

ESRC subject areas

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Introduction

This analysis explores the classifications that we use to describe our portfolio. We use a ‘primary subject’ to indicate the discipline that is the most prominent in the research. Awards can have any number of ‘non-primary’ subjects which account for a smaller proportion of the research than the primary subject. In addition we can treat all awards as equal, or try to take account of the size of an award. How we understand the disciplinary spread of our portfolio can vary depending on which classification approach we take.

This analysis explores four possible methods for classifying our portfolio. It begins by using the primary subject to describe grants, first by number of awards and then by award value. It then takes account of non-primary subjects, again by number of awards and by value. It finds that taking non-primary subjects into account increases the prominence of ‘other’ subjects outside of our core disciplines. Other than that, it does not have a major impact when looking at the number of awards but it does when looking at award value. This is because large awards are more likely to be multidisciplinary, and the primary subject approach is not sufficient for describing these awards.

The dataset is based upon the 2059 successful ESRC research grants and fellowships, authorised over the last six full financial years, 2013-14-2018-19. It only takes account of awards where ESRC is the lead funder. Classifications reflect our subjects as listed on our website.¹ Subjects outside of these areas are rolled up as ‘other’ subjects and a significant number of grants are ‘not classified’.

¹ See [discipline classifications](#) for more information

Primary subjects – award volume

Our most common primary subject is psychology, closely followed by sociology, with both accounting for around 250 awards each. Combined, these disciplines account for about a quarter of all awards in the past six financial years (see Figure 1). The other top subjects are, as expected, well established social science disciplines, with six subjects accounting for 52% of awards and ten accounting for 81% of awards. The only possible surprise is the high number of ‘no classification’ awards. This is almost entirely explained by our impact acceleration accounts and related awards, which do not sit within any individual discipline (see Figure 2).

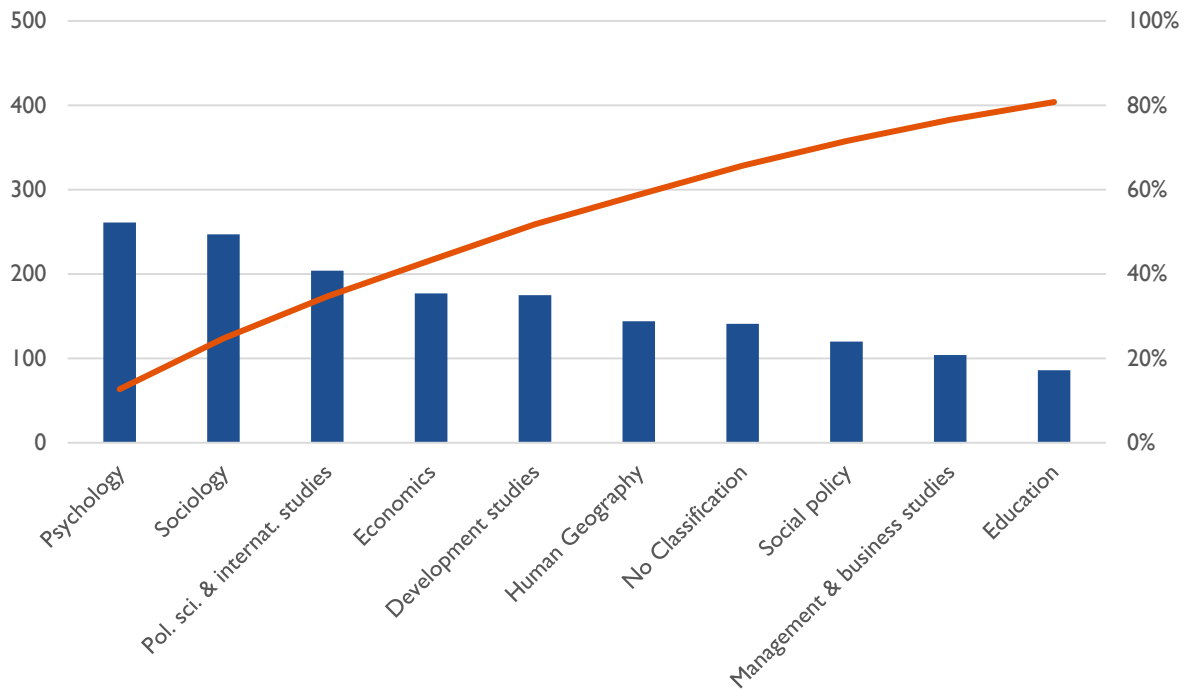


Figure 1. Number of funded awards by primary subject and cumulative percentage of all awards, ten most common subjects

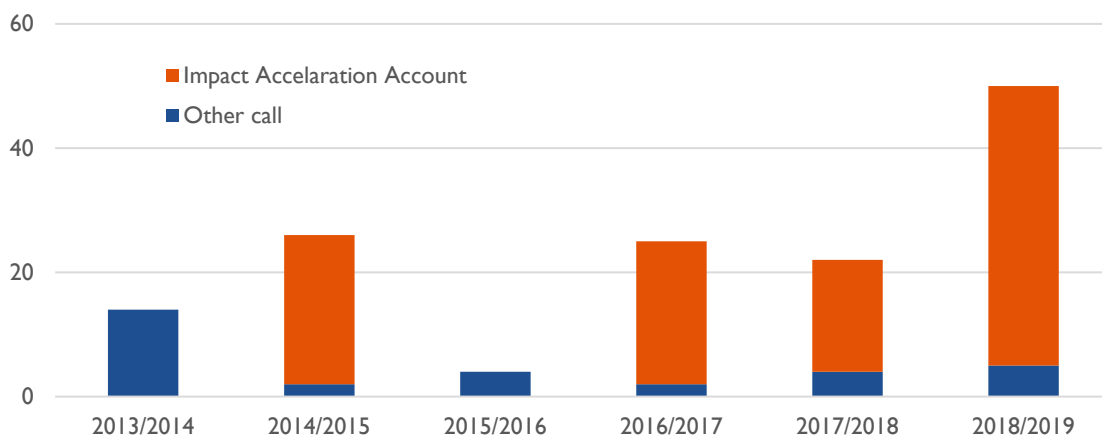


Figure 2. Proportion of unclassified awards that are IAA related

At ESRC, we currently operate three open and responsive calls, with 22% of awards in the last six years funded through these schemes.² Other calls have fixed deadlines and the subject matter is usually directed by ESRC. The proportion of awards that are funded through an open call varies by subject (see Figure 3). Awards in education and law & legal have an average proportion of open call awards. Social work, linguistics and psychology are the most likely to be in open calls.

The subjects least likely to be in open calls are those that relate to prominent fixed and directed calls. Area studies and development studies are unlikely to be in open call, in part a result of the numerous Global Challenges Research Fund (GCRF) awards funded in this discipline. ‘Other’ subjects are also unlikely to be in open call and are often funded through directed calls in collaboration with other funders, calls that naturally span the boundary between social science and other domains. No unclassified awards are in open call. As already mentioned these are usually IAAs, which are funded through fixed calls.

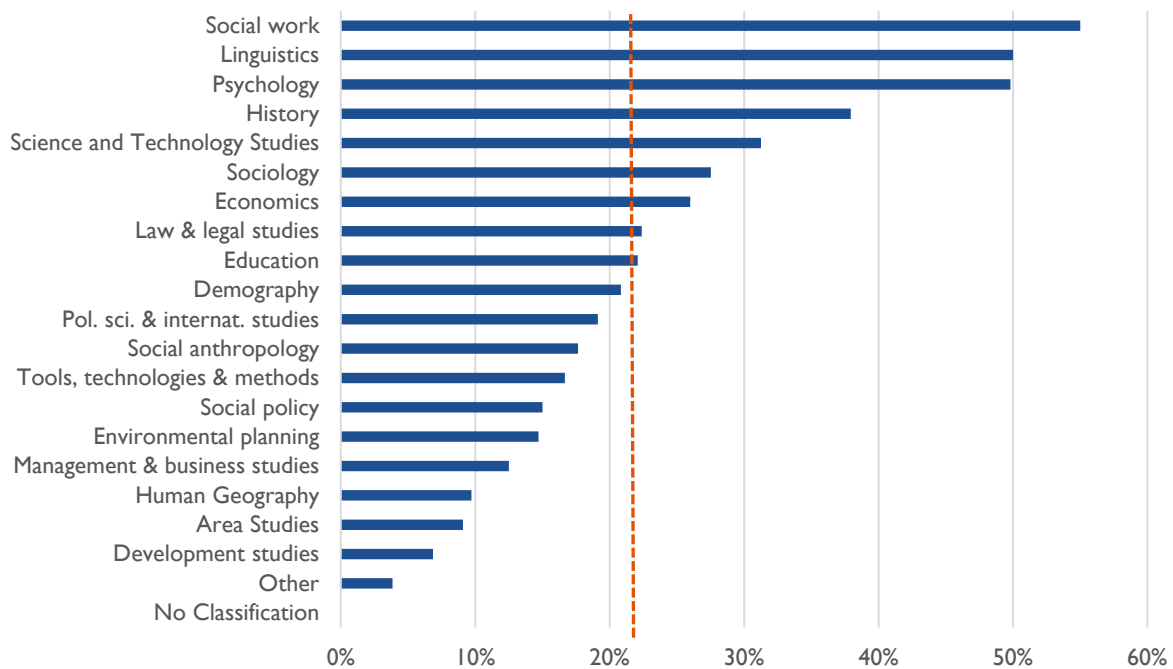


Figure 3. Proportion of awards in X discipline that are open calls. Line indicates overall figure.

² Our current open call schemes are Research Grants (Open Call), New Investigators and SDAI (Open Call)

When the data is broken down by financial year (Figure 4) we see that the most common primary subject each year is usually either psychology or sociology, with the exception of development studies in 2016-17. This is explained by the large number of GCRF awards funded through ESRC during that year.

The proportion of awards funded in any given subject changes each year, often significantly. Few of these changes appear as clear trends over time. However, we have seen a decrease in the number of awards funded in some of our most common subjects, noticeably politics, business studies and social policy. At the same time we have seen modest increase in the number of awards funded in traditionally low volume subjects, such as history and demography, as well as a growth in the number of 'other' subjects we have funded.

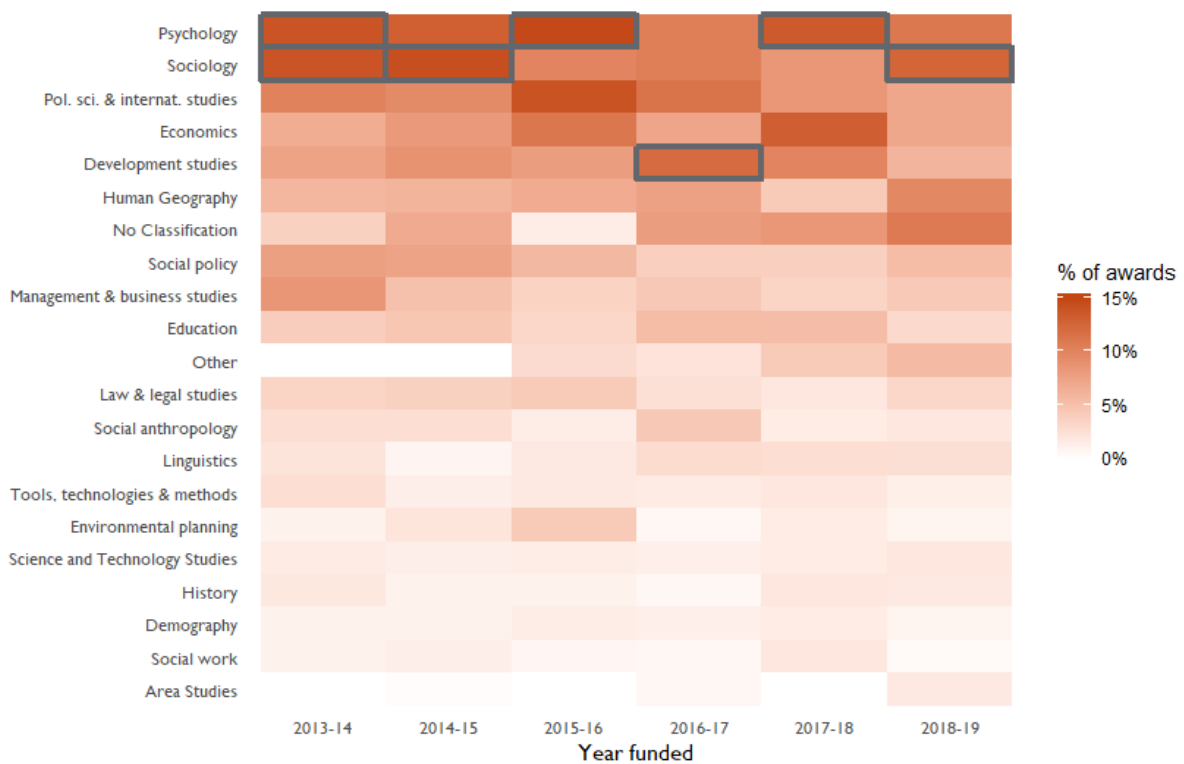


Figure 4. % of number of funded awards by primary subjects and financial year. Ordered by most common subject in total and with most common subject in each year highlighted

Primary subjects – award value

When we look at primary subject by award value (Figure 5), sociology takes a clear lead and psychology tumbles to sixth place. Given the similar number of awards in both subjects, this would appear to suggest that the average sociology award is bigger than the average psychology award and it is true that the mean value for sociology awards (£826,000) is greater than for psychology awards (£391,000). However, it is not that straight forward.

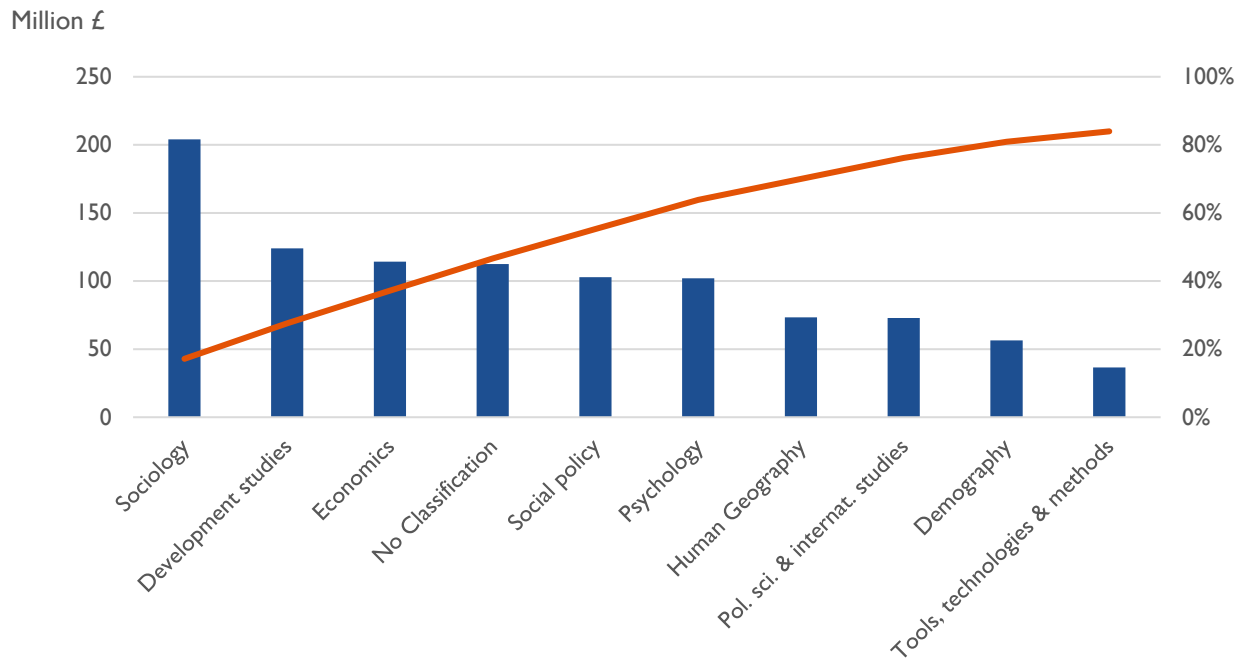


Figure 5. Total award value of funded awards by primary subject and cumulative percentage of all awards, ten most common subjects

The mean and median award values for each subject are displayed in Figure 6. For some subjects these values are similar, but for others the mean is much higher than the median, suggesting a small number of very high value awards are affecting the averages. While the median value for sociology awards is similar to the median value of psychology awards, the mean for sociology is far higher. This means that the average sociology and psychology awards are similar in size when using median award value but very different when compared using the mean. Demography stands out as having a very high mean. This is because we only fund a small number of awards in demography, one of which is very large.

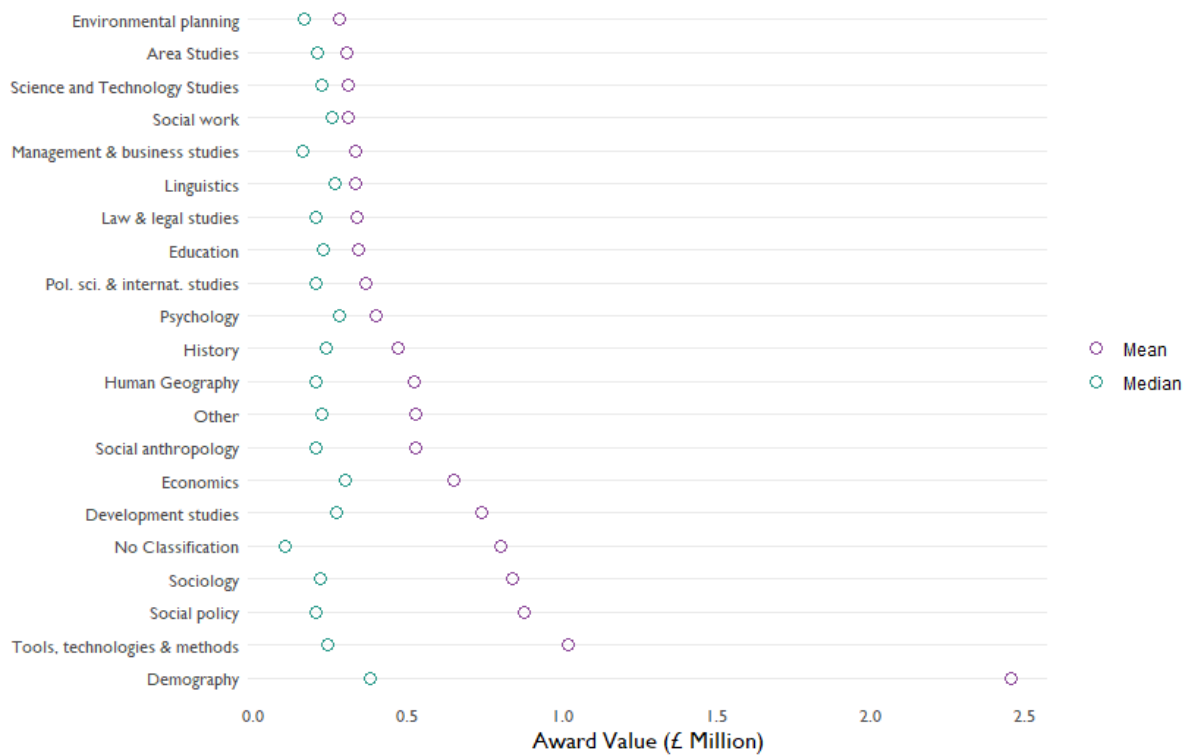


Figure 6. Median and mean award value by primary subject

Award values are visualised in the ridge plot in Figure 7. The ridges are shaded based on the number of the awards in that subject and ordered by median award size. Clearly, there is no meaningful relationship between the average award size and the number of awards we fund. Demography awards are very high value on average but infrequently funded, whereas the high value psychology awards are very common. Those subjects with significantly higher means than medians – social policy, tools & methods, demography, and sociology – have a small number of very high value awards. Some, like demography, also have high medians but others, like sociology have a smaller than average median. The most unusually distributed subject is ‘no classification’ – a result of the very high value IAAs and the relatively small value IAA fellowships.

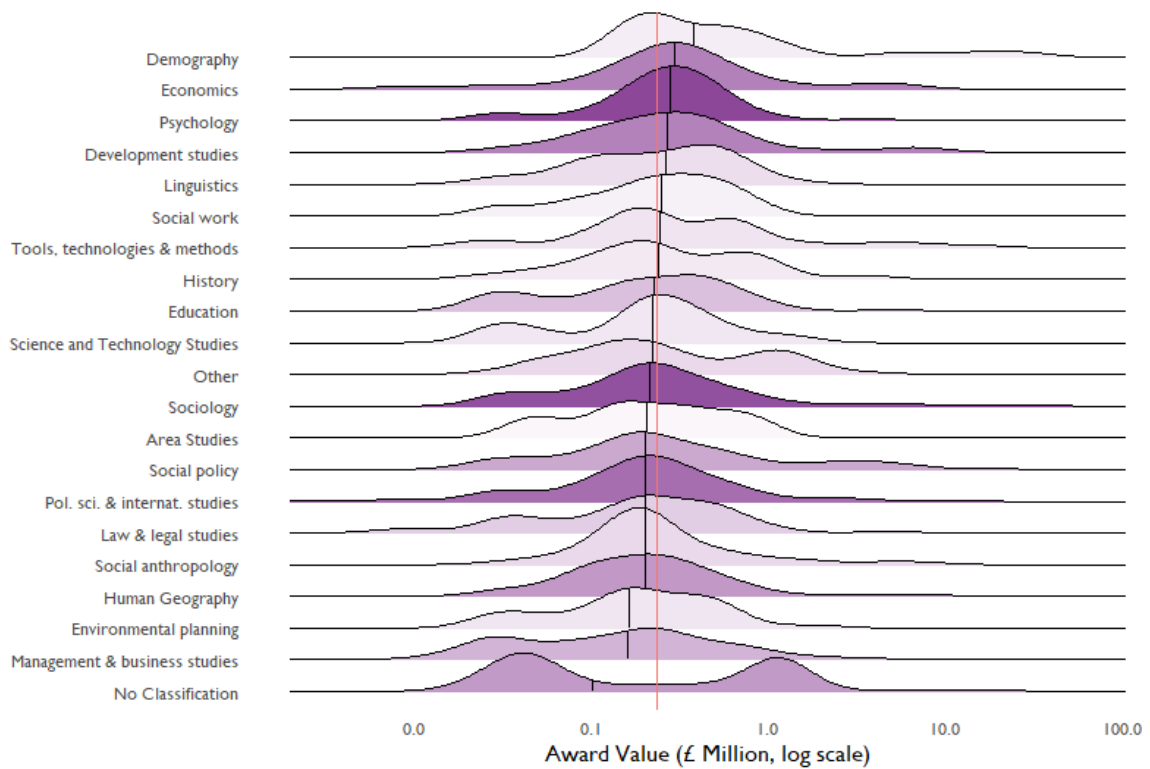


Figure 7. Ridge plot of the distribution of award values by primary subject (log scale). Ordered by median value, labelled with overall median award value and coloured by total number of awards.

The concentration of award value can be summarised using Gini coefficients. A high Gini coefficient means that a small number of awards account for most of the award value in that discipline, whereas a low Gini coefficient indicates awards are more equal in size. Figure 8 plots the coefficients for awards by subject. It also breaks this down by call type. The highest Gini coefficients are usually found in those subjects with a small number of very high value awards – tools, technologies & methods, demography social policy and, most of all, sociology.

When looking at the call type, the most notable point is that, for all subjects, awards are of a similar size for open calls than for other calls. This is not surprising – fixed calls can lead to a range of award sizes, from fellowships to centres, whereas open calls have more standardised criterion.³ It is also notable that there is no relationship between the Gini coefficients for open call awards and those in other calls across disciplines.

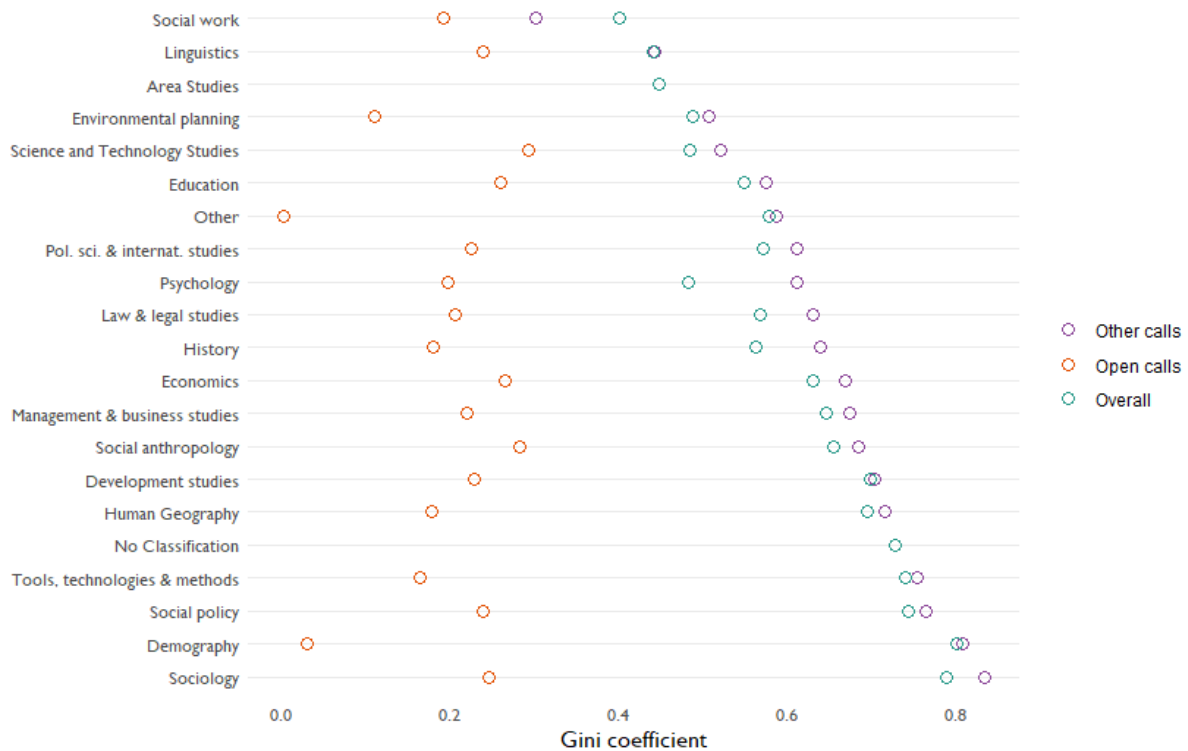


Figure 8. Gini coefficients for the concentration of award value by call type and primary discipline

³ Currently between £350,000 to £1 million (100% full Economic Cost)

There is no clear trend in the top subjects over time when measured using award value and this seems to be driven by specific, large value, funding schemes each year (see Figure 9). For example, 2014-15 and 2018-19 saw our main IAA programmes funded.

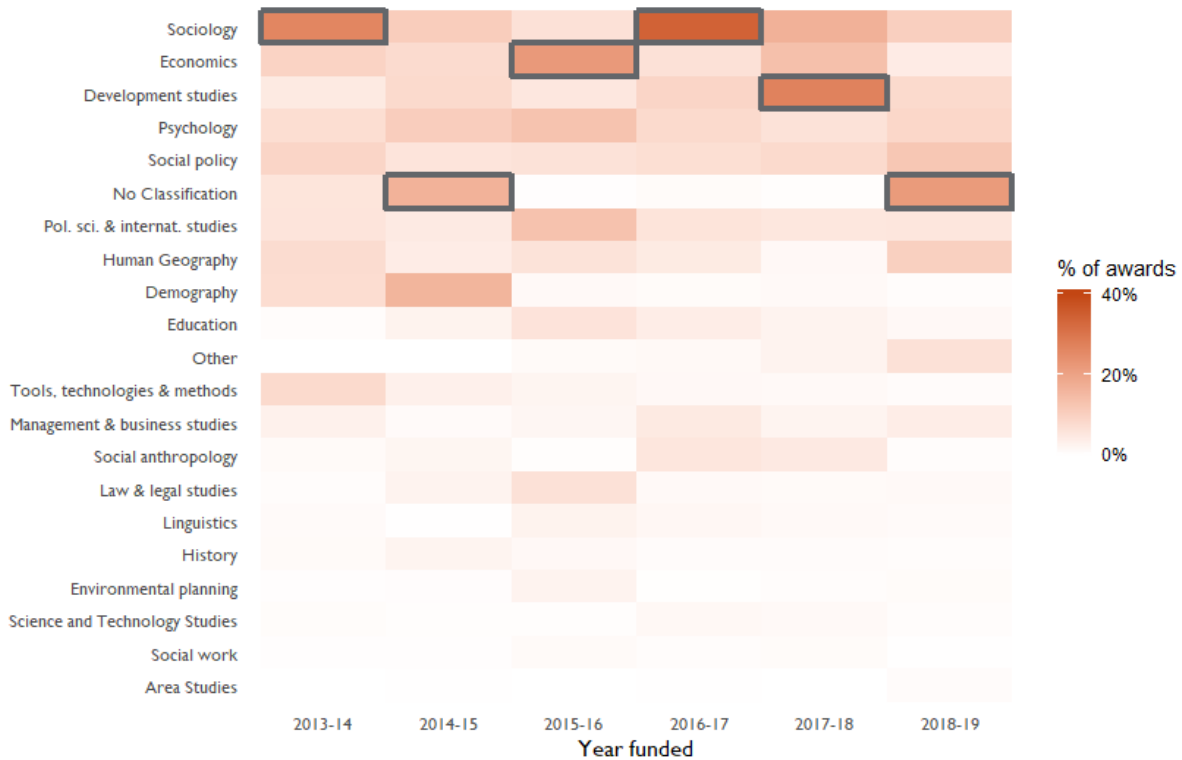


Figure 9. % of total funded award value by primary subjects and financial year. Ordered by most common subject in total and with most common subject in each year highlighted

When primary subjects are analysed based on award value, the picture can become very complicated and changes significantly depending on how you define ‘average’. Some subjects, such as sociology, have big ‘average’ awards as a result of a small number of very high value awards, but the majority of awards are actually relatively small. For other subjects, like psychology, awards are consistently large but lack the small number of very high value awards that would push the mean up. Clearly, the impact of our small number of high value awards makes it a challenge to rely on primary subject alone.

All subjects – award volume

Awards can have any number of non-primary subjects, in addition to a primary subject. Figure 10 shows that a small number of awards have no classifications and about 30% are mono-disciplinary, but most awards have at least one non-primary classification. There has been no change in the average number of disciplines applicants use to describe their research over time. The median has been two in each financial year and the mean has been between 2.2 and 2.3.

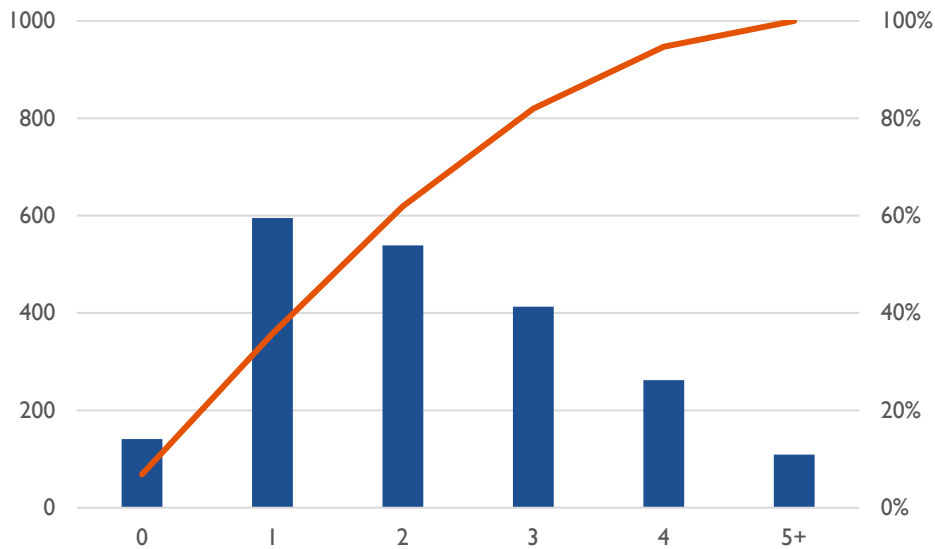


Figure 10. Number of funded awards, and cumulative percentage of all funded awards, with X number of subjects (primary and non-primary)

There are differences in the median number of subjects for awards depending on their primary subject. Sociology, human geography and management & business studies awards usually have around three subjects in total. Economics only has one on average (Figure 11).

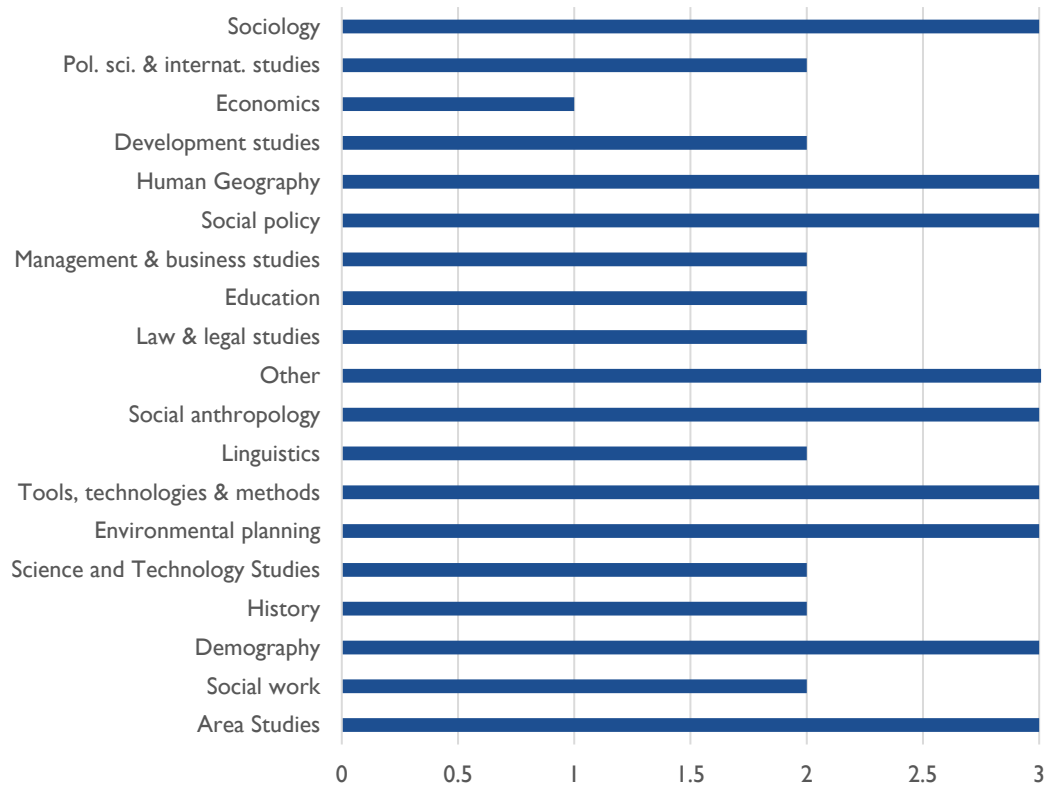


Figure 11. Median number of subjects in total, by primary subject. Ordered by most common primary subjects

Figure 12 gives the most common primary and non-primary subjects. In many ways this is similar to when awards are listed by their primary subject alone, but now 'other' subjects are the second most common. This indicates that a significant minority (25%) of the research we fund features disciplines outside of our traditional subject areas.

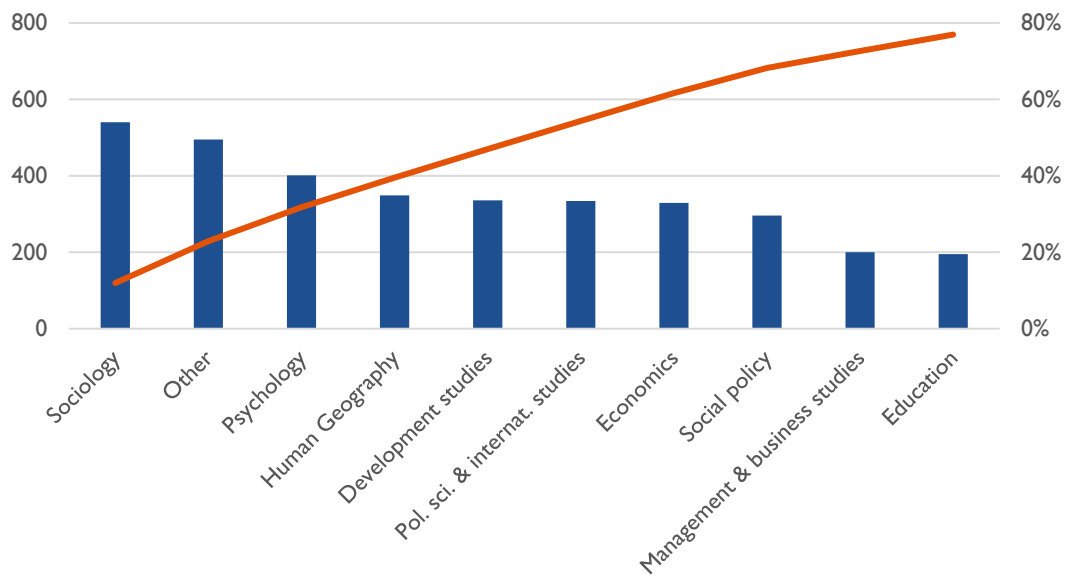


Figure 12. Number of awards with X subject (primary or non-primary), ten most common subjects

Sociology and psychology are common non-primary subjects as well as being common primary subjects. 'Other' subjects are far more common as non-primary subjects than as primary subjects. This can be summarised using odds ratios. Figure 13 gives the odds ratios for the odds of an award having a subject as a non-primary subject compared to the odds of an award having a subject as the primary subject. A high odds ratio means that the subject is more likely to be a non-primary subject than a primary subject.

Most noticeably is that the odds of an award featuring an 'other' non-primary subject is twelve times higher than the odds of the award having an 'other' primary subject. This is also true for area studies, although we only fund a small volume of awards that have area studies as a primary or non-primary subject. All other subjects are also more likely to appear as non-primary subjects than as primary subjects. It is important to take the multidisciplinary nature of awards into account; focusing only on the primary subject would miss the majority of awards featuring any given subject.

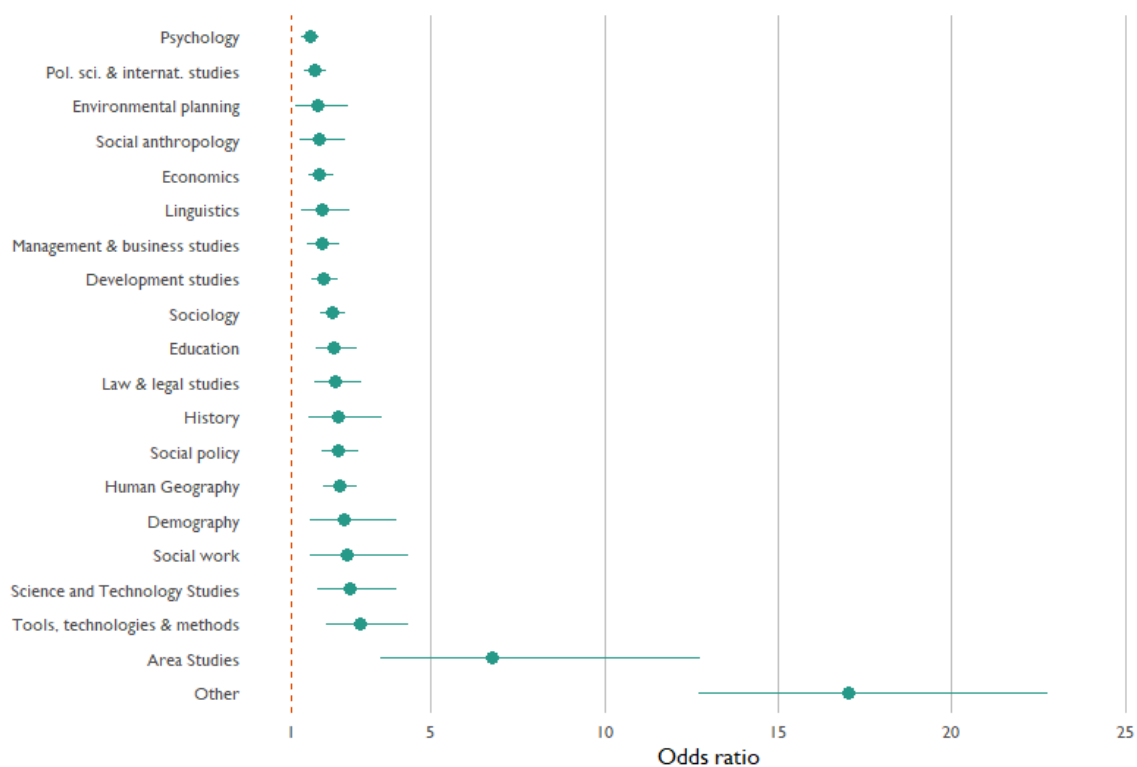


Figure 13. Odds ratios of the odds of an award having a subject as a non-primary subject compared to the odds of an award having a subject as the primary subject. With 95% confidence intervals.

The trend over time for all subjects (Figure 14) is similar to when looking at primary subjects. Again, sociology and psychology are very common, and development studies was most common in 2016-17. The main difference is that the total number of awards featuring an 'other' subject is consistency very high each year and has increased slightly in recent years.

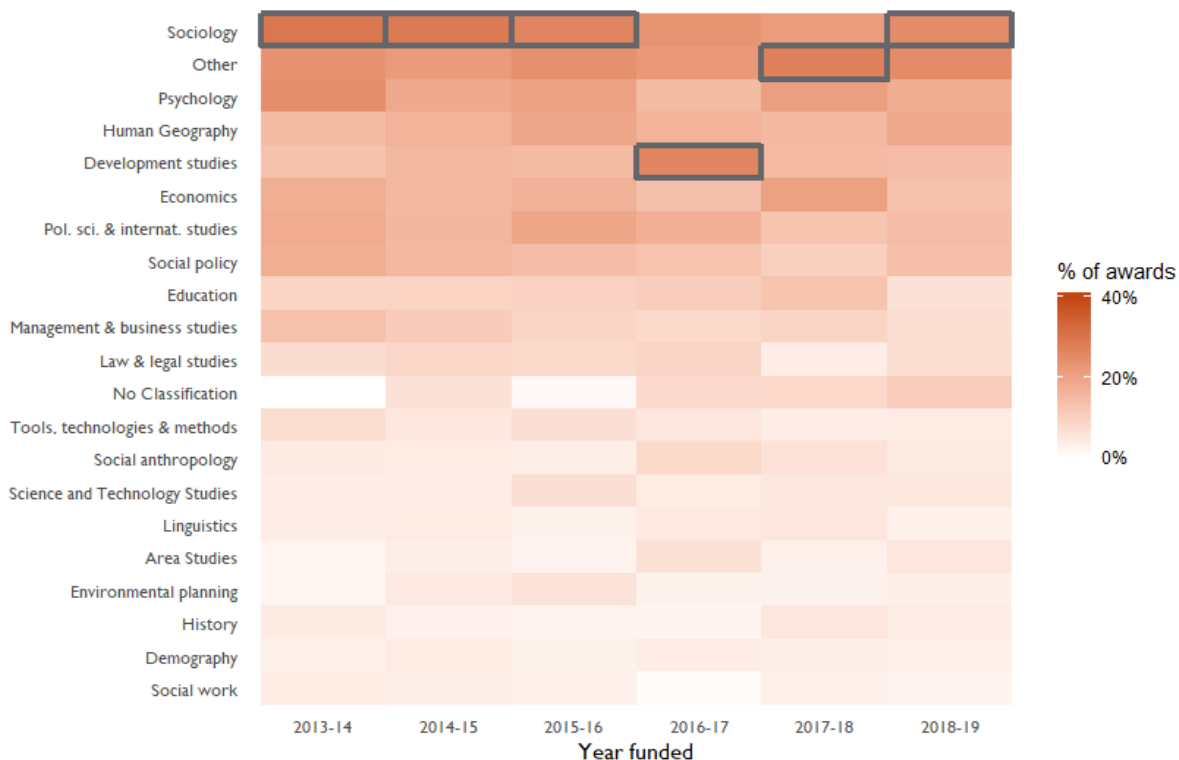


Figure 14. % of number of funded awards by all subjects and financial year. Ordered by most common subject in total and with most common subject in each year highlighted

So far, the use of all subjects rather than just primary subjects has not significantly changed the description of our portfolio, except the high number of 'other' subjects, which are much more likely to be a non-primary rather than a primary subject. Attention now turns to award value.

All subjects – award value

There is a very weak and nonlinear relationship between the size of an award and the number of subjects (Figure 15). For awards with one to three subjects, the vast majority of awards, there is no relationship between award size and number of subjects. However, awards with four or more subjects tend to be much bigger on average. This means that it is particularly misleading to describe the value of our portfolio based only on the primary subject, given that the biggest awards are the most multidisciplinary.

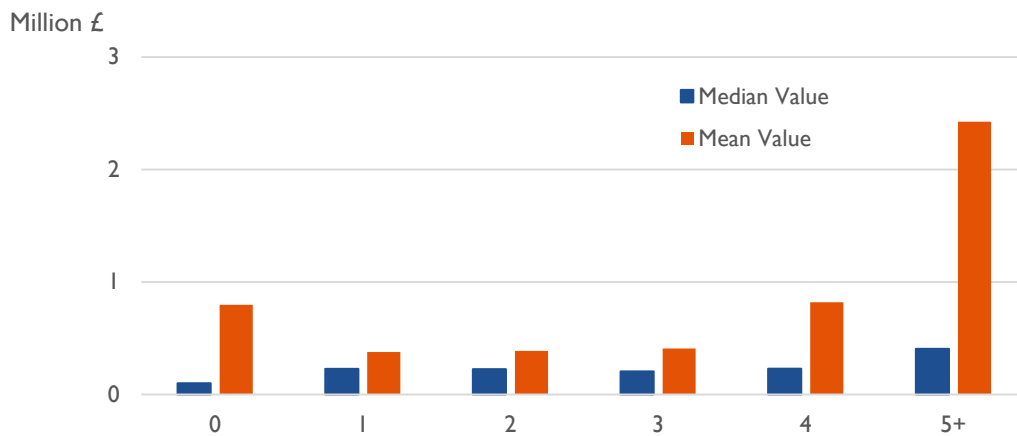


Figure 15. Mean and median award value by number of subjects (primary and non-primary)

When looking at subjects by award value, the picture is very different compared to when looking at primary subjects alone (Figure 16), with economics emerging as the leading discipline. Given this was not picked up when looking at number of awards, this suggests that our highest value awards have an element of economics to them even if it is not the primary subject.

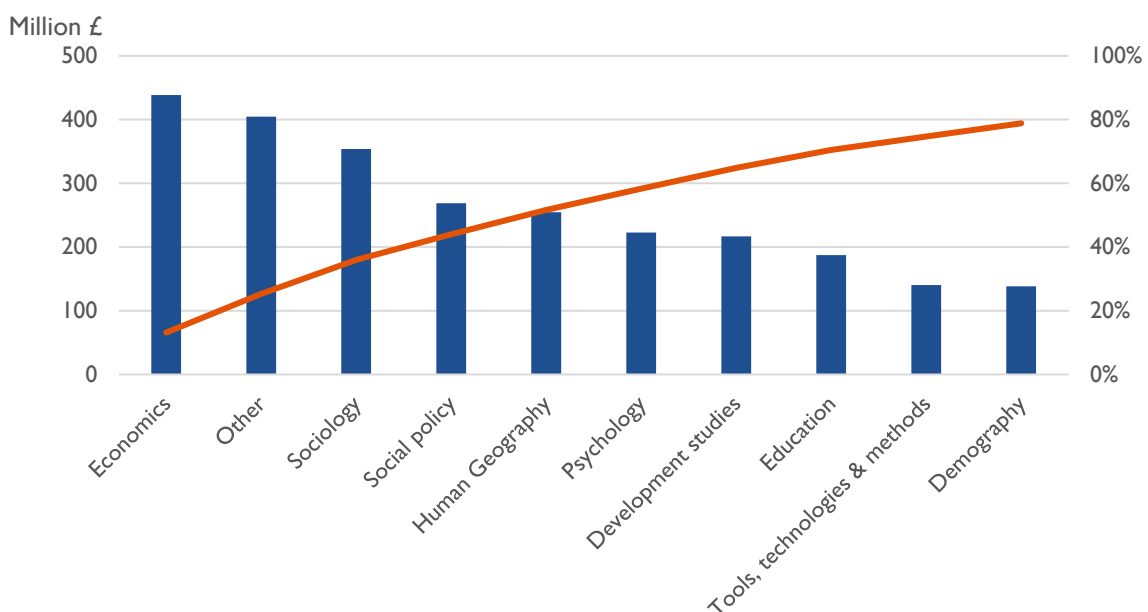


Figure 16. Total value of awards with X subject (primary or non-primary)

There are noticeable differences in the median award value based on all subjects compared to primary subjects. For example, awards featuring business studies are much bigger than awards where business studies is the lead discipline. The same is true for human geography, education, anthropology, social policy, area studies and economics. Conversely, awards where social work is the primary subject are larger on average than awards that feature social work. This is also true for development studies, psychology and, most prominently, demography.

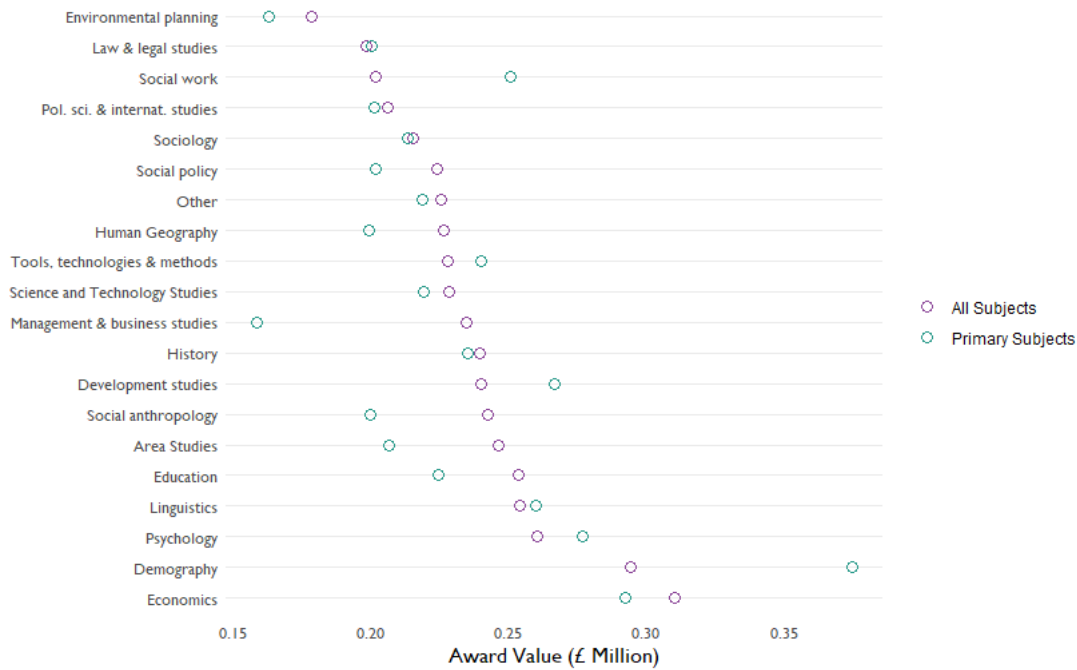


Figure 17. Median award value for award by primary subject and by any subject

The spreads of award values are illustrated in Figure 18. The most important difference with Figure 8 is that more subjects feature the long tail of a small number of very high value awards. This is expected, as these high value awards are the most likely to have multiple subjects.

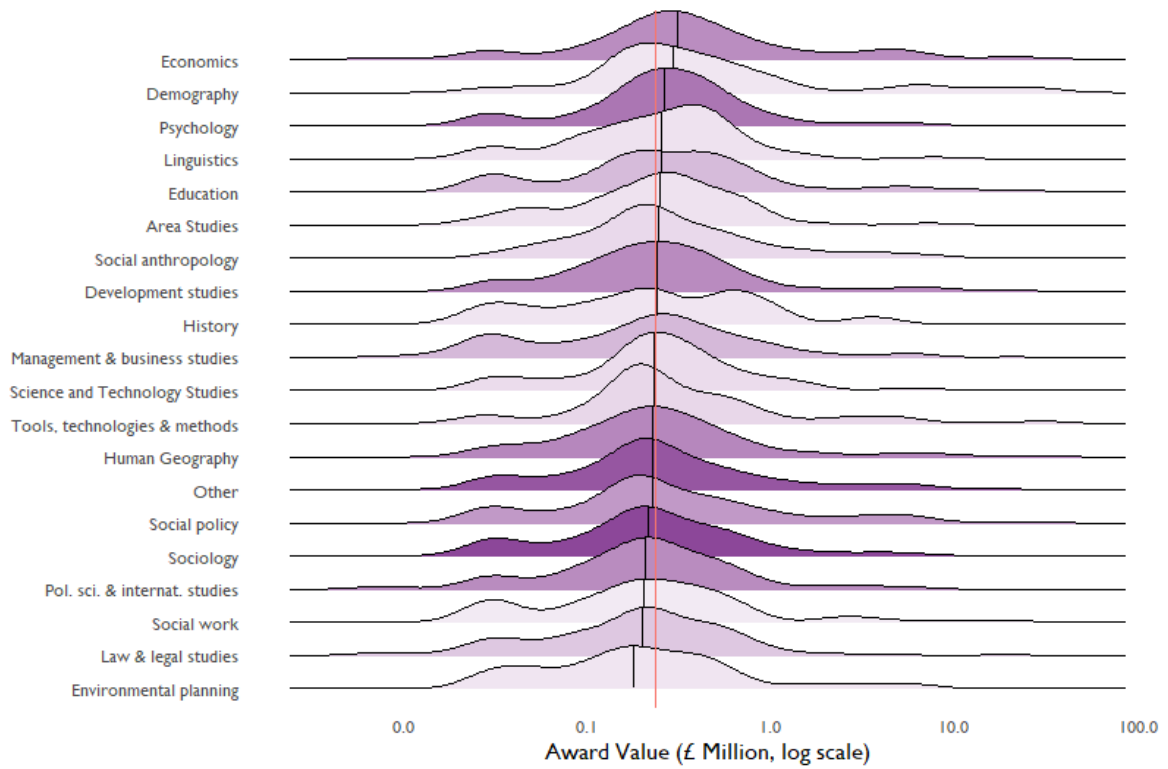


Figure 18. Ridge plot of the distribution of award values by all subjects (log scale). Ordered by median value, labelled with overall median award value and coloured by total number of awards.

Again, Gini coefficients can be used to summarise how much the total award value is concentrated within a few large awards. There is no association between the coefficients based on primary subjects compared to those based on all subjects (Figure 19). In several cases, including economics, a higher coefficient for all subjects is explained by the very high value awards that have economics as a non-primary subject.

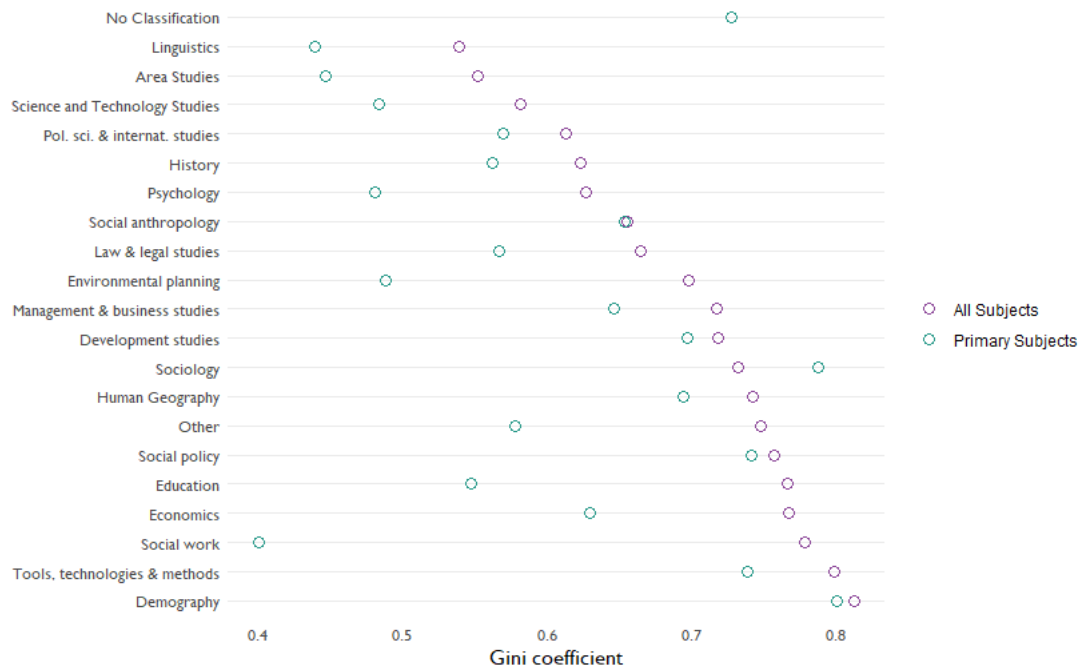


Figure 19. Gini coefficients for the concentration of award value based on primary and all subjects

Changes over time are marginally more consistent for total award value based on all subjects compared to primary subjects, with economics the most common subject in three of the six years, although clearly individual high value awards can still have a significant impact on the most common subject in any given year (Figure 20).

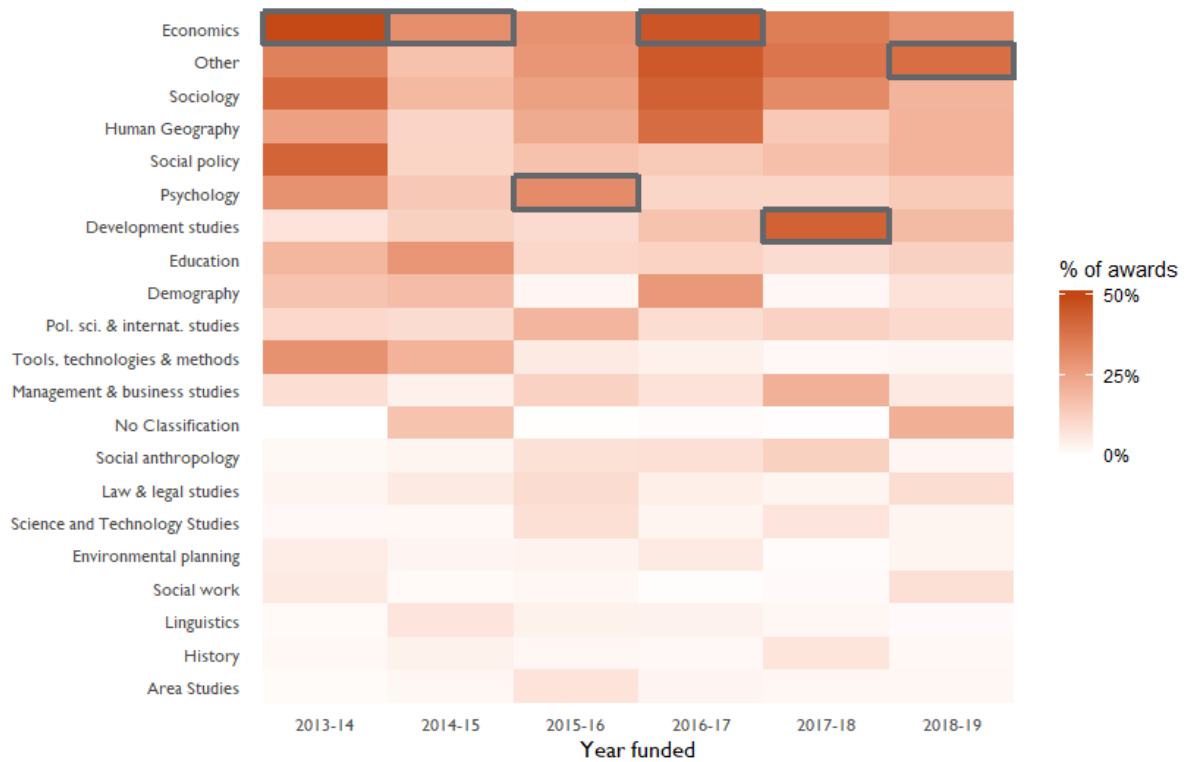


Figure 20. % of total funded award value by all subjects and financial year. Ordered by most common subject in total and with most common subject in each year highlighted

Conclusion

This analysis has found that the most common primary subjects we fund, when measured by number of awards, are sociology and psychology and this has generally been true for the past six years. We also fund a high number of political science & international studies, economics, development studies, human geography, social policy, management & business studies and education awards and, along with awards that are not classified, these account for 80% of the awards we fund.

There are big differences in the proportion of awards that are funded through open calls by subject. Around half of linguistics, social work and psychology awards are funded through open call, but this figure is much lower for most other subjects, with an overall average of 22%.

When measured by award value, psychology falls to the sixth most common subject, with sociology accounting for an even greater share of our portfolio. The trend over time is less steady, with four different top primary subjects over the past six years. This difference is explained by the small number of very high value awards funded each year which have a major impact when analysing subjects by value.

This analysis also considered all subjects (primary and non-primary) associated with an award. By number of awards, this approach does not make much difference to our list of most common subjects, except that 'other' subjects are now the second most common, evidence that a significant number of awards feature at least some research outside of our core disciplines.

One of the most important reasons to take account of non-primary subjects when looking at number of awards is that awards are always more likely to feature a subject as a non-primary subject than as a primary subject. This may seem obvious (awards can have only one primary subject but multiple non-primary subjects), but a focus only on primary subjects would miss the majority of awards featuring any given subject.

It is for award value that taking into account all subjects makes the biggest difference, because the largest awards are the most likely to be multidisciplinary. This means that examining primary subjects alone is likely to over-represent the primary subject of our biggest awards. These high value awards are more likely to have a primary subject in specific subjects too, including sociology, demography and sociology, with much of their award value concentrated in high value awards. This means that the way we choose to analyse the value of our portfolio affects different subjects in different ways.

It may not be the most common primary subject, but economics features as a non-primary subject on enough large value awards that it becomes our most common subject when measuring all subjects by award value, and this was true in three of the past six years. Depending on the method used, sociology, economics or psychology can all be considered our most common subject areas.