What do UK archaeologists think of public engagement?

A Landward Research Occasional Paper
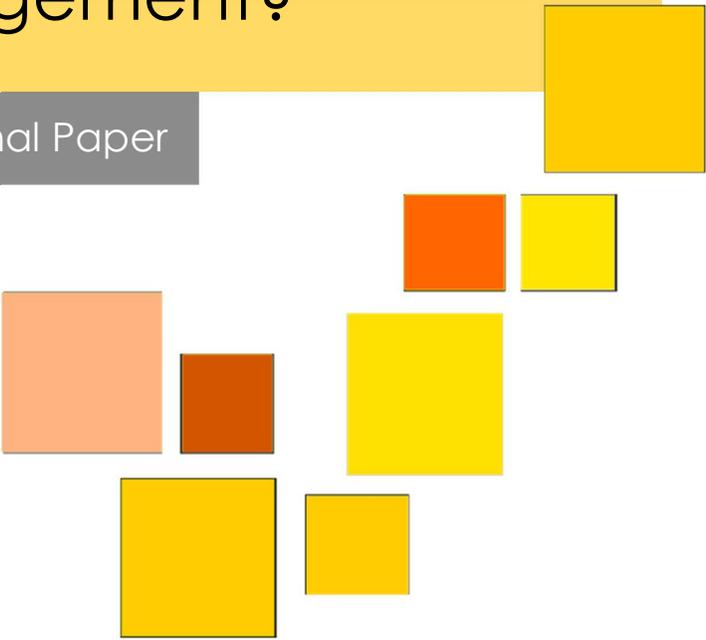
Authors

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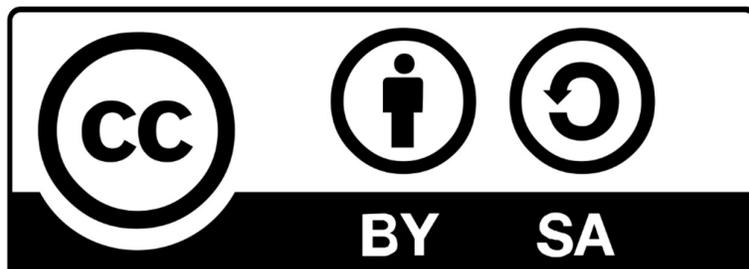
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Introduction: What do UK archaeologists think of public engagement?

While there have been many surveys of archaeologists in the UK (for example – Aitchison 1997; Aitchison and Edwards 2003; Aitchison and Edwards 2008, Aitchison and Rocks-Macqueen 2013) and indeed in many other countries (see DISCO projects for examples of from dozens of European countries www.discovering-archaeologists.eu/) there have been limited surveys into what archaeologists' views are on public engagement. There was one survey of 'Attitudes and Values in Archaeological Practice' (Zimmer et al. 1995) that asked some questions on the topic and another survey that specifically targeted the views of archaeologists in New Mexico (Rocks-Macqueen 2012). These aside, there is a significant gap in our understanding of how archaeologists perceive their engagement with the public.

This Paper aims to help bridge that gap and provide data on how public engagement is perceived by archaeologists in the UK.

Methods

This report contains quantitative data from the 2015 survey 'What do UK Archaeologists Think of Public Engagement', from work undertaken at Umeå University's Digital Social Research Unit in the Department of Sociology, by Lorna-Jane Richardson, processed with the help of Christian Hoggard. This original processed data and subsequent data visualisations can be found on FigShare at:

https://figshare.com/articles/What_do_UK_archaeologists_think_of_public_engagement_/5577958/1

That analysis relied on the 436 out of 475 respondents who provided answers to the geographic area of work question.

A full dataset was provided by Lorna-Jane Richardson to Doug Rocks-Macqueen in February 2018. Doug subsequently analysed the full dataset of 475 responses that are presented in this publication. The results of this analysis were checked by Lorna-Richardson before publishing.

This survey was undertaken as part of Lorna-Jane Richardson's postdoctoral research at the University of Umeå, and the survey was open from 12 October 2015 to 12 December 2015. The online survey was created in TextTalk Web Survey software and the link was shared widely via a range of UK based archaeological organisations, including CIfA and the CBA, and through a variety of social media platforms, groups and discussion fora.

Respondents' Demographics

Basic demographic information was gathered from the respondents. The majority of respondents worked in England, followed by Scotland and Wales. Table 1 includes all mentions of a country, and participants could indicate that they worked across multiple countries/regions. Table 2 provides a more detailed breakdown of the responses. However, for the rest of this report, references to the country of work is based on any mention so totals will be greater than the total 475 respondents to this survey.

Country	Count	Percentage
England	373	73%
Northern Ireland	4	1%
Republic of Ireland	2	0%
Scotland	49	10%
UK	17	3%
Wales	47	9%
No Response	19	4%
Total	511	

Table 1 : Responses to Question 1 by individual country/region - 'Which country do you work in within the UK?' England includes Jersey.

Country	Count	Percentage
England	340	71.6%
England & Jersey	1	0.2%
England, Wales & Scotland	4	0.8%
Northern Ireland	4	0.8%
Republic of Ireland	1	0.2%
Republic of Ireland & England	1	0.2%
Scotland	39	8.2%
Scotland & England	6	1.3%
UK	17	3.6%
Wales	22	4.6%
Wales & England	21	4.4%
No Response	19	4.0%
Total	475	

Table 2: Actual responses to Question 1 – 'Which country do you work in within the UK?'

The highest number of respondents worked in Commercial Archaeology, followed by those working in Higher Education/Further Education (**Error! Reference source not found.**). As with regions of work, respondents could choose more than one area of specialist work, and 129 of the respondents did so. Areas where respondents tended to work across multiple specialisms were:

- Amateur archaeology - community groups undertaking unpaid work;
- Independent scholars/researchers;
- Independent specialist services (ceramics identification, photography, archaeo-botanical analysis etc.);
- Schools/young people's education;
- Archaeological media;
- Stand-alone community archaeology projects (HLF or other funded projects).

Specialist area of work in UK archaeology	Count- Multiple Responses	Count- Single Response
Amateur archaeology - community groups undertaking unpaid work	38	7
Archaeological consultancy	45	17
Archaeological media	10	2
Commercial/development-led archaeology companies	137	103
Higher or further education teaching and research	81	60
Independent scholars/researchers	32	14
Independent specialist services (ceramics identification, photography, archaeo-botanical analysis etc.)	25	0
Local government curatorial services	46	34
Local government HER services	39	32
Museum and archival archaeology	43	34
National bodies (Historic England, National Trust, CBA, Historic Environment Scotland, CADW etc.)	56	52
Other	39	15
Schools/young people's education	19	4
Stand-alone community archaeology projects (HLF or other funded projects)	31	10

Table 3: Responses to Question 2 - What is your specialist area of work in UK archaeology?

Respondents were younger but almost no one under the age of 21 (Figure 1).

	21 and under	22 - 35	36 - 44	45 - 54	55 - 64	65 and over	Decline
Response	2	144	113	95	80	40	1
Percentage	0.4%	30.3%	23.8%	20.0%	16.8%	8.4%	0.2%
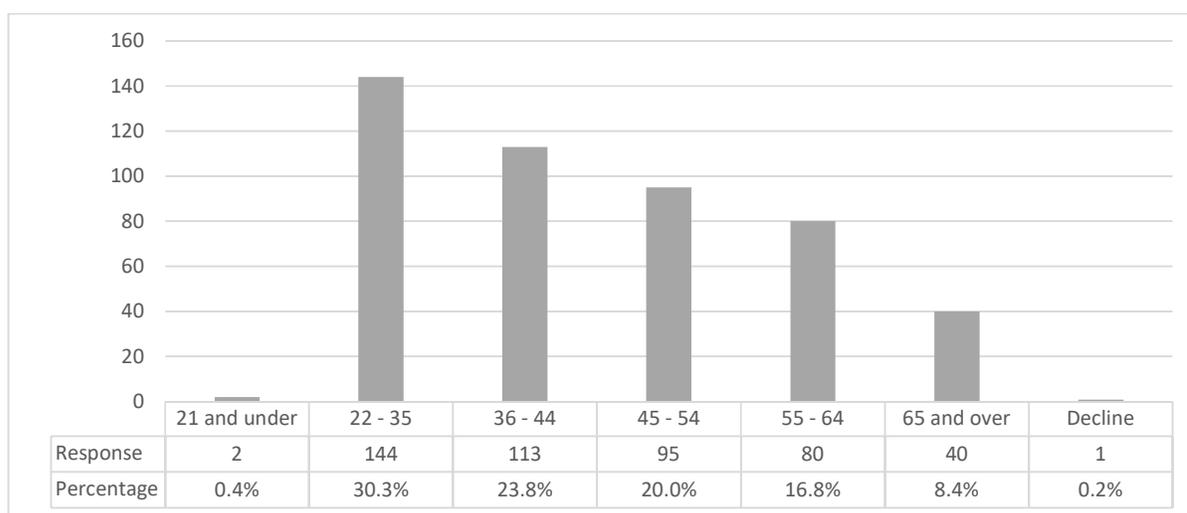
Figure 1: Responses to Question 3 - What is your age?

The gender of the respondents was almost evenly split between those that identified as Men and those that identify as Women (Figure 2).

	Male	Female	Other
%	51%	49%	0%
Count	242	228	2
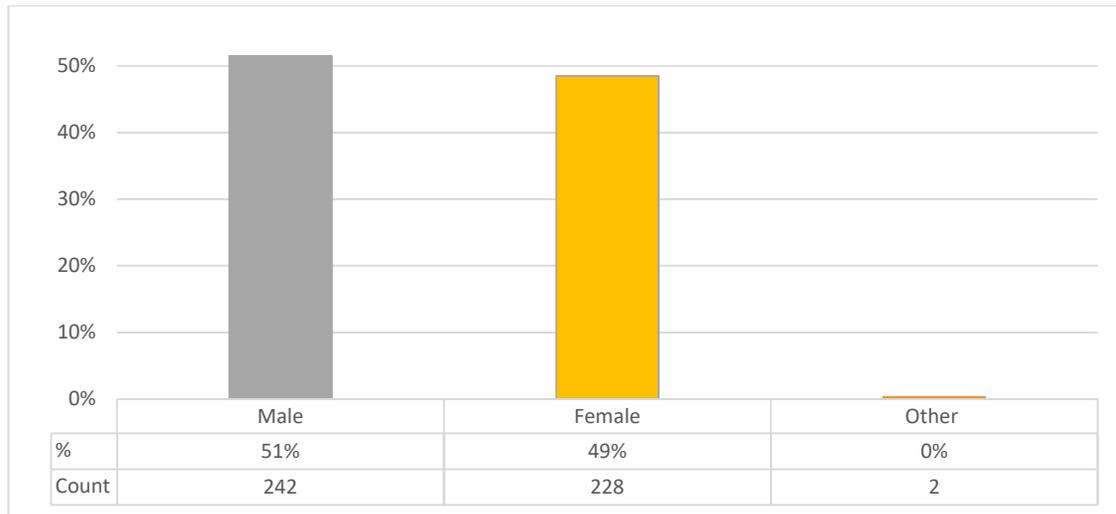
Figure 2: Responses to Question 4 - I identify my gender as...

Demographic Patterns

The different demographics were compared to each other to see if there were any patterns. The significant trends were that more men worked in the commercial sectors while more women work in government archaeology, both local and national, and in museums (Figure 3). Women also dominated the younger generations, while men dominated the older generations (Figure 4).

	Amateur' archaeology - community groups undertaking unpaid work	Archaeological consultancy	Archaeological media	Commercial/development-led archaeology companies	Higher or further education teaching and research	Independent scholars/researchers	Independent specialist services (ceramics identification, photography, archaeo-botanical analysis etc)	Local government curatorial services	Local government HER services	Museum and archival archaeology	National bodies (Historic England, National Trust, CBA, Historic Environment Scotland, CADW etc	Other	Schools/young people's education	Stand-alone community archaeology projects (HLF or other funded projects)
Men	74%	64%	60%	59%	43%	59%	46%	61%	28%	38%	41%	64%	53%	65%
Women	26%	36%	40%	41%	58%	41%	54%	39%	72%	62%	59%	36%	47%	35%
Men	28	29	6	80	34	19	11	28	11	16	23	25	10	20
Women	10	16	4	55	46	13	13	18	28	26	33	14	9	11

Figure 3: Areas of specialism by identified gender.

|	21 and under	22 - 35	36 - 44	45 - 54	55 - 64	65 and over
■ Men	0%	32%	52%	53%	71%	80%
■ Women	100%	68%	48%	47%	29%	20%
Men	0	46	59	50	55	32
Women	2	96	54	44	23	8
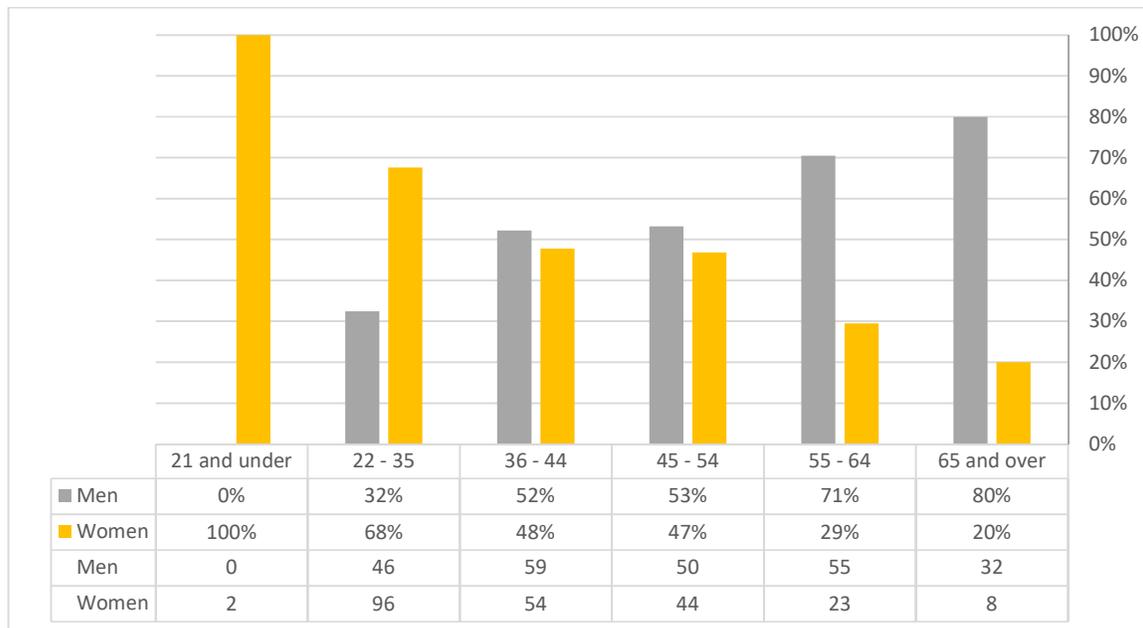
Figure 4: Age vs gender

Representative Sample and Weightings?

For surveys, it is best practice to compare the sample against the known population to determine if the sample is representative of that population. If it is not, then weightings are applied to the results to attempt to produce results that are representative of the population. For example, polls of national political issues e.g. voter intention, approval ratings, etc. will compare the demographics of those that responded against the census data and weight the outcomes.

Archaeology does not have a census, but it does have a significant survey of the population that is conducted every five years as part of the *Profiling the Profession* series of projects. However, it has been five years since the last one was under taken. Moreover, due to surveys of the commercial sector and the *Profiling the Profession* reports we know that from 2007-08 to 2012-13 we lost over a third of archaeology jobs, but since then these numbers have rebounded, and now surpass the previous peak of archaeology jobs, primarily driven by the commercial sector - data from *Profiling the Profession* (Aitchison & Edwards 2008, Aitchison & Rocks-Macqueen 2013), *Job Losses in Archaeology* (Aitchison 2010, 2011a, 2011b), *State of the Archaeological Market* (Aitchison 2011c, 2012a, 2012b), *Heritage Market Survey* (Aitchison 2014) and the *Archaeological Market Surveys* (Aitchison 2015, 2016, 2017). This means there has been great variation in the population, and we are not sure how accurate the old population data is at present. While unlikely, all the new jobs could have been filled by women, meaning the true ratio of women to men in archaeology is much higher than the roughly 50-50 seen in the 2012-13 profiling the profession. As such, any statistical comparison of this sample against an 'estimated' population should be taken with some scepticism, until a new *Profiling the Profession* survey is completed.

With that caveat in mind, this sample is roughly in line with other estimated population distributions such as gender and geographic location (Table 4 and Table 5). Even the distribution of age and gender are in line with what was seen in previous surveys (Figure 5).

Source	Male	Female
Profiling the Profession (2012)	53%	47%
Survey of Archaeological Specialists 2016-17 (2016)	45%	55%
This Survey (2015)	51%	49%

Table 4: Comparison of gender responses in different surveys.

Source	England	Northern Ireland	Scotland	Wales
Profiling the Profession (2012)	82%	0%	13%	6%
Survey of Archaeological Specialists 2016-17 (2016)	80%	<1%	15%	5%
This Survey (2015)	73%	1%	10%	9%

Table 5: Comparison of location responses in different surveys.
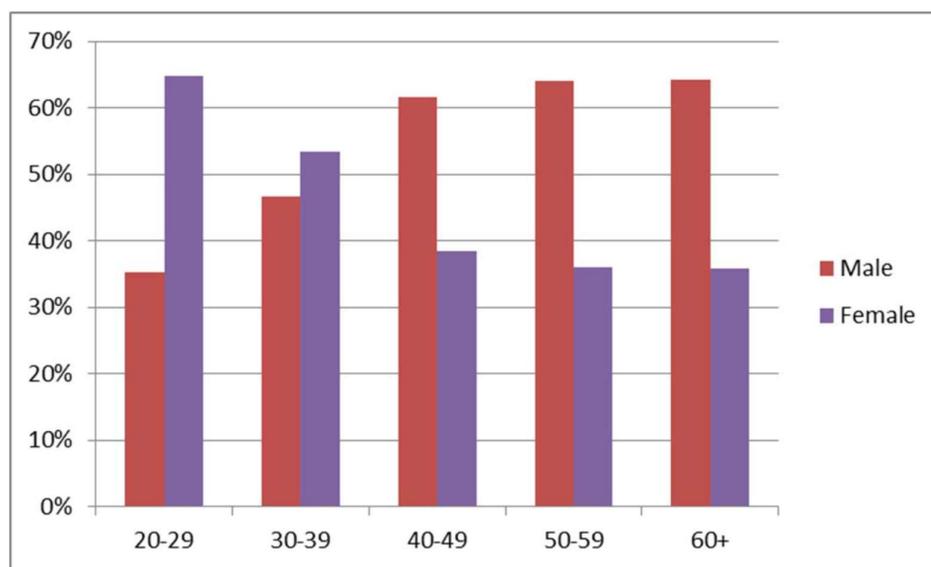
Figure 5: Age and gender - Figure 20 from 2012-13 Profiling the Profession

Because the sample is a roughly comparative representative of what we believe the archaeology population to be, no weightings were undertaken in this analysis.

However, there is still risk of sampling errors. The method of data collection was by a digital survey, and there may be inherent bias because of this, since participants are self-selecting, due to factors such as familiarity with the social media platforms on which it was advertised, access to the relevant publications the survey link appeared in, or similar. One approach to removing bias in surveying is to run multiple surveys, and then take the average results, similar to the approach of the website *Five-Thirty-Eight*, who undertake political surveys. Unfortunately, this is the first survey of its kind, and so the conclusions drawn should be done with caution. This caution is especially important in the discussion of P-values later in this report, since they require a random sample to be valid, and it is unknown if these survey meets that requirement. The respondents appear to be representative of the population as a whole, as one would receive in a random sample survey, but this is still unknown.

Sample Size and Margin of Error

Because the population of archaeologists is finite a 'finite population correction' was used when calculating the margin of error. Based on a sample of 475 from an estimated population of ~5450 archaeologists in 2015 (Aitchison 2015), the margin of error is 4.3% with a 95% confidence interval. Even though the estimation of population is from March 2015 and could be inaccurate, increasing it to 6000 would not change the margin of error. This margin of error did not have an effect on the conclusions of this Occasional Paper. Again, the issue of sampling bias could affect this calculation.

All Respondents

An earlier analysis of this data excluded those respondents that did not enter geographic location information. However, on examining the associated comments, it was clear that some of them did in fact work in the UK and made references to local authorities and national bodies. As such this paper includes all respondents, even though there is a chance that a few of them are based outside the UK. The number of respondents is so few that it would not change the outcomes of the survey. Moreover, they responded in the same way as those that did fill in geographic information, so it is highly unlikely they are outliers.

Results

This section outlines the results of the survey but does not examine correlations or discuss the implications of these results, as those will be handled in the next section.

Public engagement is helpful to my work

More than half of the respondents thought that public engagement was helpful to their work but a quarter did not; the rest were neutral in their belief (Figure 6). Some users provided insights into their views on this:

> "Public engagement is a red herring (sorry!). It is a hangover from the 'Big Society' agenda. Yes, we have to communicate with public audience but things have gone too far. How often do you hear - "oh archaeology, that's really interesting - can I have a go"? This is great but you don't see brain surgeons or policemen handing over the reigns of their professionalism. This is keeping wages low and undervalued. We need to re-frame what it is heritage professionals do and stop embedding all our finding contingent entirely on public engagement." – respondent

Others had equally strong feelings in the other direction:

> "The public benefit is the only justification for the entire commercial sector, without public support cuts in council funding for council posts and 'simplification' of planning regs will lead to poor guardianship, management and excavation. And countless sites will be lost to development. Public support can only be gained and maintained by genuine well thought out rather than tokenistic attempts at public engagement and involvement." – respondent

|	1 (agree strongly)	2	3	4	5 (disagree strongly)
%	33%	20%	20%	14%	12%
Count	155	96	97	68	59
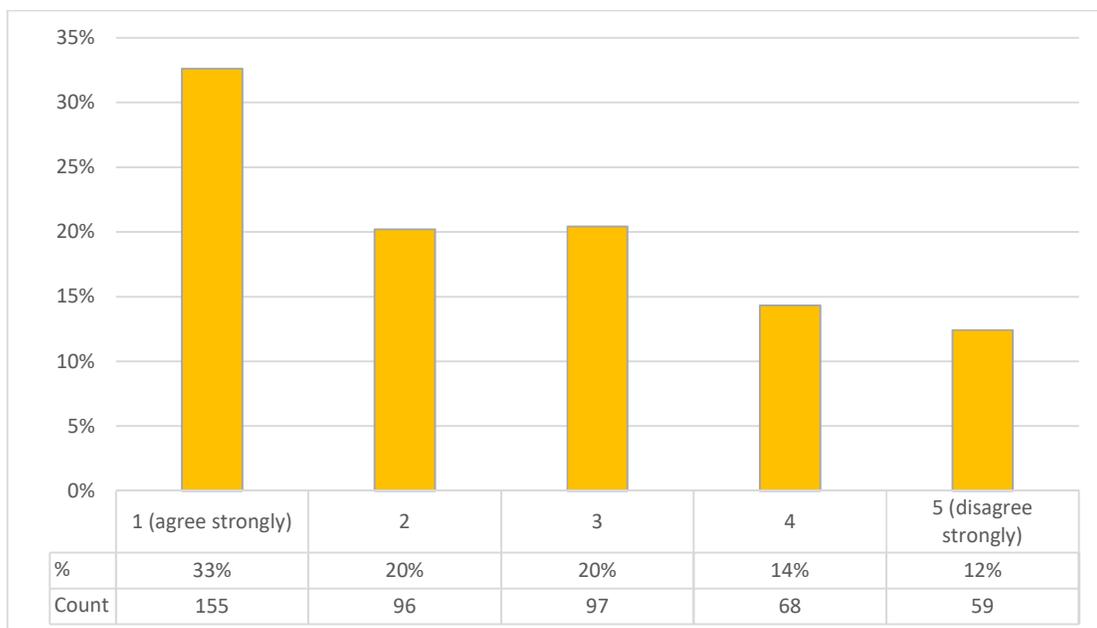
Figure 6: Responses to Question 5 - How helpful is public engagement to your archaeological work? (1- strongly agree 5- strongly disagree).

Undertaking public engagement gets in the way of my archaeological work

While a quarter of respondents did not find public engagement helpful only 15% thought that it got into the way of their work.

> "Some community funding may distort archaeological priorities by emphasising a project's community value over the contribution it makes to archaeological research." – respondent

Conversely, more than two thirds of them do not find that undertaking public engagement gets in the way of their work (Figure 7).

> "I feel strongly that public engagement is essential for archaeology." – respondent

|	1 (does not get in the way)	2	3	4	5 (gets in the way)
%	46%	25%	15%	11%	4%
Count	217	117	71	50	20
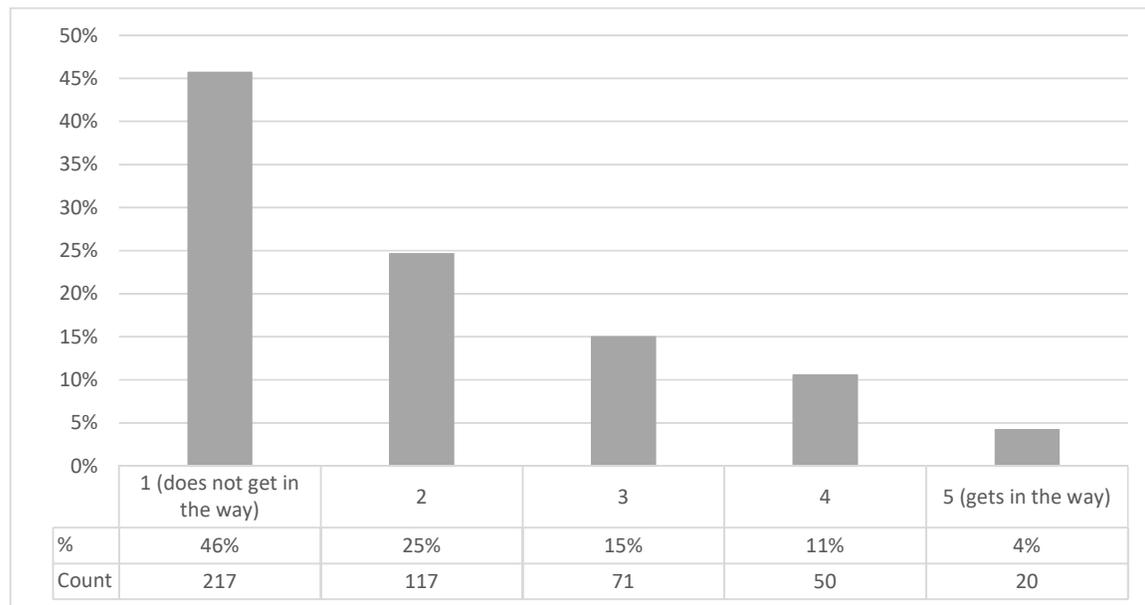
Figure 7: Responses to Question 6 - Does undertaking public engagement get in the way of your archaeological work?

Does public engagement dilute the significance of your work?

Three quarters of the respondents did not see public engagement as diluting the significance their work, with only 10% believing that it did to some degree (Figure 8).

|	1 (does not dilute)	2	3	4	5 (dilutes my work)
%	57%	19%	14%	6%	4%
Count	272	91	66	27	19
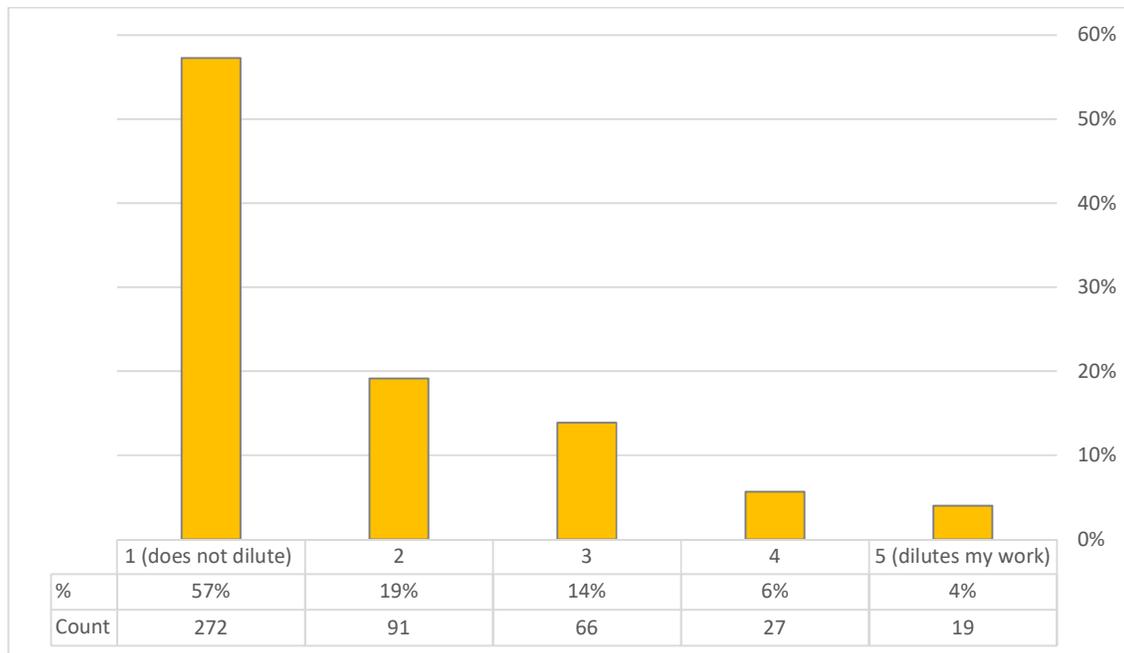
Figure 8: Responses to Question 7 - Does public engagement dilute the significance of your work? 1 -(does not dilute) 5- (dilutes my work).

One respondent thought that this question should be changed:

> "Q7 is the wrong way round: it should be 'do I dilute my work in order to engage the public?' It is the archaeologist's choice to dumb down. I certainly write in a different style, but I attempt to convey the same information, uncertainties and all." – respondent

Time issues

Two-thirds of respondents found that they have enough time to include public engagement in their work; a quarter did not (Table 6).

Do you have time to include public engagement as part of your work?	Count	%
Yes	321	68%
No	125	26%
N/A	29	6%

Table 6: Responses to Question 8 - Do you have time to include public engagement as part of your work?

> "We are advised not to communicate much with public as our public relations is at discretion of client. Also no time allocated for public engagement." – respondent

> "I only have time to include public engagement when it is timetabled in at the start of projects. Occasionally if interesting discoveries are made during commercial projects I talk to clients about public engagement opportunities. Often depends on the nature of the development 'is it sensitive etc' but also comes down to cost.

Usually given a very small budget to undertake community engagement and so have to part fund ourselves so that a worthwhile event(s) is created." – respondent

Skills for communication

Only a tiny fraction (3%) of the respondents did **not** believe that they had the necessary communication skills to work with the public (Table 7).

I feel I have skills necessary to communicate my work with the general public	Count	%
Yes	421	89%
No	15	3%
Unsure	39	8%

Table 7: Responses to Question 9 - I feel I have skills necessary to communicate my work with the general public.

However, some of the comments indicate that they do not believe that their fellow professionals have the necessary skills:

"My dissertation for Masters was looking at how Universities and Academics communicated their work without dumbing down, it tended to be a reactive policy without educational policy nor manner of delivery being taken into account, more of a tick box activity." – respondent

"I studied archaeology at university, trained as a field archaeologist, and have worked for 25 years as an archaeological illustrator. I produce "traditional" archaeological illustrations for specialist and professional publication, but I also produce many archaeological comics primarily for public outreach. These are specifically designed to communicate complex, "real" archaeological information to a non-specialist, public audience. They are extremely effective, and have proven to me and my clients that "the public" has an appetite for archaeological information which is not being served by current public outreach and visualisation strategies. Poor communication with "the public" results in lack of interest, support, access and funding for archaeology, making research and preservation even more difficult. I strongly feel that the blame for this lies squarely with my peers and colleagues in the archaeological profession, who, even when they do perform "public outreach", use methods, language and visual methodologies which are fundamentally alienating to a vast majority of their public audience. The question is not whether archaeologists are engaging with the public, but whether they are engaging with the public effectively. Archaeologists, unhappily, often "talk down" to the public in a way which is fundamentally unhelpful. Public engagement should be seen as a core skill in archaeology, and taught as such. No aspect of archaeology should be considered so arcane or so specialised that it is somehow "beyond" explaining clearly to the wider public." – respondent

Expertise

Almost 95% of the respondents did **not** think that their work was too specialised to communicate with the public.

My area of expertise is too specialised to communicate with the general public	Count	%
Yes	14	3%
No	445	94%
Unsure	16	3%

Table 8: Responses to Question 10 - My area of expertise is too specialised to communicate with the general public.

Is my research interesting beyond the sector?

Close to 90% of the respondents believe that their area of work is interesting to the public, only 3% did not (Table 9).

My area of expertise is interesting to the general public	Count	%
Yes	420	88%
No	13	3%
Unsure	42	9%

Table 9: Responses to Question 11 - My area of expertise is interesting to the general public.

> "…People are extremely interested and disseminating archaeological work to the public keeps the process transparent and relevant." – respondent

Some found this to be more nuanced:

> "I only say unsure because members of the public can be unaware of the contribution that my specialist area of work (Environmental Archaeology) could make to their project, unless the specialist gets out there and enthuses them about it. General outreach archaeologists won't necessarily say 'How about trying some Environmental Archaeology'. As a result this can be an underused area of work in public archaeology. I find archaeologists tend default to thinking that the only use for environmental archaeology would be environmental sampling on a community excavation. Broadening out the range of specialist work that could be built into public archaeology needs the specialist themselves to suggest their own ideas and prove they work. I've worked with volunteers on a range of different projects that don't involve excavation, such as auger survey, ground-truthing potential sites for palaeoenvironmental sampling identified on maps, growing historic crops and organised activities based around this etc." – respondent

Further scope for public engagement

Only ~10% of the respondents felt that there were further opportunities for engagement that were not being utilised in their work (Table 10).

I feel there are further opportunities for public engagement in or with my work which are not yet realized to their fullest potential	Count	%
Yes	421	89%
No	53	11%

Table 10: Responses to Question 12- I feel there are further opportunities for public engagement in or with my work which are not yet realized to their fullest potential

"My main problem with public archaeology is that archaeologists believe that it should be dumbed down. Amateurs turn up on site and are pointed towards treasure and a metal detector, the archaeologists in question sometimes thinking that because volunteers spend so little time on site then they should see all the amazing stuff.

I think everyone, amateur or otherwise who interact with public archaeology should be told the essential basics, start at the beginning and work your way on to more in depth. Greater understanding creates greater appreciation." – respondent

Respect for public engagement amongst peers

A considerable number, a quarter, of archaeologists were unsure if their peers viewed public engagement as a positive thing. At least 17% did not believe their peers view it as a positive thing (Table 11).

Undertaking public engagement work is viewed positively by my work colleagues and disciplinary peers	Count	%
Yes	288	61%
No	80	17%
Unsure	107	23%

Table 11: Responses to Question 13 - Undertaking public engagement work is viewed positively by my work colleagues and disciplinary peers.

"About 40% of my company support it, right from digger to senior management. Large feeling of we should do it, rather than wanting to do it. My work recently was described as woolly by an executive. Conference organising, outreach for large inner-city retail development and heritage open day organisation has been my sole work for the last 10 months. And we are a registered educational charity. Often seen as getting in the way of development client satisfaction, rather than seeing the public and academic institutions as our primary clients." – respondent

"I experience a very wide range of attitudes amongst my colleagues, from very positive to very negative views of "the public" and public engagement; by some considerable lip service is paid in public whilst cynicism in private about public engagement; and others are shining examples of excellent engagement, communicating their work and the fabulous archaeology/built heritage in their localities. A real mixed bunch." – respondent

Archaeologists and public engagement

Equal number of archaeologists thought that most archaeologists did and did not take part in public engagement. However, the largest number, almost half, were unsure on this point (Figure 1).

|	1 (agree strongly)	2	3	4	5 (disagree strongly)
%	8%	21%	43%	21%	8%
Count	36	100	202	98	39
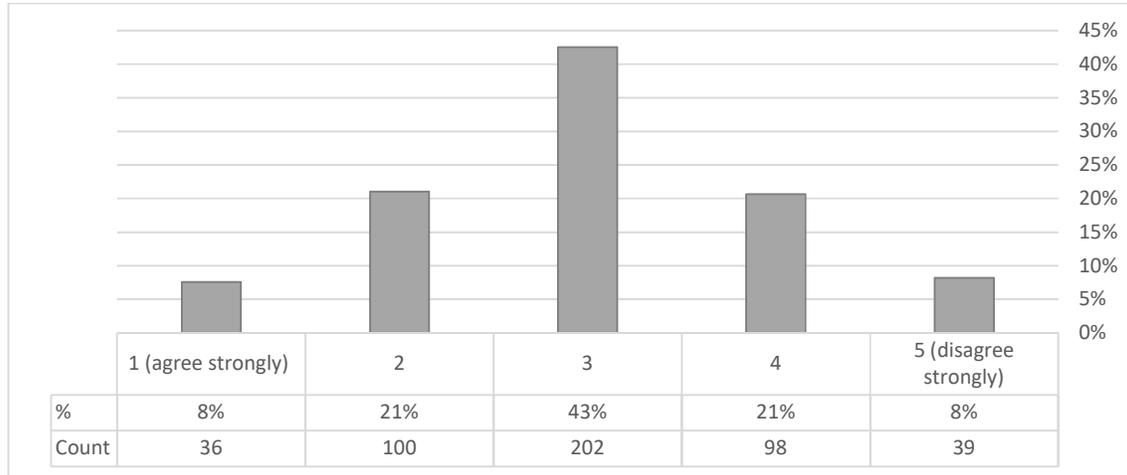
Figure 9: Responses to Question 14 - Most archaeologists do not take part in public engagement, or outreach activities/projects. 1- (agree strongly) 5- (disagree strongly).

> "I have answered 3 - somewhere in the middle ground, because I think a lot of archaeologists may thinking they are undertaken public engagement or outreach, the engagement that goes on it tired and uninspired in a lot of cases. The very fact that this survey is about outreach and public engagement is reflect across much of sector - high and mighty archaeologists should pat themselves of the back for allowing this discipline and our finding to be shared with the lowly public through an open day or talks to a local group - this is all top down. For outreach and engagement to stop being top down, and to for it is take on real meaning for the communities in which we work it needs to be bottom up. We need to find ways to work with communities, to take the lead from communities and to use archaeology and the investigation of the historic environment to meet their needs and fulfil their aspirations. This is happening in some inspirational and amazing projects, but this needs to be the norm happening across the sector." – respondent

Public engagement is a waste of time

Only 5% of respondents felt that public engagement is a waste of time and ~75% strongly disagree with that statement (Figure 10).

	1 (agree strongly)	2	3	4	5 (disagree strongly)
%	2%	3%	4%	17%	74%
Count	9	14	19	80	353
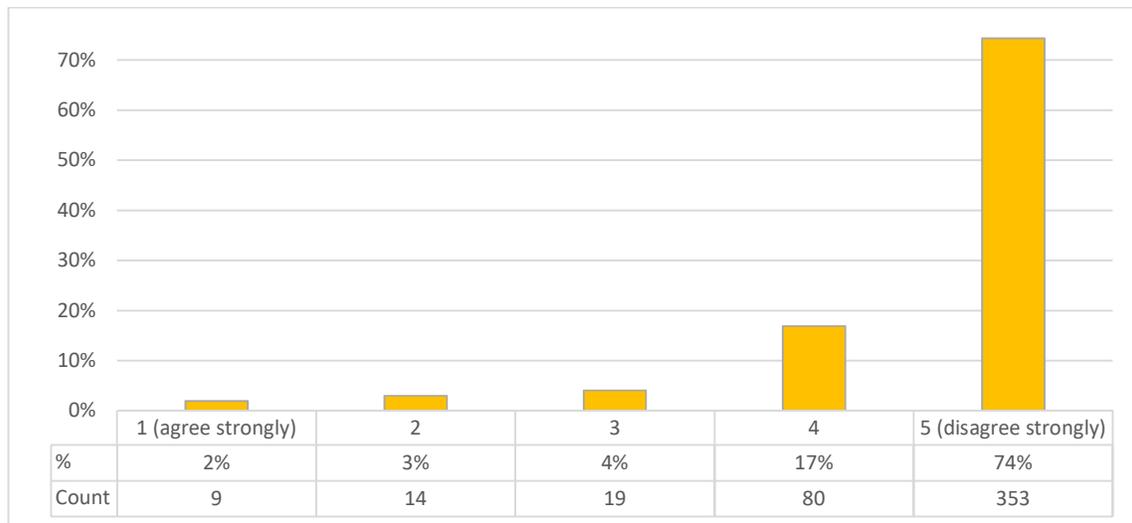
Figure 10: Responses to Question 15 - I think that undertaking public engagement is a waste of my time. 1- (agree strongly) 5- (disagree strongly).

> "If we're not doing this to further knowledge, then what is the point? I reach far many more people through public engagement than will ever read my academic reports, and given that archaeology is a societal luxury then it behoves us to keep society engaged." – respondent

Making a difference

Over 80% of the respondents agree that undertaking public engagement can make a difference to the archaeological sector, while 10% did not (Figure 11).

	1 (agree strongly)	2	3	4	5 (disagree strongly)
%	59%	23%	9%	6%	4%
Count	278	111	41	27	18
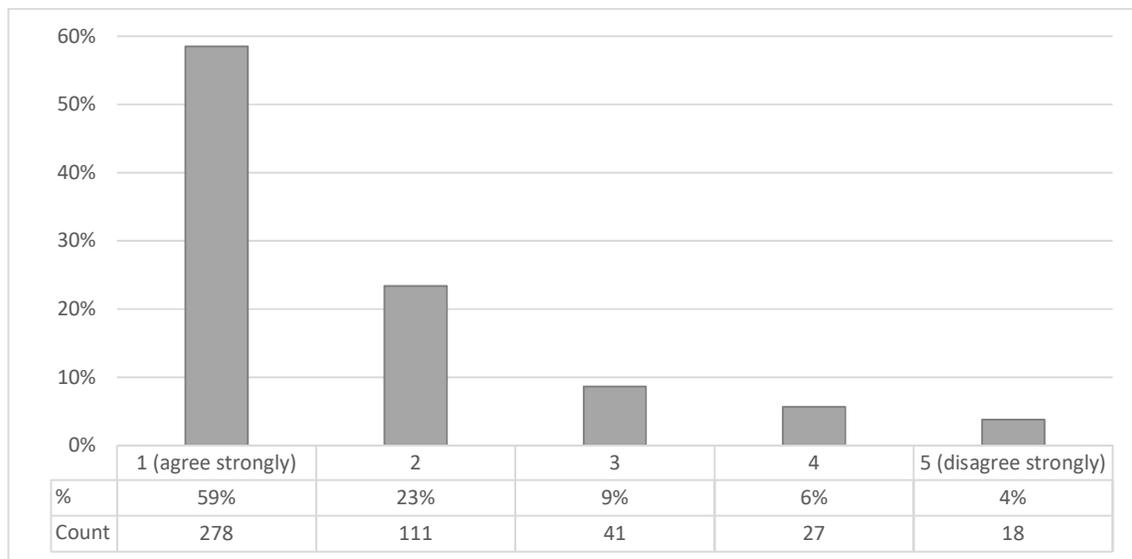
Figure 11: Responses to Question 16 - Undertaking public engagement can make a difference to the archaeological sector itself. 1- (agree strongly) 5- (disagree strongly).

"Museum-based archaeologists like myself probably spend more time that others in the process of engaging the public with archaeology and archaeological materials. I believe public engagement is at the heart of archaeology, why are we recording, conserving and displaying the past if not for the benefit of the public, both now and in the future?"

Public reception

8% of the archaeologists do not believe that the public treats them with respect. Conversely, 70% of archaeologist do believe that the general public treats them with respect (Figure 12).

|	1 (Agree strongly)	2	3	4	5 (Disagree strongly)
%	33%	37%	21%	5%	3%
Count	159	175	101	26	14
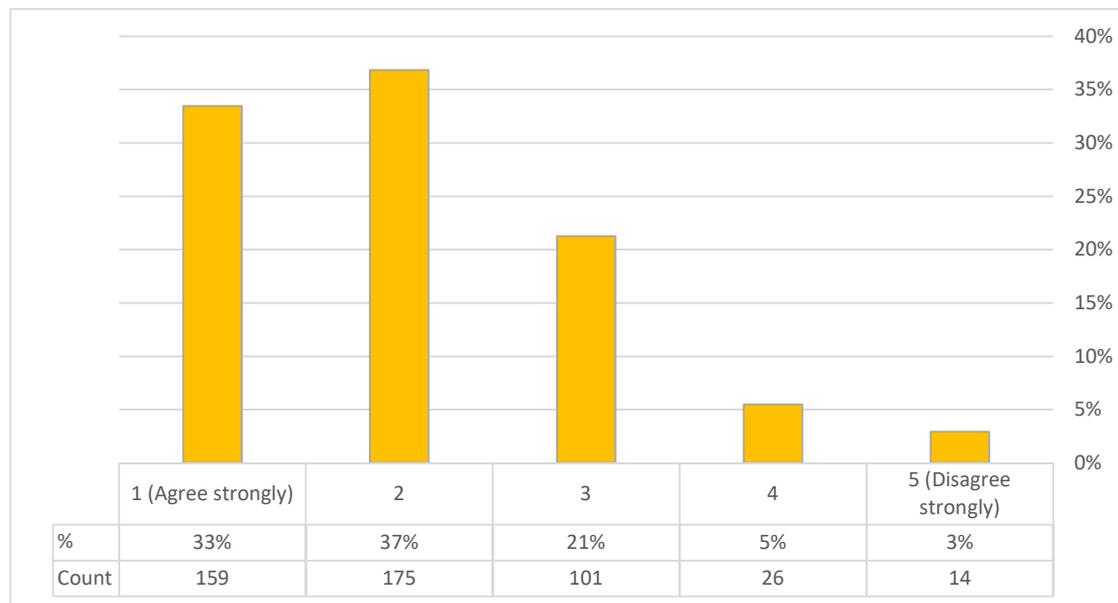
Figure 12: Responses to Question 17 - The general public treat me with respect. 1- (agree strongly) 5- (disagree strongly).

"I have been shouted at from across the field, i have had members of the public come up to my face swearing and shouting...even running in their slippers across 3/4 a freshly fertilized fields to tell me how upset they are that I think its ok to build here, tyres slashed, number plates taken, police called, dogs set loose, electric fences being switched back on etc. You name it, myself or someone i know will have experienced it....!!" – respondent

A public voice

Opportunities to contribute a voice in the public realm was something that 60% of the respondents felt they had; 17% did not (Figure 13).

	1 (agree strongly)	2	3	4	5 (disagree strongly)
%	30%	30%	23%	13%	4%
Count	143	141	109	63	19
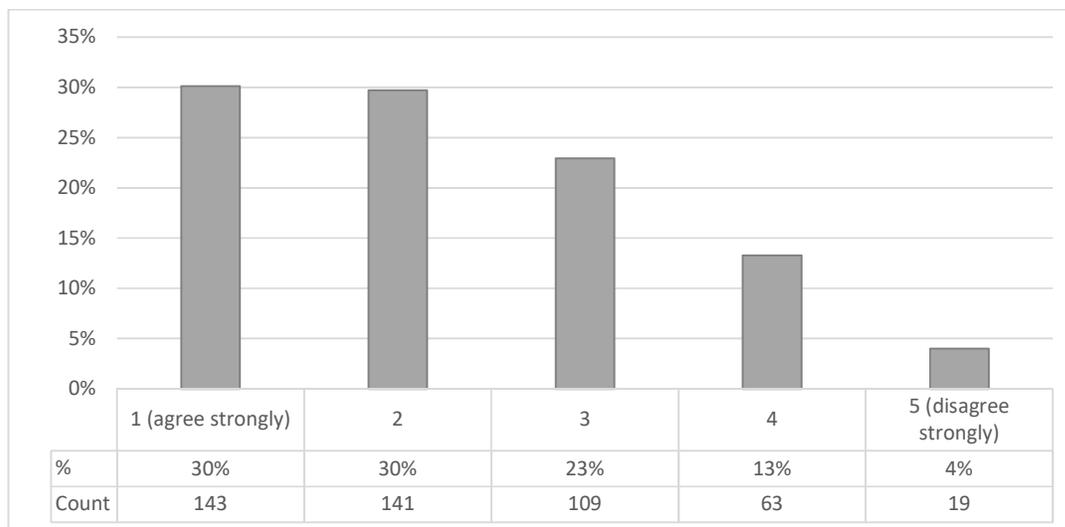
Figure 13: Responses to Question 18 - I feel I have opportunities to contribute an archaeological voice in the public realm. 1- (agree strongly) 5- (disagree strongly).

> "My archaeological voice is not heard as I feel that within the archaeological sector, only academic opinion and argument counts. A space for someone to generally communicate a view on working with archaeological remains and records is not there. I do not specialise in a period, type of site, location, material or subject or process. I do a little bit of a lot of things to run a whole project out in the field. I am the one that should have a strong voice as I interpret and run that site as a whole entity and have a very short time to do so. I work on a site before it is divided into its many parts. This is probably not a specific PE issue, more for the discipline as a whole." – respondent

My views are respected by the public

Archaeologists felt that their views were well respected by the public (Table 12).

Q19 - I feel my archaeological views are respected by the general public	Count	%
Yes	423	89%
No	52	11%

Table 12: Responses to Question 19 - I feel my archaeological views are respected by the general public.

> "I'm not sure I can answer uniformly yes or no to this. I would have preferred to answer "mixed response". Many (perhaps even most) people are interested, though when competing interests become involved (not always financial) this can change." – respondent

Being heard

A small minority of archaeologists did not feel their opinions were listened to by the public, but three quarters did (Figure 14). Though some felt it is more complex:

> "…don't quite know how to answer. Maybe a range from every day > one day a week > one day a month etc so it's about frequency instead of quantity… - respondent

	1 (agree strongly)	2	3	4	5 (disagree strongly)
%	36%	39%	19%	5%	2%
Count	169	186	90	22	8
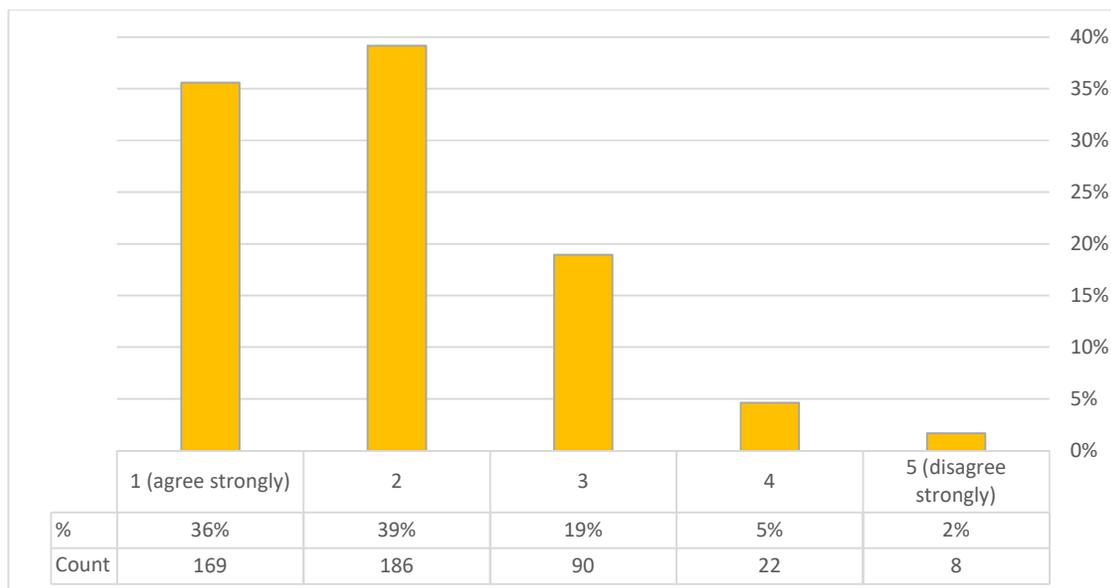
Figure 14: Responses to Question 20 - I feel my archaeological opinions are listened to when I interact with the public. 1- (agree strongly) 5- (disagree strongly).

Effectiveness of online interaction

A very high percentage of archaeologists have used digital technologies to communicate about their work (Table 13).

I have used digital/Internet technologies to communicate my work	Count	%
Yes	409	86%
No	66	14%

Table 13: Responses to Question 21 - I have used digital/Internet technologies to communicate my work.

Four out of five archaeologists feel that online engagement with the public is worthwhile (Figure 15). Most of them have contributed to a website aimed at the general public or used social media. However, only a few archaeologists have ever edited a Wikipedia article. Unfortunately, at least 20% of the respondents have had negative experiences with online engagement.

> "One of the problems of using digital media is that in terms of interaction with the general public is that archaeology is very much about the physical remains i.e. the

sites, monuments, finds etc. This is the bit of archaeology that often grabs ppls attention but unfortunately this is the bit that is often lost online." – respondent

	1 (agree strongly)	2	3	4	5 (disagree strongly)
%	50%	30%	13%	5%	2%
Count	236	142	64	23	10
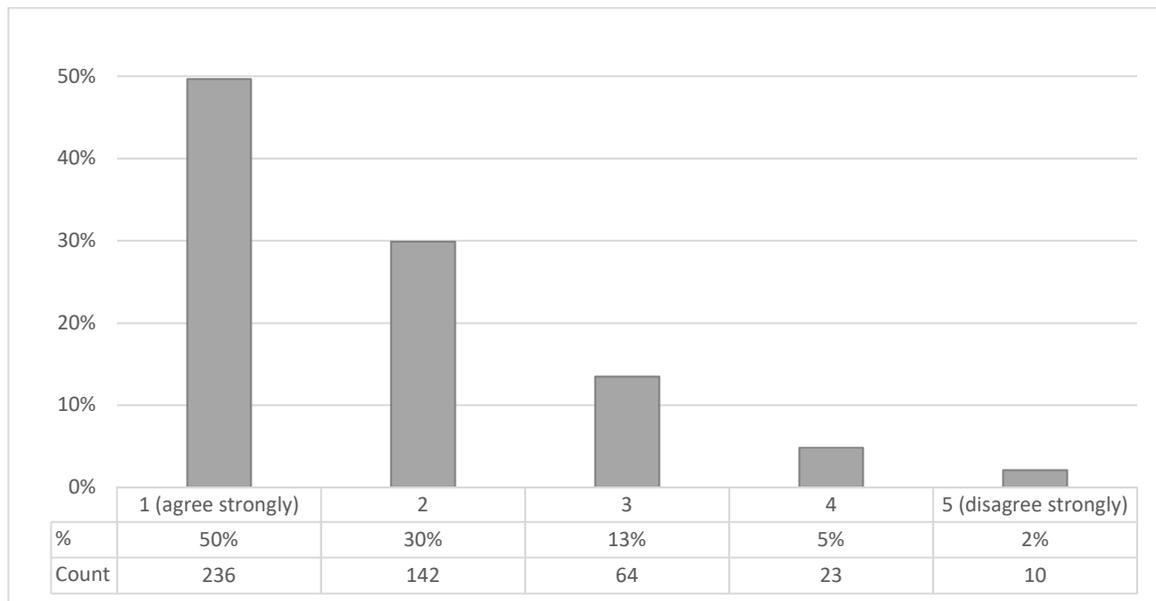
Figure 15: Responses to Question 22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector. 1- (agree strongly) 5- (disagree strongly).

Questions	Yes	No
Q23 - I have experienced online insults/disapproval/trolling as a result of my online public engagement.	98 (21%)	377 (79%)
Q24 - I have written a blog post to communicate my archaeological work.	198 (42%)	277 (58%)
Q25 - I have used a social media account to communicate my archaeological work to the general public.	322 (68%)	153 (32%)
Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work.	349 (73%)	126 (27%)
Q27 - I have participated in editing Wikipedia articles on archaeological and/or related subjects.	59 (12%)	416 (88%)

Table 14: Responses to Questions 23 – 27.

Many respondents commented on the aspect of digital engagement. A select of which were:

"Public engagement is at the core of what we do, however, with constrained budgets we have to engage with people in new ways to maximise the impact of our work. Social media is one such tool as is the web and in a digital age we can really reach out to people in a way that we could not 15-20yrs ago. The question for me is "how" do we engage with those elements of society who ordinarily don't engage with heritage or engage with heritage in their own particular way? How do we measure this? Heritage is still largely the preserve of those who can afford to engage or those lucky enough (or unlucky when you look at wages) to work in the sector." - respondent

"I feel there are two tiers (at least) when working w/ the public on social media.

1 - Preaching to the converted. If people are interested they will seek out blogs, websites, twitter accounts etc. This gives a self-selecting sample of people so I can't say my online outreach is really recruiting new people to archaeology. The "people you might like to follow" algorithms on twitter particularly contribute to this based on the friends-of-friends process it seems to follow when making recommendations.

2 - Preaching to the uninterested. Others who are not already interested in archaeology may not seek it out online, even if they have the tech to do so. Incidental advertising works better there, e.g. my work runs a monthly free archaeology talk in the pub and over the last year the attendance has shifted from mostly students to mostly not-students, which is great, and achieved mostly through word mouth & posters at the pub.

3 - Preaching to the ignorant. This is a hard one. Some people think they already know what archaeology is and will tell me at great length, eg my new neighbour who is convinced all archaeologists seek treasure, will keep coins if not prevented from doing so, that everyone has a right to whatever they find and to actively go looking and digging it up (I didn't want to argue the Treasure Act w/ him over the fence), etc etc etc. I am not sure what to do in this case; no outreach will help as he already has all the answers.

4 - Preaching to the inaccessible. My main outreach is through social media (point 1) and free events (point 2); I'm still not sure how to involve people who can't access the internet for financial or literacy reasons, or simply don't know what archaeology exists or that it is applicable to their lives. Two presenters at ASA2015 did excellent presentations on this: Dr Emily Stammiti (@archaeo_otter) and Katy Firth. Lisa Bird also presented on social media in archaeology at the same conference" – respondent

"Social media (and contributing to online forums and discussion boards etc) has been problematic in the past because it doesn't take a genius (no comment) to work out my email address, with inevitable consequences. There are also issues with time - there is a balance to be achieved between actually doing the work and telling people about it (or, even better, discussing it with people before & during instead of saving it for after). I may move in different circles to others, but the 'public' or 'community groups' I have been involved with tend to feature only a minority of Facebook/Twitter users. At the same time, there is a tendency, it seems to me, for regular Facebook/Twitter users to believe that somehow they are communicating with everybody, and a consequent failure to try and engage those who, for whatever reason, are not interested in using those platforms." – respondent

Correlations

All responses to the questions, including demographic data, were then compared against each other to see if there were any trends.

Responses were re-coded in the datasheet so that they were in a number format i.e. Yes became 1, No became 2. Because location and specialisms allowed for multiple responses each answer e.g. England, Scotland, etc. was given its own column. This re-coding allowed for the Pearson's correlation/correlation coefficient (P-value) to be obtained between each question/demographic data – the linear relationship between the responses.

A total of 1035 variable combinations (responses to the questions) were tested using the Chi-squared test in R and only 117 of these combinations had a P-value of .001 <. A P-value is the probability under a specified statistical model that a statistical summary of the data would be equal to or more extreme than its observed value. That is, in valid applications, like this survey, 99% of those applications, on average, will return the true effect size. The full list can be found in Table 27.

There is great abuse of P-values it attempts to find any combination of variables that will result in low P-values a.k.a. P-hacking. Moreover, low P-values do not mean the results are not insightful. For example, there is relationship between those that work in England vs those that work in Scotland - there is very little overlap. There is a relationship there but not one that provides us with any meaningful information. To counteract these issues the threshold of P-values was initial set at .001, lower than the common .005 and only results that can be interpreted as meaningful to our understanding of archaeologists' views of public engagement are discussed.

Furthermore, there are problems with some of the calculations as a Chi-squared test requires adequate expected cell counts. A common rule is 5 or more in all cells of a 2-by-2 table, and 5 or more in 80% of cells in larger tables, but no cells with zero expected count. Only 22 of the results did not violate these rules of thumb. What follows is a review of those relationships that are strong, not sampling error prone and insightful.

As discussed at the beginning of this publication, P-values are based on assumptions such as random sampling and a normal distribution. Random sampling is not possible in the real world and it is assumed that this sample is close to that. Should these assumptions not be true then the results will be inaccurate.

Commercial/development-led archaeology views of public engagement

Archaeologists working in commercial/development-led archaeology companies were less likely to agree to question 5 that public engagement was helpful to their archaeological work (Figure 16). Also, twice as many of them responded that they did not have time to include public engagement in their work (Table 15). Some of the respondents specifically alluded to their work influencing their views:

"I have answered with regard to my present role. Ten years ago I would have answered differently because an element of my job then was public engagement, not undertaken with full enthusiasm, I might add!"

	1 (strongly agree)	2	3	4	5 (disagree strongly)
■ Commercial/ development-led	19%	18%	26%	23%	15%
■ Everyone else	38%	21%	18%	11%	12%
Commercial/ development-led	26	24	36	31	20
Everyone else	129	72	61	37	39
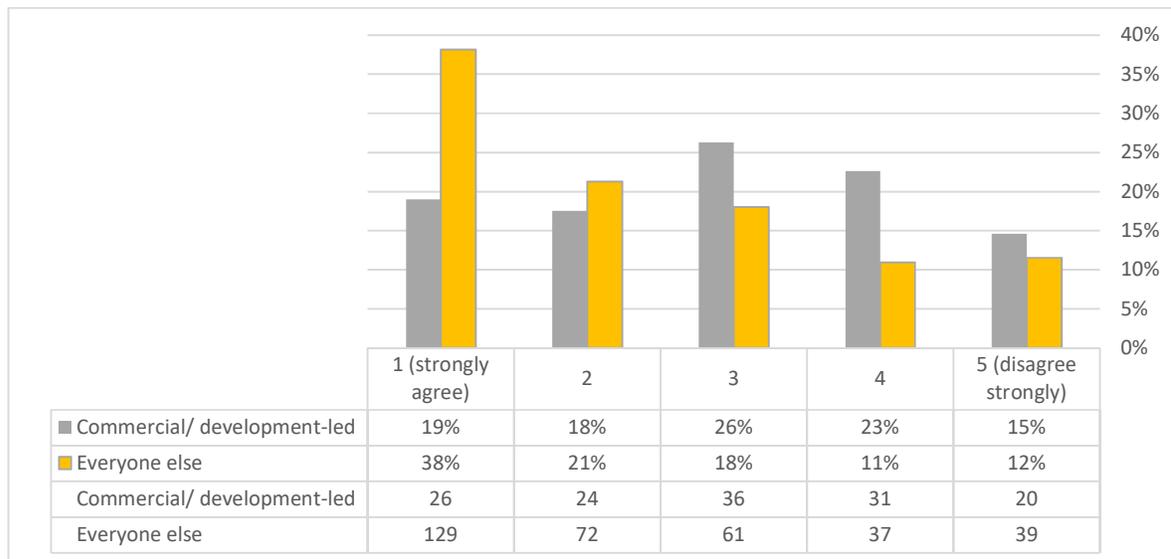
Figure 16: Commercial/development-led archaeologists responses against everyone else to Question 5 - How helpful is public engagement to your archaeological work?

Responses to Question 8 - Do you have time to include public engagement as part of your work?	N/A	No	Yes
Everyone else	5%	21%	73%
Commercial/ development-led archaeology	8%	39%	53%

Table 15: Commercial/development-led archaeologists responses against everyone else to Question 8 - Do you have time to include public engagement as part of your work?

Higher or Further Education and blogging

Those working in Higher or further education (teaching and/or research) were almost polar opposites of everyone in respects to writing a blog post with close to 60% doing so (Table 16).

Q24 - I have written a blog post to communicate my archaeological work	No	Yes
Everyone else	62%	38%
Higher or further education teaching and research	41%	59%

Table 16: Higher or further education (teaching and/or research) archaeologists responses against everyone else to Q24 - I have written a blog post to communicate my archaeological work.

Negative Views

There was a correlation in responses between questions. Those that answer no to question 19, *'I feel my archaeological views are respected by the general public'* we much more likely to respond '3' to Question 5, *'How helpful is public engagement to your archaeological work?'* (Figure 17).

	1 (strongly agree)	2	3	4	5 (disagree strongly)
■ No - Q19	15%	8%	42%	21%	13%
■ Yes - Q19	35%	22%	18%	13%	12%
No	8	4	22	11	7
Yes	147	92	75	57	52
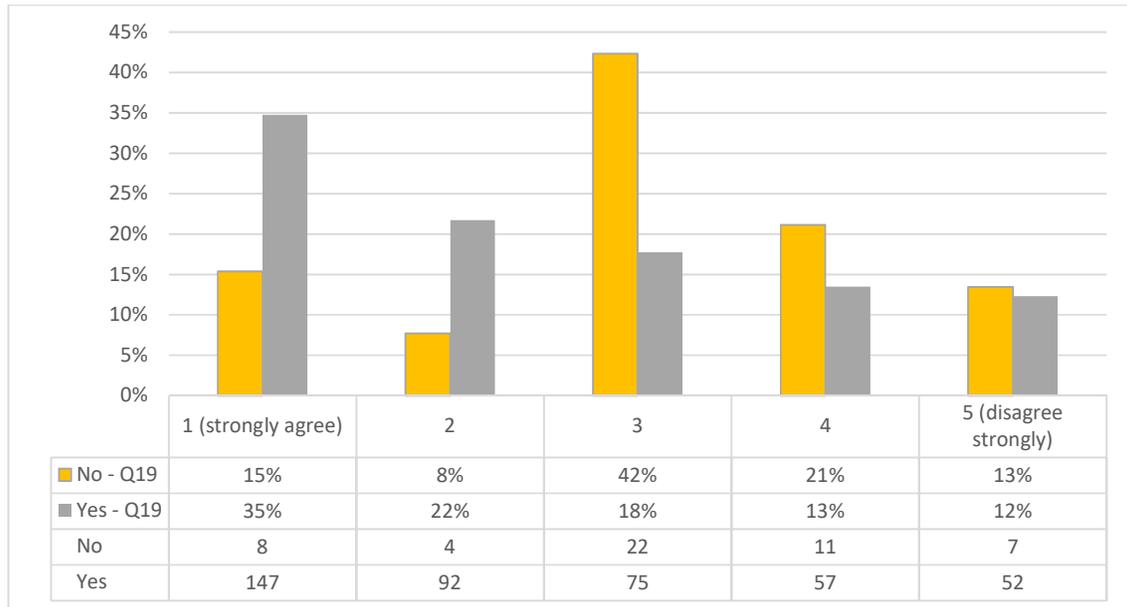
Figure 17: Response to Question 5 - 'How helpful is public engagement to your archaeological work?' (1- strongly agree 5- strongly disagree) compared to responses to Question 19 - 'I feel my archaeological views are respected by the general public' (Yes, No).

There were several correlations with those that did not believe that undertaking public engagement work is viewed positively by their work colleagues and disciplinary peers, Question 13. They agreed most strongly to question 14, *most archaeologists do not take part in public engagement, or outreach activities/projects*, (Figure 18) and did not feel that their work was respected by the public (Figure 19). It is hard to determine the cause in affect for this. The P value between questions 14 and 19 was 0.014831785 above the .001< threshold set but just barely which makes it impossible to differentiate the driving force behind these questions. Essentially, there are those who do not see public engagement as respected by their peers and the public and believe that most archaeologists do not participate in it.

	1- (agree strongly)	2	3	4	5- (disagree strongly)
No - Q13	28%	29%	25%	13%	6%
Unsure - Q13	5%	21%	50%	17%	7%
Yes - Q13	3%	19%	44%	24%	9%
No - Q13	22	23	20	10	5
Unsure - Q13	5	23	54	18	7
Yes - Q13	9	54	128	70	27
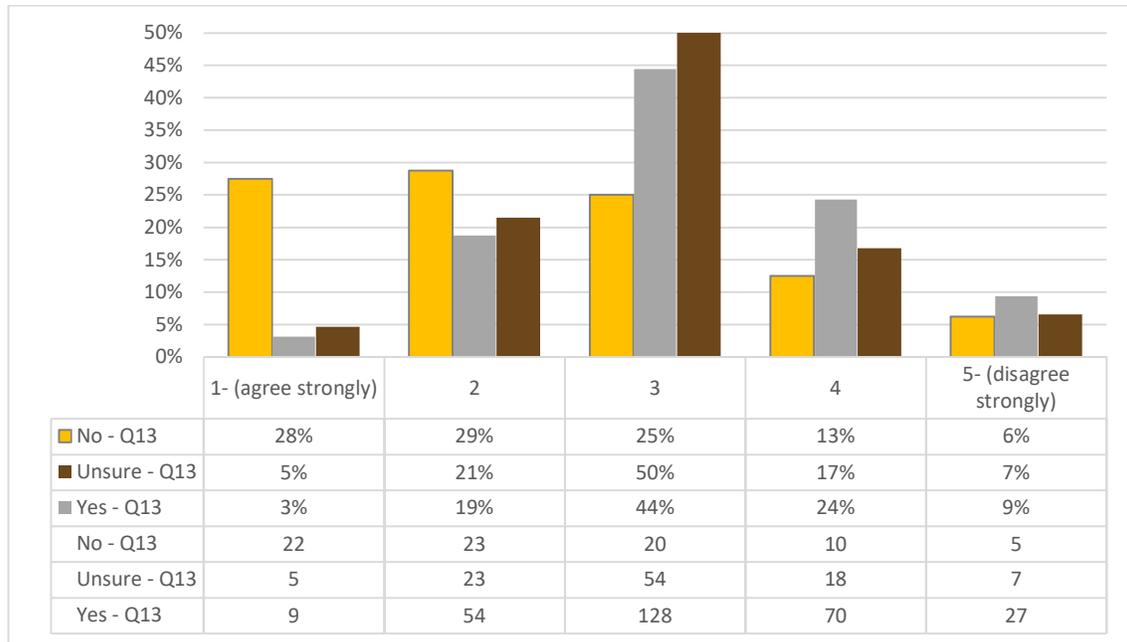
Figure 18: Comparison of responses to Question 13- Undertaking public engagement work is viewed positively by my work colleagues and disciplinary peers (Yes, No, Unsure) and Question 14 - Most archaeologists do not take part in public engagement, or outreach activities/projects (1- strongly agree 5- strongly disagree).

|	No Q13	Unsure Q13	Yes Q13
No Q19	40%	25%	35%
Yes Q19	14%	22%	64%
No Q19	21	13	18
Yes Q19	59	94	270
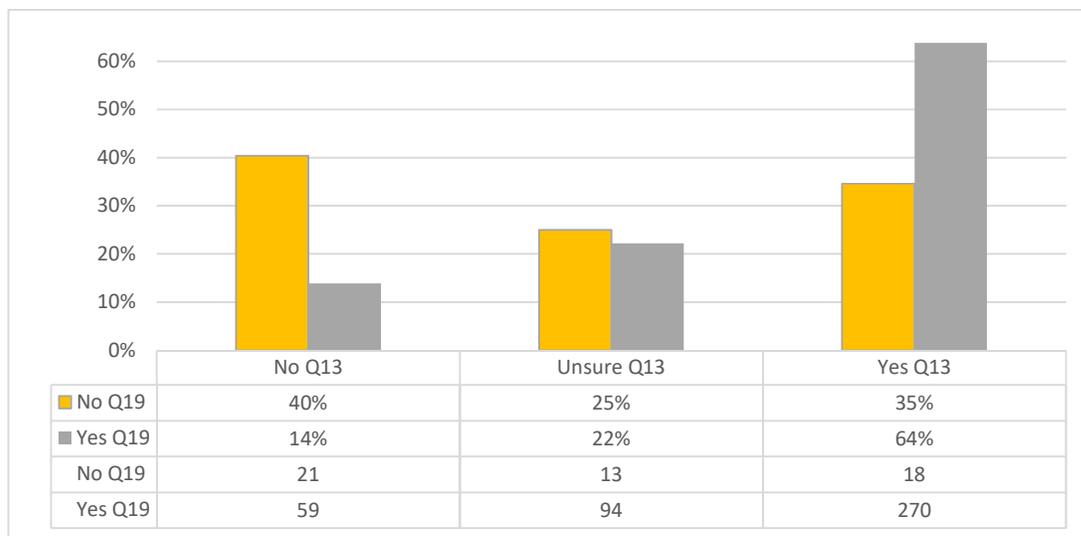
Figure 19: Comparison of responses to Question 13- Undertaking public engagement work is viewed positively by my work colleagues and disciplinary peers (Yes, No, Unsure) and Question 19 - I feel my archaeological views are respected by the general public (Yes, No).

Digital Engagement

Those that have contributed to a website aimed at the general public in order to communicate my archaeological work (Q26) were also more likely to agree that they have opportunities to contribute an archaeological voice in the public realm (Figure 20).

	1- (agree strongly)	2	3	4	5- (disagree strongly)
Yes - Q26	35%	32%	20%	11%	2%
No - Q26	17%	23%	31%	20%	9%
Yes - Q26	121	112	70	38	8
No - Q26	22	29	39	25	11
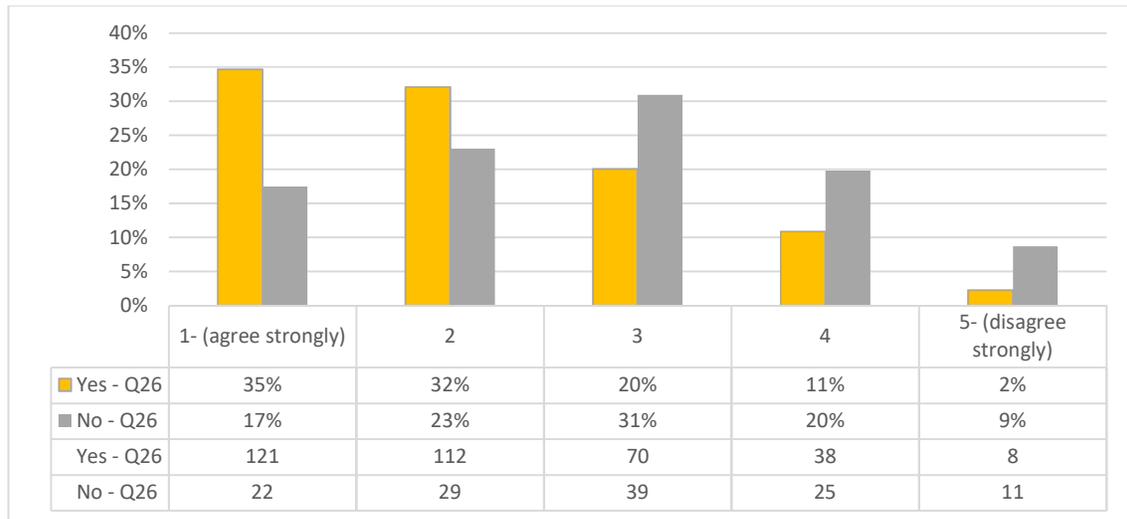
Figure 20: Comparison of responses to Question 18 - I feel I have opportunities to contribute an archaeological voice in the public realm (1- strongly agree 5- strongly disagree) and Question 26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work (Yes, No).

It is not surprising that the majority of those who responded no to Question 21 – *'I have used digital/Internet technologies to communicate my work'*, have not used blogs, social media or websites to communicate with the general public, though several have which makes one wonder what they consider digital/internet technologies to be (Table 17).

> "The answers to Q21-26 show that I am a technophobe who prefers paper and print. I know that others of my colleagues would have answered very differently." – respondent

		Q24 - I have written a blog post to communicate my archaeological work		Q25 - I have used a social media account to communicate my archaeological work to the general public		Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	
		No	Yes	No	Yes	No	Yes
Q21 - I have used digital/Internet technologies to communicate my work	No	62	4	50	16	43	23
	Yes	215	194	103	306	83	326

Table 17: Comparisons of responses to Question 21 and Questions 24, 25, and 26.

Those that have contributed digitally to public engagement through blogs, social media and websites are more likely to experience online insults/disapproval/trolling as a result of their online public engagement. While it is a small number of the population, because not everyone uses digital tool, it is still a significant number (a quarter to a third which is two to three times more than those that do not use digital tools) of those that do engage online receive abuse relating to those activities (Table 18).

		Q24 - I have written a blog post to communicate my archaeological work		Q25 - I have used a social media account to communicate my archaeological work to the general public		Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	
		No	Yes	No	Yes	No	Yes
Q23 - I have experienced online insults / disapproval / trolling as a result of my online public engagement	No	242	135	139	238	114	263
	Yes	35	63	14	84	12	86
	No	87%	68%	91%	74%	90%	75%
	Yes	13%	32%	9%	26%	10%	25%

Table 18: Comparisons of responses from Question 23 to Questions 24, 25, and 26.

Not surprisingly, those that have used one type of digital tool to engage have used others as there were strong correlations between the answers of questions Q24-26 (Appendix Table 27).

Higher P-values

The thresholds for P-values are usually arbitrarily set at .005 <. Raising the threshold to that, from .001, as used in this study, increases the number of possibly relevant correlations by 14. However, some of those are not significant outcomes. Knowing that those that undertake 'Commercial/development-led archaeology' work did not also undertake 'Local government curatorial services' work does not tell us anything interesting, those that are possibly relevant can be found in Table 19.

Variable 1	Variable 2	p.value
Commercial/development-led archaeology companies	Q13 - Undertaking public engagement work is viewed positively by my work colleagues and disciplinary peers	0.00177
Commercial/development-led archaeology companies	Q14 - Most archaeologists do not take part in public engagement, or outreach activities/projects:	0.00343
Higher or further education teaching and research	Q25 - I have used a social media account to communicate my archaeological work to the general public	0.002478
Local government HER services	Q24 - I have written a blog post to communicate my archaeological work	0.002992
Local government HER services	Q25 - I have used a social media account to communicate my archaeological work to the general public	0.004523
Q12 - I feel there are further opportunities for public engagement in or with my work which are not yet realized to their fullest potential	Q19 - I feel my archaeological views are respected by the general public	0.001821
Q12 - I feel there are further opportunities for public engagement in or with my work which are not yet realized to their fullest potential	Q21 - I have used digital/Internet technologies to communicate my work	0.002721
Q13 - Undertaking public engagement work is viewed positively by my work colleagues and disciplinary peers	Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	0.002779
Q21 - I have used digital/Internet technologies to communicate my work	Q23 - I have experienced online insults/disapproval/trolling as a result of my online public engagement	0.002803
Q5 - How helpful is public engagement to your archaeological work?	Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	0.004566
Location – Scotland	Q27 - I have participated in editing Wikipedia articles on archaeological and/or related subjects	0.003353

Table 19: P-values under .005 and over .001 by variables tested.

Reinforcing Trends

Many of these additional results add to the existing discussed trends. The relationship between some, but not all or even a majority, of those working in Commercial/ development-led archaeology companies and certain views of public engagement are reinforced. Archaeologists working in those areas are less likely to believe public engagement is viewed positively by their peers and believe fewer people take part in it (Table 20).

However, just because a result has a low P-value does not mean it is meaningful. Only 13% more archaeologists working in Commercial/development-led archaeology companies believe the public engagement is not view positively by their peers. A notable number but not one that raises concerns, at least for the authors.

	Q13 - Undertaking public engagement work is viewed positively by my work colleagues and disciplinary peers			Q14 - Most archaeologists do not take part in public engagement, or outreach activities/projects:				
	No	Unsure	Yes	1- (agree strongly)	2	3	4	5- (disagree strongly)
Everyone Else	44 (13%)	77 (23%)	217 (64%)	22 (7%)	58 (17%)	158 (47%)	73 (22%)	27 (8%)
Commercial/ development-led archaeology companies	36 (26%)	30 (22%)	71 (52%)	14 (10%)	42 (31%)	44 (32%)	25 (18%)	12 (9%)

Table 20: Commercial/ development-led archaeology companies responses against everyone else for Questions 13 and 14.

Like with blogging, those in Higher or Further Education used social media more than the rest of those surveyed (Table 21).

Q25 - I have used a social media account to communicate my archaeological work to the general public	No	Yes
Everyone Else	139 (35%)	255 (65%)
Higher or further education teaching and research	14 (17%)	67 (83%)

Table 21: Responses to question 25 by those working higher or further education teaching and research against everyone else.

Table 18 shows that those who engage with different digital engagement tools receive more troll and abuse because of this. Question 21 (I have used digital/Internet technologies to communicate my work) can be added to that list (Table 22).

Q21 - I have used digital/Internet technologies to communicate my work	Q23 - I have experienced online insults/disapproval/trolling as a result of my online public engagement	
	No	Yes
No	62 (94%)	4 (6%)
Yes	315 (77%)	94 (23%)

Table 22: Comparison of answers from Question 21 to Question 23.

New Insights?

Those working in local government curatorial services were less likely to have used blogs or social media to communicate their work (Table 23). Given these services are regularly under threat because of the austerity assault on local government it could be concerning that they do not communicate their work using these methods. They may use other methods to do so but if not then we would suspect their jobs and work would be easier to cut because not enough people know about what they do and the value of it. Though, it could be that anonymity that keeps them from getting noticed by those cutting budgets and jobs.

	Q24 - I have written a blog post to communicate my archaeological work		Q25 - I have used a social media account to communicate my archaeological work to the general public	
	No	Yes	No	Yes
Everyone else	245 (56%)	191 (44%)	132 (30%)	304 (70%)
Local government curatorial services	32 (82%)	7 (18%)	21 (54%)	18 (46%)

Table 23: Those working in local government curatorial services responses against everyone else for Questions 24 and 25.

Those that did not feel there were further opportunities for public engagement also were more likely to report not feeling their views were respected by the general public and were less likely to use digital tools to communicate (Table 24).

Q12 - I feel there are further opportunities for public engagement in or with my work which are not yet realized to their fullest potential	Q19 - I feel my archaeological views are respected by the general public		Q21 - I have used digital/Internet technologies to communicate my work	
	No	Yes	No	Yes
No	13 (25%)	40 (75%)	15 (28%)	38 (72%)
Yes	39 (9%)	382 (91%)	51 (12%)	370 (88%)

Table 24: Comparisons of responses from Question 12 to Questions 19 and 21.

Those that have not used websites for communication also did not believe their peers viewed public engagement positively or thought is helpful to their work (Table 25).

		Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	
		No	Yes
Q13 - Undertaking public engagement work is viewed positively by my work colleagues and disciplinary peers	No	32 (25%)	48 (14%)
	Unsure	32 (25%)	75 (21%)
	Yes	62 (49%)	226 (65%)
Q5 - How helpful is public engagement to your archaeological work?	1- (agree strongly)	29 (23%)	126 (36%)
	2	22 (17%)	74 (21%)
	3	35 (28%)	62 (18%)
	4	26 (21%)	42 (12%)
	5- (disagree strongly)	14 (11%)	45 (13%)

Table 25: Comparisons of responses from Question 26 to Questions 13 and 5.

Finally, those working in Scotland have used Wikipedia more than the rest of the respondents (Table 26). Given efforts by some, including one of the authors, in Scotland to increase the interaction of archaeologists with Wikipedia this is a positive result.

	Q27 - I have participated in editing Wikipedia articles on archaeological and/or related subjects	
	No	Yes
Elsewhere	380 (89%)	46 (11%)
Scotland	36 (73%)	13 (27%)

Table 26: Respondents working in Scotland responses against everyone else for Question 27.

Final Thoughts

The results of this survey highlight general trends in terms of views on public engagement in UK archaeology. Generally, there are positive views towards engaging with the public. Those working in development-led archaeology believe it is less prevalent and viewed less positively by their peers, but not all of them. Many archaeologists have engaged with the public using digital tools, especially those based in higher and further education. All of which is reviewed above and do not need to be re-studied here. But, there are three smaller findings that we believe are worth highlighting:

Online abuse – a significant number of those engaging with the public using digital tools experience abuse (a quarter to a third). This survey is not the first to raise such issues and the results are similar to those seen in Perry, S., Shipley, L. and Osborne, J. 2015, and in Richardson 2014, where a third reported victimisation via online communication. These experiences have changed how some of the respondent's act:

> "When I say 'I' communicate with the public through social media, I do not comment as myself (an older female) but under a group name. This element of privacy keeps me and my co-poster, a female colleague (from the museum sector) safe from trolling. Sad, but true. It's not all in the friendly spirit of BAJR out there." – respondent

> "I've come to see it as part of the process, unfortunately. Most isn't personal, and is just a minority of grumblers on website comment pages/FB groups whingeing about what a waste of money archaeology is, load of old tat, general antipathy towards the public sector etc etc. That's not a problem, and doesn't bother me.

> I have been subjected to sustained and personal attacks from people who self-define as archaeologists, though, and that is more troubling. On one occasion I tried to respond to a series of half-truths and wilful misinterpretations, but ended up stirring a hornets nest, so I mostly now don't bother. The trouble is, if you throw enough mud, some of it sticks. I recently googled myself and, while most of it has sunk without trace, there's some character assassination stuff out there on high-traffic blogs that shows up in the first couple of pages of results. I do worry that, in an age when Google's a useful recruitment tool, that could come back to bite me in future job applications. I think most archaeologists would see through it, but I can't help thinking that an HR advisor might get the jitters and think "this guy's a bit controversial". It's definitely affected the degree to which I feel able to express ideas and opinions on certain platforms." – respondent

"I find that when I get involved in conversations online about this stuff (I'm talking about anonymous conversations e.g. below the line on Guardian articles), there are often a heap of quite scary racists who show up. You know, people who are convinced that Asians/Aboriginal Australians/etc are descended from Homo erectus, or people with Neanderthal DNA are smarter than those without, that kind of thing. The anonymous nature of these interactions clearly makes things a bit different from when not everyone is anonymous (e.g. on Twitter). But they do make me think twice about getting involved in doing significant public engagement work on this issue, because I don't know what the repercussions might be and I don't know how much my workplace would support me (on reflection, probably plenty, but we've never talked about it). I do know people who've been sent hatemail for their work on human ancestry (and also for work on, e.g. the authenticity of religious artefacts). That all makes me a bit nervous, because it's a hassle I could do without. However, I also quite like the idea that archaeologists can really rile racists. :) Makes it seem a bit more worthwhile. Basically, I would like to do more public engagement on this issue, because I think it's important, but if I'm to do it I want to be sure I would have proper support behind me if I start getting abuse. Also, I think there's space for more planned public engagement on this, rather than just getting involved in an ad hoc manner." – respondent

We are unaware of any sector-wide training available to help archaeologists deal with these issues. Given the prevalence of this sort of behaviour and severity this is an area the sector needs to address.

Relationship between views and actions – the survey highlights a 'chicken or the egg' type situation. There are those that do not think the public and their peers respect public engagement and thus archaeologists do not participate in it, but what drives this? If they were aware of more public engagement work would it change their opinions? This cannot be disentangled from this survey's data, but future research should focus on examining relationships between actions and views.

Small actions matter – A few years ago, one of the authors, Doug Rocks-Macqueen, started a 'Wiki Club' which were get togethers in where archaeologists would learn how to edit Wikipedia. This work lasted for several years and even resulted in a meet up at the EAA conference in Glasgow. This was not especially grand projects, usually only involving half a dozen archaeologists, and focused primarily on Scotland. Which, is an area with higher use of Wikipedia – a possible correlation between actions and digital engagement. There is the chance that the results of this survey are a sampling error but, if not, small projects can have significant impact on public engagement methods.

Appendix

Variable 1	Variable 2	Chi.Square	df	p.value	Issues
England	Scotland	105.6322	1	8.88E-25	No
Q24 - I have written a blog post to communicate my archaeological work	Q25 - I have used a social media account to communicate my archaeological work to the general public	74.28475	1	6.76E-18	No
Q21 - I have used digital/Internet technologies to communicate my work	Q25 - I have used a social media account to communicate my archaeological work to the general public	64.27292	1	1.08E-15	No
Q21 - I have used digital/Internet technologies to communicate my work	Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	56.39513	1	5.93E-14	No
Q13 - Undertaking public engagement work is viewed positively by my work colleagues and disciplinary peers	Q14 - Most archaeologists do not take part in public engagement, or outreach activities/projects:	67.63478	8	1.45E-11	No
Q21 - I have used digital/Internet technologies to communicate my work	Q24 - I have written a blog post to communicate my archaeological work	38.332	1	5.97E-10	No
Q8 - Time issues: Do you have time to include public engagement as part of your work?	Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	34.58228	2	3.09E-08	No
Q24 - I have written a blog post to communicate my archaeological work	Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	25.6426	1	4.11E-07	No
Q23 - I have experienced online insults/disapproval/trolling as a result of my online public engagement	Q24 - I have written a blog post to communicate my archaeological work	24.78924	1	6.4E-07	No
Commercial/development-led archaeology companies	Higher or further education teaching and research	23.1381	1	1.51E-06	No

Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	31.65328	4	2.25E-06	No
Q13 - Undertaking public engagement work is viewed positively by my work colleagues and disciplinary peers	Q19 - I feel my archaeological views are respected by the general public	25.8932	2	2.38E-06	No
Commercial/development-led archaeology companies	National bodies (Historic England, National Trust, CBA, Historic Environment Scotland, CADW etc)	18.38261	1	1.81E-05	No
England	Wales	18.22221	1	1.97E-05	No
Commercial/development-led archaeology companies	Museum and archival archaeology	17.64977	1	2.66E-05	No
Q23 - I have experienced online insults/disapproval/trolling as a result of my online public engagement	Q25 - I have used a social media account to communicate my archaeological work to the general public	17.14927	1	3.46E-05	No
Q5 - How helpful is public engagement to your archaeological work?	Q19 - I feel my archaeological views are respected by the general public	25.5059	4	3.98E-05	No
Commercial/development-led archaeology companies	Q5 - How helpful is public engagement to your archaeological work?	24.94926	4	5.15E-05	No
Commercial/development-led archaeology companies	Local government HER services	15.72468	1	7.33E-05	No
Commercial/development-led archaeology companies	Q8 - Time issues: Do you have time to include public engagement as part of your work?	18.18397	2	0.000113	No
Q23 - I have experienced online insults/disapproval/trolling as a result of my online public engagement	Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	12.01473	1	0.000528	No
Higher or further education teaching and research	Q24 - I have written a blog post to communicate my archaeological work	11.55213	1	0.000677	no

Q25 - I have used a social media account to communicate my archaeological work to the general public	Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	11.00446	1	0.000909	no
Other	Stand-alone community archaeology projects (HLF or other funded projects)	357.8458	1	8.29E-80	yes
Q17 - The general public treat me with respect	Q20 - I feel my archaeological opinions are listened to when I interact with the public	294.5359	16	3.45E-53	yes
Q16 - Undertaking public engagement can make a difference to the archaeological sector itself	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	293.4405	16	5.81E-53	yes
Q20 - I feel my archaeological opinions are listened to when I interact with the public	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	235.7527	16	4.27E-41	yes
Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	Q20 - I feel my archaeological opinions are listened to when I interact with the public	183.128	16	1.99E-30	yes
Q19 - I feel my archaeological views are respected by the general public	Q20 - I feel my archaeological opinions are listened to when I interact with the public	110.2772	4	6.35E-23	yes
Q17 - The general public treat me with respect	Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	144.1768	16	1.09E-22	yes
Q15 - I think that undertaking public engagement is a waste of my time	Q16 - Undertaking public engagement can make a difference to the archaeological sector itself	143.1447	16	1.74E-22	yes
Q16 - Undertaking public engagement can make a difference to the archaeological sector itself	Q20 - I feel my archaeological opinions are listened to when I interact with the public	139.901	16	7.53E-22	yes
Q15 - I think that undertaking public engagement is a waste of my time	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	137.6932	16	2.04E-21	yes

Q17 - The general public treat me with respect	Q19 - I feel my archaeological views are respected by the general public	86.98637	4	5.75E-18	yes
England	No Response	67.60579	1	2E-16	yes
Q16 - Undertaking public engagement can make a difference to the archaeological sector itself	Q17 - The general public treat me with respect	109.9052	16	4.68E-16	yes
Amateur' archaeology - community groups undertaking unpaid work	Q3 - What is your age?	81.97053	6	1.4E-15	yes
Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	105.4063	16	3.33E-15	yes
England	UK	59.73489	1	1.09E-14	yes
Q7 - Does public engagement dilute the significance of your work?	Q15 - I think that undertaking public engagement is a waste of my time	100.7962	16	2.46E-14	yes
Q3 - What is your age?	Q25 - I have used a social media account to communicate my archaeological work to the general public	74.46638	6	4.94E-14	yes
Q6 - Does undertaking public engagement get in the way of your archaeological work?	Q7 - Does public engagement dilute the significance of your work?	98.77954	16	5.86E-14	yes
Q5 - How helpful is public engagement to your archaeological work?	Q15 - I think that undertaking public engagement is a waste of my time	95.67571	16	2.22E-13	yes
Q17 - The general public treat me with respect	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	94.33352	16	3.95E-13	yes
Q5 - How helpful is public engagement to your archaeological work?	Q20 - I feel my archaeological opinions are listened to when I interact with the public	94.10997	16	4.35E-13	yes
Q4 - I identify my gender as	Q20 - I feel my archaeological opinions are listened to when I interact with the public	84.30256	12	6.2E-13	yes

Q5 - How helpful is public engagement to your archaeological work?	Q16 - Undertaking public engagement can make a difference to the archaeological sector itself	90.76888	16	1.81E-12	yes
Q6 - Does undertaking public engagement get in the way of your archaeological work?	Q15 - I think that undertaking public engagement is a waste of my time	90.44867	16	2.07E-12	yes
Q5 - How helpful is public engagement to your archaeological work?	Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	88.35242	16	5.03E-12	yes
Q5 - How helpful is public engagement to your archaeological work?	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	86.69655	16	1.01E-11	yes
Q15 - I think that undertaking public engagement is a waste of my time	Q20 - I feel my archaeological opinions are listened to when I interact with the public	80.28435	16	1.48E-10	yes
Q16 - Undertaking public engagement can make a difference to the archaeological sector itself	Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	78.87531	16	2.65E-10	yes
Q5 - How helpful is public engagement to your archaeological work?	Q6 - Does undertaking public engagement get in the way of your archaeological work?	74.46248	16	1.63E-09	yes
Q7 - Does public engagement dilute the significance of your work?	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	73.51874	16	2.4E-09	yes
Q15 - I think that undertaking public engagement is a waste of my time	Q17 - The general public treat me with respect	71.16816	16	6.22E-09	yes
Q8 - Time issues: Do you have time to include public engagement as part of your work?	Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	54.03261	8	6.8E-09	yes
Q6 - Does undertaking public engagement get in the way of your archaeological work?	Q16 - Undertaking public engagement can make a difference to the archaeological sector itself	68.4013	16	1.9E-08	yes

Q3 - What is your age?	Q24 - I have written a blog post to communicate my archaeological work	43.9059	6	7.72E-08	yes
Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	Q25 - I have used a social media account to communicate my archaeological work to the general public	38.16804	4	1.03E-07	yes
Q4 - I identify my gender as	Q15 - I think that undertaking public engagement is a waste of my time	56.2038	12	1.1E-07	yes
Q7 - Does public engagement dilute the significance of your work?	Q20 - I feel my archaeological opinions are listened to when I interact with the public	63.91672	16	1.13E-07	yes
Q7 - Does public engagement dilute the significance of your work?	Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	63.41261	16	1.38E-07	yes
Q7 - Does public engagement dilute the significance of your work?	Q10 - My area of expertise is too specialised to communicate with the general public	45.27083	8	3.27E-07	yes
Q5 - How helpful is public engagement to your archaeological work?	Q17 - The general public treat me with respect	59.90593	16	5.43E-07	yes
Q10 - My area of expertise is too specialised to communicate with the general public	Q15 - I think that undertaking public engagement is a waste of my time	44.01486	8	5.65E-07	yes
Q7 - Does public engagement dilute the significance of your work?	Q16 - Undertaking public engagement can make a difference to the archaeological sector itself	59.56424	16	6.2E-07	yes
Q11 - Is my research interesting beyond the sector?	Q20 - I feel my archaeological opinions are listened to when I interact with the public	43.39422	8	7.4E-07	yes
Archaeological media	Independent scholars/researchers	23.80322	1	1.07E-06	yes
Q10 - My area of expertise is too specialised to communicate with the general public	Q11 - Is my research interesting beyond the sector?	32.4883	4	1.52E-06	yes

Q8 - Time issues: Do you have time to include public engagement as part of your work?	Q9 - I feel I have skills necessary to communicate my work with the general public	32.03311	4	1.88E-06	yes
Q8 - Time issues: Do you have time to include public engagement as part of your work?	Q21 - I have used digital/Internet technologies to communicate my work	26.29789	2	1.95E-06	yes
Q11 - Is my research interesting beyond the sector?	Q15 - I think that undertaking public engagement is a waste of my time	40.85331	8	2.22E-06	yes
Q5 - How helpful is public engagement to your archaeological work?	Q7 - Does public engagement dilute the significance of your work?	55.20534	16	3.29E-06	yes
Q5 - How helpful is public engagement to your archaeological work?	Q8 - Time issues: Do you have time to include public engagement as part of your work?	39.21143	8	4.49E-06	yes
Q4 - I identify my gender as	Q17 - The general public treat me with respect	46.72173	12	5.21E-06	yes
Independent scholars/researchers	Q3 - What is your age?	34.24248	6	6.04E-06	yes
Q16 - Undertaking public engagement can make a difference to the archaeological sector itself	Q19 - I feel my archaeological views are respected by the general public	29.52755	4	6.11E-06	yes
Q8 - Time issues: Do you have time to include public engagement as part of your work?	Q20 - I feel my archaeological opinions are listened to when I interact with the public	37.59113	8	8.96E-06	yes
No Response	Q10 - My area of expertise is too specialised to communicate with the general public	23.06788	2	9.79E-06	yes
Q9 - I feel I have skills necessary to communicate my work with the general public	Q20 - I feel my archaeological opinions are listened to when I interact with the public	37.23609	8	1.04E-05	yes
Q6 - Does undertaking public engagement get in the way of your archaeological work?	Q8 - Time issues: Do you have time to include public engagement as part of your work?	36.66389	8	1.33E-05	yes

Q8 - Time issues: Do you have time to include public engagement as part of your work?	Q12 - I feel there are further opportunities for public engagement in or with my work which are not yet realized to their fullest potential	21.99443	2	1.67E-05	yes
Q6 - Does undertaking public engagement get in the way of your archaeological work?	Q20 - I feel my archaeological opinions are listened to when I interact with the public	50.79255	16	1.71E-05	yes
Q4 - I identify my gender as	Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	43.61095	12	1.78E-05	yes
Q6 - Does undertaking public engagement get in the way of your archaeological work?	Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	50.54978	16	1.87E-05	yes
Q11 - Is my research interesting beyond the sector?	Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	35.58066	8	2.1E-05	yes
Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	Q19 - I feel my archaeological views are respected by the general public	26.50072	4	2.51E-05	yes
Q3 - What is your age?	Q4 - I identify my gender as	52.70028	18	2.92E-05	yes
Q21 - I have used digital/Internet technologies to communicate my work	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	25.83979	4	3.41E-05	yes
Q8 - Time issues: Do you have time to include public engagement as part of your work?	Q19 - I feel my archaeological views are respected by the general public	20.2982	2	3.91E-05	yes
Schools/young people's education	Stand-alone community archaeology projects (HLF or other funded projects)	16.30936	1	5.38E-05	yes
Q15 - I think that undertaking public engagement is a waste of my time	Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	47.32564	16	6.06E-05	yes

Q8 - Time issues: Do you have time to include public engagement as part of your work?	Q11 - Is my research interesting beyond the sector?	24.49834	4	6.35E-05	yes
Q6 - Does undertaking public engagement get in the way of your archaeological work?	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	47.09199	16	6.59E-05	yes
Q11 - Is my research interesting beyond the sector?	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	32.52131	8	7.51E-05	yes
Q3 - What is your age?	Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	28.4958	6	7.58E-05	yes
Q8 - Time issues: Do you have time to include public engagement as part of your work?	Q17 - The general public treat me with respect	32.00205	8	9.31E-05	yes
Q10 - My area of expertise is too specialised to communicate with the general public	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	31.51558	8	0.000114	yes
Q12 - I feel there are further opportunities for public engagement in or with my work which are not yet realized to their fullest potential	Q15 - I think that undertaking public engagement is a waste of my time	22.74353	4	0.000142	yes
Q11 - Is my research interesting beyond the sector?	Q26 - I have contributed to a website aimed at the general public in order to communicate my archaeological work	17.23687	2	0.000181	yes
Q9 - I feel I have skills necessary to communicate my work with the general public	Q13 - Undertaking public engagement work is viewed positively by my work colleagues and disciplinary peers	21.42612	4	0.000261	yes

Q4 - I identify my gender as	Q7 - Does public engagement dilute the significance of your work?	36.02946	12	0.00032	yes
Other	Q5 - How helpful is public engagement to your archaeological work?	20.78925	4	0.000349	yes
No Response	Q4 - I identify my gender as	18.26742	3	0.000387	yes
Q3 - What is your age?	Q11 - Is my research interesting beyond the sector?	34.93516	12	0.00048	yes
Q12 - I feel there are further opportunities for public engagement in or with my work which are not yet realized to their fullest potential	Q22 - I feel that online engagement with the general public is a worthwhile exercise for archaeologists in my sector	19.97515	4	0.000505	yes
Q14 - Most archaeologists do not take part in public engagement, or outreach activities/projects:	Q18 - I feel I have opportunities to contribute an archaeological voice in the public realm	41.16152	16	0.000526	yes
Q7 - Does public engagement dilute the significance of your work?	Q17 - The general public treat me with respect	41.09054	16	0.000538	yes
Q4 - I identify my gender as	Q6 - Does undertaking public engagement get in the way of your archaeological work?	34.54629	12	0.000553	yes
Q8 - Time issues: Do you have time to include public engagement as part of your work?	Q15 - I think that undertaking public engagement is a waste of my time	27.50957	8	0.000577	yes
Amateur' archaeology - community groups undertaking unpaid work	Stand-alone community archaeology projects (HLF or other funded projects)	11.81622	1	0.000587	yes
Local government HER services	Q3 - What is your age?	23.70335	6	0.000592	yes
Q9 - I feel I have skills necessary to communicate my work with the general public	Q19 - I feel my archaeological views are respected by the general public	14.67773	2	0.00065	yes

Q8 - Time issues: Do you have time to include public engagement as part of your work?	Q10 - My area of expertise is too specialised to communicate with the general public	19.16589	4	0.000729	yes
Other	Schools/young people's education	11.29285	1	0.000778	yes
Q9 - I feel I have skills necessary to communicate my work with the general public	Q10 - My area of expertise is too specialised to communicate with the general public	18.87088	4	0.000833	yes
Local government curatorial services	Q8 - Time issues: Do you have time to include public engagement as part of your work?	13.85324	2	0.000981	yes

Table 27: Variables compared to each other with Chi squared value, degrees of freedom (df), P-values and if there are any issues the size of the expected values for all results with a P-value of .001<.

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