

Graduates entrepreneurship

Methodological note

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IN COLLABORATION WITH:



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GRADUATES ENTREPRENEURSHIP METHODOLOGICAL NOTE

DATA OVERVIEW

The project investigates the phenomenon of new venture creation by Italian graduates in order to understand their characteristics and measure their economic impact.

It is a joint collaborative effort of AlmaLaurea Interuniversity Consortium, the Department of Management of the University of Bologna, and Unioncamere.

AlmaLaurea, established in 1994, counts in 2019 75 Universities¹ members (the number of Italian universities is 97) which correspond to about 90% of Italian graduates. Every year AlmaLaurea surveys the Profile and the Occupational condition of graduates in first and second level higher education courses, professional master programmes, and Ph.Ds. at 1, 3, and 5 years from the graduation. Unioncamere is the Italian Union of Chambers of Commerce, Industry, Crafts, and Agriculture and it institutionally represents the Italian chamber system.

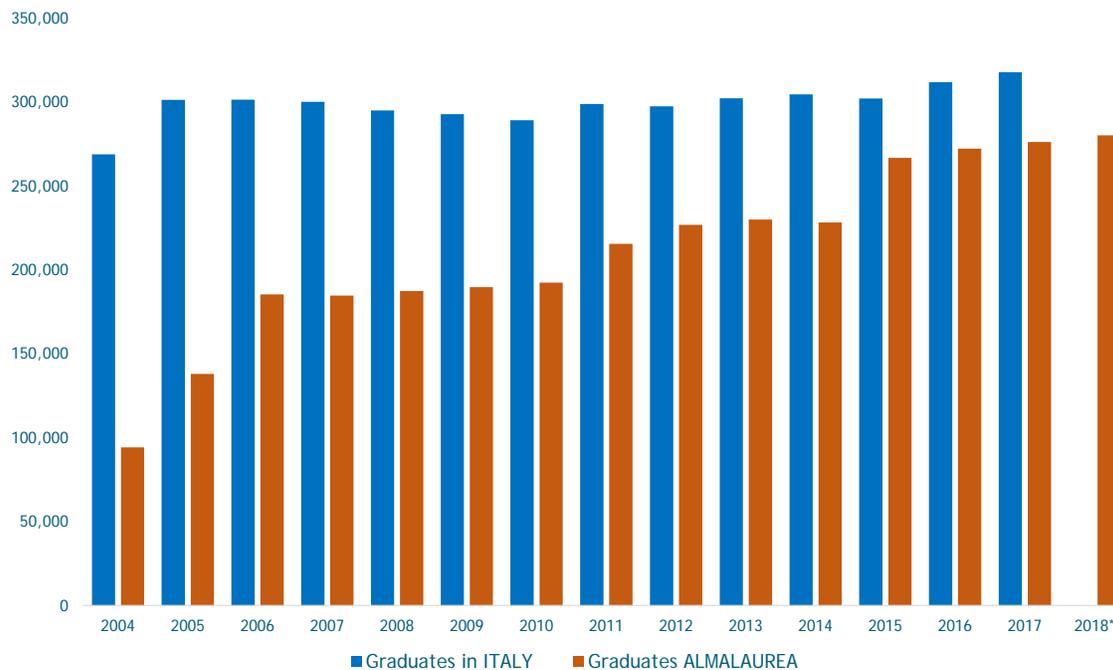
Figure A1 shows the number of graduates in Italy (MIUR, 2018) compared to the graduates of the Universities taking part to the Consortium. The data from MIUR show that, since 2004, the number of graduates has slightly increased, raising in 2017, 317,792 graduates from 97 Italian Universities (+1.18% compared to 2004). This result is also due to the Italian University Reform (Italian Ministerial Decree no. 509/1999), which has changed the degree structure (i.e., bachelor vs. master). We also observe that the



¹ The Universities which have not joined the Consortium are Bocconi, Cattolica, LUISS, Politecnico of Milan, all the telematics Universities, and few Universities with a low number of graduates.

number of AlmaLaurea graduates increases over the years as the number of universities increase. To date, AlmaLaurea covers about 90% of Italian graduates.

Figure A1. Italian University Graduates (2004-2018)



*For 2018 data from MIUR are not available

Source: Miur ("graduates in Italy"), AlmaLaurea ("graduates AlmaLaurea")

The database used in this report is the first outcome of the project. It is a relational and multilevel database, and it represents one of the most comprehensive archives of graduate entrepreneurs compiled for research purposes in Italy. It contains detailed information on university graduates in Italy, and the companies they created, and covers the period between 2004 and 2018. For a summary, see Table A1.

In particular, we gathered information on university graduates from the dataset of AlmaLaurea, which collects demographic information, study characteristics and experiences, and family background. We retrieved data concerning the venture and the roles of graduates in the venture from InfoCamere, which manages the Italian Business Register. As for the venture performances, we collected information from AIDA, which stores information on Italian companies that are compelled to publish their balance sheets. Finally, to characterize the innovative ventures, we retrieved data from the special section of the Italian Business Register, which collects information about innovative startup and innovative SMEs (Small Medium Enterprises).

Table A1. Data Overview

Domain	Level	Type	Description	Records	Time Span	Data Source
University	Individual	Primary	University Graduates	2,891,980	2004-2018	AlmaLaurea https://www.almalaurea.it/
Venture	Organizational	Secondary	Ventures Characteristics	584,540	Until Sept. 2019	Unioncamere http://www.unioncamere.gov.it/
Venture	Individual	Secondary	Individuals with at least one role	370,126	Until Sept. 2019	Unioncamere http://www.unioncamere.gov.it/
Venture	Organizational	Secondary	Performance	243,538	2004-2018	AIDA database https://aida.bvdep.com
Venture	Organizational	Secondary	Venture Innovativeness	11,732	2015-2018	InfoCamere http://www.infocamere.it/en/

MAIN APPROACH

For creating the dataset, we used the following criteria.

The time window

We chose to focus on the time span between 2004 and 2018 for two related reasons. The first one regards the number of universities that take part in the AlmaLaurea Consortium: since the establishment of the Consortium the number of universities has increased over the years reaching 35 in 2004. Moreover, as the number of universities increased to 75 over the years, the number of graduates in the AlmaLaurea dataset has increased, representing in 2018 almost the 90% of graduates' population in 2018 (See Table A2).

The second reason regards the Italian university system. In the last 20 years, universities have become more entrepreneurial, fostering, and supporting the engagement in entrepreneurial activities for both academics and students. For example, the establishment in 1999 of Law 297 introduced the possibility for public researchers to be formally involved in the creation of a spin-off.

Table A2. Universities in AlmaLaurea Consortium 1998-2018

Year of graduation	Number of Universities	Number of AlmaLaurea Graduates	Number of Graduates in Italy (MIUR)*	Percentage of Graduates
1998	16	29,653	-	
1999	18	43,713	152,341	28.7
2000	19	46,124	161,484	28.6
2001	22	59,387	171,806	34.6
2002	24	68,948	201,118	34.3
2003	27	94,243	234,939	40.1
2004	35	138,019	268,821	51.3
2005	38	175,906	301,298	58.4
2006	41	185,361	301,376	61.5
2007	46	184,669	300,131	61.5
2008	49	187,359	294,977	63.5
2009	51	189,746	292,810	64.8
2010	56	191,358	289,130	66.2
2011	61	215,525	298,872	72.1
2012	63	226,799	297,447	76.2
2013	64	229,966	302,230	76.1
2014	64	228,240	304,608	74.9
2015	71	266,742	302,073	88.3
2016	71	272,225	311,799	87.3
2017	74	276,195	317,792	86.9
2018	75	280,239	-	

*1998 and 2018 are not available on the website of MIUR

The graduates

AlmaLaurea collects data concerning the degree obtained by graduates. For individuals with more than one degree, AlmaLaurea collects information for each of them. For example, an individual might be in the dataset with a bachelor's degree, a master's degree, and a Ph.D. For graduates with more than one degree, we decided to focus on the degree owned by the individual at the time of acquisition of a role in the venture. For individuals without role we focus on the degree owned at the time of acquisition of equity. Moreover, if an individual has a role or equity before graduation, we consider the first degree obtained. For the remaining part of the population of graduates we consider the first degree obtained.

As for the type of graduation, we excluded all the post-graduates' degree and we focus only on graduates' individuals (TAB A3). We will focus on the specific population of post-graduates in future analysis.

Table A3. 2004-2018 graduates by degree type

Degree type	Number of graduates	Percentage of graduates
Pre-Bologna process degree	436,076	15.1
Bachelor degree	1,976,253	68.3
Master degree	169,117	5.8
Single-cycle degree	310,534	10.7
Total	2,891,980	100.0

Type of ventures

We collected information concerning all companies started by graduates, and in which graduates have a specific role. We included all forms of companies registered in the Italian Business Register.

Founders

In this study we focus on founders. A founder is an individual who owns all or part of the company at the time of foundation and is formally identified by the Unioncamere Database in an operating role, i.e. holder, administrators or partners according to the classification used.

All the documentation is available at:
www.almalaurea.it/universita/altro/2019/laurea-impreditorialita



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