

REF 2021: Research Impact and the Arts and Culture Sectors

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**National Centre for
Academic and Cultural Exchange**

REF 2021: Research Impact and the Arts and Culture Sectors

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Contents

Foreword - Professor Maria Delgado	4
Executive Summary	6
 Chapter 1 - Arts and culture-related impact in the 2021 REF impact case studies: an analysis of the evidence - Dr Federica Rossi	 11
1.1. Introduction: the Research Excellence Framework and arts and culture-related impact	12
1.2. The dataset used for the analysis	13
1.3. General overview of the submissions	13
1.4. Identifying case studies with arts and culture-related impact	16
1.5. Where is arts and culture-related impact produced, and where does impact occur?	16
1.6. How is the production of arts and culture-related impact organised?	22
1.7. The role of cultural institutions in REF 2021 cases with arts and culture-related impact	30
1.8. Conclusion	37
 Chapter 2 - Addressing societal Grand Challenges through arts and culture research - Dr Ning Baines, Dr Federica Rossi	 39
2.1. Introduction: Arts and culture research to address Grand Challenges	40
2.2. Identifying and analysing impact cases relating to Grand Challenges	42
2.3. The range of beneficiaries	47
2.4. The key role of partner organisations in mediating the generation of impact	49
2.5. The roles played by partner organisations in impact generation: analysis using the Collaborative Value Creation (CVC) framework	50
2.6. Collaborations with partner organisations and impact generation	52
2.7. Differences by theme	56
2.8. Conclusion	59
 Chapter 3 - An analysis of the REF2021 impact case study submissions from small and specialist HEIs - Dr Laura J. Lee Kemp	 61
3.1. Introduction	62
3.2. Methodology	62
3.3. Score distributions	63
3.4. Partners	63
3.5. Funders	64
3.6. Types of impact claimed	65
3.7. Cultural sub-sectors involved in collaborations	70
3.8. Types of beneficiaries	71
3.9. Conclusion	73

Chapter 4 - Taking a snapshot: REF 2021 and Arts Council England's National Portfolio Organisations - Evelyn Wilson	74
4.1 Introduction	75
4.2 Arts Council England and National Portfolio Organisations	75
4.3 Methodology	76
4.4 Findings from the two primary samples	77
4.5 Art Form Areas	78
4.6 Place	82
4.7 Impact across the samples	84
4.8 Additional findings	84
4.9. Findings from the two sub-sample sets	86
4.10 Sub-sample 1 snapshot	86
4.11 Sub-Sample 2 snapshot	87
4.12 Some key roles played by the arts that support and enhance research	87
4.12.1 Cultural Leadership: Supporting, endorsing and augmenting research	88
4.12.2 Public and audience awareness and engagement: Curating, disseminating, showcasing and generating new work from research	89
4.13 How research supports and enhances the arts	91
4.14 Arts and research working together to connect with and Influence Policy	95
4.15 Funding	96
4.16 Concluding remarks	97
 Recommendations and implications for policy	
Recommendations from Chapter 1	99
Recommendations from Chapter 2	100
Recommendations from Chapter 3	100
Recommendations from Chapter 4	101
 References	103
 Appendices	105
Appendix 1. List of variables included in the database used for the analysis	105
Appendix 3. Fields included in the database of REF impact case studies extracted using Grand Challenges and arts and culture keywords	108
Appendix 4. Examples of impact beneficiaries	109
Appendix 5. Examples of roles played by partner organisations	111
Appendix 6. Examples of direct impacts of research	113
Appendix 7. Examples of indirect impacts of research	115
Appendix 8. List of Small Specialist Institutions	118
Appendix 9. Overview of Sample Set 1 - Top 50 funded NPOs	119
Appendix 10. Overview of Sample set 2 - Middle 50 NPOs	123
Appendix 11 - Units of assessment of impact case studies in sub-sample 1	125
Appendix 12 - Units of assessment of impact case studies in sub-sample 2	127

Foreword

Professor Maria Delgado

Impact matters. It is a mode of demonstrating the value of research within the higher education sector which goes well beyond academia in shaping the social, cultural, political, religious, educational, medical, engineering, environmental, trade union, sports, legal and policy fields. Impacts and changes take different shapes and forms. There is no one size fits all approach, no hierarchy of benefits. Economic benefits are accompanied by impacts on artistic practice and palpable changes on quality of life. Impacts can be charted on practices and on people – at the core is the evidencing of tangible changes and benefits. Impact is about making a difference.

The four chapters included in this report demonstrate the impact of impact, so to speak. They focus on the arts and cultural sector, showing how impacts that engage with this broad field spill over into a range of areas – from health and wellbeing to education and the environment. Research in the arts and humanities renders benefits that spill out in ways that build community, audiences, products, skills, and a sense of wellbeing. But as Federica Rossi demonstrates in her chapter, research across disciplinary areas outside the arts and humanities also generate impact across the arts and cultural sector (p. 10). The findings identified in this research – on geographical spread, on reach and significance, on partnerships both in the UK and internationally – allow for a better understanding of how arts and culture shape all aspects of public life in the UK and beyond.

Reading this publication, I am struck by the importance of funding outside UKRI, the Leverhulme Trust and Wellcome Trust on the impacts identified in the arts and cultural sector. Arts Council England is a conspicuous partner here, but investment also comes from theatres, orchestras, production companies and local authorities. Cultural institutions are both partners and funders, pointing to vital collaborative relationships between the higher education and the arts and heritage sectors. As well as the coproduction of cultural activities and products, it is clear from Ning Baines and Federica Rossi's chapter, that impacts are mobilising and catalysing societal change, directly addressing major challenges – the Grand Challenges – faced by contemporary society. Identified beneficiaries are broad, including patients, carers, their families, schools and students, and individuals who engage with the relevant training and professional development that is part of the impact in relation to a wide range of areas including new technologies, therapeutic skills, product generation, and the cultivation of participatory or collaborative work – all these relating to social good. The arts and culture are shown to catalyse societal change in a range of myriad ways.

The role of the small specialist institutions reminds the reader of how diverse the UK higher education sector is. Impact is often built into the DNA of these organisations – with industry collaborations underpinning both teaching and research. Laura Kemp's chapter shows that big isn't necessarily best. The case studies she draws on demonstrate tangible shifts and changes in institutional and sectoral policies across government and the heritage and performance sectors. Practice research is frequently interwoven with impact – they cannot easily be disaggregated

because the research and impact run concurrently, mutually enriching each other across so many of these case studies. Furthermore, impacts are evidenced across a range of cultural and non-cultural spaces – from art galleries to refugee camps. They are also realised across both short- and longer-term collaborations. Kemp also shows how changes are mapped across very different communities, with a politics of care built into many of the collaborations with marginalised and minoritised groups. These case studies are testaments to a world where integrity in working practices and due consideration to power inequalities are part of what it means to engage in trying to forge both a better and more just society and a better and more just arts and culture sector. The arts and culture are shown across so many of these case studies to be a core part of a wider social and economic infrastructure - flexible, open and engaged in change-making. Crucially, how we ‘act’ cannot be disentangled with what we ‘do’. And rigour, integrity and respect for all those involved has to be at the core of this collaborative work.

Evelyn Wilson’s chapter on Arts Council England (ACE) National Portfolio Organisations (NPOs) demonstrates the productive partnerships between researchers in universities and the publicly funded cultural sector. The samples provided demonstrate what Wilson concludes is ‘a very high degree of connectivity between NPOs and the research base, signaling (sic) the strength of the arts within the research ecology’ specifically referencing the 50 NPOs receiving the highest level of funding from ACE (p. 118) with 312 out of 337 impact case studies citing those organisations. Wilson’s observation that 50% of the wider samples NPOs do not appear in the impact case studies suggests perhaps more nascent relationships where impact may not yet be fully realised. They may also point to work to be undertaken to support NPO capacity to engage in a more longstanding way with research in universities and vice versa. This collection looks at the REF2021 impact case studies as a way of looking forward, with the potential for further research on strategies for collaborations with ACE NPOs as well as other publicly funded organisations across the devolved administrations.

This NCACE publication is both timely and important. At a time when price and value are sometimes unhelpfully conflated, it reminds the reader of the tangible value of the higher education sector working with the arts and culture sector. The collaborations and benefits documented here speak to and engage with the here and now of our contemporary world. I began this foreword by writing on the fact that impact matters and close it by observing how the report also shows how and why the arts and culture matter and how their influence impressively seeps into and shapes so much of public life.

Executive Summary

The Research Excellence Framework is the UK's system for assessing the quality of research in UK higher education institutions. The latest instalment of the REF (the second one, the first having taken place in 2014) took place in 2021. UK higher education institutions were required to submit three different elements which were assessed separately: a selection of their outputs (e.g. publications, performances, and exhibitions), several impact case studies describing the impact of their research beyond academia, and a statement describing the institutional environment that supports research. Submissions were evaluated through a process of expert review carried out by expert panels for each of the 34 subject-based Units of Assessment (UOAs), under the guidance of four main panels. Expert panels were made up of senior academics, international members, and research users.

The analysis of the REF 2021 Impact Case Studies that forms the subject of this publication was undertaken by the National Centre for Academic and Cultural Exchange (NCACE) as part of our ongoing efforts to develop a robust evidence base on the nature of relations between research and the arts and culture sectors. It builds on several pieces of research that we have conducted since our launch in 2021, all of which can be accessed in the NCACE Collection¹. In particular, undertaking this work has created a vital opportunity for us to both reflect and build on work that we undertook at the start of NCACE when we examined the REF 2014 case studies².

As a mechanism, REF has much to tell us about the nature of relations between research and the arts and about the many different ways in which impacts are created. It also has much to tell us about how universities and the arts work together, and the wider effects and flows of such collaborations. In this publication we examine: the overarching scale and nature of these relations in Chapter 1 and how such relations coalesce around a number of key Grand Challenge areas in Chapter 2. We also examine research relations between Small Specialist arts institutions and the arts in Chapter 3 and in Chapter 4 we explore research connections with Arts Council England's National Portfolio Organisations.

As our key findings from our analyses of REF 2021 testify, research and the arts are working strongly together to produce a whole raft of ambitious, ground-breaking activities that generate and showcase new knowledge and ideas as well as addressing and supporting some of the key societal challenges of our time.

In our **first chapter** we analyse what kind of arts and culture-related impact is generated by academic research, and how (where by cases with arts and culture-related impact we mean any impact case studies which mention the arts and cultural sector as a beneficiary of impact, irrespective of the type of research that generated that impact). In particular, we investigate where arts and culture-related impact is produced (distribution of arts and culture-related impact case studies by Unit of Assessment, types of institutions, regions), where it occurs (the geographical areas impacted), which organisational features underpin its production (the number and types of

¹ <https://ncace.ac.uk/collections/>

² https://ncace.ac.uk/wp-content/uploads/2022/01/Rossi-Wilson-and-Hopkins-How-does-academic-research-generate-arts-and-culture-related-impact_-5.pdf

partners involved, sources of funding, continuation from previous REF). We also perform a further deep-dive investigation into the role of cultural institutions in REF 2021.

Our **key findings** are as follows:

- The arts and humanities have the greatest share of submitted case studies that have arts and culture-related impact, as does archaeology, however, some STEM fields like Physics, Geography and Computer Science exhibit a remarkably high share of cases with arts and culture-related impact.
- There is some evidence that units that submitted a greater share of impact cases with arts and culture-related impact had a lower share of impact cases rated 4*. The negative correlation however is weak overall, and differs across Units of Assessment. This would require a more fine-grained investigation.
- Cases with arts and culture related impact tend to have fewer numbers of formal partners cited than cases without such impact.
- Cases with arts and culture related impact are more likely to receive external funding and to have a larger number of funders than the population average. This pattern is particularly pronounced for cases with arts and culture related impact submitted in STEM fields.
- Cases with arts and culture related impact are less likely to be a continuation of cases submitted to REF 2014. This raises questions about whether arts and culture-related impact is more likely to be project-specific.
- The top ten institutions with the greatest shares of cases with arts and culture-related impact are all in the KEF ARTS cluster: as expected, specialist arts institutions focus on case studies that have arts and culture-related impact.
- Cultural institutions play an important role in supporting, enabling and benefitting from the production of research impact. We identify eight main modes of engagement of cultural institutions in the production of arts and culture-related impact. The most frequent ones are: (i) researchers collaborating with cultural institutions to develop cultural activities and/or to showcase work ; (ii) researchers helping cultural institutions to improve practices; (iii) researchers helping cultural institutions to expand their cultural offer.

In our **second chapter** we analyse how research activities in arts and culture and partnerships between researchers and the arts and culture sectors play a role in mobilising and catalysing societal change, addressing four Grand Challenges including: Place making and levelling up; Health and wellbeing; Technologies for social good; Environment and climate emergency.

Our **key findings**, based on an in-depth analysis of 90 REF impact case studies, are as follows:

- Many cases report general impacts on society, through public engagement activities, or changes in policy.
- Often, impact is reported in relation to specific groups of people. Grand Challenges relating to place, health and environment are often addressed by working with social groups that are particularly influenced by or sensitive to these challenges – such as local and indigenous communities, patients and students, children and young people.
- Impact is frequently presented in relation to specific organisations. These could be organisations that: collaborated with researchers to produce a piece of work (e.g. performance, exhibition, event, a piece of software or technology), release a piece of work developed by the researchers; implemented an intervention or programme based on the research; implemented or used a product or service built from the research; hosted activities delivered by researchers.

- Collaborations with partner organisations external to academia are core to the achievement of impact. While in most cases, the partners themselves benefit from engaging with researchers, they are often crucial in mediating the relationships that go on to generate wider impacts on society.
- Cultural organisations play a variety of roles in the collaboration. These range from ‘transactional’, where they use the research to develop work independently for their own benefit to ‘integrative’, where both partners exchange resources for mutual benefit, to ‘transformative’, where both partners engage closely together to achieve synergistic value.
- When considering value creation, in transformational collaborations, the synergies generated from the collaboration often spill over to benefit external stakeholders.
- In terms of beneficiaries: local communities were particularly frequent beneficiaries in the theme of Place making and levelling up; patients, carers and their families emerged as important beneficiaries in the theme of Health and wellbeing; schools, students and children often featured as beneficiaries in the theme of Environment and climate emergency whilst professional training and development was important across the board.
- In terms of processes: cases relating to Place making and levelling up often involved engaging local communities, to promote and preserve local pride and heritage; cases relating to Health and wellbeing often supported the delivery of interventions benefiting carers, patients and their families; cases related to Technologies for social good focussed on demonstration, showcasing and implementation of technology developed by the researchers, or the commercialisation and further adoption of products based on the research.
- Public engagement activities were important across the board, but particularly in cases relating to theme 2: Health and wellbeing and theme 3: Technologies for social good.

In our **third chapter** we analyse submissions from specialist HEIs that have interactions with, or impact upon the arts and culture sectors, to determine the types of collaborative interactions taking place, the types of impact represented, the beneficiaries affected and the funders and partners involved in each case study.

Our **key findings** were as follows:

- All arts and culture-related impact case studies in this sample were submitted to either UoA 32 (Art and Design: History, Practice and Theory) or UoA 33 (Music, Drama, Dance, Performing Arts, Film & Screen Studies).
- The scores awarded to impact case studies submitted to UoA 32 were lower than those submitted to UoA 33.
- 69% of case studies in this sample cited multiple formal partners, with the most being 25 collaborative partners involved in one case study. Museums, galleries and theatres are the most common cultural partners cited.
- Arts Council England (ACE) was the most prolific funder within this sample. ACE is listed as a funder for 16% of the arts and culture-related case studies submitted by specialist institutions, whereas for the entire REF impact database ACE is accredited to only 1.2% of the submissions overall.
- 43% of case studies in this sample cite public engagement and research dissemination as the type of impact achieved. 12% claim some type of policy influence, including impact upon national, devolved and local governmental priorities and institutional/sectoral policies.
- Collaborations with external artistic practitioners feature in 37% of case studies in this sample. 18% of case studies focus on practice research, or the work of practitioners employed by the submitting institution.

- The cultural sub-sector which featured most prolifically in this sample was the visual arts, followed by music – reflecting both the disciplinary specialisms of the submitting institutions and types of formal partners cited.
- The general public are cited as the beneficiaries in 19% of these case studies, with young people featuring as the next most widely-cited stakeholders. The case studies we can identify as 4*, had very specific groups of beneficiaries in fairly localised contexts.
- Over 50% of the case studies in this sample correspond to one of the four ‘grand challenge’ themes as explored in Chapter 2, with Health and Wellbeing being the most prolific, followed by Placemaking and the Climate Emergency.

In our **fourth chapter** we explore how Arts Council England’s National Portfolio Organisations are reflected in the REF impact case studies. We firstly take two samples; the top 50 funded organisations and the middle 50 of the portfolio to get a broad picture of relations. We then examine case studies associated with two smaller sub-samples to see how relations between research and the arts, and how they work together and support each other, are narrated through REF.

Our **key findings** are as follows:

- Across our sample of 100 Arts Council England supported National Portfolio Organisations (around 10% of the entire portfolio) we find almost 337 mentions within the REF impact case studies and we can see there is particularly high research connectivity with the top 50 funded NPOs.
- With our 50 NPOs from the middle of the portfolio, in funding terms, we see much less REF connectivity with just over a quarter being research connected. However, of those that are, almost 40% are engaged in multiple research projects.
- Research connection with theatres and museums feature strongly in the top 50 sample, whilst it is the Visual Arts that are most connected amongst our middle 50 NPOs.
- London based organisations still have significantly larger degrees of research connectivity.
- From the case studies we examined, there are two overarching ways in which the arts can be thought of as supporting, catalysing and amplifying research impact. These include: Cultural Leadership, where the arts act to support, endorse, augment and shape research and Public and Community Engagement where the arts act to curate, showcase and generate new cultural, community and educational projects and activities from research.
- Key ways in which research supports the arts and the wider communities it serves include the following overarching themes: Cultural Innovation, Grand Challenge Areas (as outlined above), Diversity and Decolonisation, and Education and Skills.
- Together they enable significant transformations, generating new knowledge, ideas, cultural activities and skills, collaborating around major societal issues and influencing government policy.
- After the AHRC, Arts Council England is the second most prolific funder amongst the case studies we examined, and is directly mentioned as supporting around one third of the case studies.

We have produced this work as part of our ongoing evidence collection and we hope that it will be useful to a range of readers from Higher Education, the arts and cultural sector, funding bodies and elsewhere within the wider policy landscape. We hope too that it will serve to inspire further research on the many different dimensions of this important subject that in some instances we have just touched upon. We hope that it will also contribute to the wider understanding of why impact matters and why research collaborations with the arts and culture sectors should be val-

ued, championed and supported. We would like to thank the team at NCACE for their deep support and patience in bringing this publication to fruition and our Sounding Board for their ongoing support and commitment to building the evidence base on research with the arts and culture sectors and the wider transformations that can occur as a result. We would also like to thank Dr Steven Hill, Director of Research, Research England.

Evelyn Wilson, Dr Laura Kemp, Dr Federica Rossi and Dr Ning Baines, NCACE and associates

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Chapter 1

Arts and culture-related impact in the 2021 REF impact case studies: an analysis of the evidence

Dr Federica Rossi

1.1. Introduction: the Research Excellence Framework and arts and culture-related impact

The Research Excellence Framework (REF) is a major national assessment that is undertaken by UK based Higher Education Institutions (HEIs) every seven years. It is a system for measuring the quality of academic research, based on the evaluation of several elements: the quality of the HEI's publications, the quality of its research environment and, since 2014, the impact that the HEI's research has on 'the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia.'³

HEIs make their submissions to different subject-based Units of Assessments, each of which has its own evaluation panels. The evaluation is based on documental evidence which includes, for each Unit of Assessment (UoA): a selection of publications, an environment statement describing the research environment and several impact case studies describing the impact of the research (the number of case studies to be submitted depends on the size of the unit in terms of FTE research-active staff). The first REF, replacing the previous RAE (Research Assessment Exercise), took place in 2014. The second REF, which was broadly similar to the first in terms of submission requirements, was held in 2021.

The REF impact case studies, which are available to download freely from the REF's website⁴, are a very valuable source for analysing how academic research in the UK generates impact. Since these cases cover all subjects, and they are submitted by all publicly-funded universities in the UK, the impact case studies provide a very comprehensive resource in order to understand what kind of impact is generated by academic research, and how. It also provides the opportunity to delve into more specific questions about impact, including questions about the extent to which academic research pertaining to arts and culture generates impact, and the extent to which the impact of academic research involves the arts and culture sector.

Investigating these issues is the main objective of the present chapter. The analysis follows a previous report (Rossi, Wilson and Hopkins, 2021), which used the REF 2014 Impact Case Studies database in order to analyse the research process underpinning the production of arts and culture-related impact. In particular, the report focused on: who performed research that generates arts and culture-related impact, the nature of those who benefitted from such impact, and the nature of the research process leading to arts and culture-related impact.

The present chapter provides a broad overview of arts and culture-related impact in REF 2021, by focusing on:

- where arts and culture-related impact is produced (distribution of arts and culture-related impact case studies by UoA, types of institutions, regions)
- where arts and culture-related impact occurs (geographical areas impacted)
- which organisational features underpin the production of arts and culture-related impact (number and types of partners involved, sources of funding, continuation from previous REF)

³ REF, 2011, p. 26

⁴ Available from the following link: <https://results2021.ref.ac.uk/impact> (last accessed 26 September 2022).

We also perform a further deep-dive investigation into the role of cultural institutions in REF 2021.

1.2. The dataset used for the analysis

This analysis builds on the database of impact case studies submitted to REF 2021. The publicly available database of REF impact case studies contains 6,361 different impact cases.⁵ For comparison, in the REF 2014 the number of case studies included in the database was 6,637. So the size of the Impact Case Studies database in REF 2021 was slightly smaller than in REF 2014.

For each impact case study, the database includes the name of the HEI that submitted it, the Unit of Assessment to which it was submitted, the impact case study's title, a short summary of the impact, a longer description of the details of the impact, a description of the underpinning research, relevant academic references, and sources to corroborate the impact. The database also includes some additional information about: whether the case was submitted to more than one UoA, whether the case was jointly submitted by different institutions, whether the case was a continuation of a case submitted to REF 2014, the countries where the impact occurred, the formal partners involved in the case, the funding programmes that supported the case and the names of the funders.

We further integrated this database with information about the REF evaluation scores obtained by the unit that submitted each case study, and about the number of their full time equivalent (FTE) staff; these can also be downloaded separately from the REF website⁶. The full list of variables in the database is reported in Appendix 1.

1.3. General overview of the submissions

The impact cases present in the database were submitted to 34 different Units of Assessment. Table 1.1 reports the total number of cases submitted to each UoA in 2021, ordered according to the number of cases submitted (in decreasing order). As a comparison we also show the number of cases submitted to each UoA in 2014.

Table 1.1. Number of cases submitted to each Unit of Assessment

Unit of Assessment	N cases REF 2021	N cases REF 2014
Business and Management Studies	504	410
Allied Health Professions, Dentistry, Nursing and Pharmacy	393	342
Engineering	391	126
Psychology, Psychiatry and Neuroscience	326	316
English Language and Literature	273	280
Total	6361	6637

⁵ The total number of impact cases submitted to the REF 2021 was 6,781, but some of these were deemed as confidential or sensitive in nature, and therefore they are not included in the database.

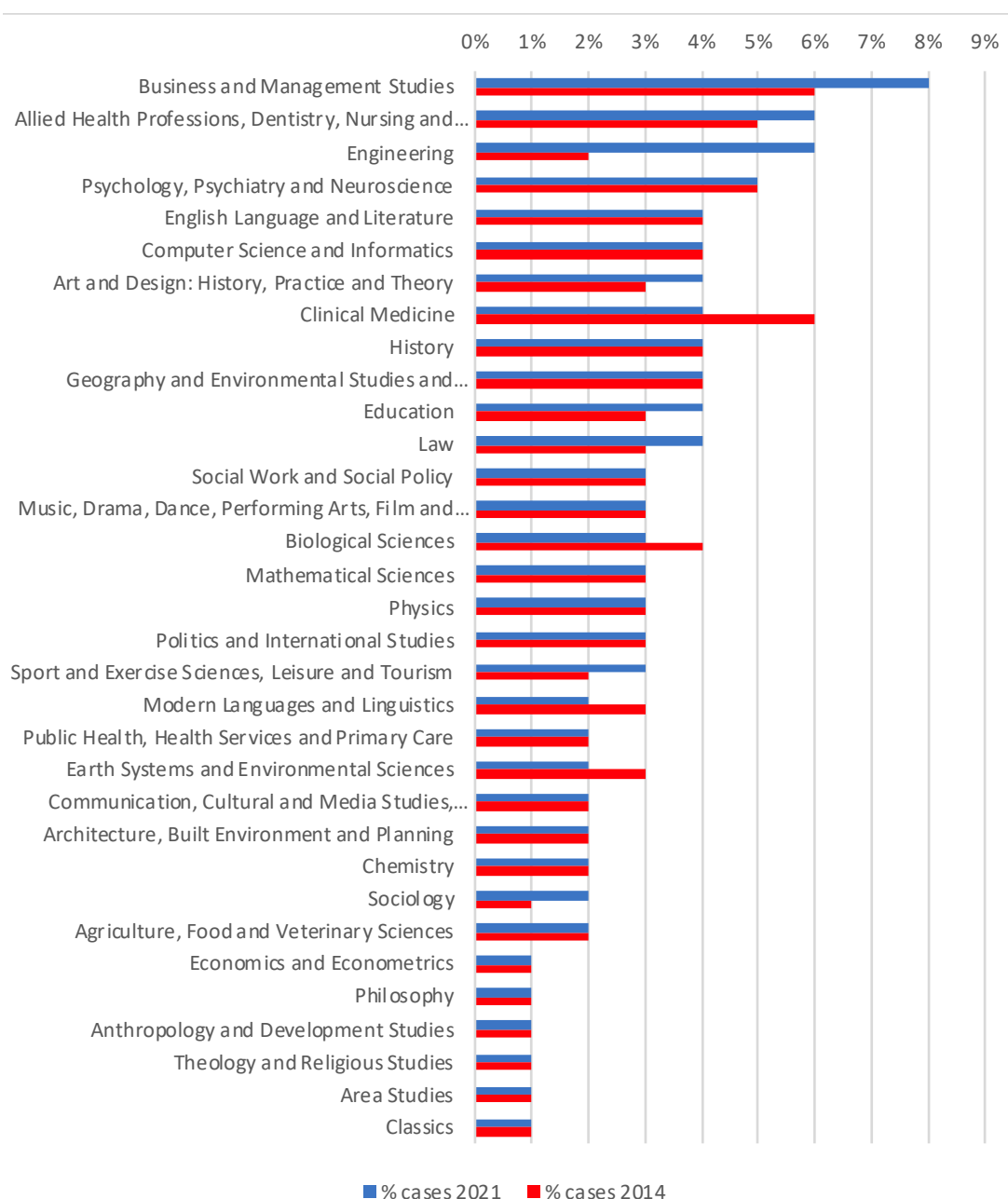
⁶ Available from the following link <https://results2021.ref.ac.uk/> (last accessed 26 September 2022).

Computer Science and Informatics	271	248
Art and Design: History, Practice and Theory	262	231
Clinical Medicine	254	383
History	240	263
Education	230	215
Law	226	216
Social Work and Social Policy	222	186
Music, Drama, Dance, Performing Arts, Film and Screen Studies	196	194
Biological Sciences	192	257
Geography and Environmental Studies	180	235
Mathematical Sciences	176	209
Physics	169	181
Politics and International Studies	166	166
Sport and Exercise Sciences, Leisure and Tourism	160	122
Modern Languages and Linguistics	154	190
Public Health, Health Services and Primary Care	151	163
Earth Systems and Environmental Sciences	148	171
Communication, Cultural and Media Studies, Library and Information Management	145	159
Architecture, Built Environment and Planning	127	140
Chemistry	113	125
Sociology	107	97
Agriculture, Food and Veterinary Sciences	103	125
Economics and Econometrics	88	98
Philosophy	85	98
Anthropology and Development Studies	77	80
Theology and Religious Studies	68	75
Archaeology*	59	0
Area Studies	57	68
Classics	48	59
Total	6361	6637

**Note to Table 1.1: In REF 2014, Archaeology was combined with Geography and Environmental Studies.*

The distribution of cases across units in the two periods was not too dissimilar, as can be seen from Figure 1.1. Business and Management Studies made up the largest share of all impact case studies submissions (its share increased in 2021), followed by Allied Health Professions, Engineering, and Psychology; each of these UoAs counted for more than 5% of all submissions, for a total of about 25% of all submissions. The first UoA in the humanities is English Language and Literature, in fifth place, with 4.3% of all submitted cases.

Figure 1.1. % cases submitted to each Unit of Assessment



The Units of Assessment which experienced greater percentage increases in the number of cases submitted were: Engineering (where the number of submitted cases more than doubled), Business and Management Studies (where the number of submitted cases increased by about 20%), Allied Health Professions, Dentistry, Nursing and Pharmacy, Social Work and Social Policy, Sport and Exercise Sciences, Leisure and Tourism, Art and Design: History, Practice and Theory, Computer Science and Informatics. The areas which experienced greater percentage drops in the number of cases submitted were, in decreasing order: Clinical Medicine, Biological Sciences, Modern Languages and Linguistics, Mathematical Sciences Agriculture, Food and Veterinary Sciences, Earth Systems and Environmental Sciences, and History.

Since the number of cases submitted depends on the number of units submitting and on the size of each unit in terms of staff, these patterns presumably reflect general changes in staff employment across the various subjects (departments closing or shrinking in specific subject areas, new departments opening or old departments expanding in other areas; these are linked to underlying changes in patterns of available funding for research, and to student demand). They could also reflect institutional choices in relation to which Units of Assessment panels to submit to, since some types of research can be submitted to different UoAs so there is an element of choice on the part of the submitting HEIs.

1.4. Identifying case studies with arts and culture-related impact

Having provided a general overview of the submissions to each UoA, we focus on the impact case studies that had arts and culture-related impact. To identify those cases, we replicated the methodology we used for the analysis of impact cases submitted to REF 2014 (Rossi, Wilson and Hopkins, 2021). We identified all impact cases where the words ‘arts’ and ‘culture’ were mentioned, irrespective of which UoA they were submitted to. In particular, we extracted all those whose ‘summary of the impact’ field includes the words “art*” or “cultur*”. This led to a set of 1,218 cases whose ‘summary of the impact’ field makes some reference to arts or culture. These cases were then manually checked to eliminate those that did not have any relationship with arts and culture production or use - for example because the word art* was used in other words like ‘arthritis’ or ‘artificial’ or ‘state-of-the-art’. This led to a reduced set of 1,075 cases submitted by 140 different institutions (equivalent to 17% of all impact cases). We call these ‘arts and culture-related impact’ cases.

The number of cases with arts and culture-related impact appears to be much greater in 2021 than in 2014 when we counted 793 cases – indeed, it is a 36% increase. This also represents an increase in the share of all impact cases with arts and culture-related impact, from 12% in 2014 to 17% in 2021. However, the methodology has some limitations particularly when used comparatively – for example, cases could have arts and culture-related impact without mentioning the words ‘arts’ or ‘culture’ or their composites. Therefore, all that we can say when comparing the cases we have identified as having arts and culture-related impact in 2014 and 2021 is that in the latter database we have a greater number of cases that use the word ‘arts’ and ‘culture’ and their composites in the summary descriptions of the impact achieved.

Because of the limitations in the comparability between the 2014 and 2021 impact case studies when using this approach to identifying cases with arts and culture-related impact, in the following, we refrain from doing further comparisons between 2014 and 2021 and we focus on the analysis of the 2021 cases only.

1.5. Where is arts and culture-related impact produced, and where does impact occur?

In this section we analyse how the cases with arts and culture-related impact were distributed according to several dimensions; the UoAs they were submitted to and the HEIs that submitted them, including in relation to their geographical location.

Table 1.2 shows the number of cases with arts and culture-related impact submitted to each UoA in 2021. The greater number of impact cases with arts and culture-related impact were submitted to UoAs in the humanities, as could be expected. These are followed by social sciences (Education, Business and Management Studies) but there are a small number of cases with arts and culture-related impact across all Units of Assessment (apart from Economics and Econometrics).

If we consider the percentage of cases submitted to each UoA that have arts and culture-related impact, the ranking changes slightly. The humanities still have the greatest share of submitted cases related to arts and culture (archaeology also has a large share of such cases). Although Business and Management Studies and Education have a lot of cases with arts and culture-related impact, these constitute only 5.36% and 12.17% of all submitted cases respectively. It is remarkable that 11.24% of cases submitted to Physics mention art or culture. There appears to be some engagement on the part of other STEM fields with arts and culture as well: 7.78% of cases submitted to Geography and Environmental Studies⁷, and 5.9% of cases submitted to Computer Science, claim impact related to arts and culture.

Table 1.2. Cases with arts and culture-related impact submitted to each Unit of Assessment

Unit of Assessment	N cases	% cases
Music, Drama, Dance, Performing Arts, Film and Screen Studies	137	69.90%
Art and Design: History, Practice and Theory	180	68.70%
English Language and Literature	165	60.44%
Classics	28	58.33%
Modern Languages and Linguistics	71	46.10%
Communication, Cultural and Media Studies, Library and Information Management	63	43.45%
Archaeology	24	40.68%
History	95	39.58%
Theology and Religious Studies	20	29.41%
Anthropology and Development Studies	21	27.27%
Area Studies	15	26.32%
Philosophy	14	16.47%
Sociology	16	14.95%
Education	28	12.17%
Physics	19	11.24%
Architecture, Built Environment and Planning	12	9.45%
Politics and International Studies	14	8.43%
Geography and Environmental Studies	14	7.78%
Social Work and Social Policy	16	7.21%

⁷ Geography has been formally recognised by HEFCE as a part-STEM subject for both teaching and research in Higher Education (Royal Geographical Society, 2011). In practice it crosses into both STEM and the social sciences and humanities.

Unit of Assessment	N cases	% cases
Computer Science and Informatics	16	5.90%
Business and Management Studies	27	5.36%
Law	11	4.87%
Chemistry	5	4.42%
Biological Sciences	8	4.17%
Allied Health Professions, Dentistry, Nursing and Pharmacy	16	4.07%
Sport and Exercise Sciences, Leisure and Tourism	6	3.75%
Psychology, Psychiatry and Neuroscience	12	3.68%
Mathematical Sciences	5	2.84%
Earth Systems and Environmental Sciences	4	2.70%
Engineering	8	2.05%
Agriculture, Food and Veterinary Sciences	2	1.94%
Public Health, Health Services and Primary Care	2	1.32%
Clinical Medicine	1	0.39%
Economics and Econometrics	0	0.00%
	1075	

To analyse the types of institutions that submitted cases with arts and culture-related impact, we classify them using the clusters proposed by the Knowledge Excellence Framework (KEF) exercise⁸ (with the caveat that HEIs in Scotland, Wales and Northern Ireland are not included in this classification). We find, as expected, that institutions in the KEF ARTS cluster are those with the greatest share of cases with arts and culture-related impact (68.25%), followed by institutions in the KEF Social Sciences & Business cluster (36.84%) while institutions in the KEF STEM cluster are those with the lowest shares of cases with arts and culture-related impact (only 2.6%). As shown in Table 1.3, the greatest numbers of cases with arts and culture-related impact have been submitted by institutions in clusters V (271 cases), E (217 cases) and X (187 cases).

Table 1.3. Cases with arts and culture-related impact submitted by HEIs in different KEF clusters

KEF cluster	N universities	N cases	N cases with arts and culture	% cases with arts and culture
E	29	1218	217	17.82%
J	17	427	108	25.29%
M	16	243	60	24.69%
X	20	1248	187	14.98%
V	16	1899	271	14.27%
ARTS	16	63	43	68.25%
STEM	9	77	2	2.60%

⁸ See: <https://kef.ac.uk/dashboard>

KEF cluster	N universities	N cases	N cases with arts and culture	% cases with arts and culture
Social Sciences & Business	2	19	7	36.84%

In particular, the top ten institutions with the greatest shares of cases with arts and culture-related impact are all in the ARTS cluster: Guildhall School of Music & Drama, Norwich University of the Arts, Rose Bruford College of Theatre and Performance, Royal Northern College of Music, The Royal Central School of Speech and Drama, all have 100% of their cases with arts and culture-related impact. Leeds Arts University, University of the Arts London, Courtauld Institute of Art and University for the Creative Arts have 75% or more of their cases with arts and culture-related impact. These submissions are explored further in Chapter 3.

If we categorise institutions according to the quality of their research, using the share of research outputs rated as 4* in the REF 2021 as a measure of research quality, we do not find a significant correlation between research quality and share of case studies with arts and culture-related impact. The institutions in the top quartile of the distribution have on average 21.2% of case studies with arts and culture-related impact, while those in the bottom quartile have on average 19.3%.

If we categorise institutions according to the quality of their impact, using the share of impact cases rated as 4* in the REF 2021 as a measure of impact quality, we find a negative correlation between impact quality and share of case studies with arts and culture-related impact: the institutions in the top quartile of the distribution have on average 18.3% of case studies with arts and culture-related impact, while those in the bottom quartile have on average 27.10%. Additionally, there is a negative, but weak, correlation, at the institutional level, between the share of impact cases rated as 4* and the share of impact cases with arts and culture-related impact (-0.12).

This could indicate that case studies with arts and culture-related impact are less likely to be rated as being of 4* quality than other cases. Since the evaluations of individual impact cases are not available, it is not possible to know this for certain.

Using submitting UoAs as the unit of analysis, we find a slightly negative correlation (-0.05) between the share of impact cases with arts and culture-related impact and the share of impact cases rated as 4*; while the correlations between the share of impact cases with arts and culture-related impact and the share of impact cases rated as 3*, 2* and 1* are weakly positive (respectively, 0.02, 0.04 and 0.03). If we compute these correlations for each of the UoAs rather than for the whole population of submitting units, we find that the correlation between the share of impact cases with arts and culture-related impact and the share of impact cases rated as 4* is negative for 23 UoAs and positive for only 10 UoAs.

There seems to be, therefore, some weak evidence that arts and culture-related impact case studies are less likely to be rated 4*.

We do not find significant differences across regions of institutions that submitted cases with arts and culture-related impact. Table 1.4 shows that the greatest share of cases with arts and culture-related impact are found in the South West (19.32%), followed by the West Midlands (18.99%) and the South East (18.17%) while the lowest shares of cases with arts and culture-related impact are found in the North East (15.17%) and the East of England (15.17%).

ed impact are found in Yorkshire and the Humber (14.95%). The greatest numbers of cases with arts and culture-related impact have been submitted by institutions in London (178 cases), the South East (163 cases) and Scotland (116 cases).

The database contains some information on the countries that were impacted by the case studies, so we can consider the geographical dimension of impact case studies in terms of the locations where the impact occurred, rather than in terms of the location of the institutions where the cases originated from.

Table 1.4. Cases with arts and culture-related impact submitted by institutions in different regions

Region	N universities	N cases	N cases with arts and culture	% cases with arts and culture
East Midlands	9	428	68	15.89%
East of England	9	412	71	17.23%
London	35	1097	178	16.23%
North East	5	299	51	17.06%
North West	14	634	113	17.82%
South East	17	897	163	18.17%
South West	12	471	91	19.32%
West Midlands	11	416	79	18.99%
Yorkshire and the Humber	11	535	80	14.95%
Northern Ireland	3	138	21	15.22%
Scotland	17	746	116	15.55%
Wales	8	280	43	15.36%

The geographical dimension of arts and culture-related impact

The Units of Assessment where cases with arts and culture-related impact have an impact on the greatest number of countries are, on average, in STEM fields: Mathematical Sciences, Clinical Medicine, Physics, Agriculture, Food and Veterinary Sciences, Computer Science and Informatics, Biological Sciences. These are followed by UoAs in fields which, by their nature, tend to have a broad geographical outlook: Anthropology and Development Studies and Geography and Environmental Studies. At the other extreme, among the UoAs whose cases have the narrower geographical impact, on average, we find: Art and Design, Politics and International Studies, Communication, Cultural and Media Studies, Library and Information Management, Sport and Exercise Sciences, Leisure and Tourism, English Language and Literature, Social Work and Social Policy, Area Studies and Law (as shown in Table 1.5).

It could be argued that the knowledge produced in many of these subject areas tends to be more contextual and linked to specific political, economic, social and cultural settings – which implies that the impact it generates is also more geographically localised. There could also be a more crit-

ical interpretation according to which academics in certain subjects tend to develop more geographically localised networks.

Some cases stated that the impact was ‘global’ or ‘worldwide’. These constitute a small share of all cases, however, there are large differences across Units of Assessment when we focus only on cases with arts and culture-related impact. Tourism and Public Health, Health Services and Primary Care, more than 20% of cases with arts and culture-related impact have global impact (in these units, however, the number of cases with arts and culture-related impact is quite small). Instead, in other UoAs less than 2% of cases (and often none of them) have global impact.

Table 1.5. Average number of countries impacted

Unit of Assessment	All cases	Cases with arts and culture-related impact
Mathematical Sciences	2.37	13.40
Clinical Medicine	4.31	7.00
Physics	4.40	5.53
Agriculture, Food and Veterinary Sciences	3.59	5.00
Computer Science and Informatics	3.23	4.56
Biological Sciences	3.93	4.50
Anthropology and Development Studies	5.01	3.71
Geography and Environmental Studies	3.68	3.64
Engineering	3.49	3.63
Psychology, Psychiatry and Neuroscience	2.87	3.58
Education	2.89	3.46
Chemistry	2.62	3.40
Modern Languages and Linguistics	3.27	3.28
Earth Systems and Environmental Sciences	7.58	3.25
Business and Management Studies	2.14	3.15
Philosophy	2.27	2.64
Allied Health Professions, Dentistry, Nursing and Pharmacy	3.88	2.63
Theology and Religious Studies	1.94	2.55
Classics	4.21	2.46
History	1.94	2.22
Music, Drama, Dance, Performing Arts, Film and Screen Studies	2.04	2.21
Sociology	2.91	2.19
Archaeology	3.49	2.17
Architecture, Built Environment and Planning	2.94	2.08
Public Health, Health Services and Primary Care	3.23	2.00
Art and Design: History, Practice and Theory	2.55	1.93
Politics and International Studies	2.97	1.86

Unit of Assessment	All cases	Cases with arts and culture-related impact
Communication, Cultural and Media Studies, Library and Information Management	1.78	1.86
Sport and Exercise Sciences, Leisure and Tourism	4.39	1.83
English Language and Literature	1.75	1.60
Social Work and Social Policy	2.71	1.56
Area Studies	3.19	1.33
Law	1.96	0.91

This broadly reflects a similar pattern as that reported in relation to the number of countries impacted, with some exceptions (e.g. cases in Leisure and Tourism tend to have impact on a smaller number of countries, but they report a relatively larger share of cases that have worldwide impact).

1.6. How is the production of arts and culture-related impact organised?

In this section we examine some organisational characteristics associated with the impact case studies: the number and types of formal partners involved in each case, the external funding received, the number of funders, the continuation of cases submitted to the previous REF.

Partner organisations involved in arts and culture-related impact

The REF database reports information on the number of formal partners involved in each case study. The UoAs with the largest average numbers of formal partners reported are, generally, in the STEM field: Archaeology, Earth Systems and Environmental Sciences, Engineering, Architecture, Built Environment and Planning, Physics, Geography and Environmental Studies, Computer Science and Sciences, Leisure and Tourism and Communication, Cultural and Media Studies, Library and Information Management.

Table 1.6. Average number of formal partners

Unit of Assessment	All cases	Cases with arts and culture-related impact
Archaeology	7.98	4.83
Earth Systems and Environmental Sciences	5.03	3.00
Engineering	4.83	4.50
Architecture, Built Environment and Planning	4.80	3.17
Physics	4.59	3.53
Geography and Environmental Studies	4.02	5.57
Computer Science and Informatics	3.37	3.50
Allied Health Professions, Dentistry, Nursing and Pharmacy	2.92	3.31
Sociology	2.90	4.94
Agriculture, Food and Veterinary Sciences	2.75	0.00

Unit of Assessment	All cases	Cases with arts and culture-related impact
Art and Design: History, Practice and Theory	2.70	1.64
Biological Sciences	2.43	1.50
Music, Drama, Dance, Performing Arts, Film and Screen Studies	2.40	2.88
Mathematical Sciences	2.36	11.40
Public Health, Health Services and Primary Care	2.36	1.50
Modern Languages and Linguistics	2.16	1.65
Communication, Cultural and Media Studies, Library and Information Management	2.11	3.17
<i>continued on next page</i>		
Business and Management Studies	2.01	1.67
Social Work and Social Policy	1.99	1.25
Politics and International Studies	1.86	1.36
Education	1.79	2.18
Chemistry	1.76	0.60
Clinical Medicine	1.73	0.00
History	1.68	2.51
Sport and Exercise Sciences, Leisure and Tourism	1.64	2.83
Area Studies	1.54	0.80
English Language and Literature	1.53	1.73
Psychology, Psychiatry and Neuroscience	1.50	1.33
Classics	1.31	0.86
Philosophy	1.08	3.07
Anthropology and Development Studies	1.04	0.86
Law	1.01	0.91
Theology and Religious Studies	0.97	0.50

The 1,075 cases with arts and culture-related impact in our sample report engagement with 1,947 formal partners as shown in Table 1.6. These include 146 UK-based universities and public research organisations, 357 universities and public research organisations based abroad, 289 cultural institutions (museums, libraries, archives, galleries, collections, cathedrals, heritage sites) as well as a variety of other partners, such as arts organisations, sports organisations, local governments, governmental bodies, charities, associations, schools, religious organisations, and companies. Some organisations appear as partners in several case studies. Those that appear most frequently are universities (the Open University features as formal partner in 23 cases, UCL in 21 cases, the University of Exeter in 20 cases, the University of Oxford in 18), cultural institutions such as the British Library (22 cases), the British museum (19 cases), and charities such as the National Trust (14 cases).

Considering partnerships with HEIs in the UK, the HEIs that appear more often as formal partners are larger universities, often Russell group ones, although the most frequent partner is the

Open University, and there are also some newer universities that appear quite frequently, such as Coventry, the University of the West of England, Bath Spa, University of Hertfordshire. Table 1.7 shows the UK HEIs that appear more frequently as partners in impact case studies that have produced arts and culture-related impact, considering only those that have five collaborations or more.

Considering partnerships with international universities and public research organisations, partners come from 70 different countries. The majority of these are based in the US (33 organisations), Germany (31), France (27), Spain (23) and Italy (20). Figure 1.2 shows the list of countries where partner universities and public research organisations are based. We show only those countries where at least two different partner organisations are present; there are another 30 countries, not shown in the figure, where there have been collaborations with one university or public research organisation. The figure shows, separately, the number of organisations and the number of collaborations, since the same organisation can participate in more than one collaboration. The main partners are in the US and Europe, though Australia, India, Canada, Brazil, Egypt and some countries in Asia and Africa also appear.

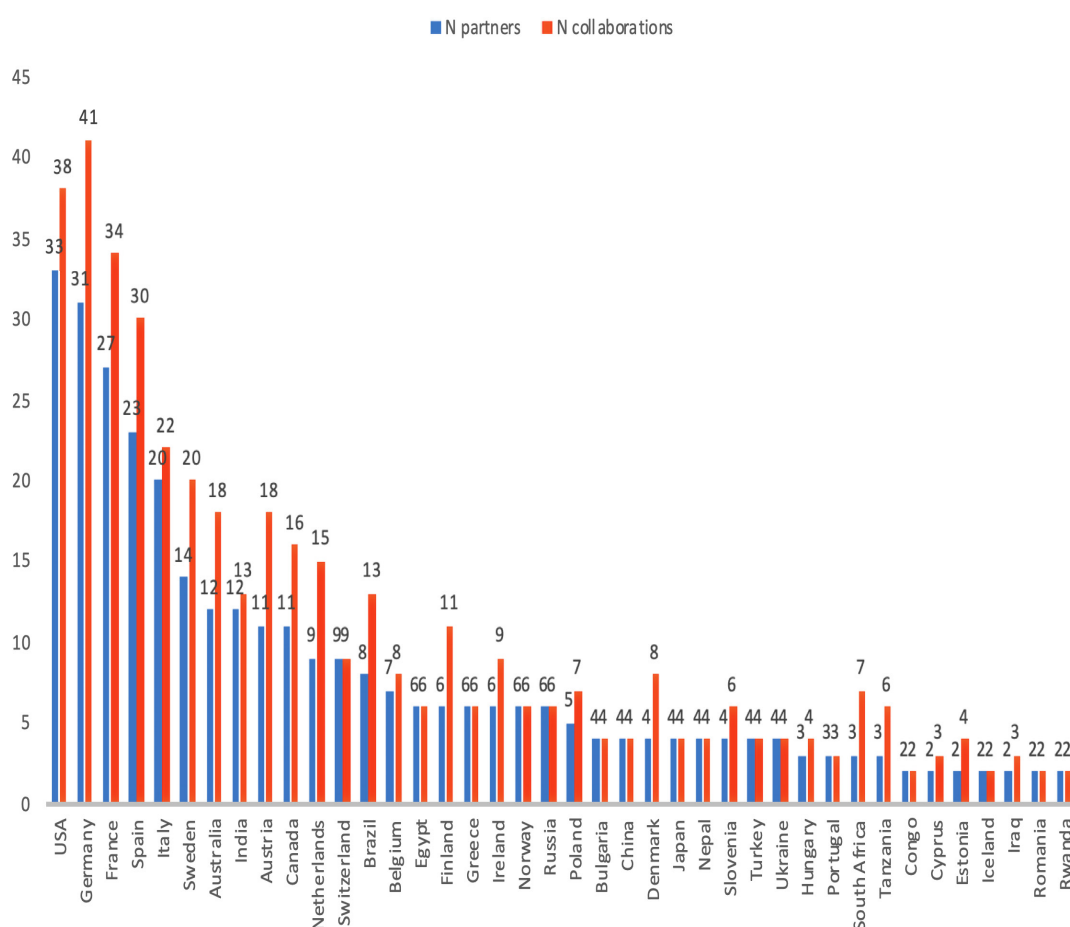
Table 1.7. UK HEIs that are formal partners in cases with arts and culture-related impact

UK-based HEI	No. of collaborations
Open University	23
University College London	21
University of Exeter	20
University of Oxford	18
University of Edinburgh	13
University of Durham	13
University of Leeds	13
University of Glasgow	12
King's College London	11
University of Bristol	10
University of Birmingham	9
Coventry University	7
University of Manchester	7
University of Newcastle	7
University of Nottingham	7
University of the West of England	7
University of Bath	7
Brunel University	6
University of Plymouth	6
University of Warwick	6
Bath Spa University	5
Goldsmiths, University of London	5
University of East Anglia	5

UK-based HEI	No. of collaborations
University of Hertfordshire	5
University of Huddersfield	5
University of Kent	5
University of Liverpool	5
University of Cambridge	5

Overall, 63% of the foreign universities and public research organisations with which HEIs collaborate are in Europe, 13% in North America, 11% in Asia, 6% in Africa, 4% in Central and South America, and 3% in Australia.

Figure 1.2. Collaborations with universities and public research organisations abroad, by country



The other very frequent types of partner are:

- cultural institutions – such as museums, libraries, archives, galleries, collections, cathedrals, heritage sites. The most frequent collaborators in this group (5 or more cases) are the British Library, the British Museum, the V&A, the Tate, the National Gallery, the Science

Museum, the British Film Institute, the Imperial War Museum, the Manchester Museum, the National Library of Wales;

- arts organisations – such as festivals, theatre companies, dance companies, orchestras, arts centres, artists. Compared with cultural institutions, these smaller organisations tend to appear in one or two impact cases each at the most;
- charities active in a variety of fields. Some large charities appear as partners in several cases (National Trust, English Heritage, Runnymede Trust) but the majority of partner charities are small organisations that only appear as partners once;
- local councils and local development bodies (such as local enterprise partnerships). Again, most of these organisations only appear once as partners. The majority of the collaborations involve UK councils, boroughs, city or metropolitan authorities, however there are also some collaborations with cities and municipalities abroad, mainly in Europe;
- government agencies, funding agencies; here the main partners are the British Council (11 cases) and the Arts Council (7 cases), with the majority of government departments and agencies appearing as partners in only one case. There are numerous collaborations with foreign government departments in African countries such as Egypt, Libya, Iraq, Ghana, Liberia, seemingly linked to research on heritage and antiquities.

There are some collaborations with other types of organisations as well, including private companies in a variety of sectors (mainly in the creative industries), sports organisations, religious organisations, hospitals, professional societies and trade unions, schools.

External funding underpinning in arts and culture-related impact

The greatest shares of cases with external funding are found in STEM fields.⁹ If we consider the shares of cases with arts and culture-related impact that have received external funding, the UoAs with the greatest shares are still in STEM (although not exactly the same as those which have received greater external funding in general): Public Health, Health Services and Primary Care, Clinical Medicine, Sociology, Agriculture, Food and Veterinary Sciences, Physics, Computer Science and Informatics, Chemistry and Mathematical Sciences. The lowest shares of cases with arts and culture-related impact receiving external funding are in the arts and humanities and in the social sciences as well as in Engineering, as shown in Figure 1.3.

Interestingly, in many UoAs the share of cases with external funding is higher for those that have arts and culture-related impact than for all cases.

The only exceptions, where the share of cases with arts and culture-related impact with external funding is lower than the share with external funding in general, are Archaeology, Geography and Environmental Studies, Architecture and Built Environment, Area Studies, Art and Design, Engineering, Business and Management Studies, Classics and Law.

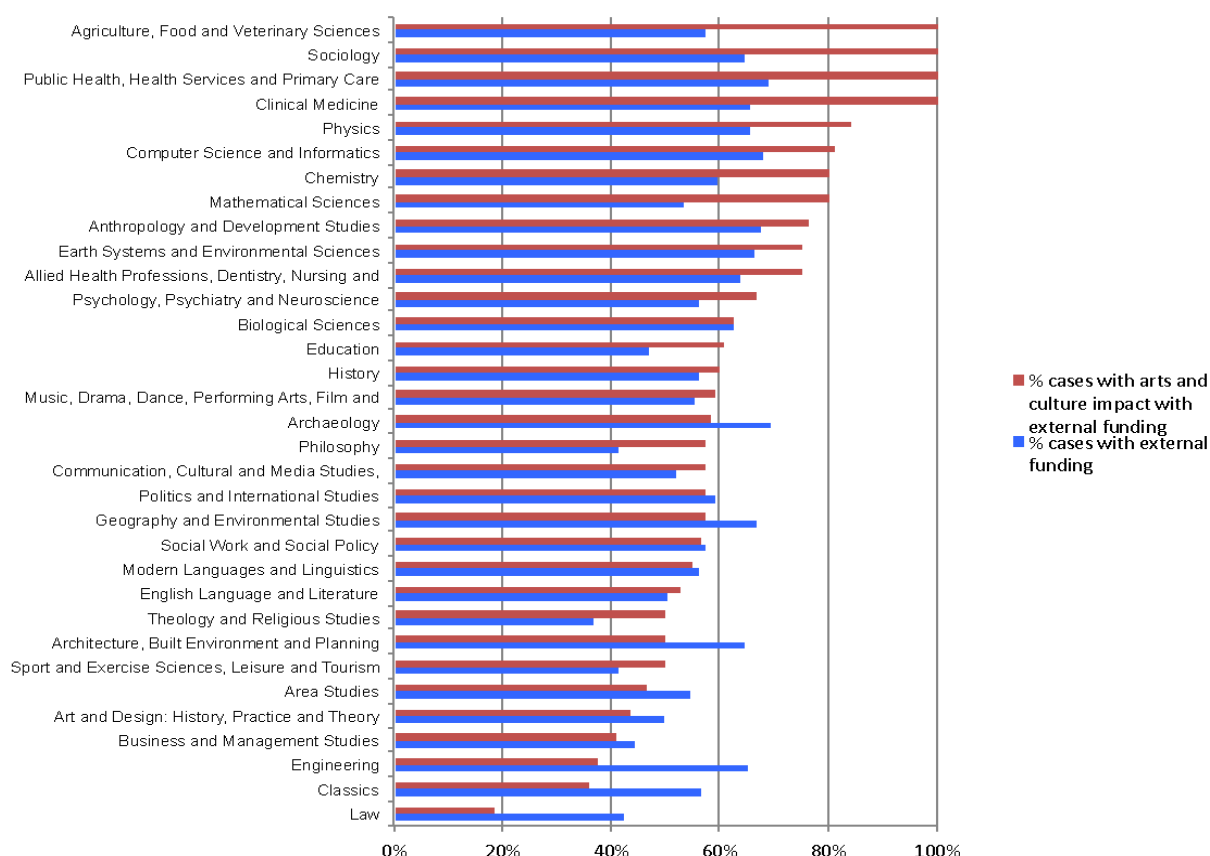
Since the share of cases with arts and culture-related impact with external funding is particularly high for those subject areas that are in STEM fields, one possible interpretation is that academics in these fields will engage in research that has some arts and culture-related content or applications only if they have specific external funding in order to do so. Instead, for academics working in arts and humanities subject (and to a lesser extent the social sciences) engaging in research

⁹ Archaeology, Public Health, Health Services and Primary Care, Computer Science and Informatics, Anthropology and Development Studies, Geography and Environmental Studies, Earth Systems and Environmental Sciences, Physics and Clinical Medicine.

that has arts and culture-related content or applications is part of their remit, and they will do so without necessarily having external funding.

It is also notable that while a smaller share of cases in the arts and humanities receive external funding than it is the case for STEM, the share of cases that receive external funding is still quite high (between 40% and 60% in most fields), and it is particularly high in the case of Music, Drama, Dance, Performing Arts, Film and Screen Studies (nearly 60%).

Figure 1.3. Share of cases receiving external funding, by Unit of Assessment



When it comes to the average number of funders, we find a similar pattern. The average number of different funders is slightly higher, on average, for cases with arts and culture-related impact (2.6 funders on average) than for the overall sample (2.23 funders on average).

Particularly high numbers of funders are found for cases with arts and culture-related impact in STEM fields: clinical medicine, engineering, mathematical sciences, public health, physics, biology, earth systems and environment, agriculture. Hence, academics in STEM subjects seem to work with a greater number of funders, and this number is particularly high for cases that have arts and culture-related impact.

In the case of the social sciences and arts and humanities, the number of external funders is on average lower, and the difference between cases with arts and culture-related impact and other cases is not as large (in fact, there are numerous fields where the average number of funders is lower for cases with arts and culture-related impact).

Considering in greater detail the sources of external funding for the 1,075 cases with arts and culture-related impact, these case studies report 509 different funders which appear 1857 times (each case can have more than one source of funding). The most frequently cited source of external funding is the Arts and Humanities Research Council (AHRC), which is cited 401 times – this means that 401 cases with arts and culture-related impact were at least partly funded by the AHRC. The second most frequent cited source is the Leverhulme Trust (129 cases) followed by the European Commission (99 cases). Table 1.8 lists the top sources of external funding, those cited in 10 or more impact case studies.

Table 1.8. Most frequently cited sources of external funding

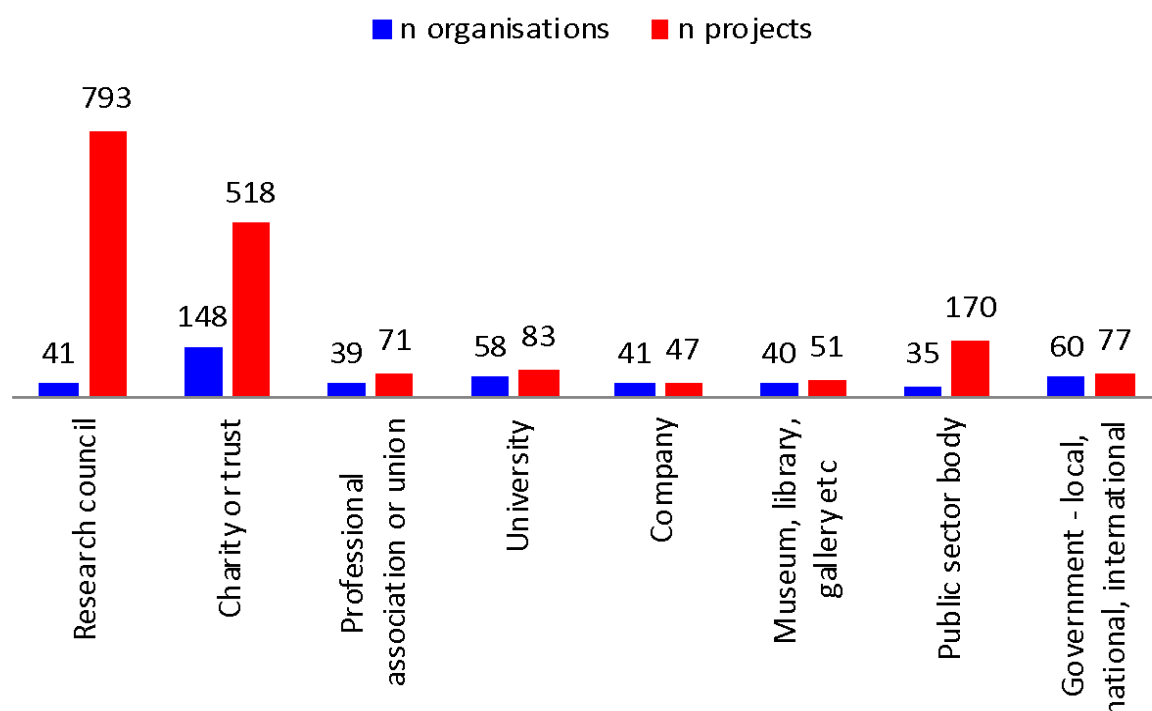
External funder	N projects funded
AHRC	401
Leverhulme Trust	129
European Commission	99
British Academy	95
ESRC	91
Arts Council England	73
Wellcome Trust	50
EPSRC	37
European Research Council	32
Heritage Lottery Fund	29
STFC	26
British Council	19
Innovate UK	19
UKRI	18
Research England	17
NERC	15
Royal Society	14
Royal Society of Edinburgh	12

There are many different types of organisations that provide funding. Figure 1.4 shows the number of funding organisations by type, and the number of projects funded by each type of funding organisations. 41 different research councils (UK and international) provide funding for 793 projects so they play a very important role. Charities or trusts are also very important, with 148 organisations providing funding for 518 projects. These of course range from some charities that fund a lot of projects (Leverhulme Trust, British Academy, Wellcome Trust, Heritage Lottery Fund), to many charities which only fund one project. International, national and local governing bodies also provide funding, and so do universities, companies, cultural institutions (museums, libraries, galleries etc.) and professional associations and unions.

Impact continuing from REF2014

Cases with arts and culture-related impact are less likely to be a continuation of cases from REF 2014 than other cases. The continuation rate (share of cases that are a continuation of cases submitted to REF 2014) is 5.06% for all cases while it is only 2.42% for cases with arts and culture-related impact.

Figure 1.4. External funders by type



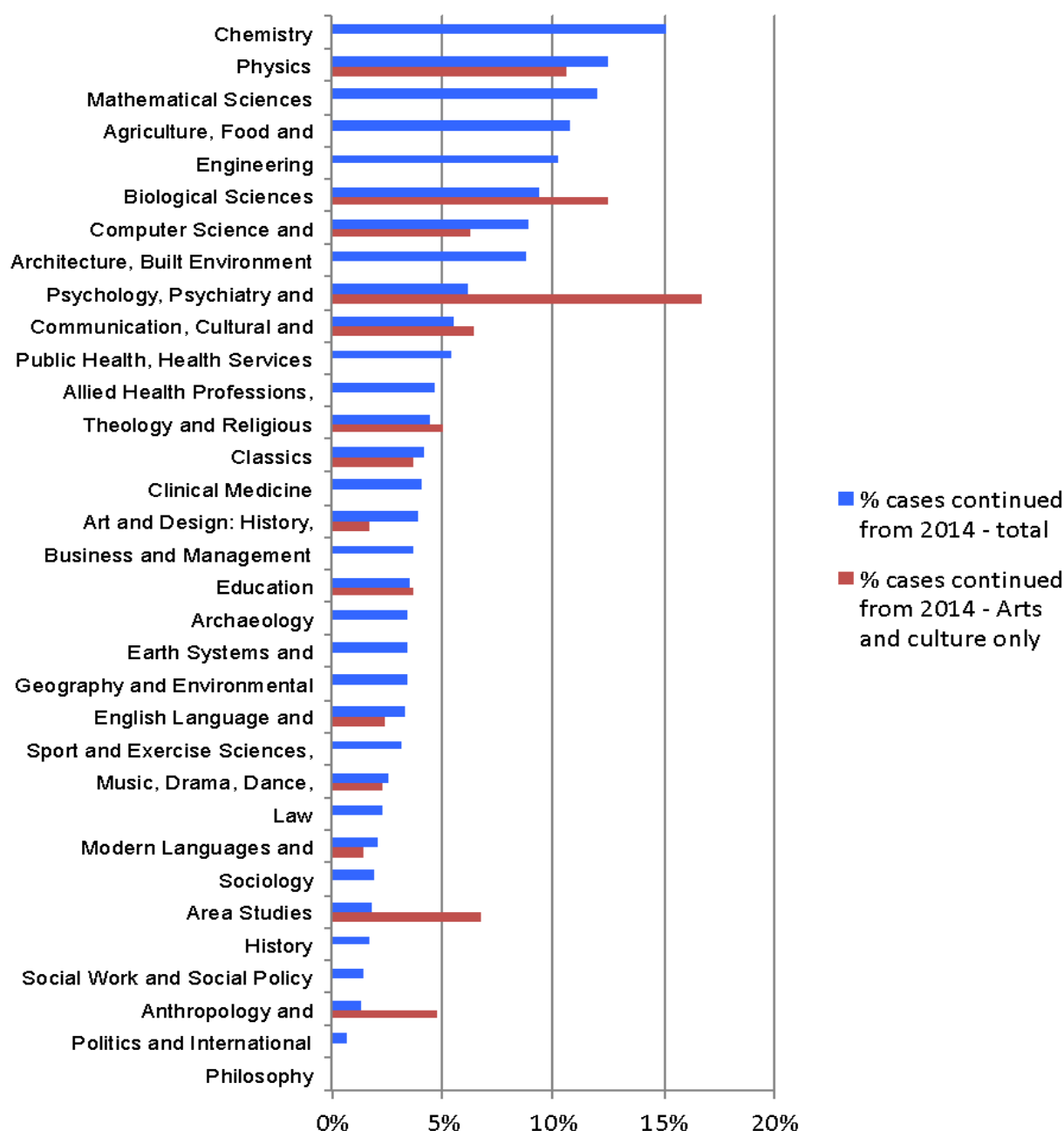
There are notable differences between Units of Assessment. When we consider all the impact cases studies, we can see that the share of cases that are continuation of previous cases submitted to REF 2014 is higher in STEM – Chemistry, Physics, Engineering, Mathematics, Agriculture, each have continuation rates above 10%. Whereas the rates tend to be below 5% in the social sciences and the arts and humanities, as well as in medicine.

When we consider the subset of cases with arts and culture-related impact, we find that, in most fields, continuation rates are lower for cases with arts and culture-related impact than the average of all cases. There are a few exceptions: in Psychology, Psychiatry and Neuroscience, 16.7% of cases were continued from 2014 (while the overall average was 6.1%), and slightly higher continuation rates than the average of all cases are found in Biological sciences, Communication, Cultural and Media Studies, Library and Information Management, Anthropology and Development Studies, Theology and Religious Studies, and Area Studies (see Figure 1.5).

This finding raises the question as to whether arts and culture-related impact is more short-lived, or whether it is more project-specific, and it is more difficult to repurpose the research outcomes to generate impact beyond those obtained initially in a specific context or with specific stakeholders – something that appears to be more achievable in the STEM subjects. It is also possible that

there may be many enduring partnerships between HEIs and the arts, but these may not necessarily result in impacts that make it into the REF.

Figure 1.5. Share of impact case studies that continue cases submitted to REF 2014

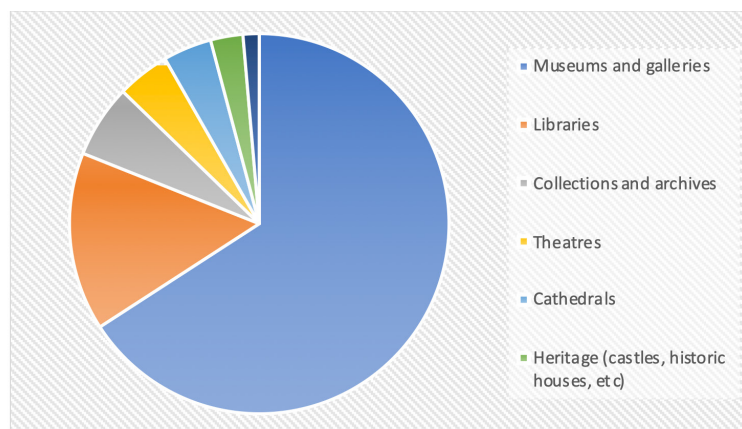


1.7. The role of cultural institutions in REF 2021 cases with arts and culture-related impact

Cultural institutions have an acknowledged mission to engage in the conservation, interpretation and dissemination of cultural, scientific, and environmental knowledge, and promote activities meant to inform and educate citizens on associated aspects of culture, history, science and the

in general (191 out of 289 collaborators, or 66%), followed by libraries, collections and archives, theatres and cathedrals. There are also a few heritage sites (castles, historic houses and dock-yards) and two archaeological parks, one sculpture park and a botanical park.

Figure 1.6. Cultural institutions as partners, by type



The cases that involved cultural institutions as partners were, for the most part, submitted to UoAs in the arts and humanities, as can be seen in Table 1.10. The first seven UoAs with cases involving cultural institutions as partners are all in the arts and humanities fields and together, they account for 81.2% of the cases with cultural institutions as partners. Yet, these cases are spread across a wide range of Units of Assessment – a few cases with cultural institutions as partners can be found in another 18 UoAs in STEM and the social sciences.

Table 1.10. Cases with cultural institutions as partners, by Units of Assessment

Units of Assessment	No. of cases
Art and Design: History, Practice and Theory	37
English Language and Literature	35
History	27
Music, Drama, Dance, Performing Arts, Film and Screen Studies	21
Communication, Cultural and Media Studies, Library and Information Management	14
Modern Languages and Linguistics	14
Archaeology	11
Classics	5
Computer Science and Informatics	4
Geography and Environmental Studies	4
Architecture, Built Environment and Planning	3
Education	3
Engineering	3
Theology and Religious Studies	3
Anthropology and Development Studies	2
Grand Total	202

Units of Assessment	No. of cases
Biological Sciences	2
Mathematical Sciences	2
Philosophy	2
Politics and International Studies	2
Sociology	2
Allied Health Professions, Dentistry, Nursing and Pharmacy	1
Area Studies	1
Earth Systems and Environmental Sciences	1
Law	1
Physics	1
Social Work and Social Policy	1
Grand Total	202

We then analysed the qualitative descriptions of the impact generated by the 202 cases with arts and culture-related impact that had cultural institutions as partners. We read the “summary of the impact” fields for all of these cases; if the role of the cultural institution was not presented sufficiently clearly in the summary, we also read the more detailed descriptions contained in the “details of the impact” fields. We coded several types of information from the analysis of these qualitative descriptions:

- the modes of engagement between researchers/HEIs and the cultural institutions (Table 1.11);
- whether the collaboration with the cultural institution was the main focus of the impact case study, or whether it was part of a broader project;
- the types of actors impacted (Table 1.12);
- the types of impacts generated (Table 1.13).

Our analysis highlighted eight different modes of engagement between researchers/HEIs and cultural institutions. The distinctions between these modes are sometimes quite subtle, and in some cases more than one mode of engagement was present. For 18 cases, we were unable to clearly identify the role of the cultural institution; that is, the cultural institution was listed as a collaboration partner, but neither the summary of the impact nor the details of the impact fields explained clearly what its role was in the process of impact generation. In the rest of this section, we focus on the other 184 cases where we were able to understand the role of the cultural institution and how the engagement took place.

Co-production of cultural activities

By far the most frequent mode of engagement involves researchers collaborating with one or more cultural institutions to co-produce cultural activities, such as exhibitions, performances, events, screenings, festivals, operas, art installations, etc. We noted that this mode of engagement characterised at least 87 cases (about 43%). These cultural activities could be directed at the general public or at specific audiences such as young people, patients, prisoners, refugees and so on.

These collaborations usually benefit the audiences attending and participating in the cultural activities produced, as well as artists and specific communities. The cultural institutions themselves also usually derive some benefit, often economic (ticket sales, donations) but also intangible benefits such as greater visibility and improved knowledge for curatorial and professional staff. In some cases, benefits were reported on local economies by means of greater attractiveness to visitors and tourists more generally.

In some cases, the collaboration seemed to involve a more passive role of the cultural institutions, which simply provided venues where researchers showcased their work. In such cases, not a lot of emphasis was placed on the knowledge exchange between researchers and cultural institution staff. These are, however, a much smaller set of cases (12 cases, or about 6%), which highlights that in the majority of cases there was a stronger involvement of the cultural institution in the exchange of knowledge.

Co-production of products and services

In a small number of cases (we identified 8, about 4%), the collaboration led to the co-production not so much of cultural activities or cultural artifacts, but of other types of products and services. For example, some cases led to the production of software tools (apps, crowdsourcing platforms); other cases led to the production of services (educational programmes, training, fellowship programmes...).

Broadening of cultural offer

Another mode of engagement, slightly different from the co-production of specific cultural activities (but sometimes occurring in parallel to it), occurred when researchers helped cultural institutions to broaden their cultural offer. This was the case when researchers produced new cultural artifacts with or for the cultural institutions, through activities such as: assembling new collections of existing works, putting together new databases, helping in the preservation of heritage artifacts, putting together new cultural programmes, and so on. Sometimes the production of cultural artifacts even led to the setup of new museums, galleries, archives; sometimes, collaborations with researchers helped cultural institutions to secure funding for renovations, acquisitions and reorganisations. We identified 20 cases (about 10%) where this was the primary mode of engagement.

In these cases, the main beneficiary of the collaboration was usually the cultural institution itself, which gained in prestige, visibility, attractiveness to visitors, and sometimes reaped economic benefits in the form of increased external funding and more ticket sales. Curators and professional staff also benefited from a broadening of their knowledge and competences. Additional benefits were reported for audiences and local communities and economies.

Provision of technology

A slightly different mode of engagement occurred when the researchers produced a technology which was then used by a cultural institution. In this case the technology was not produced as an outcome of the collaboration, but it was produced by the researchers independently, and the cultural institution was involved as a user. Often these technologies came from STEM researchers in fields like computer science, physics, engineering, but also from art and design: software tools,

optical instruments, carbon dating technology, 3d scanning, VR. We identified 8 such cases, about 4%.

Improvement in organisational practices

In some cases, researchers helped cultural institutions to improve their own internal organisational practices. These are a relatively large number of cases (43, about 21%) and the practices involved cover a wide range of activities: curation, presentation, digitisation of material, engagement with external stakeholders and audiences, or with specific communities, external communications, user experience, as well as working practices (helping the cultural institution to improve their ways of working with artists, LGBTQI+ people, staff who need to balance work and personal life, etc.). In these cases, cultural institutions and their staff were the primary beneficiaries, but a lot of secondary impacts rippled out to audiences, specific communities, local communities and so on.

Finally, we identified a couple of modes of engagement that were typical of only a few cases. Some case studies (4, about 2%) involved research that generated theories, models and frameworks that were used by cultural institutions themselves and sometimes by other sectors. For example, researchers collaborated with a cultural institution to provide guidance on copyright for the film industry. In another case, researchers developed models for the creative reuse of cultural artifacts, which could be used by archives and other cultural institutions. A couple of cases involved research that helped cultural institutions to advocate for their own value with policymakers and governments, leading them to attract more funding or more favourable policies.

In a couple of cases, researchers mentioned that they used the materials made available by cultural institutions (such as collections and archives) to produce artistic and cultural works, such as films, books, public events. This is a mode of involvement where the cultural institution is simply used by the researcher as a provider of resources, rather than a form of knowledge exchange. We suppose that this type of use of cultural institutions' materials occurs very often, but only a couple of cases mentioned this as the primary mode of engagement.

Table 1.11. Modes of engagement of cultural institutions

Mode of engagement	Count of Nature of engagement with cultural institution
Researchers collaborated with cultural institution to develop products and services	8
Researchers collaborated with cultural institutions to develop cultural activities and/or to showcase work	99
Researchers generated theories, models and frameworks that are used by cultural institutions	4
Researchers helped cultural institution to improve practices	43
Researchers helped cultural institutions to expand their cultural offer	20
Researchers provided technology used by cultural institutions	8
Researchers used archival research to produce public events, films etc	2
Grand Total	202

Mode of engagement	Count of Nature of engagement with cultural institution
Role of cultural institutions unclear	18
Grand Total	202

Table 1.12. Stakeholders impacted by cases involving cultural institutions

Impacted stakeholders	No. of cases	% cases
Audiences, visitors, participants	129	63.86%
Cultural institutions	110	54.46%
Curators, conservationists, culture industry professionals	31	15.35%
Teachers, students, educators, schools, training providers	31	15.35%
Communities (local communities, marginalised groups e.g. refugees, prisoners, youth, indigenous people...)	50	24.75%
Policymakers, councils, authorities, governments	32	15.84%
Artists, practitioners	52	25.74%
Businesses, industry	18	8.91%
Arts organisations	13	6.44%
Tourists, local economies	12	5.94%
Others (activists, volunteers, children, patients, sports organisations, charities...)	31	15.35%

Table 1.13. Types of impact produced by cases involving cultural institutions

Type of impact	No. of cases	% cases
cultural	123	60.89%
behavioural	94	46.53%
social	51	25.25%
education	26	12.87%
economic	30	14.85%
policy	28	13.86%
Other (health, technology, environment)	16	7.92%

Overall, cultural institutions play an important role in supporting, enabling and benefitting from the production of research impact. Of course, cultural institutions can be involved in impact case studies even without being mentioned as partners, so we can assume that their role in the creation of impact is even broader than that which emerges from the analysis of these 202 case studies.

1.8. Conclusion

This chapter has provided a broad overview of arts and culture-related impact in REF 2021, by focusing on:

- where arts and culture-related impact is produced (distribution of arts and culture-related impact case studies by UoA, types of institutions, regions)
- where arts and culture-related impact occurs (geographical areas impacted)
- which organisational features underpin the production of arts and culture-related impact (number and types of partners involved, sources of funding, continuation from previous REF)

It has also performed a further deep-dive investigation into the role of cultural institutions in REF 2021.

We find that arts humanities have the greatest share of submitted cases that have arts and culture-related impact (archaeology as well has a large share of such cases); however, some STEM fields like Physics, Geography and Computer Science exhibit a remarkably high share of cases with arts and culture-related impact. There is some evidence that units that submitted a greater share of impact cases with arts and culture-related impact had a lower share of impact cases rated 4*. The negative correlation however is weak overall, and differs across Units of Assessment. This would require a more fine-grained investigation.

Cases with arts and culture related impact tend to have less formal partners, across the board (though in general those submitted to STEM fields have more formal partners than those submitted to the social sciences and humanities). Cases with arts and culture related impact are more likely to receive external funding and to have a larger number of funders than the population average. This pattern is particularly pronounced for cases with arts and culture related impact submitted in STEM fields.

Cases with arts and culture related impact are less likely to be a continuation of cases submitted to REF 2014. This finding raises the question as to whether arts and culture-related impact is more short-lived, or whether it is more project-specific, and it is more difficult to repurpose the research outcomes to generate impact beyond those obtained initially in a specific context or with specific stakeholders – something that appears to be more achievable in the STEM subjects. It is also possible that there may be many enduring partnerships between HEIs and the arts, but these may not necessarily result in impacts that make it into the REF.

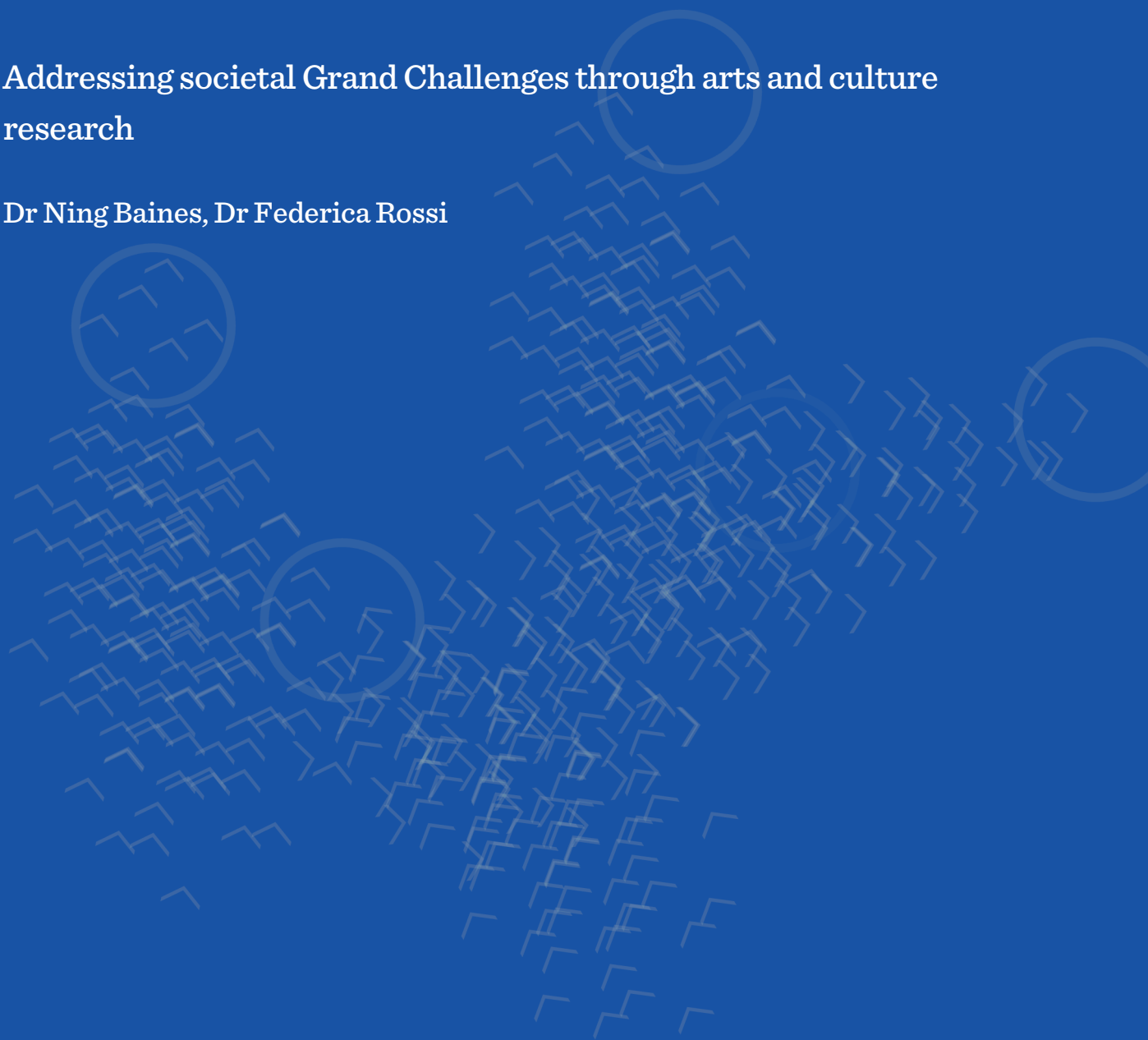
The top ten institutions with the greatest shares of cases with arts and culture-related impact are all in the ARTS cluster and as expected, specialist arts institutions focus on case studies that have arts and culture-related impact. Cultural institutions play an important role in supporting, enabling and benefitting from the production of research impact. Of the 1,075 impact cases with arts and culture-related impact, 202 have indicated one or more cultural institutions as partners: 130 cases had one cultural institution as partner, 49 had two cultural institutions as partners, 23 had more than two. Overall, 289 cultural institutions were indicated as partners. We identified eight different modes of engagement between researchers/HEIs and cultural institutions.

The findings presented in this chapter provide some valuable insight into arts and culture-related impact in the REF and constitute a first broad scoping of the evidence base, to be followed by more detailed analyses of specific aspects in the subsequent chapters.

Chapter 2

Addressing societal Grand Challenges through arts and culture research

Dr Ning Baines, Dr Federica Rossi



2.1. Introduction: Arts and culture research to address Grand Challenges

The notion of Grand Challenges has become prevalent in recent years. It has received attention not only from governments, NGOs, business and organisations, but also research across all disciplines. There is an increasing recognition that arts and culture, especially research activities in arts and culture, have a crucial role to play in mobilising and catalysing societal change and addressing the Grand Challenges.

In this chapter, we focus on the Grand Challenges that have aligned with the NCACE's strategic mission: Place making and levelling up, Health and wellbeing, Technologies for social good, Environment and climate emergency. We rely on the database of REF 2021 impact case studies to analyse how research pertaining to the general area of art and culture has been instrumental to tackling the four Grand Challenges mentioned above. The findings offer insights into research beneficiaries, roles played by partners, collaboration process and the differences across each theme.

Grand Challenges can be defined as “specific critical barrier(s) that, if removed, would help solve an important societal problem with a high likelihood of global impact through widespread implementation. Grand Challenges, by their very nature, require coordinated and sustained effort from multiple and diverse stakeholders toward a clearly articulated problem or goals” (George et al., 2016:1881). Despite their ambitious nature, goals are set to be achieved by connecting science, technology and innovation to solve important problems at national and global scale.

The most widely acknowledged and adopted Grand Challenges are the Sustainable Development Goals (SDGs) set by the United Nations (UN) in September 2015 as part of a sustainable development agenda. A set of 17 goals aim to end poverty, protect the planet, and ensure prosperity for all, targeted to be achieved by 2030. These goals have been incorporated into government interventions and funding programmes, for example the UK's Global Challenges Research Fund, which supports cutting-edge research to address challenges faced by developing countries by focusing on six global strategic challenges: 1) cities and sustainable infrastructure, 2) education, 3) food systems, 4) global health, 5) resilience to environmental shocks and change, and 6) security, protracted conflict, refugee crises and forced displacement.¹¹

In this chapter, we focus on the Grand Challenges that align with the NCACE's strategic mission of evidencing and showcasing the social, cultural, environmental, as well as economic impacts of Knowledge Exchange (KE) activities between Higher Education and the arts and culture sectors across the UK, particularly focusing on the following themes:

- Place making and levelling up¹²

- Health and wellbeing¹³

¹¹ <https://www.ukri.org/what-we-do/our-main-funds-and-areas-of-support/browse-our-areas-of-investment-and-support/global-challenges-research-fund/> (<https://www.ukri.org/what-we-do/our-main-funds-and-areas-of-support/browse-our-areas-of-investment-and-support/global-challenges-research-fund/>) (last accessed September 2023).

¹² Place making and levelling up is given a definition by the Department of Digital, Culture, Media and Sport ‘The role that art and culture might play in delivering a Government commitment to level up the country. The emphasis is on cultural placemaking and the recognition that arts organisations can make a significant contribution to levelling up’. (<https://committees.parliament.uk/work/1744/reimagining-where-we-live-cultural-placemaking-and-the-levelling-up-agenda/>) last accessed September 2023)

¹³ According to the World Health Organisation (WHO), ‘health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Mental health is a state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to

- Technologies for social good¹⁴

- Environment and climate emergency¹⁵

In recent years, there has been an increasing recognition that arts and culture have a crucial role to play in mobilising and catalysing societal change and addressing challenges, such as community resilience, inequality of wealth and of opportunity, social isolation and creative health and wellbeing, and the accelerating climate emergency. Arts and cultural activities are increasingly recognised as having key roles to play in the prevention of ill health, the promotion of good health, and the management and treatment of a range of different conditions (Dow et al., 2023). Evidence has also highlighted that arts and culture have an essential role to play in supporting the climate emergency agenda by engaging the communities and public, driving interdisciplinary collaboration, creating innovation, and instigating actions (Payne, n.d.).

Concurrently, an increase of arts and culture research in addressing Grand Challenges has been observed, thanks to research funding from various research funding councils and organisations to support cutting-edge and cross-disciplinary research combining arts with other disciplines (Science, Technology, Management Medicine etc.) to maximise the impact of research and to address key societal and environmental challenges as well as the UN sustainable development goals. Additionally, in the UK, the REF has encouraged arts and culture research to showcase and highlight the changes and benefits that research has had on society, economy, public policy and practice, environment and quality of life.

In this chapter, we rely on the database of REF 2021 impact case studies to analyse how research work pertaining to the general area of art and culture has been instrumental to tackling the four Grand Challenges mentioned above. Our objective is to analyse, in broad terms, how research activities related to arts and culture help society to address Grand Challenges. We do so by exploring issues such as:

- Who benefits from these research activities?
- What roles do partner organisations play?
- What are the processes through which Grand Challenges are addressed?
- Are there relevant differences across different Grand Challenges?

We highlight research that involves some aspects of engagement with arts and culture irrespective of the disciplinary (or interdisciplinary) field in which it was produced; therefore, as outlined in the Methodology section, we extract research related to arts and culture using specific keywords, rather than focussing on research that emerged from specific subject areas. This has led us to identify relevant cases emerging from a variety of fields (see figure 2.7 which shows the distribution of relevant cases across REF UoAs). The chapter is structured as follows. In Section 2.2, we describe our methodology. In Section 2.3, we present the findings from our analysis. In Section 2.4, we conclude by summarising the key messages and outlining some implications for practice and policy.

make a contribution to his or her community (<https://www.who.int/data/gho/data/major-themes/health-and-well-being#:~:text=The%20WHO%20constitution%20states%3A%20%22Health,of%20mental%20disorders%20or%20disabilities.last%20accessed%20September%202023%22>)

¹⁴ The World Economic Forum has defined 'Technologies for social good' as 'the space where technology is deployed to take on big social and environmental problems' (<https://www.weforum.org/agenda/2023/03/tech-for-good-what-does-it-mean-and-how-can-we-deliver-on-it/> last accessed September 2023)

¹⁵ Climate emergency is defined as 'a situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it. (Oxford Dictionary)

2.2. Identifying and analysing impact cases relating to Grand Challenges

The process started from scoping literature such as government and organisations reports, academic journals and United Nations websites) to identify numerous key words related to a number of pre-selected Grand Challenges” and Sustainable Development Goals broadly, mapping onto the NCACE themes of Place making and levelling up, Health and Wellbeing, Technologies for Social Good, and Environment and Climate Emergency.

Two members of the research team then selected 5 or 6 main keywords for each of the four themes. The selection was based on how the keywords broadly captured the most important dimensions of the Grand Challenges. The keywords selected are the following:

- Place making and levelling up: Community engagement, Community wealth building, Levelling-up, Regional and urban creative economic development, Inequality, Inclusive and sustainable economic growth, Regeneration
- Health and Wellbeing: Health, Well-being, Global health, Healthy lives, Community health, Mental health
- Technology for social good: Artificial intelligence, Data technology, Green technologies, Emergent technologies, Immersive experiences, Virtual reality
- Environment and Climate Emergency: Zero emission, Environment, Climate change, Climate emergency, Sustainable communities, Ecology

These keywords were combined with additional keywords suggested by members of the research team to ensure that we could extract a set of cases which, while not completely exhaustive, would be relevant and representative of main Grand Challenges and main arts and culture sectors. In particular, another member of the research team selected 6 main arts and culture sectors:

- Theatre (including performance art, opera, dance, plays)
- Music
- Public Arts (including Community Arts)
- Museums (including Galleries and Visual Arts)
- Artists
- Literature (including poetry and literary festival)

The keywords (combining the Grand Challenges keywords and the arts and culture sectors keywords selected by the research team) were then used to extract subsets of cases from the REF Impact Case Studies database¹⁶ that exemplify how the arts and culture sector deal with the Grand Challenges. This way, we identified a set of impact case studies containing such keywords, and listed them in an Excel database.

Table 2.1 shows the number of REF impact cases that included the Grand Challenges keywords and the arts and culture keywords. The third column in the table also includes duplicated cases, which contained more than one keyword, and therefore appeared in the database more than once. The overall number of cases after the deletion of duplicated cases is reported in the last column on the right of the table. Overall, we identified 903 cases distributed across four themes (440 in theme 1, 227 in theme 2, 98 in theme 3 and 165 in theme 4). A more detailed version of this table containing a breakdown of cases by keywords is reported in Appendix 2.

¹⁶ Available at <https://results2021.ref.ac.uk/impact>

Table 2.1. Number of REF impact cases extracted using Grand Challenge keywords and art and culture sectors keywords

NCACE themes	Number of REF cases extracted using:		
	Grand Challenges keywords only	Grand Challenges keywords + arts & culture keywords	Grand Challenges keywords + arts & culture keywords (de-duplicated)
Place making and levelling up	2504	525	440
Health and Wellbeing	7727	547	227
Technology for social good	2027	126	98
Environment and Climate Emergency	3738	201	165

For each case, we collected relevant information and listed it in the database. Additionally, we included information about: whether the case was retrieved under more than one keyword, whether the case has a potential to be identified for depth analysis, which art and culture sector the case involves, and which keyword(s) the case appeared under (see Appendix 3 for the list of fields included in the database).

Figure 2.1. Relevance of four themes in relation to overall impact case studies

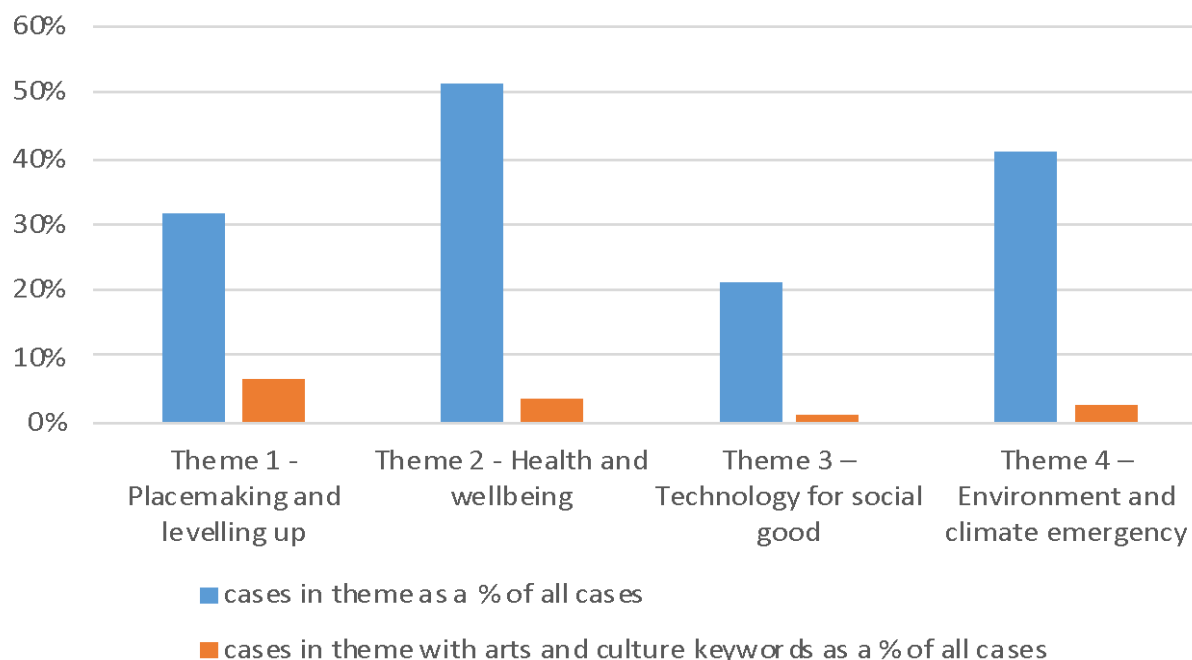
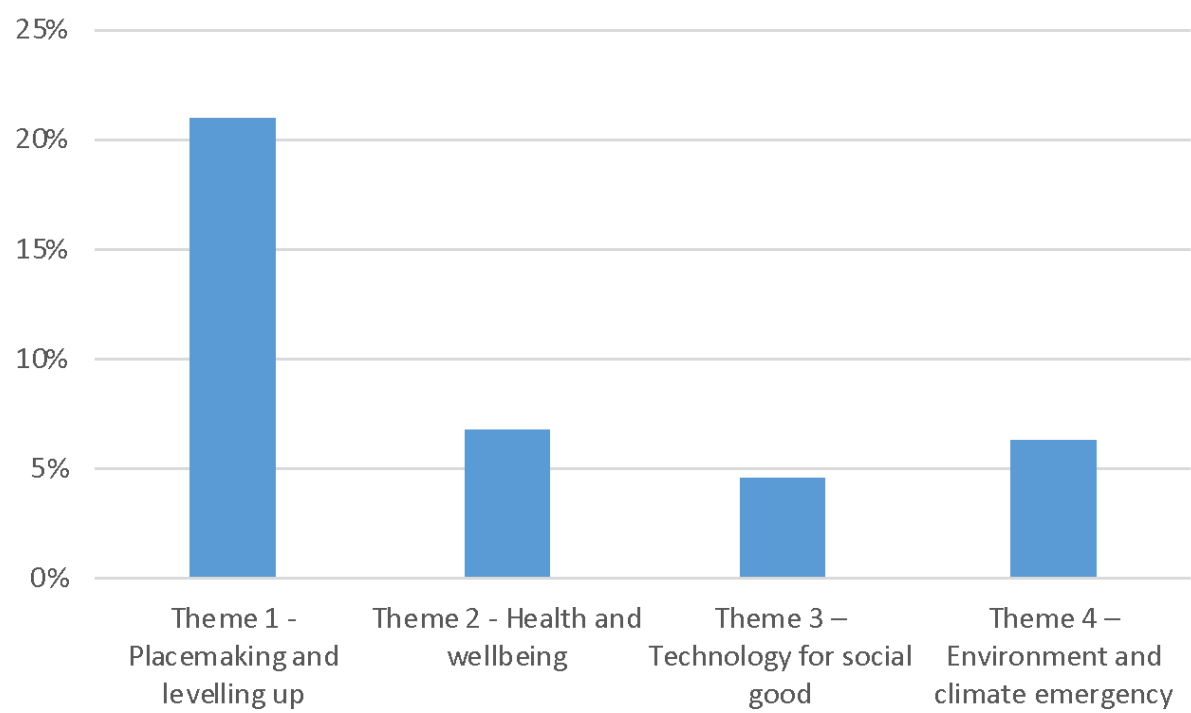


Figure 2.1 shows how impact case studies are distributed across the four themes (after removing duplicates), as a share of all impact case studies. Additionally, it shows the share of all impact case studies which, for each theme, include arts and culture keywords. Health and wellbeing keywords

are present in more than half of cases, while keywords relating to environment and climate change are present in more than 40% of cases. However, only a small share of these cases relate to arts and culture. Considering the share of cases which include both Grand Challenges keywords and arts and culture keywords, the theme which has the greatest share is placemaking and levelling up.

Figure 2.2. Relevance of arts and culture keywords within each of the four themes



The prevalence of placemaking and levelling up in arts and culture impact cases is particularly evident from Figure 2.2, which shows the number of cases with (our restricted list of) arts and culture keywords in each theme divided by the number of cases present in each theme. More than 20% of cases in the Placemaking and levelling up theme contain arts and culture keywords. Instead for the other three themes the share of cases which contain arts and culture keywords is around 5%.

Figure 2.3 shows how the seven arts and culture keywords are distributed across the four themes (considering the impact cases that contain keywords relating to both themes and arts and culture). The distribution of arts and culture keywords is broadly similar across themes 1, 2 and 4 (with the greatest shares belonging to literature, theatre and museums, the latter particularly important in the health and wellbeing theme), while theme 3 (technology for social good) sees a greater prevalence of music and theatre.

Although impact cases with arts and culture keywords are a small share of the overall number of cases in each theme, they are widely distributed across universities and across UoAs. Table 2.2 shows the share of Units of Assessment and the share of universities that have submitted at least one case with both thematic and arts and culture keywords, by theme.

Figure 2.3. Distribution of arts and culture keywords within each of the four themes

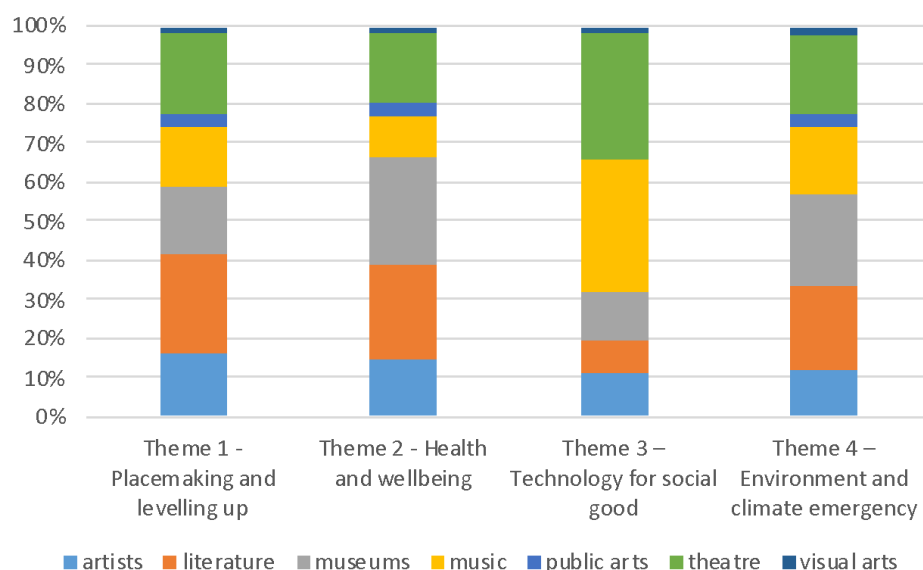
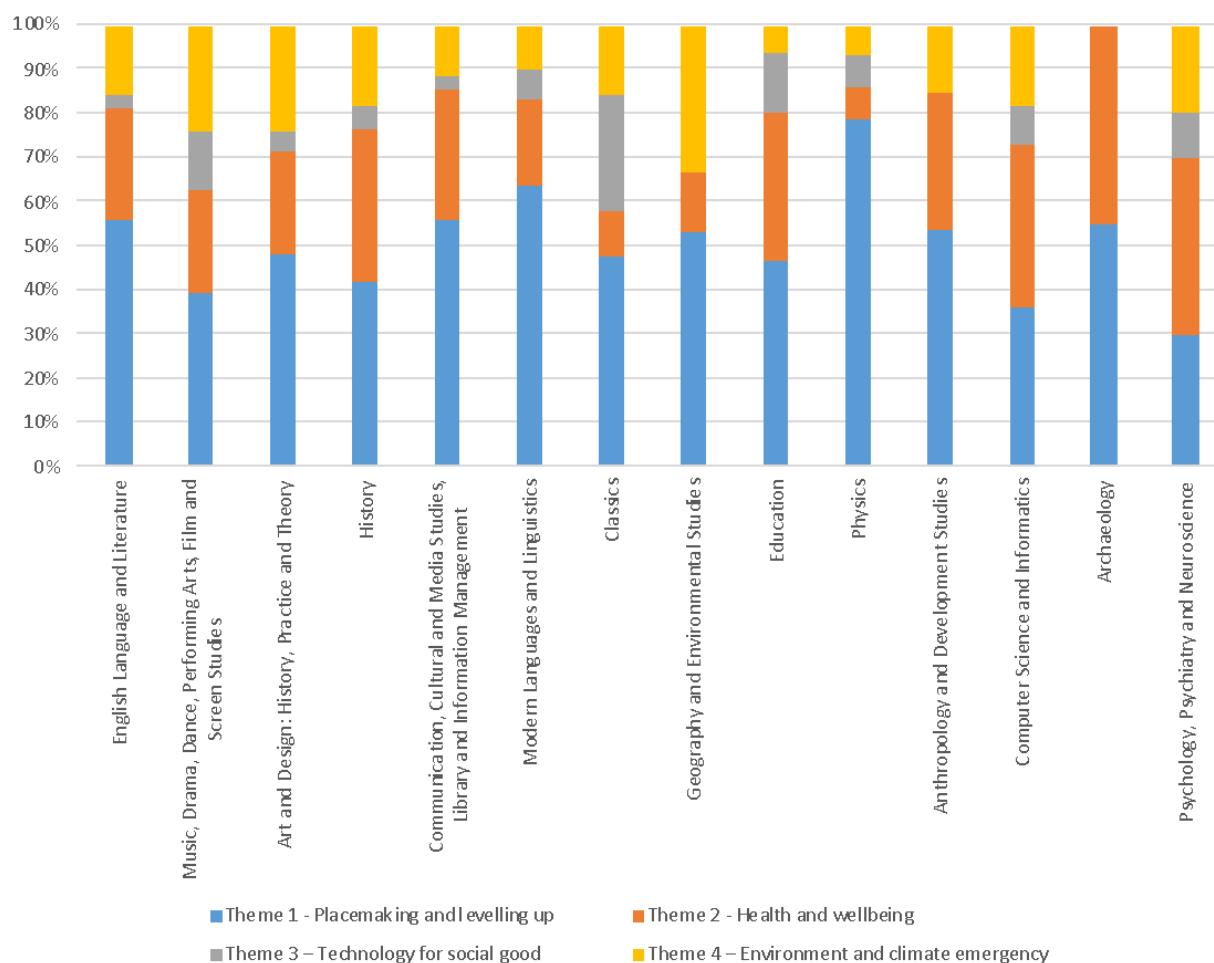


Table 2.2. Shares of universities and Units of Assessment that have submitted at least one case with arts and culture keywords under each theme

	Theme:			
	1 - Placemaking & levelling up	2 - Health & wellbeing	3 - Technology for social good	4 - Environment & climate emergency
% Units of Assessment	85.30%	76.50%	50%	61.70%
% universities	82.80%	67.10%	34.10%	56.90%

Finally, Figure 2.4 shows how the cases with arts and culture keywords are distributed across Units of Assessment, by theme. This figure includes only the 14 UoAs where all four themes are present. The majority of these UoAs are in the arts and humanities and social sciences but it is notable that Physics, Computer Science, Geography and Environment, and Psychology, Psychiatry and Neuroscience are also represented. The placemaking and levelling up theme is prevalent in most UoAs, generally followed by health and wellbeing. The main deviations from this pattern are the greater share of environment and climate change cases in the Geography and Environment UoA, and the greater shares of technology for social good cases in Performing Arts and Classics UoAs.

Figure 2.4. Distribution of cases with arts and culture keywords by theme for each Unit of Assessment



Subsequently, the research team read the summaries of the REF impact cases and selected a subset of cases in each theme for further analysis. The selection was based on the following criteria:

- we extracted 90 cases, corresponding to 10% of all cases in our database (which included 903 cases);
- the 90 cases were distributed across the four themes, representing about 10-15% of cases in each theme;
- we selected cases in order to include a variety of art and culture sectors, type of institutions, geography of institutions and Units of Assessment.

These cases were distributed as follows:

- Place making and levelling up = 34 cases
- Health and Wellbeing = 20 cases
- Technologies for Social Good = 17 cases
- Environment and Climate Emergencies = 19 cases
- Total = 90 cases

The next phase involved in-depth analysis of each of the 90 cases. We downloaded the 5-page detailed cases from the REF Impact Case Studies database. One member of the research team free

coded the cases to identify: beneficiaries, art and cultural partners, role of partners, actual impact, and process. Subsequently, a more detailed coding exercise was performed by two members of the research team who identified: (i) the partner organisations involved in the cases, and the roles that they played in the generation of impact, (ii) the types of stakeholders who benefited from the impact, (iii) the nature of the collaborations giving rise to impact, and (iv) the processes and networks through which impact was generated.

2.3. The range of beneficiaries

By analysing 90 impact case studies dealing with four broad types of Grand Challenges, we identified the main types of stakeholders – individuals, groups and organisations – that benefited from the research performed, either directly (for example, by collaborating directly with the researchers on topics of interest, by adopting approaches, practices or advice suggested by the research, or by using the research finding to advocate for causes or to obtain funding) or indirectly (for example by attending performances or watching programmes informed by the research, or by attending interventions that built on the research).

Many cases highlighted impact on general groups of individuals in society, such as audiences attending performances or shows, visitors to museums, events or heritage sites, listeners to broadcasts and people watching documentaries and films. Sometimes, the cases presented numerical estimates of the size of the audience, or they presented audiences' reviews and evaluations, or statements about how the work (informed by the research) affected them.

General impacts on society were also achieved through changes in policy, which were sometimes reported as a result of the research being cited in influential policy reports or through the engagement of researchers with policymakers or with activist or advocacy groups (or through the research inspiring other people to engage in campaign or activism), although the further impacts that these policy changes had on society are then difficult to evaluate precisely, and are usually not reported.

Often, impact was reported in relation to specific groups of people who, for example, participated in specific interventions and initiatives. Such groups include carers, patients and their families (these groups featured particularly often in cases relating to Theme 2 – Health and Wellbeing), students, children, young people (those groups were particularly targeted in cases relating to Themes 1 and 4 – Placemaking and Levelling up and Environment and Climate Emergency), as well as groups that are often marginalised (prisoners, homeless people, refugees, migrants, indigenous people, elderly people, women, LGBTQI people, and so on). This suggests that arts and culture research, as well as research in collaboration with arts and cultural partners, has a notable impact on disadvantaged groups. It also addresses Grand Challenges relating to place, health and environment by working with social groups that are particularly influenced by or sensitive to these challenges.

Some cases reported impact on business, professions, and policy. These included users that benefited from the improved products, technologies, services, developed thanks to the research (these were particularly relevant in some cases relating to Theme 3: Technology for Social Good), policymakers, academics, and professionals. The latter is a broad category of beneficiary that includes artists, health professionals, curators, archivists, teachers, sound technicians and others – who mainly benefited from interventions, programmes, training that were developed building on the research.

Impact was also often reported in relation to specific organisations. These could be organisations that collaborated with researchers to produce a piece of work such a performance, exhibition, event, talk – often these were arts organisations including: dance, music and theatre companies as well as museums, libraries, archives – but they could also be companies working with researchers to produce a piece of software or technology, or companies (publishing houses, music companies) that released a piece of work developed by the researchers.

Or they could be organisations that implemented an intervention or programme based on the research such as hospitals or care homes, particularly frequent in cases related to Theme 2, or schools, which featured frequently as participants in initiatives designed by researchers, or organisations that implemented or used a product or service developed building on the research (we can find examples of museums, orchestras, archives that have done so).

Frequently, organisations played host to so-called ‘Public Engagement’ activities such as exhibitions, workshops and talks held by researchers – venues, museums, libraries, broadcasting companies all fall within this group. Appendix 4 lists examples of each of these types of impact beneficiaries.

The collaborating organisations played a very important role in the generation of impact, as we will discuss in greater detail in the next section. Partner organisations benefited from increased income, expanded client bases, greater visibility and reputation, but particularly they benefited from the learning experience of working with researchers:

‘The local creatives who form the festival’s steering committee with Bell have reported learning new skills and confidence, in organising cultural activities and in collaborating across artistic disciplines or with academics.’ [Theme 1]

‘The work has imparted new skills and technical capacity to Sudanese partner institutions to sustain the preservation agenda. 148 Sudanese colleagues were trained in digital skills to preserve and document cultural heritage’ [Theme 3]

‘Scott’s research has not only changed the way music festivals considered their environmental impact but provided them with the tools to bring about new sustainable industry practices.’ [Theme 2]

Figure 2.5. Types of impact beneficiaries, and examples for each type
Figure 2.5 summarises the key types of impact beneficiaries and reports the most frequent examples of each type of beneficiary.

2.4. The key role of partner organisations in mediating the generation of impact

While impact was reported in relation to a broad range of stakeholders across all levels of society, it appears that collaborations with specific partner organisations external to academia were core to the achievement of impact. While, as mentioned earlier, these partner organisations often themselves benefited from engaging with researchers, they were also often crucial in mediating the relationships that then proceed to generate broader impact on society. For example, organisations helped researchers to develop and deliver interventions, programmes, training, in partnership with researchers to relevant groups of beneficiaries (patients, carers, families, young people, and so on), or went on to develop further interventions based on the research. Often, they connected researchers with relevant audiences, and were instrumental in generating impact on policy.

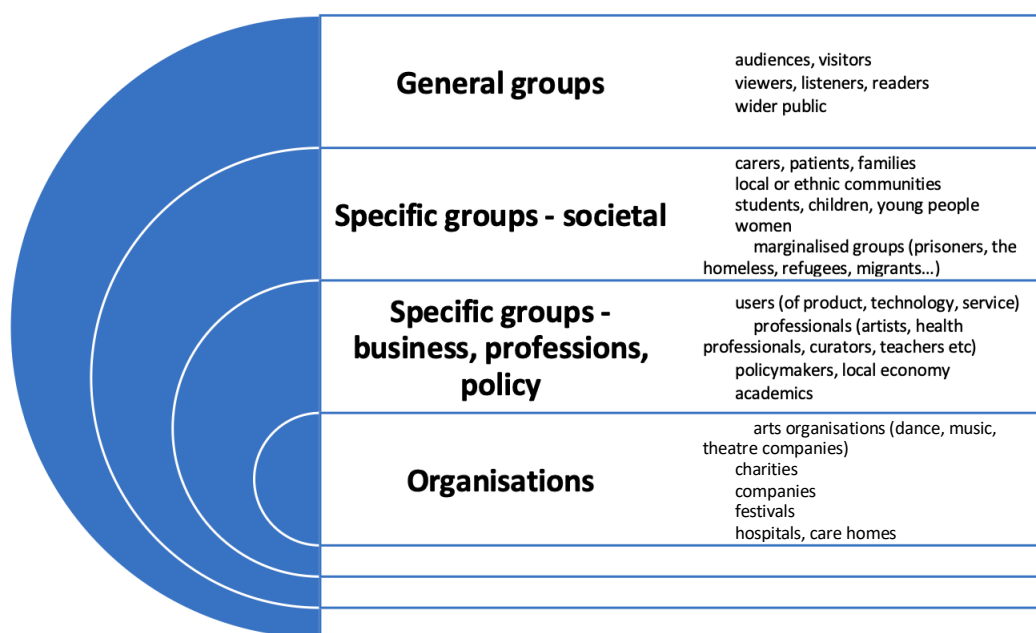
In this section, we elaborate on the roles that partner organisations play in generating impact through collaborations with researchers. We noted that partner organisations were involved both in supporting research activities and in using and disseminating their outcomes, as well as in co-designing (interventions, initiatives, programmes, training etc.), co-developing (technologies, products, services) and in developing further initiatives based on the research. These activities were not ordered linearly from research to development or dissemination, but they often took place concurrently or followed pathways that were circular – for example a dissemination activity offering opportunities for further research, a research project leading to the implementation of initiatives with a partner organisation which in turn allowed them to apply for more project funding, and so on. Examples of such circular pathways include:

‘These research findings underpinned the contribution that Cohen and Jones made to the bid for Liverpool to be recognised as a UNESCO City of Music, which was further informed by Jones’ research into the value of Beatles heritage and tourism for Liverpool’s economy’. [Theme 1]

‘Since 2014, this has involved developing hubs in Ipswich (with Dance East) and Cardiff (with National Dance Company Wales). Indeed, the hubs proved such a success that, between 2016 and 2019 they, along with the Oxford and Liverpool hubs, obtained sustainable funding to continue, using DfP research as evidence to PH Holt, Trusts and Foundations and private donors.’ [Theme 2]

‘In September 2013, ENU were invited by JISC to give the UK’s first public demonstration of realtime live music performance by musicians from the Royal College of Music over distance at the first Arts and Humanities Streaming Workshop. Findings from this trial resulted in further research and testing’ [Theme 3]

‘The visualisation work found substantial application in public outreach, which became the focus of a subsequent project with Imperial College. Between 2013 and 2017, the partners developed BioBlox an educational game allowing laypeople to explore how proteins “dock” with each other, as well as 3D graphical tools for scientists’ [Theme 3]



Even in situations where partner organisations used research for their own objectives - for example, to improve their own practices, to implement technology for their own use - the partner organisations were often not the only beneficiary; the improved practices or the technology adopted in turn would benefit the organisation's clients, partners, customers, staff, and sometimes inspire other organisations to adopt the same approaches. For example:

'The development of a new resource (visual aid) which is used in three nurse-led cancer clinics at Christie Hospital, Manchester (the largest single site cancer centre in Europe). This has led to better outcomes for patients experiencing sexual and relationship problems following cancer treatment' [Theme 2]

'The success of SUN has also influenced festival organisers' working practices going forward, seeking installations that can be developed to include additional engagement opportunities and enhance the visitor experience further' [Theme 3]

2.5. The roles played by partner organisations in impact generation: analysis using the Collaborative Value Creation (CVC) framework

In order to further examine the roles played by partner organisations in impact generation, we classified these roles using a framework proposed by Austin and Seitanidi (2012), who have built a Collaborative Value Creation (CVC) framework for analysing social partnerships between businesses and non-profits, with particular emphasis on the framework's value creation spectrum. Austin and Seitanidi (2012) distinguish three types of approaches to the collaboration between businesses and non-profits, which sit along a continuum. At one end of the spectrum, transactional collaborations are characterised by low engagement of the partners, peripheral importance of the collaboration to the organisation's mission, narrow scope of activities and each organisation creating value individually. These collaborations do not require a high level of trust between the partners, they seldom lead to innovation, and they rarely lead to an external system change. At the opposite end of the spectrum, transformational collaborations are characterised by high engagement of the partners, central importance of the collaboration to the organisation's mission, broad scope of activities, and both organisations creating value jointly. These collaborations require a high degree of trust between the partners, they often lead to innovation, and very frequently lead to an external system change. In between, there are integrative relationships, which have intermediate characteristics. Each of these types of collaborations, according to the CVC framework, generates value in different ways. Transactional collaborations generate value from the transfer of resources. Typically, the immediate benefit created by the collaboration accrues to one or the other partner (the one who receives the resources). Integrative collaborations generate value from the process of working together. Typically, these benefits accrue to both partners in the collaboration. Transformational collaborations generate value by achieving synergies between the partners. Often these synergies will spill out of the collaboration and generate external benefits such as social or environmental value.

Table 2.3, building on Austin (2000) and Austin and Seitanidi (2012), summarises the relationship between type of collaboration (and their key characteristics) and value creation.

Table 2.3. Types of collaborations and value creation according to CVC framework

Type of collaboration	Transactional	Integrative	Transformational
Engagement between partners	Low engagement	Medium engagement	High engagement
Centrality to mission	Peripheral	Intermediate	Central
Scope of activities	Narrow	Intermediate	Broad
Degree of trust between partners	Low	Medium	High
Who creates value	Each partner individually	Both partners mutually	Both partners synergistically
Source of value	Transferred resource value	Interaction value	Synergistic value
Main beneficiary	One of the partners	Both partners	External stakeholders

Source: Austin (2000); Austin and Seitanidi (2012)

We identified some ‘transactional’ roles played by partner organisations, where the partner organisation used the research to develop work independently for its own benefit. This occurred when the partner organisation delivered an initiative (programme, intervention, training, service) based on the research, developed a product based on the research, performed work by the researcher, or released a product (for example, a record, or a book) based on the research.

In the case of ‘integrative’ roles, both partners exchanged resources for mutual benefit. These roles included:

- Supporting research, as in when the partner organisation provided data, facilities or infrastructure for the research, provided funding or awards for the research, initiative or project, or provided evidence for further academic studies;
- Using research, as in when the partner organisation collaborated with the researcher to implement technology, used the research to improve its own practice, used the research to bid for funding or to apply for an award, or commissioned work by the researcher;
- Showcasing/disseminating research outputs, as in when the partner organisation hosted an initiative (intervention, programme, training), hosted or broadcasted work performed directly by the researcher or based on the researchers’ work (exhibition, performance, play). Other examples are when partner organisations invited researchers to hold events, seminars, or demonstrated technology developed by the researchers. These initiatives could be directed at disseminating work within the partner organisation, or externally, with the partner organisation’s network of clients, suppliers, collaborators, or with general audiences.

Finally, a number of roles played by partner organisations were ‘transformative’: where organisations and researchers engaged closely together to achieve synergistic value. This occurred when the partner organisation and the researcher:

- co-developed an initiative (intervention, project)
- co-produced a piece of work (performance, play, choreography, workshop)
- co-developed a product
- collaborated to co-produce evidence (report, consultation response, guidance).

Figure 2.6 summarises the roles identified through our analysis and mapped onto the CVC framework typology. Some examples of partner organisations playing each of these roles are presented in Appendix 5.

Figure 2.6. A typology of roles of partner organisations

2.6. Collaborations with partner organisations and impact generation

The CVC framework suggests that in the case of integrative collaborations, the collaboration generates mutual benefits; that in transactional collaborations, one of the parties is the main beneficiary, while in transformational collaborations, the synergies generated from the collaboration often spill over to benefit external stakeholders. In general, we find that this is the case, but only when we consider value creation in relation to the direct impacts of these collaborations, in a short-term perspective.

For example, in the context of transactional relationships, the benefit from developing initiatives independently based on the research accrue primarily to the organisation itself.

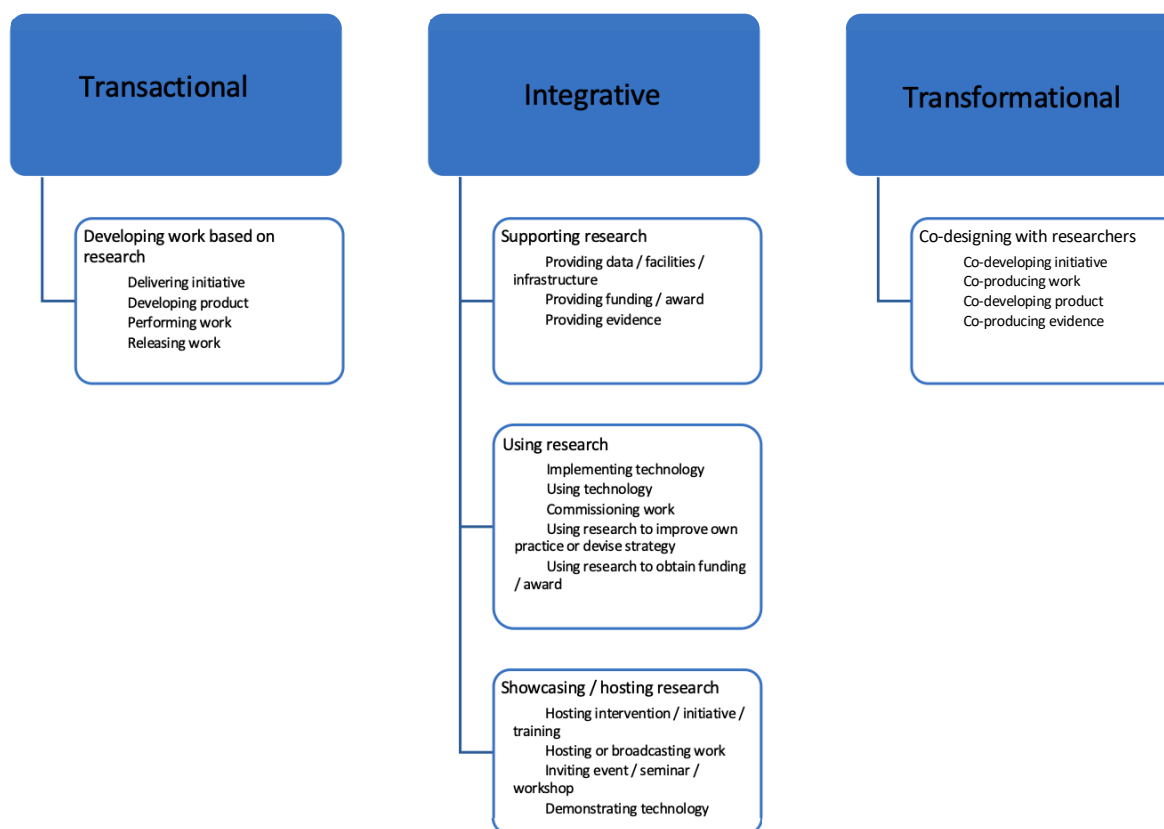
‘In 2016, the Exhibition Curator for Leonardo da Vinci: Ten Drawings from the Royal Collection at Nottingham Castle Museum and Art Gallery sought out Dr Neher’s expertise and research on the Renaissance period to assist with the interpretation and contextualisation of the artworks for wider public learning, and for a deeper understanding of the life and times of Leonardo, which led to the Museum reaching new audiences and a change in curatorial approaches following the exhibition.’ [Theme 1]

‘Brighton-based developer Gunfish Games provides testimony that our research supported not only the development of their practice, but also the launch of original intellectual property.’ [Theme 3]

In the context of integrative collaborations, we can identify numerous examples of mutual benefits directly arising from the collaborations. Organisations hosting exhibitions or performances benefited from increased income and an expanded client base, whilst organisations implementing the research outcomes benefited from improved practices. At the same time, researchers benefited from greater visibility of their work, new evidence and data, greater prestige and new appointments. The following are examples of integrative collaborations that resulted in mutual benefits:

‘As a result of Bangor’s research collaboration, Denbighshire county council reported the beneficial effects of improving dementia service provision (via the arts) within their organisation.[...Bangor’s expertise led to appointments to the Welsh Government taskforce for Implementation of the Dementia Action Plan (Windle), and the Cross Party Group (CPG) for Arts and Health (Windle and Algar-Skaife).’ [Theme 2]

'Described by leading international gaming magazine, PC Gamer, as 'a very cool thing', WALLPAPER sold 198 copies, was exhibited to 700 people in Sheffield, Wakefield, and Oslo and generated new empirical findings on immersion' [Theme 3]



'The increased visitor numbers have brought commercial benefits to the museum, contributing to the annual turnover of more than GBP2,000,000. The remote-sensing technology is helping to reduce inspection and maintenance costs' [Theme 4]

In transformational collaborations, co-designed initiatives often have the ability to generate broader changes.

'An important strand of literary research at Newcastle involves close collaboration with regional companies. The collaborations, which include partnerships with Bloodaxe Books, and Seven Stories: The National Centre for Children's Books, have been underpinned by some of the first Knowledge Transfer Partnerships (KTPs) to be awarded nationally in literary studies and creative writing. Through these partnerships, novel methods of deploying texts were co-developed to generate increased competitiveness for business.' [Theme 1]

‘Heritage used the research in Rio de Janeiro to set up a five-year programme in collaboration with arts organisations working in contexts of extreme fragility in Bogotá, Lima and Buenos Aires (Building Resilience: MR/S03580X/1: 2019-24) and has established a research network of arts organisations in Argentina, Brazil, Colombia and Peru sharing knowledge about overcoming mental distress amongst young people.’ [Theme 4]

However, longer-term, all kinds of collaborations have the potential to generate further benefits and it is difficult to associate a specific type of role played by partner organisations to a specific ‘pathway to impact’. When processes are observed for a long period of time, as it is the case for most impact case studies, we can see numerous examples of research that generates direct impact for specific organisations, which in turn helps to generate further indirect impact on others outside the initial collaboration; and research that leads to further collaborations, which in turn generate further impacts for the organisations and for others. The following is an example of how an organisation used the research to launch an initiative that ended up benefiting many patients:

‘the British Lung Foundation (BFL), using our research as the evidence-base, launched the UK-wide ‘Singing for Lung Health’ initiative. They established 107 singing groups and provided each with seed funding for 12 weeks, which benefitted an estimated 1,300 people.’ [Theme 2]

The following is an example of how an exhibition of the research output led to a discussion with a company which, in turn, engaged with a university to develop a new use for the research output to benefit patients:

‘Exhibiting MutatorVR led to discussions with the R&D division of hardware manufacturer HTC Vive. This has in turn led to a memorandum of understanding with the University of Maryland to investigate if MutatorVR can be used in pain relief for medical patients.’ [Theme 3]

In particular, in our analysis of the 90 cases under four themes, we have identified both:

- (i) impacts emerging directly from the research, e.g. from collaborations between researchers and partner organisations and groups, or from the direct use of research results and evidence on the part of organisations and groups;
- (ii) impacts emerging indirectly from the research, e.g. from initiatives implemented based on the research, or from collaborations that have been initiated thanks to the research.

Impacts emerging directly from the research include direct impacts of the research on the partner organisation, such as:

- Increased income
- Increased or expanded client base
- Increased reputation and visibility
- Improved service delivery
- Strategy development
- Product adoption
- Further funding, awards, demonstration of value

They also include direct impacts of the research on societal stakeholders, such as:

- Greater visibility-branding of a local community/area
- Creation of community engagement
- Urban regeneration
- Preservation or sharing of cultural artifacts or heritage for public benefit
- Support for advocacy campaign - charity initiative
- Support for policy change

This list does not intend to be exhaustive or representative, but just aims to illustrate the variety of direct impacts generated. Appendix 6 presents examples of each of these impacts emerging directly from the research.

In terms of indirect impact of the research, we identified numerous processes through which indirect impacts were produced. The following categories do not intend to be exhaustive or representative, but just aim to illustrate the variety of indirect impacts and of the processes through which they were generated.

First, numerous collaborations with partner organisations led to new or expanded initiatives (programmes, interventions, training, curricula, but also new products and services), which in turn generated further impacts, such as:

- benefits for new users, clients, audiences
- increased interest in and visibility of partner organisation
- further creative outputs
- improved training for professionals, further benefiting their clients
- creation of new training courses.

Secondly, another form of indirect impact arose when the research inspired people and organisations to take action, after attending presentations/events about the research, or participating in initiatives based on the research. Examples include:

- individuals being inspired to become activists or advocates
- individuals or groups being inspired to start new initiatives
- individuals being able to obtain funding, commissions, improve their careers etc.
- organisations being inspired to implement similar approaches.

Thirdly, forms of indirect impact also occurred when the research resulted in the establishment of new collaborations or new formal and informal organisational forms (centres, networks, groups, companies, communities) which in turn generated many further impacts. For example, the collaboration with researchers enabled the partner organisation to develop further collaborations, or the researchers set up a formal or informal organisational form. Examples of the latter include:

- Competitions, awards, prizes
- Research centres
- Networks
- Communities
- Action groups

Figure 2.7. Examples of processes generating indirect impacts from research

Figure 2.7 summarises our findings relating to the processes generating further impacts from the research. Appendix 7 presents examples of each of the indirect impacts we have identified.

2.7. Differences by theme

In addition to the common collaboration and impact nature across themes as outlined in the previous sections, some differences have also been observed within each theme.

Theme 1 - Placemaking and levelling up

Research and collaborations with arts and cultural partners created important impacts towards local community, either encouraging engagement of local community or contributing to place/urban regeneration. For example:

‘Through film and photography exhibition, Dr Coyles in collaboration with East-Side Partnership, a Belfast-based Non-profit Organisation organised a series of skills workshops with communities affected by deprivation as a legacy of the conflict by influencing community regeneration and development of the inner East, an area placed within the ‘top 20’ most deprived in Northern Ireland. As a result, several renovations were made, alongside the upgrading of local roads, footpaths and landscaping, providing physical enhancement to area.’ [Theme 1]

In addition, arts and cultural research and practice were employed as a mechanism to engage local communities, to promote and preserve local pride and heritage. For example:

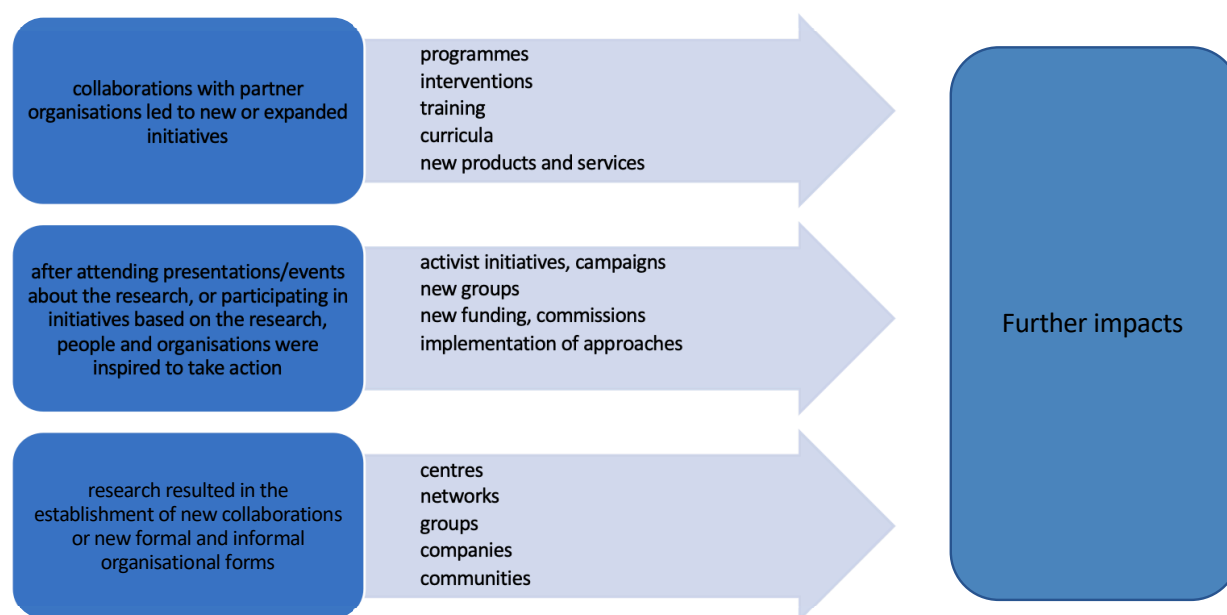
‘Research on industrial heritage by Vall has explored Redcar’s industrial past. The community-engaged approach devised at the outset resonated with visitors and supported the exhibition’s ambition to increase local pride and a positive sense of belonging: 86% of visitors reported that they ‘felt pride in Teesside’s heritage after viewing the exhibition’ [Theme 1]

We also observed that arts and cultural research and practice had an influence in policy and helping local authorities and government engage with communities.

‘The ‘Town Meeting’ project has had an immediate impact on planning practice across northeast England. The initial touring play was developed by Cowie and Cap-a-Pie into a workshop method designed to allow planners at both Local Authority and community level, to use ‘theatre as a method’ to engage communities in the statutory planning process.’ [Theme 1]

Theme 2 – Health and wellbeing

We observed a consistent picture of the impacts taking place within this theme. Very often, re-



searchers collaborated with partner organisations in the health sectors and in the arts and culture sector, to showcase or deliver interventions that involved patients, their families and/or carers. For example:

‘Dr Sara Houston has encouraged people with Parkinson’s disease (PwPs) to dance, enabled dance artists to teach them, and helped dance organisations to support them.’ [Theme 2]

Often, these interventions were then replicated and delivered directly by the health organisations that initially collaborated with the researchers, multiplying the benefits for patients. For example:

‘Age Exchange developed reminiscence arts activity boxes to improve the mental health, mood and engagement of someone with dementia. These boxes have been distributed to 150 people with dementia and their carers on a weekly basis totalling 600 boxes per month’ [Theme 2]

Training and development of professionals was an important additional outcome of many interventions.

‘[The project] reached a total audience of 1,412, including medical professionals, with further screenings reaching the Alzheimer’s Society in 2017 and the Dementia Pathfinder’s Annual Award Ceremony in 2016.’ [Theme 2]

Theme 3 – Technology for Social good

In this theme, we noted a diversity of impacts occurring through the collaborations with arts and cultural partners. Often, impact was achieved through the demonstration, showcasing and implementation of technology developed by the researchers, or the commercialisation and further adoption of products based on the research. For example:

'The new array was adopted by sound engineers for major broadcast events such as the FIFA World Cup, BBC Proms and the French Open. Other microphone arrays and an array design app that was based on the research became essential tools for 3D sound recording at Abbey Road Studios (UK), Austrian Broadcasting Corporation (Austria), Arizona Public Broadcasting Services (USA) and Tianjin Juilliard School for musicians (China)'. [Theme 3]

However, numerous impacts also occurred through public engagement activities, often in collaboration with cultural institutions (museums, libraries, theatres, concert halls) and impacting audiences. For example:

'The development of resources for VSAT took place across 23 Co-creation workshops designed to improve young people's confidence and capacity with digital and material creativity. The first series of 6 workshops, held in 2016-2017 and based around Bob and Rose Brown's 1931 'Reading Machine', attracted 120 participants, 25 of whom were from BAME and disadvantaged communities'. [Theme 3]

Another important channel through which impact occurred is the training and development of professionals in various sectors including heritage, conservation, museums. For example:

'We have staged demonstrations of immersive designs at CMP events and have given 5 immersive skills-building workshops to local museum staff. 7 immersive introductory sessions have been given: 2019/20 'build a chat bot' (30 attended); 3D Tours (7 attended); Immersive Marketing (8 attended); Realtime World in VR (12 attended); Inclusive Immersive (14 attended)'. [Theme 3]

Theme 4 – Environment and Climate emergency

Again, in this theme we noted a variety of impacts, but what emerged particularly strongly is the impact occurring through education of children and students. For example:

'Where's My Igloo Gone? toured to 23 rural touring venues, giving 32 performances in community contexts, while Gulp! gave a total of 12 (before lockdown occurred). Longwill School for the Deaf (Birmingham) explained the significance of this approach stating that "environmental issues have been addressed previously but it is hard to hold our pupils' attention'. [Theme 4]

Impact generated through general public engagement was also very frequent. The latter also involved local or ethnic communities and marginalised groups such as homeless people. For example:

'The Polar Museum's Education and Outreach team routinely work with a range of underrepresented audiences to share SPRI research with people of all ages and backgrounds. These include running short courses for people living with dementia and their carers, partnering with local charity 'Portals to the World' (78 people engaged since 2015), museum tours especially for young parents, and tours for homeless people with local charity 'Winter Comfort' (one group of around 10 for each reporting year)'. [Theme 4]

2.8. Conclusion

This chapter aims to analyse and elucidate on how research activities related to arts and culture help society to address Grand Challenges, focusing particularly on the four themes of: Place making and levelling up, Health and Wellbeing, Technologies for Social Good, and Environment and Climate Emergencies. We have explored the following issues:

- i) Who benefits from these research activities?
- ii) What roles do partner organisations play?
- iii) What are the processes through which Grand Challenges are addressed?
- iv) Are there relevant differences across different Grand Challenges?

To respond to these questions, we extracted 90 REF impact cases divided by the 4 themes and employed content analysis to examine the cases.

First, the analysis allowed us to identify “Who benefits from these research activities?”. The key stakeholders – individuals, groups and organisations – benefited from the research by either: collaborating directly with researchers on topics of interest, by adopting approaches, practices or advice suggested by the research, or by using the research findings to advocate for causes or to obtain funding. Stakeholders also benefitted indirectly by attending performances or watching programmes informed by the research, or by attending interventions that built on the research. Many cases highlighted impact upon general groups of individuals in society, such as audiences or visitors, as well as some impacts on society achieved through changes in policy. Repeatedly, impact was reported in relation to specific groups that participated in specific interventions and initiatives as well as groups that are often marginalised in society. This suggests that arts and culture research and partnerships between researchers and the arts and culture sectors, not only had significant impact upon disadvantaged groups in society, but also addressed Grand Challenges by working with social groups that were particularly influenced by or sensitive to these challenges. In addition, impacts have been noted on groups that relate to business, professions, and policy, for example: users that benefited from the improved products, technologies, or services developed as a result of the research. The other identified beneficiary group is related to organisations that implemented an intervention or programme based on the research.

We further explored “*What roles do partner organisations play?*”. In order to further examine the roles played by partner organisations in generating impact, we classified these roles using a framework proposed by Austin and Seitanidi (2012), who have built a Collaborative Value Creation (CVC) framework for analysing social partnerships between businesses and non-profits, with particular emphasis on the framework’s value creation spectrum. We identified a number of ‘integrative’ roles played by partner organisations in collaboration with researchers, where both partners exchanged resources for mutual benefit. These roles included: supporting research, using research, or showcasing/disseminating research outputs, or hosting/broadcasting work performed directly by the researcher, or based on the researchers’ work. In the context of integrative collaborations, we can identify numerous examples of mutual benefits directly arising from the collaborations.

A number of roles played by partner organisations were ‘transformative’, where organisations and researchers engaged closely together to achieve synergistic value. This occurred when the partner organisation and the researcher co-developed an initiative (intervention, project), co-produced a piece of work (performance, play, choreography, workshop), co-developed a product, or collaborated to co-produce evidence (report, consultation response, guidance). In transformational collaborations, co-designed initiatives often have the ability to generate broader changes.

Additionally, we identified some roles played by partner organisations which were more ‘transactional’; where the partner organisation used the research to develop work independently for its own benefit. This occurred when the partner organisation delivered an initiative (programme, intervention, training, service) based on the research. The benefit from developing initiatives independently based on the research accrue primarily to the organisation itself. Nevertheless, it’s worth noting that in a long-term perspective, all kinds of collaborations have the potential to generate further benefits and it is difficult to associate a specific type of role played by partner organisations to a specific ‘pathway to impact’.

Third, we observed and addressed the question: “*What are the processes through which Grand Challenges are addressed?*” We identified both:

- (i) impacts emerging directly from the research, e.g. from collaborations between researchers and partner organisations and groups, or from the direct use of research results and evidence on the part of organisations and groups;
- (ii) impacts emerging indirectly from the research, e.g. from initiatives implemented based on the research, or from collaborations that have been initiated thanks to the research.

In terms of indirect impact of the research, we identified numerous processes through which indirect impacts were produced. First, we identified numerous examples of collaborations with partner organisations which led to new or expanded initiatives, which consequently generated further impacts. We also noticed that indirect impact arose when the research inspired people and organisations to take action, either after attending presentations/events about the research, or participating in initiatives based on the research. Another form of indirect creation of impact occurred when the research resulted in the establishment of new collaborations, or new formal and informal organisational forms, which in turn generated many further impacts.

Finally, we further analysed the cases to see “*Are there relevant differences across different Grand Challenges?*”. Here we noted that certain processes were more evident in specific themes, in particular: the involvement of local communities in Theme 1, the implementation of healthcare interventions in Theme 2, the role of development, commercialisation and adoption of technologies in Theme 3, and the development of educational activities in Theme 4.

To conclude, the evidence from the REF case studies demonstrates the multifaceted impact of art and culture research in addressing Grand Challenges. The impacts are created through the multidisciplinary research and collaborations with various stakeholders in society to tackle various issues related to the Grand Challenges. Even though the REF case studies present rich information in relation to the impacts created by research engaged with arts and culture, data is still limited on the nature of collaboration, especially between researchers and arts and cultural partner organisations. Further research could explore the collaborations to evidently capture value creation, mission, scope of activities, trust building and source of value linking to the beneficiaries.

Chapter 3

An analysis of the REF2021 impact case study submissions from small and specialist HEIs.

Dr Laura J. Lee Kemp – Senior Manager, NCACE

3.1. Introduction

Specialist institutions offer higher education courses and expertise focused around one specialism. This chapter is concerned with those institutions that conduct research within disciplines that correspond to the arts and culture sectors, such as music, the visual arts, the performing arts and literature. As these institutions cover the disciplinary areas that correspond directly to the types of artistic and cultural practice that NCACE engages with, we want to determine the types of collaborative interactions taking place within specialist institutions as represented within the REF2021 case studies, in addition to analysing the types of impact represented, the beneficiaries affected, and the funders and partners involved in each case study.

The institutions under consideration were identified by cross-referencing submissions to REF2021, the KEF Arts Cluster and member institutions of GuildHE¹⁷. As explored in Chapter 1, institutions in the KEF ARTS cluster are those with the greatest share of cases with arts and culture-related impact (68.25%). However, not all institutions that submitted to KEF are research active, and therefore did not provide REF submissions. In addition, KEF only includes English institutions, whereas the REF includes HE providers from Scotland, Wales and Northern Ireland. The 18 specialist institutions identified as conducting both research and Knowledge Exchange activities (because they are named in REF and either KEF or GuildHE) are given in Appendix 8.

From these 18 institutions a total of 73 impact case studies were submitted, of which 55 feature interactions with, or impact upon, the arts and culture sector. The sector areas, as defined throughout this publication, fall into seven categories:

- i) Theatre (including performance art, opera, dance, plays)
- ii) Music
- iii) Visual Arts
- iv) Public Arts (including Community Arts)
- v) Museums (including Galleries)
- vi) Artists
- vii) Literature (including poetry and literary festival)

The remainder of the case studies were engaged with the design, fashion, film and tv sectors, which are outside the remit of this publication. Of the 55 under consideration, all of the impact case studies were submitted to either UoA 32- Art and Design: History, Practice and Theory (32 case studies), or UoA 33 - Music, Drama, Dance and Performing Arts, Film and Screen Studies (23 case studies).

3.2. Methodology

The 55 case studies identified through the criteria outlined above were downloaded from the REF Impact Case Studies database before being free coded to identify: funders, art and cultur-

¹⁷ [Our Members - GuildHE \(https://guildhe.ac.uk/our-members/\)](https://guildhe.ac.uk/our-members/)

al partners, role of partners, impact claimed, and beneficiaries. Subsequently, a more detailed cross-analysis was performed to compare score distributions and identify any 4* case studies.

3.3. Score distributions

The scores awarded to impact case studies submitted to UoA 32 (Art & Design) were lower than those submitted to UoA 33. This could indicate that there was more competitive marking because it is a larger Unit of Assessment. Indeed, the total number of submissions to UoA 32 overall were almost 25% higher than submissions to UoA 33. There is also a correlation between lower scores and institutions submitting a higher number of case studies in UoA 32, with an average number of 3.2 case studies submitted ranging from 6 to 1. The average number submitted to UoA 33 per institution was 2.3 case studies, which could indicate that smaller institutions focusing on submissions of 2 to 3 case studies are more likely to score highly. Only 1 submitting institution scored 100% 4* in impact (Guildhall) with 2 case studies submitted to UoA 33. The second highest score (83.3% 4*) was also in UoA 33, with a submission of 3 case studies (RCSSD).

3.4. Partners

Of the 13 case studies that cited 'formal' partners, 4 listed one partner and the remainder named multiple partners - with the most being 25 partners involved in one case study. This is representative of how the arts and culture sectors operate within networks, often expansive and collaborative, that provide pools of expertise and multiple small funding sources. Many of the case studies had established partnerships with larger, more research intensive HEIs or specialist research institutions, perhaps indicating a similar network structure within arts research. A large percentage of the formal partners listed across all case studies are museums and galleries, with an unsurprising emphasis on these types of partners in submissions to UoA 32. There is also an emphasis on collaborations with theatres, which range from large companies such as The Old Vic and the National Theatres of Scotland and Wales, to more local organisations such as Theatre by the Lake. It is interesting to note that most theatrical partners are involved in two or more case studies, indicating established relationships with local specialist institutions.

There are also many arts organisations and centres listed as formal partners, again in case studies with multiple collaborative partners. Other partners named include local authorities or local council schemes, such as Manchester City Council, Farnham Town Council and the Broads Partnership scheme. These authorities or schemes are all involved in case studies with large partner networks, which focus on a range of issues which include: establishing a new WWI memorial event in Manchester (MCC), enhancing public understanding and engagement with the history and ecosystem of the Norfolk Broads (Broads Partnership Scheme), increasing recognition of pottery produced in Farnham and thereby stimulating economic and cultural activity (Farnham Town Council). The case studies which involve local authorities all cite impacts which are hyper-local, although the Manchester City Council case study also involved partners located in northern France. Interestingly, the case studies involving local authorities (Manchester & Farnham) received funding from Arts Council England, and it does not appear that the LAs themselves made any financial contributions. The Broads Partnership project also received funding from a large national body - the Heritage Lottery Fund, which was accessed via the Broads Authority.

Although this is a very small sample of case studies from which to draw any conclusions, it could indicate that small specialist institutions are able to draw on strong local/regional connections

and networks to access large national funding streams aligned to government priorities - in these examples, the placemaking and levelling-out agendas. The 2022 GuildHE report, Building the Jigsaw, noted that smaller, specialist institutions 'are frequently located in smaller towns, on the edge of cities, or in rural or coastal locations. They are locally significant as employers and community anchors and active partners in Local Enterprise Partnerships and other local bodies, such as Chambers of Commerce.'¹⁸ These regionally significant relationships are made apparent through the REF2021 impact case studies.

3.5. Funders

Arts Council England (ACE) funded the majority (9 case studies) within the sample under consideration (55 case studies), although as part of a group of funders in 8 of these. It is interesting to note that ACE is listed as a funder for 16% of the case studies submitted by specialist institutions, whereas for the entire REF impact database, ACE is accredited to only 1.2% of the submissions overall. The total subsidy received by the 9 case studies is detailed in Table 3. 1.

Table 3.1. ACE funding per case study

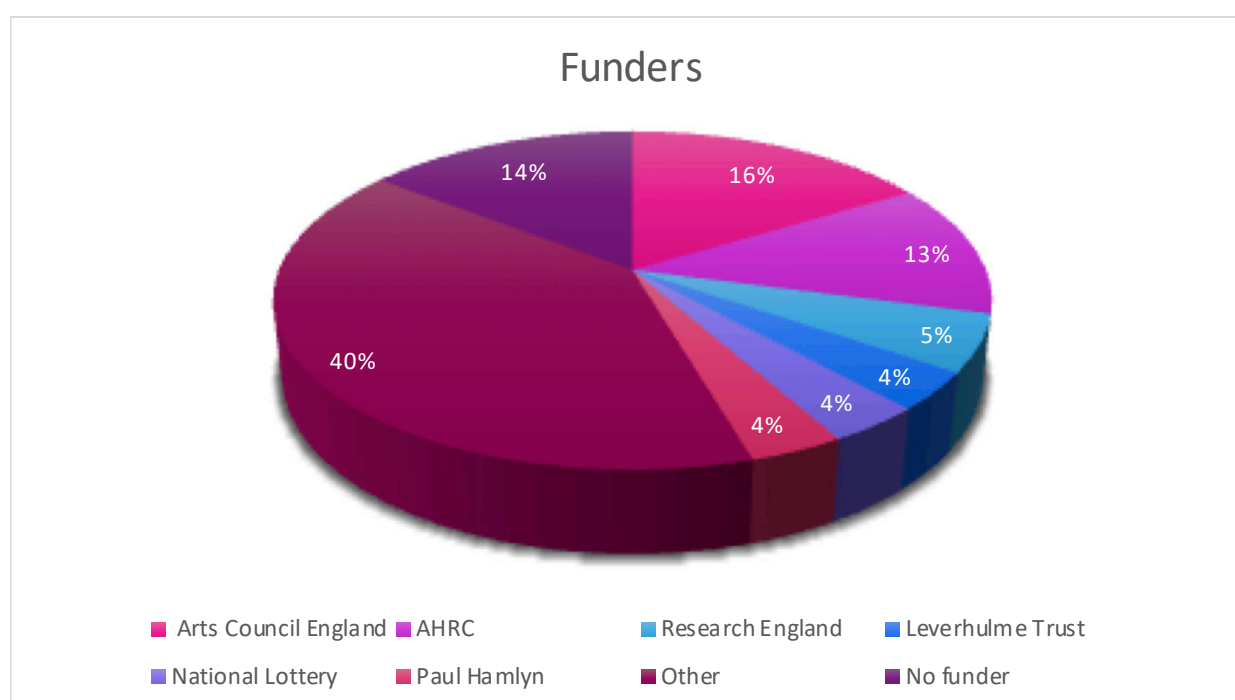
Case Study Title	Arts Council England funding received
Enabling Cornish Museums to offer Immersive Visitor Experiences	£95,472
Online Orchestra: providing access to ensemble music-making for people in remote communities	£14,948
'Taking Care': Enhancing UK nursing training using mixed-methods drama research to reconceptualise, teach and promote embodied 'care' in clinical interactions	£14,531
Music and Maternal Mental Health	£199,916
The Music of the First World War Across Borders: engaging diverse communities in new narratives, collections and forms of commemoration	£10,000
Participation, engagement, and cultural understanding: Developing new models for performance touring, audience development, creative partnerships, and social change	£804,640
Improving social equality in the British performing arts industries	£15,000
Innovative Textiles Curation: Enabling Arts Organisations to Deliver Institutional Strategies	£84,482 + £26,000
The Role of Studio Pottery in Developing the Local Economy and Changing Museum Exhibition Practices	£16,648
Total	£1,281,637

The total amount of ACE funding received by these nine case studies is comparatively high when we look at submissions from other non-specialist institutions, with a variable range of 22,000 pints (see [REF2021 impact case study submissions from small and specialist HEIs](#), p.2)

from £10,000 to £804,640. The highest funding subsidy corresponds to a formal partnership with an ACE National Portfolio Organisation, Fevered Sleep. It is also significant that every case study in receipt of ACE funding also had formal partners, usually multiple partners. This is not the case for any other funder who appears more than once in the selection, so it could represent either a preference for noting established networks as formal partners by ACE, or simply that researchers applying for Arts Council funding are more likely to be established within wide and dynamic networks in their cultural or artistic sector. Another explanation for such high investment from ACE could be that it compensates for the reduced level of Higher Education Impact Fund (HEIF) investment received by small institutions, as explored in the recent GuildHE report *Expertise in Action*.¹⁹

The AHRC is the next most frequent funder for 7 case studies, and is the sole funder for 3 of these. Research England or (HEFCE/HEIF) funded 3 case studies, with Leverhulme, the National Lottery and Paul Hamlyn foundation all funding 2 each. All the other listed funders appear only once and are listed in case studies with multiple funding sources. The percentage of case studies supported by each funder are given in the pie chart in Figure 3.1.

Figure 3.1. Funders supporting % of case studies in sample



3.6. Types of impact claimed

Public engagement and collaborative research dissemination

Of the types of impact demonstrated in the case studies, 24 (43%) involve collaboration with museums, galleries or exhibitions and overwhelmingly cite public engagement activities or research dissemination as the impact achieved. As we know from previous iterations of the REF and the guidance released for REF2021, public engagement and research dissemination is mostly con-

¹⁹ [GuildHE Report: Knowledge Exchange \(https://guildhe.ac.uk/wp-content/uploads/2023/09/GuildHE-Report-Expertise-in-Action.pdf\)](https://guildhe.ac.uk/wp-content/uploads/2023/09/GuildHE-Report-Expertise-in-Action.pdf)

sidered a pathway to impact by UoA panels, rather than impact in itself. The majority of the case studies which stipulate public engagement as the end impact outcome were submitted to UoA 32, perhaps accounting to the lower average score distribution in that Unit of Assessment for specialist institutions. Unfortunately it's not possible to determine precisely whether public engagement led to lower scores overall, but it is significant that there is a wider correlation between public engagement activities through museums or galleries within the case studies submitted to UoA 32 by specialist institutions.

Examples of the impacts described in these case studies include:

- 'enabl(ing) curators to engage the public with the global humanitarian crisis of forced human displacement in new ways, attracting new and larger audiences in Scotland..., Greece and Germany... and in the United States';
- 'enabl(ing) two organisations to deliver their strategic objectives to reach broader, more diverse and international audiences';
- 'contribut(ing) to greater public recognition of artists Dorothea Tanning and Leonora Carrington, raising their profiles for new audiences';
- 'a clearer public understanding of how the narratives and history of the blues have been constructed and told';
- 'changed public understanding of art as protest, empowered disenfranchised and disaffected communities, and shaped our collective discourse on social and political imperatives';
- 'the development of new collaborations and connections with greater global reach and the ability to reach bigger and wider audiences.'

Although there were many examples of public engagement and research dissemination submitted to UoA 32 by specialist institutions, there is undoubtedly a close ecology between visual arts institutions and local galleries and museums and the sub-panel has acknowledged the socio-political, economic and environmental benefits provided to local and engaged communities by these examples of knowledge exchange. As the UoA32 report notes: 'The sub-panel also observed the influence of art and design researchers who were actively producing interdisciplinary investigations in which issues of intersectionality, gender, race, identity, class, and disability were central. Evidenced in impact case studies, it was clear that through historical, theoretical and practice research many had made a profound difference to policies, practice and communities in challenging AngloEuropean perspectives and surfacing colonial, social and cultural issues through, for example, exhibitions, co-design, and public and community engagement.'²⁰

Case studies which claim to increase the dissemination and reach of research findings, or of certain artistic practice, proliferate within this sample. However, there are also a number of case studies submitted to UoA 32 that demonstrate how collaborations with a museum or gallery have led to further impact within local communities, such as 'pro-environmental behaviours and policy changes to curriculum offerings in schools, universities and the biodiversity learning strategies of major public organisations.' The UoA32 sub-panel report also praised the 'contribution art and design research has made to economic regeneration, to health, social justice, placemaking, environmental sustainability and to the quality of cultural and public life and the wellbeing of communities...'²¹

²⁰ [mp-d-overview-report-final-updated-september-2022.pdf](https://ref.ac.uk/media/1913/mp-d-overview-report-final-updated-september-2022.pdf) (<https://ref.ac.uk/media/1913/mp-d-overview-report-final-updated-september-2022.pdf>) p.158, note 18.

²¹ [mp-d-overview-report-final-updated-september-2022.pdf](https://ref.ac.uk/media/1913/mp-d-overview-report-final-updated-september-2022.pdf) (<https://ref.ac.uk/media/1913/mp-d-overview-report-final-updated-september-2022.pdf>) p.169, note 71.

Policy influence

The above reference to policy impact derived from public engagement speaks to the high percentage of case studies within this sample which make claims to influencing policy in some way. From the 55 case studies under consideration, seven of them (12%) claim some type of policy impact. Given that evidencing a change in any policy - whether that's national governmental policy or policies of practice within a sector - is notoriously difficult to demonstrate within REF impact case studies, this percentage is surprisingly high for a fairly small selection of examples from small, specialist institutions. Of the case studies which report influencing changes to policy, there at least two which we can deduce were awarded 4* and four others which must have been awarded 3-4*.

Descriptions of the claims to influencing national or devolved governmental priorities include:

- *'developing impact at a national arts and healthcare education policy level with early signs of buy-in from several key stakeholders'. (Guildhall School of Music & Drama)*
- *'the research has contributed to key policy documents which have established the evidence and need for the role of the arts in healthcare. For example, it was cited in the World Health Organization (WHO, 2019) scoping review on the role of the arts in improving health and wellbeing which "in light of the size of the evidence base mapped...raises a number of policy considerations for members of the WHO European Region to support the development of longterm policies or strategies that will provide more synergized collaboration between health and arts sectors that could realize the potential of the arts for improving global health". Further, it was listed in the All-Party Parliamentary Group on Arts, Health, and Wellbeing 2017 Creative Health report as evidence for the recommendation that "local authorities might ensure that health visitors, midwives, GPs and antenatal teachers are informed of the health and wellbeing benefits of arts participation for expectant mothers and those with pre-school and school-age children, and that these benefits are communicated to expectant and new mothers. Where there is little or no provision, local authorities might encourage partnership projects with local arts organisations" and was cited in the All-Party Parliamentary Group on Arts, Health, and Wellbeing Submission to the Arts Council Strategy Consultation (2019) as "just one example of the enormous potential the arts has shown" in supporting maternal health. Additionally, the research has been cited in public-facing discussions as evidence for the importance of the rapidly expanding social prescribing movement in the UK. (Royal College of Music)*
- *WGO has been influential in shaping successive Scottish governments' policies towards to youth music and, together with a continuing body of research undertaken by the Conservatoire, remains a foundation for policy, planning and funding of youth music across Scotland (Royal Conservatoire of Scotland)*
- *Harradine's practice research in This Grief Thing has led to his contribution to policy debates on grief and bereavement. In recognition of his research and im-*

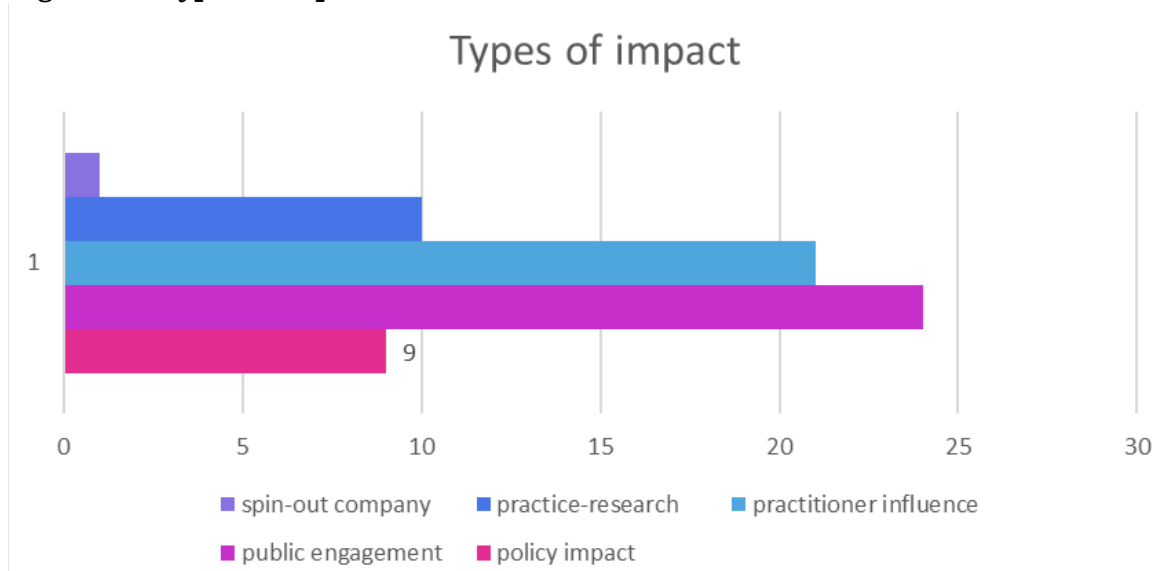
pact, he was invited in early 2019 to join the All-Party Parliamentary Group on bereavement support, representing Fevered Sleep, who are the only arts organisation in the group. The group's secretariat, The Good Grief Trust (the UK's umbrella organisation for bereavement charities and related organisations), contributes to government policy on bereavement and developed National Grief Awareness Week 2020. (Royal Central School of Speech & Drama)

Descriptions of the cases which have influenced institutional or sectoral policies include:

- *Both PIPA's Best Practice Research and Tonic's diversity-focused Planning Tool were cited in the 2017 Workforce Review of the UK Offstage Theatre and Performing Arts Sector, commissioned by UK Theatre and the Society of London Theatres (S3), and have led to further work in the sector, exploring inclusion in relation to gender and caring responsibilities. These include PIPA's Balancing Act Survey (2019), which recommends changes to policy to break 'the link between caring responsibilities and career progression in the performing arts' (S7: 4). (RCSSD).*
- *Changes in the policies and practices of museums, galleries, collections and festivals, including the National Portrait Gallery, LagosPhoto and the Hyman Collection. The latter has introduced a gender-equal collecting policy as a direct result of *Fast Forward*. Beneficiaries are the institutions, their audiences and the artists they represent. (University for the Creative Arts)*

We can see from these descriptions that impacts include influencing national and devolved government priorities, and influencing policies of practices within cultural institutions or sectors. Five out of the six of these cited case studies were submitted to UoA 33. Figure 3.2 details the number of case studies claiming different types of impact as described.

Figure 3.2. Types of impact claimed



Collaborations with external practitioners

Twenty-one (or 37%) of the case studies under consideration in this chapter involve a collaboration with an external artistic or cultural practitioner who are not cited as ‘formal partners’. The subsequent impact relates to influencing the practitioner’s work or practice, or to dissemination of their work. This high percentage speaks to the deep connections that specialist institutions have with their respective cultural or artistic sectors, such as art, sculpture, music and drama. We also looked at where research is engaged directly with artistic or cultural practitioners, and found that there were very active processes of collaboration and bilateral knowledge exchange with external artists or cultural organisations. Examples from these case studies include: deep collaborative research with sculptor Anthony Gormley which resulted in ‘a significant moment of reappraisal for Gormley himself’ and ‘transformed audience understandings and experiences of Gormley’s works’; workshops with local artists from disadvantaged communities whose ‘sculptures were shown on posters in Leeds, a large-scale building wrap in Wakefield, and adverts on Facebook, temporarily changing the environments they were located in and exposing the general public, who may not visit art galleries, to contemporary art’. As evidenced by these descriptions, some of these case studies involve long-standing and reciprocal relationships between practitioners and the submitting institution. Whilst this is not necessarily unique to specialist institutions, it is definitely representative of an ecology of exchange between small specialist HEIs and their respective industries.

Practice research

A wide range of impacts were reported through a fairly high percentage (18%) of case studies that focus on the work of researcher-practitioners employed by the submitting institution and involve impact derived from practice-based research. Examples include: two practice-based research projects by photographer Wenham-Clarke, one ‘which drew public attention to scientific advances in genetics research’, and another which ‘inform(ed) the public about the inequalities of modern life, to challenge public perception and to encourage a greater acceptance of cultural diversity’. Another practice-research submission details ‘a series of stand-alone yet interconnected performances, installations and films of monologue texts by Tai Shani from the Royal College of Art (which) encouraged wholesale reappraisal of feminist interventions in contemporary art practice among curators, artists and the general public’, and an artist-in-residence, Storey, who is ‘the first person to be appointed United Nations High Commission for Refugees (UNHCR) Artist in Residence, based at Za’atari refugee camp in Jordan (2019). Her extensive body of evidence-based practice research has had global impact at political and individual levels, in particular, on the understanding of the relationship between climate breakdown and the global migration of people.’

The word cloud in Figure 3.3 reflects some of the impacts reported through the impact case studies featuring practice research.

Featuring researcher-practitioners in impact case studies is perhaps not surprising when we consider that specialist institutions teach degrees which are practice-based, such as fine art, sculpture, textile design etc, and the sub-panel report notes that ‘REF 2021 provided significant evidence of world-leading and internationally excellent practice research, presented under an array of headings within the REF categorisation system.’²² However, it is also important to note that

²² [mp-d-overview-report-final-updated-september-2022.pdf](https://ref.ac.uk/media/1913/mp-d-overview-report-final-updated-september-2022.pdf) (ref.ac.uk) (<https://ref.ac.uk/media/1913/mp-d-overview-report-final-updated-september-2022.pdf>) p.167, note 61.

the examples given above demonstrate some of the ways in which small specialist HEIs benefit society, the economy, the environment and support the development of practitioners within their own specialist art forms.

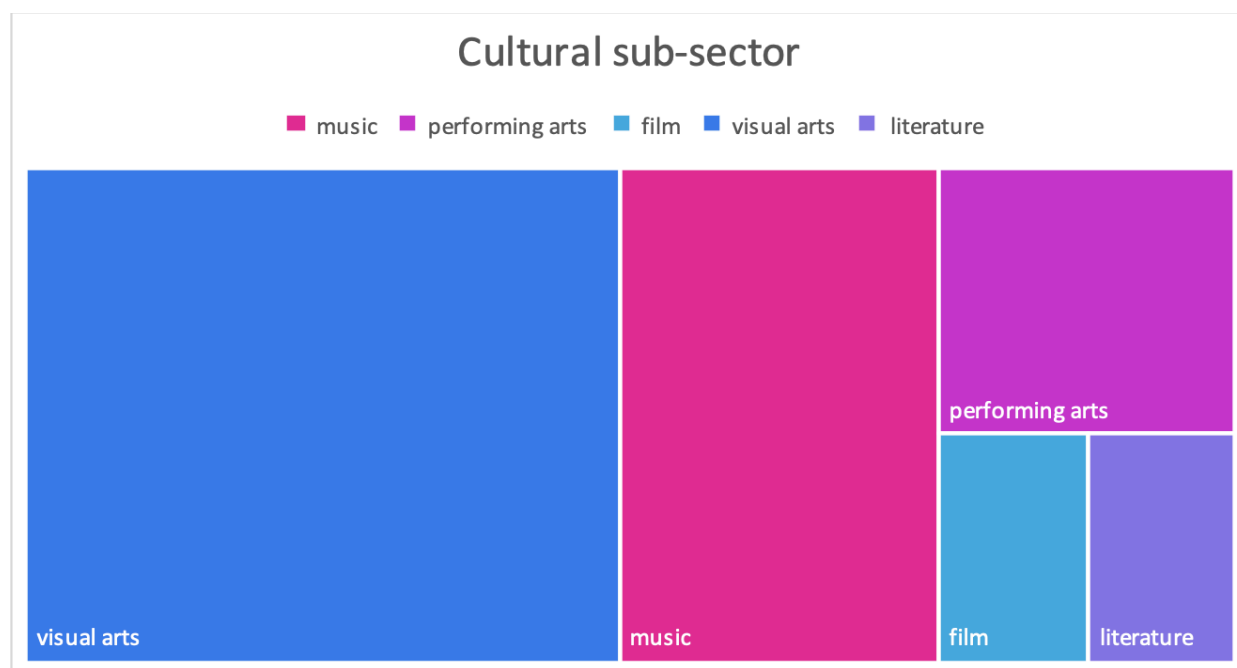
Figure 3.3. Practice research impact word cloud

3.7. Cultural sub-sectors involved in collaborations

As depicted in Figure 3.4, there is a big emphasis within this sample of impact case studies drawn from research and knowledge exchange taking place within the visual arts sector, including museums, galleries, photography, fine art and sculpture. This correlates with the position of public engagement as the most dominant type of impact, as the visual arts operate mainly within the realm of public exhibitions and public education. The types of specialist institutions under consideration in this chapter also have a weighted membership to this sub-sector, with many offering fine art or photography degree courses. Similarly, we see a large number of case studies which belong to the music sub-sector, just as a high number of the specialist institutions teach music at undergraduate and postgraduate level.

The lower number of case studies which correspond to the sub-sector of literature is also worth further consideration. It does not necessarily indicate that literature is a lesser-taught discipline within specialist institutions, as many of them offer Creative Writing and Screenwriting degrees; however, none of the impact case studies submitted by the institutions within this sample were submitted to UoA 27 - English Literature, or to UoA34 - Communication, Cultural and Media Studies. It may be the case that concentrating submissions within UoAs 31 and 32, which cover disciplines not widely taught within HEIs across the UK, was a strategic decision to avoid submitting to other UoAs (like English Literature) that would also see submissions from the large, research-intensive universities. One question which arises from this hypothesis, is whether such a decision could be related to lower levels of professional services support for REF within small institutions.

Figure 3.4. Proportional representation of cultural sub-sectors featured in impact case studies



3.8. Types of beneficiaries

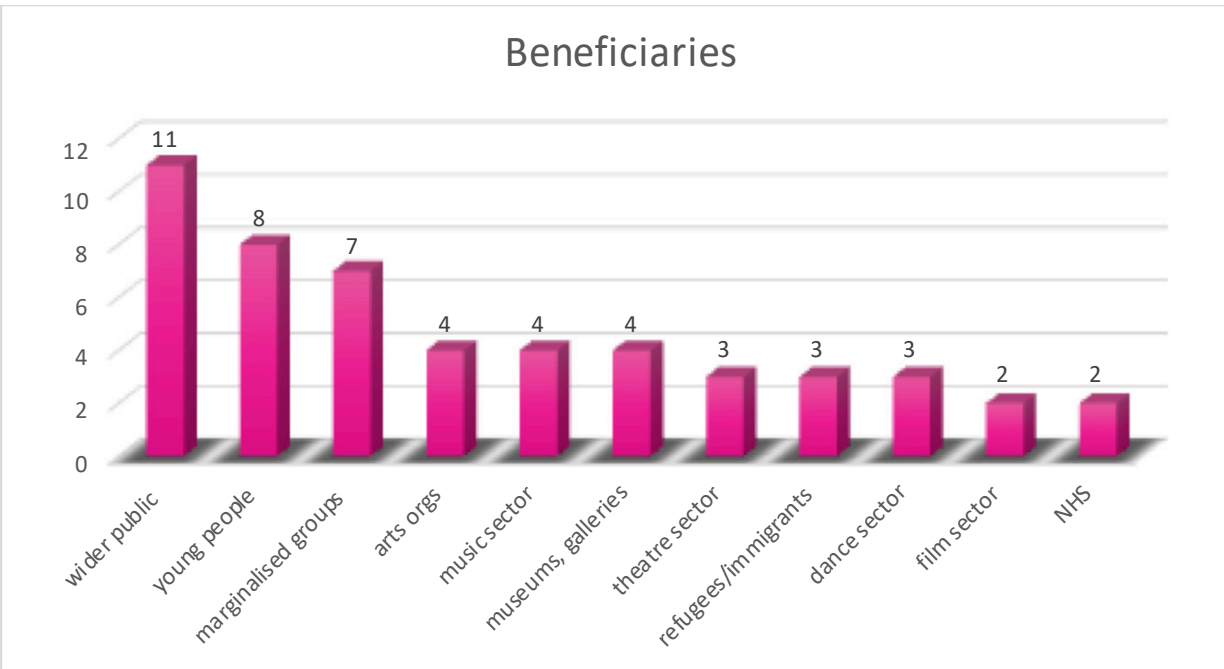
The wider, or general, public are the most cited impact beneficiaries in 19% of case studies, which correspond largely to those cases which cite public engagement or research dissemination as the impact type. Examples include changing attitudes towards climate change, feminism, migration or educating audiences about certain artistic or musical practices. The next most widely cited group of beneficiaries, or stake-holders, within the sample under consideration in this chapter are ‘young people’, including young musicians, artists, theatre performers and HE students, reflecting

the aforementioned investment that small specialists have in securing the legacies and futures of their respective culture sectors.

Marginalised groups (including Black British artists, those with disabilities or Special Educational Needs, women suffering from postnatal depression and Irish Travellers) are the third most common group of beneficiaries within this sample, appearing in seven of the 55 case studies (see Figure 3.5). Three additional case studies also cited a positive benefit upon refugees and migrants, with examples including the aforementioned UNHCR Artist in Residence, and supporting ‘Syrian refugee musicians and performers, including the Syrian Expat Philharmonic Orchestra (SEPO) to reach new audiences around the world’.

In an analysis of REF2014 impact case studies done by Mark Reed, it is clear that higher scores were awarded to those that specified wide-reaching benefits upon specific groups of stakeholders.²³ The two case studies within this selection which we can deduce were awarded 4* (because 100% of the impact submission from that institution received 4*), both featured very specific groups of beneficiaries. In the first case study, the beneficiaries were nursing students in the UK and Belgium. This project was funded by the AHRC and ACE, with a named formal partner - the Theatre and Performance Research Association. The other case study featured practice-based research in opera and libretto composition, citing benefits for young people training in this practice. The impacts affected school curriculum design and public policy on languages. It was also funded by the AHRC and had formal partners from other HEIs. Although this case study only claimed impact within the UK, and more specifically, London, the beneficiaries consisted of a very specific group.

Figure 3.5. Types of beneficiaries featured in number of case studies



The impacts demonstrated and beneficiaries cited in this group of case studies are diverse and numerous, ranging from improving the cultural life of society in Britain and abroad, to specific

²³ [What makes a 4* research impact case study for REF2021? \(fasttrackimpact.com\) \(https://www.fasttrackimpact.com/post/2017/12/19/what-makes-a-4-research-impact-case-study-for-ref2021\)](https://www.fasttrackimpact.com/post/2017/12/19/what-makes-a-4-research-impact-case-study-for-ref2021)

improvements upon the lives of marginalised groups and young people. Many of these case studies speak to one of the four themes that underpin our work at NCACE - themes that cover some of the most pressing issues of our time, pertinent to both government research funding policies and wider societal concerns. These themes are detailed below in Table 3.2, cross-referenced with the number of case studies submitted by specialist institutions which interact with the arts and culture sectors:

Table 3.2. Alignment of impact case studies with NCACE themes

NCACE Theme	No. of case studies (out of 55)
Placemaking & Levelling Out	7
Environment & Climate Emergency	7
Health and Wellbeing	10
Technology for Social Good	4

Just over 50% of the case studies in this sample speak to one of the four NCACE themes, which reflects how specialist institutions, which teach very specific artistic and cultural practices, are undertaking knowledge exchange and research impact strategies that are concerned with some of the most urgent and timely needs of global society. The role of cultural knowledge exchange in addressing societal ‘Grand Challenges’ has been further explored Chapter 2.

3.9. Conclusion

The patterns demonstrated through the analysis of this sample include:

- significant funding investment from Arts Council England;
- substantial investment through the AHRC;
- strong knowledge exchange economies between specialist arts institutions and local galleries and museums;
- high levels of interaction with policy - whether that be national/devolved government policies, industry policy or local authority policies;
- strong representation within case studies of practice-researchers and evidence of long-standing reciprocal interactions with artistic/cultural practitioners, both individuals and organisations;
- a focus on marginalised and under-represented groups, and a dedication to supporting the development and legacies of respective cultural and artistic practices.

There are some similarities between the themes that emerged through the larger sample of impact case studies in Chapter 2 and this smaller sample submitted by specialist institutions. Firstly, a significant level of policy impact was reported in both samples. Secondly, both analyses demonstrate a concentration of impact case studies reporting benefits to marginalised groups. Collaborative work with partners is also a shared theme, with the co-development of training or education programmes, exhibitions and performances. However, the sample taken from the specialist institutions does not feature much interaction with businesses or the monetisation of products derived from research collaborations.

What is clear from this analysis is that the impact case studies submitted by the institutions listed in Appendix 8 have demonstrated that, despite their size and specialist foci, these HEIs provide impressive levels of support to the arts and culture sectors through collaborative research, knowledge exchange and discipline specific investment. Such collaborations have also led to demonstrable impact for the benefit of wider society, marginalised groups, the healthcare sector and the environment.

Chapter 4

Taking a snapshot: REF 2021 and Arts Council England's National Portfolio Organisations

Evelyn Wilson, Co-Director, NCACE

4.1 Introduction

As part of our work on REF2021 NCACE is exploring research connections and networks with the arts and culture sector. The focus of this chapter is on how such connections and proximities are evidenced in relation to Arts Council England's body of NPOs (National Portfolio Organisations). Its purpose is to act as a starting point for collecting new insights into relations between researchers and research impact and the arts and culture sector, based on some initial explorations of the REF dataset and the Arts Council England's Investment Programme dataset. In order to do this, we took samples from the current dataset to explore synergies with REF 2021 Impact Case Studies. We were keen to understand what they reveal about: the impacts, partnerships and wider connections that exist between research and the arts and culture sector. We also wanted to learn more about roles that these arts organisations are playing within the research ecosystem, recognising of course that they are not funded as research bodies, although a small number are based within universities.

4.2 Arts Council England and National Portfolio Organisations

Arts Council England (ACE) is the key funder for the arts in England and it regularly funds a substantial number of arts and cultural organisations across a range of fields including: theatre, music, dance and the performing arts, museums, galleries and visual arts, literature and poetry, community and cross-disciplinary arts organisations. Between 2023 - 2026, as part of its Investment Programme²⁴, ACE is supporting almost 1000 organisations and this forms the major part of ACE's support for arts and culture sector organisations in England. The majority of those organisations are referred to as National Portfolio Organisations or NPOs as well as a very small number of IPSOs (Investment Principles Support Organisations).

These are not the only arts or cultural organisations in receipt of ACE funding with other ACE funding streams supporting project activities for other arts companies and individual artists and cultural practitioners. However, the Investment Programme portfolio generally designates robust organisations with good governance and financial processes and the capacity to undertake and deliver quality work in their respective fields as expressed in the NPO Relationship Framework²⁵. It is, as such, more likely to be the case that these organisations will also be engaged in collaborative activities with other cultural partners and other types of organisations including Higher Education Institutions. There is also a kudos that NPO status brings for arts organisations and this may also be a factor for some researchers when it comes to forging new collaborations or other such partnerships.

We acknowledge of course that research, (both within and outside of REF reporting) knowledge exchange and teaching, civic and other forms of partnerships with the arts and culture sector also occur with organisations that are not part of the National Portfolio. Many research projects, for

²⁴ <https://www.artscouncil.org.uk/how-we-invest-public-money/2023-26-Investment-Programme/2023-26-investment-programme-data>

²⁵ <https://www.artscouncil.org.uk/sites/default/files/download-file/Relationship%20Framework%20-%20National%20Portfolio%20Organisations%202023-26.pdf>

example, connect with or employ artists as researchers. There are also many deep and established collaborations with non NPO cultural institutions ranging from small-scale organisations to large scale cultural organisations such as national museums and other IROs (Independent Research Organisations) that are likely to be in receipt of direct DCMS or other types of funding, rather than being in receipt of ACE portfolio funding. We also acknowledge that NPO connections with academia are likely to span areas including knowledge exchange and teaching and as such REF based connections gives us a partial rather than a complete view of such partnerships.

An overview of Arts Council England's NPO Investments between 2023 and 2026 can be found at the link below where, in addition to the quantitative data on each NPO, there is video and other documentation about the portfolio and the key factors outlining the decision making process behind the allocation. The investment allocation for NPO to those 985 organisations is a substantial £445 million each year.²⁶

Research Excellence Framework (REF)

A comprehensive overview of the Research Excellence Framework, also known as REF, is provided in Chapter 1 Introduction: The Research Excellence Framework and arts and culture related impact and the REF²⁷ website is a source of all the key data for the exercise.

4.3 Methodology

Given the substantial size of the Investment Programme, which supports some 985 organisations, the majority of which are NPOs, our method was to take a snapshot approach. Firstly, we took two samples of 50 organisations, in total 100 organisations, from the Portfolio to get a broad picture of relations between research and the arts. (see Appendix 9) Then we took a further sub-sample of 5 organisations from each sample set. Here we looked at REF Impact Case Studies (ICS) that had cited those organisations to enable us to explore in greater depth a number of areas including: research themes and types of impact, the roles being played by the NPOs as well as wider networks and funding streams associated with the various Impact Case Studies. A total of 34 ICS were associated with our 2 sub-samples; 5 organisations per sample. (see Appendix 10)

We could have taken the samples and sub-samples based on a number of given criteria available from the dataset but ultimately we chose funding levels as the means by which to conduct our investigation. A key consideration for choosing funding level is that capacity is often cited as a key element in developing effective collaborations, and in turn, and often implicit, is the notion that there is a direct relationship between capacity and scale. We arranged the data set by funding level, from highest to the lowest taking our two samples of 50 organisations each, just over 10% of the entire investment portfolio.

Our first sample was the **top 50 funded arts and cultural organisations in the Portfolio**. These are key major cultural organisations in receipt of high levels of annual funding from Arts Council England. Many of these are nationally renowned and celebrated organisations with the top five funded NPOs in England currently comprising: The Royal Opera House, The Southbank Centre, National Theatre, Royal Shakespeare Company and Opera North. At the top 50 end of the allocation, funding levels range from over £22 million per year to around £1.3 million per year.

²⁶ <https://www.artscouncil.org.uk/2023-26-Investment-Programme>

²⁷ <https://www.ref.ac.uk/>

Our second sample was taken from around the middle of the Portfolio allocation, **ranging from 450 - 500 in terms of funding from highest to lowest**. These organisations are mostly much smaller in scale and many of them, although often considerably younger or less established as organisations, are also nationally recognised and highly regarded in their fields. In this sample we find organisations such as The Cheltenham Festivals, Craftspace, Grizedale Arts and Bath Spa Paper Nations. Here, ACE investment ranges from around £217K to £200K per annum.

In order to establish the extent to which those 100 organisations are evidenced or present within the REF ICS dataset we conducted direct searches for each of them within the REF database. In most instances, this was a relatively straightforward task, although in a small number of cases, the title was, for example, an umbrella title, covering a number of cultural institutions such as GLAM at Oxford University which has NPO status and supports a number of cultural institutions.²⁸

Through our two primary samples, in addition to getting an overview of the state of relations, we also wanted to see if particular art form areas appear to have especially strong connectivities with research and whether we could detect any notable place-based patterns. We were also interested to see to what extent different funding levels may be a contributing factor in the presence of research relationships. Where NPOs were mentioned within REF ICS, we also went on to identify associated types of impact which, unsurprisingly, were largely either cultural or social.

From each of our two primary samples, we took a sub-sample of 5 organisations and reviewed the impact case studies associated with those ten organisations. Within each sub-sample and across both samples we chose a range of NPOs, all of whom had research connectivity evidenced in the REF. Our samples represented a wide range of art form areas with geographical spread across the various ACE regions. Our first sub-sample of 5 organisations from the highest funded NPOs included a total of 20 associated impact case studies whilst our second sub-sample of 5 organisations, taken from our sample from the middle of the portfolio, has 14 associated impact case studies.

Through the sub-samples, we set out to explore what kinds of research themes they were connected to including the following Grand Challenge areas: Place-making and Levelling Up, Environment and Climate Emergency, Health and Wellbeing and Technology for Social Good. We also examined the roles that NPOs play in the generation of research impact as well as identifying some of the key ways in which research benefits the wider activities and concerns of NPOs.

4.4 Findings from the two primary samples

As anticipated, we found a much higher degree of connectivity with research in our first sample, where, across the top 50 funded arts and culture organisations in England, we found a total of 312 REF impact case studies citing those organisations. This indicates a very high degree of connectivity between those organisations and the research base, signalling the strength of the arts within the research ecology. Only 9 of 50 top NPOs do not appear in REF2021 ICS whilst 41, or over 80% of the current top funded NPOs are cited and therefore are what we can consider to be research connected. Of those, 27 are mentioned in up to 5 impact case studies, with a further 8 mentioned in 6 - 9 case studies and a further 6 organisations with a very substantial 10 + mentions in the ICS. These include: Leeds Museums and Galleries (10), Royal Opera House (17), Southbank Centre

²⁸ <https://www.glam.ox.ac.uk/article/glam-ace-funding#:~:text=Oxford%20University%20Gardens%2C%20Libraries,%2C%A34%2C023%2C510%20over%20three%20years>.

(19), RSC (18) National Theatre (50) GLAM at University of Oxford (53). There is also a direct correlation with the top funded NPOs which are: Royal Opera House, Southbank Centre, National Theatre and Royal Shakespeare Company with 17, 19, 50 and 18 mentions respectively. So overall we can quickly see that the majority of top funded NPOs in England are indeed multiply connected with research and research institutions, suggesting high levels of partnership and networking between research and the arts and culture and high levels of capacity to undertake such activities.

In our second sample of organisations however we found a much lower level of connectivity with 25 mentions. Whilst this suggests that there is still a positive relationship between the arts and research culture, the numbers are in sharp contrast to the first sample. Here we find almost the reverse of the first sample, with 37 organisations uncited within the REF ICS with only 13 out of 50, or 26% of the sample actually being cited within ICS, with a total number of 25 associated case studies. Of these 13 organisations we see that 8 are mentioned in 1 ICS with the remaining 5 having respectively 2, 3, 3 4 and 5 mentions. So in spite of very substantial differences in funding levels associated with this sample - where the typical annual funding allocation is around £200K - we can see that over 38% of those research connected organisations also have multiple connections. In this instance those with multiple research connections include: Cheltenham Festivals, Culture, Health and Wellbeing Alliance (the only Investment Principles Support Organisation in our samples), Impressions Gallery, LUX, and Paper Nations at Bath Spa University amongst others.

When we combine the two samples we therefore find significant evidence of strong connections with research with 337 impact case studies citing those 100 organisations as having played a role in research generation impact. From this we can deduce first of all that the contribution of research to the arts, and vice versa, through even a relatively modest snapshot looks strong. We see a particularly strong correlation between volume of research and levels of funding, as evidenced in our first sample, with factors such as scale, capacity and perhaps also kudos or ‘cultural capital’ more broadly implicit here too.

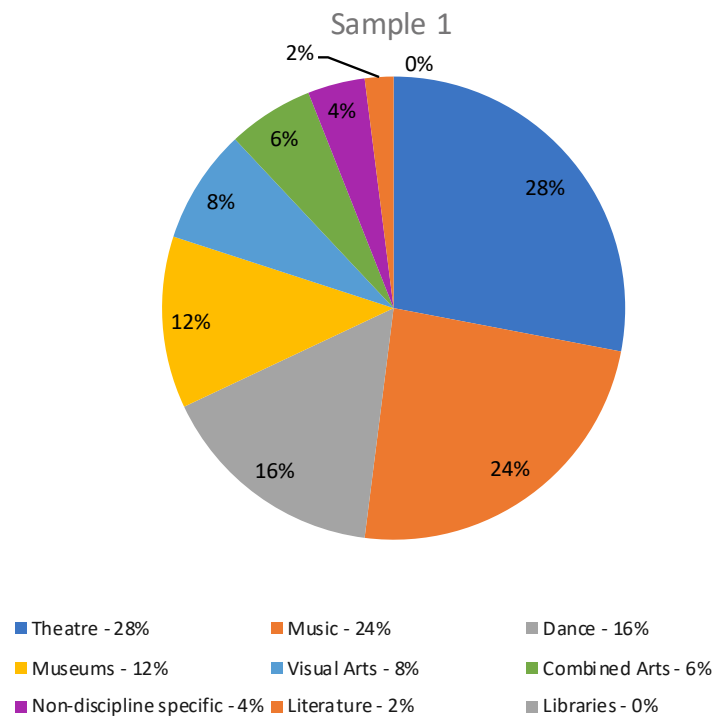
Conversely, across both samples we see many instances where NPOs do not appear in REF, equating to almost 50%. The intensity of relationships at the higher end of the portfolio does present a very positive picture of relations. However, it is likely that if the exercise were repeated across the entire Investment Programme we could see the percentage of organisations without research connectivity being significantly higher than 50%. So in spite of some very strong connectivity, particularly across the highest funded organisations, there is arguably still much work to be done to encourage and support NPO capacity to engage with research and vice versa. We also recognise that even where organisations are absent from REF, they may very well be engaged with research and universities through our activities. See for example our report Collaborating with Higher Education Institutions: Findings from NCACE Survey with Arts Professional. (<https://ncace.ac.uk/wp-content/uploads/2021/12/Wilson-Hopkins-Rossi-Collaborating-with-Higher-Education-Institutions-1.pdf>) However, it would be useful to undertake more research to get a full picture of the state of NPOs relations with universities and vice versa.

4.5 Art Form Areas

In our first sample of the top 50 funded NPOs in England, art form areas are made up as follows: Non-discipline specific - 4%, Combined 6%, Theatre 28%, Music 24%, Dance 16%, Literature 2%, Museums 12%, Visual Arts 8% and Libraries 0%. In this instance, those with a ‘non-specific’ or

‘combined’ designation tend to be largely performance oriented, so we can say that the performing arts are overwhelmingly represented at the top end of the Portfolio with around three-quarters of the sample being either completely or largely performance arts focussed, as demonstrated in Figure 4.1.

Figure 4.1 Percentage of art-form funding across Top 50 funded NPOs



In our second sample, from around the middle of the portfolio, we see a slightly different pattern emerging with the following art form types: Non-discipline specific 6%, Combined 24%, Theatre 22%, Music 8%, Dance 8%, Literature 2%, Museums 8%, Visual Arts 18%, Libraries 4%. Here although, we are seeing a slightly higher proportion of visual arts organisations as well as a very modest number of literature organisations and libraries, around two thirds of the second allocation is in the performing and combined arts. Across our two particular samples, the performing arts are more highly represented, with literature the least represented art form.

The number of art forms represented in both samples from highest to lowest are as follows: Theatre 25%, Music 16%, Combined Arts 15%, Visual Arts 13%, Dance 12%, Museums 10%, Non-specific 5%, Literature 2% and Libraries 2% as represented in Figure 4.2.

Art form areas in relation to overall presence in the Impact Case Studies

Across our two samples, we see a positive correlation between NPOs and the REF with particularly high correlation in our first sample of the top 50 funded NPOs where we find 312 impact case studies mentioning various kinds of relationship with an NPO, albeit not necessarily listed as being formal partners. They do, none-the-less, all identify the connection with the NPO and the role they play in catalysing and supporting research. This takes many forms, from or enabling research to be communicated to new audiences via festivals and other such cultural programming

activities, to more intense relationships where the research is co-designed or co-delivered by the NPO partner.

Figure 4.2 Percentage of art form funding across the 2nd sample of NPOs

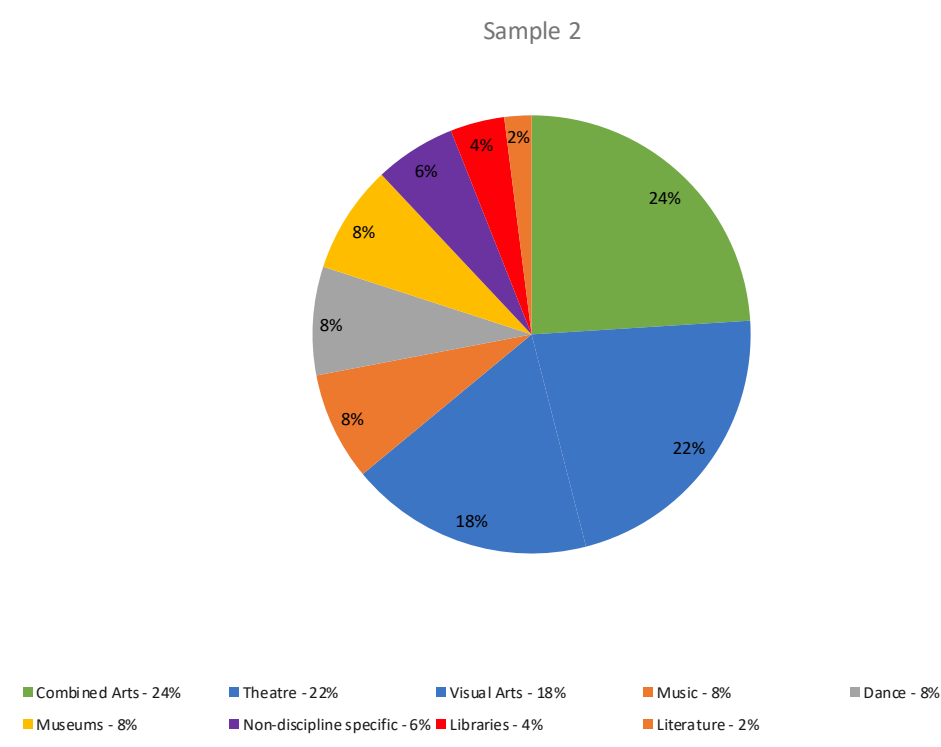


Table 4.1 Number and percentage of impact case studies mention across art-form areas

Sample 1	Number and % of ICS mentions	Sample 2	Number and % of ICS mentions
Non-discipline specific 4%	17	Non-discipline specific 6%	5
Combined Arts 6%	27	Combined Arts 24%	5
Theatre 28%	95	Theatre 22%	2
Music 24%	36	Music 8%	1
Dance 16%	24	Dance 8%	0
Literature 2%	3	Literature 2%	3
Museums 12%	87	Museums 8%	2
Visual Arts 8%	23	Visual Arts 18%	7
Libraries 0%	0	Libraries 0%	0
Total	312		25

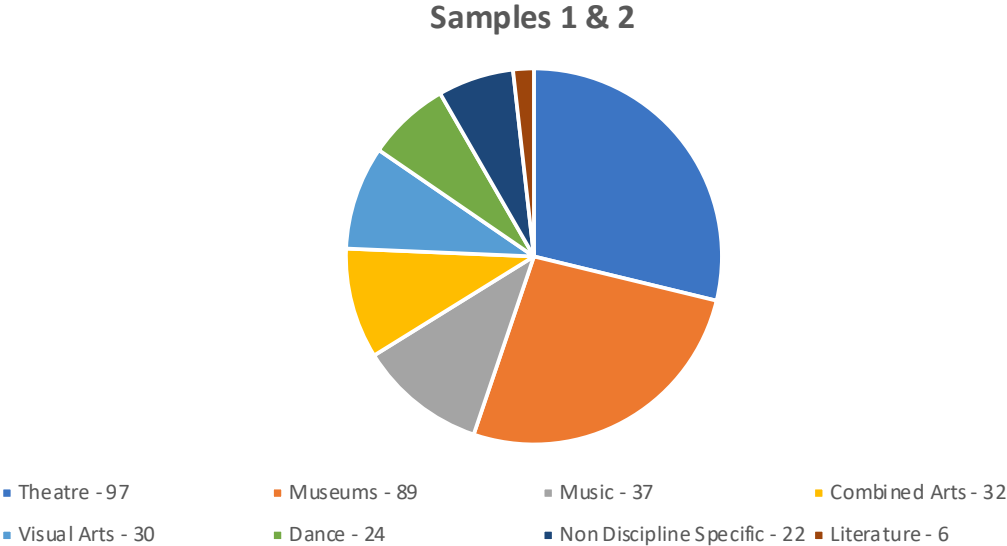
When we look at the relationships between art form areas in our **first sample** and the correlated number of ICS mentions, we see particularly high relations with Theatre and Museums (see Table 4.1). It is unsurprising that Theatre should receive so many mentions given that it is also the art form most well represented within the sample. However, what is very interesting, though

not altogether surprising, is that museums, which represent only 12% of the top funded NPOs, are ranked second in terms of research connectivity. In particular, we can note that of those 87 mentions, it is GLAM at University of Oxford which has the highest number of mentions. (It is at this point also worth noting that several of the NPOs with our samples, including GLAM, are also based within, or otherwise closely connected to a university, a point we pick up in more detail in Section 4.6) Again, as we might expect from our first sample, the overall picture is that most of the ICS mentions also correspond with the performing and combined arts.

However, with our **second sample** of more modestly funded NPOs we find only 25 associated case studies. Although we are looking at smaller numbers in this instance, the co relationship pattern is quite different to the first sample. What is striking is that this time it is the Visual Arts where we see the most connectivity with 7, or 28% of the ICS mentions associated with that sample and this is obviously proportionately higher than the percentage of Visual Arts NPOs being supported within that sample which is only 18%. And literature, which again only accounts for 1 of the 50 NPOs, or 2% of the second sample, accounts for around one eighth of the total number of mentions. Similarly to what we noticed in the first sample, it is yet another university connected NPO, this time Paper Nations based at Bath Spa University, to which those mentions are related. Theatre, however, is less well represented with only 2 ICSs, despite forming over a fifth of the sample. So in this sample, we see proportionally higher results across Visual Arts, Museums and Libraries

As we see in Figure 4.3 when we amalgamate the samples we find that, from highest to lowest, the numbers of ICS mentions we have is as follows: Theatre 97, Museums 89, Music 37, Combined Arts 32, Visual Arts 30, Dance 24, Non-specific 22 and Literature 6. Libraries have no direct mentions but they are barely represented within the samples. The number of art forms represented in both samples are from highest to lowest as follows: Theatre 25%, Music 16%, Combined Arts 15%, Visual Arts 13%, Dance 12%, Museums 10%, Non-specific 5%, Literature 2% and Libraries 2%.

Figure 4.3 Number of impact case studies per art-form area across both samples



4.6 Place

Across our samples, we were keen to identify where in the country the 100 NPOs were located and we were also keen to explore what patterns might be detected around where impact is occurring in relation to the NPOs. When we look at our NPO samples, using ACE location categories (London, Midlands, North, South West and South East²⁹), we see that across our first sample of the top 50 funded organisations, 19 are in the North, 15 in London, 8 in the Midlands, 6 in the South East and 2 in the South West (see Figure 4.4). In the second sample we see a somewhat different picture emerging with the North still highly represented with 19, a slightly higher number of 11 in the Midlands, a lower number of 9 in London and the South East with 2, but the South West featuring more prominently in this instance with 9 organisations (see Figure 4.5).

Figure 4.4 Location of NPOs in our first sample of Top 50 funded NPOs

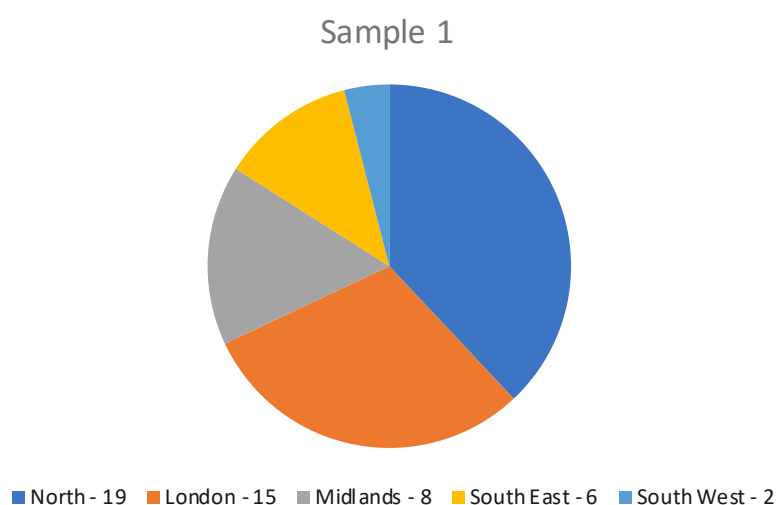
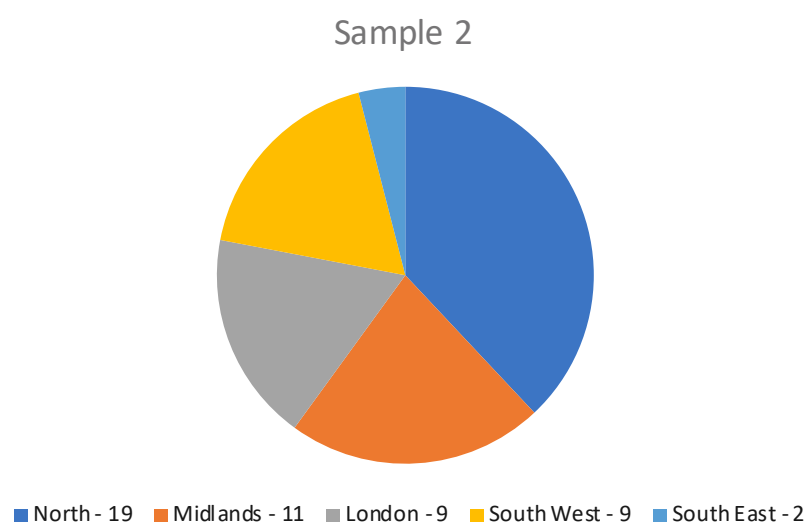


Figure 4.5 Location of NPOs in our second sample of NPOs drawn from the middle of the portfolio



²⁹ <https://www.artscouncil.org.uk/your-area>

Within our first sample set of top 50 funded NPOs with 312 impact case study mentions, the spread is as follows: 134 or 43% relate to London-based NPOs, 64 or 20% relate to NPOs based in the North, 45 or 14.4% to NPOs based in the Midlands, 60 or 19.2% to NPOs based in the South East (although one NPO, GLAM, accounts for 53 of those mentions) and 9 or 2.8% to NPOs based in the South West.

Our second sample of NPOs, drawn from the middle of the portfolio, shows a much lower level of research connectivity with of 25 ICSs, the spread of which is as follows:

4 or 16% to NPOs based in London, 8 or 32% to NPOs based in the North, 2 or 8% to NPOs based in the Midlands, 1 or 4% to NPOs based in the South East and 10 or 40% to NPOs based in the South West. Table 4.2 shows the number of impact case studies associated with NPOs from each sample in terms of their location.

Table 4.2 Impact case study mentions across both samples

Sample 1	ICS mentions	Sample 2	ICS mentions
London	131	London	4
North	67	North	8
Midlands	45	Midlands	2
South East	60	South East	1
South West	9	South West	10

From Table 4.2 we can see that, within two samples, London based organisations have significantly larger degrees of connectivity with particularly high research connectivity concentrated in the first sample. London is also of course home to a preponderance of large-scale cultural organisations including the top 3 funded NPOs which are: Royal Opera House, SouthBank Centre and National Theatre, all of which also have multiple mentions in the ICS database (17, 19 and 50 respectively) accounting for around 64% of the ICSs relating to the top funded London based NPOs. In this particular instance the impacts associated with these three organisations are, as we might expect, either Cultural (64) or Social (22) with cultural impacts accounting for around three quarters. In terms of actual funding, we can see these three organisations have a combined annual funding from ACE of around £54 million. If we look at The Southbank Centre for example, (one of the top 3 funded and London-based organisations) only 3 of the 19 case studies have been submitted by London HEIs: Queen Mary, UCL and UEL. The others are spread across the country with one in Wales. We do however see a high level of Russell Group connectivity here with 9 out of the 19, or around 47% of the associated case studies. This indicates the importance of major cultural institutions within the research ecology across the country, as well as the vital role that these organisations play in endorsing, programming and showcasing culture and research.

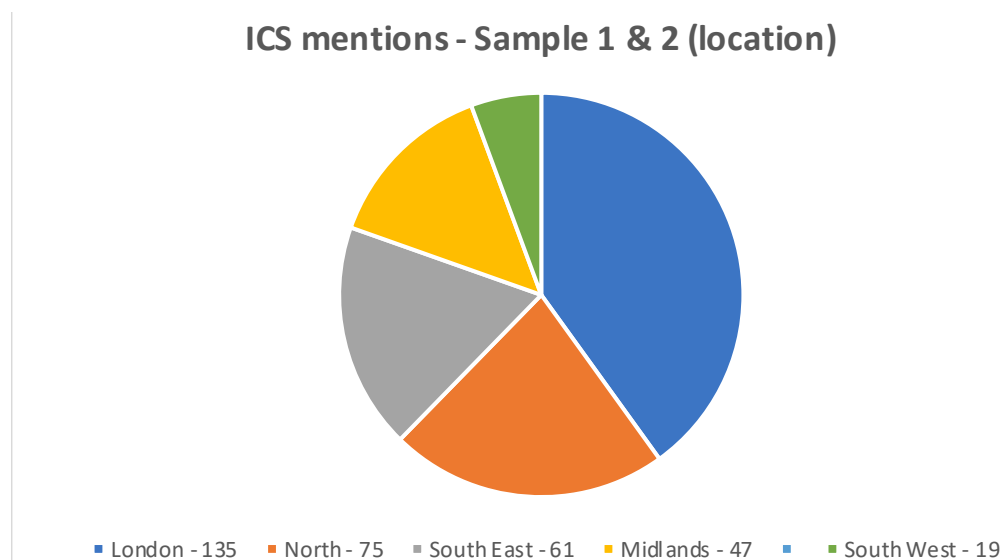
Overall, within our first sample it is however in the South East that we see the NPO with the highest research connectivity and that is GLAM, part of the University of Oxford, with 53 ICS mentions.

When we look at the second sample we see a different picture emerging, with the South West appearing most frequently where we see four organisations associated with 10 impact case studies

as follows: Cheltenham Festivals, Creative Kernow, Prime Theatre and Bath Spa Paper Nations. Here however, the combined annual ACE funding for all four organisations is less than £850K.

In both samples it is in the North that we can see the second highest levels of research connection with a total of 75 impact case studies in total associated with 14 large and 4 smaller-scale organisations (see Figure 4.6). It is evident from the findings across our two small samples that more research is needed to explore what patterns would emerge if the entire portfolio were to be examined.

Figure 4.6 Impact case study mentions in relation to NPO location across both samples



4.7 Impact across the samples

In our first sample set of the top 50 funded organisations, we found a total of 312 impact case studies across the sample set with key types of impact cited as follows:

Cultural - 224, Social - 81, Technological - 2, Health - 3 and Environmental - 2.

Figure 4.7 Types of impact across both samples

In our second sample set of 50 taken from around the middle of the portfolio (those ranked 450 - 500 in terms of levels of ACE funding), we find, as we might expect, a much lower number of impact case studies; a total of 25 with key types of impact being: Cultural (17) and Social (8). We see a somewhat wider spread of impact types in our first sample with Technology and Health impacts both featuring, albeit at relatively low levels (see Figure 4.7).

4.8 Additional findings

In some ways it is no surprise to find that some of the organisations in both the samples are university-based arts organisations. Across the country there are myriad examples of museums and arts and cultural spaces that are housed in and supported by universities. In addition to cultural assets, such as galleries and concert halls, there are also other kinds of cultural organisations that are based in universities. In some instances, these may be organisations that have emerged through the specific interests of individual researchers or groups of researchers and in other in-

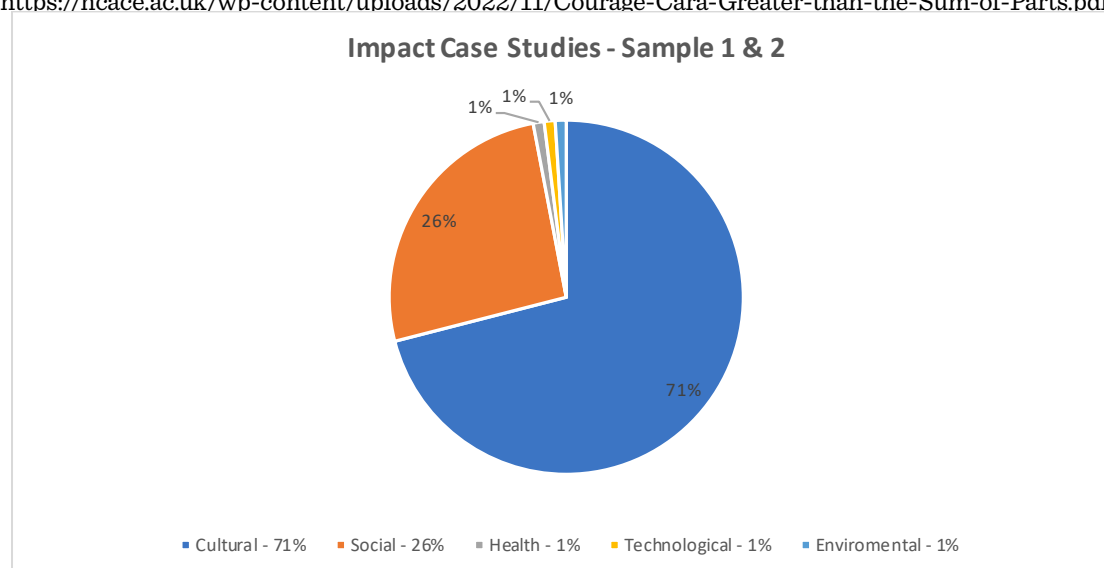
stances they may be organisations that have been invited to be part of a university that would typically offer some kind of support in kind in exchange for, e.g the delivery of guest lectures or other types of activities that might add to the cultural offer of the university. The models around such practices are diverse and it is likely to be the case that particular models have been more prevalent at different points in the history of universities in this country. Through our two samples we see ACE supported NPOs that are also part of universities. These include, from our first sample, GLAM at University of Oxford. From our second sample both University of Leicester Attenborough Centre and Bath Spa Paper Nations are university based NPOs. There are many other very close partnership connections too. The Culture Health and Wellbeing Alliance is based in the North and is a national membership organisation providing networked, collaborative advocacy, support and resources to support health and wellbeing through creative and cultural practice. It has evolved from research initially undertaken by Professor Helen Chaterjee at UCL. Creative Kernow runs programmes to support creatives in Cornwall and the Isles of Scilly including Cultivator, a business support programme, in partnership with University of Plymouth and other partners. Opera North and University of Leeds have had a longstanding partnership called DARE with Collaborative Doctoral Awards and the Dare Arts Prize.

Whilst further work is required to build a more comprehensive picture of the extent to which ACE funded organisations are either part of, or work in formal partnerships with universities, what the surveys begin to point to is the role that ACE plays as a supporter of culture and research ecologies across the country.

Beyond the remit of this specific piece of work, we can also say that strong teaching and knowledge exchange partnerships exist between NPOs and universities and as we have been starting to see over the last few years, there are also now interesting examples of multi-agency partnerships developing in response to areas on government agendas such as Place and Levelling Up. Such partnerships typically involve a range of stakeholders including universities, local authorities and arts and cultural organisations (we also talk about this in our Greater than the Sum of Parts³⁰ essay by Dr Cara Courage).

The table at **Appendix 9** identifies the NPOs (and one IPSO) associated with both samples, along with the geographical area in which they are located, the art form they are primarily associated

³⁰ <https://ncace.ac.uk/wp-content/uploads/2022/11/Courage-Cara-Greater-than-the-Sum-of-Parts.pdf>



with and their annual level of subsidy. They also indicate the number of mentions each organisation receives within the Impact Case Studies database.

4.9. Findings from the two sub-sample sets

To take a deeper dive into our two samples, we reviewed a number of REF Impact Case Studies associated with sub-samples of 5 organisations from each of our two main samples (see key details at Table 4.3)

This helped us to build a picture of research and cultural ecologies that we are witnessing through REF and to consider the key ways in which research and the arts might be thought of as working together and supporting each other and the wider benefits associated with that. For our two sub-samples, we selected a range of art form areas including at least one organisation from the following key ACE categories: Theatre, Music, Combined Arts, Non-discipline specific, Museums, Visual Arts and Literature. The sub-samples also included at least one organisation for each ACE region with three organisations based in the North, two in London, two in the Midlands, two in the South West and one in the South East.

Table 4.3 Overview of sub-samples (Name, art form, location and number of associated impact case studies)

NPO	Art form	Location	Number of associated Impact Case Studies
Sub-Sample 1			
Crafts Council	Visual Arts	London	6
Opera North	Music	North	5
Tyne and Wear Archives	Museums	North	5
B'ham Royal Ballet	Dance	Midlands	2
N'ham Playhouse	Theatre	Midlands	2
Sample 2			
Bath Spa Paper Nations	Literature	South West	3
Carousel	Music	South East	1
Fevered Sleep	Theatre	London	1
Cheltenham Festivals	Combined Arts	South West	5
Culture Health and Well-being Alliance (IPSO)	Non-discipline specific	North	4

4.10 Sub-sample 1 snapshot

From our sample of the top 50 funded NPOs, our sub-sample with a combined number of 20 ICS mentions included: The Crafts Council, Opera North, Tyne and Wear Archives, Birmingham Royal Ballet and Nottingham Playhouse.

In terms of REF Units of Assessment, 60% of the 20 impact case studies associated with this sub-sample are from UoA 33 (Music, Drama, Dance, Performing Arts, Film and Screen Studies)

and UoA 32 (Art and Design: History, Practice and Theory) with 35% and 25% respectively. Other Humanities, Social Sciences as well as a small number of sciences subjects form the remaining 40% as indicated below. We can see that 80% of the impacts associated are cultural with 15% social and 5%, in other words one of the impact case studies, having a health impact.

4.11 Sub-Sample 2 snapshot

In the second sample of the organisations - from the middle of the portfolio - where organisations have an annual funding level of around £200K - our sub-sample, with a combined number of 14 ICS mentions, includes: Cheltenham Festivals, a combined arts organisation based in the South West; Fevered Sleep, a theatrical organisation based in London; the Culture, Health and Wellbeing Alliance, an Investment Principles Support Organisation and non-specific arts organisation based in the North; Carousel, a music organisation based in the South East and Bath Spa Paper Nations, a literature organisation based in the South West. Here we see a somewhat broader range of UoAs associated with the research, with 3 case studies under UoA 34 and 2 each under UoA 33 and UoA 28. Interestingly we see a different looking set of impacts with 8 of the case studies having cultural impacts and 6 with social impacts.

4.12 Some key roles played by the arts that support and enhance research

Throughout this and the other chapters of this publication it is evident that research enjoys strong connectivity with the arts and cultural sector and vice versa. In this chapter we see particularly strong evidence of that amongst large-scale NPOs, and there is also firm evidence of strong, though less prolific, research collaboration with smaller NPOs as well.

Through the impact case studies associated with our two sub-samples - 10 organisations with 34 associated case studies - we see many examples of how the arts serve, support, amplify, network, endorse and co-design research, often also acting as platforms for public engagement, policy relations and wider media exposure for research. Our study indicates the presence of a web of relationships which appear to be based on principles of friendship, co-operation, collaboration, mutual benefit and the impetus to drive and support wider cultural, social and economic transformations.

There are many ways in which to categorise how the arts support and enhance research. Two key themes that emerge strongly through our sub-samples and that for us were particularly interesting to explore include: **Cultural Leadership**, or how the arts supports, endorses and augments research and **Public and audience engagement**, or how the arts curates, showcases and generates new work from research. Whilst there is often tacit acknowledgement of the roles that the arts play to support the wider understanding of and engagement in research, this could often be better articulated. As such, we were keen to see how the case studies narrate these relationships and what that tells us about research values. It is pleasing to see that, in many instances within our case studies, cultural players are actively named and their perspectives on the benefits of research acknowledged and shared. However it would appear to still be the case that the crucial role that the arts play in disseminating and curating research is perhaps less well articulated or acknowledged, especially in instances where public engagement is primarily occurring. This may indicate that such processes are perhaps not as well understood by the research community as they might be. It also highlights the need for capacity building to support a clearer understanding of the values the arts bring to the cultural research ecosystem, and indeed vice versa. Through the case

studies we also see strong evidence of the transformative roles played by research and the arts acting together - as highlighted in Chapter 2. At 4.14 we draw out one facet of this by showcasing some examples of how research and the arts work to feed into **Policy agendas**.

4.12.1 Cultural Leadership: Supporting, endorsing and augmenting research

Through our sub-samples we see a recurring articulation of the role of cultural leadership - often with individual cultural leaders named in case studies - in supporting research, endorsing it and catalysing activities or generating new cultural projects or products associated with the research.

In the University of Westminster impact case study '**Ceramics in the Expanded Field**' we see, for example, how the **Crafts Council** serves as a key endorser of research which, in this instance, was concerned with the development of transformational cultural strategies and practices around the exhibition of craft.

"Rosy Greenlees, Executive Director of the Crafts Council specifies that Cummings' Triumph of the Immaterial [4], and the exposure it gained as winner of the Woman's Hour Craft Prize in 2017, was significant to this shift in the perception of ceramics by a broader range of exhibitors: 'Since then there has been a growing interest by the contemporary art world in ceramics and craft related processes of which (sic) Phoebe Cummings' selection as the prize winner undoubtedly contributed'."

The agency of culture leaders as imagineers with the ability to suggest and fast-track cultural production responding to research comes through a case study on '**Research into experimental theatre of 1st World War**' that features a research collaboration with a Bristol based dance company IDT.

"As a direct result of this screening, the dance company was approached by Carlos Acosta, the internationally renowned dancer and choreographer and newly-appointed Director of **Birmingham Royal Ballet**, to collaborate on a short dance film entitled Empty Stage, which reflects on the plight of the performing arts in the pandemic. Production took place in November 2020 (supported by Arts Council England and Birmingham City Council) and screening is expected in January 2021."

In another instance we see the importance of strong international cultural leadership demonstrated through **Nottingham Playhouse's** role in both amplifying research impact and leading in the training of educators for the next generations of theatre. This is associated with an impact case study from University of Lincoln on '**Dramaturgies of Conflict**.'

"Following training in Nottingham in 2014 fledgling youth theatres were established in Sarajevo (SARTR Theatre's FAKAT Drama) and Pristina (TEATRI ODA Theatre's, ODA for youth), adopting Nottingham Playhouse's processes for working with young people, and new methodology, to create a unique offer for people in the Bosnian and Kosovar capitals [5.1]. An independent evaluation report collated for the British Council highlights how 'For both theatres (and to an extent for Nottingham Playhouse), the

Bolero project has been a hugely important articulation of their respective desires to incorporate young people more centrally in their plans.”[5.1].

Even within our two small sub-samples, the importance of the roles of the arts institution and, very often the team associated with that institution, are recognised and articulated as key figures, not simply to corroborate the impact but as a vital part of the wider ecology in which the work is located. We see this in two case studies citing **Culture Health and Wellbeing Alliance (CHWBA)**, the only IPSO in our study, where their Museums as Spaces of Wellbeing report 2018 cited University of Exeter’s Sex and History research as an example of best practice. That report, in turn, was endorsed by Public Health England. Another case study, this time from Northumbria University on **Embedding Trauma Informed Care in the NHS to improve practice** cited endorsement by **CHWBA** in their report discussing 50 case studies focused on ‘How creativity and culture are supporting and shielding vulnerable people at home during COVID-19.’³¹

4.12.2 Public and audience awareness and engagement: Curating, disseminating, showcasing and generating new work from research

Implicit in the majority of case studies we examined is the role of the arts in enabling public and community engagements. In many instances accounts were made specifically of projects that served to engage with diverse and marginalised audiences, a point we expand on briefly at 6.4.3. Here we highlight a few examples of how these relations are expressed, ranging from those which simply acknowledge the cultural institution as showcasing their work through to other examples where greater evidence of a more collaborative ethos between the partners comes to the fore.

We also find many examples where festivals and arts organisations or programmes act as modes of research exposure and dissemination. In some cases the narration of the organisation’s role is fairly understated, such as in a case study from University of Hertfordshire on **‘Connecting Arts and Science in Sculpture, Light and Sound’** where the role of the NPO, in this case Cheltenham Festivals, is simply acknowledged as a research exhibitor. We see this again with another case study citing **Cheltenham Festivals**, this time from Oxford Brookes University on **Transforming Curatorial Practice and Enhancing Understanding through themes in British Art**.

“Payne’s research on trees in British art perfectly suited one of the Tree Charter’s ten principles, ‘celebrate the power of trees to inspire.’ The Woodland Trust invited her to speak at the Hay Festival in May 2017, at the launch of the Charter in Lincoln Cathedral in November 2017, and at the Cheltenham Festival in October 2019.”

As evidenced here, we also see research being showcased across multiple cultural spaces and locations, emphasising the generally unarticulated role that festivals and the arts play in the curation, circulation and endorsement of cultural ideas and product, including research as cultural product.

³¹ <https://www.culturehealthandwellbeing.org.uk/sites/default/files/Short%20report%20-%20How%20creativity%20and%20culture%20has%20been%20supporting%20people%20who%20are%20shielding%20or%20vulnerable%20during%20Covid-19%20-%20UPDATED.pdf>

Within other impact case studies, the importance of the arts role in supporting public engagement with research is acknowledged as actually catalysing new cultural production. We see this with a case study from Bath Spa University on **Narrating and Emerging Technology: Remodelling Literary Forms through Digital Media** where a collaboration with the NPO Paper Nations, also based at Bath Spa, results in a new initiative to enable writers to develop their digital skills and capacities.

“Her collaboration with the Arts Council England-funded writing hub Paper Nations led to **Beyond the Book** - a GBP20,000 initiative which awarded three bursaries in its inaugural year to writers for narrative and emerging technology projects.”

Similarly, in a case study from University of Brighton on **Transforming Screen Culture**, centring on an important regional screen archive and collection, we see the role of local organisations in utilising the collection to generate new exhibitions and other cultural projects. The NPO **Carousel** utilised the collection to inspire new film-making amongst learning disabled artists and to showcase the resulting works within the region.

“Carousel is a charity dedicated to supporting learning disabled artists develop their practices. Its Heritage Lottery funded community project Silver Screen (2018) used Smith and Williamson films from the SASE collection as the inspiration for the creation of new films by young people with learning disabilities. The resulting touring programme (entitled Modern Marvels) visited ten venues in Sussex and introduced young audiences to early British films”.

In a University of York case study on **Virtual Acoustics**, the importance of a research collaboration with Opera North is also centred on engaging both new and existing audiences but this time through interactive and immersive audio experiences.

“The Ghosts in the Machine project with **Opera North** aimed to convey the power of opera as a storytelling artform using VR Choir auralisation and OpenAIR data to create an interactive trailer for a production of *The Turn of The Screw*.”³²

Yet again in this case study, we see the influence of the arts in promoting research through their media assets and the positive and symbiotic wider effects of the collaboration which, in this instance, is about supporting new cultural understandings and perspectives.

“The trailer was the most visited page on the Opera North website since January 2020 with 99,853 views and more than 2,143 tickets booked directly post-viewing through tracked visitor engagement (5.10). From a focus group of school pupils 60% agreed that the trailer made them more interested in seeing live opera, with 96% stating that the trailer had changed their view of the artform.”

The previously highlighted **‘Dramaturgies of Conflict’** case study with **Nottingham Playhouse** further acknowledges the influence that arts institutions have with media and social media platforms.

“The performance of Bolero in Sarajevo featured on Radio 4’s Today programme and Nottingham Playhouse’s satellite project – Mass Bolero – featuring Torvill and Dean,

³² <https://www.operanorth.co.uk/turn-of-the-screw-immersive-trailer/>.

was shown on BBC's The One Show and has now received over 177k views on YouTube."

4.13 How research supports and enhances the arts

Through the sub-samples, we see that the ways in which research supports the cultural sector are diverse and often innovative and catalytic and that by working together, research and the arts often drive yet wider transformations again; research and culture 'flows' that serve to enrich, inspire growth, nurture communities and support well-being.

Research impact case studies connecting with NPOs in the sub-samples are often bound with notions of what we might describe as **cultural innovation** where the role being played by either the researcher, the NPO or both working in collaboration, is vital in affecting and activating different cultural innovations and transformations. We also see examples of work concerned with '**Grand Challenge**' areas such Place and Levelling Up, Health and Wellbeing, Technology for Social Good and Environment and Climate Emergency. Two other thematic areas emerged strongly through our sub-samples. These can be broadly categorised as: **Diversity and Decolonisation and Education and Skills**. In the following sections we speak briefly to each of these key areas.

Cultural Innovation

The notion of research transforming cultural strategies and practices and supporting what we might regard as cultural innovation, is strongly articulated throughout many of the case studies. Such activities include; enhancing the practices of museums and galleries, breaking new boundaries in the arts, developing or co-developing new cultural projects or products. Below we highlight examples of the other forms of cultural innovation mentioned including how research supports the culture sector to; define its economic role, engage in the uptake of technologies and catalyse the development of a new cultural organisation.

The role of the arts in economic development and place. In a University of the Creative Arts case study on **The role of Studio Pottery in developing the Local Economy and Changing Museum Exhibition Practices**, where the importance of the Craft Study Centre at UCA to the craft fairs at Farnham Maltings were noted by **Crafts Council** in relation to the granting of World Craft City Status. This impact was measured in a research report completed in 2020 which found that 'the total economic impact of crafts activity in the Farnham and Surrey Hills area, to which CSC contributes, is in excess of £50 million per annum'.

Supporting the uptake of technology developments. We have already cited the **Virtual Acoustics** project with **Opera North** and we see other examples, such as a UWE case study on **Transforming Heritage Printing Industries**, where the Centre for Fine Print Research collaborates with **Crafts Council** to co-host a major symposium in 2020 to inform contemporary digital printing and showcase and support developments in print technologies.

The proximity of research to the culture sector and the innovations that this can bring are also articulated through case studies associated with the **Culture, Health and Wellbeing Alliance**. This is a relatively recently established organisation, funded by Arts Council England as an IPSO (Investment Principles Support Organisation), which emerged from research initially

undertaken by Professor Helen Chatterjee at UCL. In the BBK/UCL case study **Enhancing the impact of arts, culture and nature on health and wellbeing** we find out:

“Chatterjee’s research into heritage and wellbeing led her to become Chair and Co-Founder of the National Alliance for Museums, Health and Wellbeing (from 2014 to 2018, funded by Arts Council England), which established a national sector support organisation providing training, conferences and a free online course. In 2018 the Alliance merged to form the Culture, Health and Wellbeing Alliance, which Chatterjee helped to set up. CHWA has over 5,000 members and provides the secretariat to the All-Party Parliamentary Group (APPG) on Arts, Health and Wellbeing, on which Chatterjee advises.”

Grand Challenge Areas

The notion of Grand Challenges (GCs) has become prevalent in recent years and is recognised across governments, NGOs, business and research across all disciplines. It is also recognised that the arts and culture often play key roles in catalysing societal change and in addressing the grand challenges. In Chapter 2 we focus in detail on how Grand Challenges are addressed through arts and culture. In this section we highlight examples emerging through our sub-samples, aligning them with two key NCACE themes of: Place making and levelling up; Health and wellbeing. These are the two most connected themes coming through our sub-samples.

Place and Levelling Up.

Although the theme of place comes across broadly, as we might expect, the notion of Levelling Up doesn’t come across in our case studies. The Levelling Up Taskforce group and subsequent work associated with that group wasn’t established until September 2021. Below we highlight some examples where research and the arts connect broadly around the theme of ‘place’

In their work with **Tyne and Wear Archives** the University of Stirling’s case study on **Expanding representation of Black and Asian Poets within cultural and educational institutions** focuses on how place, race, identity and belonging are represented and questioned in poetic practice. One of the outputs of the research was a project to produce ‘new poetic word maps of the region’, reaching 400 students. The Director of Tyne and Wear Archives and Museums confirmed:

‘Out of Bounds’ innovative work with place-based poetry has been of particular value to GNM [Great North Museum] and TWAM [Tyne and Wear Archives and Museums] in helping us to articulate a more inclusive, diverse and outward-looking vision of the North East to local, national and international audiences.’

The relationship between Place, Heritage and Culture comes to the fore in a University of Buckinghamshire case study on **Reactivating Industrial Craft for cultural change** where the researcher’s ‘sustained body of ‘fieldwork’ has excavated and reactivated the tangible and intangible heritage of North Staffordshire to address the ongoing reverberations of historic change and lost labour in post-industrial contexts worldwide.’

One of his projects was Marl Hole ‘Offering new insights into ‘material-led’ site-specific interventions, these works stretched the boundaries of ‘ceramic’ practice’ and also shaped Annabelle

Campbell's thinking (Head of Exhibitions and Collections, **Crafts Council**) about the intersection of craft and other media. This led to an exhibition that evolved into Real to Reel: The Craft Film Festival. Running annually since 2016 and touring internationally, it has showcased 136 *'films that will challenge assumptions about craft, *creating opportunities for makers.'*

Several case studies with place related themes are also associated with other themes including Health and Wellbeing and Education and Skills. Some of these are briefly highlighted in the following sections.

Health and Wellbeing

Another impact case study associated with **Tyne and Wear Archives**, Birkbeck/UCL's **'Not so Grim up North'** focuses, as the title suggests, on place but also on health and wellbeing, contributing to the 'wellbeing of people with dementia, mental illness, stroke survivors and those in addiction recovery through creative activities run by The Whitworth, Manchester Museum and Tyne and Wear Archives as this quote from the case study testifies:

"being involved in this research has positively impacted how we design, develop and deliver our outreach services and programmes, which in turn leads to wellbeing improvements for our audiences" (Head of Outreach, Tyne and Wear Archives and Museums)

The health and wellbeing of cultural practitioners, in this case dancers, is the focus of the University of Wolverhampton's **Keep Dancers Dancing** case study with **Birmingham Royal Ballet**. Here research focused on "applied targeted and comprehensive interventions to reduce injury incidence and improve performance capabilities." A key outcome of this research indicates again the connecting power of major cultural institutions with other cultural organisations and also with media organisations.

"Through our research collaboration with Birmingham Royal Ballet, we were commissioned by the BBC to demonstrate how dance science supports elite performance".

The development of cultural initiatives to support wellbeing, access and widening participation during the Covid pandemic is another dimension within this theme. This is expressed in University of Glasgow's **Use of creative practice and research to change perceptions of writing and motherhood** case study in collaboration with **Paper Nations** where a co-developed literary festival entitled *Stay-at-Home!* was held in Spring 2020, featuring 220 authors and 145 events, with 15,000 participants attending. Evaluation comments indicated that many experienced fewer barriers than usual to attendance at literary festivals.

'A great thing for me was access to a much more diverse audience than I would normally get - younger, wider range of interests and ethnicities, really positive and refreshing' and 'as someone who has disabilities and chronic illnesses this was amazing for me. So accessible and allowed me to experience more than I possibly could physically do in years.'

We explore later where research and practice connect to advise and feed into policy via the work of the **Culture, Health and Wellbeing Alliance** at 4.14.

Diversity, Decolonisation and Migration

It is heartening to note that over a third of our sub-sample case studies were concerned broadly with issues of diversity, decolonisation, migration and refugee displacement, including work focussed on supporting diverse cultural practitioners and engaging diverse audiences. This theme was in fact more prevalent than any of the other Grand Challenge areas, indicating the desire and commitment of both research and the arts to support and effect positive and equitable social change.

In several instances we see a focus on research supporting more inclusive cultural practices. UEL's **Decolonising Opera** impact case study, in which **Opera North** was a partner, identifies areas in which substantial impacts have been produced, including the creation of new roles in the operatic repertoire for black artists and developing diverse audiences for opera and the heritage sector.

“By working in an operatic form, with a diverse cast, in a black led company, this production is an essential part of redefining opera: whose stories are represented on the opera stage; who creates and tells them.” Jo Nockels, Head of Projects, Opera North.

Similarly, the University of East Anglia's **Changing Rhythms: influencing the form and content of festivals** case study worked with **Cheltenham Festivals** - in this instance with the Cheltenham Jazz Festival - to change how ‘festival programming can respond to issues of race, crucial for a musical form such as jazz which has relied heavily on Black performers and musicians.’

‘McKay’s ground-breaking work on British jazz festivals and slavery ... has prompted us to look at our own historical situation, and to think about how we could commission new jazz so that the festival acknowledges and begins to address questions of decolonisation and transatlantic slave trade legacy around the Cheltenham festival site’ (Artistic advisor to Cheltenham Jazz Festival.)

Wider public engagement often also runs to the heart of such activities. An event at the **Cheltenham Literary Festival**, supported by the RSC and the AHRC, featured a researcher from Queen’s University Belfast whose work on **Rethinking Theatre through Translation** helped inform 7 new commissions for the Chinese Classics Translations Project and support the ‘decolonisation of the UK canon of theatre’.

Education and Skills

From cultural knowledge generating activities such as the drafting of programme essays for **Opera North** and other Opera companies on opera’s hidden history as popular entertainment, to the exploitation of archival material at Screen Archive South East to support educational initiatives in film production for learning disabled artists at **Carousel**, many of the impact case studies associated with our samples unsurprisingly support education, skills development and wider learning opportunities.

In some instances these activities were for or with arts and culture sector professionals such as University of Leeds case study on **Professionalising Arts Fundraising and Philanthropy** on which **Opera North** was a partner.

‘The working group, comprising representatives from Leeds University Business School, the University’s Cultural Institute and its key cultural industry partner, Opera North, established a set of learning outcomes based on the underpinning research and on acknowledged skills gaps in the sector.’

“As a consortium, AFP has produced and successfully delivered the largest suite of online learning resources for arts and cultural management in the world.”

Arts Fundraising and Philanthropy is also funded by ACE as an NPO and IPSO (Investment Principles Support Organisation) and University of Leeds is one of the consortium partners.” In another instance with a Royal Holloway and Bedford New College case study **Innovating the staging and curation of difficult pasts in museums**, the focus is on enhancing approaches to curation and changing mindsets on how museums can stage difficult pasts. Here, staff from **Tyne and Wear Archives** and many other cultural organisations were given ‘insights into artistic approaches developed in Kraków (moving an object from a museal to a theatrical frame) and Buenos Aires (performative forms of curating difficult spaces) that would help them to engage diverse audiences across the UK with local, often hidden stories related to significant and difficult histories.’

In another case study relating to **Tyne and Wear Archives** with University of Newcastle on **Using Museum Collections to inform Public understanding of the Ancient Greek and Etruscan Past** the researcher worked with museum staff to develop community curriculum and to develop activities to educate school children, in particular the redevelopment of six Greek-themed ‘Boxes of Delight’ for TWAM’s sector leading School Loans Service.

“These boxes now support the Community Curriculum and have been used by over 1,000 children and their teachers in the past year (IMP10). The Learning Officer confirms that Waite’s research ‘has had a major impact on the improved quality of our Ancient Greece boxes’ with the new boxes ‘meeting 9 out of 10 of our success criteria – the original boxes rated 4 out of 10’. Furthermore, she comments that ‘this impact will be a long-lasting one as these newly developed boxes will be experienced by many thousands of North East children in the years to come’”.

4.14 Arts and research working together to connect with and Influence Policy

Several of the sub-sample case studies narrated impacts that support policy thinking or development. In some instances these were concerned with organisational policies within cultural institutions themselves. Others focussed on developments in cultural policy that, in turn, supported shifts in cultural practice, shaping and influencing the thinking of key culture industry leaders and the work they undertake. As we see in the following examples, there are also instances where research and the arts collaborated to feed into wider policy areas. Interestingly it is with two organisations from our second sub-sample of smaller organisations where we see activities connecting to All Party Parliamentary Group activity.

Royal Central School of Speech and Drama case-study **Participation, engagement and cultural understanding: Developing new models for performance touring, creative part-**

nerships and social change with theatre-based organisation **Fevered Sleep**, outlines a wide range of impacts, all of which connect to themes in this chapter. In relationship to policy, one of these key impacts is on working with the APPG on bereavement support.

“Harradine’s practice research in *This Grief Thing* has led to his contribution to policy debates on grief and bereavement. In recognition of his research and impact, he was invited in early 2019 to join the All-Party Parliamentary Group on bereavement support, representing Fevered Sleep, who are the only arts organisation in the group. The group’s secretariat, The Good Grief Trusthas testified to Harradine’s impact on policy debate: ‘Fevered Sleep was the key arts partner for this project, galvanising major cultural institutions across the UK (including the National Theatre and Imperial War Museums) to engage in awareness-raising activities to highlight the need for high level government action on bereavement support’.”

In the Birkbeck/UCL case study *Enhancing the impact of arts, culture and nature on health and wellbeing through community engagement and national policy influence* in addition to the initial research leading to the formation of the Culture Health and Wellbeing Alliance, we see the influence of the researcher role here. Professor Helen Chatterjee works as an advisor with Culture Health and Wellbeing Alliance (CHWBA) and the APPG on Arts, Health and Wellbeing, to which CHWBA is closely aligned.

“Lord Howarth (Co-Chair of the APPG) described Chatterjee’s presence on the APPG as “an invaluable source of ideas to all involved,” in part due to her “ability to communicate technical matters intelligibly to those without her specialised expertise” [S8]. The Policy Project Manager for the Heritage Fund said that “Professor Chatterjee’s expertise within the All-Party Parliamentary Group on Arts, Health and Wellbeing has led directly to a long-term improvement in the profile and social impact of UK cultural participation, including resource allocation”.

The research has also influenced other bodies including DCMS which, as a result, argue that *“the evidence base on arts and social cohesion is strong and can be trusted to guide policy development.”*

4.15 Funding

Across our two sub-samples, with a combined number of 34 impact case studies, we see a combined funding level of over £19.7 million. In our first sub-sample of 5 organisations, drawn from the top 50 funded NPOs, and with a related number of 20 case studies, the funding totals cited in the impact case studies are around £9.6 million. The case studies associated with Opera North account for over £4.6 million of that sum.

Interestingly, the funding aligning to the 14 case studies relating to the second sub-sample of organisations, where the organisations are funded around £200k per annum, is higher at over £10 million. Here the case studies typically had associated funding ranging from around £1.6 million to £2.2million, whilst case studies associated with two of the first sub-sample were comparatively low at £50K and £62K respectively, indicating that it is possible that matched funds for elements of the work were not necessarily taken into account.

These findings should prove heartening for the arts and culture sector, revealing the power of research connectivity not solely as a generator of knowledge or ideas but potentially also as an important agent and ally within the wider cultural economy. They should prove for research institutions the commitment of the arts to research, as demonstrated by the generous support of Arts Council England in many instances.

Around 40 funders were associated with the 34 case studies and the most prolific of these, perhaps unsurprisingly, was the AHRC, with 17 mentions. More surprising is that Arts Council England was the second most frequently cited funder with 10 mentions so although ACE is primarily an arts funder it is clear that it is also a major funder of research and practice research that benefits not just the arts but which has wider impacts and values across culture and society. Other funders that were mentioned on two or three occasions included: Heritage Lottery, Innovate UK, British Academy, Wellcome Trust, ESRC and RCUK. The tacit role of NPO funding, which in many instances would be likely to be bound in the cost of human resources and other operational and management costs, would be useful to explore further to gain a fuller picture of the arts support for research.

4.16 Concluding remarks

What is revealed through this snapshot is a vital, intense and complex web of relationships between the research sector and the arts with vital work being undertaken that generates new ideas, knowledge, practices and networks. It is work which addresses some of the key challenges of our time and through that it serves to inspire, educate, enable individuals and communities, create new cultural projects and products, and support a host of wider societal challenges.

We see particularly high levels of research connectivity with arts partners, from the top 50 funded National Portfolio Organisations with over 80% of organisations connected to research institutions, many of them with multiple relationships. This suggests the importance of factors such as capacity, kudos and 'cultural capital' in the formation of research relationships and indicates the values placed on research as a major cultural asset in its own right by our major cultural institutions.

In our second sample of NPOs from the middle of the portfolio, with considerably lower funding levels, just over a quarter of these are research connected, but of those who are, almost 40% of those are engaged in multiple research projects. It is also interesting to note that within our sub-samples the organisations most overtly connected to supporting government policy were in fact from this group.

It suggests that whilst considerable work is already taking place, there is a need for further work to support capacity amongst smaller arts organisations in building relationships with the research community and vice versa. This is especially important given how many smaller organisations exist right across the country. It also signals a real opportunity for the formation of regional and local academic and arts networks where none currently exist or where those that do need more support.

It is clear through this study that research outputs and dissemination is seriously boosted by proximity and relationships with NPOs. The arts act as a connector and provide vital showcasing opportunities for research to reach multiple and diverse audiences at substantial numbers

of cultural events. They also connect research to wider media and social media exposure than may otherwise be likely to occur. This also raises Important considerations about the potential for more ambitious and joined up funding mechanisms for the arts because, without its arts partners and networks, we could arguably see a considerable diminishing of research impact and reach.

It is abundantly clear that our research communities highly value the power of cultural networks. The identification of cultural leaders and their value in endorsing and adding value to research is often through the impact case studies.

We see too that whilst arts organisations are perhaps not listed as formal partners as often as we might expect, the values of NPOs and the networks they bring to research can sometimes be implicit rather than explicit. In future iteration of REF it may be worth considering encouraging greater ambition in recognising and articulating the roles and agency of non-academic partners.

Whilst further work is required to build a more comprehensive picture of the extent to which ACE funded organisations are either part of, or work in formal partnerships with universities, what this survey points to is the key role that ACE plays as a supporter of culture and research ecologies across the country, a point we also make in Chapter 3.

It is interesting to note that several NPOs within our samples and sub-samples are in fact based in universities. There may be considerable knowledge, know-how and learning that such organisations could share with other NPOs and it is an area that requires further investigation.

The policy landscape as we write in 2023 is of course somewhat different from when much of the research featured in REF 2021 when notions such as Levelling up and our heightened concern for the Climate Emergency were arguably less prevalent. This is reflected in our findings. We look forward to REF 2028 and to seeing to what extent wider agendas and associated funding influence research outcomes around these and other major concerns such as diversity and decolonisation.

Recommendations and implications for policy

As part of our work on how research connects with the arts and culture sector we have explored a number of key areas through this publication. In Chapter 1, we examined the overarching scale and nature of these relations and in Chapter 2 we addressed how such relations coalesce around a number of key Grand Challenges. In Chapter 3 we examined research relations between Small Specialist arts institutions and in Chapter 4 we explored research connections with Arts Council England's National Portfolio Organisations. We have brought together the following set of recommendations. They have relevance across both practice as well as policy and funding. It is not designed to be an exhaustive list, but we hope it indicates what we believe to be key areas for consideration.

Recommendations from Chapter 1

In our **first chapter** we analyse what kind of arts and culture-related impact is generated by academic research, and how (where by cases with arts and culture-related impact we mean any impact case studies which mention the arts and cultural sector as a beneficiary of impact, irrespective of the type of research that generated that impact). We investigate where arts and culture-related impact is produced (distribution of arts and culture-related impact case studies by Unit of Assessment, types of institutions, regions), where it occurs (the geographical areas impacted), which organisational features underpin its production (the number and types of partners involved, sources of funding, continuation from previous REF). We also perform a further deep-dive investigation into the role of cultural institutions in REF 2021. Our key recommendations are as follows:

1.1 Policymakers should gain better knowledge about emerging weaknesses of cases with arts and culture-related impact

Policy should seek to understand better whether it is true that cases with arts and culture-related impact tend to be scored less highly in the REF, and if so what are the reasons for this. It would also be important to understand why cases with arts and culture-related impact are less likely to be a continuation of cases submitted to REF 2014. Deep dives into specific cases and qualitative research (e.g. interviews with individuals and organisations involved in submitting such cases) could shed light on these issues.

1.2 Learn from good practices emerging from cases with arts and culture related impact

Since cases with arts and culture related impact are more likely to receive external funding and to have a larger number of funders than the population average, they can be studied in order to derive lessons for individuals and organisations in other subject areas relating to how to successfully apply for funding and how to put together successful consortia applying to multiple funding sources.

1.3 Learn how to collaborate with cultural institutions

The identification of eight different modes of engagement with cultural institutions can help HEIs to gain a good overview of what are the possible ways to engage with cultural institutions,

to identify which mode of engagement is more suitable to their needs, and to decide how to set up collaborations accordingly.

Recommendations from Chapter 2

In our **second chapter** we analyse how research activities in arts and culture, and partnerships between researchers and the arts and culture sectors, play a role in mobilising and catalysing societal change, addressing four Grand Challenges including: Place making and levelling up; Health and wellbeing; Technologies for social good; Environment and climate emergency. Our key recommendations are as follows:

2.1 The role of arts and culture should be recognised in funding programmes supporting universities and other organisations to address Grand Challenges

This could be done by explicitly including within the scope of such programmes arts and culture research and/or collaborations between research and the arts and culture sector. Participation in these programmes of arts and culture sector organisations should be encouraged by providing support and guidance.

2.2 Policy interventions supporting the arts and culture sector should recognise the key mediating role played by these organisations in amplifying the impact of university research and consider them as part of the research ecosystem.

They should be allowed greater access to funding schemes open to research organisations, more advice and support in accessing funding should be provided, and specific programmes supporting these organisations as part of the research ecosystem could be set up.

2.3 “Integrative” and “Transformative” collaborations generate synergies which often spill over to benefit external stakeholders and wider society. As such, policy support is vital.

Supporting programmes may include activities aiming to increase awareness on the potential and benefits of synergies and to encourage dialogue, interaction and goal sharing among partners. In addition, training can be provided as a form of support to collaborative partners with explicit attention to developing integrative/transformational leadership skills in the collaboration development process.

Recommendations from Chapter 3

This chapter analyses a much smaller sample of arts and culture-related impact case studies submitted by small, specialist arts institutions as defined through cross-referencing the REF2021 submissions with the KEF Arts Cluster and members of GuildHE. Our key recommendations are as follows:

3.1 Provide reliable KE and Impact funding to specialist arts institutions

Although many of the institutions featured in this sample are not in receipt of HEIF funding due to not reaching the threshold, it is clear that they are producing knowledge exchange and impact

that benefits wider society, healthcare and marginalised groups, in addition to supporting the future of the arts and culture sectors as a whole.

3.2 Increase accessible and responsive funding streams

The majority of the case studies in this sample had multiple funders and the difficulty involved in both securing and managing the administrative burden of multiple funding streams should be recognised. This could be eased by increasing both the accessibility and flexibility of smaller funding sources.

3.3 Support collaborative relationships with local cultural organisations

This chapter identifies strong knowledge exchange economies between specialist arts institutions and local galleries and museums in particular. These relationships are long-standing and multifarious, and can lead to impactful local collaborations.

In our **fourth chapter** we explore how Arts Council England's Investment Programme for National Portfolio Organisations are reflected in the REF impact case studies. We firstly take two samples; the top 50 funded organisations and the middle 50 of the portfolio to get a broad picture of relations. We then examine case studies associated with two smaller sub-samples to see how relations between research and the arts, and how they work together and support each other, are narrated through REF.

Recommendations from Chapter 4

4.1 Research outputs and dissemination is seriously boosted by proximity and relationships with NPOs and should be better rewarded and recognised within funding opportunities.

The role of collaboration in supporting innovation and the generation of new ideas, knowledge and cultural programmes and products is highly significant. The arts act as a connector and provide vital showcasing opportunities for research to reach multiple and diverse audiences at substantial numbers of cultural events. They also connect research to wider media and social media exposure than may otherwise be likely to occur. This suggests real potential for more ambitious and joined up funding mechanisms for the role that the arts are playing in research. Without its arts partners and networks, we could arguably see a considerable diminishing of research impact and reach.

4.2 Further work to support capacity amongst smaller NPOs in building relationships with the research community and vice versa.

This is especially important given how many smaller NPOs exist right across the country. It also signals a real opportunity for the formation, for example, of regional and local academic and arts networks where none currently exist or where those that do need more support. It also signals the need for small-scale seed funding to grow confidence and ability in cross-sector working, particularly in relation to themes we have identified in this report.

4.3 REF to consider encouraging researchers to more fully acknowledge the roles and agency of non-academic partners

REF is a deep source of inspiration and knowledge in its own right that could be used to support and inspire both researchers and arts and cultural sector organisations. We see that arts organisations are not listed as formal partners in research as often as we might expect and therefore the strengths they bring to research can be implicit rather than explicit. In future iterations of REF it would be useful to encourage better articulation of the roles and agency of non-academic partners.

4.4. Communicating the role of Arts Council England

ACE plays a major role in supporting culture and research ecologies across the country, a point we also make in Chapter 3. More could be done to communicate and amplify this highly important support and to connect with other funding actors in this space.

4.5 Developing peer learning mechanisms

Several NPOs within our samples are in fact based in universities. There may be considerable knowledge, know-how and learning that such organisations could share.

Other points for consideration include: rewarding R&D in tax incentivisation for the arts, creating opportunities in which to nurture better relationships between research, the arts and policy, especially around Grand Challenge type areas.

We are happy to talk to funders or other interested parties about these recommendations.

Thank you for taking the time to read this report.

NCACE
November 2023

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Appendices

Appendix 1. List of variables included in the database used for the analysis

- Institution UKPRN code
- Institution name
- Main panel (to which case study was submitted)
- Unit of Assessment number
- Unit of Assessment name
- Multiple submission letter
- Multiple submission name
- Joint submission (name of other unit with which the joint submission was made)
- REF impact case study identifier
- Title (of case study)
- Is continued from 2014
- Countries (impacted by the research)
- Formal partners
- Funding programmes
- Global research identifiers
- Name of funders
- Researcher ORCIDs
- Grant funding
- Summary of the impact
- Underpinning research
- References to the research
- Details of the impact
- Sources to corroborate the impact
- COVID-19 Statement
- Art and culture impact
- Global impact
- FTE of submitted staff
- % eligible staff submitted
- Overall 4* (share of overall submission rated 4*)
- Overall 3* (share of overall submission rated 3*)
- Overall 2* (share of overall submission rated 2*)
- Overall 1* (share of overall submission rated 1*)
- Outputs 4* (share of research outputs rated 4*)
- Outputs 3* (share of research outputs rated 3*)
- Outputs 2* (share of research outputs rated 2*)
- Outputs 1* (share of research outputs rated 1*)
- Impact 4* (share of impact case studies rated 4*)
- Impact 3* (share of impact case studies rated 3*)
- Impact 2* (share of impact case studies rated 2*)
- Impact 1* (share of impact case studies rated 1*)
- Environment 4* (share of research environment rated 4*)
- Environment 3* (share of research environment rated 3*)
- Environment 2* (share of research environment rated 2*)
- Environment 1* (share of research environment rated 1*)

Appendix 2. Matrix of Grand Challenge keywords and number of REF Impact Cases by art and culture sectors

NCACE themes		Total REF cases - all keywords	Public						Total REF cases
	Keywords		Theatre	Music	Arts	Museums	Artists	Literature	
Place making and levelling up	Community engagement (1484)	2504	77	52	12	63	63	89	440
	Community wealth building (31)		0	0	0	4	0	1	
	Levelling-up (33)		1	0	0	0	0	1	
	Regional and urban creative economic development (189)		14	12	1	16	11	16	
	Inequality (306)		8	3	2	4	4	12	
	Inclusive and sustainable economic growth (258)		5	1	0	6	1	1	
	Regeneration (203)		4	6	6	15	5	9	
Health and Wellbeing	Health (3091)	7727	32	20	7	34	21	44	227
	Well-being (1080)		28	17	6	44	27	24	
	Global health (1298)		8	7	2	13	9	8	
	Healthy lives (106)		1	0	0	4	3	0	
	Community health (1358)		25	15	4	39	15	19	
	Mental health (794)		16	8	1	19	9	18	
Technology for social good	Artificial intelligence (202)	2027	1	3	0	3	1	0	98
	Data technology (1357)		6	18	0	10	4	4	
	Green technologies (183)		0	2	0	0	1	1	
	Emergent technologies (35)		1	0	0	0	2	2	
	Immersive experiences (100)		10	9	0	5	4	4	
	Virtual reality (150)		10	9	0	9	4	3	

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NCACE themes	Keywords	Total REF cases - all keywords	Theatre	Music	Public Arts	Museums	Artists	Literature	Total REF cases
Environment and Climate Emergency	Zero emission (49)	3738	0	1	0	0	0	0	165
	Environment (2133)		20	19	1	27	16	22	
	Climate change(637)		2	2	2	9	1	11	
	Climate emergency (82)		2	0	0	2	1	2	
	Sustainable communities (559)		10	3	0	13	2	3	
	Ecology (278)		3	5	3	6	3	10	

Appendix 3. Fields included in the database of REF impact case studies extracted using Grand Challenges and arts and culture keywords

1. Institution UKPRN code
2. Institution name
3. Main panel
4. Unit of Assessment number
5. Unit of Assessment name
6. Multiple submission letter
7. Multiple submission name
8. Joint submission
9. REF impact case study identifier
10. Title
11. Is continued from 2014
12. Summary impact type
13. Countries
14. Formal partners
15. Funding programmes
16. Global research identifiers
17. Name of funders
18. Researcher ORCIDs
19. Grant funding
20. Summary of the impact (approximately 100 words summarising the case)
21. whether the case was retrieved under more than one keyword
22. whether the case has a potential to be identified for depth analysis
23. which art and culture sector the case involves
24. which keyword(s) the case appeared under

Appendix 4. Examples of impact beneficiaries

Examples		
General impacts on society	General groups of individuals (audiences, visitors, listeners...)	<p><i>'EI engaged a worldwide audience with site-specific contemporary art installations at two world-famous archaeological sites. Combined, these attracted over 4,000,000 visitors in 2018. This afforded visitors new experiences, changing understanding and appreciation of the contemporary relevance of Roman Wall painting, Roman objects and the relationship between contemporary art and archaeology.'</i> [Theme 1]</p> <p><i>'The London exhibition attracted more than 1,993 visitors and event participants. It was also used as a breakout space and was therefore visited by an incalculable number of predominantly medical conference attendees.'</i> [Theme 2]</p> <p><i>'The project resulted in an exhibition and display at Laura Grimond House which was open to the public on an open day. Service users developed creative responses to archaeological artefacts and excavations, which "taught them new skills and created an atmosphere where they could build up social networks, thereby reducing their isolation".'</i> [Theme 3]</p>
General impacts on society	Policy	<p><i>'Through these interdisciplinary methods, research has demonstrated for the first time how complex local and transnational networks have allowed Cartoneras to develop new ways of 'doing politics' underground through socio-artistic action. These networks, in turn, have been mobilized to fight against social exclusion, stigma and inequality faced by large sectors of the Latin American population.'</i> [Theme 1]</p> <p><i>'Impacts include [...] a cross-governmental strategy to support delivery of health and well-being through arts and culture'</i> [Theme 2]</p> <p><i>'.....as a solution, the Landscape, Arts and Biodiversity Strategy (LABS) document was created, by Borough Council. [...] art strategy is 'one of three foundational aspects of the document', which lays out a series of design guidelines for companies to follow in bidding for permissions to build, providing a lever for enabling the arts strategy to influence the practice and ethos of other companies.'</i> [Theme 4]</p>
Specific groups	Societal	<p><i>'The research has impacted communities affected by deprivation as a legacy of the conflict by influencing community regeneration and development, leading to job creation, inward investment, urban regeneration and increased community capacity, through community co-creation.'</i> [Theme 1]</p> <p><i>'The research has positively influenced care procedures, carer attitudes and quality of life for people living with dementia'</i> [Theme 2]</p> <p><i>'The pioneering Compound 13 Lab engaged local communities and upskilled over 100 marginalised young people'</i> [Theme 3]</p>
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Examples		
Specific groups	Business, professions, policy	<p><i>'In 2020 Local Insight recorded that 40.9% of over 16s in Hanley have no formal qualifications. The research has become the foundation of arts programmes that have achieved impact by benefiting community members' skills and employability. Since 2015, Community Maker and The Portland Inn Project have reported total 3,261 people attending skills workshops. Workshops include ceramics, illustration and other technical art skills, emotional wellbeing skills, and employment skills (including CV writing and social media marketing)' [Theme 1]</i></p> <p><i>'One company required all their care home managers to attend the training sessions (n=51). Pre and post test questionnaires highlighted that managers self-rated their observation skills of clients physical and cognitive abilities to have increased from 65.8% and 93.8%; to 72.8% and 95.8% respectively' [Theme 2]</i></p> <p><i>'The Art/Archaeology research has boosted creative SMEs in Orkney by contributing to the design, development, and marketing of new products and the adoption of new business models.' [Theme 3]</i></p>
Specific organisations	Co-producing work with researchers, or implementing or delivering work based on the research	<p><i>'The research output, The Lost Palace (2016-17) [3.5], which Clarke wrote, directed and co-designed, was a new visitor experience commissioned by HRP, developed in collaboration with Calvium, Gibson and theatre producers Fuel, along with designers Chomko & Rosier and multimedia design studio Limbic Cinema.' [Theme 3]</i></p> <p><i>'The 'Archaeology Plus' Project (2018-2019) was led by Bevan and Lee in collaboration with the Orkney Blide Trust, a charity offering mental health services for 150 people and their carers across Orkney. Archaeology Plus workshops engaged 30 members, who learned about artefacts, photography skills, and expressed creative responses to the archaeological materials and processes during arts workshops' [Theme 3]</i></p>
Specific organisations	Hosting or showcasing research activities	<p><i>'De Pont Museum (Netherlands) has collaborated with Doherty on multiple projects including exhibitions and educational outreach programmes around themes of conflict legacy. A solo exhibition UNSEEN in 2014/15 in partnership with Matt's Gallery, London and The Nerve Centre, Derry was attended by 21,910 visitors (4,974 of which were children and students born after the conflict ended).' [Theme 1]</i></p> <p><i>'Disney's research also featured as a video installation (a 3D visualisation of a Brazilian rainforest, which played on a loop on a display screen) in a major 2018 exhibition at the Victoria and Albert Museum (V&A) in London, 'The Future Starts Here'. [Theme 4]</i></p>

Appendix 5. Examples of roles played by partner organisations

Examples		
Integrative role	Supporting re-search	<p><i>‘The Newham plays developed through a collaboration between Kenworth (writer) and Charlton (director) and the Royal Docks Trust, Community Links and Ambition, Aspire, Achieve, East London. The development and promotion of partnership/stakeholder building that has been invested in supports the infrastructure of the shows and enables the research to make an impact on its participants.’ [Theme 1]</i></p> <p><i>‘This data was supported by meteorological data from NASA’s Corrosion Technology Lab, which used its satellites to monitor the local atmospheric conditions. This resulted in publication of a joint paper with NASA. BAE Systems also provided in-kind support with access to its labs, testing, and knowledge-share.’ [Theme 3]</i></p>
Integrative role	Using research	<p><i>‘The research has supported Francis and the Portland Street community to secure total funding of GBP566,116 to build on the findings by establishing programmes and providing infrastructure for community development.’ [Theme 1]</i></p> <p><i>‘Step Up for Parkinson’s (Malta) which now runs classes in four different locations around the country, reported that use of the research as evidence to support their proposals enabled them to receive the funding needed to set up these classes’ [Theme 2]</i></p> <p><i>‘Gulp! Radically altered the means by which STW – the UK’s second largest water company, serving 4.4m customers in England and Wales – achieved its key objectives to change understandings of water as a precious resource, for which we are collectively responsible in terms of future supply.’ [Theme 4]</i></p>
Integrative role	Showcasing / disseminating research outputs	<p><i>‘The researchers promoted Chagossian heritage to politicians, policy makers, and the public via an international touring exhibition.’ [Theme 1]</i></p> <p><i>‘The Royal Society for Public Health produced a webinar with Houston as one of its expert speakers, reaching an audience in 25 countries’ [Theme 2]</i></p> <p><i>‘Events were held in venues that had not engaged their users with digital fiction before including holding the UK’s first ever exhibition of digital fiction at Bank Street Arts in Sheffield in 2014 which attracted 443 visitors over 3 weeks and involved professional development training delivered by the researchers for 10 gallery staff’ [Theme 3]</i></p>
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Examples		
Transformative role		<p><i>'Jiang applied and further refined her ideas about the art of flat organizing through a co-produced project with The Voice of Domestic Workers (VoDW). This project involved a participatory video in collaboration with Tassia Kobylinska - a filmmaker from Goldsmiths - and a group of MDWs associated with VoDW. Twelve MDWs were trained in video production. Organised by Jiang and Kobylinska, this group co-produced a short documentary video, Our Journey, and curated exhibitions (My Home is Not My Home) that presented a combination of video installation, photography, artworks and documents in different museums and galleries across the UK.'</i> [Theme 1]</p> <p><i>'KIMA: Colour was created by Analema Group in collaboration with scientists and curators from the National Gallery and data and algorithm experts from King's College. The artwork allows audiences to experience a deeper understanding of both the art and science of colour in National Gallery paintings.'</i> [Theme 3]</p>
Transactional role		<p><i>'The research examines how cross-cultural identity is created in literary works by figures such as Shakespeare and his contemporaries. It enabled theatre practitioners in English Touring Theatre to create new versions of canonical texts (Othello) and curators at Dr Johnson's House to revive neglected texts and histories.'</i> [Theme 1]</p> <p><i>'The knowledge was commercially exploited as the design basis for an award-winning microphone array by Schoeps, a world-renowned microphone manufacturer based in Germany.'</i> [Theme 3]</p> <p><i>'Our collaborators in Norway (Bergen Public Library and COPE) and Germany (Tesserae) immediately turned VSAT into a multilingual tool for delivering face-to-face and remote classes on language and technology for immigrant learners.'</i> [Theme 3]</p>

Appendix 6. Examples of direct impacts of research

Direct impact of research on partner organisation	Examples
Increased income	<i>“Royal Botanic Gardens, Kew had an increase of 18.6% (13th place at 1,828,956) following the installation of The Hive from the UK Pavilion at the Milan Expo 2015 and the opening of their Great Broad Walk Borders” [Theme 3]</i>
Increased or expanded client base	<i>Originally working with 12 BAME, LGBTQ+ and disabled young people in 6 workshops at Makerspace and Oxford’s community arts Ark-T Centre, VSAT is now engaging over 500 young people from one of the 20% most deprived wards in the UK with creative technologies [Theme 3]</i>
Increased reputation - visibility	<i>The enhanced profile created by the redevelopment led to the Lapworth being a founding member of the international Science in University Museums network. [Theme 4]</i>
Improved service delivery	<i>These methods are being used by NASA and European Space Agency (ESA) space missions to improve satellite estimates of carbon stocks. [Theme 4]</i>
Devised strategy	<i>NCLA has embedded new digital skills at the Northumberland offices of Bloodaxe, bringing lasting benefits to the company by developing an innovative digital business model that provides (as Bloodaxe’s Director puts it) ‘overdue attention to poetry production outside the consecrating literary centre of London’ (IMP2). The ‘Poetics of the Archive’ project (GRANT1) repurposed the Bloodaxe Books Archive as a digital resource for the future. [Theme 1]</i>
Adopted product	<i>The new version of ORTF-3D was rapidly adopted and used for broadcasting a number of major musical and sports events, such as the BBC Proms (2016–2019), FIFA World Cup (2018), and the French Open (2018–2019). [Theme 3]</i>
Obtained further funding, awards, demonstrated value	<i>The project significantly raised HRP’s and creative partners’ reputations in the area of digital heritage/interaction and led to international awards, including the IMAGINES Project of Influence award at The Best In Heritage awarded by ICOM (International Council of Museums) and Europa Nostra (Dubrovnik 2018). [Theme 3]</i>
Direct impact of research on societal stakeholders	
Greater visibility-branding of local community-area	<i>Based on our work immersive design has been identified as an area for growth and investment in Cornwall both by the LEP in the Local Industrial Strategy and Cornwall Council in the Creative Manifesto. [Theme 3] The themes of his research on stories as a form of community-building have catalysed activism within Portsmouth’s creative circles, stimulating events and given practitioners the confidence and skill to fulfil more ambitious, multimedia projects. This organic development compliments official efforts to enhance local culture as a means of ‘placemaking’ [Theme 1]</i>
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Direct impact of research on partner organisation	Examples
Created community engagement	<p><i>EI had positive cultural and societal impact on local communities. In Ercolano, key stakeholders were involved through an extensive workshop programme. This resulted in closer relationships between surrounding communities and the archaeological site; changed opinions and behaviour regarding local Roman heritage; and attracted new visitors to the site. [Theme 1]</i></p> <p><i>Phil Smith's performance research enables individuals and communities to navigate challenging political and historical themes, narratives and landscapes, in order to make personal or communal meaning and view their environments through new lenses. These include the Commoners Choir's singing and walking project, Magna Carta (Yorkshire, 2015), about the rights of people to access land for leisure and recreation, which was 'transformative in terms of promoting a sense of connection with others and for promoting well-being' [Theme 4]</i></p>
Urban regeneration	<p><i>Herbert's research has allowed the building company to creatively map and inscribe into the built landscape a form of urban regeneration that would have been impossible to achieve at the level of bricks and mortar alone. The text-based arts strategy has enabled a re-connection to, and a re-imagining of, place, breaking with the negative associations of industrial heritage not by rejecting or building over them but by recovering them in ways that have prompted a re-evaluation of that past. [Theme 1]</i></p>
Preservation or sharing of cultural artefacts or heritage for public benefit	<p><i>The research and continuing collaboration was instrumental in facilitating the National Archives and National Library of Sweden's move to provide open access to their newspaper collection with over 1,200 titles (some 3 million pages) made freely accessible since 2019. [Theme 3]</i></p> <p><i>The research, conducted through a series of major projects, included extensive ethnographic and archival investigation into the richness and diversity of Liverpool's popular music past, longstanding efforts to develop the local music industries and formulate music policy, diverse experiences and evaluations of Beatles tourism, and different understandings of music as heritage. [Theme 1]</i></p>
Support for advocacy campaign - charity initiative	<p><i>The campaign raised over GBP 32,000, enabling the purchase of essential foodstuffs, fuel, oxygen CPAP and personal protective equipment, as well as the construction of an isolation building for quarantining infected individuals within the Ipatse village, alongside a new health care facility. [Theme 4]</i></p> <p><i>In line with her foundational research, the participatory art project directed by Jiang to produce the documentary video and exhibitions has supported 'flat organizing' by giving the MDWs a voice - as individuals, through unionization and by connecting them to non-traditional actors, such as museum curators. [Theme 1]</i></p>
Support for policy change	<p><i>The PMW, supported and endorsed by the Soil Association, was delivered to the Department for Environment, Food and Rural Affairs (DEFRA) at 10 Downing Street in person by a 10,000 strong march of supporters in September 2018 [Theme 4]</i></p>

Appendix 7. Examples of indirect impacts of research

Activity	Further impacts	Examples
New or expanded initiatives based on research	Benefits for new users, clients, audiences	<p><i>'Age Cymru secured additional funding to extend the arts interventions in dementia care service for 2 years. Following changes being made the service delivered an additional 864 arts sessions across care homes in Wales and in total 1840 art sessions have been delivered to 25% of care homes across Wales.'</i> [Theme 2]</p> <p><i>'This research was also applied by Dreaming Methods in the development of further work including a Virtual Reality version of the original WALLPAPER piece'</i> [Theme 3]</p>
	Increased interest in and voice of partner organisation	<i>'The hubs have been a way of embedding high quality DfP practice within four regions of England and Wales with DfP research driving the evidence, advocacy and interest in ENB's work.'</i> [Theme 2]
	Further creative outputs	<i>'Direct impact on PWD is exhibited in the ongoing collaboration with Saffron Hall Trust and the resulting programme Together in Sound (TiS), led by Cambridge Institute for Music Therapy Researchers Odell-Miller and Senior Lecturer Molyneux. In November 2020, a new film was launched about the project'</i> [Theme 2]
	Improved training for professionals	<i>'The training has been incorporated into the curriculum for caregivers in 4 Universities in Japan, providing trainee professionals with the knowledge and expertise required to observe and assess patients more accurately and provide a better level of care once qualified.'</i> [Theme 2]
	New training courses	<i>'Bevan and Thomas have used the interdisciplinary research approach of Art/Archaeology to develop a unique suite of professional training courses, including an MA in Contemporary Art and Archaeology, the only course of its kind in the world, and internationally validated for 2020 delivery. It builds on the successful programme of CPD courses which have run since 2016, which have seen 130 creative practitioners from the USA, Canada, Italy, France, Ireland and the UK engage with the UHI's Art/Archaeology model.'</i> [Theme 3]
Attending or participating in events about the research	Individuals being inspired to become activists or advocates	<i>'As a direct result of engagement with the PMW, one of the co-authors of the manifesto was approached by the CEO of the 9000-acre privately-owned Castle Howard estate in Yorkshire to establish an advisory board to oversee an initial rewilding of 500 acres of the estate, with further wilding efforts planned.'</i> [Theme 2]
<i>continued on next page</i>		

Activity	Further impacts	Examples
	Individuals or groups being inspired to start new initiatives	<p><i>'It inspired a group of archive students to apply to the Fund for International Development in Archives (FIDA) for a project to visit authors around Cameroon to ask about their papers. Sutton supported the successful application and the resulting 15,000 Euros grant made it possible for the students to travel around the country digitising documents.'</i> [Theme 4]</p> <p><i>'Another patient advocate, Kay, set up a new local support group in 2020 (with support and activities being online due to the Covid-19 pandemic in 2020). Kay addressed an audience of 200 people at a Breast Cancer Research event (26/02/20) about the positive impact of participation in ComMA.'</i> [Theme 2]</p>
	Individuals being able to obtain funding, commissions, improve their careers, etc.	<p><i>'The competitions have inspired young, emerging writers from diverse backgrounds to work with major publishers such as Penguin, and apply for grants and fellowships to further their writing careers.'</i> [Theme 2]</p> <p><i>'For Adivaani, it was the first time they had worked in museum and exhibition publishing. Following this exposure, they were contracted to produce a catalogue for the exhibition Behind the Indian Boom (Brunei Gallery, SOAS, London, 2017).'</i> [Theme 2]</p>
	Organisations being inspired to implement similar approaches	<i>'The partnership's success also led the PS Director, in September 2019, to consult Higgins and Somervell about Romantic texts to be featured in a Department for Education national recitation competition in schools.'</i> [Theme 2]
Establishment of new collaborations or new formal and informal or-organisational forms	Partner organisation developing further collaborations	<i>'For Stewart, the design process "led to changes in practice for me as a designer [and] demonstrated the potential for combining academic research and collaborations in product design" As a result, Stewart is now "pursuing international collaborations in Asia". The collaboration continues with a relaunch planned for 2021.'</i> [Theme 3]
	Researchers set up competitions, awards, prizes	<i>'Bell and colleagues launched the Opening Up Digital Fiction Writing Competition in 2017. As the only digital fiction competition in the world aimed at both established and novice writers, it encouraged more writers to experiment with digital media and inspired the production of new cultural artefacts, with 110 digital fictions submitted from 24 countries.'</i> [Theme 3]
	Researchers set up research centres	<i>'In 2017 Howard co-established PRiSM at the Royal Northern College of Music, Manchester, of which Rempe is a founding Associate member. PRiSM is building on the approach developed at Liverpool to benefit composers, curators and audiences through high-profile commissions.'</i> [Theme 3]
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Activity	Further impacts	Examples
	Researchers set up networks	<i>'As a founding member of the Walking Artists Network (2011) and by contributing to and organising collective gatherings that bring together artists, practitioners and academics – including the Walking's New Movements conference at the University of Plymouth (2019).'</i> [Theme 4]
	Researchers set up communities	<i>'Bangor researchers developed a 'dementia supportive practice community', initially bringing together 70 people living with dementia, researchers, carers, health and social care providers to improve the quality of life of those affected by dementia. This is now an established network with 540 members (across Wales), utilising research findings and creative approaches to engagement.'</i> [Theme 2]
	Researchers set up action groups	<i>'In Cambridge, the UCM's "India Unboxed" season grew out of Another India and was developed in parallel, supported by an Arts Council England ChangeMaker Fellowship for the project curator of the season. A legacy of this work has been the establishment of the Change Makers Action Group (CMAG) as a platform to advocate for more inclusive museum practice and for structural change in museums in Cambridge and beyond.'</i> [Theme 2]

Appendix 8. List of Small Specialist Institutions

(Impact case studies submitted to REF2021 in parenthesis)

1. Courtauld Institute of Art (4)
2. Falmouth University (5)
3. Glasgow School of Art (4)
4. Guildhall School of Music and Drama (2)
5. Leeds Arts University (8)
6. Norwich University of the Arts (2)
7. Ravensbourne University London (2)
8. Rose Bruford College of Theatre and Performance (2)
9. Royal Academy of Music (3)
10. Royal College of Art (8)
11. Royal College of Music (3)
12. Royal Conservatoire of Scotland (3)
13. Royal Northern College of Music (2)
14. The Arts University Bournemouth (5)
15. The Royal Central School of Speech and Drama (3)
16. Trinity Laban Conservatoire of Music and Dance (2)
17. University for the Creative Arts (4)
18. University of the Arts, London (10)

Appendix 9. Overview of Sample Set 1 - Top 50 funded NPOs

NPO + ACE Location	Annual Funding	Art form area	No. of separate REF 2021 ICS mentions	Summary Impact Type
Royal Opera House (Lon)	£22.268.584	Not disciple specific	17	Cultural - 14 Societal - 3
Southbank Centre (Lon)	£16.828.042	Combined Arts	19	Cultural - 16 Societal - 3
National Theatre- (Lon)	£16.156.916	Theatre	50	Cultural - 34 Societal - 16
RSC - (Mid)	£15.259.706	Theatre	18	Cultural - 15 Societal - 3
Opera North - (North)	£10.677.102	Music	5	Cultural - 4 Societal - 1
Manchester International Festival (North)	£9.908.150	Combined Arts	8	Cultural - 4 Societal - 4
B'ham Royal Ballet (Mid)	£8.036.194	Dance	2	Cultural - 1 Health - 1
English National Ballet (Lon)	£6.011.921	Dance	4	Cultural - 2 Health - 1 Societal - 1
Booktrust (North)	£5.763.099	Literature	3	Societal - 2 Cultural - 1
Welsh National Opera (Midlands)	£4.000.000	Music	8	Cultural - 6 Societal - 1 Health - 1
North Music Trust (Sage Gateshead) (North)	£3.576.745	Music	4	Cultural - 2 Technological - 1 Societal - 1
Tyne and Wear Archives (North)	£3.357.648	Museums	5	Cultural - 4 Societal - 1
Northern Ballet (North)	£3.289.261	Dance	1	Societal - 1
Baltic (North)	£3.037.975	Visual Arts	3	Cultural - 3
Bournemouth SO (South West)	£2.601.798	Music	2	Cultural - 1 Societal - 1
Royal L'pool Philharmonic (North)	£2.472.708	Music	3	Cultural - 3
Sadlers Wells (Lon)	£2.376.279	Dance	9	Cultural - 5 Societal - 4
<i>continued on next page</i>				

Royal Exchange Theatre (North)	£2.374.909	Theatre	2	Societal - 2
English Stage Company (North)	£2.236.073	Theatre	0	
Crafts Council (London)	£2.222.889	Visual Arts	6	Cultural - 6
City of Bham SO (Mid)	£2.221.113	Music	2	Cultural - 2
Rambert (Lon)	£2.164.253	Dance	1	Societal - 1
English Touring Opera (Lon)	£2.130.478	Music	1	Cultural - 1
Halle Concerts (North)	£2.122.014	Music	0	
London SO (Lon)	£1.977.044	Music	5	Cultural - 4 Technological - 1
Leicester Theatre Trust (Mid)	£1.949.247	Theatre	0	
Birmingham Rep (Mid)	£1.867.698	Theatre	4	Cultural - 3 Societal - 1
London Philharmonic (Lon)	£1.830.223	Music	4	Cultural - 2 Societal - 2
Philharmonia Ltd (Lon)	£1.830.223	Music	0	0
Contemporary Dance Trust (Lon)	£1.826.994	Dance	0	0
Young Vic (Lon)	£1.792.530	Theatre	5	Societal - 4 Cultural - 1
Chichester Festival Theatre (SE)	£1.772.234	Theatre	3	Cultural - 2 Societal - 1
Liverpool and Merseyside Theatres Trust (North)	£1.680.337	Theatre	0	0
Manchester City Gallery now known as Manchester Art Gall (North)	£1.627.056	Museums	8	Societal - 1 Cultural - 7

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Leeds Museums and Galleries (North)	£1.619.256	Museums	10	Abbey House Museum (Societal - 1) Leeds Art Gallery (Cultural - 1) Leeds City Museum (Cultural - 2, Societal - 1) Kirkstall Abbey (Cultural - 2) Temple Newsam (Cultural - 2) Lotherton (Cultural - 1)
Northern Stage (North)	£1.591.246	Theatre	7	Societal - 2 Cultural - 5
Leeds Theatre Trust (North)	£1.535.853	Theatre	0	0
Whitechapel Gallery (Lon)	£1.437.955	Visual Arts	9	Cultural - 8 Societal - 1
Britten Pears Arts (SE)	£1.428.835	Music	2 (for Snape Maltings)	Cultural 1 Social 1
Artsworld (SE)	£1.394.508	Not discipline specific	0	0
N'ham Playhouse (Mid)	£1.379.735	Theatre	2	Societal - 1 Cultural - 1
Fabric (DanceXchange and Dance4) (Mid)	£1.376.001	Dance	5	DanceXchange Societal - 2 Dance4 Societal - 2 Cultural - 1
Norfolk Museums Service	£1.375.308	Museums	4	Norfolk Museums Service (Cultural - 2) Ancient House Museum (Cultural - 1) Norwich Castle Museum and Art Gallery (Cultural - 1)
<i>continued on next page</i>				

Bristol Museums (SW)	£1.364.320	Museums	7	<p>Bristol Museums (Cultural - 1, Societal - 1)</p> <p>Bristol Museum & Art Gallery (Cultural - 1)</p> <p>M Shed (Cultural - 1)</p> <p>The Georgian House Museum (Societal - 1)</p> <p>Bristol Archives (Cultural - 2)</p>
University of Oxford (GLAM) (SE)	£1.341.170	Museums	53	<p>Ashmolean Museum Oxford (Cultural - 7)</p> <p>Bodleian Libraries (Cultural - 8, Societal - 1)</p> <p>Oxford Botanic Garden & Arboretum (Environmental - 1)</p> <p>History of Science Museum (Cultural - 4)</p> <p>Museum of Natural History (Cultural 7, Societal 4, Environmental - 1)</p> <p>Pitt Rivers Museum (Cultural - 15, Societal - 5)</p>
Yorkshire Sculpture Park (North)	£1.336.799	Visual Arts	5	<p>Societal - 3</p> <p>Cultural - 2</p>
Unicorn Theatre (Lon)	£1.327.875	Theatre	1	Societal - 1
City of Manchester Arts Centre (North)	£1.321.387	Combined Arts	0	
New Adventures Charity (South East)	£1.317.810	Dance	2	Cultural - 2
Sheffield Theatres Trust Ltd (North)	£1,303,415	Theatre	3	<p>Cultural - 1</p> <p>Crucible (Cultural - 1)</p> <p>Playhouse (Cultural - 1)</p>

Appendix 10. Overview of Sample set 2 - Middle 50 NPOs

NPO and Location	Annual Funding	Art Form	Number of separate REF ICS mentions	Summary Impact Type
Cheltenham Festivals (South West)	£217.480	Combined Arts	5	Culture - 5
African Oye Ltd (North)	£217.456	Music	0	0
The Courtyard Trust (Midlands)	£216.778	Combined Arts	0	0
A-n The Artists information Company (North)	£216.669	Visual Arts	0	0
Creative Kernow (SW)	£216.588	Not discipline specific	1	Cultural - 1
Cultural Health WellBeing Alliance (North)	£216.579	Not discipline specific	4	
Disability Arts Shropshire (Mid)	£216.208	Visual arts	0	0
Upswing Aerial (d/c) (London)	£216.095	Theatre	0	0
20 Stories High (North)	£215.804	Theatre		
Craftspace (Mid)	£215.446	Visual arts	1	Societal - 1
Carousel Project (South East)	£215.000	Music	1	Cultural - 1
SS Great Britain Trust (SW)	£213.864	Museums	0	0
Zoie Logic Dance Theatre (SW)	£213.864	Dance	0	0
Southwest Heritage Trust (SW)	£212.600	Museums	0	0
Actors Touring Company (London)	£211.596	Theatre	0	0
University of Leicester Attenborough Centre (Mid)	£210.800	Combined arts	0	
Certain Blacks (London)	£210.000	Combined arts	0	0
North Lincolnshire Council (North)	£210.000	Visual arts	0	
Warwickshire Libraries (Mid)	£210.000	Libraries	0	
Swindon Dance (South West)	£209.994	Dance	0	0
Travaux Sauvages (South West)	£209.983	Theatre	0	0
Surface Area Dance (North)	£209.636	Dance	0	0
Wakefield Council Museums (North)	£208.772	Museums	1	Wakefield Museum (Cultural - 1)
Rosehill Arts Trust (North)	£208.523	Combined arts	0	0
Orchestra of Age of Enlightenment (London)	£207.656	Music	0	
Prime Theatre (South West)	£207.555	Theatre	1	Societal - 1
Lung Productions (North)	£206.699	Theatre	0	

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NPO and Location	Annual Funding	Art Form	Number of separate REF ICS mentions	Summary Impact Type
Impressions Gallery (North)	£206.003	Visual arts	2	Cul
Lincolnshire County Council (Museums) (Midlands)	£205.910	Museums	1	Museum of Lincolnshire Life (Cultural - 1)
480. LUX (Lon)	£205.841	Visual arts	3	Cultural - 3
Intoart (London)	£205.156	Visual arts	0	
Fevered Sleep (Lon)	£204.861	Theatre	1	Societal - 1
Fuel Productions (London)	£204.861	Theatre	0	
Nofit State Community Circus (Midlands)	£204.861	Theatre	0	
North Kesteven District Council (for The Hub, previously the NCCD) (Midlands)	£204.861	Visual arts	0	
Creative Arts East (Mid)	£204.760	Combined arts	0	
The Customs House (North)	£204.000	Combined arts	0	
Sound City (North)	£203.680	Music	0	
Varmos Theatre (d/c) (Mid)	£203.680	Theatre	0	
TIN Arts (North)	£202.952	Dance	0	
Gem Arts (North)	£202.208	Combined arts	0	
Assoc of Cult Enterprises (North)	£201.643	Not discipline specific	0	
Grizedale Arts (North)	£201.334	Visual arts	1	Cult
Shademakers Uk (SE)	£201.215	Combined arts	0	
Bath Spa Paper Nations (SW)	£201.020	Literature	3	Cultural 2 Societal 1
Liverpool Arab Arts Festival (North)	£200.912	Combined arts	0	
Kali Theatre Co (London)	£200.116	Theatre	0	
Absolutely Cultural (North)	£200.000	Combined arts	0	
Ass of Senior Children's and Educ Libraries (North)	£200.000	Libraries	0	
Cosmopolitan Arts (Mid)	£200.000	Combined arts	0	

Appendix 11 - Units of assessment of impact case studies in sub-sample 1

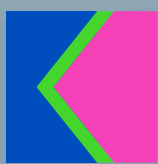
Sub-sample 1 NPOs + Associated Impact Case Study/studies, HEI and impact type		
No.	Tyne and Wear Archives	Unit of Assessment
1	Enhancing the impact of arts, culture and nature on health and wellbeing through community engagement and national policy influence (Soc) (Birkbeck University of London)	5 - Biological Sciences
2	Expanding representation of Black and Asian poets within cultural and educational institutions (Cult) (University of Stirling)	27 - English Language and Literature
3	Innovating the staging and curation of difficult pasts in museums (Cult) (Royal Holloway and Bedford New College)	33 - Music, Drama, Dance, Performing Arts, Film and Screen Studies
4	Shaping modern perceptions of military culture through Roman experiences (Cult) (University of St Andrews)	29 - Classics
5	Using Museum Collections to Inform Public Understanding of the Ancient Greek and Etruscan Past (Cult) (University of Newcastle upon Tyne)	29 - Classics
	Opera North Music	
1	A Democratic Art Form: Changing the Conversation About Opera (Cult) (Oxford Brookes University)	33 - Music, Drama, Dance, Performing Arts, Film and Screen Studies
2	Decolonising opera; Restaging BAME heritage (Cult) (University of East London)	33 - Music, Drama, Dance, Performing Arts, Film and Screen Studies
3	Professionalising Arts Fundraising and Philanthropy (Soc) (The University of Leeds)	33 - Music, Drama, Dance, Performing Arts, Film and Screen Studies
4	Transforming performance of Carmen on the global stage (Cult) (Cardiff University / Prifysgol Caerdydd)	33 - Music, Drama, Dance, Performing Arts, Film and Screen Studies
5	Virtual Acoustics: Influencing Environmental Public Health Policy, Creative Practice and the Cultural Sector (Cult) (University of York)	12 - Engineering
	Birmingham Royal Ballet	
1	Keeping Dancers Dancing: Reducing Injury Incidence and Improving Performance Capabilities (Health) (University of Wolverhampton)	24 - Sport and Exercise Sciences, Leisure and Tourism
<i>continued on next page</i>		

2	Research into experimental theatre of First World War forges innovative collaborations and growth for creative practitioners (Cult) (University of Bristol)	28 - History
	Crafts Council	
1	Ceramics in the Expanded Field: Ceramics Research Centre UK (Cult) (The University of Westminster)	32 - Art and Design: History, Practice and Theory
2	Crafting Resistance: the art of Chilean political prisoners (Cult) (Birkbeck University of London)	14 - Geography and Environmental Studies
3	Reactivating industrial craft for cultural change (Cult) (Buckinghamshire New University)	32 - Art and Design: History, Practice and Theory
4	The Role of Studio Pottery in Developing the Local Economy and Changing Museum Exhibition Practices (Cult) (University for the Creative Arts)	32 - Art and Design: History, Practice and Theory
5	Thread Bearing Witness': Changing Lives One Stitch at a Time (Cult) (Manchester Metropolitan University)	32 - Art and Design: History, Practice and Theory
6	Transforming heritage printing industries for the 21st century (Cult) (University of the West of England, Bristol)	32 - Art and Design: History, Practice and Theory
	Nottingham Playhouse	
1	Dramaturgies of Conflict: Making Bolero (Soc) (University of Lincoln)	33 - Music, Drama, Dance, Performing Arts, Film and Screen Studies
2	No Woman's Land: increasing knowledge of migratory histories (Cult) (University of Worcester)	33 - Music, Drama, Dance, Performing Arts, Film and Screen Studies

Appendix 12 - Units of assessment of impact case studies in sub-sample 2

Sub-sample 2 NPO + associated Impact Case Study/studies, HEI and impact type		
No.	Cheltenham Festival	Unit of Assessment
1	Changing Rhythms: Influencing the form and content of festivals (Cult) (University of East Anglia)	34 - Comms, Cultural and Media Studies, Library and Information Management
2	Connecting Art and Science in Sculpture, Light and Sound (Cult) (University of Hertfordshire)	32 - Art and Design: History, Practice and Theory
3	Re-Thinking Theatre through translation (Cult) (Queen's University of Belfast)	26 - Modern Languages and Linguistics
4	The Solfeggio Tradition: Enriching Contemporary Music Education, Performance and Museum Practice in the UK, Netherlands, Italy, Switzerland and Singapore (Cult) (University of Nottingham)	33 - Music, Drama, Dance, Performing Arts, Film and Screen Studies
5	Transforming Curatorial Practice and Enhancing Understanding through Themes in British Art (Cult) (Oxford Brookes University)	28 - History
	Carousel	
1	Transforming Screen Cultures (Cult) (University of Brighton)	34 - Comms, Cultural and Media Studies, Library and Information Management
	Fevered Sleep	
1	Participation, engagement, and cultural understanding: Developing new models for performance touring, audience development, creative partnerships, and social change (Soc) (Royal Central School of Speech and Drama)	33 - Music, Drama, Dance, Performing Arts, Film and Screen Studies
	Paper Nations	
1	Developing and embedding innovative creative pedagogical approaches in creative arts education (Soc) (Bath Spa University)	23 - Education
2	Narrative and Emerging Technology: Remodelling Literary Forms through Digital Media (Cult) (Bath Spa University)	34 - Comms, Cultural and Media Studies, Library and Information Management
<i>continued on next page</i>		

3	Use of creative practice and research to change perceptions of writing and motherhood (Cult) (University of Glasgow)	27 - English Language and Literature
	Culture, Health and Wellbeing Alliance (IPSO)	
1	Delivering transformational Relationships and Sex Education through creative methods: The Sex & History Method (Soc) (University of Exeter)	29 - Classics
2	Embedding trauma informed care in the NHS to improve practice (Soc) (University of Northumbria)	11 - Computer Science and Informatics
3	Enhancing the impact of arts, culture and nature on health and wellbeing through community engagement and national policy influence (Soc) (Birkbeck College, Institute of Zoology, University College London)	5 - Biological Sciences
4	The Sex & History Method: Delivering transformational Relationships and Sex Education through creative approaches (Soc) (University of Exeter)	28 - History



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