

MN5811: Business Intelligence

UK Graduate Outcomes: Employment and Study Trends 2021/22

Introduction:

This report explores graduate outcomes using interactive Tableau dashboards, showing actionable insights. The interactive visuals explore the main trends in employment rates, the impacts of study mode, and demographic influences such as ethnicity and domicile. The dashboard enables a detailed look at graduate route by those factors across provider types and activities to enable stakeholders to identify disparities in the outcomes and to assess institutional performance to support strategic decision-making in improving employability and opportunities for graduates.

Aim:

The primary aim of this dataset is to analyse graduate outcomes in order to:

- 1) To identify patterns in employment and further study across different regions and qualification levels.
- 2) To understand the differences in outcomes based on gender or ethnicity.
- 3) To give companies and educational institutions practical advice on how to improve graduate employability and match educational programs with labour market needs.

Data Source:

The HESA dataset contains information about the results of graduates from UK higher education institutions, classified by various personal and academic characteristics. The dataset is important for studying the post-graduation scenario, as it represents trends for the academic year 2021/22.

Link: <https://www.hesa.ac.uk/data-and-analysis/sb268/figure-5>

Key Columns:

- 1) **Personal Characteristic Category Filter:** Specifies filters, such as Sex, Ethnicity, Age group and Disability.
- 2) **Personal Characteristic Category:** Details of above column such as Female, Asian, etc.
- 3) **Activity:** Categories like "Full-time employment," "Further study," or "Part-time employment."
- 4) **Country of Provider:** Indicates the location of the institution.
- 5) **Domicile:** Represents the graduate's residence status.
- 6) **Provider Type:** Type of educational provider.
- 7) **Level of Qualification Obtained:** Indicates the degree level.
- 8) **Mode of Former Study:** Refers to study mode.

- 9) **Interim Study:** Whether interim study is included or excluded.
- 10) **Academic Year:** The year of the data i.e. 2021/22.
- 11) **Number:** Number of graduates in a category.
- 12) **Percent:** Percentage of graduates in a category.
- 13) **95% Confidence Interval:** Statistical confidence range for percentages.

Calculations:

Personal Characteristic Category had values for categories such as Sex, Ethnicity, Age Group and Disability. To work on specific category, I had following calculations performed:

- 1) Age Group
IF [Personal characteristic category] = "20 and under" THEN "20 and under"
ELSEIF [Personal characteristic category] = "21-24 years" THEN "21-24 years"
ELSEIF [Personal characteristic category] = "25-29 years" THEN "25-29 years"
ELSEIF [Personal characteristic category] = "30 years and over" THEN "30 years and over"
ELSE "Other"
END
- 2) Gender
IF [Personal characteristic category] = "Female" THEN "Female"
ELSEIF [Personal characteristic category] = "Male" THEN "Male"
ELSE "Other"
END
- 3) Ethnicity
IF [Personal characteristic category] = "Asian" THEN "Asian"
ELSEIF [Personal characteristic category] = "Black" THEN "Black"
ELSEIF [Personal characteristic category] = "Mixed" THEN "Mixed"
ELSEIF [Personal characteristic category] = "White" THEN "White"
ELSE "Not known"
END

Table Calculation:

Applied “Quick Table Calculation” to “Percent” column in order to have percentage up to 100%. (Quick Table Calculation > Percent of Total)

Dashboard Analysis:



The dashboard provides a comprehensive analysis of UK Graduate Outcomes for 2021/22. It displays the following reports:

- 1) Comparison of Activities for Domestic vs. International Graduates
Visualisation used: Highlighted Table
- 2) Employment Rates for Part-Time vs. Full-Time Graduates
Visualisation used: Pie Chart
- 3) Percentage of Graduates by Sex: Full-Time Employment vs. Further Studies
Visualisation used: Bar Chart
- 4) Activity Outcomes Across Levels of Qualification
Visualisation used: Stacked Bar Chart
- 5) Employment outcomes by Ethnicity
Visualisation used: Scatter Plot

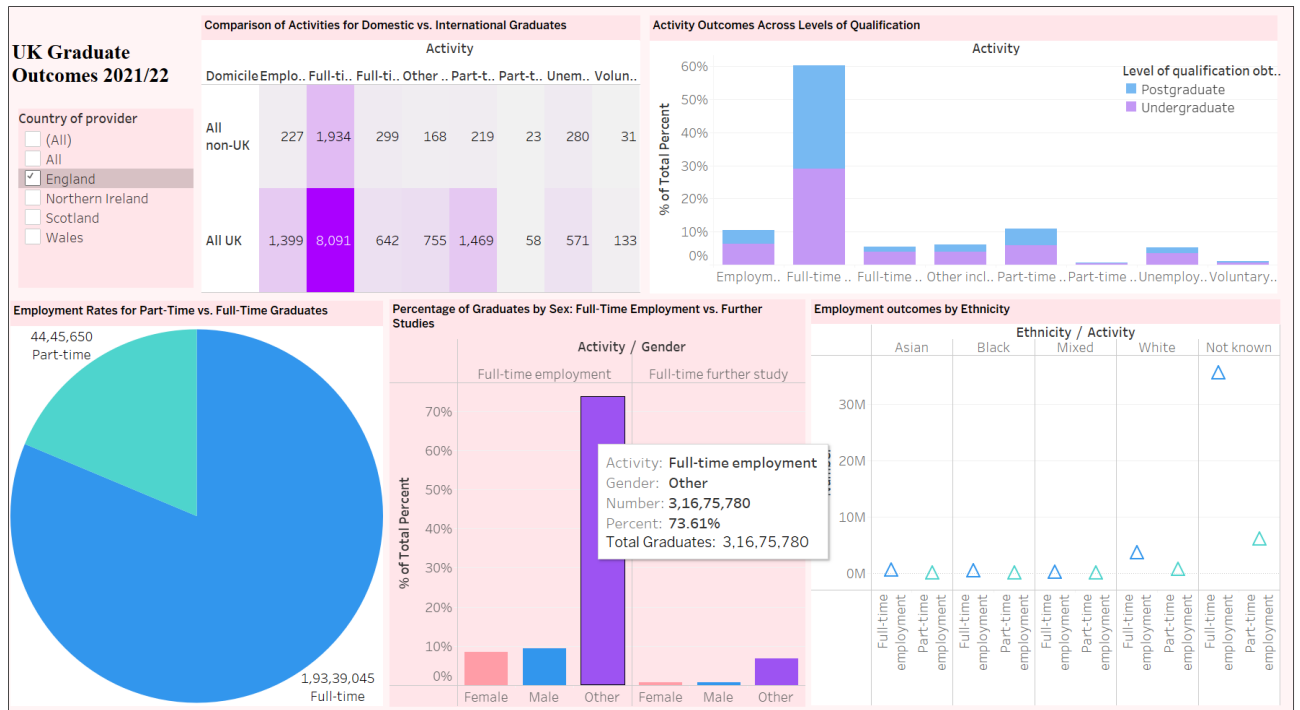
Interactivity in dashboard:

Hover Tooltips provide additional insights such as total number of graduates, percent of graduates or activities or qualifications based on the visualisation.

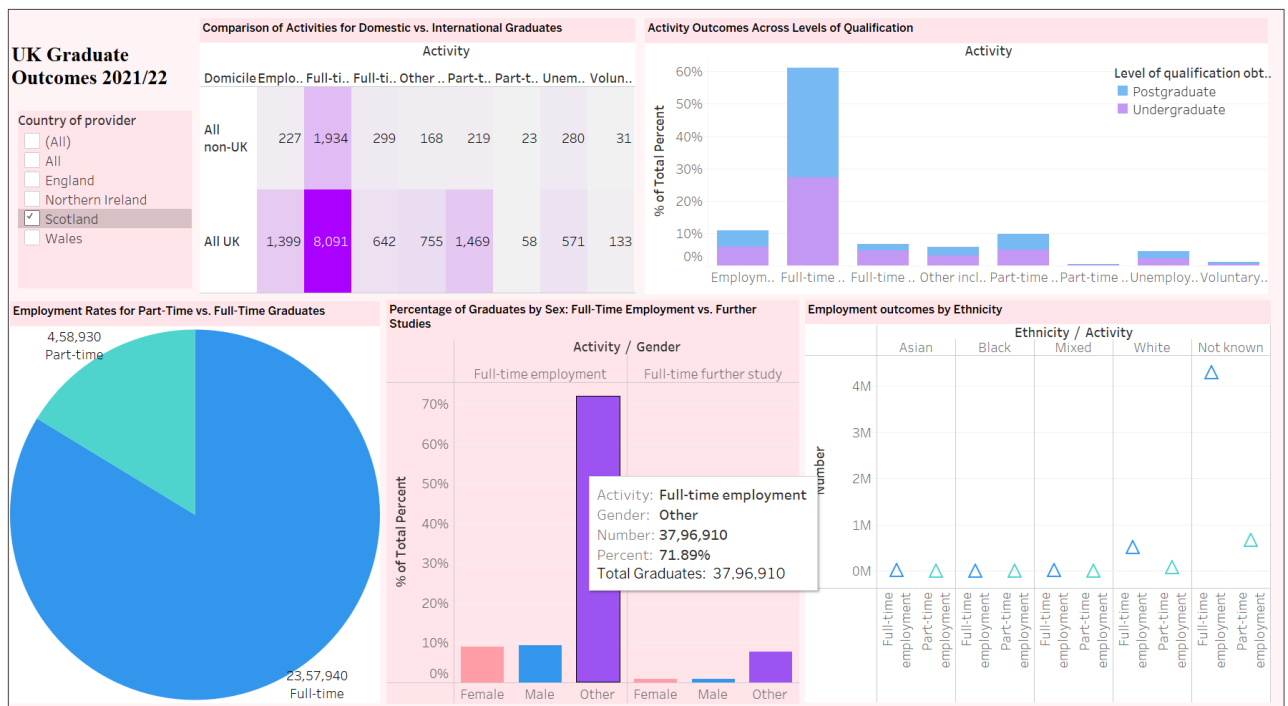
This dashboard consists of a filter named “Country of provider” for interactivity. It is used to filter the analysis based on specific regions in UK i.e. England, Scotland, Wales and Northern Ireland. This filter is applied to all sheets except for “Comparison of Activities for Domestic vs. International Graduates” where it is important to show the domestic and international

aspect. For the following interactivity, I have chosen to hover over one aspect in order to show differences.

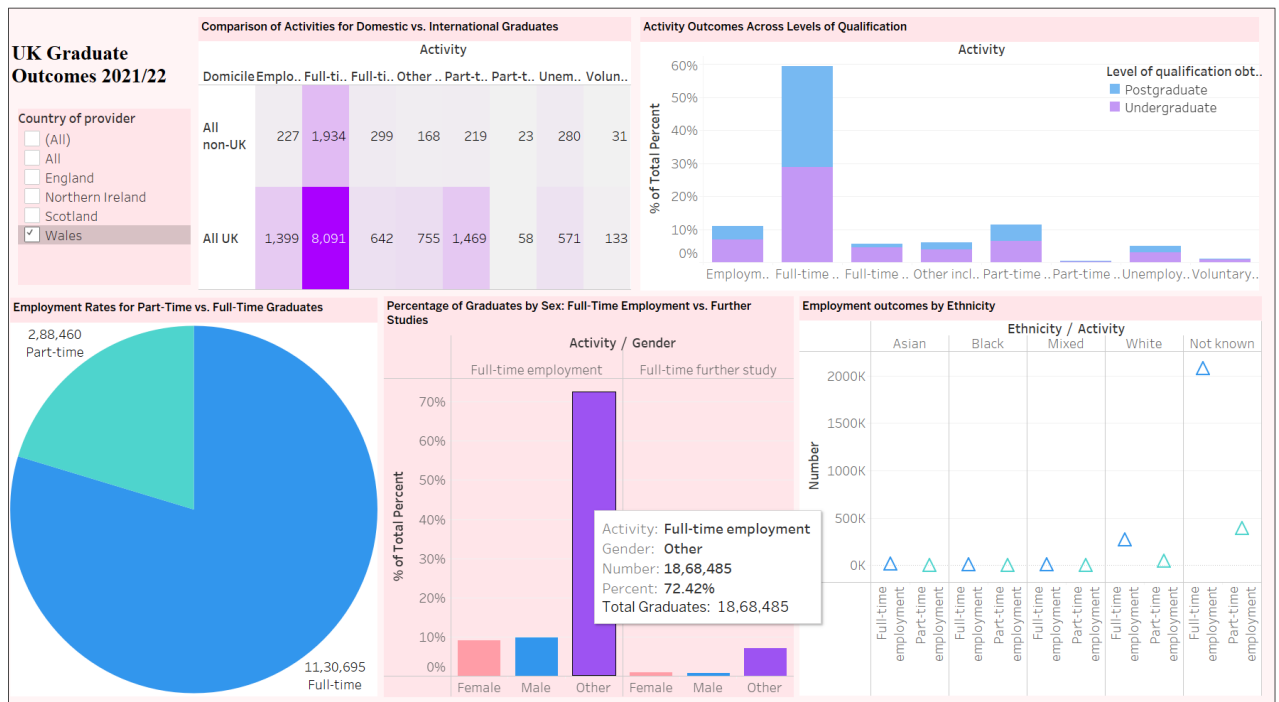
For England the dashboard looks like this:



Scotland:



Wales:



Northern Ireland:

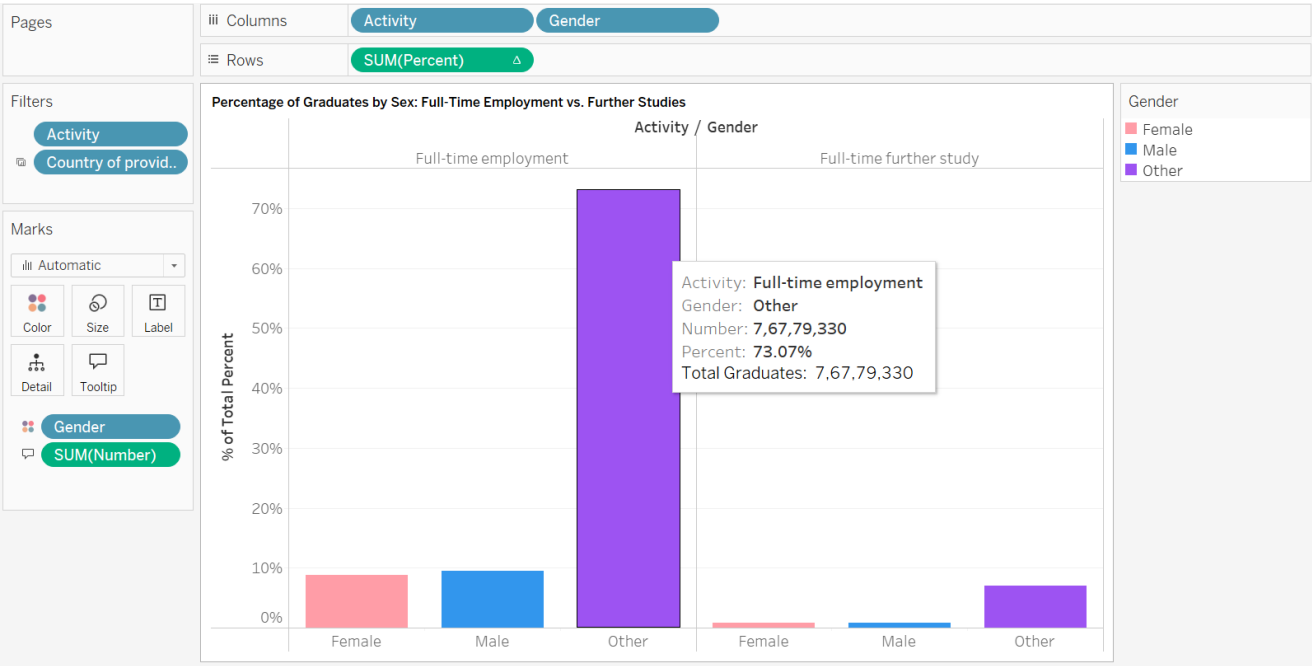


The dashboard provides domicile analysis, gender and ethnicity trends, employment analysis and activity analysis by qualification level. The following are the in-depth analysis of the project.

Key Findings:

1) What percentage of graduates (by sex) are employed full-time versus pursuing further studies?

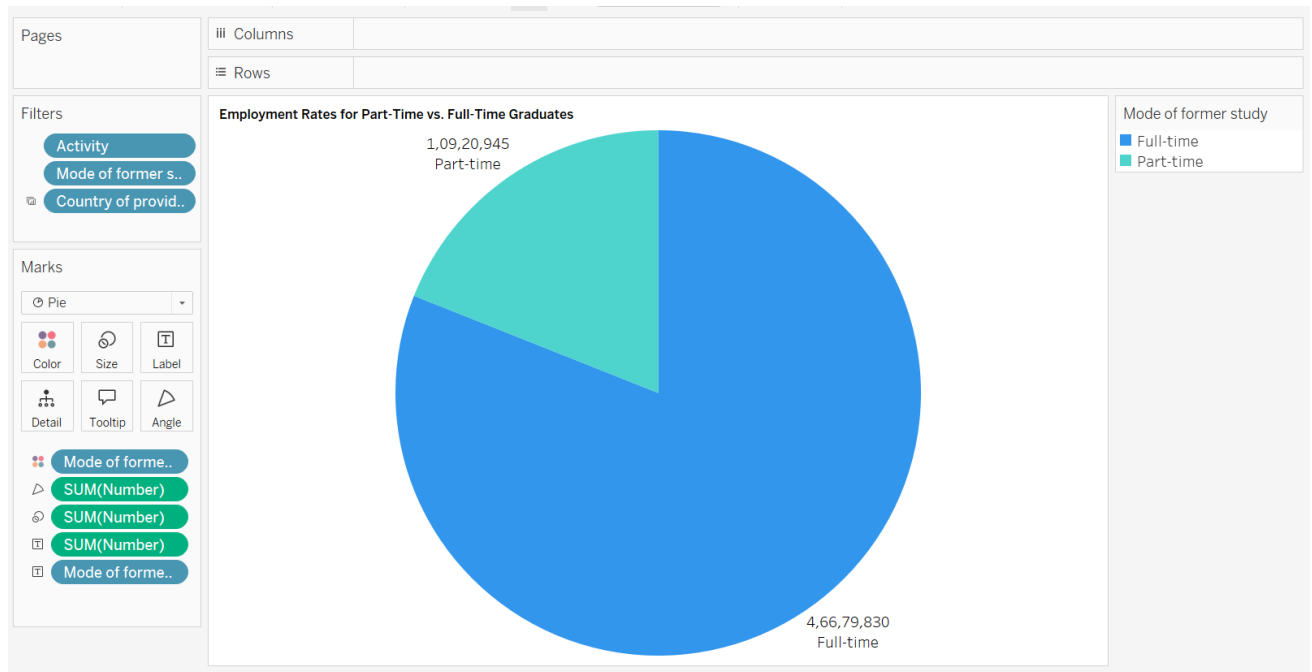
This chart will show the distribution of activities like full-time employment and full-time further studies for each gender, highlighting trends and disparities. It will help to identify if which gender prefers further studies over employment as well as if there are any biases in employment based on gender.



This visual format makes it easy to compare trends at a glance and understand differences in preferences or outcomes. It is quite clear that after graduation a large percent of graduates opt for full-time employment as compared to further studies. By looking at the percent differences between the genders in employment shows almost similar percents as “Other” category can consist of any other gender apart from “Male” and “Female”. Although, employers can tailor their recruitment approaches according to observed trends in recruiting underrepresented groups. On the other hand smaller chunk opt for further studies as compared to those who enter the corporate world. Therefore, universities can tailor career services and academic offerings to address this.

2) What is the employment rate for graduates who studied part-time versus full-time?

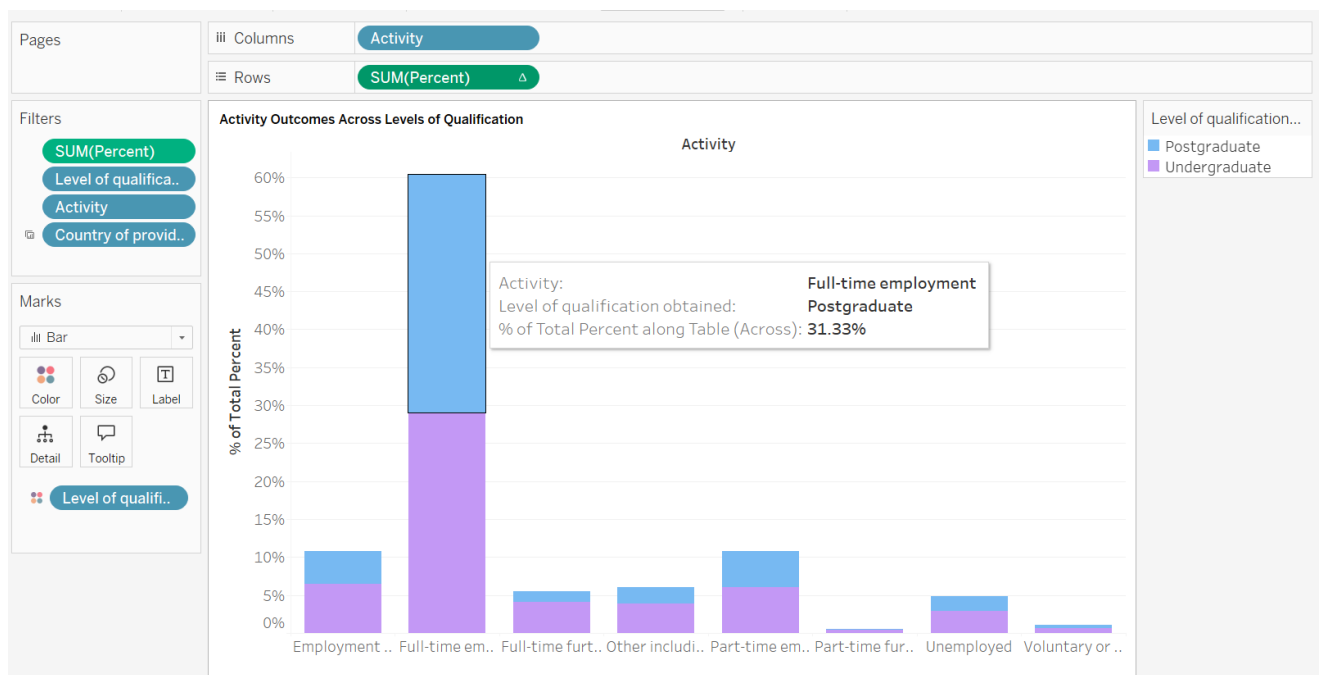
This visual shows how employment rates differ between full-time and part-time graduates and whether studying part-time impacts the likelihood of obtaining full-time employment.



This pie chart shows that graduates who studied full-time have a much higher rate of employment compared to those who studied part-time. It may reflect stronger connections with employers, career services, or at least less divided attention during studies for full-time students. This chart brings into focus the effect study mode has on employment—a basic aspect universities use to frame programs and resources for part-time students. The universities can therefore have programs for part-time students to increase their employability, or they can leverage this information to market the benefits of full-time programs.

3) What are the primary activities after graduation across levels of qualification?

This stacked bar chart represents the different activities that undergraduates and postgraduates do after their graduation.



This visual reveal that a larger percent of undergraduates as well as postgraduates head towards full-time employment. Undergraduates are much more likely to continue studying, since most of them try to increase their qualifications to the postgraduate level for better career opportunities. The rates of further study are lower for postgraduates, reflecting their already advanced qualification. Besides, the chart might reveal smaller proportions of other activities such as hobbies, unemployment and, voluntary work, indicating variations in preferences or opportunities. The variation in the distribution of activities signifies that career support and program design are particularly important to be tailored for the unique needs of undergraduates and postgraduates. These will help institutions guide students effectively toward their career aspirations.

4) How do graduate outcomes differ by ethnicity across full-time and part-time employment?

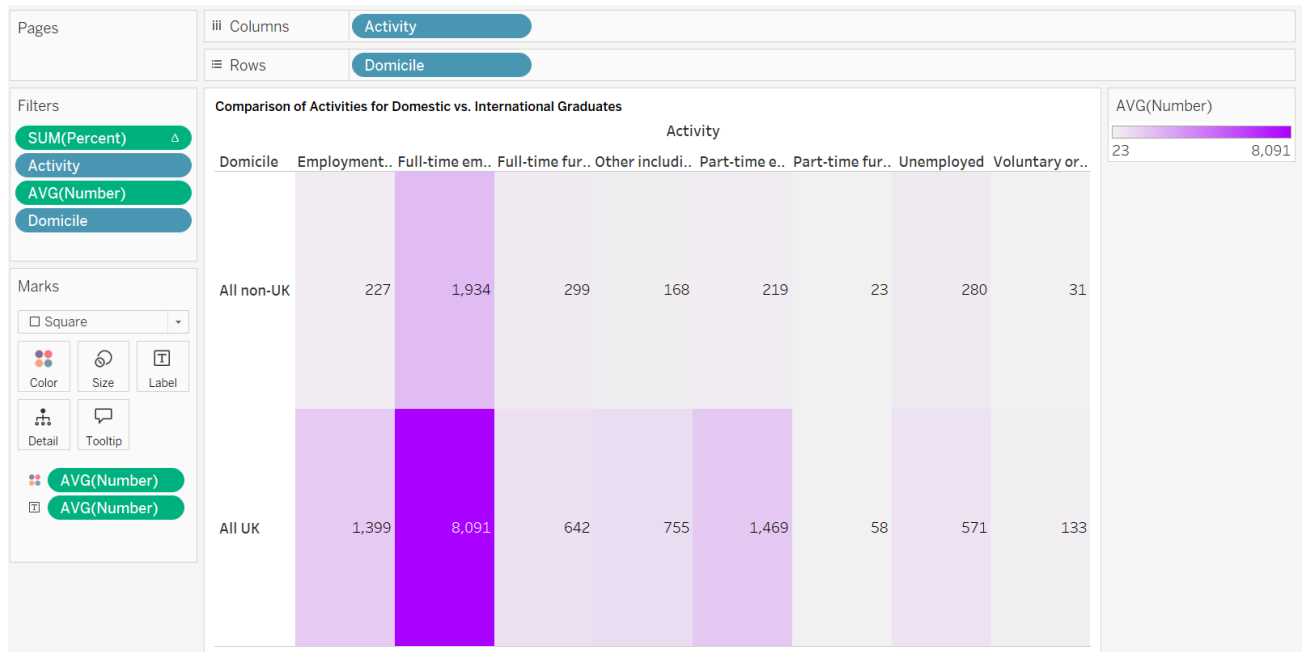
This chart highlights whether specific ethnic groups have higher or lower employment rates compared to others.



The above visualization shows the gaps in employment outcome across ethnic groups, hence provides some insight into inequity or systemic issues. It is seen that white graduates are significantly high in number for full-time as well as part-time employment across other ethnicities. This maybe for different reasons such as easier access to opportunity needs. In contrast, Asian, Black, and Mixed ethnicity graduates exhibit comparatively lower rates of employment, with not much differences observed among these groups. This indicates that they may share the same problems or obstacles. This may be due to limited opportunities resulting from systemic bias or lack of representation in some sectors or cultural or social variables that may contribute to employability outcomes.

5) How do outcomes differ between domestic and international students?

This question answers the difference between the numbers against domestic and international graduates in different activities. This visual shows the average number of graduates.



Domestic students, or those from the UK have higher employment rates compared to international students. This could be due to familiarity with the local job market, better access to local professional networks and recruitment opportunities or fewer visa-related employment restrictions. Similarly, many people in the UK do voluntary work. It would be viable that universities provide specific career support services targeted at international students, while employers can go further in developing recruitment strategies for international graduates with the view to leveraging these international perspectives in making unique contributions within a rapidly globalized context.

Recommendations:

Strategic advice to senior management:

1) Improve the career support for the international students:

International students often face certain challenges in job searching, such as unfamiliarity with local job markets, lack of professional networks, and visa restrictions. Management can offer specialized career counselling, visa support, and networking opportunities for better employability. This will help international students gain more exposure to the UK employability.

2) Address the gaps in gender and ethnicity:

The data shows disparities in employment outcomes by gender and ethnicity that may suggest the need to focus on the efforts to promote equity and diversity. For this, management can implement mentorship programs for underrepresented groups and promote diversity in recruitment practices. This will help to address the gaps in gender and ethnicity.

3) Promote benefits of studying full-time:

The data indicates that full-time graduates are more likely to secure full-time employment. This highlights the need to portray the advantages of full-time study to students. To overcome this management can either encourage full-time studies by highlighting the better job prospects linked to it or provide more opportunities for part-time studying students regarding employment. They can tailor specific career counselling programs related to it.

4) Give priority to the further education:

A significant percentage of the undergraduates pursue further studies, proving that postgraduate programs have a high demand. The trend can be employed by the institutions to attract more students and revenues. On the other hand, post-graduate students are more likely to land a full-time job and their unemployment rate is low as compared to under-graduate students. Management can leverage this study to promote post-graduate programs.

Conclusion:

This project demonstrates a dashboard that highlights important trends in graduate outcomes, such as the impact of domicile, qualifications, and study mode on employment outcomes and disparities by gender and ethnicity that require some attention. As a Business Intelligence Consultant, the above stated strategies would enable senior management to improve the institutes reputation on the basis of better graduate employability and inclusiveness. It will also improve student satisfaction and engagement, promoting better retention and alumni giving. This will help to nurture partnerships with employers and industries for a strong talent pipeline and drive undergraduate as well as postgraduate enrolments for more significant institutional revenues and greater reach.

Link to Dashboard:

https://github.com/riyashelwante/2502398_MN5811_IndividualAssessment