Big Data Analytics of Socio-Economic Impact on UK University Graduates

Jack Morgan  
BSc Computer Science  
University of WolverhamptonWulfruna Street, Wolverhampton, WV1 1LY  
J.M.Morgan@wlv.ac.uk Kieron Ransley  
BSc Computing and Information Technology  
University of WolverhamptonWulfruna Steet, Wolverhampton, WV1 1LY  
K.D.Ransley@wlv.ac.uk

*Abstract*—The following report details how the socio-economic status of major UK towns and cities affects its universities and the students who are graduating from them. University is the biggest challenge that students will face in their academic career, and for some it is also a major financial decision. Students coming from more difficult backgrounds, or a lower financial standing may struggle with the challenges they face in this academic environment.

Using datasets found from various sources, which have then been read into, explored, and visualized using a machine learning model, and further cleaned and further data predicted using a predictive model demonstrates that students who study in an area with less of a socio-economic standing tend to perform at a lower level. This argues that not enough support is given to students or the University institutions themselves by local councils due to insufficient funding requirements or substandard facilities surrounding campuses. Further concerns need to be raised with local councils or the wider government to ensure more awareness and support is raised.

Keywords— socio-economic status, graduating, financial standing, academic environment, machine learning model, predictive model, awareness and support.

# Introduction

## Opening

A big step in any academic career, is attending a University. As of 2023, there are currently 166 registered Universities in the United Kingdom, with 11 of which occupying a space on the Times Higher Education[1] top 100 University rankings. University is often for many students, a huge personal and financial decision. With only a select few over the country, a student may often have to relocate to a new location to attend, and with that as well as course fee’s, it can come at a huge cost. Some students can often find this a struggle, and end up with major worries about finances over the course of their degree. While there is the student loans company and as well as other government assistance, concerns can still arise with the huge costs not only for attending, but for living and thriving in the nearby area to the campus. While these costs are increased for the nearly 700,000 internation students[2] (data accurate as of 2022), it still provides problems for home students, which will be the aim of this report.

## Problem Statement

* Add statistical information about graduation rates
* Area with highest, area with lowest
* University with highest, university with lowest
* Graph this data, or similar

## Aims and Objectives

## Contribution Statement

### Jack Morgan

### Kieron Ransley

## Report Outline

# Literatre review

## Talking Point One

## Talking Point Two

## Talking Point Three

## Talking Point Four

## Talking Point Five

## Summary

# Methodology

# Results

# Further Discussion

# Conclusions

# References

1. World University Rankings (2023) Times Higher Education (THE). Available at: https://www.timeshighereducation.com/world-university-rankings/2024/world-ranking (Accessed: 26th February 2024).
2. Gent (2023) International Student Statistics in UK 2023, Study in UK. Available at: https://www.studying-in-uk.org/international-student-statistics-in-uk/#:~:text=Statistics%20show%20that%20the%20total,outside%20of%20the%20European%20Union. (Accessed: 26th February 2024).