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DATA ANALYSIS FOR UNIVERSITY

The HackerStreet Boys



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OUR TEAM



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02

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04

DATA ANALYSIS

What can I say about this data?





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01

PROBLEM STATEMENT

Understand business and business goals





PROBLEM STATEMENT

The various analysis are oriented to the research of trends related to the enrollment of students in the different courses of study, based on demography, background and employment opportunities





PROS VS CONS



LOTS OF DATA

You have a large amount of data, all useful for different purposes...

VS

LOW INFORMATION

... but not all of it contains interesting information to analyse





METHODS, TECHNIQUES AND TOOLS

The process was based on three
fundamental steps:



Identify the state of the art



Predict data trends



Find ways to manipulate what will be





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METHODS, TECHNIQUES AND TOOLS



Google Colab



Pandas

Excel



PowerBI

Folium





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02

DATA COLLECTION

Collecting and aggregate data





DATA SOURCES



THIRD-PARTY DATA

Open datasets owned by organizations such as MIUR and ISTAT



QUANTITATIVE DATA

Numerical values concerning percentages and absolute values of enrolled students, graduates, etc.



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DATA COLLECTION



OPEN DATA

Gathering of the most interesting collections



Not only data on students, but also territory and demography



Time series of all kinds concerning enrolments, graduates, etc.





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03

DATA CLEANING

Delete superfluous data





DATA CLEANING PROCESS

FILTER ERRORS

Removing errors, duplicates or outliers

01



02

REMOVE UNWANTED

Filter the observations that have no bearing for the analysis



03

BRINGING STRUCTURE

Fixing typos and layout issues

FILLING IN

If exists some gaps, fill it with other data

04





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04

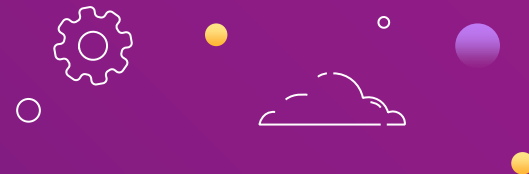
DATA ANALYSIS

Extraction of the information from data



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TYPES OF DATA ANALYSIS



DESCRIPTIVE

Identifies what has already happened



DIAGNOSTIC

Understanding why something has happened



PREDICTIVE

Identifies future trends based on historical data



PRESCRIPTIVE

Make some recommendation for the future





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SOME NUMBERS



98

UNIVERSITIES
now active in Italy

UNIVERSITIES

in southern Italy only

25



35

UNIVERSITIES

have a catchment area of
more than 20,000 students



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REGION PER UNIVERSITIES



17.4%

Lazio is the region
with most universities

15.6%

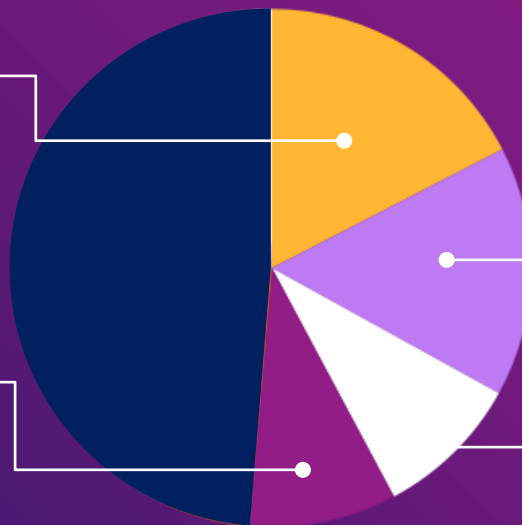
Lombardy is the
second for universities

9.2%

Campania ranks 4th for
number of universities

9.2%

Tuscany is the third,
tie with Campania





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...BUT



QUANTITY  QUALITY





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3,490.000

..and more students enrolled since 2010



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REGION ENROLLMENT

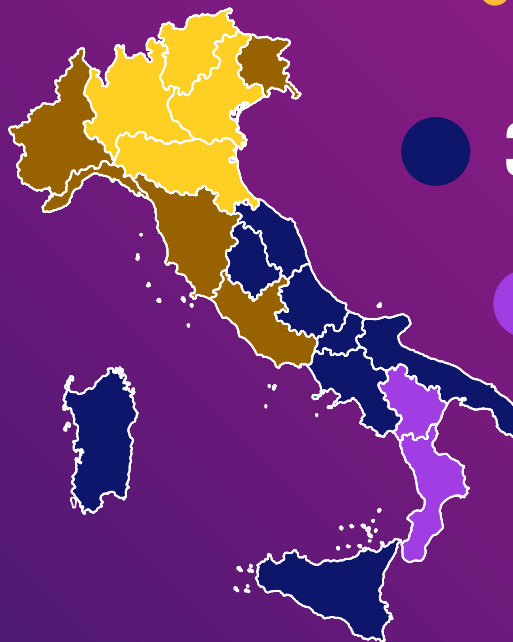
The percentages are calculated according to the population of the region

LESS THAN 2.5% 

2.5% TO 3% 

 3% TO 4%

 MORE THAN 4%





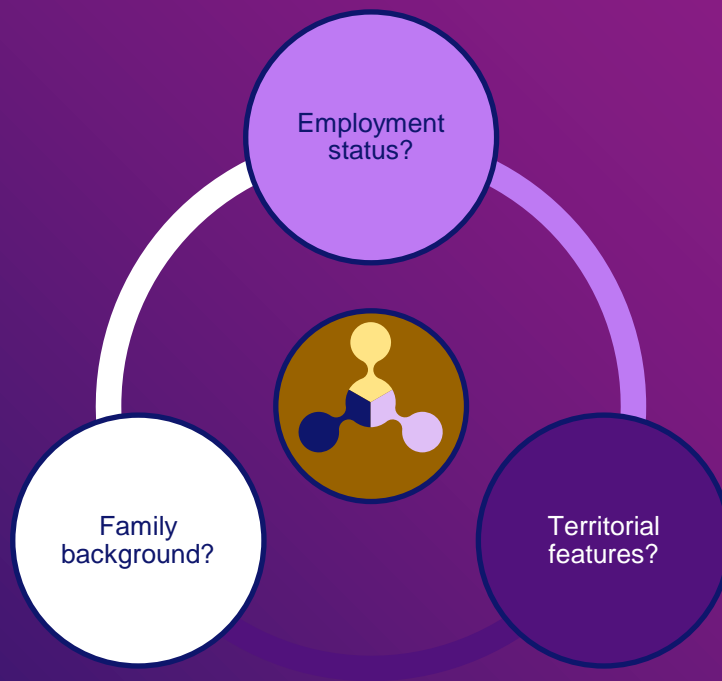
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WHAT KIND OF FACTOR INFLUENCE REGION ENROLLMENT?





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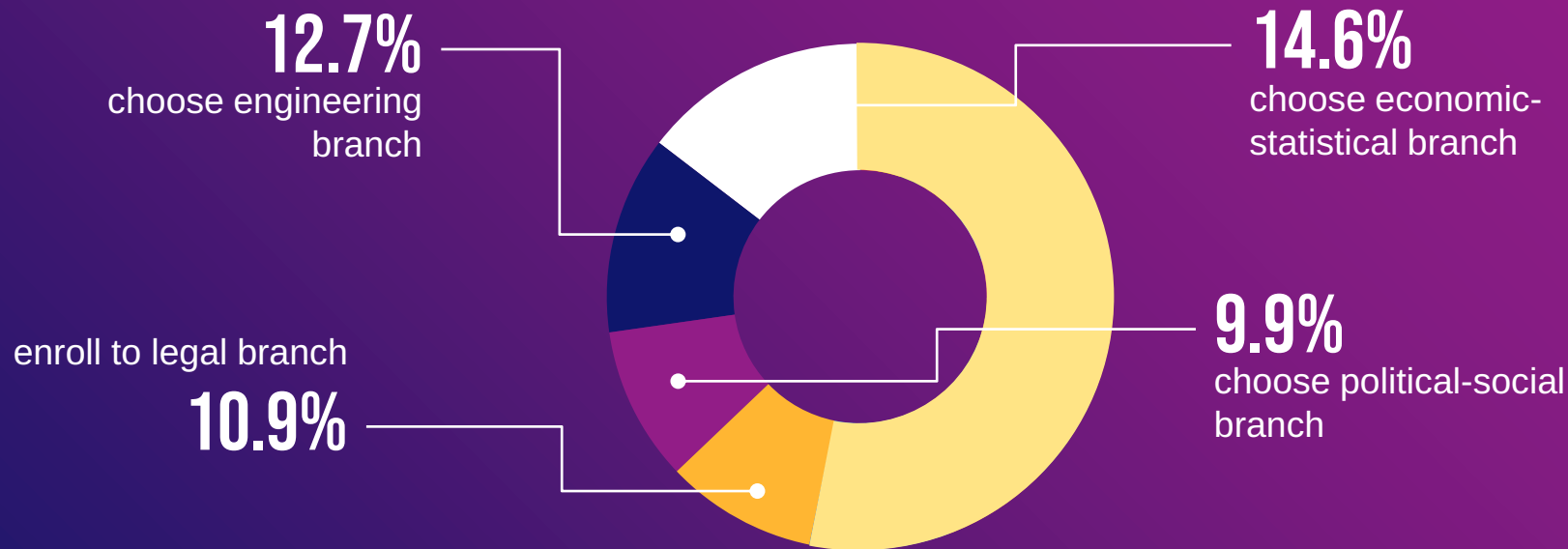
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DIAGNOSTIC ANALYSIS



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GROUP ENROLLMENT



Source: ISTAT





- ...but the total number of groups are **SIXTEEN** !

These four groups alone comprise almost

50%

of students enrolled since 2010.
Why do they choose them?





GRADUATES FAMILY BACKGROUND

53.3%
of students with
graduate parents
manage to obtain a
second level degree



46.7%

of students with parents^o
with a university
degree, on the other
hand, manage to obtain
a bachelor's degree

... but what if the family background changes?





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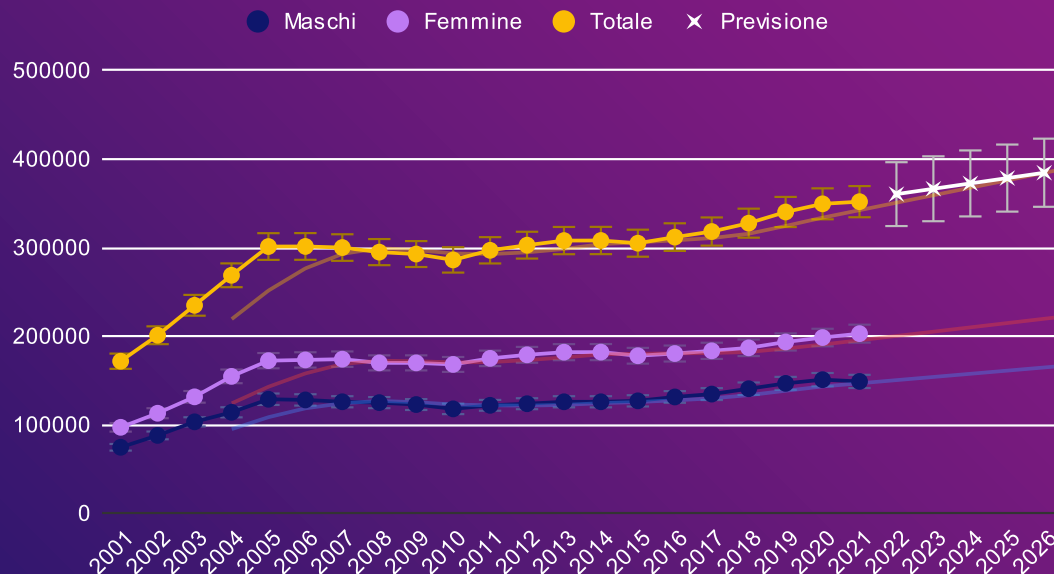
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PREDICTIVE ANALYSIS



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WHAT ABOUT THE FUTURE?





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PRESCRIPTIVE ANALYSIS





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DATA

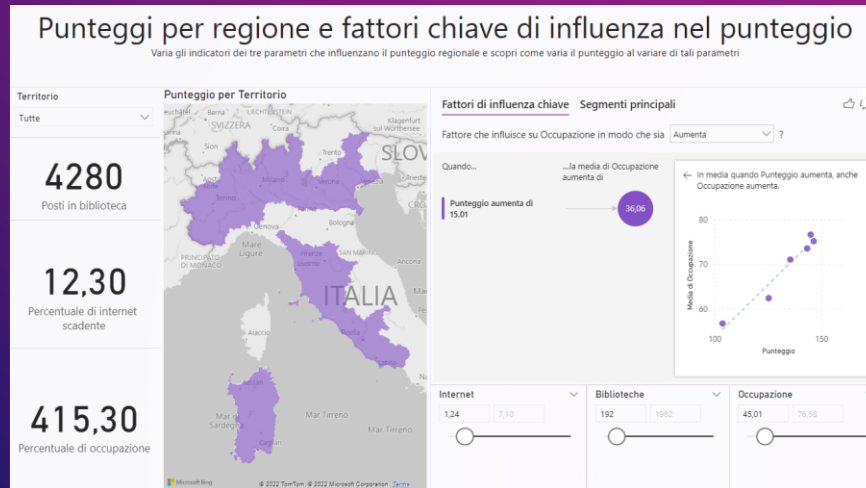
VISUALIZATION



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POWERBI DASHBOARD

In order to make the analysis more readable, it was decided to create dashboards using PowerBI





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THANKS!

DO YOU HAVE ANY QUESTIONS?

