Introducing Data Bytes

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Data Bytes is a series of data graphics from Cambridge Assessment's Research Division that is designed to bring the latest trends and research in educational assessment to a wider audience.

High-quality graphics are increasingly used by researchers to communicate complex subject matter both to other researchers and to the general public (Healy & Moody, 2014). This may include the presentation of "raw" data sets, or the results of statistical analyses. However the clear visual communication of quantitative information can be obscured by so-called "chartjunk" (Tufte, 2001). This may be as simple as the use of poorly-chosen fill patterns, or overly dense grid lines that make the visual interpretation of a graphic difficult. But Tufte also warns of graphics "when the overall design purveys Graphical Style rather than quantitative informative" (p. 116). Many "infographics" arguably fall into this latter category. David McCandless (2010) in particular has been criticised for using graphics that "make a simple statement in a way that looks light-hearted and fun. As such, they invite viewers to accept the message superficially, not to explore or contemplate deeply." (Few, 2011). With this caution in mind, we have designed Data Bytes to be informative, accurate and easy to understand.

Each Data Byte consists of a single graphic designed to present a notable data set or research finding relevant to educational assessment. The graphic is accompanied by a brief text explaining what the image shows and why it is significant. Topics for Data Bytes are often chosen to coincide with contemporary news or recent Cambridge Assessment research outputs. Since the series began in October 2015, we have published approximately one graphic per month on topics such as global trends in educational attainment, changing uptake in secondary education subjects, teacher mobility within Europe, and the gender gap in attainment.

One recent example demonstrates the link between achieving an A* grade at A level and a student's likelihood of achieving a First-class university degree. The research was originally published in a peer reviewed journal (Vidal Rodeiro & Zanini, 2015) with the results summarised as a table of odds ratios, a format useful to an academic audience but difficult for the general public to interpret. The corresponding Data Byte presented the same information more intuitively as predicted probabilities, as shown in Figure 1. The graphic illustrates that the number of A* grades a student attained at A level was a strong predictor of their likelihood of achieving a First-class degree at university, and that this relationship was particularly strong for A levels in STEM (Science, Technology, Engineering and Mathematics) subjects. An interactive version of the graphic is available on our website, allowing readers to explore how these probabilities vary by university subject, A level subject, gender, and other factors.

The Data Bytes series can be found at http://www.cambridgeassessment.org.uk/our-research/data-bytes/

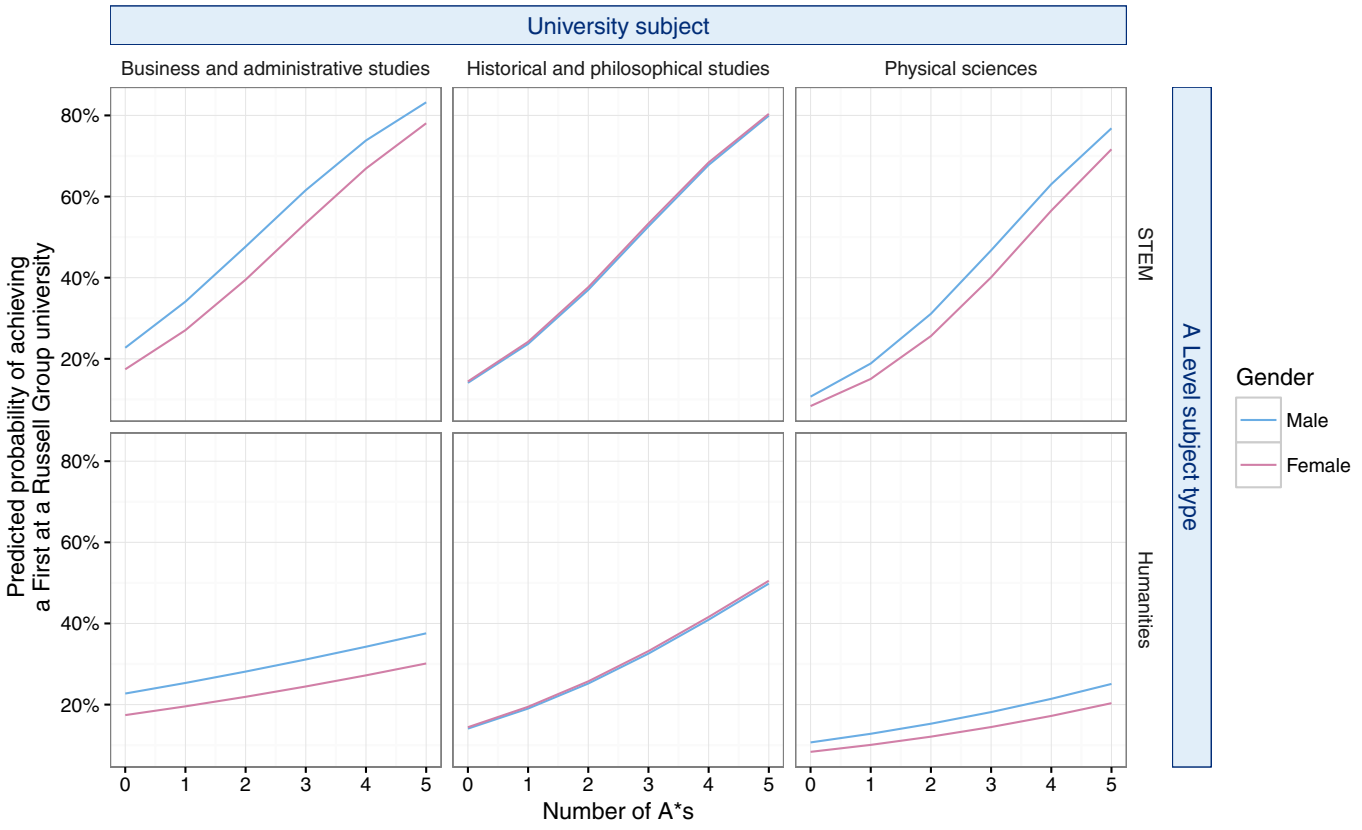

Figure 1: The effect of the A* grade on a student's probability of achieving a First-class degree from a Russell Group university in different subjects

References

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