Thoughts on Storks - Demographics code

Lizzie Jones[1]

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WSP - Demographics exploration, analysis and visualisations

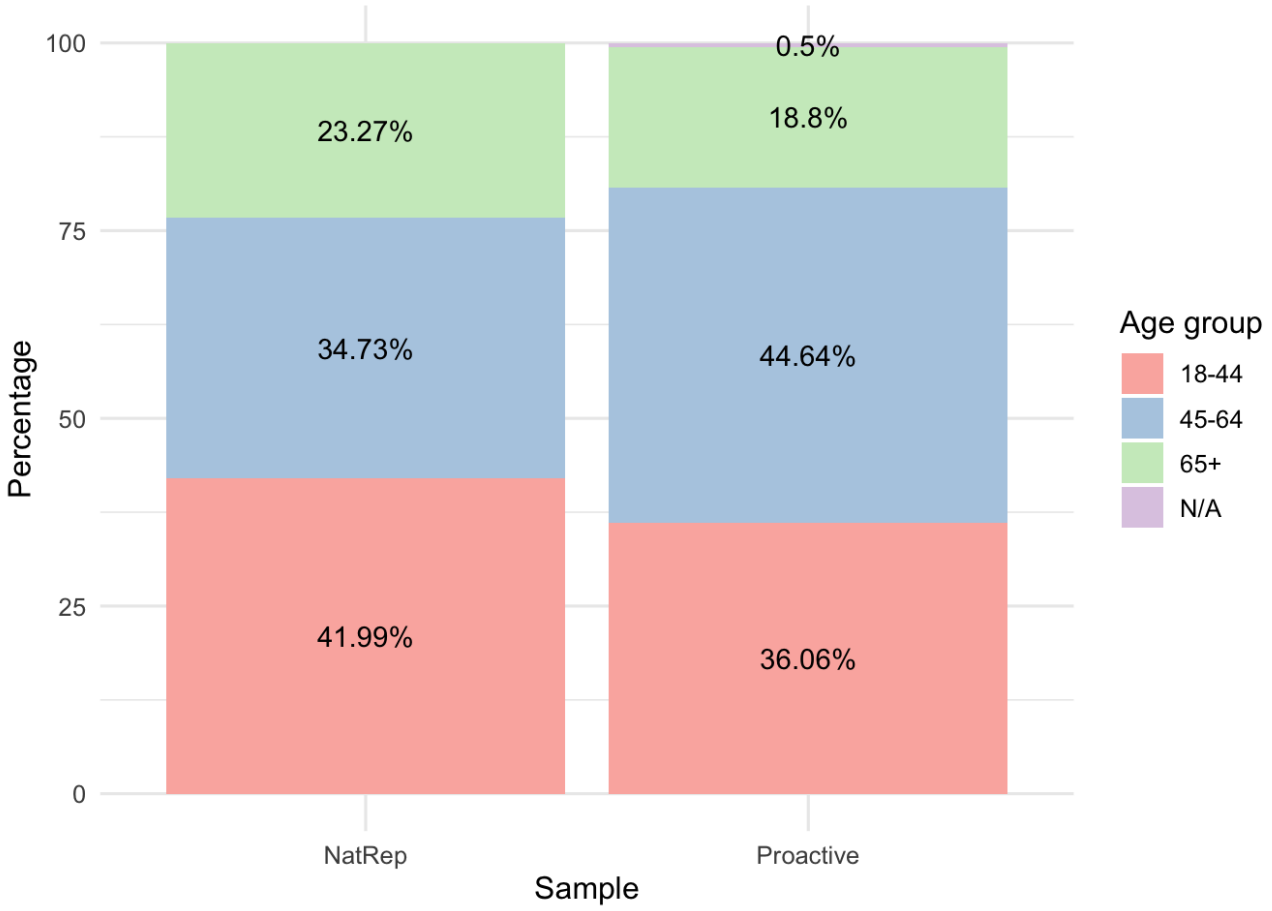
About this rMarkdown

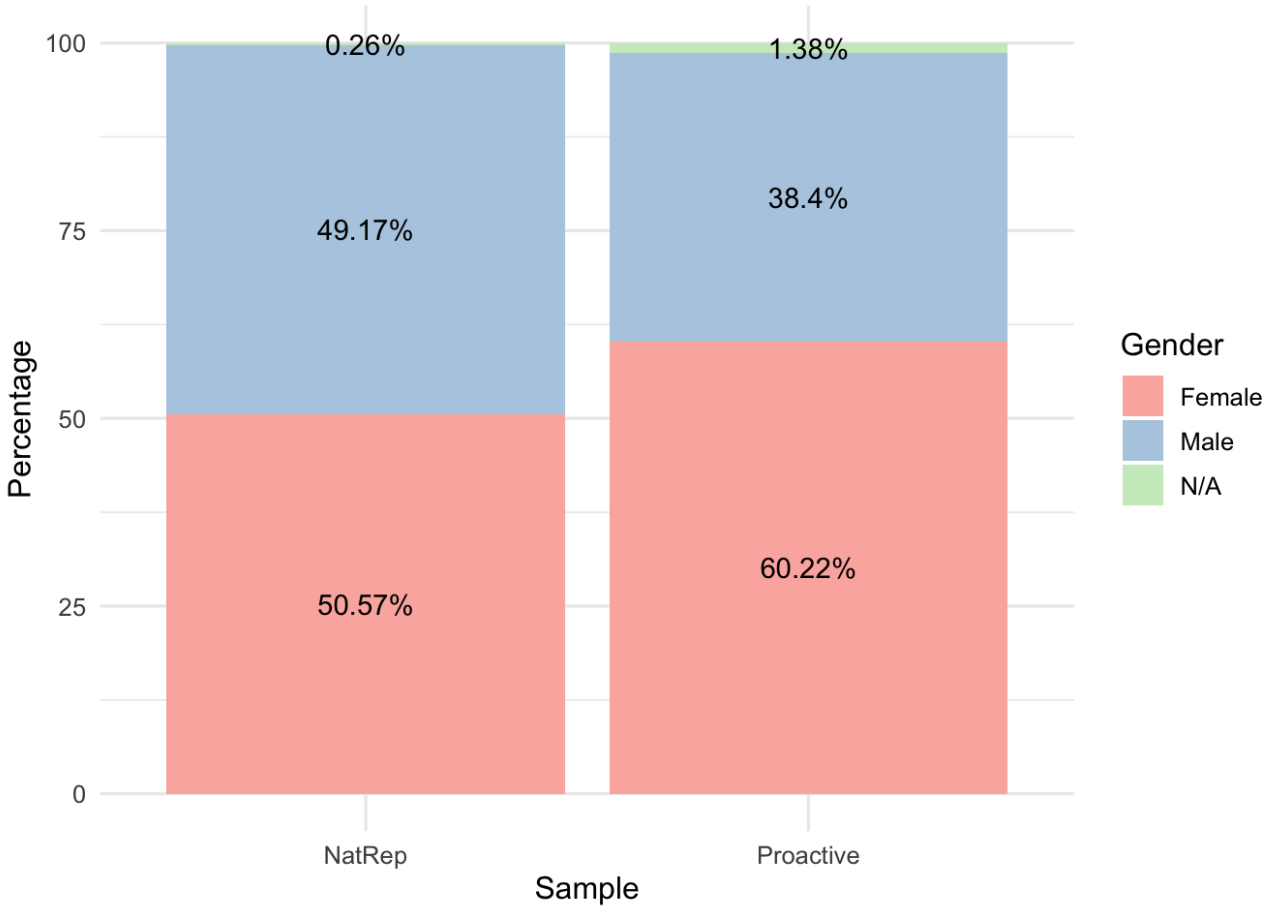
This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com (http://rmarkdown.rstudio.com). To generate the document of all content, click the **Knit** button.

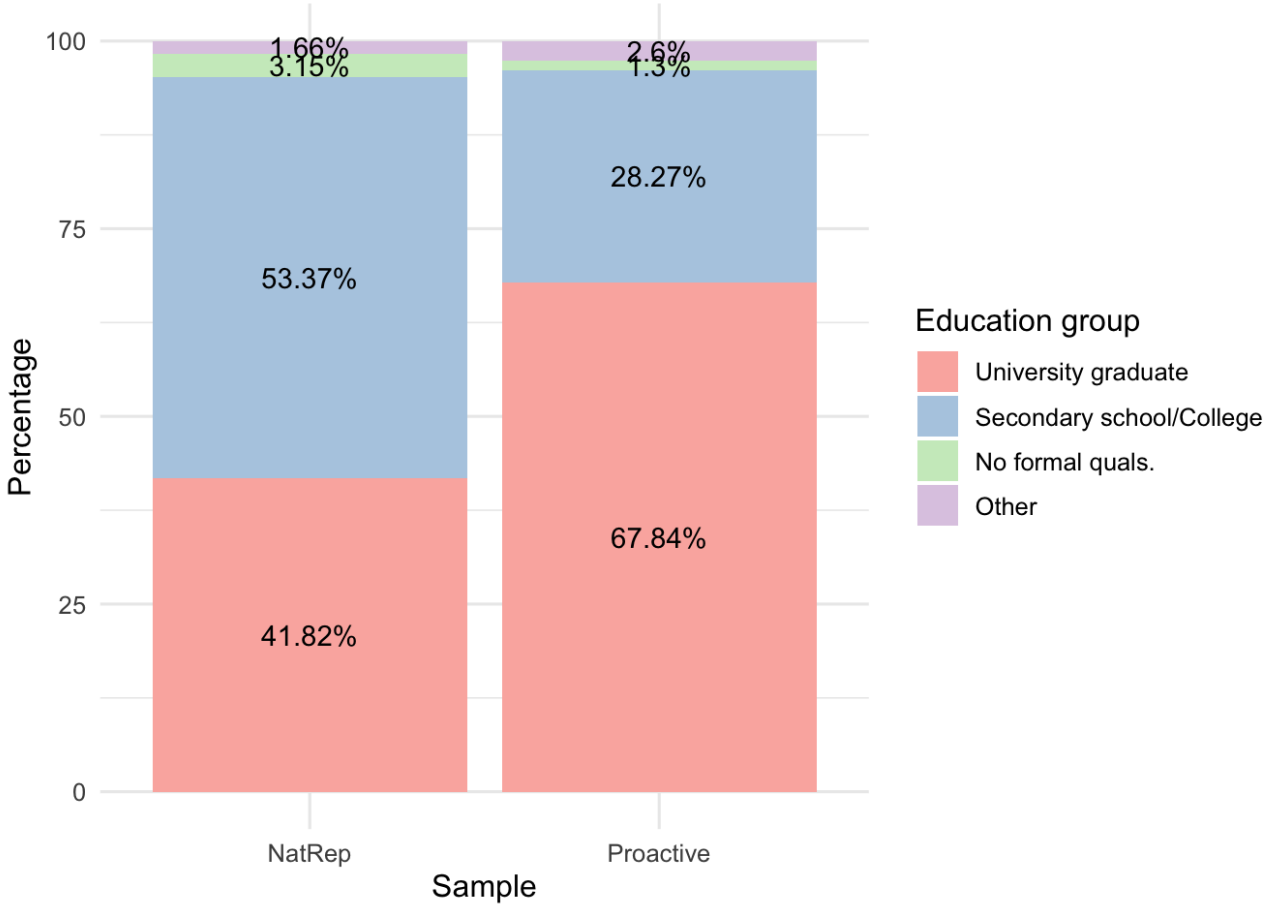
This rMarkdown document will be periodically updated and uploaded to the OneDrive folder and pushed to the WSP GitHub code repository. The primary format of this document is HTML, but this can be easily changed by changing the output (e.g. PDF, GitHub) using the 'output' section at the top of the document. The possible output formats are listed here: https://rmarkdown.rstudio.com/lesson-9.html (https://rmarkdown.rstudio.com/lesson-9.html).

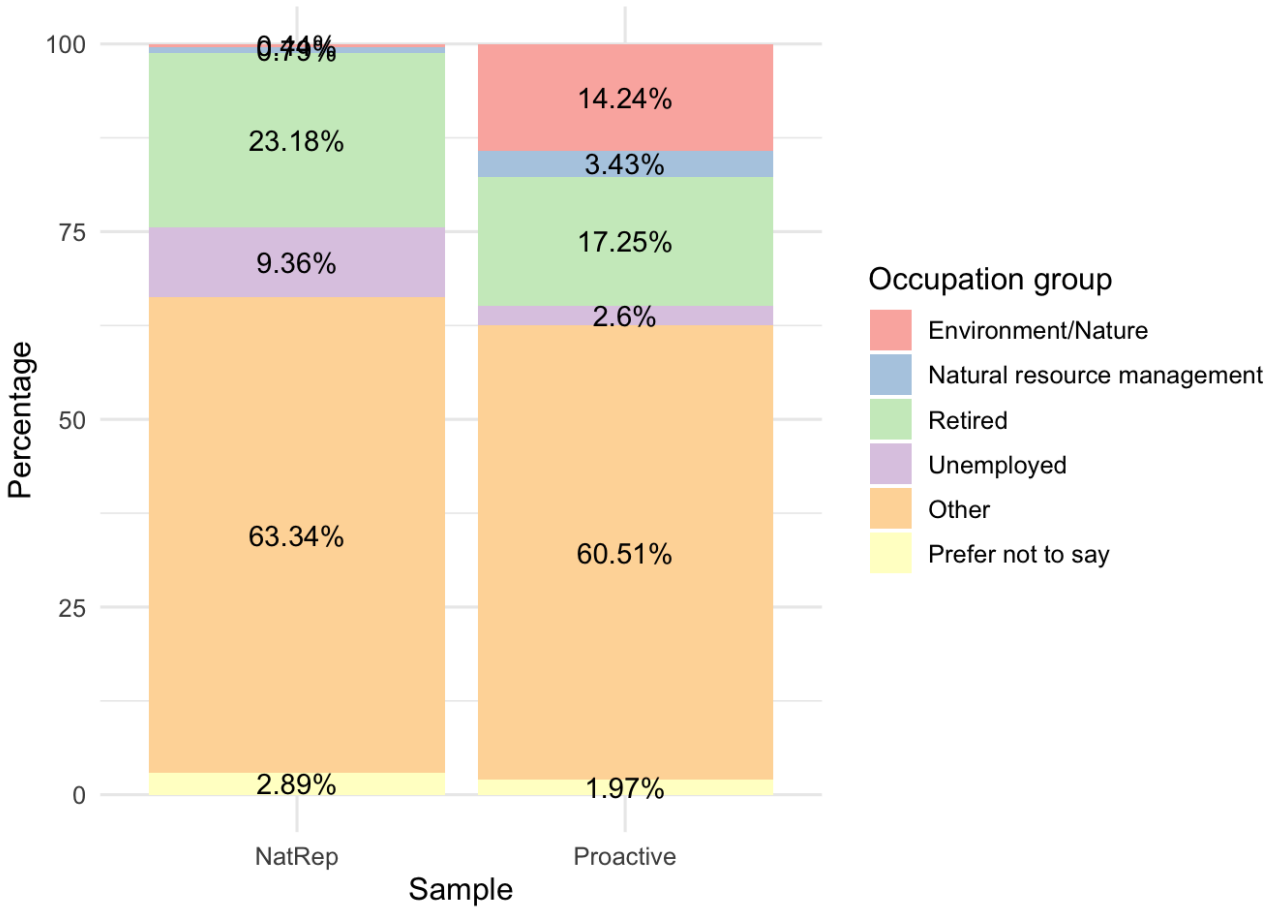
Exploring respondent demographics

The distributions of age, gender, occupation and education are explored and compared between samples using stacked bar plots.






100
75
50
25
0
Percentage
1.66%
3.15%
53.37%
41.82%
2.6%
1.3%
28.27%
67.84%
NatRep
Proactive
Sample
Education group
University graduate
Secondary school/College
No formal quals.
Other


100
75
50
25
0
Percentage
23.18%
9.36%
63.34%
2.89%
14.24%
3.43%
17.25%
2.6%
60.51%
1.97%
NatRep
Proactive
Sample
Occupation group
Environment/Nature
Natural resource management
Retired
Unemployed
Other
Prefer not to say

Respondent demographics tables

The table below (created using the package “table1”) outlines the demographic characteriscs of each of the two samples, and the overall demographics of all respondents across both samples. For each demographic variable the tables provides a breakdown of the number of respondents within each level/group and the percentage.

Short demographics table (simplified strata plus interaction of Local and Survey type)

	Nationally rep.		Proactive		Overall	
	Local (N=18)	Not local (N=1125)	Local (N=1014)	Not local (N=1374)	Local (N=1032)	Not local (N=2499)
Age group						
18-44	6 (33.3%)	474 (42.1%)	269 (26.5%)	592 (43.1%)	275 (26.6%)	1066 (42.7%)
45-64	8 (44.4%)	389 (34.6%)	505 (49.8%)	561 (40.8%)	513 (49.7%)	950 (38.0%)
65+	4 (22.2%)	262 (23.3%)	235 (23.2%)	214 (15.6%)	239 (23.2%)	476 (19.0%)
N/A	0 (0%)	0 (0%)	5 (0.5%)	7 (0.5%)	5 (0.5%)	7 (0.3%)
Gender						
Female	10 (55.6%)	568 (50.5%)	690 (68.0%)	748 (54.4%)	700 (67.8%)	1316 (52.7%)
Male	8 (44.4%)	554 (49.2%)	314 (31.0%)	603 (43.9%)	322 (31.2%)	1157 (46.3%)
N/A	0 (0%)	3 (0.3%)	10 (1.0%)	23 (1.7%)	10 (1.0%)	26 (1.0%)
Education						
University graduate	7 (38.9%)	471 (41.9%)	595 (58.7%)	1025 (74.6%)	602 (58.3%)	1496 (59.9%)
Secondary school/College	10 (55.6%)	600 (53.3%)	363 (35.8%)	312 (22.7%)	373 (36.1%)	912 (36.5%)
No formal quals.	1 (5.6%)	35 (3.1%)	16 (1.6%)	15 (1.1%)	17 (1.6%)	50 (2.0%)
Other	0 (0%)	19 (1.7%)	40 (3.9%)	22 (1.6%)	40 (3.9%)	41 (1.6%)
Occupation						
Environment/Nature	0 (0%)	5 (0.4%)	55 (5.4%)	285 (20.7%)	55 (5.3%)	290 (11.6%)
Natural resource management	0 (0%)	9 (0.8%)	37 (3.6%)	45 (3.3%)	37 (3.6%)	54 (2.2%)
Retired	4 (22.2%)	261 (23.2%)	189 (18.6%)	223 (16.2%)	193 (18.7%)	484 (19.4%)
Unemployed	2 (11.1%)	105 (9.3%)	22 (2.2%)	40 (2.9%)	24 (2.3%)	145 (5.8%)
Other	12 (66.7%)	712 (63.3%)	688 (67.9%)	757 (55.1%)	700 (67.8%)	1469 (58.8%)
Prefer not to say	0 (0%)	33 (2.9%)	23 (2.3%)	24 (1.7%)	23 (2.2%)	57 (2.3%)
Area type						
Rural	7 (38.9%)	214 (19.0%)	609 (60.1%)	435 (31.7%)	616 (59.7%)	649 (26.0%)
Sub-urban	6 (33.3%)	534 (47.5%)	305 (30.1%)	551 (40.1%)	311 (30.1%)	1085 (43.4%)
Urban	5 (27.8%)	377 (33.5%)	100 (9.9%)	388 (28.2%)	105 (10.2%)	765 (30.6%)

Simple demographics table (no interaction of Local and Survey type)

	Local (N=1032)	Not local (N=2499)	Overall (N=3531)
Age group			
18-44	275 (26.6%)	1066 (42.7%)	1341 (38.0%)
45-64	513 (49.7%)	950 (38.0%)	1463 (41.4%)
65+	239 (23.2%)	476 (19.0%)	715 (20.2%)
N/A	5 (0.5%)	7 (0.3%)	12 (0.3%)
Gender			
Female	700 (67.8%)	1316 (52.7%)	2016 (57.1%)
Male	322 (31.2%)	1157 (46.3%)	1479 (41.9%)
N/A	10 (1.0%)	26 (1.0%)	36 (1.0%)
Education			
University graduate	602 (58.3%)	1496 (59.9%)	2098 (59.4%)
Secondary school/College	373 (36.1%)	912 (36.5%)	1285 (36.4%)
No formal quals.	17 (1.6%)	50 (2.0%)	67 (1.9%)
Other	40 (3.9%)	41 (1.6%)	81 (2.3%)
Occupation			
Environment/Nature	55 (5.3%)	290 (11.6%)	345 (9.8%)
Natural resource management	37 (3.6%)	54 (2.2%)	91 (2.6%)
Retired	193 (18.7%)	484 (19.4%)	677 (19.2%)
Unemployed	24 (2.3%)	145 (5.8%)	169 (4.8%)
Other	700 (67.8%)	1469 (58.8%)	2169 (61.4%)
Prefer not to say	23 (2.2%)	57 (2.3%)	80 (2.3%)
Area type			
Rural	616 (59.7%)	649 (26.0%)	1265 (35.8%)
Sub-urban	311 (30.1%)	1085 (43.4%)	1396 (39.5%)
Urban	105 (10.2%)	765 (30.6%)	870 (24.6%)

Long demographics table (all strata plus interaction of Local and Survey type)

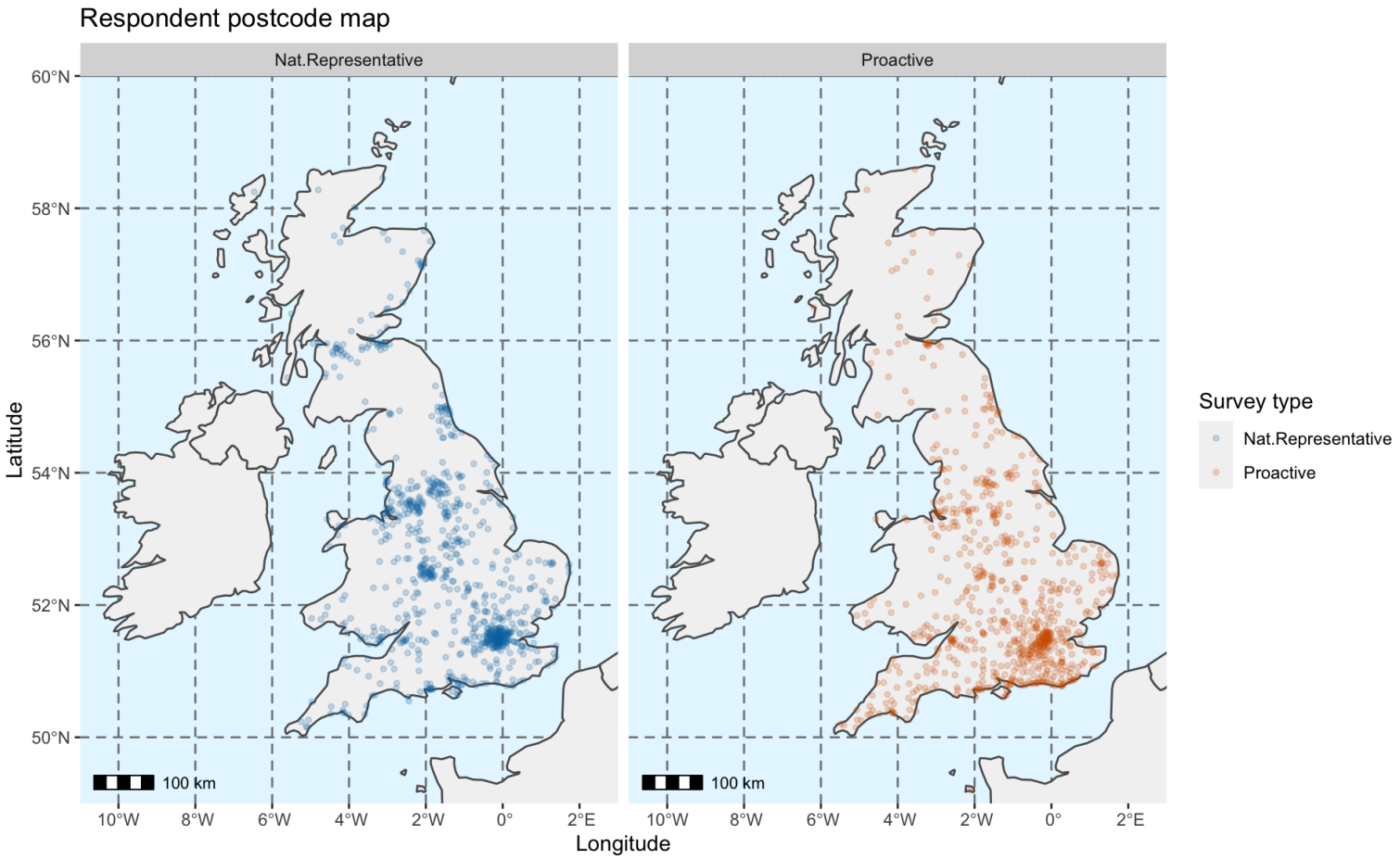
Original format of the demographics table with all variables, strata and sample interations.

	Nationally rep.		Proactive		Overall	
	Local (N=18)	Not local (N=1125)	Local (N=1014)	Not local (N=1374)	Local (N=1032)	Not local (N=2499)
Age group						
18-24	1 (5.6%)	124 (11.0%)	21 (2.1%)	112 (8.2%)	22 (2.1%)	236 (9.4%)
25-34	1 (5.6%)	172 (15.3%)	82 (8.1%)	251 (18.3%)	83 (8.0%)	423 (16.9%)
35-44	4 (22.2%)	178 (15.8%)	166 (16.4%)	229 (16.7%)	170 (16.5%)	407 (16.3%)
45-54	5 (27.8%)	199 (17.7%)	241 (23.8%)	247 (18.0%)	246 (23.8%)	446 (17.8%)
55-64	3 (16.7%)	190 (16.9%)	264 (26.0%)	314 (22.9%)	267 (25.9%)	504 (20.2%)
65+	4 (22.2%)	262 (23.3%)	235 (23.2%)	214 (15.6%)	239 (23.2%)	476 (19.0%)
Prefer not to answer	0 (0%)	0 (0%)	5 (0.5%)	7 (0.5%)	5 (0.5%)	7 (0.3%)
Gender						
Female	10 (55.6%)	568 (50.5%)	690 (68.0%)	748 (54.4%)	700 (67.8%)	1316 (52.7%)
Male	8 (44.4%)	554 (49.2%)	314 (31.0%)	603 (43.9%)	322 (31.2%)	1157 (46.3%)
N/A	0 (0%)	3 (0.3%)	10 (1.0%)	23 (1.7%)	10 (1.0%)	26 (1.0%)
Education						
Further Education	3 (16.7%)	209 (18.6%)	172 (17.0%)	157 (11.4%)	175 (17.0%)	366 (14.6%)
No formal qualifications	1 (5.6%)	35 (3.1%)	16 (1.6%)	15 (1.1%)	17 (1.6%)	50 (2.0%)
Other	0 (0%)	1 (0.1%)	24 (2.4%)	11 (0.8%)	24 (2.3%)	12 (0.5%)
Postgraduate degree	0 (0%)	153 (13.6%)	249 (24.6%)	495 (36.0%)	249 (24.1%)	648 (25.9%)
Prefer not to answer	0 (0%)	18 (1.6%)	16 (1.6%)	11 (0.8%)	16 (1.6%)	29 (1.2%)
Secondary school	7 (38.9%)	391 (34.8%)	191 (18.8%)	155 (11.3%)	198 (19.2%)	546 (21.8%)
Undergraduate degree	7 (38.9%)	318 (28.3%)	346 (34.1%)	530 (38.6%)	353 (34.2%)	848 (33.9%)
Occupation						
Architecture, Energy & Engineering	0 (0%)	29 (2.6%)	16 (1.6%)	24 (1.7%)	16 (1.6%)	53 (2.1%)
Arts, Sport & Media	1 (5.6%)	19 (1.7%)	50 (4.9%)	62 (4.5%)	51 (4.9%)	81 (3.2%)
Building & Maintenance	1 (5.6%)	20 (1.8%)	14 (1.4%)	8 (0.6%)	15 (1.5%)	28 (1.1%)
Business & Finance	1 (5.6%)	72 (6.4%)	68 (6.7%)	60 (4.4%)	69 (6.7%)	132 (5.3%)
Community & Social Service	0 (0%)	16 (1.4%)	26 (2.6%)	26 (1.9%)	26 (2.5%)	42 (1.7%)
Computer & Mathematical	1 (5.6%)	30 (2.7%)	33 (3.3%)	37 (2.7%)	34 (3.3%)	67 (2.7%)
Education	1 (5.6%)	64 (5.7%)	137 (13.5%)	148 (10.8%)	138 (13.4%)	212 (8.5%)
Environment, Nature & Wildlife	0 (0%)	5 (0.4%)	54 (5.3%)	285 (20.7%)	54 (5.2%)	290 (11.6%)
Farming & Agriculture	0 (0%)	6 (0.5%)	16 (1.6%)	17 (1.2%)	16 (1.6%)	23 (0.9%)
Fisheries & Aquaculture	0 (0%)	1 (0.1%)	1 (0.1%)	9 (0.7%)	1 (0.1%)	10 (0.4%)
Forestry & Woodland Management	0 (0%)	0 (0%)	7 (0.7%)	9 (0.7%)	7 (0.7%)	9 (0.4%)
Healthcare	1 (5.6%)	87 (7.7%)	93 (9.2%)	72 (5.2%)	94 (9.1%)	159 (6.4%)
Homemaker / Carer	0 (0%)	16 (1.4%)	20 (2.0%)	7 (0.5%)	20 (1.9%)	23 (0.9%)
Horticulture/Gardening/Landscaping	0 (0%)	2 (0.2%)	10 (1.0%)	8 (0.6%)	10 (1.0%)	10 (0.4%)
Hospitality	1 (5.6%)	39 (3.5%)	14 (1.4%)	17 (1.2%)	15 (1.5%)	56 (2.2%)
Law/Legal	0 (0%)	4 (0.4%)	5 (0.5%)	7 (0.5%)	5 (0.5%)	11 (0.4%)
Office and Administrative Support	3 (16.7%)	78 (6.9%)	60 (5.9%)	59 (4.3%)	63 (6.1%)	137 (5.5%)
Other	1 (5.6%)	84 (7.5%)	106 (10.5%)	117 (8.5%)	107 (10.4%)	201 (8.0%)
Physical and Social Science	0 (0%)	5 (0.4%)	8 (0.8%)	10 (0.7%)	8 (0.8%)	15 (0.6%)

	Nationally rep.		Proactive		Overall	
	Local (N=18)	Not local (N=1125)	Local (N=1014)	Not local (N=1374)	Local (N=1032)	Not local (N=2499)
Prefer not to answer	0 (0%)	33 (2.9%)	23 (2.3%)	24 (1.7%)	23 (2.2%)	57 (2.3%)
Production	0 (0%)	14 (1.2%)	7 (0.7%)	13 (0.9%)	7 (0.7%)	27 (1.1%)
Retired	4 (22.2%)	261 (23.2%)	171 (16.9%)	211 (15.4%)	175 (17.0%)	472 (18.9%)
Sales	1 (5.6%)	48 (4.3%)	19 (1.9%)	12 (0.9%)	20 (1.9%)	60 (2.4%)
Student	0 (0%)	54 (4.8%)	12 (1.2%)	69 (5.0%)	12 (1.2%)	123 (4.9%)
Tourism	0 (0%)	6 (0.5%)	6 (0.6%)	9 (0.7%)	6 (0.6%)	15 (0.6%)
Transport	0 (0%)	27 (2.4%)	16 (1.6%)	14 (1.0%)	16 (1.6%)	41 (1.6%)
Unemployed	2 (11.1%)	105 (9.3%)	22 (2.2%)	40 (2.9%)	24 (2.3%)	145 (5.8%)
Area type						
Rural	7 (38.9%)	214 (19.0%)	609 (60.1%)	435 (31.7%)	616 (59.7%)	649 (26.0%)
Sub-urban	6 (33.3%)	534 (47.5%)	305 (30.1%)	551 (40.1%)	311 (30.1%)	1085 (43.4%)
Urban	5 (27.8%)	377 (33.5%)	100 (9.9%)	388 (28.2%)	105 (10.2%)	765 (30.6%)

Respondent postcode mapping

Maps of respondent location, seperating respondents according to survey type. The map indicates location using the first 4 digits of postcode (e.g., TN28), and points are colour-coded according to survey type.



Map of first 4 digits of postcode (e.g.,), colour = survey type

Mapping proximity to WSP release sites

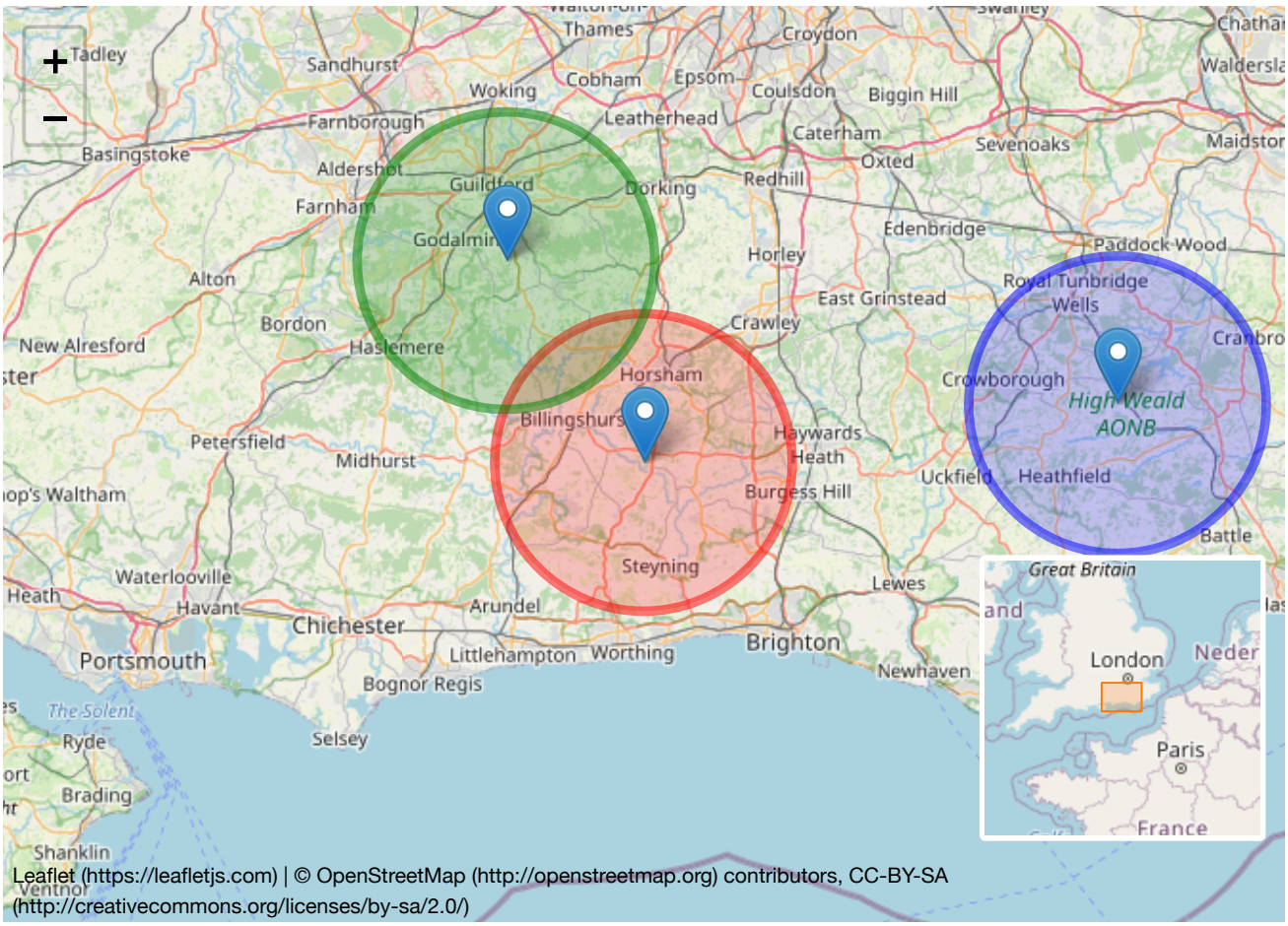
Maps of each WSP release site and a 15km radius encompassing the ‘local area’ as referred to in the main manuscript. The following code creates an interactive map of each site on an Open Street Map base which can be explored like a Google map.

I have also created this map as an interactive Shiny object (hosted via Shiny.io in my personal account but this can be transferred over to a Project account later on). The map is accessible via this link: https://ljones42.shinyapps.io/WSP_site_map/ (https://ljones42.shinyapps.io/WSP_site_map/)

The code file for this is in the Shiny file called ‘app.R’, which can be updated, run and pushed to the server.

```
# Define data frame of site names and coordinates
marker_df <- read.csv(textConnection(
"Name,Lat,Long
Knepp,50.98341,-0.35485
Wadhurst,51.03579,0.32769
Wintershall,51.16605,-0.55289"))

## Create map iusing Leaflet
uk_map <- leaflet(marker_df) %>%
  addTiles() %>%
  setView(lng=-0.35485, lat=50.98341, zoom = 9) %>%  # Set view to local area and zoom
  addMarkers(lng=~Long, lat=~Lat, popup = ~htmltools::htmlEscape(Name)) %>%
  addCircles(lng=-0.35485, lat=50.98341, color = "red", radius = 15000) %>%
  addCircles(lng=0.32769, lat=51.03579, color = "blue", radius = 15000) %>%
  addCircles(lng=-0.55289, lat=51.16605, color = "green", radius = 15000) %>%
  addMeasure() %>% # Add scale and ability to manually measure distance between points
  addMiniMap() # Add in a small minimap of wider area
uk_map
```



1. University of Brighton, l.jones4@brighton.ac.uk (mailto:l.jones4@brighton.ac.uk)↩