


Analysis of UK Graduate Data



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Dataset Overview

Data Source: <https://www.hesa.ac.uk/data-and-analysis/graduates/table-30.csv>

- 3 Datasets for Academic years 2019/20, 2020/21, 2021/22
- Contains Graduate study data and salary bands after their first year of graduating

Combined raw data contains almost 2 million rows

Initial Hypotheses

- Graduate salaries are increasing during the recent period of inflation surrounding the 'Cost of Living'
- Highest paid graduate subject areas will be weighted around STEM subjects
- STEM subjects will see higher average salary increases

Dataset Overview

Available data series:

Subject area of degree - 26 Categories of Degree subject Area

Country of provider - UK Country that University is based in

Provider type - Type of Academic Institution

Level of qualification obtained - Undergrad/Postgrad degree, also shows 'First Degrees' for undergrad

Mode of former study - Full time or Part time

Skill group - 'High' 'Medium' or 'Low' skilled,

Work population marker - Survey answer regarding graduates priority of job searching

Salary band - Salary band for graduate employment following year after graduating

Academic year - Year graduated

Number - Number of Graduates

Percent - Percentage of relevant Total

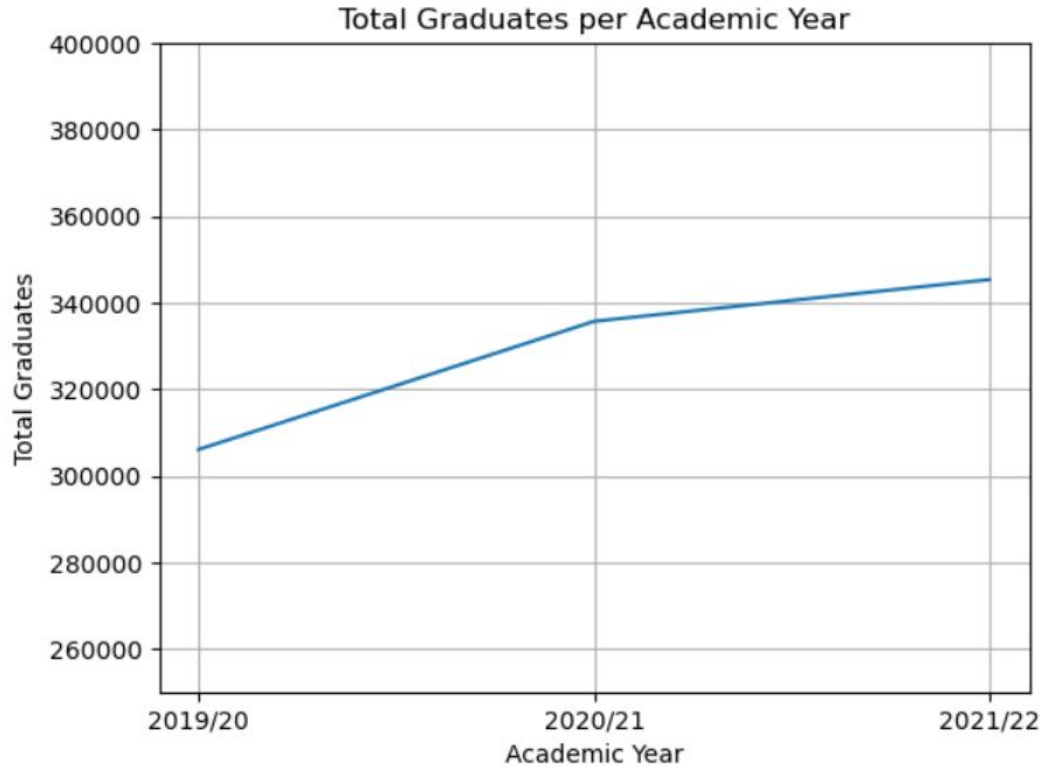
Data Cleaning

Fortunately, this dataset was relatively clean with only some minor changes made prior to exploration

- Removing unwanted characters from Series names
- Dropping unnecessary columns
- Converting percentage column into workable integers
- Removing 'Work Population Marker' column
- Removing duplicate rows
- Renaming long subject area names for visualisation



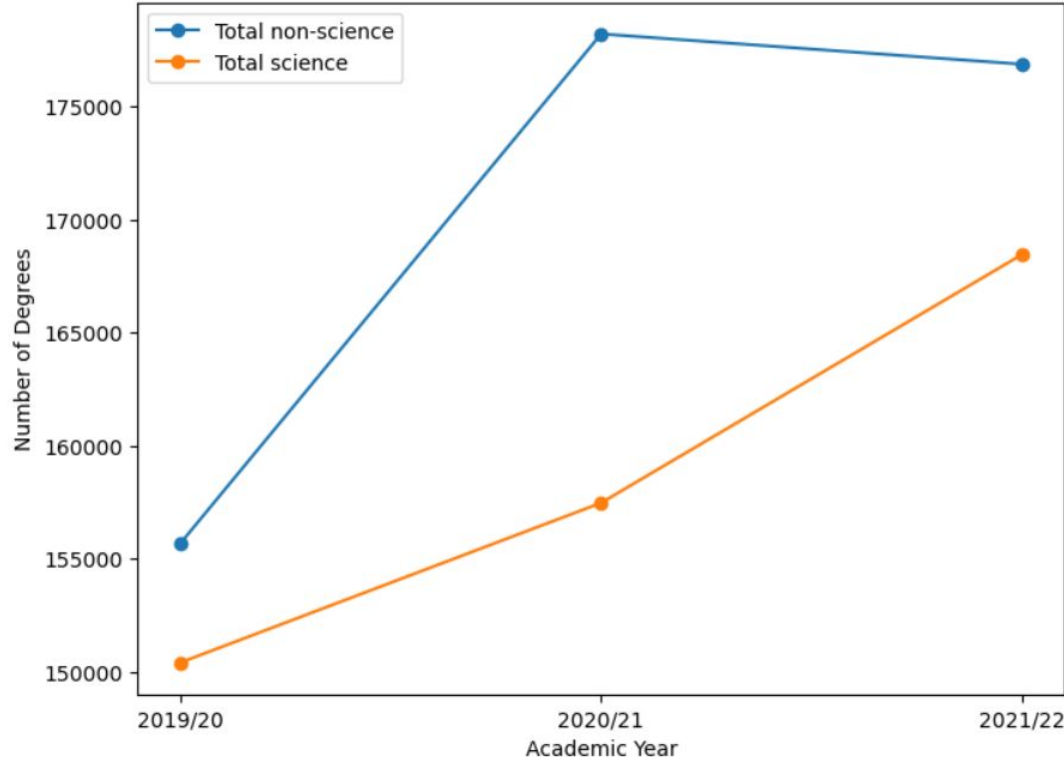
Initial exploration of Data - Graduate Numbers



Total number of graduates saw a greater increase in 2020/21 academic year (9.68%) opposed to 2021/22 (2.88%)

Initial exploration of Data - Science vs Non-science Graduates

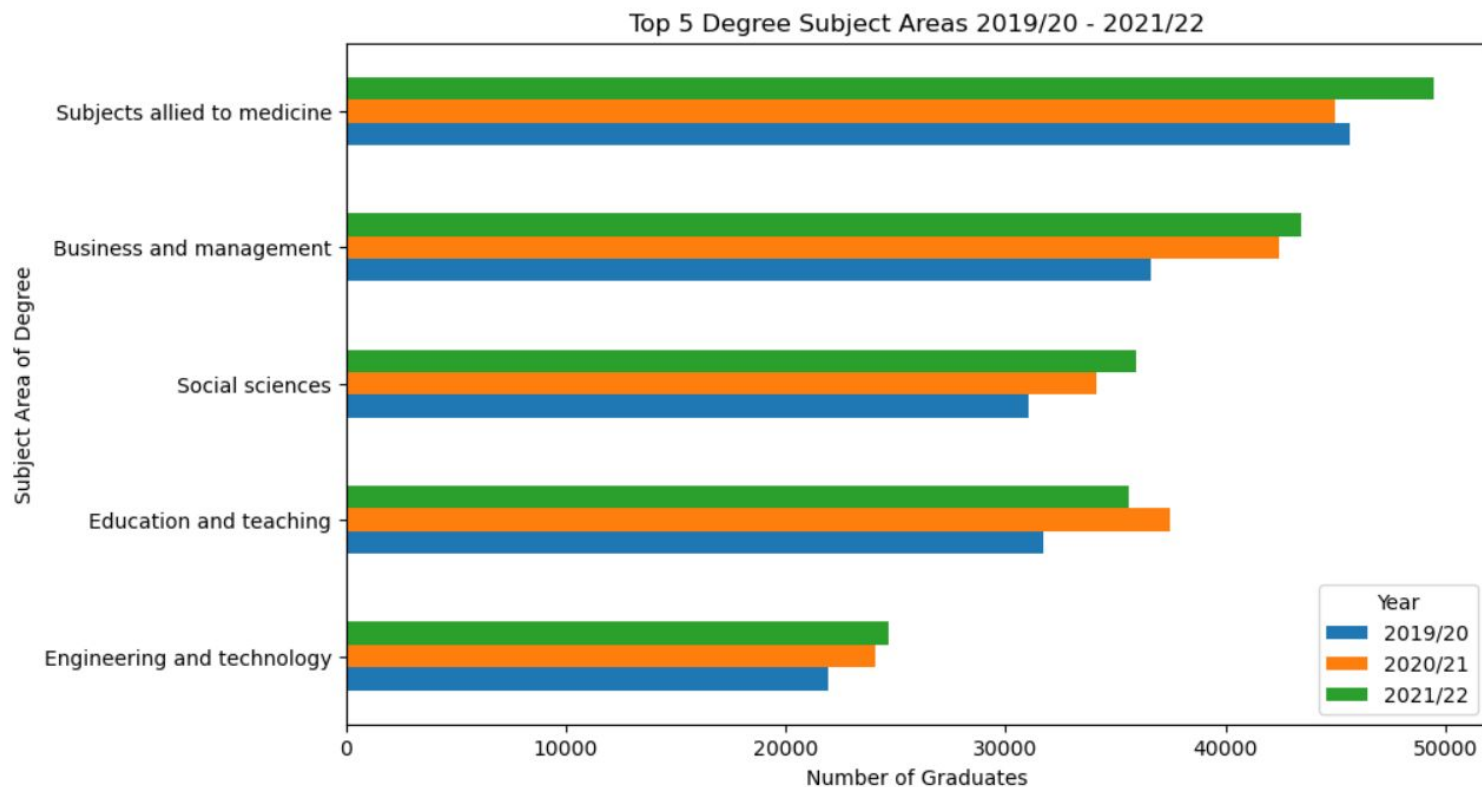
Number of Science vs Non-Science Degree Graduates Across Academic Years 2019/20-2021/22



20/21 saw a clear spike in the number of non-science graduates, with a slight decline in 21/22.

The number of science graduates increased relatively steadily

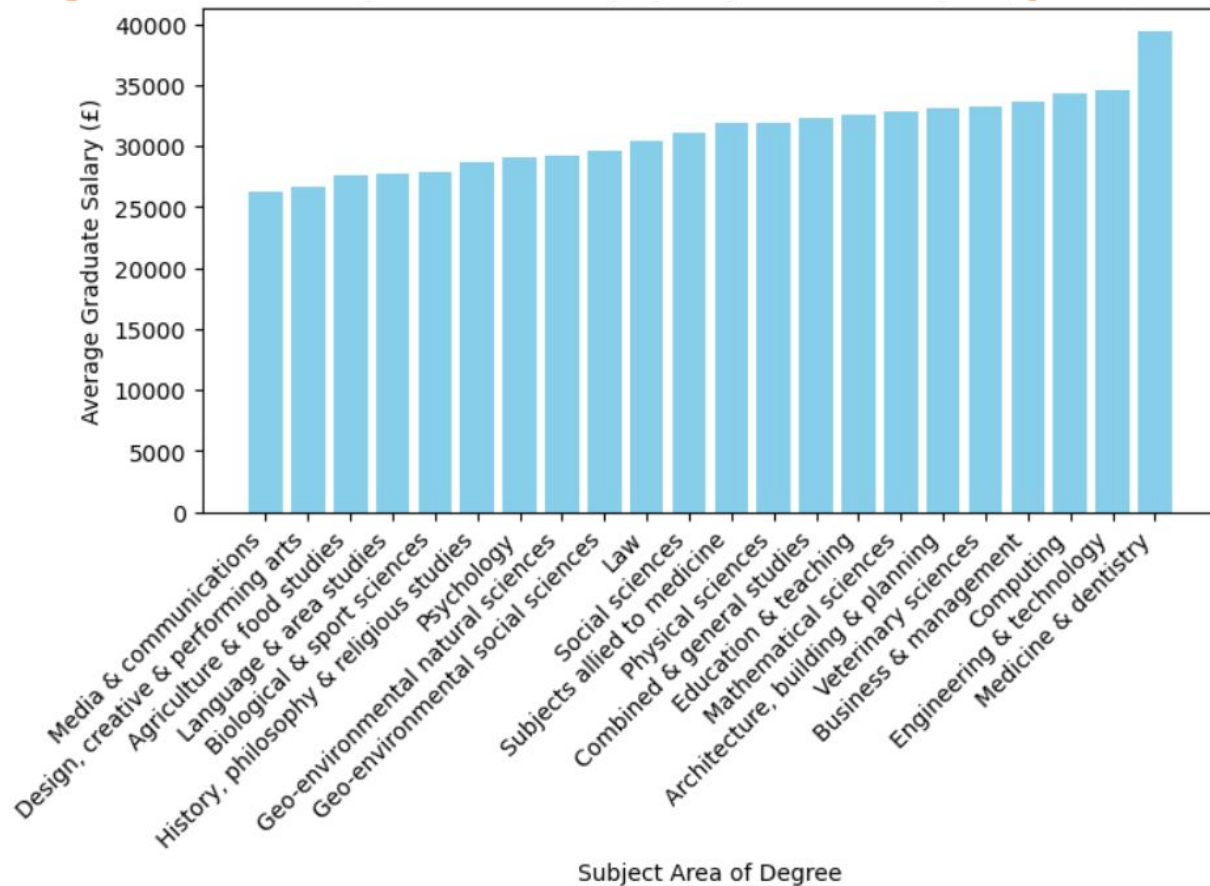
Initial Exploration of Data - Popular Subject Areas



Initial Exploration of Data - Popular Subject Areas

- The same five subject areas appear in top five for each of the three academic years
- Most follow same pattern of gradual increase year on year
- Exceptions to this include Education & Teaching, which saw a spike in 20/21 and Subjects allied to Medicine, which saw a drop in 20/21 but continued gain in 21/22.
- Could external factors have affected these? Did COVID cause a temporary drop in students wanting to enter the medical realm?

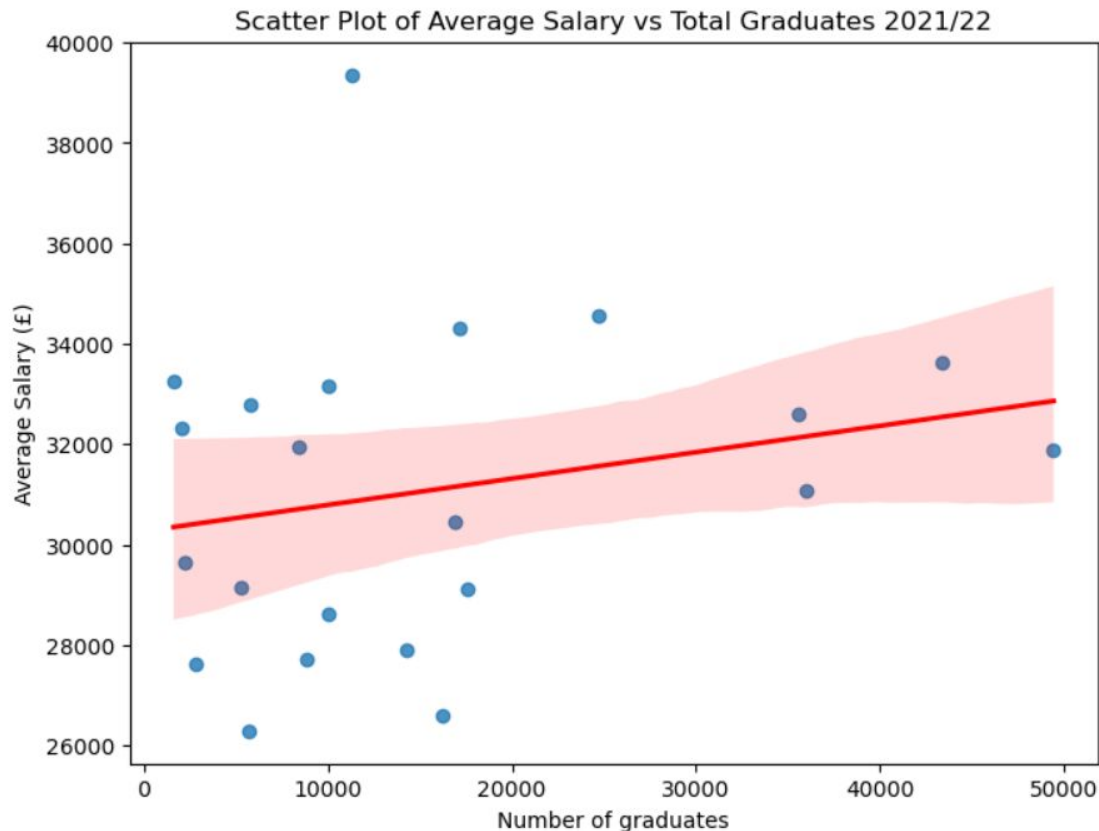
Average Graduate Salary by Subject Area 21/22



Average Graduate Salary by Subject Area 21/22

- Medicine has significantly higher average salary than any other subject area
- Seven of top ten highest paid subject areas are STEM subjects
- Business and management highest paid non-STEM subject by small margin

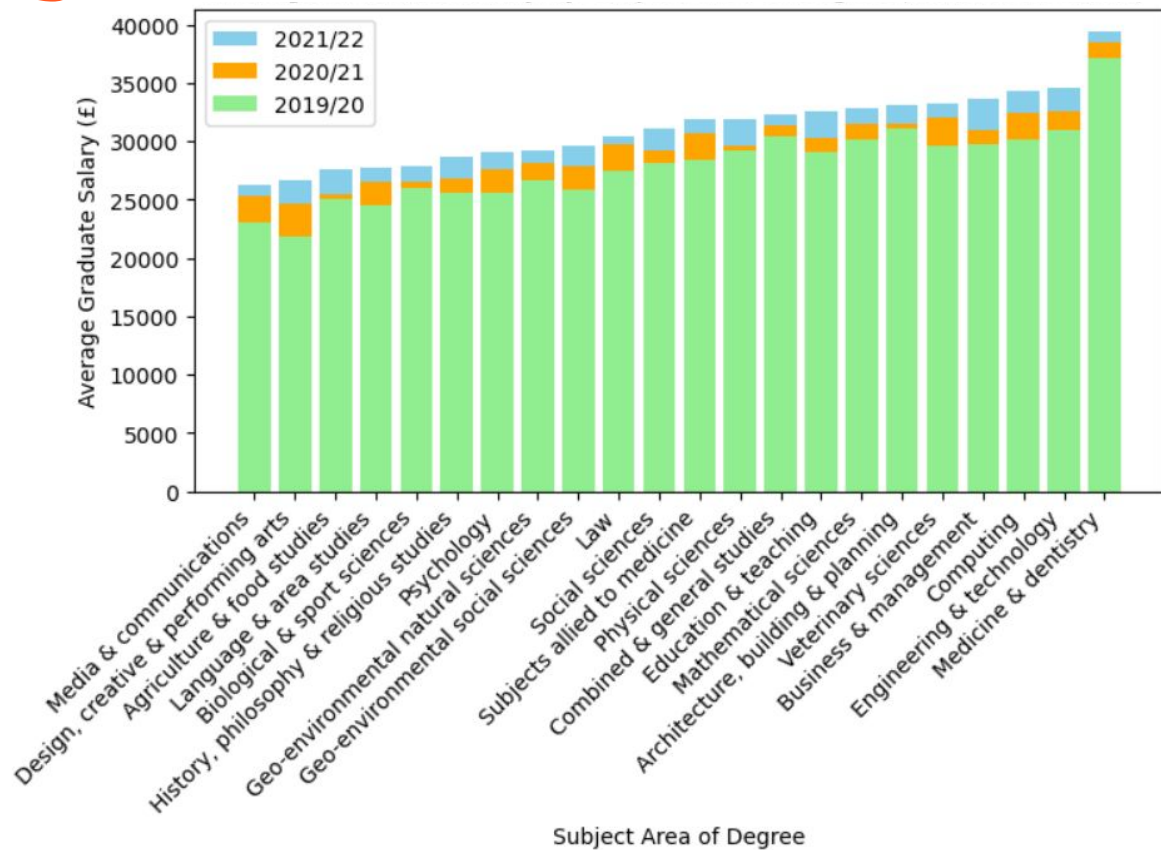
Does Popularity affect Average Salary?



Whilst intuition suggests that less popular subject areas may command higher salaries (more specialised, more difficult?) the data suggests there is actually a slight correlation with more popular subject areas and a higher average graduate salary.

The Medicine & Dentistry field is a clear outlier regarding this trend.

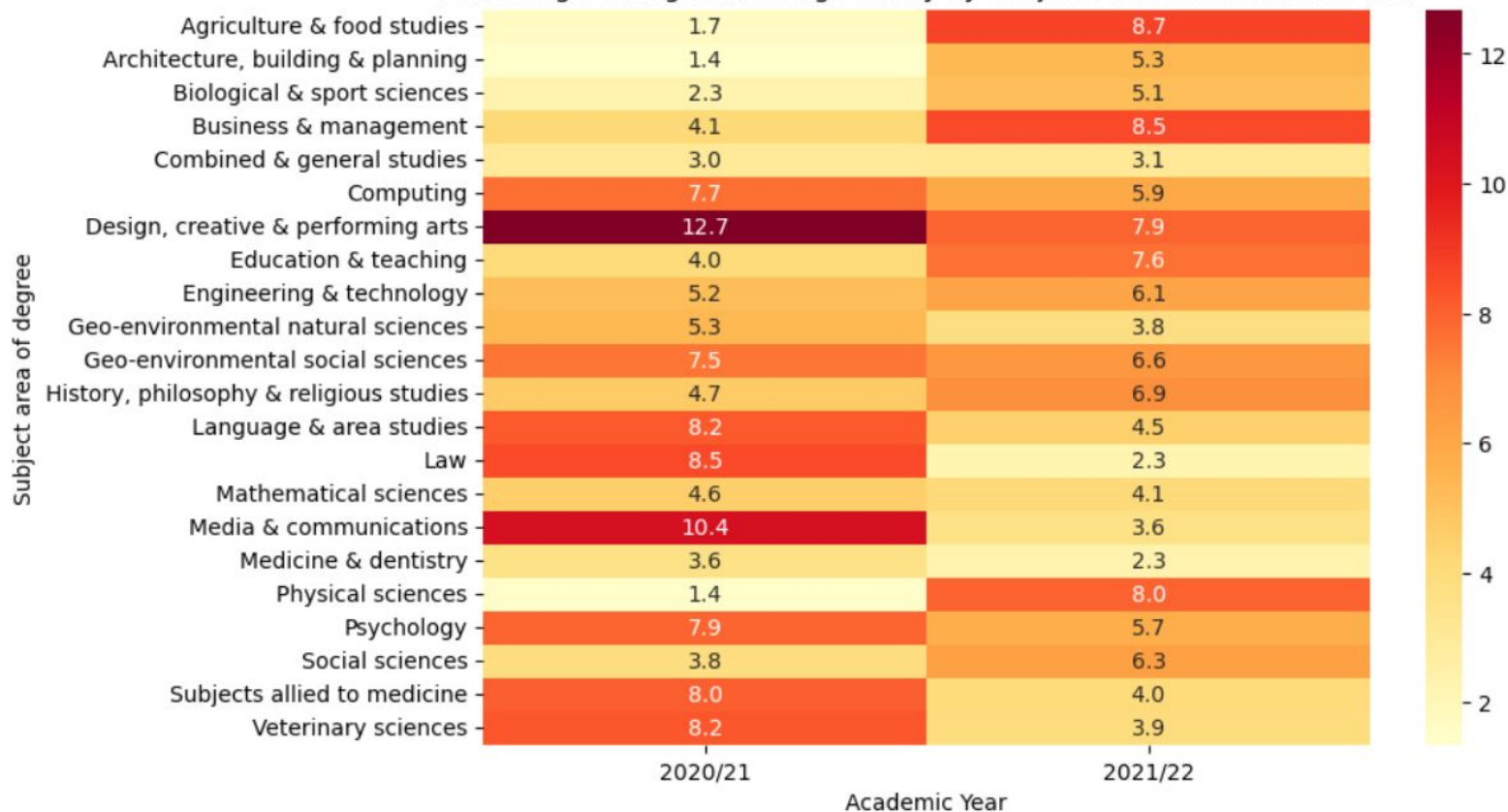
Average Graduate Salaries 2019/20-2021/22



Looking at trends year on year, all average salaries have increased, some subject areas more than others, which we can examine in more detail.

Average Graduate Salaries Increases 2020/21-2021/22

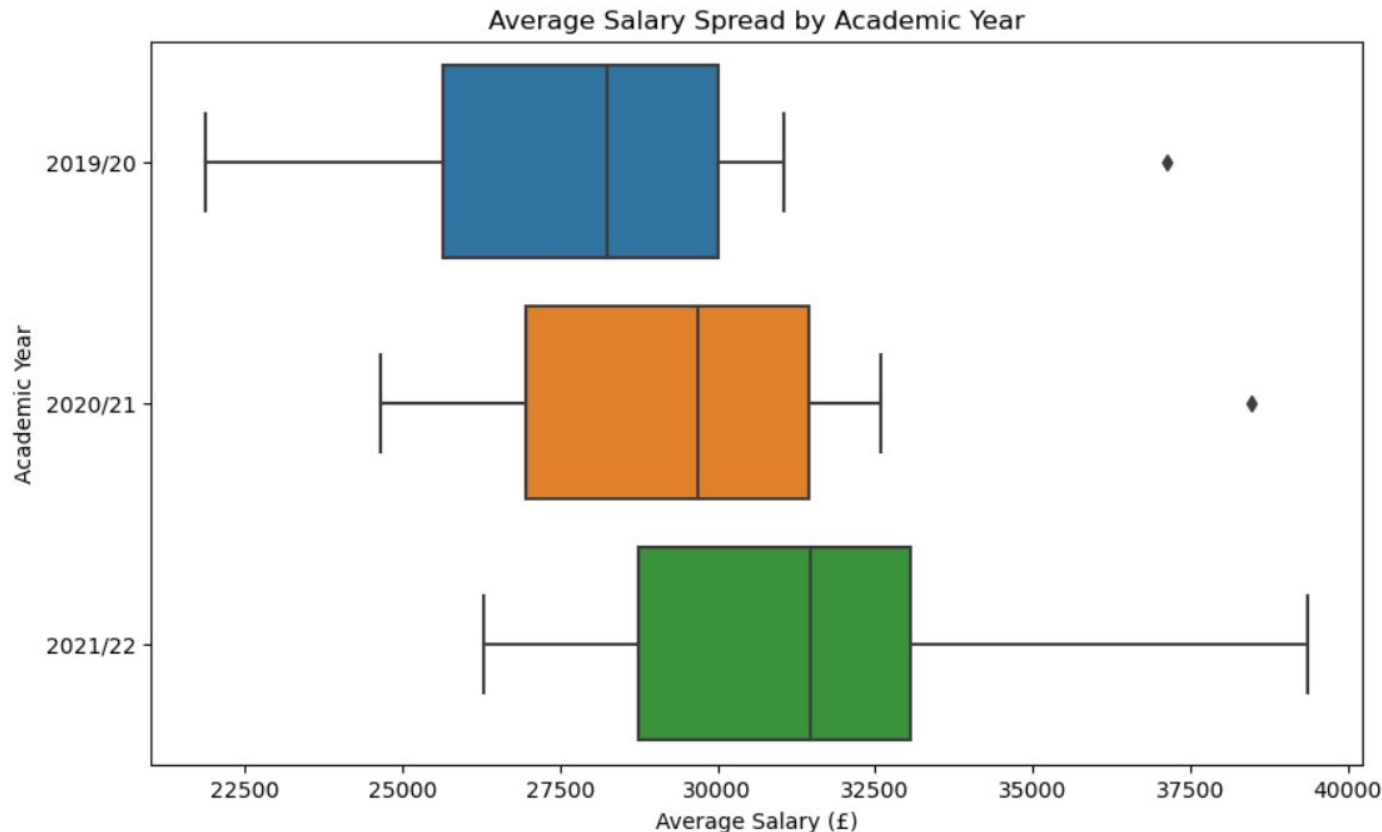
Percentage Change in Average Salary by Subject Area and Academic Year



Insights

- The two subject areas with the largest percentage increase are also the two lowest for average salary (Media and communications, Design, creative and performing arts).
- Medicine and dentistry had the lowest percentage increase whilst being the subject area with the highest average salary.
- In general, subjects areas that had a high percentage increase in 2020/21 had a low increase in 2021/22 and vice versa.
- Overall, this indicates that the disparity between higher and lower paid subjects areas is decreasing between 2019/20 - 2021/22

Examining Salary Spread across 2019/20-2021-22



The spread of salaries in academic years 2019/20 and 2020/21 is so wide that the highest salary subject area (Medicine & Dentistry) are considered outliers!

There is also noticeably less spread on the lower end of 2020/21 and 2021/22.

Conclusion

Comparing our findings to our original three hypotheses:

- Graduate salaries are indeed increasing across all industries, with the spread across subject areas decreasing due to notable increases in some of the lower paid subjects.
- The highest paid graduate are weighted towards STEM subjects as expected, four out of the top five for 2021/22.
- Contrary to our initial hypothesis - the greatest average salary increases have been in non-STEM subjects, with no general distinction between the two when compared across all subject areas.

Room for further Study

This data is collected a year after graduation, with the most recent years data released in 2023 representing graduates from the 2021/22 year.

Once more up to date data is released this year, it would be essential to see if current trends within the economic climate continue to impact graduate salaries in the same way.

Thank you!



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