Tracking Graduate Pathways through Administrative Data:

Evidence from Tuscan Universities

Silvia Duranti · Maria Luisa Maitino · Valentina Patacchini · Patrizia Lattarulo

IRPET – Istituto Regionale per la Programmazione Economica della Toscana

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Presentation roadmap

From national monitoring approaches to evidence for university policy.

01	**Background**	Graduate outcomes monitoring in Italy
02	**The project**	Partners and administrative data sources
03	**The database**	Coverage, sample selection and outcome measures
04	**Results**	Dependent work · Self-employment · Work during studies · Combined outcomes

How are graduate outcomes monitored in Italy?

Surveys and selected university–labour-market administrative linkages

SURVEY-BASED MONITORING

AlmaLaurea

Annual follow-ups at 1, 3 and 5 years; 81 participating universities in 2026.

ISTAT

Graduate labour-market entry survey; last conducted in 2015 (2011 graduation cohort). No subsequent editions currently published.

LINKED ADMINISTRATIVE-DATA STUDIES

PROJECT / STUDY	GRADUATE COVERAGE	RESEARCH FOCUS
Uni.CO – Sapienza Lucisano et al. (2016, 2022)	Sapienza; later 5 Lazio universities	Longitudinal employment pathways linked to nationwide COb.
SKiNT – Turin Di Monaco et al. (2019)	University of Turin graduates, 2005–14	Observed degree–occupation matches and mismatch.
MHEO – Milan Mezzanzanica & Salini (2025)	University of Milan & Milano-Bicocca	Monitoring entry, contracts and territorial mobility.
Bovini et al. (2026) Bank of Italy	Italy: national graduate cohorts, 2011–18	Linked graduate–job records for gender pay gaps.
Contini et al. (2026) ANS × WHIP / INPS	Italy: national ANS × WHIP sample	Regional mobility across university and work.

The Tuscan Universities Information System

A collaborative project linking complementary administrative data.

TUSCAN UNIVERSITIES

Academic records

Graduates' characteristics, academic careers, degree type and field, grades and residence.
Florence · Pisa · Siena · Siena for Foreigners

REGIONE TOSCANA

Regional administrative records

Fiscal records on VAT activity (Tuscany residents), scholarships and accommodation, and ESF interventions.

MINISTRY OF LABOUR

Nationwide COb

Mandatory employment notifications throughout Italy: contracts, occupations, work days, sectors and job location.

INTEGRATED GRADUATE DATABASE

Analysed by IRPET and Sapienza

Strengths and limitations of the linked database

Whole-population evidence, with important blind spots in continued education.

STRENGTHS

Population coverage

All graduates from Tuscan universities, not a survey sample.

Longitudinal records

Job spells, contracts and days worked: more than a snapshot.

Inclusion of self-employment

VAT registration linked to employment notifications for Tuscan residents.

LIMITATIONS

Study outside Tuscany

Master's programmes elsewhere are unobserved; bachelor outcomes may be misread.

Postgraduate training

Master's and single-cycle graduates may pursue PhDs or other courses elsewhere.

Missing employment

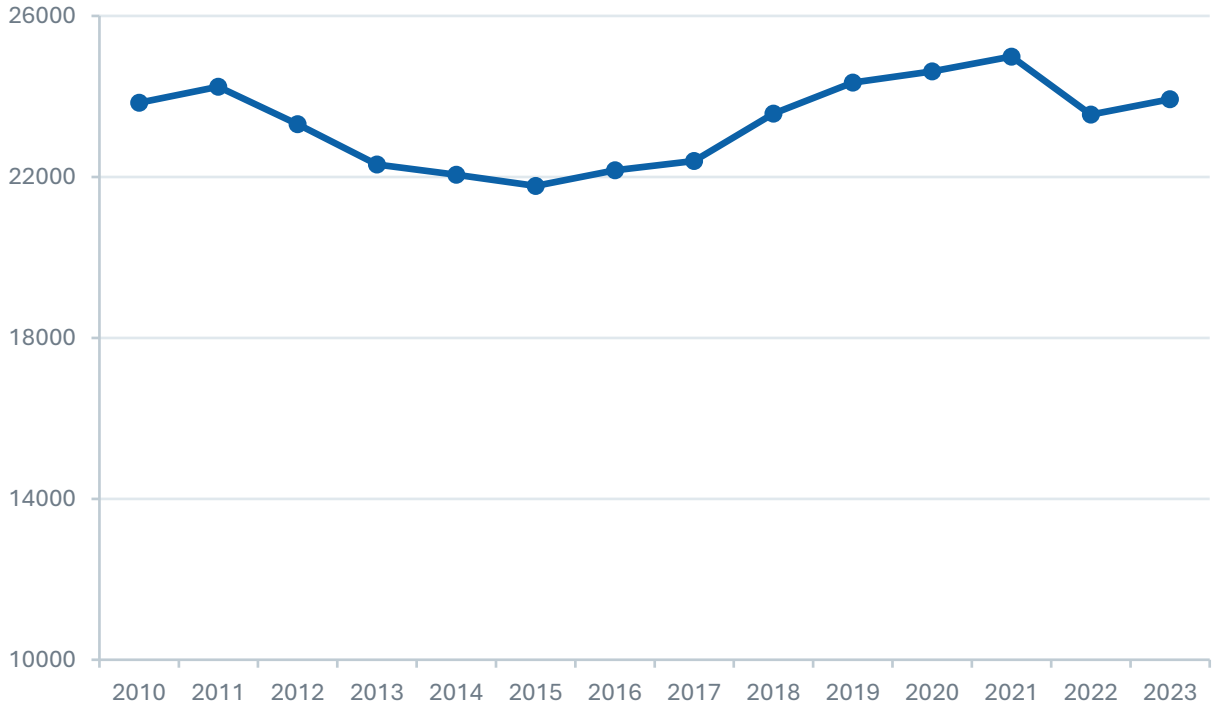
Work abroad is missing, as is self-employment for non-residents.

No observed job does not necessarily imply unemployment.

Graduate population and database coverage

All degrees awarded by Tuscan universities, 2010–2023.

Degrees awarded per year



>255k

graduates

≈327k

degree awards

One individual may obtain more than one qualification during the observation period.

From the full database to the outcome population

Selection is designed to observe labour-market entry after the last Tuscan qualification.

01 ALL GRADUATES — 2010–2023: all degree types, multiple qualifications possible

02 DEGREE SELECTION — Master’s and single-cycle degrees; bachelor’s graduates excluded

03 PERSON SELECTION — Last Tuscan qualification, age up to 35; Medicine excluded

04 FOLLOW-UP WINDOW — 2010–2018 cohorts: up to 5 years for dependent work, 3 for combined outcomes

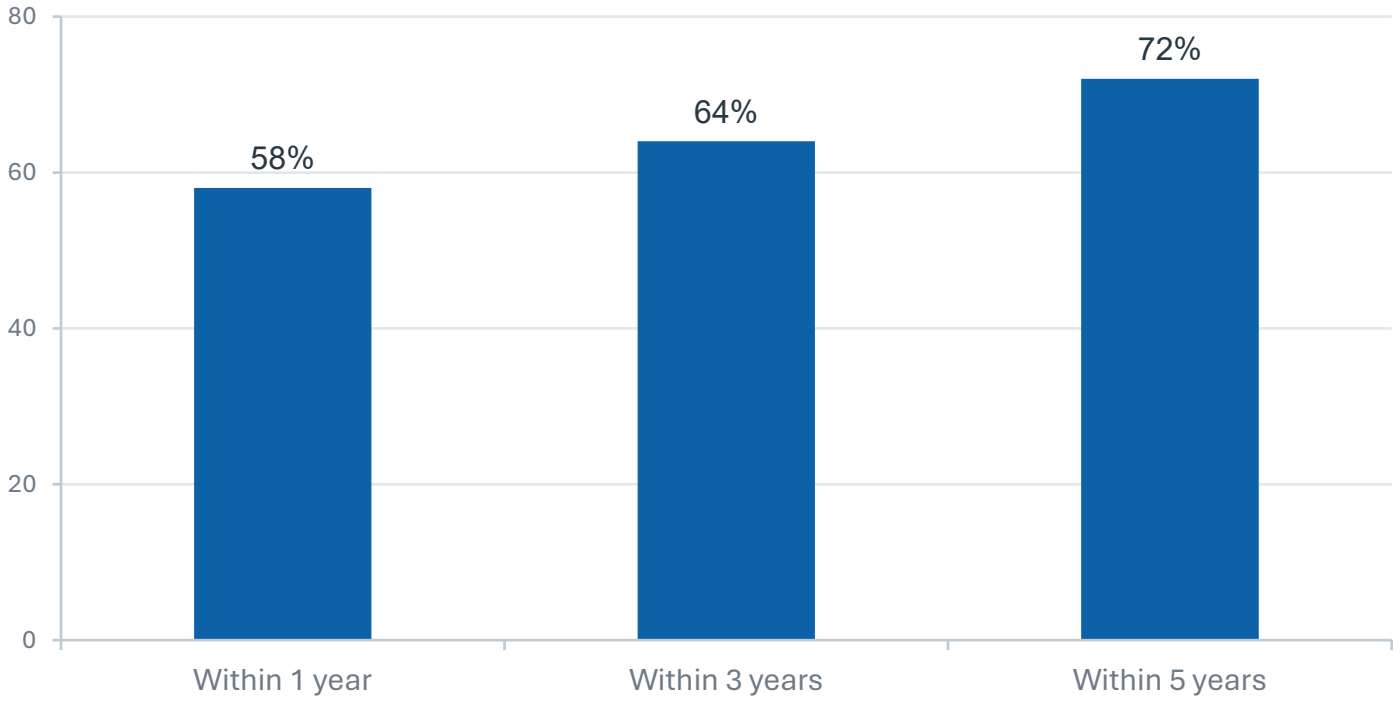
What can we measure with linked records?

Distinct measures of access, continuity, job quality and post-graduation pathways.

ENTRY	At least one dependent or para-subordinate job start within 1, 3 or 5 years.
CONTINUITY	Number of job starts and percentage of days worked in the observation period.
JOB QUALITY	Best contract achieved and highest occupational qualification attained.
SELF-EMPLOYMENT	VAT registration within 3 years (Tuscany residents only).
WORK DURING STUDIES	Dependent / para-subordinate work or VAT activity before graduation (Tuscany residents).
COMBINED OUTCOME	Dependent work, self-employment or work already active at graduation.

Entry into dependent employment rises over time

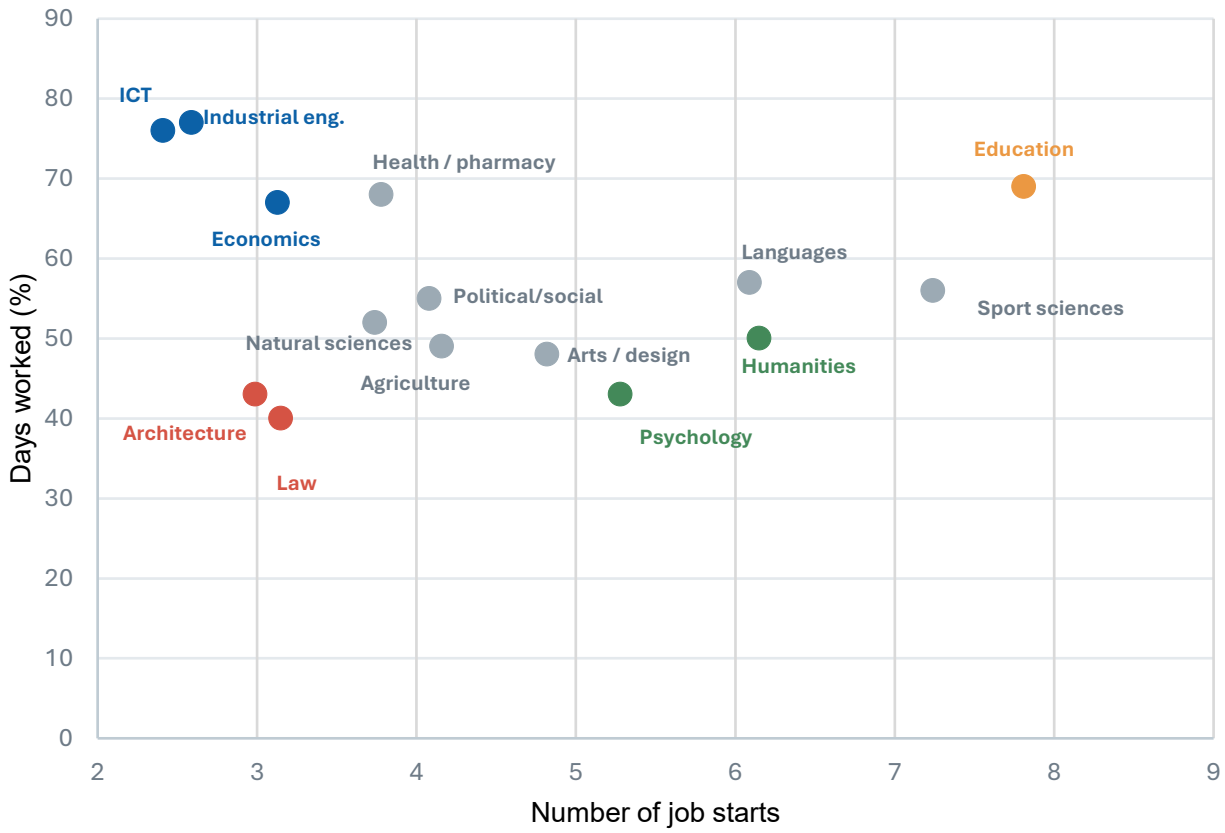
Share with at least one dependent or para-subordinate job start.



A job start measures access, but does not assess job stability or quality.

Work intensity and turnover vary across fields

Share of days worked and number of job starts within five years.



HIGH INTENSITY · LOW TURNOVER

Economics · ICT · Industrial engineering

HIGH INTENSITY · HIGH TURNOVER

Education and training

FRAGMENTED JOB PATHWAYS

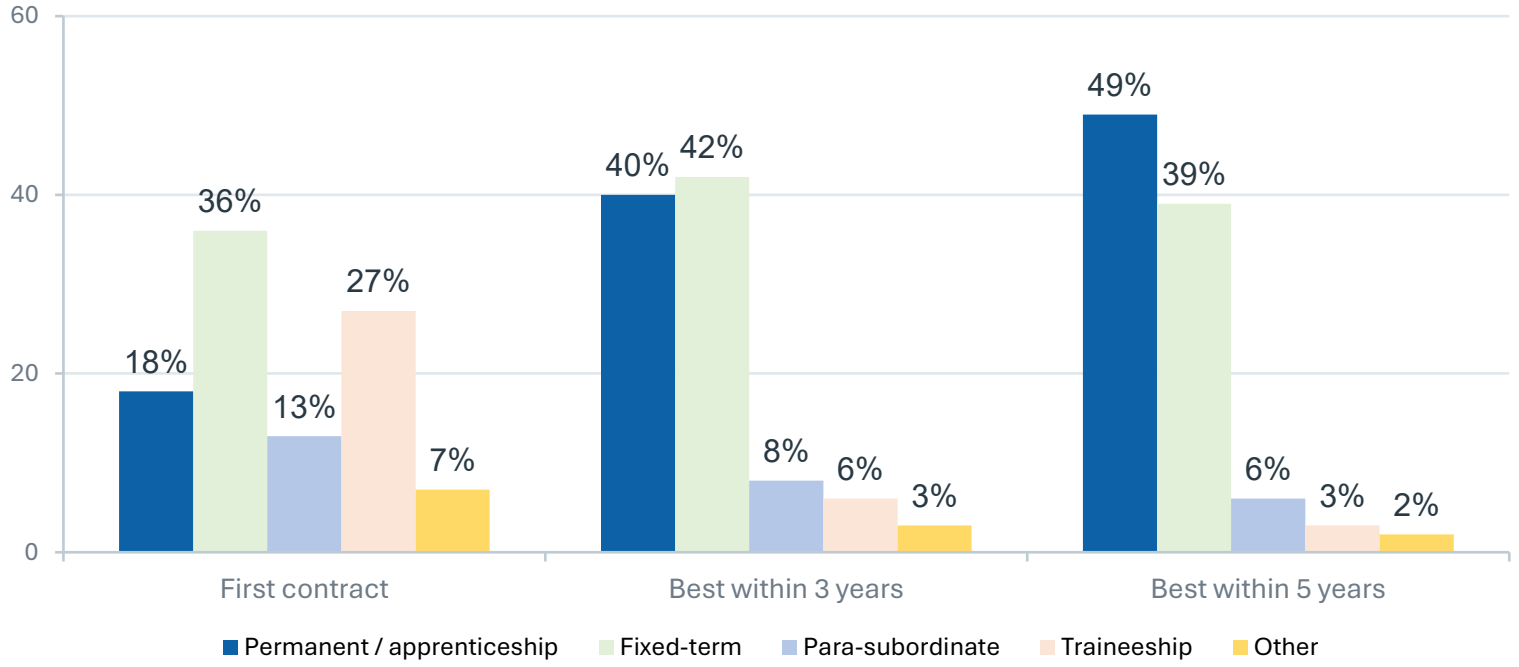
Psychology · Humanities

SELF-EMPLOYMENT MATTERS

Law · Architecture / civil engineering

Job stability increases over the first five years

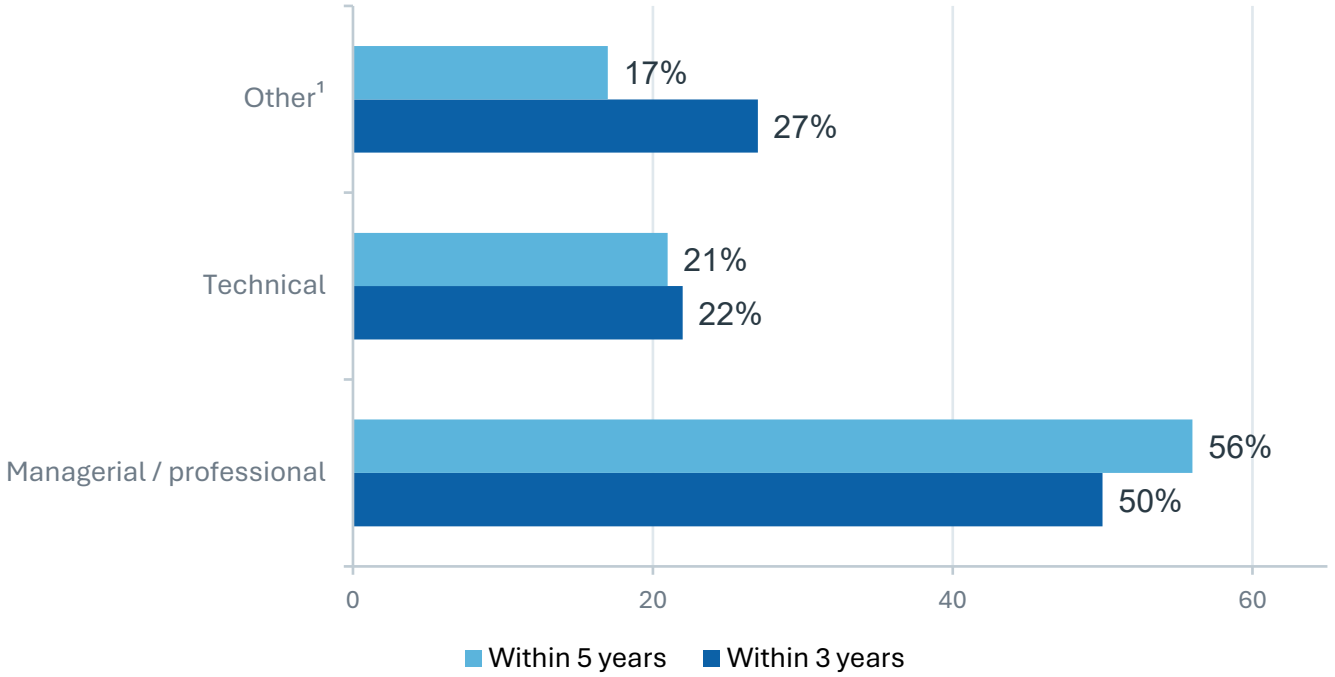
First job compared with the best contract observed within three or five years.



Permanent contracts or apprenticeships rise from 18% at entry to 49% within five years.

Graduates gradually move into higher-skilled jobs

Highest occupational qualification attained within three or five years.



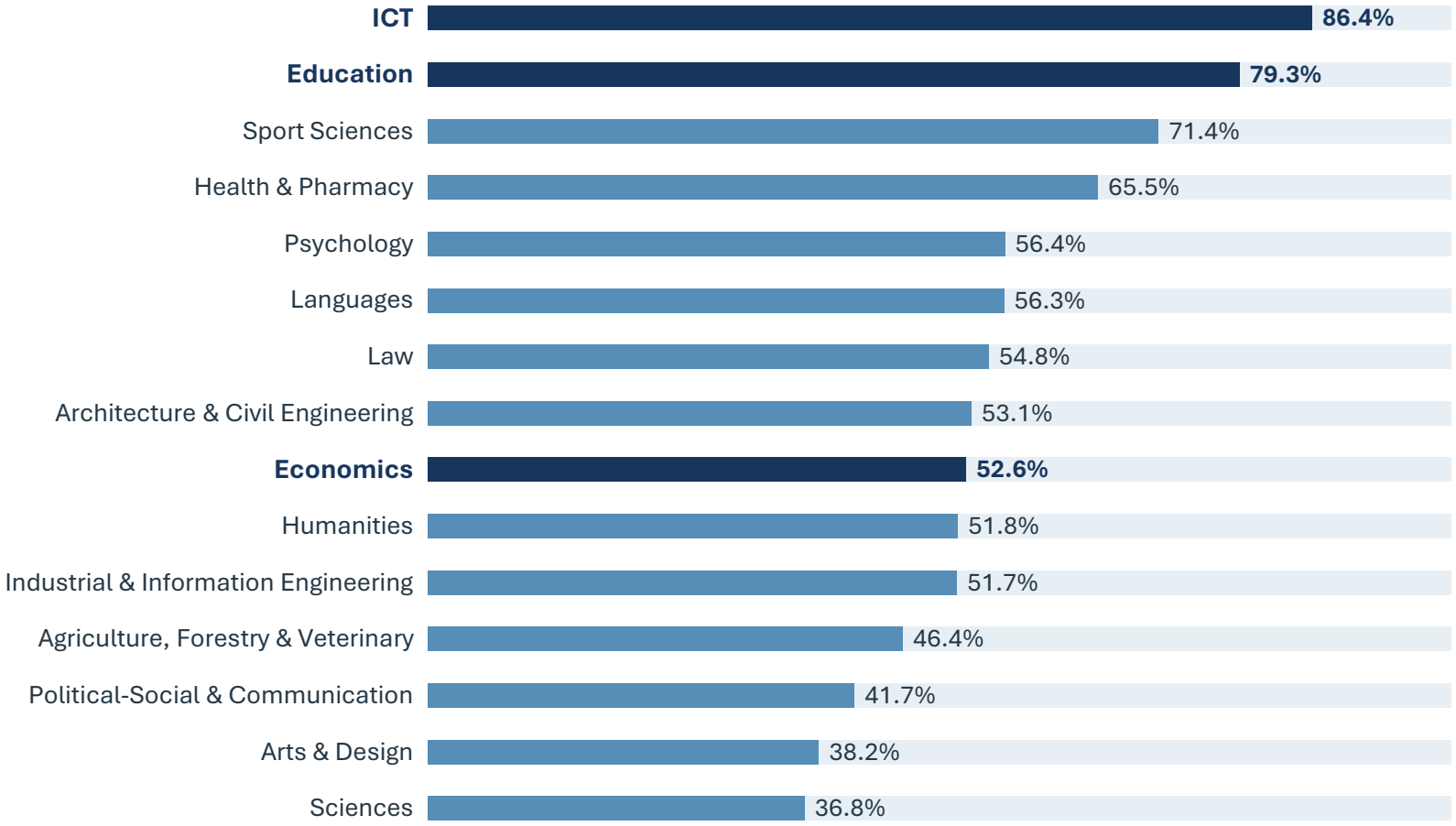
17%

vertical mismatch

[1] Other = clerical and lower-skilled occupations. Vertical mismatch refers to occupations below the major group of technicians.

How concentrated are graduates' occupational destinations?

Share of first-job outcomes accounted for by the top 10 occupations, by field of study (%)



Ordered by the share of first-job outcomes in the ten most frequent occupations

What do graduates do? Three examples

Top 5 first-job occupations within selected fields of study

Education

79.3% of first-job outcomes in the top 10 occupations

1	Primary school teachers	23.4%
2	Pre-primary school teachers	15.9%
3	Special needs education specialists	11.6%
4	Professional educators	8.8%
5	Social reintegration & inclusion technicians	4.7%

Economics

52.6% of first-job outcomes in the top 10 occupations

1	General affairs clerks	16.9%
2	Banking technicians	6.5%
3	Accounting specialists	6.5%
4	Human resources specialists	4.0%
5	Accountants	3.9%

ICT

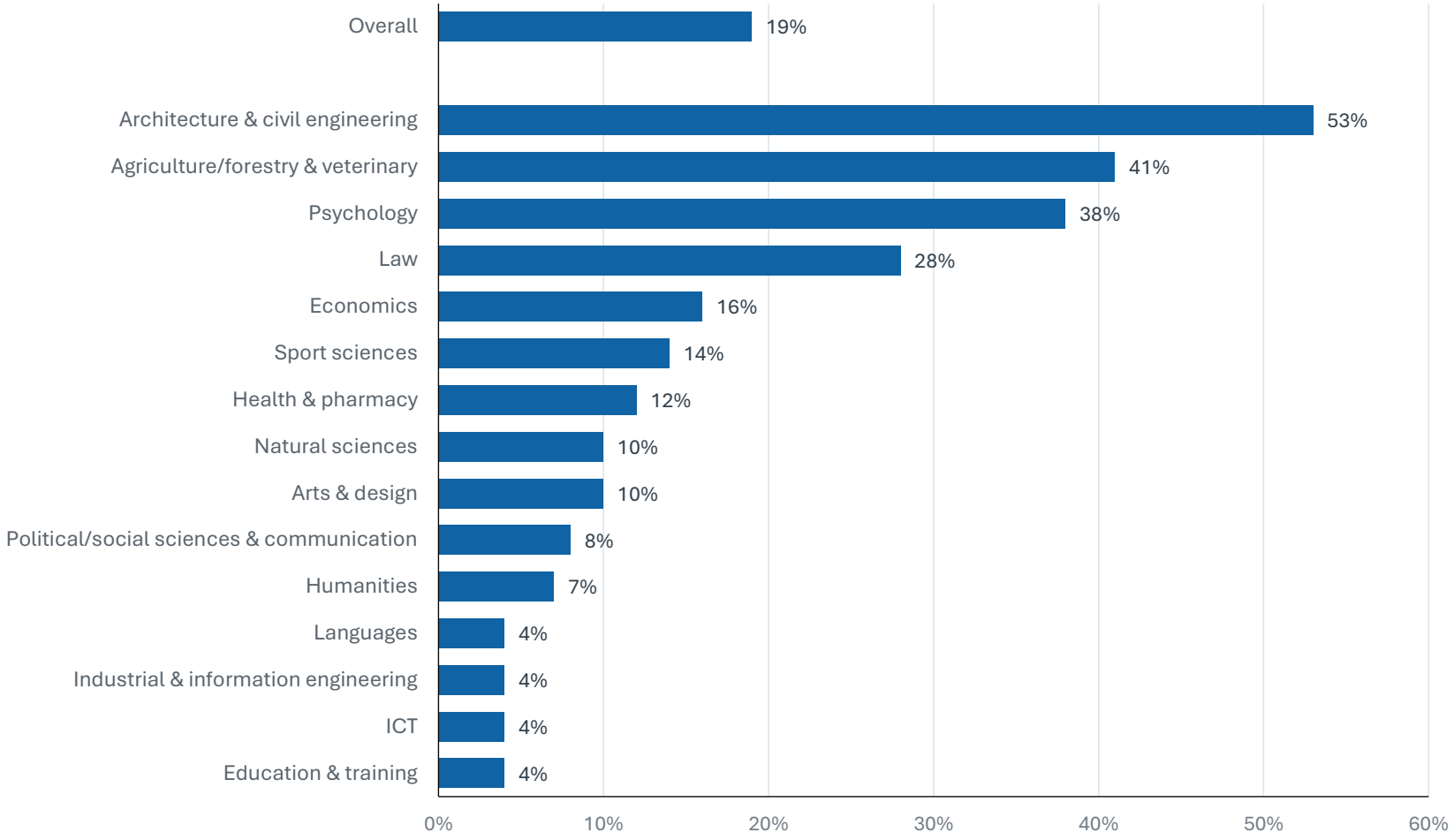
86.4% of first-job outcomes in the top 10 occupations

1	Software analysts & designers	24.8%
2	Computer programmers	23.2%
3	Application technicians	9.1%
4	Human resources specialists	7.6%
5	Graduate researchers/technicians in information sciences	6.9%

Education and ICT lead to a relatively narrow set of occupations; Economics graduates enter a broader range of jobs.

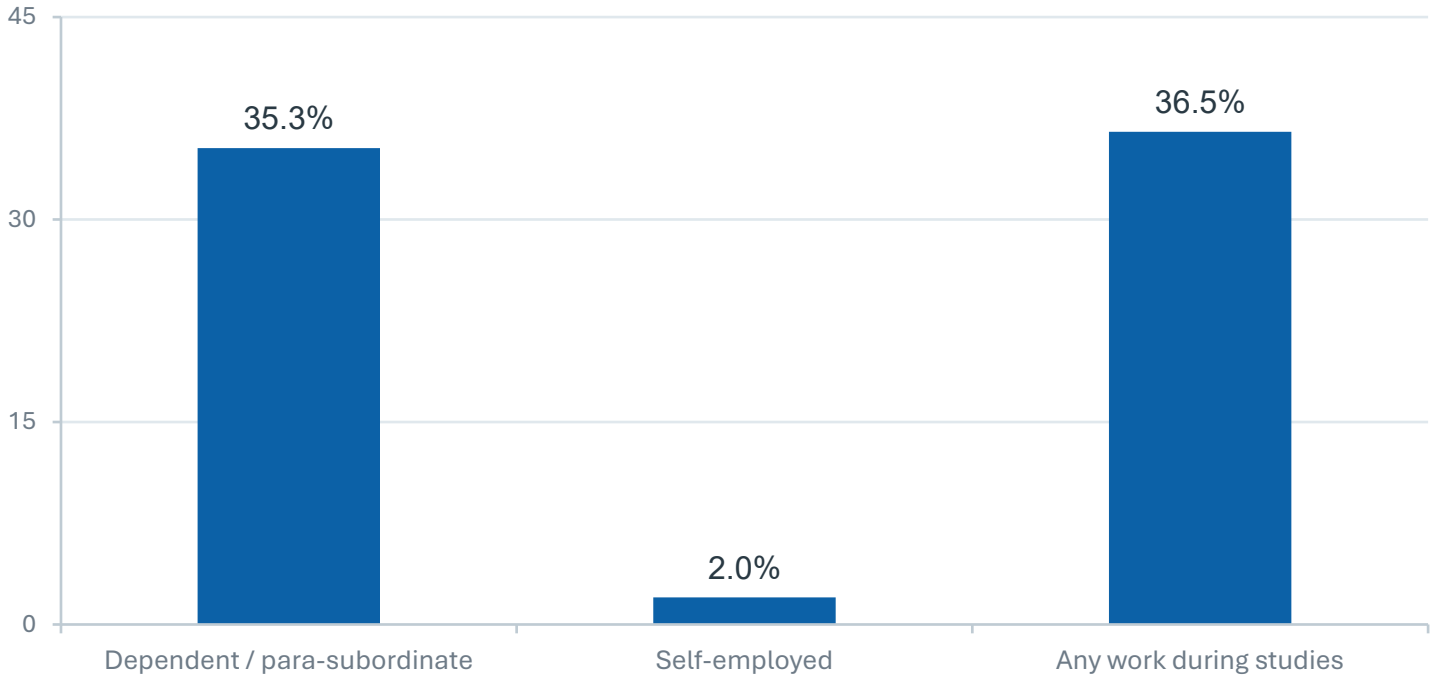
Self-employment changes the picture

VAT registration within 3 years · Tuscany residents only



Working before graduation is not uncommon

Observed work experience while studying · Tuscany residents, master's and single-cycle graduates.



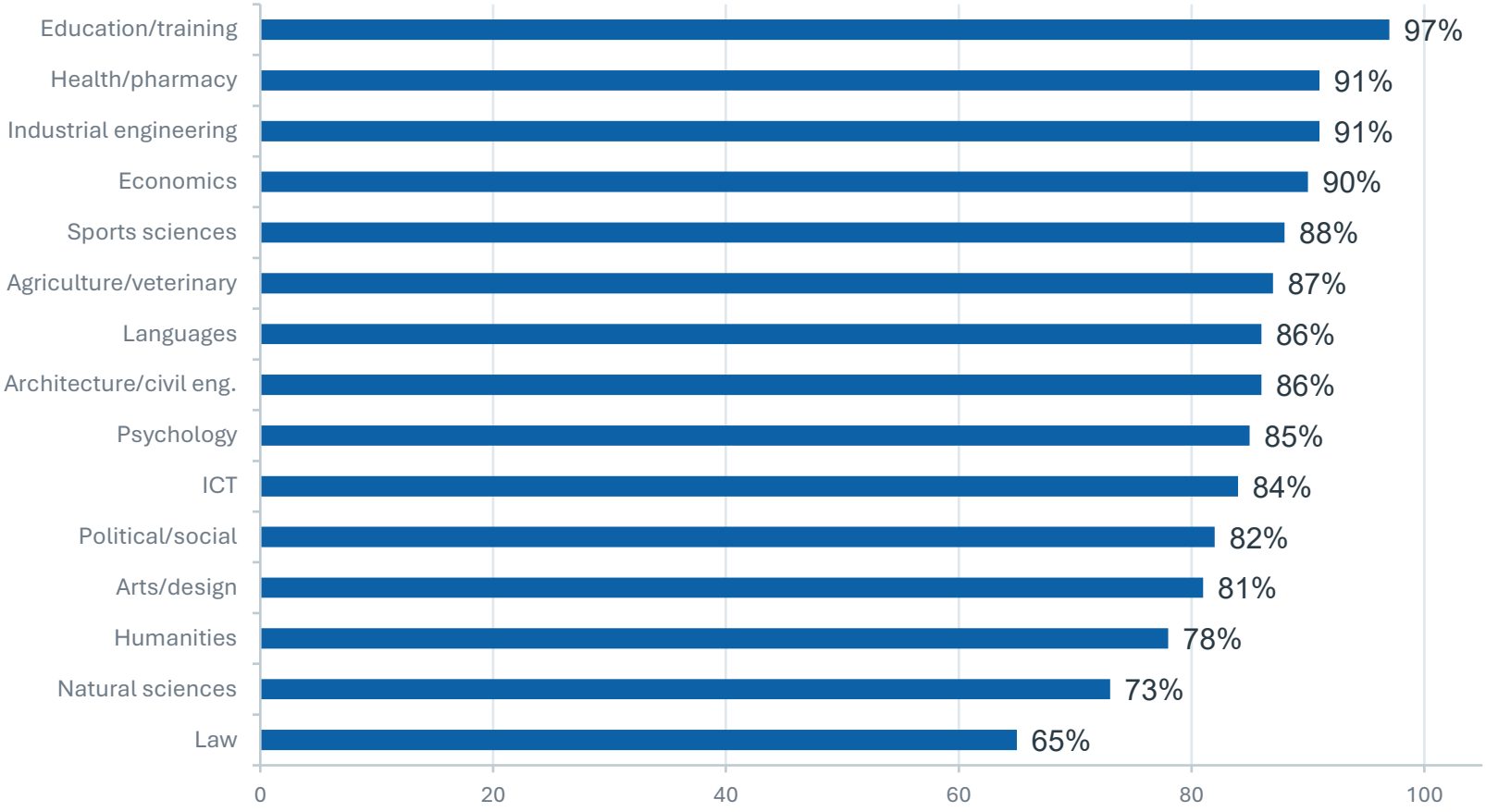
66% · Education & training

27% · Natural sciences

The 36.5% total counts each graduate once, including those with both types of work.

Employment outcomes three years after graduation

Any observed dependent work, VAT activity or work already active at graduation · Tuscany residents.



OVERALL AVERAGE 83%

Conclusions and policy implications

What linked administrative data can offer to universities and policymakers.

1

Look beyond the first job

Job duration, contracts and occupational qualifications reveal differences in job quality.

2

Capture different routes into employment

Self-employment matters in Law, Psychology, Architecture and regulated professions.

3

Make information useful to universities

Regular evidence by field can support course monitoring, student guidance and informed educational choices.

4

Invest in a durable information system

Maintaining linkage to nationwide data makes it possible to follow graduates across regions and over time.

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