

## **Belonging and Engaging for Successful Transition to University**

### **Please describe the research you have conducted this period**

Initially, I spent some time reading published literature to gain a better understanding of the research area. Thereafter, I worked on the data analysis of an ongoing research project – belonging and engaging for successful transition to university. Focusing on the data from student surveys in 2020 – 2021, I have produced a methodology that can now be applied to the data from other years.

The data has been analysed using software from IBM called SPSS. I have used the internet and Field's "Discovering Statistics Using IBM SPSS Statistics" (2017) to learn how to analyse the data. I first recoded some of the data variables to make them suitable for use in a Principal Component Analysis (PCA). The variables capture information about students' background, sense of belonging in their cohort, practicalities about engaging in online learning and feelings in response to their exam results. Alison, Rob and I then discussed the variables and decided which variables from the initial dataset to put in each PCA. PCA 1 was concerned with demographics, PCA 2 with sense of belonging, PCA 3 with engagement and PCA 4 with success. I then ran each PCA and decided which components to extract, presenting the results in a PowerPoint. Following further reading and discussions, I reran the PCAs to ensure the results met certain statistical criteria, to ensure the results were effective and reliable. Linear regressions were then conducted to establish the relationship between the extracted components. I also presented these results in a PowerPoint and have commented on the significant results on my research poster.

At this stage of the project, many results were not significant due to the small sample size as I only used one year of data. A software called G Power was used to understand what sample size we would need to gain significant results from the regressions. Furthermore, I have recorded all decisions relating to the methodology in a document for reference, so that this methodology can now be applied to all other data collected. Thus, it is hoped that when all the data is analysed together, significant results will be produced.

### **How is the research work you have been undertaking impactful or important?**

This project has collected lots of data over several years, which must now be analysed. I have been working with the 2020-2021 dataset with the aim of establishing a methodology that can be applied to all the data collected over the seven years that the project has been running. Establishing an effective and reliable methodology is an important aspect of the project to ensure the results are useful

and accepted when the research is ready to be published. Having tried several methods, the established methodology can now be used to analyse all the data.

Working with the 2020 – 2021 dataset, I have been able to highlight some correlations between demographics, belonging, engagement and success. However, working with only one set of data has meant that the sample size for analysis has been relatively small. Nonetheless, the application of the established methodology to the other data will increase the sample size. This will likely lead to more significant results that can be used to produce resources that can positively impact students' transition to university.

Nevertheless, one significant result from the 2020 - 2021 dataset is that females feel less confident and prepared for university than males. Thus, the research is impactful as this result could be used to target support for new students. Ultimately, once this methodology is applied to all data, this project hopes to identify factors and correlations that can be interpreted to find new ways to support students. Thus, this research will be impactful by producing recommendations for resources that can be distributed to students during their welcome and induction week, and by guiding staff on how to support new students.

### **What impact has conducting research had on your degree course and university experience?**

I have learnt to use resources such as EndNote that will be useful for the rest of my degree. This is a useful tool for gathering literature and creating references. I have also learnt to use SPSS and improved my knowledge of Excel. Using SPSS has introduced me to many key terms within statistics. These skills will be useful to me throughout my statistics and econometrics modules next year.

Conducting this research has enriched my university experience by exposing me to real raw data and research early into my degree. This research has taught me the importance of being careful and thorough when analysing data. It has reinforced to me that whilst there may be correlations within the data, we can often only suggest causation.

This research period has also helped to prepare me for my dissertation in my final year. I have learnt how to analyse quantitative survey responses, so will be prepared to conduct a survey should I choose to do so. I also now better understand the process of writing a published research paper. I understand the importance of creating a methodology for other people to read so that they can understand where the results have come from. I have also learnt that you can report some of the results in the paper and then use the discussion part of the paper to interpret the results and make suggestions.

**What leadership skills do you believe you have gained from the research period? (please refer to the leadership attributes below)**

Over the research period, I have gained the leadership skill of learning continually. I have learnt about a new research area through reading literature, analysing data and having discussions with Alison and Rob. I have learnt to use SPSS with no prior knowledge. One way I learnt to use SPSS was by regularly referring to a textbook to understand the best way to analyse the data. Hence, I also believe that I have developed skills in analysing data and interpreting results. I have learnt to conduct a principal component analysis and conduct linear regressions using SPSS. I also have learnt of many statistical tests to ensure the validity and reliability of results.

I believe that I have developed the skill of making effective decisions in complex environments. As part of producing a reliable methodology, important decisions such as which variables to analyse had to be made, and justified. Despite having many options, I have aimed to create a clear and effective list of decisions that can now be used as a methodology. I also believe that I have developed the leadership skill of working collaboratively and across boundaries. As part of the decision-making process, I would make recommendations to Alison and Rob, and collectively we would make a decision.

**Please talk about activities you've been involved in to disseminate your research, including but not limited to attending conferences, producing research posters, and promotion of the scholarship**

I have produced a research poster to post online to the Laidlaw Scholars Network and to present at events. My research poster provides a background to the research. This includes an explanation about the project and some research questions. It also describes the established methodology to analyse the data. As my research was focused on establishing a methodology, I have explained it on the poster, alongside an example of a Scree Plot from a principal component analysis and some data. I have also discussed some of the significant results from the linear regressions of the 2020 – 2021 dataset. I have finished the poster by commenting on a limitation of the research and by explaining the next steps of the project.

I made an initial post on LinkedIn at the start of the summer to describe the Laidlaw Scholarship and briefly share my research topic. I plan to make a new post to summarise my research. I also hope that this research can be presented at conferences in the future once all data has been analysed and interpreted. I am also due to work as an ambassador at the upcoming university open day, so this provides an opportunity to further share my research and promote the scholarship to prospective students.

**What are your future career or educational plans?**

I hope to have a career in improving public health. I am keen to improve preventative measures in the community, to reduce the burden of poor health on

the National Health Service (NHS). These should also help to improve the health and happiness of the population, ultimately making them more productive. Previously, I had been most interested in policy making at a local or national government level. However, following this summer of research, I have learnt that I enjoy analysing data so will consider other roles.

I am also interested in how we can make the NHS more efficient and able to cope with modern demands. This interest stems from personal experience and work experience within the NHS, both on the frontline and behind the scenes. I am also keen to help others and am motivated by seeing the positive impact of my work.

I want to do a master's degree that relates to public health or health economics. I have some in mind, but plan to research these more over the next year. This is because I believe that completing a master's degree will provide me with further skills that will better equip me for the type of work I wish to do.

## Supervisor

Please comment on your scholar's research period, what you consider to be your scholars' strengths and which leadership attributes (please refer to the leadership attributes below) you feel your scholar has demonstrated and is particularly skilled in. You could also identify areas which your scholar can develop further.

Isabelle has been a fantastic asset to our research team. She has established new and effective protocols for data analysis of our large data sets. This has involved her in many new statistical techniques and she has risen to the challenge exceptionally well. Izzy has strong intellectual ability and a clear capacity to learn continually. She has researched very technical details of statistical tests to see which apply to our data, and she speaks and writes clearly and confidently to explain her findings to the academic team. In this way she has been able to make effective decisions in complex environments and turn ideas into action.

Her scholarship ran over the summer when at times one or other of the academic supervisors was on holiday. Izzy has thus demonstrated her ability to lead without authority, and has kept the project moving forward. Izzy also has the important skill of knowing her own limitations and has thus presented not only results and information at our meetings, but also raised questions for us to answer or signpost where to find further information.

Izzy has been a joy to work with. She has excellent interpersonal skills, building rapport and trust. She listens to what she is asked to do, and asks intelligent questions. She is empathetic and understands that academic staff cannot be available at all times, and she is flexible to accommodate this.

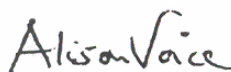
Through her project Izzy has had real impact. Impact on our research team, as we now have a way forward to analyse our data for correlations of key factors. This in turn will impact incoming students to the university, as the project has investigated sense of belonging and factors relating to academic success, which are crucial to all students arriving at university.

Signature of Scholar



Date: 17/09/22

Signature of Project Leader



Date: 12/09/22