea.it
www.almalaurea.it