AGI Skills Survey

Environmental Statement;

by producing this report in a digital only format, with additional detail online, we are aiming to minimise, our environmental impact.

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agi | THE ASSOCIATION FOR **GEOGRAPHIC** **INFORMATION**
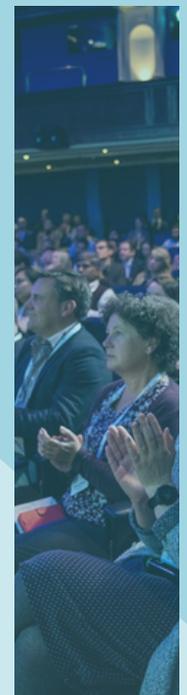
About the **AGI**

The Association for Geographic Information (AGI) is the UK's geospatial membership organisation; leading, connecting and developing a community of members who use and benefit from geographic information.

An independent and impartial organisation representing the UK geospatial sector, the AGI works with members and the wider community, to successfully influence government policy, deliver the highest quality of education and provide a lead for best practice across the industry.

Our mission is to nurture, create and support a thriving UK Geospatial Community, actively supporting a sustainable future and we aim to achieve this through the three pillars that govern our activities and intentions;

- nurture and connect active GI communities
- support career and skills development for GI Professionals
- provide thought leadership to inspire future generations

Established in 1989, members of the AGI enjoy unrivalled networking opportunities, a framework to learn new skills and the support to progress professional development and there are many ways to get involved and different levels of engagement;

- **Individual Network Member;** free membership for anyone
- **Individual Professional Member;** paid membership for individuals providing additional career, networking and business development benefits
- **Organisational Associate Member;** membership for organisations that includes professional membership for employees and promotional benefits
- **Organisational Partner Member;** premium membership for organisations that includes thought leadership, professional membership, promotions, sponsorship and additional benefits

For further information about membership levels, commitments and benefits visit
https://www.agi.org.uk/membership-levels/

About the Education & Skills Working Group

The AGI's Education and Skills Working Group contributes to ensuring the relevant skills exist in the UK workforce to underpin a thriving GI sector. It carries out an annual skills survey to identify issues and trends in recruiting, retaining and developing talent, and is leading the creation of a catalogue of geospatial skills providers in the UK.

Introduction

Geospatial data is an essential part of modern society, underpinning everything from navigation to disaster response, urban planning to climate change monitoring. The importance of geospatial data extends beyond traditional geographic fields, and it is increasingly being used in cross-cutting sectors such as health, finance, and transportation.

The result is that the geospatial industry is a growing and fast changing landscape – made more complex by the blurring of boundaries between geospatial, data science, earth observation and web/application development.

The skills it requires overlap heavily with tech, finance, and other sectors, making for fierce competition for talent. A key challenge over the coming years will be to ensure that we equip our newly emerging professionals with all of the skills our sector needs.

As Ralph Coleman, Chief Commercial Officer at Bluesky International, an AGI member, says *"It's no secret that there is currently a skills gap in the geospatial labour market. For SMEs recruiting for technical and sales positions it can be a challenging, super competitive environment, and, due to ongoing expansion, it has become increasingly difficult to find suitable people for these types of positions."*

AGI conducted this first skills survey in order to understand the current and future skills needs of the geospatial industry and how well those needs are being met. Whilst 'core' geospatial skills remain strong within the supply of new recruits, it is specialist skills or those that compete with other sectors that are increasingly difficult to recruit to, with pay and career pathways often seen as the main limiting factor.

These results will be used to inform action taken by AGI, government, and other stakeholders to address skill shortages and promote the growth of the geospatial industry. By addressing skill shortages, we can ensure that the geospatial industry continues to drive innovation and contribute to the growth of the economy.

Anne Robertson & Ian Maxfield
AGI Education and Skills Working Group Co-Chairs

Foreword

New technologies, such as Artificial Intelligence and Machine Learning, are becoming all-pervasive and part of our everyday experiences. However, in order to integrate and incorporate these tools and methodologies within the geospatial sector, to gain benefit and greater understanding, we must be able to recruit and retain individuals with the right skills.

The ideal candidate is multi-disciplinary but more often individuals are good programmers but have no knowledge of spatial or temporal data or have excellent GIS analysis experience but no ML skills. To overcome this lack of multi-disciplinary skill availability we tend to recruit programmers and then pair them with geospatial domain experts.

Conversations with industry partners mirror these experiences but also highlighted issues in retaining staff with social and economic factors cited as barriers and a drain of talent from the academic and public sector to technology firms.

As educators we must continuously review what courses should be developed, taking into account what training modules industry requires, and we are grateful to the work of the AGI in working with the sector to understand their requirements.

Professor Michela Bertolotto,
School of Computer Science, University College Dublin

Dr. Michela Bertolotto joined UCD in September 2000. Her main research interests include spatio-temporal data modelling and mining, mobile and web-based GIS, map personalisation, open and crowd-sourced spatial data.

She has published over 100 scientific papers in Geographic Information Science (GIScience) and related disciplines, and has been in the Program Committee of all major international GIScience events. She is an associate editor of the International Journal of Geographical Information Science; an editorial board member of the Journal of Spatial Information Science and a regular reviewer for several major journals in GIScience.

Summary

Respondents

- This report summarises the results of the first skills survey conducted by the AGI Education & Skills Working Group.
- The survey received responses from 131 organisations based across the UK. This is 12% of the AGI membership.
- There was an even split of responses from the public (55%) and private (45%) sectors, and the majority of respondents were from large organisations (64%).

Recruitment

- 79% of organisations had recruited in the last 6 months, with more new roles being created in the private sector and more backfilling in the public sector.
- 63% of organisations are recruiting because they were experiencing higher demand for geospatial skills in their business.
- 69% or organisations are able to recruit for the geospatial skills they require. The private sector finds it easier to recruit than the public sector.
- 77% of organisations expect to be able to recruit in the future. The private sector is more confident about recruitment than the public sector.
- 46% of organisations who are hiring say that pay is a barrier to recruitment.

Skills
- The skills in highest demand are core data skills – analysis, processing, visualisation, manipulation.
- The skills in lowest demand are less data-related skills like ethics, people management,and business analysis.

Retention
- The majority (63%) of organisations are able to retain, 33% are partly able to retain, and only 5% unable to retain.
- Reasons for good retention include a good company culture (39%) and good career progression opportunities (21%).
- The majority (71%) of organisations provide development opportunities.
- Two third (65%) of organisations with recruitment challenges say that pay is a barrier to retention.
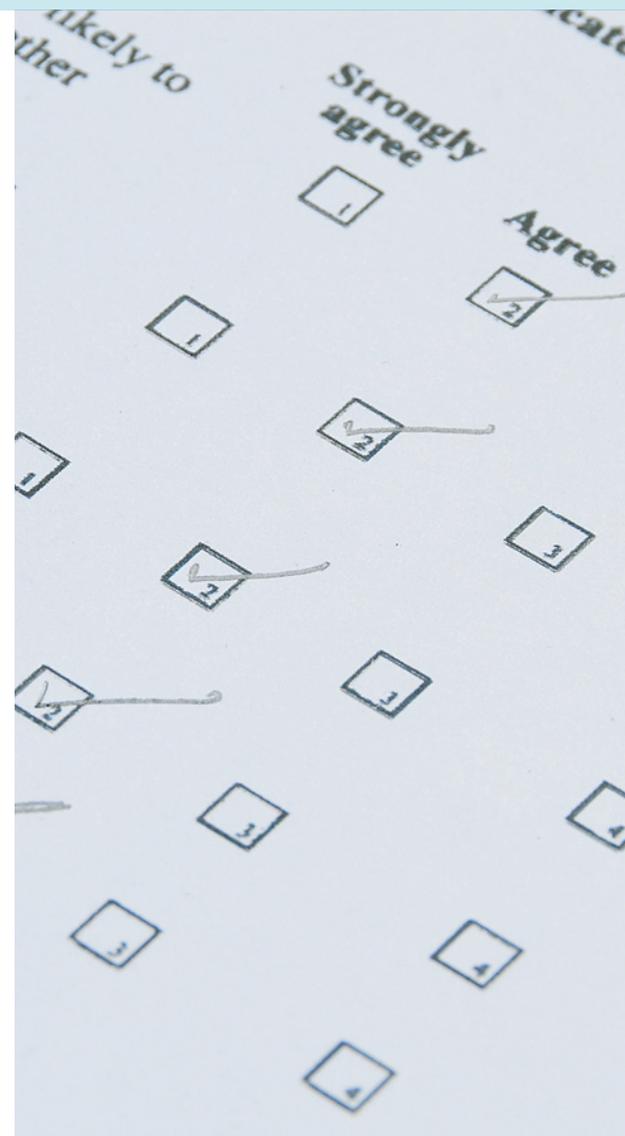
About the Respondents

The survey received 131 responses from members of AGI and the wider geospatial community, approximately 12% of the AGI membership. See Appendix 1 for more details of the methodology.
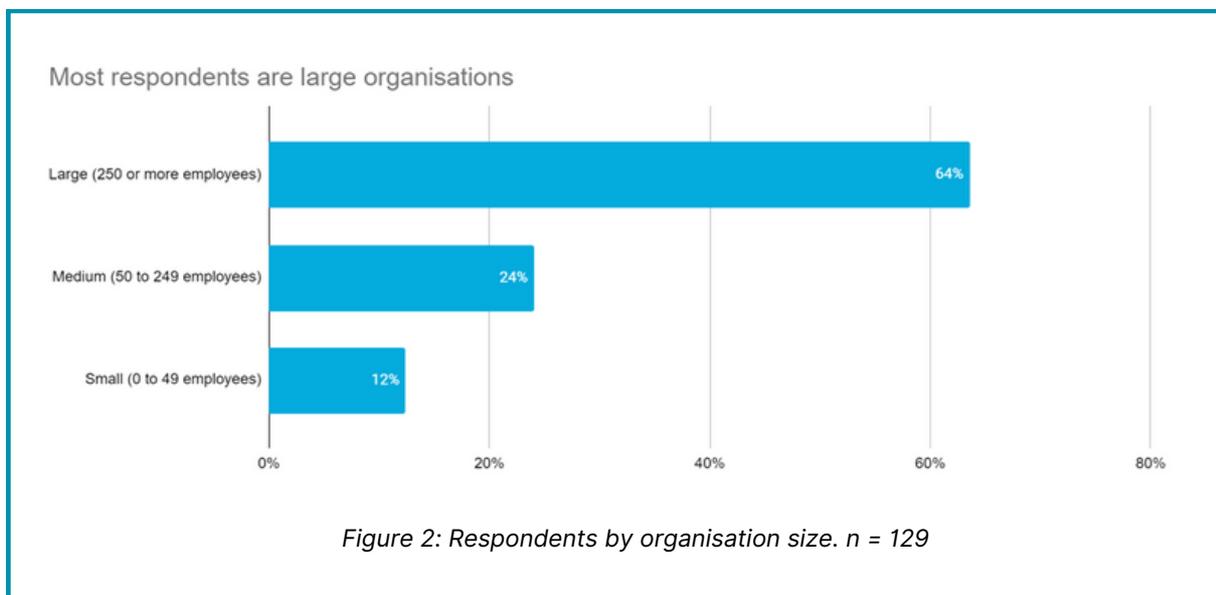
Organisation types

Most respondents represented organisations in the public sector (47%) or industry (43%).

In order to create suitable sample sizes for analysis, we grouped similar organisation types into either the public sector (55%) or private sector (45%).

Figure 1: Respondents by organisation type. n = 128
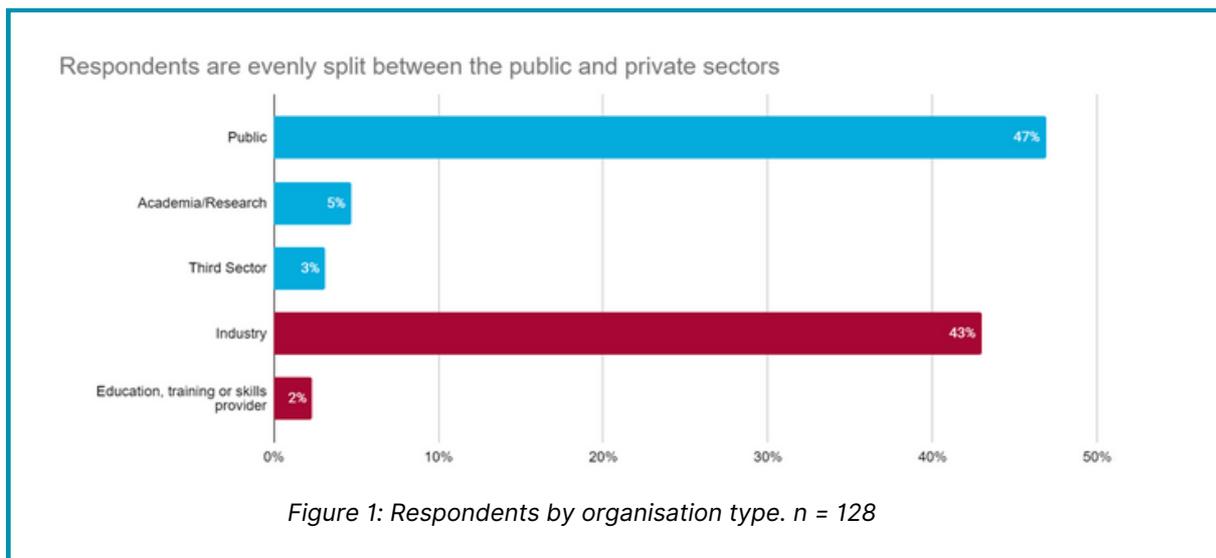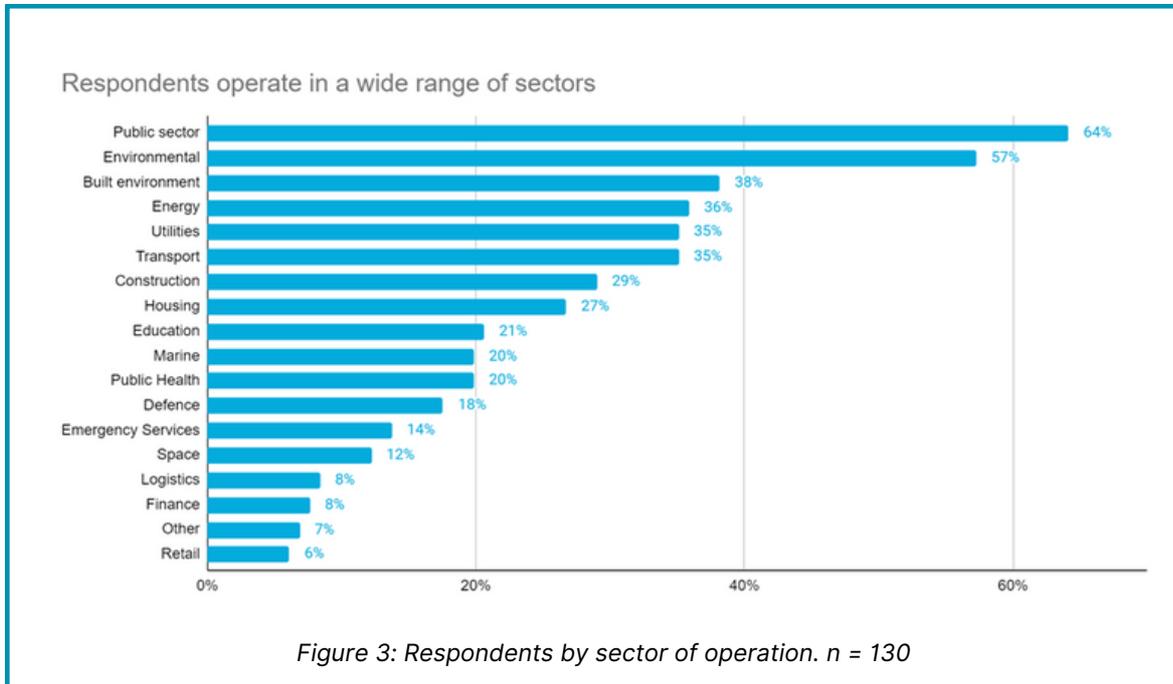
Organisation Size

The majority (64%) of respondents represented large organisations with over 250 employees. 64% of respondents are from large organisations, 24% from medium, and 12% from small organisations.

Figure 2: Respondents by organisation size. n = 129

Sectors of Operation

Organisations operate across a wide range of sectors, from transport to space.

Respondents selected an average of 4.5 sectors, with 31% of respondents selecting only 1 sector of operation, and one respondent selecting 17 sectors of operation. The most common areas of operation are the public sector (64%) and the environmental sector (57%).

Figure 3: Respondents by sector of operation. n = 130

Geographical distribution

Approximately half of organisations operate across a wide geographical area, with 49% of respondents having multiple geographic areas of operation.

Over a third of respondents said their organisation operated across the entirety of the United Kingdom (38%), England (36%), Scotland (17%), Northern Ireland (15%), and Wales (11%). For organisations with a base in England, over a quarter (26%) have operations in London.

Figure 4: Respondents by geographical distribution. n = 128
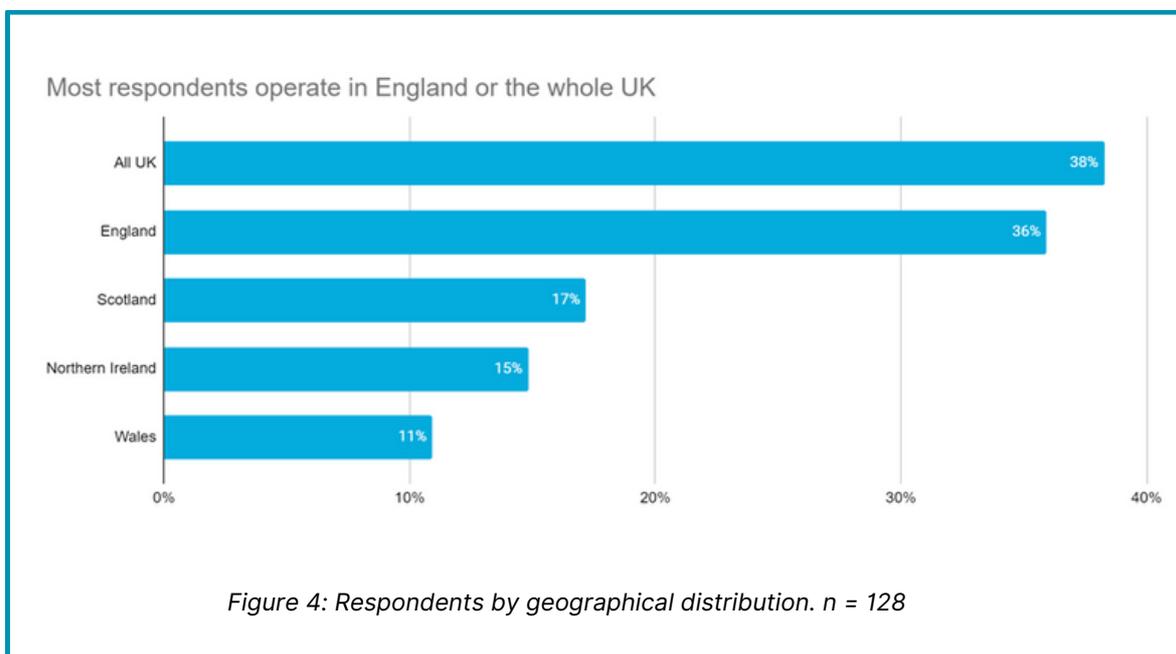
Use of geospatial technology

The majority (82%) of respondents are long-term users of geospatial technology, having used it for ten years or more. Just 3% of respondents described their organisation as a recent start-up.

Figure 5: Respondents by how long they have used geospatial technology for. n = 130
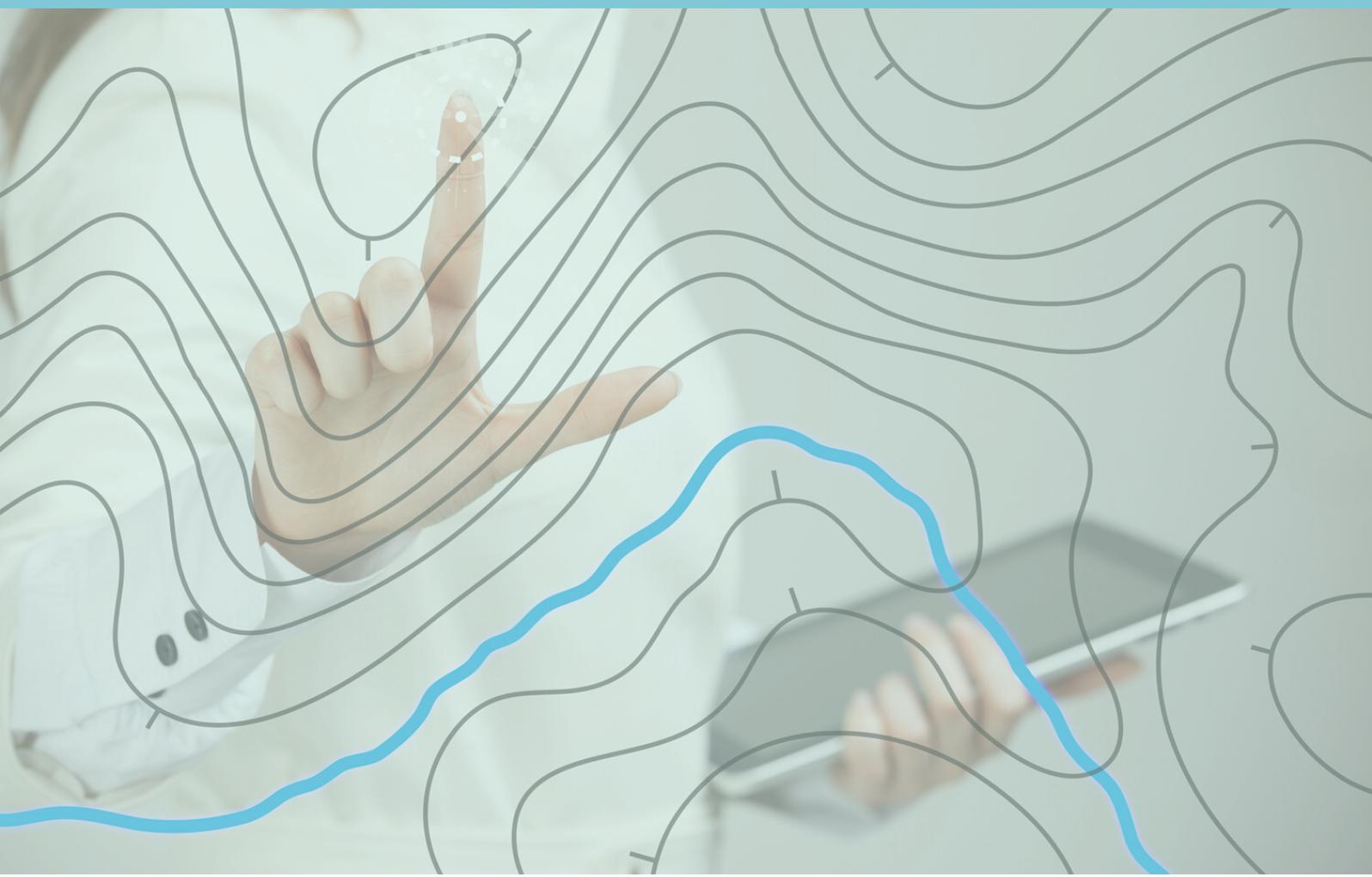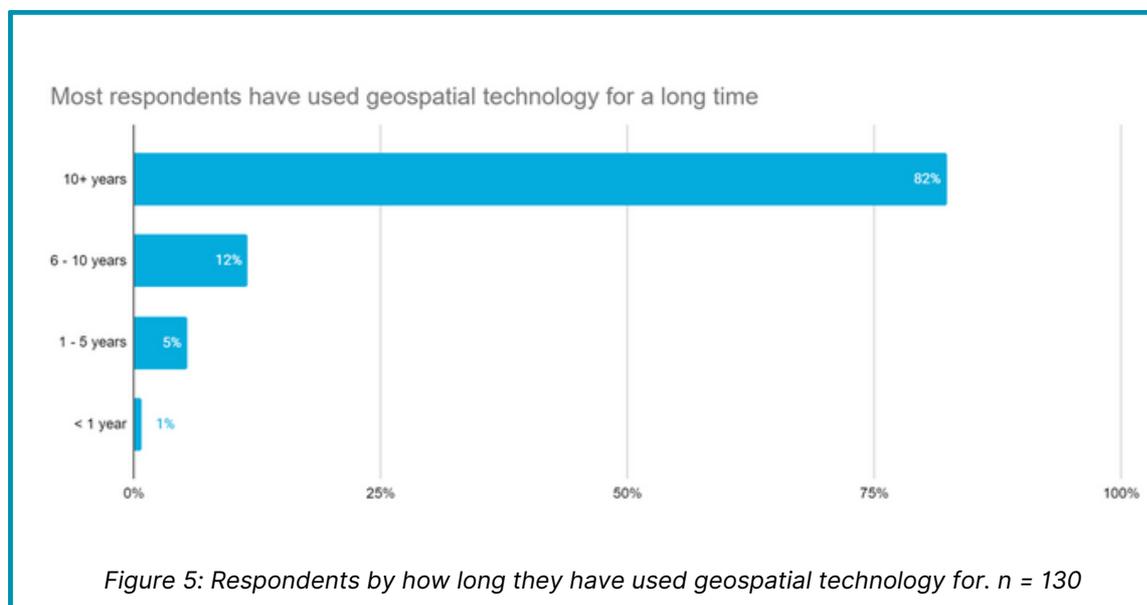
Findings

Recruitment

### Most organisations have recruited recently

The majority (79%) of organisations have recruited for a role requiring geospatial skills in the last 6 months, with the private sector recruiting more recently than the public sector. This suggests a healthy growth rate and good opportunities within the sector.

However, the survey was specifically targeted at those with recent experiences of recruitment, so this may be an overrepresentation compared to the wider sector.

Figure 6: Respondents by when they last recruited. n = 128
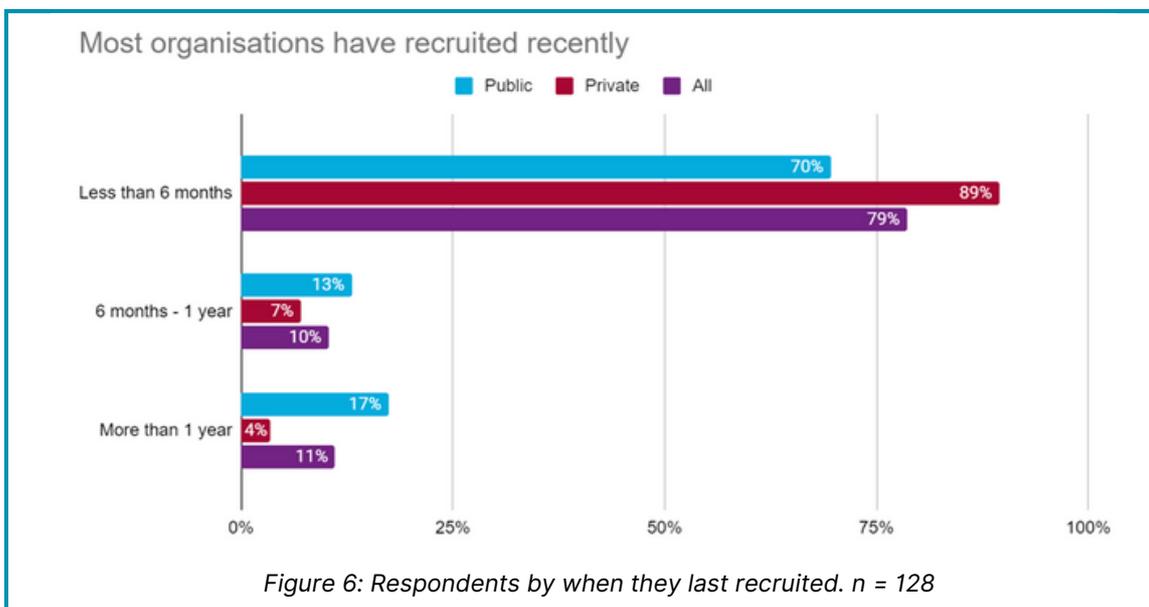
Respondents are evenly split between recruiting for new roles (52%) and backfilling existing ones (48%). The private sector tends to be recruiting for new roles (60% private vs 46% public), suggesting a faster rate of growth, whilst public sector organisations are looking to fill existing roles (54% public vs 40% private).

Figure 6: Respondents by whether the role was existing or newly created. n = 129
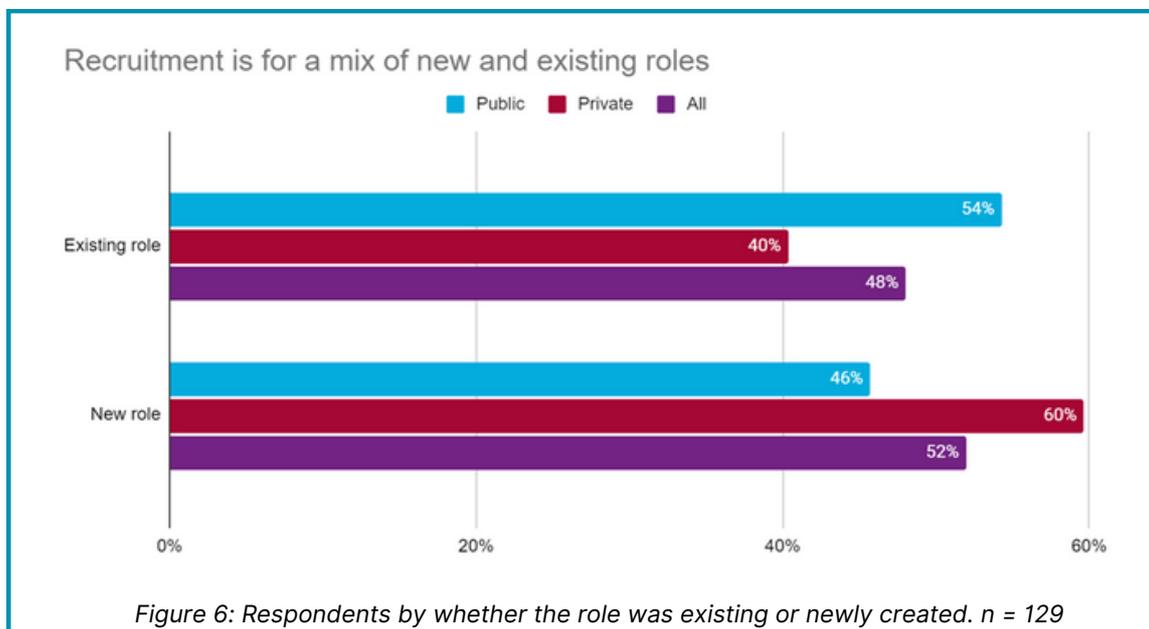
Organisations are recruiting as the demand for geospatial skills increases

Two thirds of organisations (63%) are recruiting because they are experiencing higher demand for geospatial skills in their business. Other key themes for recruitment reasons include the need for skilled people to work on new projects or products, and the replacement of people who have left or retired from existing roles.

"Created new roles for more members of staff to accommodate growing demand for Geospatial skills in our business. This has included staff at all levels from senior to graduates."

Respondent from a large organisation in the private sector

"Role was created in response to increasing demand for geospatial service provision within the company and from clients. This was the second GIS consultant role that we have recruited for in a single year."

Respondent from a medium-sized organisation in the private sector

"The organisation recently moved to an Esri platform and needs more specialist skills to support the users, system and other GIS colleagues"

Respondent from a large organisation in the public sector

Figure 7: Respondents by the reason the role was created. n = 65
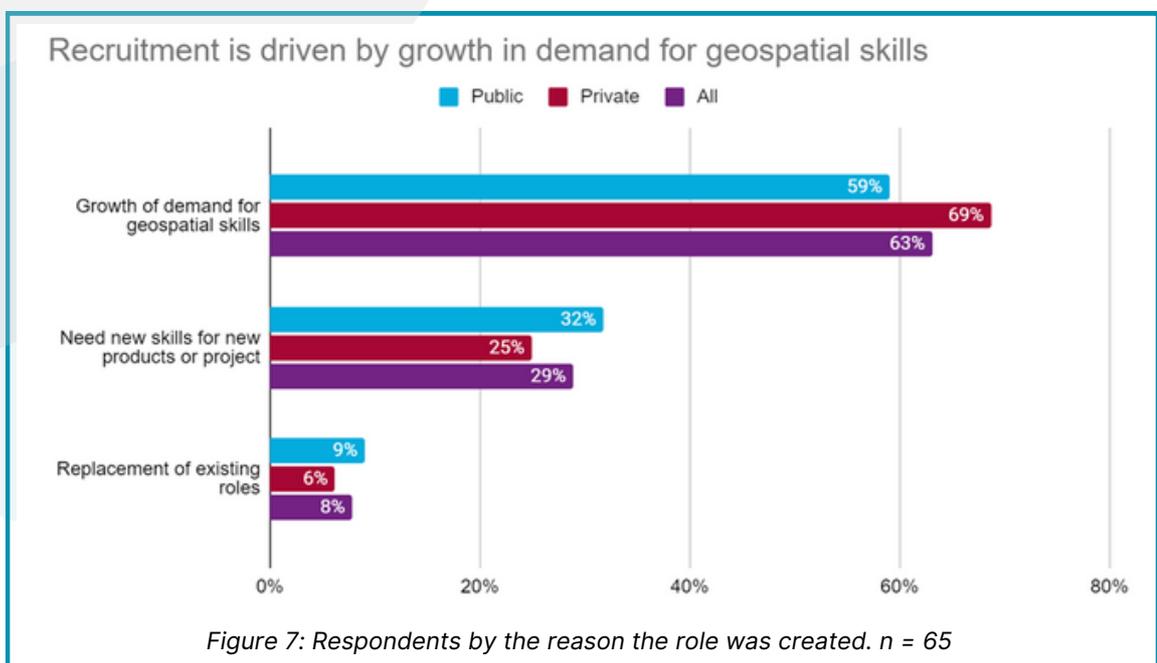
Analysts are in demand

The most common job titles for recently recruited roles included 'analyst' (26%) and 'consultant' (18%). Few respondents (5%) mentioned apprenticeships or graduate roles, however the range of roles identified was very varied.

*"Growing our geospatial capability with a new focus on apprentice positions"*
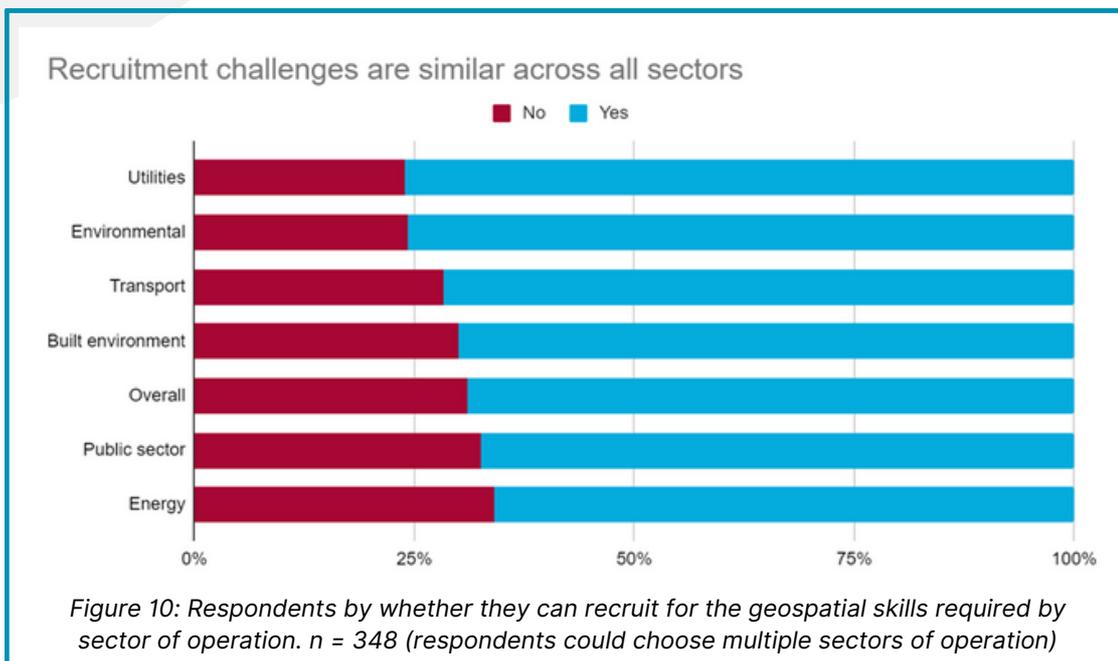Respondent from a large organisation in the private sector

Figure 8: Word cloud of the roles created. n = 65

Most organisations are able to recruit and feel positive about the future

While the majority (69%) of organisations responded that they are able to recruit the geospatial skills they require, the private sector finds it slightly easier to recruit than public sector organisations (74% vs 66%) to recruit.

Figure 9: Respondents by whether they can recruit for the geospatial skills required. n = 129
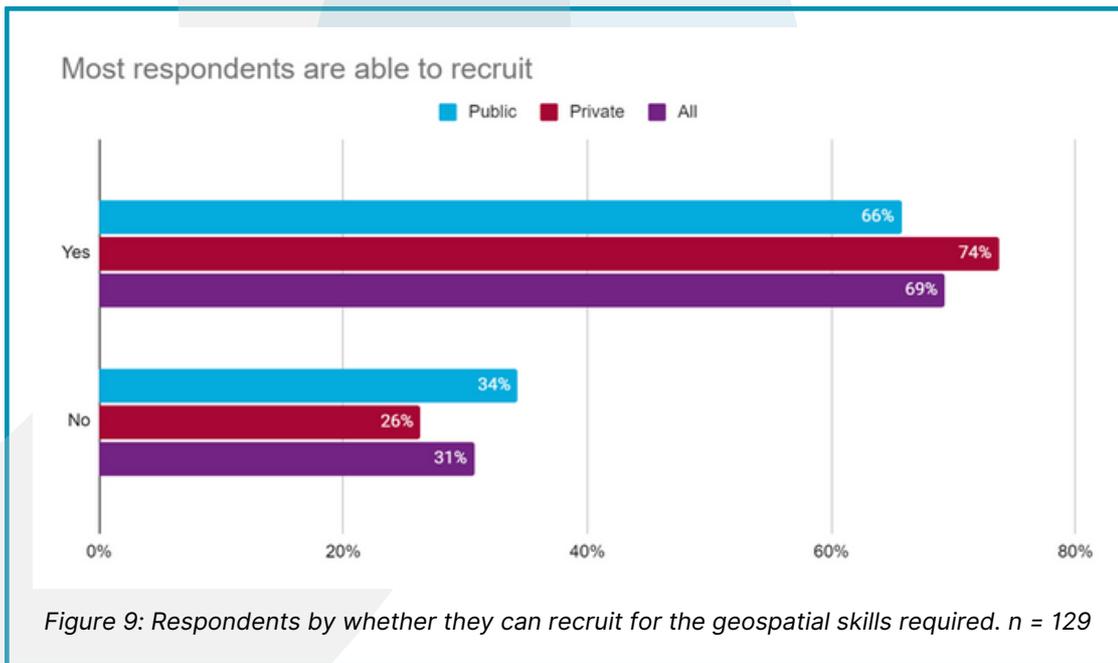
Organisations working in utilities, environment, transport, and built environment appear to be finding it easier to recruit than the average. Only sectors of operation with a large enough sample size (of over a third respondents) were included.

Figure 10: Respondents by whether they can recruit for the geospatial skills required by sector of operation. n = 348 (respondents could choose multiple sectors of operation)

Most organisations (77%) expect to be able to recruit in the future. Of the 23% who felt that they would not be successful, 34% cited pay as a limiting factor, 17% identified a skills gap and 10% felt that geospatial technologies were not valued enough in their workplace.

> *"The organisation doesn't really understand what it needs from a geospatial point of view. We are ~5 years behind the private sector and academia and the gap is increasing as we fail to keep pace with new developments."*
> Respondent from a large organisation in the public sector

> *"Geospatial field not recognised as it should in local authorities"*
> Respondent from a large organisation in the public sector

Figure 11: Respondents by whether they expect to be able to recruit in the future. n = 127
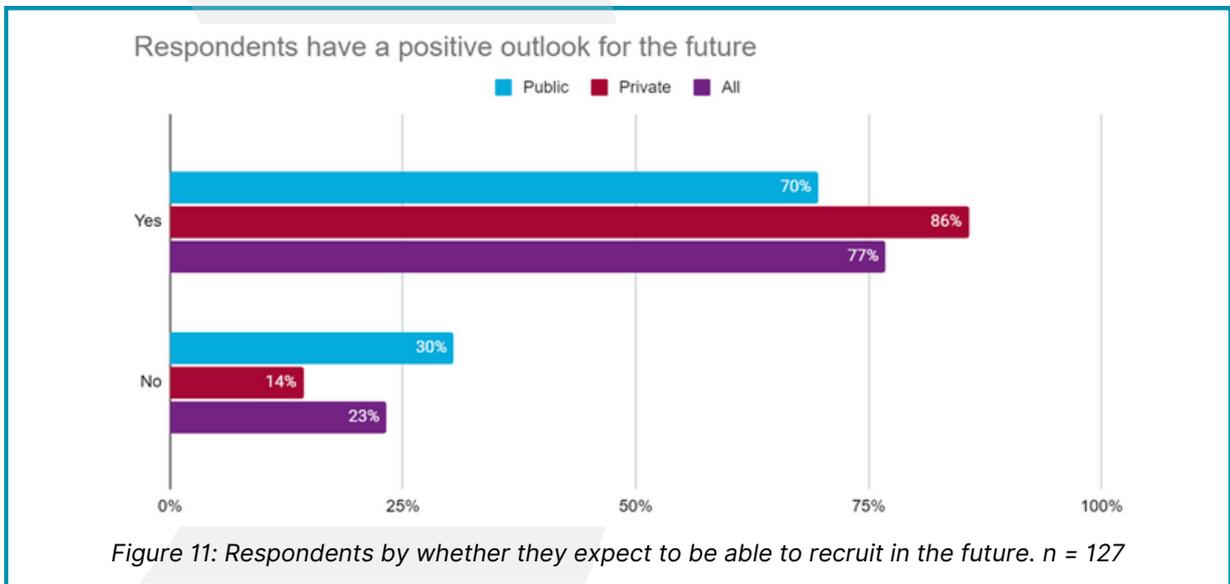
On a positive note, organisations expect recruitment to get easier. The private sector currently finds it easy to recruit (74%) and they are also more confident they will be able to recruit in the future (86%). While the public sector finds it a little less easy to recruit (66%), they are also confident that they can recruit in the future (70%).

Organisations working in utilities, environment, transport, energy, and built environment appear to be more positive about their future recruitment than the average. Only sectors of operation with a large enough sample size were included. Only sectors of operation with a large enough sample size (of over a third respondents) were included.

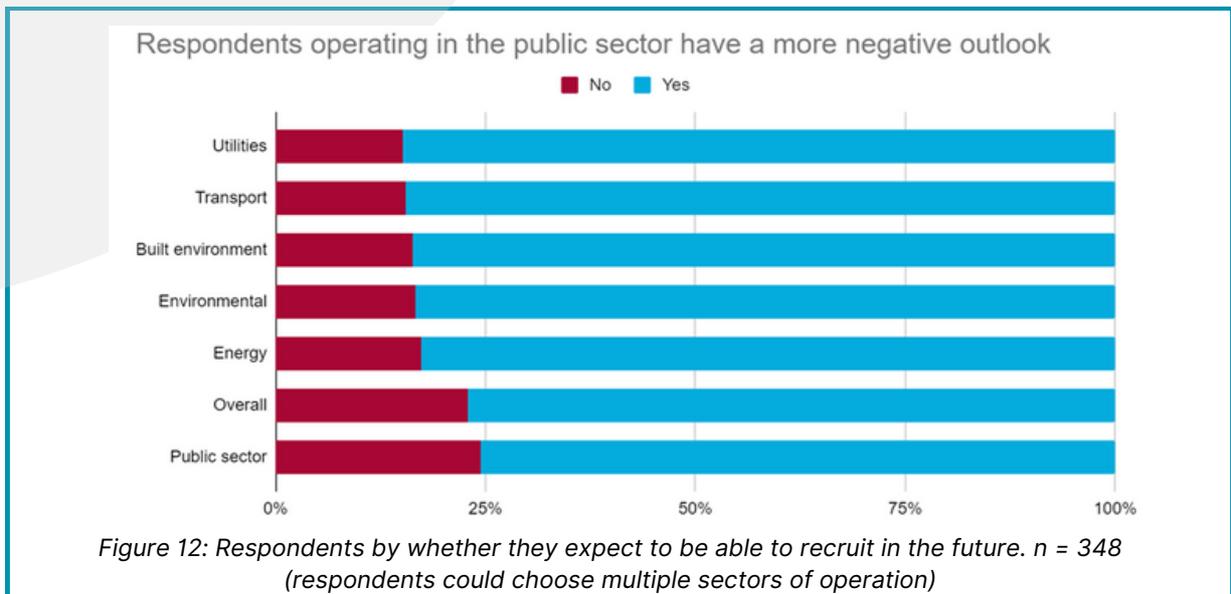Figure 12: Respondents by whether they expect to be able to recruit in the future. n = 348
(respondents could choose multiple sectors of operation)

Recruitment challenges are complex

Recruitment challenges are complex and varied across each organisation, but free-text responses identified four key reasons: salary, organisational culture, lack of progression opportunities, and lack of skilled people applying for the roles. Of organisations who are recruiting, 46% say that pay is a barrier to recruitment.

"We can't compete with salaries of the private sector. Also we can't offer exclusively work from home options at the moment. We have lost candidates because of these factors."
Respondent from a large organisation in the public sector

Figure 13: Respondents by recruitment challenges. n = 26
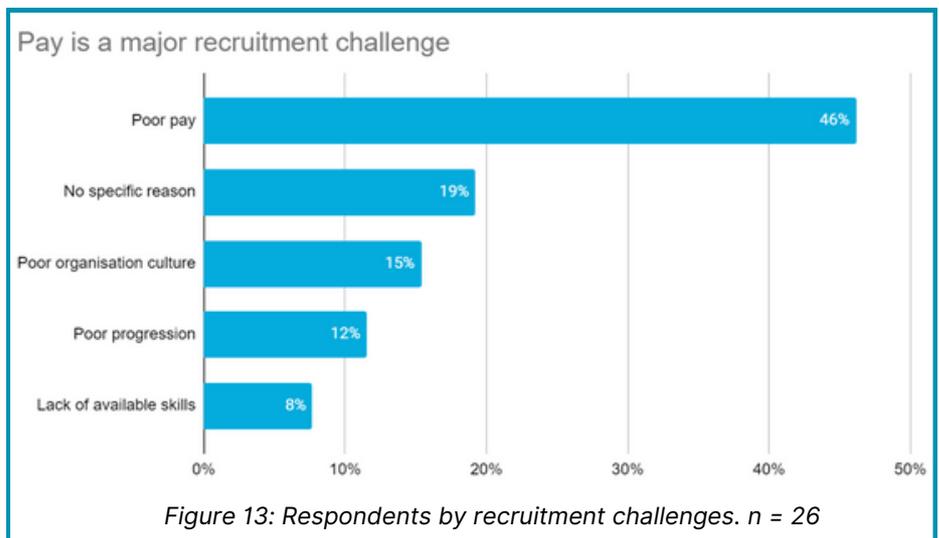
Skills

A range of skills are in demand

Respondents to the survey were asked which skills they can successfully recruit for, and which skills they are unsuccessful at recruiting for. From this, it is also possible to identify the skills in highest demand.

The skills in the highest demand are the core data-related skills that most working in geospatial technology require: data analysis, processing, visualisation, manipulation. The demand for people with skills in data analysis in particular was highlighted by 72% of respondents.

There is lower demand for less data-related skills like ethics, people management, and business analysis.

Skill	% of all respondents	% of those recruiting who are successful	% of those recruiting who are unsuccessful
Data analysis	72%	84%	16%
Data processing	63%	86%	14%
Data visualisation	50%	92%	8%
Advanced data manipulation	44%	68%	32%
Soft skills	41%	87%	13%
Data capture	40%	80%	20%
Data management specialist	39%	84%	16%
Data cleansing	38%	94%	6%
Data presentation	32%	95%	5%
Database/other server-level administration	32%	68%	32%
Project management	29%	89%	11%
AI/machine learning data modelling	25%	63%	38%
Software engineer	20%	56%	44%
Business analysis	18%	87%	13%
People management	16%	90%	10%
Awareness of location data ethics	16%	80%	20%

Table 1: Demand for skills split by all respondents, those able to recruit, and those unable to recruit. n = 127

Hardest skills to recruit for

We can identify which skills are the hardest to recruit for by identifying where there are areas of high demand and high shortages.

The hardest skill to recruit for is advanced data manipulation where both demand and shortages are high. This is unsurprising given these are 'advanced' skills. This suggests that there is value in providing more training on advanced data manipulation to upskill the current workforce.

"Strong developers with strong GIS skills seem to be rare or gainfully employed and not looking to move. By strong developers, I mean people who can build apps with javascript, c# and similar languages, not just python and arcade scripting."
Respondent from a medium-sized organisation in the private sector

Organisations are also struggling to recruit for database administration skills, AI/machine learning, data modelling, and software engineering, but overall demand in these areas is relatively low. Struggles in these areas are not surprising as these skills overlap significantly with competitive sectors like tech and finance. Some write-in answers also highlighted their concern about the next challenge: recruiting for AI/machine learning skills as these technologies become more embedded in the sector.

However, the biggest concern amongst those who provided write-in answers focused on the struggle to find people with the right combination of skills.

"Geospatial skills are becoming increasingly democratised - many disciplines now require geospatial skills and the role of the geospatial "specialist" is changing or diminishing. The need for more self-serve approaches to geospatial output means the role of a geospatial professional is more akin to a developer or product specialist than a traditional "GIS analyst" etc. This means it's increasingly more challenging for organisations to understand the level of geospatial skill in an organisation as the skills are recruited via other parts of a business. The profession needs to pivot towards acceptance that our role will be to ensure others "do geospatial" well, rather than own the discipline."
Respondent from a large organisation in the private sector

Easiest skills to recruit for

We can identify which skills are the easiest to recruit for by identifying where there are areas of low demand and low shortages. For example, people management has a low demand (16%) and low shortage (10%).
This is not to say that these skills are unimportant, but that they are not skills that the sector is struggling to recruit for, and less likely to require new training and other interventions.

"Geospatial Analyst positions will be fine. However, specialist developer or technical manager posts are difficult to fill"
Respondent from a large organisation in the public sector

Retention

Most organisations are able to retain staff

Two thirds (63%) of respondents said they are able to retain staff in geospatial roles for more than two years. A further third of respondents (33%) said they are partially able to retain staff, and very few (5%) said they are unable to retain staff.

This is one area where the public and private sectors have very similar responses. Only 2% of private and 7% of public said they struggle with retention. Similarly, there is no meaningful difference in retention between the different sectors of operation.

Figure 14: Respondents by ability to retain staff for more than two years. n = 128
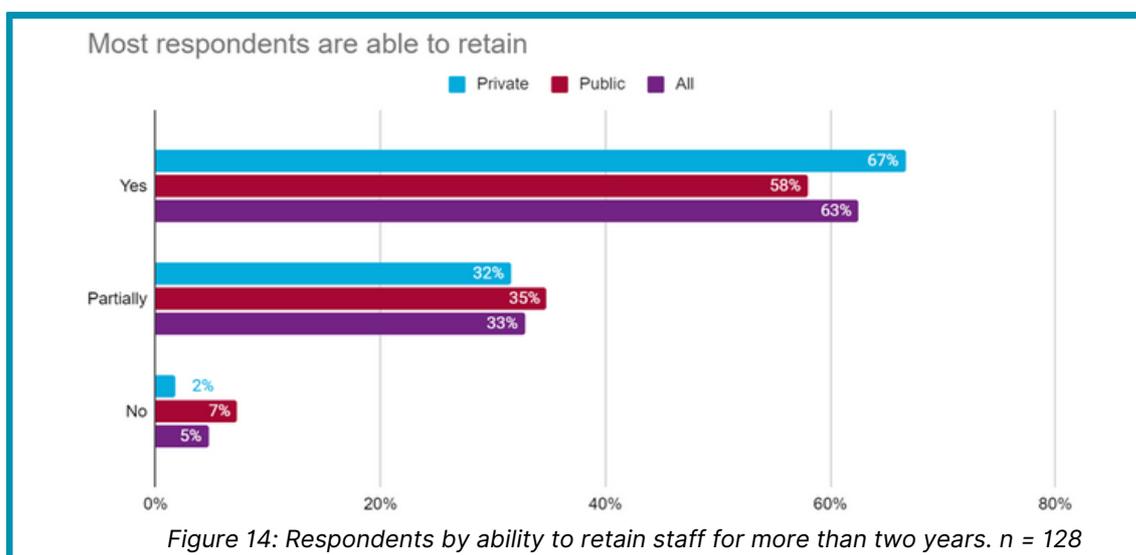
Of the 95% of respondents who said they are able to fully or partially retain, 39% said that good company culture is the leading reason for strong retention.

"I believe staff retention is in large part about giving people the opportunities to develop; a careful eye on work/life balance; and management that protects staff and allows them to get on with their day job, rather than placing demands and increasing pressure. Salary is also a factor, but I don't believe it is the driving factor. Staff welfare is far more significant."
Respondent from a medium-sized organisation in the private sector

"Friendly team with more of a family feeling than a work environment. Room for growth and development and lots of opportunity for diverse development and varied work."
Respondent from a large organisation in the public sector

Other reasons for strong retention include good career progression which was cited by the private sector (34%), but not by the public sector (7%). The public sector does however offer stability, with 27% citing this as a reason for retention compared to zero in the private sector.

"Civil service posts give job stability, and high training support, and hopefully high job satisfaction."
Respondent from a large organisation in the public sector

Figure 15: Respondents by reasons for good retention. n = 66
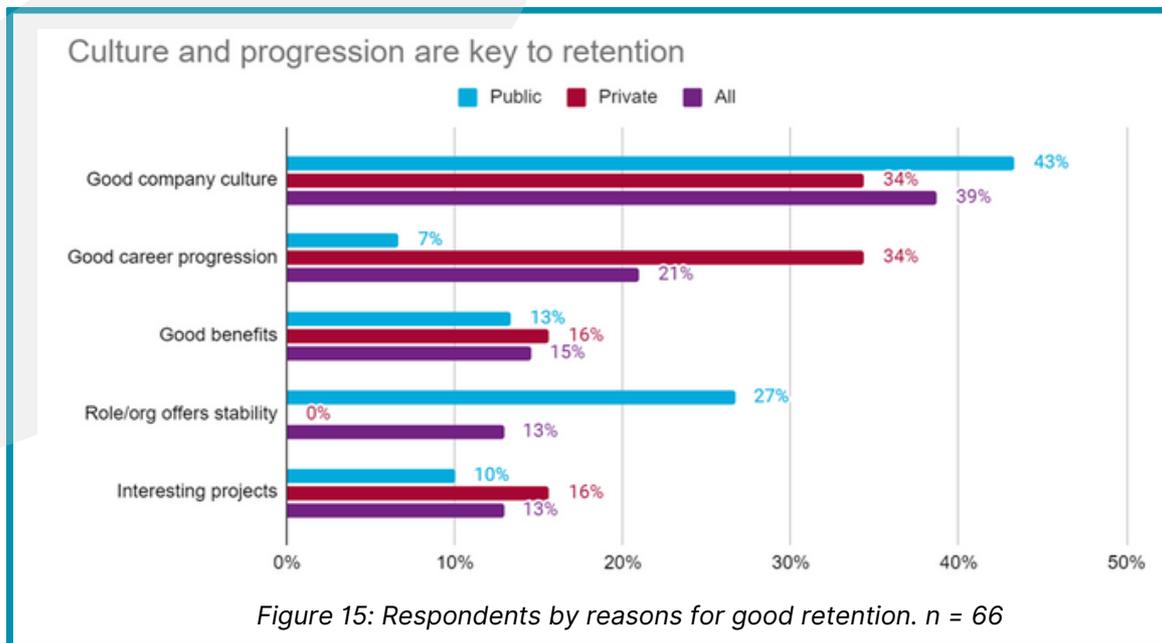
Pay is a key barrier to retention

Just over a third (37%) of organisations reported struggling with retention to some degree. Respondents identified 4 key themes: pay, lack of progression opportunities, restrictions faced by fixed term contracts, and, for some in the public sector, government restrictions.

"We are currently only able to offer fixed term appointments so have a high turnover of staff"
Respondent from a large organisation in the public sector

However, the biggest single reason for both the public and private sector for not being able to retain is pay (65%). This mirrors the results on recruitment difficulties, where pay was cited by 46% of respondents struggling to recruit.

"Difficulty retaining staff with good range of skills to meet all customer requirements. Better skilled staff being poached by private sector. Staff frustrated by public sector pay compared to terms and conditions in private sector."
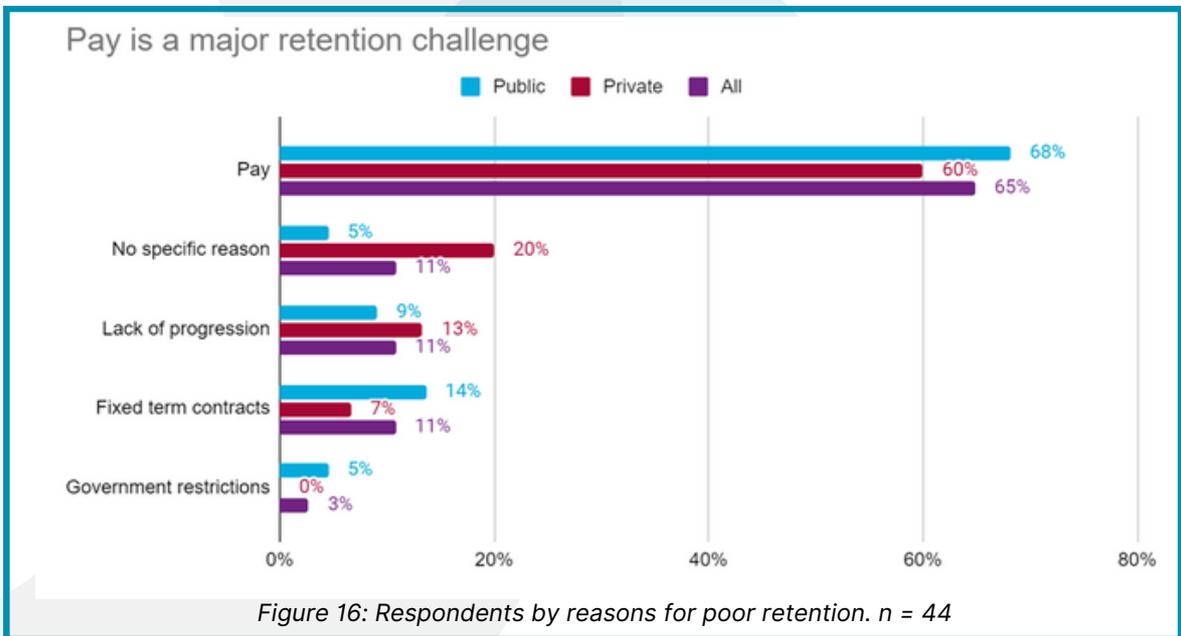Respondent from a medium-sized organisation in the public sector

"Better offers elsewhere in terms of pay and work life balance."
- Respondent from a large organisation in the private sector

"Market salaries for experienced staff are very high, competition is strong and it's essentially a candidates market right now. Even for less experienced/junior staff, salary expectations are considerably higher than they were 12-18 months ago. Affordability is a key challenge coupled with the scarcity in supply of proven, experienced geospatial software developers."
- Respondent from a large organisation in the private sector

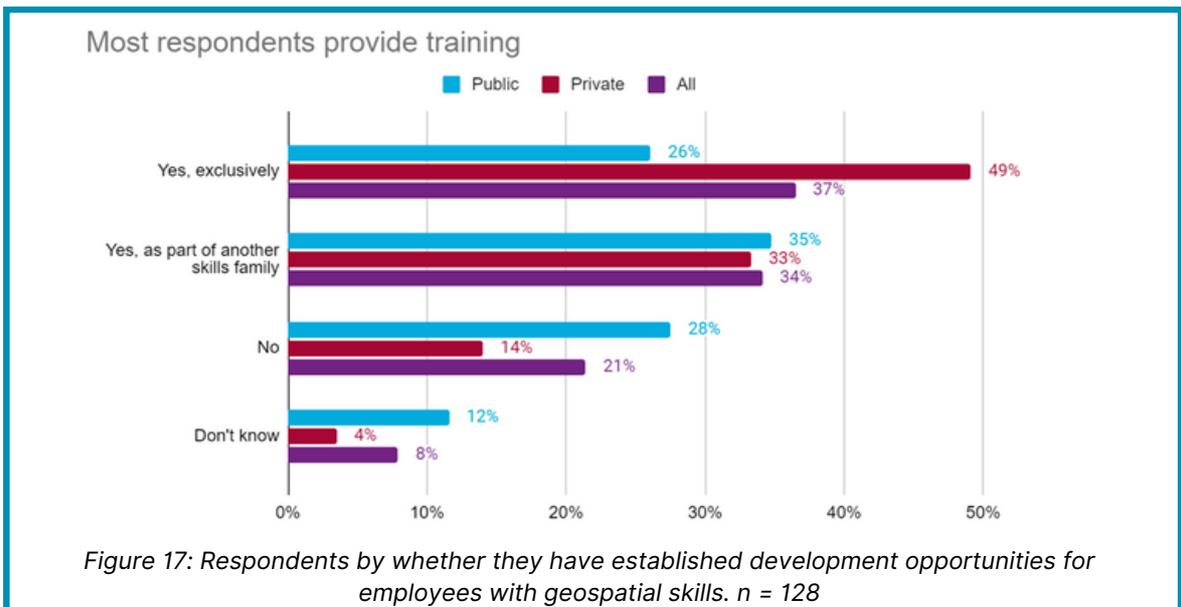Figure 16: Respondents by reasons for poor retention. n = 44

Retention challenges and development opportunities also appear to be closely linked. Of those organisations with established professional development opportunities, only 2% struggle to retain, whereas of those without opportunities, 15% struggle to retain.

"Difficult to ensure we offer pathways of progression"
Respondent from a medium-sized organisation in the private sector

The majority (71%) of organisations have established development opportunities for employees with geospatial skills, either exclusively or as part of another skills family. The private sector has significantly more development opportunities (82%) than the public sector (61%), which may also contribute to retention successes. However, providing training does not come without the risk of another organisation poaching the newly trained staff.

"Staff with skills in emerging technologies, including AI/ML and EO, are difficult to come by, so we train new candidates in-house over the course of a few years to gain some of those skills (or at least a better understanding of it). However, once staff acquire them, those same skills are then parlayed into better paying jobs/roles elsewhere."
Respondent from a medium-sized organisation in the public sector

Figure 17: Respondents by whether they have established development opportunities for employees with geospatial skills. n = 128

Conclusion

The results of the AGI skills survey provide a mostly positive view of the sector. Most organisations say that they are able to recruit, able to retain, and see skills gaps in a few key areas. Organisations are positive about the future and say that they will be able to recruit for the geospatial skills they require.

While respondents highlighted skills shortages in free-text answers, the skills shortages do not seem to be an insurmountable challenge to the sector. The skills challenge is not just a lack of people with a specific skill, but instead a lack of people with the right combination of skills. These are skills that are gained with experience, rather than through qualifications alone, and may require the sector to be open to providing more on-the-job training than previously.

Where there are shortages of specific skills, for example in advanced data skills, there is the opportunity to address this with training. It may however be harder to address shortages in software engineering and AI/ML as these are areas where the geospatial sector is in fierce competition with tech and other similar sectors.

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"Mainstreaming geospatial within an existing software product business presents its own challenges, but capacity building and experience with geospatial are key and getting the blend of "mainstream" skills and practices along with geospatial domain knowledge is crucial.

Experience is also important presenting a fine balance between immediate project and product commitments and the overhead of training, mentoring and supporting."

Alan Moore, Head of Geospatial Services, Idox Software

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However, the biggest challenge to both retention and recruitment is pay. The public sector struggles with this the most, experiencing higher turnover of staff and lower pay. Many respondents highlighted that their staff appear to be leaving the public sector for the private sector due to low salaries and the lack of progression opportunities.

This could be a short-term symptom of the current cost of living crisis, but is more likely to be a systemic problem driven by high-demand for data-related skills in other sectors.

Future Activities
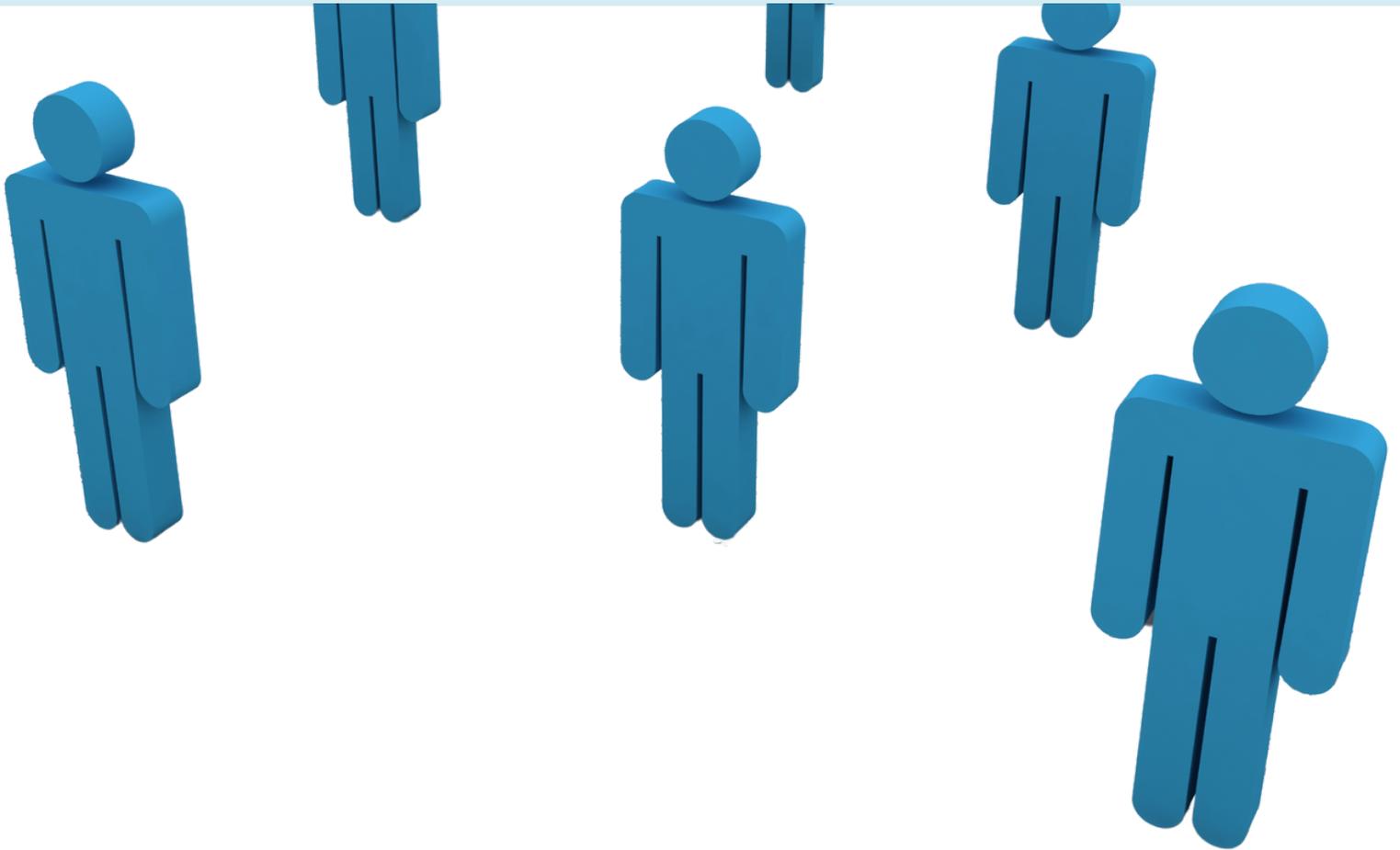
This report identified skills recruitment issues at the end of 2022, on the cusp of the explosion of generative AI. Goldman Sachs forecasts that generative AI will impact 300 million jobs globally(1) , particularly the kind of computer-based and data-related work that is fundamental to the GI sector.

These results will be used to inform action taken by AGI, government, and other stakeholders to address skill shortages and promote the growth of the geospatial industry.

Moreover, the AGI will take the findings of this inaugural skills report to make connections to pathways at all stages of the Geospatial sector value chain. Upstream this requires the AGI to look at education and skills provision – both current and future providers, for example university course offerings, apprenticeships and wider providers.

From this report the AGI will also aim to look at GI and EO career pathways within its future programmes of work, enabling an assessment of the skills and capabilities required for different pathways against the findings of the skills report and identifying gaps and opportunities.

This skills report and subsequent AGI activities will link to programmes aiming to professionalise the Geospatial sector, through routes such as skills and competency frameworks. The use of competency frameworks will enable both employers and staff to identify existing skills sets and capabilities, and also for organisations to put in place the longer-term development programmes that have been identified as required from the skills report, to address the difficulties in recruiting to positions such as the advanced data analysis, machine learning / AI and geospatial developers.

Lastly, the AGI will look to ensure that the skills survey is implemented with a regular frequency for future years, keeping the core questions for continuity but expanding the scope as necessary to enable future trends and new skills / areas in the future.

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(1) https://www.cnbc.com/2023/03/28/ai-automation-could-impact-300-million-jobs-heres-which-ones.html

Membership of the AGI

Established in 1989, members of the AGI enjoy unrivalled networking opportunities, a framework to learn new skills and the support to progress professional development and there are many ways to get involved and different levels of engagement;

- **Individual Network Member**; free membership for anyone

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About the Education & Skills Working Group

The AGI's Education and Skills Working Group contributes to ensuring the relevant skills exist in the UK workforce to underpin a thriving GI sector.

With representation from AGI Wales, AGI Northern Ireland, AGI Scotland and the AGI Early Careers Network and support from the Geospatial Commission, the Royal Geographical Society and the recruitment sector, the Group was established in 2020.

Working to a Terms of Reference, the Group describes its focus as carrying out an annual skills survey of AGI members to identify issues and trends in recruiting, retaining and developing talent and the creation of a catalogue of geospatial skills providers in the UK.

Leading the Action Working Group are Council members Ian Maxfield and Anne Robertson. Associate Director of Geospatial Services within the NHS, Ian has in a previous career been a secondary school Geography teacher as well as undertaking university lecturing in GIS.

Anne, as Head of Services for EDINA, has responsibility for delivering geospatial consultancy and data services to the higher and further education sectors via EDINA's Digimap service and to over 4,000 primary and secondary schools across GB via EDINA's Digimap for Schools service.

Ian and Anne are joined by:

Charlton Bland, Geospatial Capabilities and Skills Lead, Ordnance Survey
Darren Bailey, Education Manager, Ordnance Survey
David Roberts, Head of Geography for the Welsh Government
Heidi Thiemann, Director, Space Skills Alliance
Joseph Dudley, Director, Space Skills Alliance
Laurence Donaghy, Asset Data and Systems Analyst, Translink, Northern Ireland
Liz Fox-Tucker, Professional and Policy Manager, Royal Geographical Society
Matthew Webster, GIS Analyst, Jacobs & AGI Early Careers Network
Patrick Rickles, North Sea Transition Authority
Rebecca Reid, Skills, Capabilities and Innovation Lead, Geospatial Commission
Tom Perks, GIS Officer, Greater London Authority & AGI Early Careers Network

Appendix 1: Survey Methodology

Methodology
The survey was conducted via an online form open for 12 weeks from 19th October 2022 to 12th January 2023. It consisted of 20 questions aimed at understanding the current and future skills and recruitment challenges of members of the AGI and wider geospatial community.

The questions were designed by the AGI Education & Skills Working Group.

Audience
The survey was sent to all members of AGI, targeted at those with recent experience of recruitment, and members with particular job titles including Manager, Director, and Head. This means that companies who responded are more likely to have been hiring recently.

It was also shared on social media and the AGI website.

The survey received 131 responses from members of AGI and the wider geospatial community, approximately 12% of AGI members.

Non response rate
The non-response rate was very low, averaging 2% across the entire survey, with no questions having more than a 3% non-response rate.

Processing and analysis
Some light processing was done to the responses to make them easy to analyse.

This included reclassifying those who provided an organisation type as "other" as one of the existing categories based on their free text comments.

Organisation types were also reclassified into "public" and "private" in order to create larger sample sizes. Those who provided an organisation type of "academia", "third sector", and "public sector" were grouped into "public", and "industry" and "training provider" into "private".

Locations within England provided by respondents were grouped to identify the number of organisations with operations in England as a whole.

Where suitable, results were normalised to 100% to exclude non-responses and make the data easier to understand. Where respondents could provide free text answers, these were bucketed in order to get numerical data as well as quotes.

Caveats
The majority of respondents are from large and medium-sized organisations. The results therefore may not fully represent the experiences of small companies or start-ups.

The survey was targeted at organisations with recent experience of hiring. The results therefore may overrepresent the number of organisations who have recruited recently.

Appendix 2: Survey Questions

1. How would you describe your organisation?

Academia & Research / Education, training or skills provider / Industry / Public / Third Sector

2. How big is your organisation?

Large (250+ employees) / Medium (50-249 employees) / Small (0-49 employees)

3. Would you describe your organisation as a start up?

Yes / No / Blank

4. In which sector(s) do you operate?

Public sector / Environmental / Built environment / Energy / Transport / Utilities / Construction / Housing / Education / Public Health / Marine / Defence / Emergency Services / Space / Logistics / Finance / Retail / Other

5. Where in the UK do you operate?

All UK / England / Scotland / Northern Ireland / Wales

6. Do you currently use geospatial technology in your organisation?

Yes / No / Blank

7. How long has your organisation been using geospatial technology?

< 1 year / 1-5 years / 6-10 years / 10+ years

8. When was the last time your organisation recruited for a role requiring geospatial skills?

In the last 6 months / More than 6 months ago / A year ago / More than a year ago

9. Was this role, or were these roles, newly created?

Yes / No

10. Please describe the role (or roles) and why they were created

Free text answer

11. Are you able to recruit the geospatial skills you require?

Yes / No / Blank

a. If no, or partially no, please identify from the list below the skills you are unable to recruit;

Advanced data manipulation / AI/machine learning data modelling / Awareness of location / Data ethics / Business analysis / Data analysis / Data capture / Data cleansing / Data management specialist / Data presentation / Data processing / Data visualisation / Database or other server-level administration / People management / Project management / Soft skills / Software engineer

b. If yes, please identify from the list below the skills you are able to recruit;

Advanced data manipulation / AI/machine learning data modelling / Awareness of location / Data ethics / Business analysis / Data analysis / Data capture / Data cleansing / Data management specialist / Data presentation / Data processing / Data visualisation / Database or other server-level administration / People management / Project management / Soft skills / Software engineer

12. Are you able to retain staff employed in geospatial roles for more than two years?

Yes / No / Partially

a. Please could you explain why not?

Free text answer

b. Please could you explain particular reasons for high staff retention?

Free text answer

13. Within your organisation, do you have established development opportunities for employees with geospatial skills?

Yes, exclusively / Yes, as part of another skills family / No / Don't know

14. Do you think your organisation will be able to successfully recruit in the future for geospatial roles?

Yes / No / Blank

15. What do you think is going wrong and why?

Free text answer

16. We are keen to understand skills-related issues your organisation may face, if you would like to share information that has not been addressed in your answers to our questions, please provide it in the text box

Free text answer

2023 Dates for your Diary

Here are just some of the events that the AGI and its membership will be organising and attending in 2023:

Esri UK Annual Conference
QEII Conference Centre, London
2024

AGI Geo Cymru Conference
Annual Conference 'Climate Change'
Glamorgan County Cricket Club at Sophia Gardens
10th October 2023

GEO Business
ExCel London
5 - 6th June 2024

Save The Date #GeoCom23
Tuesday 5th December 2023

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