State of the Sector Data Maturity

In the Nonprofit Sector

2023

DO DATAORCHARD

Written and researched by Sian Basker and Libby Harkins. July 2023

info@dataorchard.org.uk | www.dataorchard.org.uk

About Data Orchard

Data Orchard combines specialist skills in research, statistics, and data with a passion for making the world a better place socially, economically, and environmentally. Our mission is to enable every nonprofit organisation to use data effectively to achieve their goals.

Our services include research and analysis, data maturity assessment, data strategy, impact measurement, training, and capacity building. Since 2013, we've worked on hundreds of projects supporting organisations to get better with data. Our direct clients include charities, social enterprises, and public sector bodies in diverse fields such as health, housing, environment, arts, disability, government, and education. We reach thousands more through our learning events, training, tools, and resources.

In this report we share our unique insight into data maturity in the nonprofit sector based on three years of data from our Data Maturity Assessment tool.

Contents

Executive Summary

Data maturity is an organisation's journey towards improvement and increased capability in using data. Data Orchard created a framework model which describes data maturity on a five-stage journey. This progresses from 'Unaware' through to 'Mastering' across seven key themes: Uses, Data, Analysis, Leadership, Culture, Tools, and Skills.

In October 2019 we launched an online Data Maturity Assessment tool which enables organisations to measure where they are on the five-stage journey to data maturity. There is a free version for individual users, an organisation version for multiple users, and a cohort version for multiple organisations.
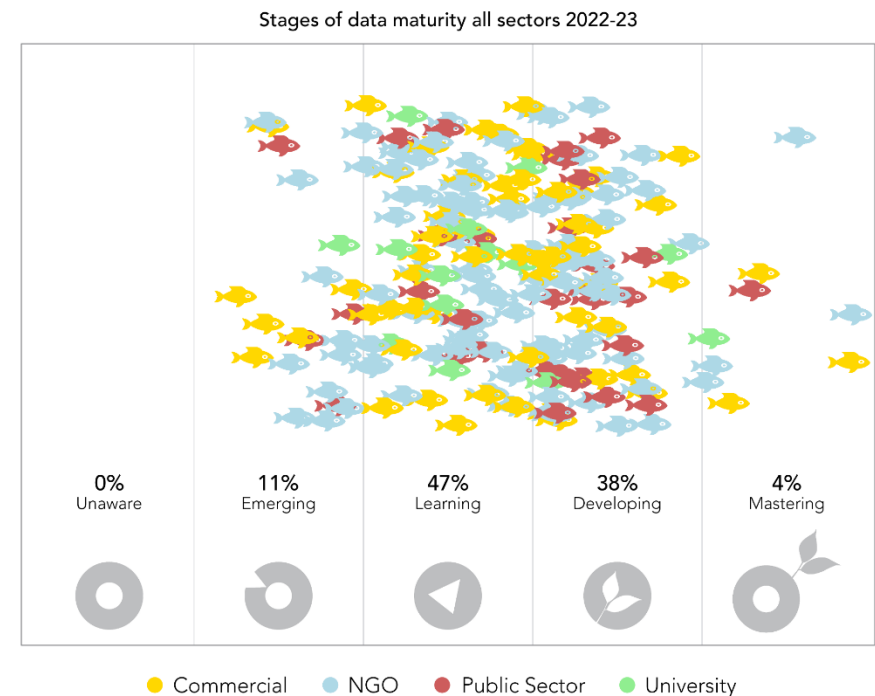
About the data

Data Orchard's Data Maturity Assessment tool has been used by thousands of people from all kinds of organisations and sectors, and from all over the world. This report focuses on those that have used the tool in the 2022-23 financial year and takes a longer-lens look using three years of user data between 2020 and 2023.

Whilst commercial organisations are included for sector comparisons, this report primarily presents findings on data from validated nonprofit (non-commercial) organisations. These include: non-governmental organisations (NGOs) like charities and social enterprises, public sector organisations, and universities.

Key insights

Profile of data maturity by sector and type of organisation

Perhaps surprisingly, we didn't find much difference in data maturity between sectors. Our research shows the public sector slightly ahead, followed by the commercial sector and then NGOs – but overall they are very similar. In every sector there are organisations at different stages with some leading the way and others lagging behind.

Stages of data maturity all sectors 2022-23

| 0%
Unaware | 11%
Emerging | 47%
Learning | 38%
Developing | 4%
Mastering |

● Commercial   ● NGO   ● Public Sector   ● University

Number of organisations = 206

The size of an organisation, by annual income or number of employees, doesn't have any effect on data maturity. However, it's possible the type of activity/subsector and the geographic location of an organisation may have an influence.

How things are changing
In the nonprofit sector there has been a shift over the last three years, with increasing numbers of organisations scoring in the 'Developing' and 'Mastering' stages. 44% were in these two higher stages in 2022-23 compared with 29% in 2020-21. The biggest advances have been in Culture, Tools and Uses. Average scores for Leadership, Skills and Analysis have barely changed, and scores for Data have become a little worse.

What's improving?
CULTURE: The sector is doing well in relation to openness. More than two-thirds of organisations share data externally with partners, networks and stakeholders. Half openly publish their own data and analysis and/or share data with their clients/service users. For 60%, policies and practices around security and protection are fairly strong. However, scores around 'self-questioning' and 'team approach' remain more mixed.

TOOLS: The tools theme has shifted from the 4th highest scoring theme amongst nonprofits to the 2nd highest in 3 years. This may be related to digital transformation/investment initiatives, much accelerated during and since the pandemic. There's more digital data (and less on paper) and more use of digital tools for collecting and storing data (including one in ten using mobile apps). Business intelligence/dashboards and data visualisation are on the increase and around 1 in 3 organisations use these moderately or extensively. 15% are making use of advanced analytics tools (e.g. coding, mapping). Around a quarter say they have good tools for joining and relating data from different sources.

USES: With more organisations in the advanced 'Developing' and 'Mastering' stages, rewards and benefits of data and analytics are being seen more widely. In relation to services, data is improving the ability of organisations to evidence impact and needs; target and communicate with clients; and design and deliver better services and products. Internally, organisations are benefitting from increased levels of knowledge and expertise; better strategic planning and decision making; and improved impact. Many are also seeing increased income and efficiency savings.

What's getting worse?
Exploring patterns over time suggest some measures of data maturity are getting worse.

- Fewer organisations say they have good quality data. 57% tended to disagree that their data is complete, accurate and kept up to date in 2022-23, compared with 44% in 2020-21.

- More organisations say their staff are not data literate. 58% tended to <u>disagree</u> that staff were data literate in 2022-23, compared with 47% in 2020-21.
- There's less confidence about data security. 51% tended to <u>agree</u> they were confident about the security of the data they held in 2022-23, compared with 61% in 2020-21.

It's possible these changes in scores relate to an increase in awareness about the importance of these issues in organisations.

What's happening in leadership?
Leaders are key to planning, decision-making and resourcing data maturity (and the second largest user group of our tool by role type). Overall scores for Leadership haven't shifted much in the last three years, though there are indications things are starting to change in some areas. More respondents say that their organisation has an overarching business plan with defined measurable goals; they have data and analytics expertise amongst their leadership; and leaders who are actively harnessing the value from their data. This research also shows data maturity is strongly related to leadership investment in people, skills, learning and tools.

Where are the greatest weaknesses?
Skills and Analysis are consistently the weakest of the seven key themes, with little change in the scores over the last three years.

- Fewer than one in five say they have appropriate numbers of staff managing and developing their data capabilities.
- Fewer than a quarter say they have the right skills and capabilities to maximise the use of their data.
- Fewer than half say they analyse data in useful and meaningful ways. Most are doing simple descriptive analysis of past data, rather than deeper exploratory, experimental, or predictive analysis.
- Much reporting and analysis at a strategic level is manually collated from multiple sources. Just over a third have semi-automated reporting and fewer than 4% fully automated.

The elephant in the room
Some aspects of data and data management have growing environmental, legal, and resource-waste implications, yet are often overlooked in data strategies. As volumes of digital data in 'cloud'-based systems continue to grow at high speed, the environmental impact of data centres cannot be ignored. Just 36% say their digital files and documents are well organised and managed. Although paper-based data collection (and storage) has rapidly reduced in the last three years, 31% say they still use paper questionnaires and forms moderately or extensively.

Only 40% say they delete data about identifiable individuals that is no longer necessary (despite this being one of the key

principles of the 2018 Data Protection Act). So it appears the tail-end of the data life cycle receives relatively little attention.

Salaries are usually among the highest areas of expenditure for nonprofits. Organisations in this research say more than half their staff's time is spent working with data. Only a quarter of organisations say data is easily available and accessible to staff when they need it. Whilst there is much to be gained from technical efficiencies like reproducible analytics pipelines and interactive dashboards, it seems there are also benefits to be had from good data management, governance, and housekeeping.

Reflections

Our research shows that the nonprofit sector is progressing in its data maturity. Those that are investing the extra effort and resources are reaping rich rewards for their organisations and those they serve.

Many still have a long way to travel on their data maturity journeys and there's a clear need for improved skills and support. This is especially so for leadership teams who are facing many new responsibilities that come alongside exciting opportunities.

We hope this research will stimulate policy makers and funders to channel resources into advancing data maturity. You can find out more about our data maturity assessments for organisations, cohorts, and partners here.

Introduction

Data Orchard has been researching data maturity since 2015. We define data maturity as an organisation's journey towards improvement and increased capability in using data. In October 2019 we launched an online Data Maturity Assessment tool, which is based on our data maturity framework and enables organisations to measure where they are on the five-stage journey to data maturity. The free individual-user version was followed in 2020 with an organisation version for multiple users, and a cohort version for multiple organisations.

This report presents the findings on data maturity for organisations that used the tool in 2022-23 and takes a longer-lens look using three years of user data between 2020 and 2023. We have a robust validation process to ensure our dataset only includes the results for organisations that legitimately exist.
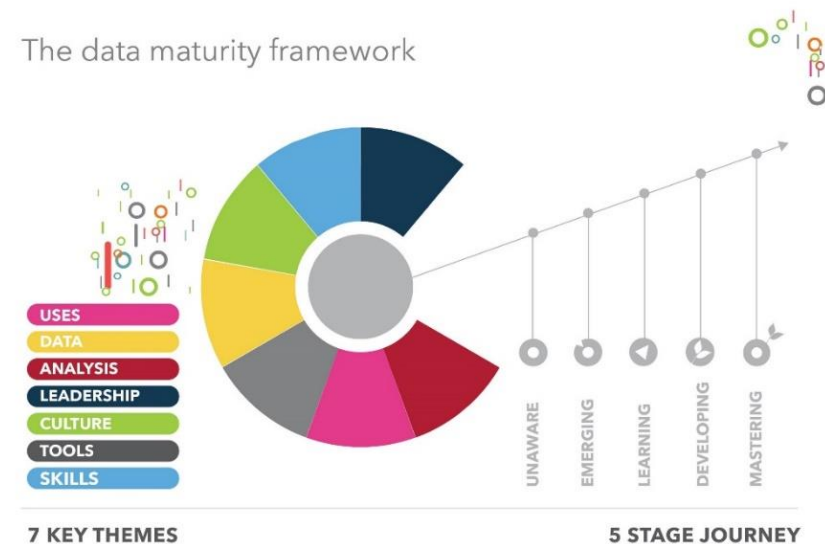
What do we mean by nonprofit sector?

Whilst commercial organisations are included for sector comparisons, this report primarily presents findings on data from validated nonprofit (non-commercial) organisations. These include non-governmental organisations (NGOs) like charities and social enterprises, public sector organisations, and universities. See Appendix 3 for details of how we categorise organisations.

What do we mean by data?

We have a holistic definition of data which encompasses all of the types of information an organisation collects, stores, analyses and uses. It's not just numbers – it includes written information, images, video, audio, and maps.

What is the data maturity framework?

We've created a framework model which describes data maturity on a five-stage journey towards improvement and increased capability. This progresses from 'Unaware' through to 'Mastering' across seven key themes: Uses, Data, Analysis, Leadership, Culture, Tools, and Skills. The data maturity framework is licenced under Creative Commons and available for non-commercial use.

The data maturity framework

USES
DATA
ANALYSIS
LEADERSHIP
CULTURE
TOOLS
SKILLS

UNAWARE · EMERGING · LEARNING · DEVELOPING · MASTERING

7 KEY THEMES   **5 STAGE JOURNEY**

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About the data maturity assessment

The online Data Maturity Assessment involves users answering a series of questions related to each of the seven themes.

The seven data maturity themes

USES
• Purposes for collecting and analysing
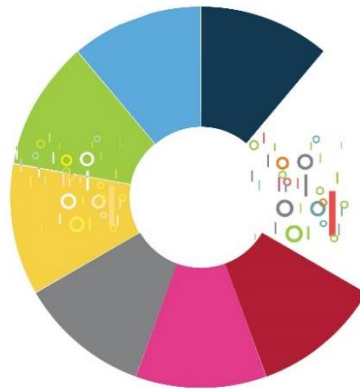• Benefits and rewards

DATA
• Collection
• Quality
• Sources
• Assets

ANALYSIS
• Type
• Technique
• Joining
• Presenting

LEADERSHIP
• Attitudes
• Plans
• Capability
• Investment

CULTURE
• Team approach
• Self-questioning
• Openness
• Protection

TOOLS
• Collection
• Storage
• Organising and managing
• Analysis and reporting
• Integration and architecture

SKILLS
• Capacity
• Skills
• Training
• Access to knowledge and expertise

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At the end of the assessment, users receive a report with their results. The report identifies:

- where their organisation is on the five-stage journey
- how they score in each of the seven themes
- where their strengths are
- priority areas to focus on
- how they compare to benchmarks
- what the current and next stages look like for each theme

See Appendix 1 or visit the following link for a sample organisation data maturity assessment report .

About the data in this report

It should be emphasised that Data Orchard's Data Maturity Assessment tool is a self-assessment tool. The results reflect what users say about data in their organisations. Users are self-selecting. Whilst we can make no claims about it being precisely representative of the sector, we do monitor the profile of users to see how representative they are. We know that our users:

- operate in a broad range of activity areas, with highest numbers in health, social services, education, and local government.

- primarily come from the UK (including representation from every UK nation and region), though there are also users from over 30 countries around the world.

- vary in size and turnover, with incomes ranging from more than £100M to less than £100k.

Dataset for 2022-23

For findings relating to 2022-23, the analysis is based on 2045 responses from 206 organisations across all sectors. Excluding the commercial sector, we use 1972 responses from 145 nonprofit organisations.
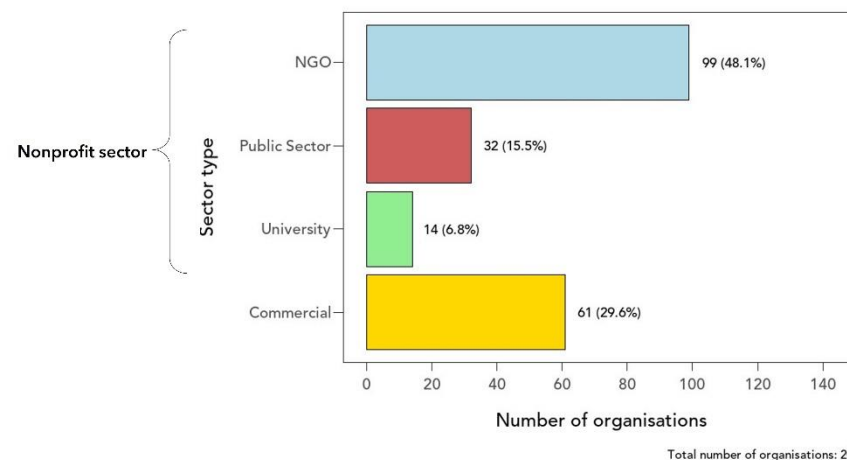
Total number of organisations: 206

Dataset for 2020-23

Since we launched the tool in 2019, we have collected responses from over 6000 users. From this, we have extracted a three-year dataset of user responses covering the financial years 2020-2023 (April 2020 to March 2023). For findings relating to 2020-23, the analysis is based on 4475 responses from 387 nonprofit organisation assessments.

More detail about the data in this report, cleaning and validation, and scoring and benchmarking can be found in Appendix 2.

Individual and multiple users

The Data Maturity Assessment was specifically designed to encourage and enable multiple people from the same organisation to take the assessment. This helps to develop shared learning and understanding, to create a common language, and to mobilise people into thinking collectively about planning and action towards future improvements. Critically, it's about recognising that data is used, understood, and applied in different ways by different people in different parts of an organisation. So, to shift the whole organisation forward it is sensible to involve all those people and perspectives in the assessment process.

Individual version

The individual version of the assessment is designed for one person to complete. This version is available for free. It is suitable for very small organisations. Sometimes the assessment is completed together by a group, sometimes several people take the individual assessment separately and discuss their individual results together.

One user takes an assessment, receives a self assessment report, and takes action

Organisational version

The whole organisation version of the assessment is designed for multiple users to complete. This version is customisable and available on a tiered pricing basis. Many of those using the organisational version invite large numbers of staff (sometimes all of them) to take part in the assessment.
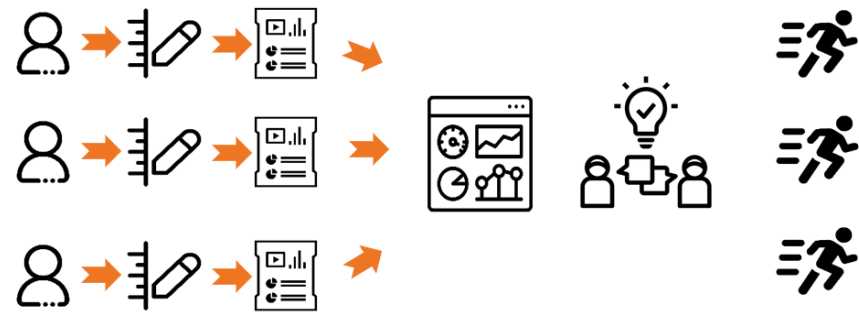
Multiple users take the assessment and receive a personal report on how they scored the organisation; all the individual users' results are combined into an overall organisation report; the whole organisation takes action.

Important terminology

Clients: This term refers to the people the organisation serves. We acknowledge different organisations may have different names for this, such as service users, beneficiaries, customers, residents, members, participants, stakeholders, and students. They may serve other organisations or communities. It's possible the organisation works for the benefit of the environment or creatures, such as natural habitats, birds, or animals.

Staff: This term refers to the people who work for the organisation. It includes employees and volunteers. In some cases, it may also include freelancers, associates or contractors who work to deliver the organisation's services and products to clients.

Important notes about the data presented in this report

Averages: Throughout this report when we use the word 'average' we are referring to the median.

Fish: Where we use a fish icon, this represents an organisation's assessment score.

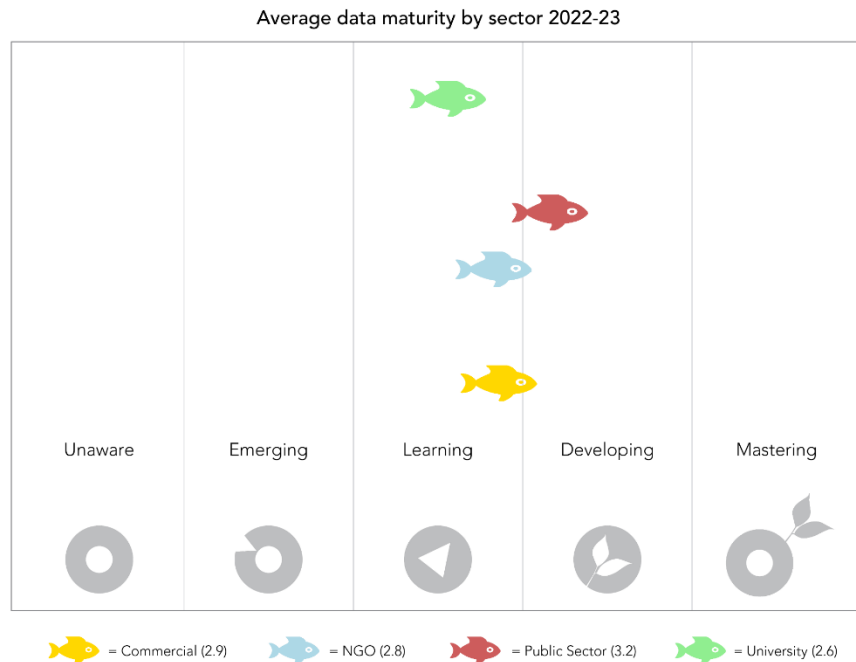 NGO organisation

 Public sector organisation

 University

 Commercial organisation

 Nonprofit organisation

Scores: all data maturity scores are on a 0 to 5 scale representing the five stages of data maturity from 'Unaware' to 'Mastering'.

Findings about data maturity: 2022-23

Profile of data maturity by sector and type of organisation

Perhaps surprisingly, we didn't find much difference between sectors in data maturity. Our research shows the public sector slightly ahead, followed by the commercial sector, and then NGOs – but overall, they are very similar. In every sector there are organisations at different stages, with some leading the way and others lagging behind.

The average organisational scores are:

- Public sector 3.2 out of 5 (Developing)
- Commercial sector 2.9 out of 5 (Learning)
- NGOs 2.8 out of 5 (Learning)
- Universities 2.6 out of 5 (Learning)

Exploring the full range of data maturity scores across different sectors, we can see most are in the 'Learning' and early 'Developing' stages.

Average data maturity by sector 2022-23

Unaware Emerging Learning Developing Mastering

= Commercial (2.9)   = NGO (2.8)   = Public Sector (3.2)   = University (2.6)

Number of organisations = 206

Stages of data maturity by sector 2022-23

| 0% Unaware | 11% Emerging | 47% Learning | 38% Developing | 4% Mastering |

● Commercial ● NGO ● Public Sector ● University

Number of organisations = 206
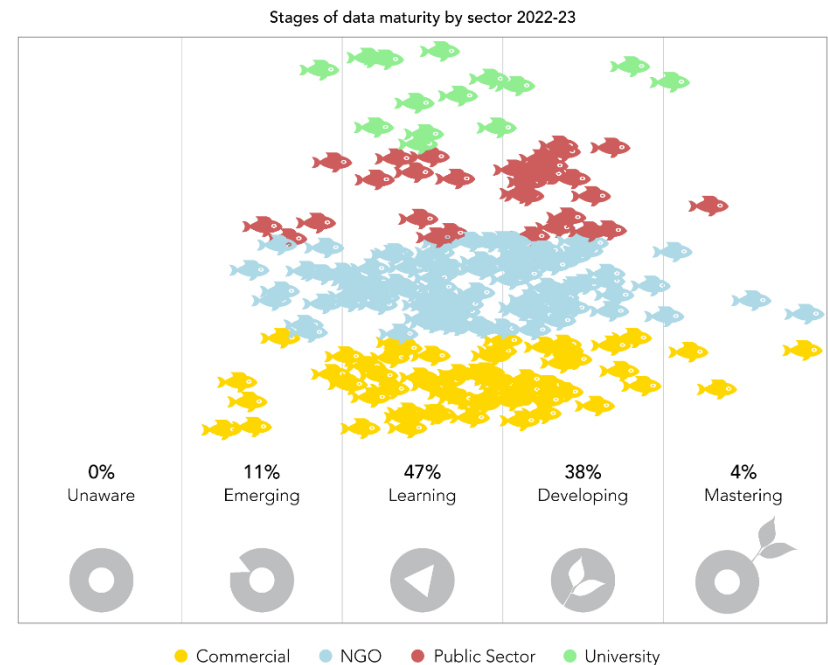
Since we are interested in the nonprofit sector, from now on this report will only focus on nonprofit organisations (NGOs, public sector, and universities).

Delving deeper into the scores across themes, we can see there's considerable variation in how organisations score, so it's not a single story at whole organisation level or at theme level.

Data maturity in nonprofit organisations 2022-23

| 0% | 11% | 45% | 40% | 4% |
| Unaware | Emerging | Learning | Developing | Mastering |

= average (2.9)

Number of organisations = 145

Dotplot of theme scores by organisation
(black dot = theme median / grey line = overall median)

Data maturity score
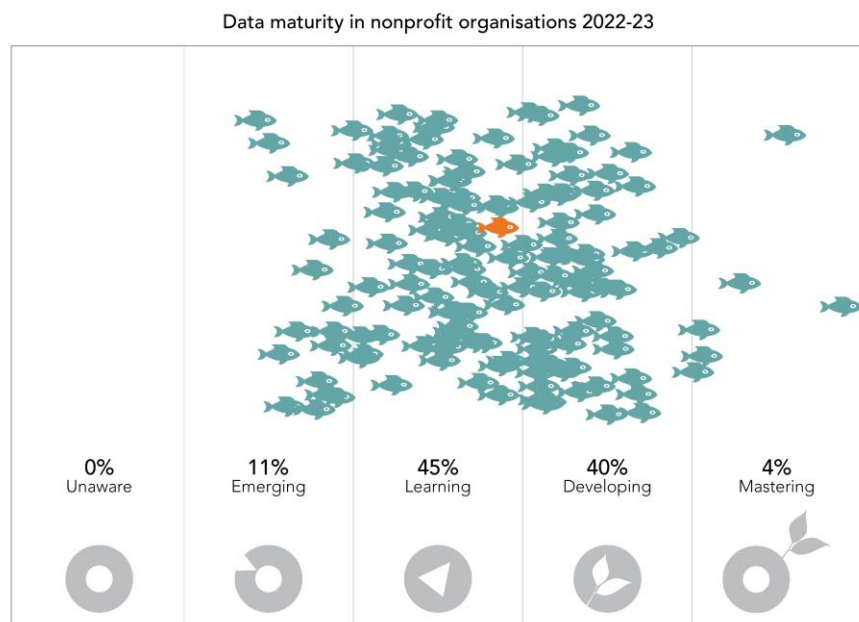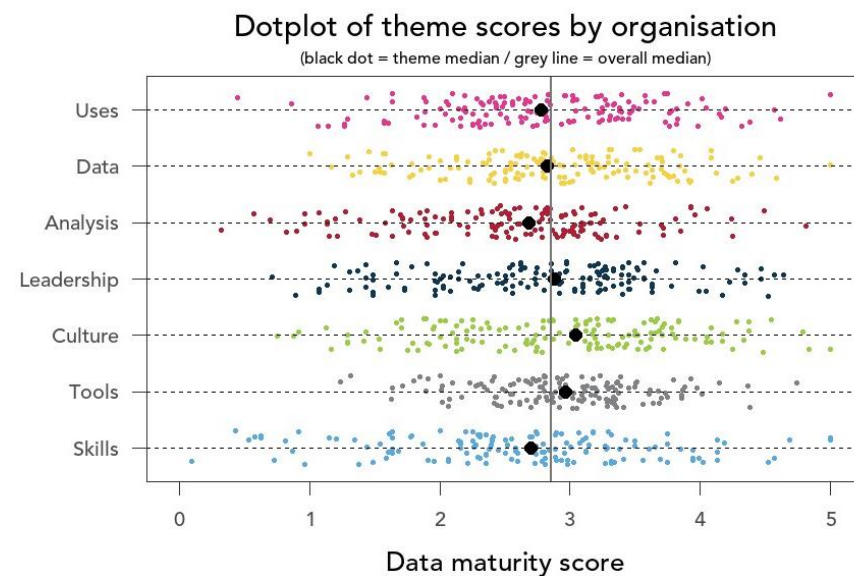
Number of organisations = 145

It's notable that for several of the themes some organisations are scoring in the lowest 'Unaware' stage – particularly for Skills and Analysis. The results show the sector is strongest in Culture and Tools, and weakest in Skills and Analysis.

High scoring themes

Culture – top scoring

Culture has consistently been the top scoring theme. Questions in the assessment explore four aspects of culture: Team approach, self-questioning, openness, and protection. Scores around openness are particularly strong,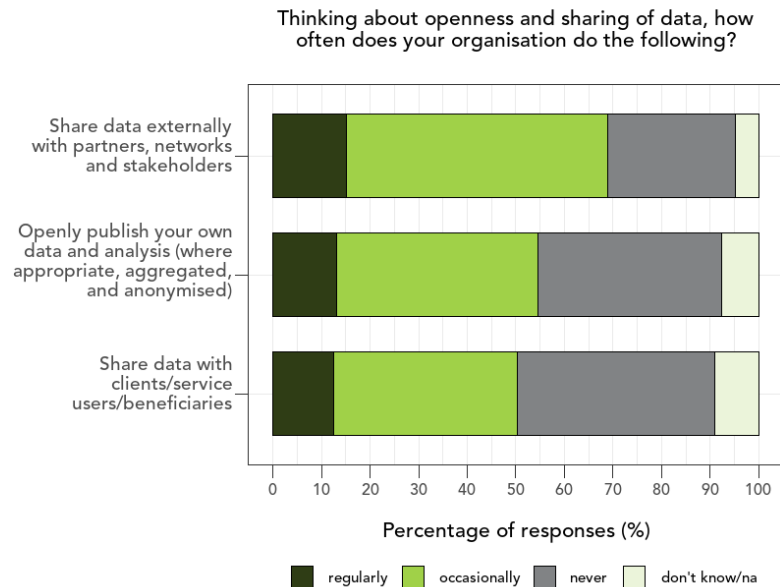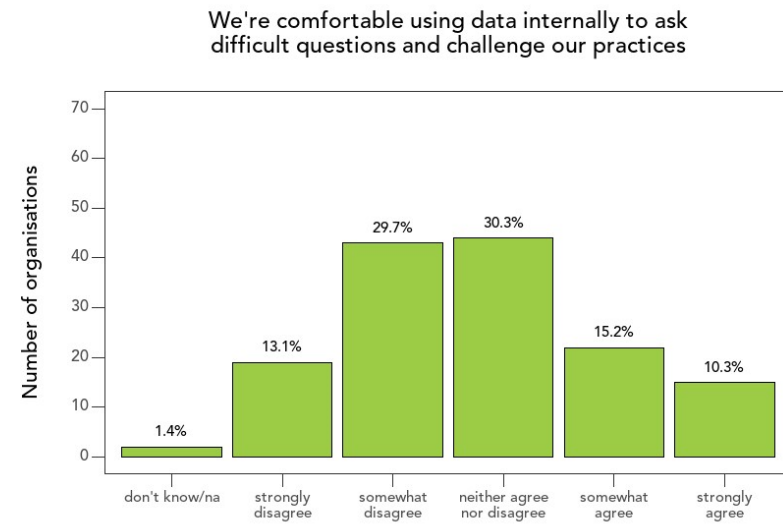 with widespread sharing of data with partners, networks and stakeholders, and around half of organisations publishing data and analysis openly and/or sharing data with clients.

Overall, 60% of organisations tend to agree they have robust policies and practices around security and protection. Far fewer, 35%, tend to agree that they monitor and test risks. This is an area where public sector organisations tend to score higher than average.

Scores are more mixed in relation to self questioning, with just a quarter saying they're comfortable using data internally to ask difficult questions and challenge their practices. Almost half of organisations (43%) disagree that this is the case.

Thinking about openness and sharing of data, how often does your organisation do the following?

Percentage of responses (%)

regularly   occasionally   never   don't know/na

We're comfortable using data internally to ask difficult questions and challenge our practices


Number of organisation assessments: 145

C1. To what extent do you agree or disagree with the following statements about your organisation?

Tools – second highest scoring theme

Tools has leapt from being the 4th to the 2nd highest scoring theme in three years. Assessment questions in the tools theme explore collecting, storing, organising and managing data; analysis and reporting; and integration and architecture.

Some of the advances in tools may be related to digital transformation/investment initiatives, which have been much accelerated during and since the pandemic. There's more digital data (and less on paper) and more use of digital tools for collecting and storing data (including one in ten using mobile apps).

To what extent do you agree or disagree with the following statements about your organisation?

Percentage of responses (%)

■ strongly agree   ■ somewhat agree
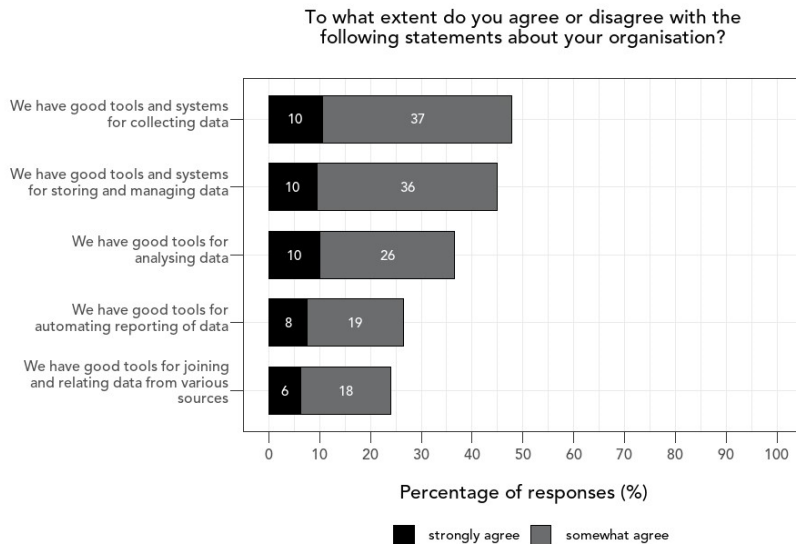
Overall, tools for collecting and storing/managing data are rated higher compared to those for analysing, reporting, or joining data. Fewer than half of organisations say they have good tools for any of these purposes. 47% tend to agree they have good tools for collecting data, and 46% for storing/managing data.

There is much disparity of opinion about how good tools are for analysing and reporting data. 36% tend to agree they have good tools, 41% tend to disagree. Delving deeper into the types of tools being used:

- Spreadsheets remain most widely used. 78% use these for analysing and reporting on data (45% extensively, 34% moderately)

- Databases and CRM systems are used by 54% (31% extensively, 23% moderately)

- Specialist analysis tools like SAS, R, Python, Stata, or GIS mapping are used by 15% (8% extensively, 7% moderately)

Just over a quarter say they have good tools for automating reporting. Business intelligence/dashboards and data visualisation are on the increase, with around 1 in 3 organisations using these tools moderately or extensively. Meanwhile, tools for linking data are least advanced. 24% tend to agree they have good tools for joining and relating data from different sources, whilst 62% disagree. This suggests more data engineering and architecture is needed.
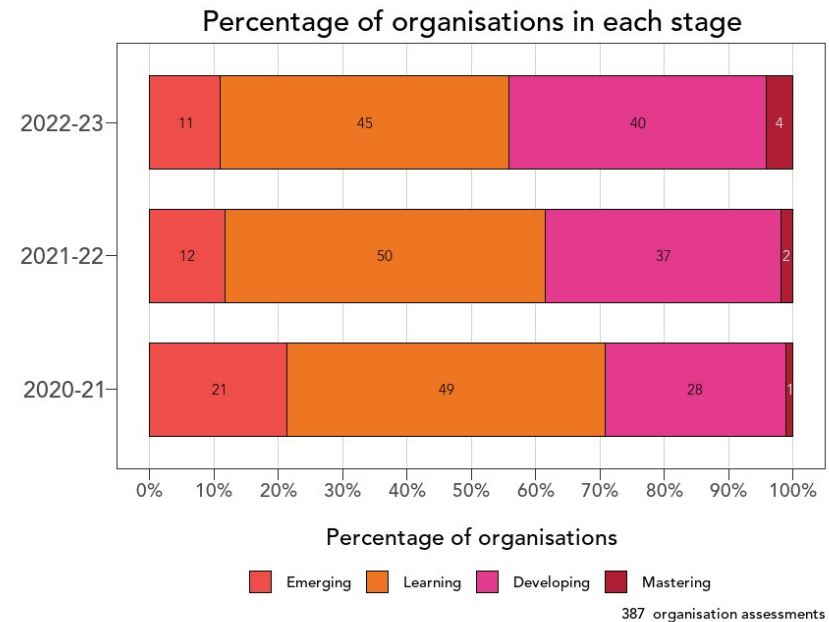
A longer-lens look at data maturity: 2020-23

Since the assessment tool was launched we've collected a huge dataset about data maturity and about the kinds of people and organisations that have completed an assessment. This provides a rich resource for benchmarking and exploring trends over time. For the remainder of this report we will focus on three years of data from 2020-23.

At an overall level, based on averages, there's been a gradual improvement over the years. In 2020-21 the average was 2.7 out of 5, in 2021-22 it increased to 2.8, and in 2022-23 it was 2.9. However averages don't tell the full story.

How things are changing

There has been a shift over the last three years, with increasing numbers of organisations scoring in the 'Developing' and 'Mastering' stages. 44% were in these two higher stages in 2022-23 compared with 29% in 2020-21.

Data maturity in nonprofit organisations 2020-23

| 0% | 14% | 48% | 36% | 3% |
| Unaware | Emerging | Learning | Developing | Mastering |

= 2020-21 average (2.7)   = 2021-22 average (2.8)   = 2022-23 average (2.9)

Number of organisational assessments = 387

Percentage of organisations in each stage

Percentage of organisations

Emerging   Learning   Developing   Mastering

387 organisation assessments
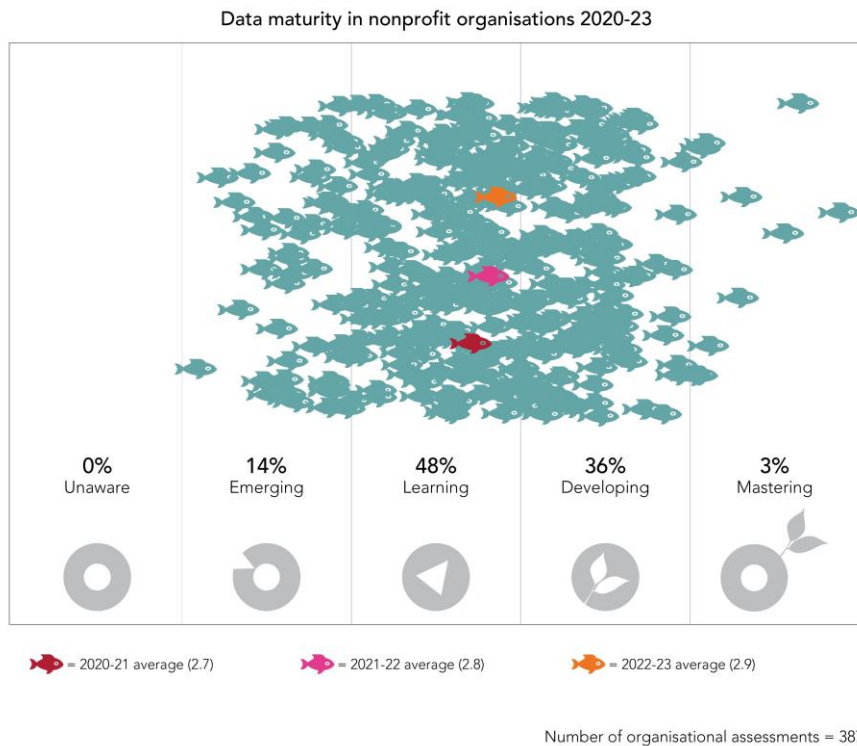
Factors that don't influence data maturity, and some that might

Throughout our research we have regularly analysed whether organisation size makes a difference to data maturity. We've looked at annual income and number of employees and done all kinds of statistical analyses and never found any evidence to support the hypothesis that bigger organisations are more data mature. Spot the outlier in the chart below!
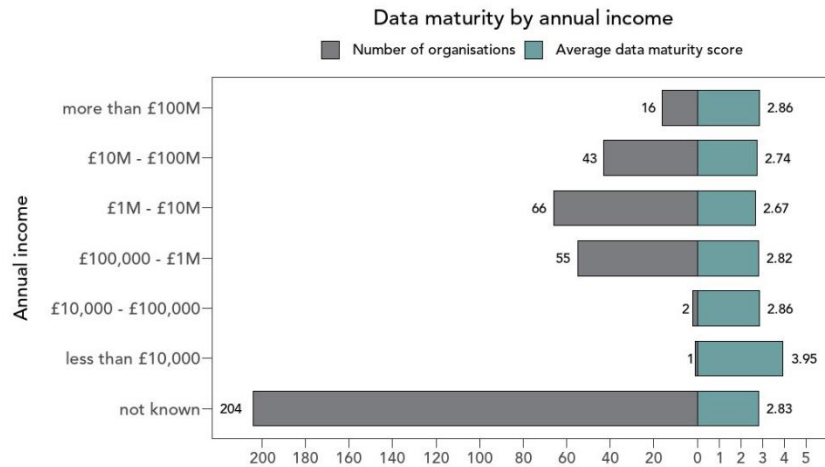
Analysis of data maturity by subsector

Our research shows the type of activity/subsector may have an influence on data maturity scores. We have used the International Classification of Non Profit Organisations (ICNPO) which puts organisations into one single category based on their main activity and added in some categories for public sector. This shows there's a real diversity in the types of organisation using the tool with the largest subsectors being health, social services, education and local authorities.

Data maturity by annual income

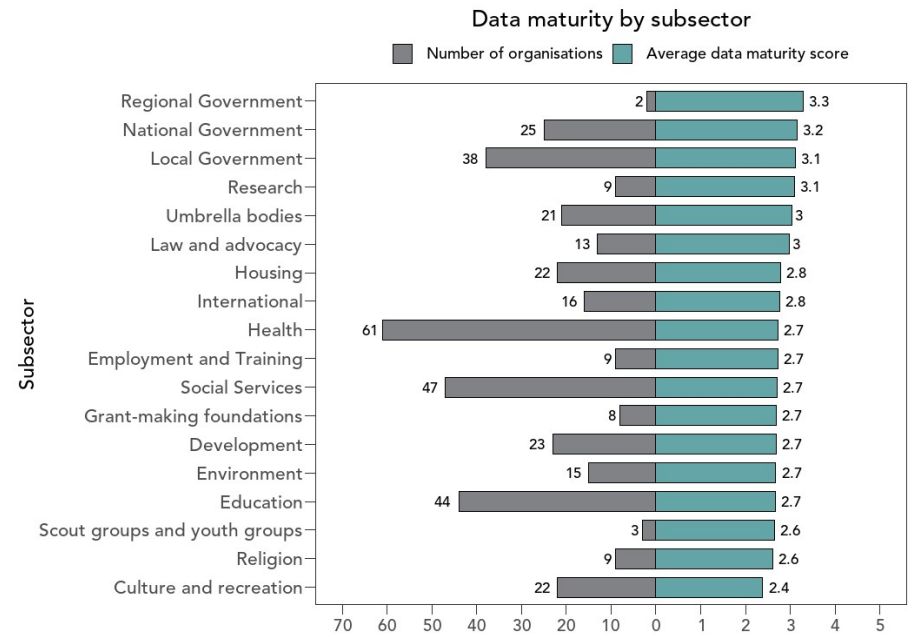Number of organisations · Average data maturity score

Annual income	Number of organisations	Average data maturity score
more than £100M	16	2.86
£10M - £100M	43	2.74
£1M - £10M	66	2.67
£100,000 - £1M	55	2.82
£10,000 - £100,000	2	2.86
less than £10,000	1	3.95
not known	204	2.83

Data maturity by subsector

Number of organisations · Average data maturity score

Subsector	Number of organisations	Average data maturity score
Regional Government	2	3.3
National Government	25	3.2
Local Government	38	3.1
Research	9	3.1
Umbrella bodies	21	3
Law and advocacy	13	3
Housing	22	2.8
International	16	2.8
Health	61	2.7
Employment and Training	9	2.7
Social Services	47	2.7
Grant-making foundations	8	2.7
Development	23	2.7
Environment	15	2.7
Education	44	2.7
Scout groups and youth groups	3	2.6
Religion	9	2.6
Culture and recreation	22	2.4

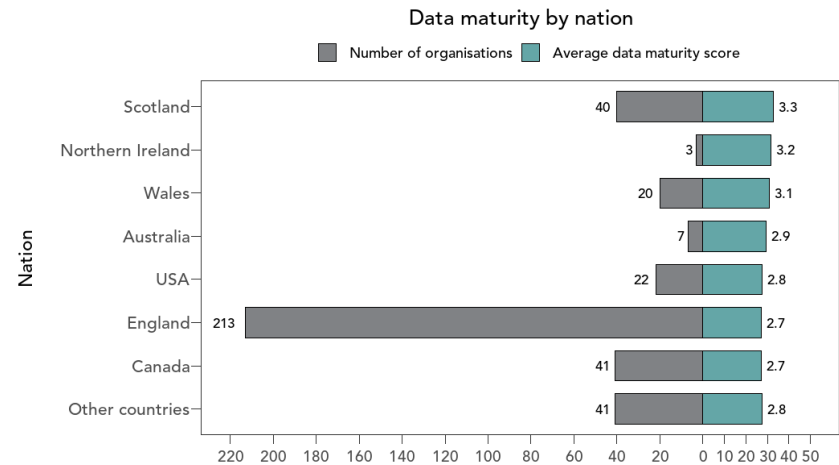Public sector organisations local, regional and national tend to score highest. Followed by research, umbrella bodies and law/advocacy organisations. Meanwhile at the other end of the spectrum the lowest scoring types of organisation are those in culture and recreation and religion.

Analysis of data maturity by location

Geographic location of an organisation may also have an influence. Analysing by UK region and nation we see organisations in Scotland, Northern Ireland and Wales have much higher average scores (3.3, 3.2, 3.1 respectively) than those in the East Midlands and East of England (2.3 and 2.2 respectively).
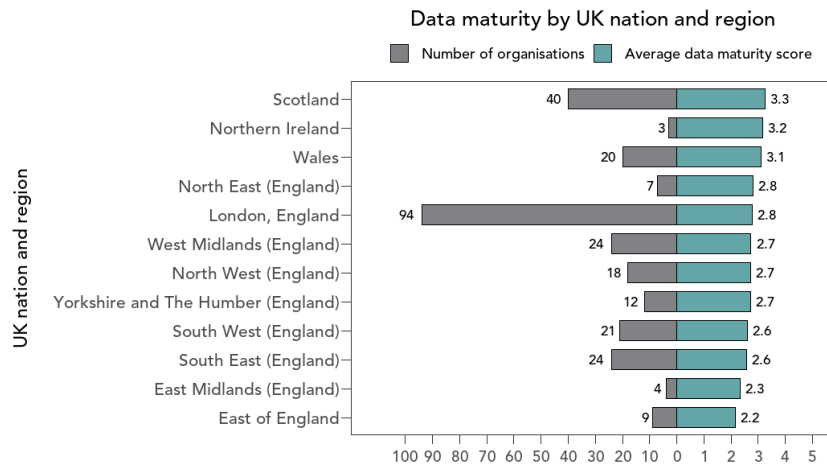
Globally there are less marked differences comparing data maturity by country. Unsurprisingly most users of the tool come from English speaking nations (or bilingual nations that use English).

Data maturity by nation

Number of organisations ■ Average data maturity score

Nation	Number of organisations	Average data maturity score
Scotland	40	3.3
Northern Ireland	3	3.2
Wales	20	3.1
Australia	7	2.9
USA	22	2.8
England	213	2.7
Canada	41	2.7
Other countries	41	2.8

Data maturity by UK nation and region

Number of organisations ■ Average data maturity score

UK nation and region	Number of organisations	Average data maturity score
Scotland	40	3.3
Northern Ireland	3	3.2
Wales	20	3.1
North East (England)	7	2.8
London, England	94	2.8
West Midlands (England)	24	2.7
North West (England)	18	2.7
Yorkshire and The Humber (England)	12	2.7
South West (England)	21	2.6
South East (England)	24	2.6
East Midlands (England)	4	2.3
East of England	9	2.2

What's changing?

Over the last three years, the pattern of data maturity has been broadly similar across themes. The biggest advances have been in Culture, Tools and Uses. Average scores for Leadership, Skills and Analysis have barely changed, and scores for Data have become a little worse.

Theme scores over years
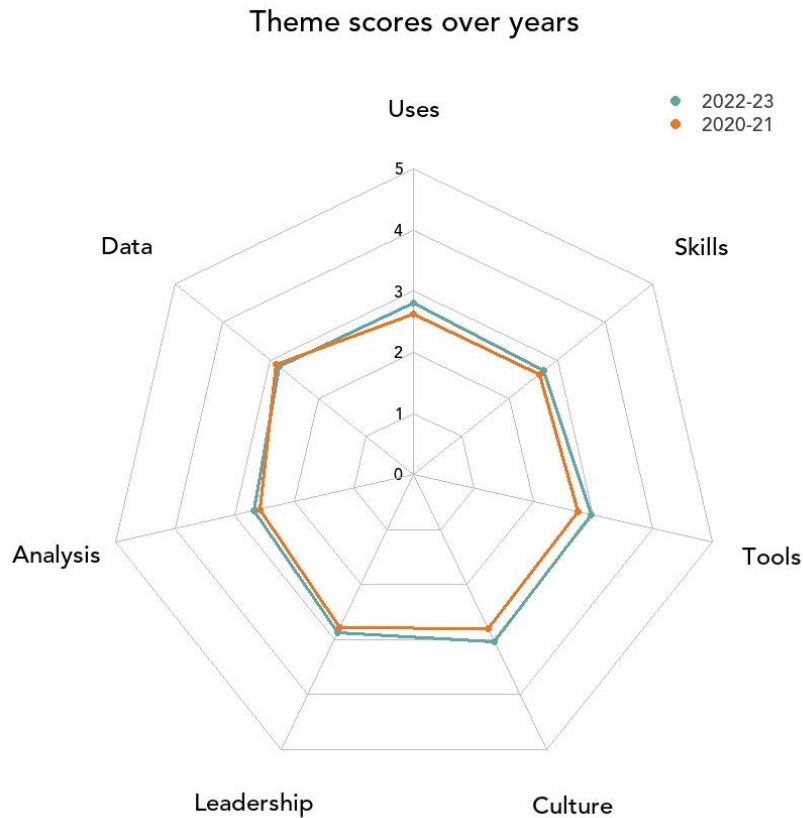
What's improving?

We've already explored changes in Culture and Tools earlier in this report, so we'll focus here on Uses. The assessment questions around uses explore the purposes for which data is being used – both outward facing in terms of services and products and internally in capabilities for running the organisation.

The majority of organisations use data mostly for recording activity/work with clients (82% do this moderately or extensively) compared with half as many using it for understanding clients/environments they serve, or evidencing needs or problems. An increasing number use it to measure service quality and performance (52% do this moderately or extensively). From an internal perspective, the most common internal driver for using data is for regulators/funder/contract reporting (66% moderately or extensively. Though strategic planning and decision-making is second most common (54% moderately or extensively).

With more organisations in the advanced 'Developing' and 'Mastering' stages, rewards and benefits of data and analytics are being seen more widely. In relation to services, data is improving the ability of organisations to evidence impact and needs; target and communicate with clients; and design and deliver better services and products. Internally, organisations are benefitting from increased levels of knowledge and expertise; better strategic planning and decision making; and improved impact. Many are also seeing increased income and efficiency savings. We show this in more detail by stage below.

Rewards and benefits of advanced data maturity – for services

Area of influence of data and analytics in service delivery	Emerging (53 organisations)	Learning (185 organisations)	Developing (139 organisations)	Mastering (10 organisations)
Evidencing impact to stakeholders Evidencing needs and problems the organisation seeks to address Reach/engagement with clients Targeting of services/interventions to clients Design and delivery of services and products Client/environmental outcomes				
Average staff time spent working with data	**52%**	**52%**	**57%**	**63%**

■ extensively ■ moderately

Rewards and benefits of advanced data maturity – for internal capabilities

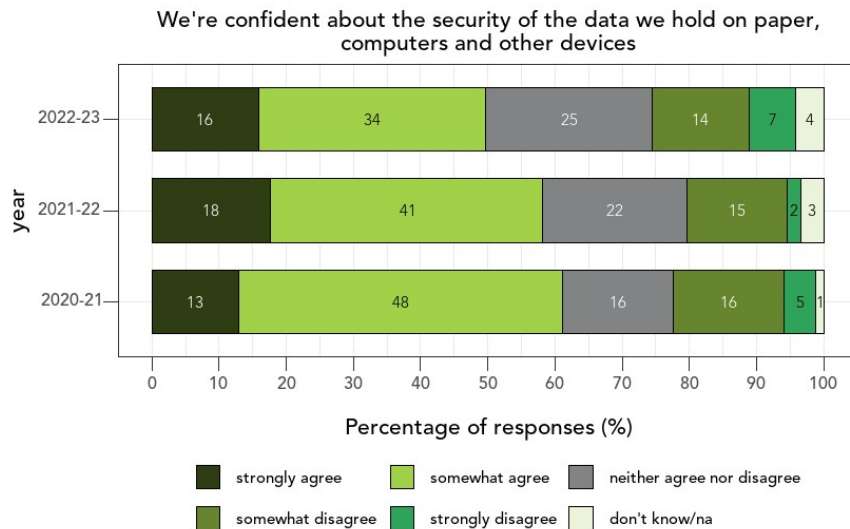| Area of influence of data and analytics internally	Emerging (53 organisations)	Learning (185 organisations)	Developing (139 organisations)	Mastering (10 organisations)
Strategic planning and decision making				
Income generation				
Improving impact				
Credibility and influence				
Levels of knowledge and expertise				
Strength of partnerships/networks				
Efficiency savings (resources, processes, service/product design)				
Average staff time spent working with data	52%	52%	57%	63%

■ extensively ■ moderately

What's getting worse?

Exploring patterns over time suggest some measures of data maturity are getting worse. Three areas where there are noticeable changes are in security, data literacy and data quality. It's possible these changes relate to an increase in awareness about the importance of these issues in organisations.

Increased security concerns

There's less confidence about data security. 50% tended to <u>agree</u> they were confident about the security of the data they held in 2022-23, compared with 61% in 2020-21.
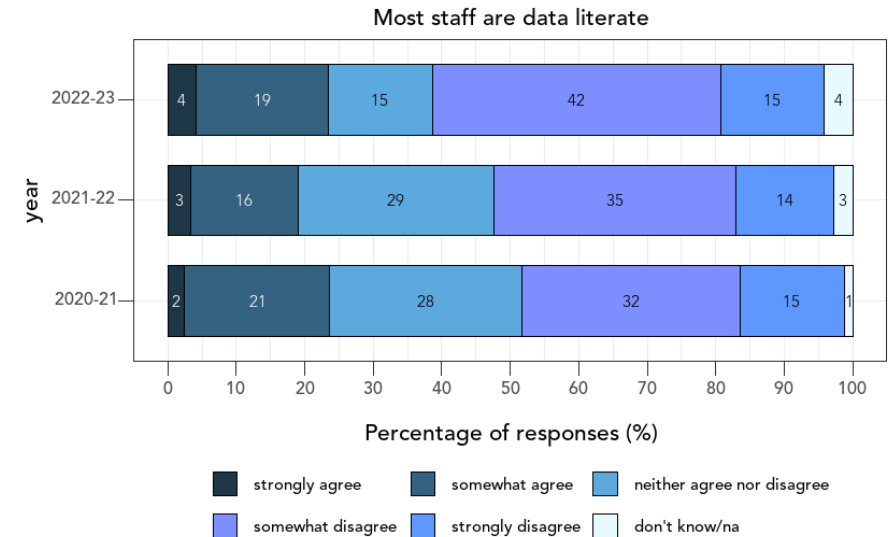
We're confident about the security of the data we hold on paper, computers and other devices

Percentage of responses (%)

- strongly agree
- somewhat agree
- neither agree nor disagree
- somewhat disagree
- strongly disagree
- don't know/na

2022-23: 145 assessments, from 1996 respondents
2021-22: 148 assessments, from 2074 respondents
2020-21: 85 assessments, from 357 respondents

C3. To what extent do you agree or disagree with the following statements about your organisation?

Lack of data literacy is an increasing issue

More organisations say their staff are not data literate. 57% tended to <u>disagree</u> that staff were data literate in 2022-23, compared with 47% in 2020-21.

Most staff are data literate

Percentage of responses (%)

- strongly agree
- somewhat agree
- neither agree nor disagree
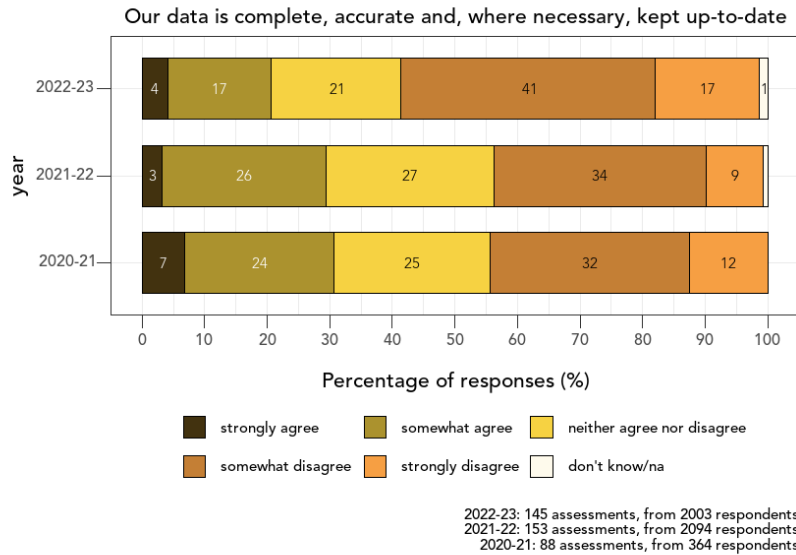- somewhat disagree
- strongly disagree
- don't know/na

2022-23: 145 assessments, from 1985 respondents
2021-22: 147 assessments, from 2072 respondents
2020-21: 85 assessments, from 355 respondents

S1. To what extent do you agree or disagree with the following statements about your organisation?

Data quality may be getting worse

Fewer organisations say they have good quality data. 58% tended to <u>disagree</u> their data is complete, accurate and kept up to date in 2022-23, compared with 44% in 2020-21.
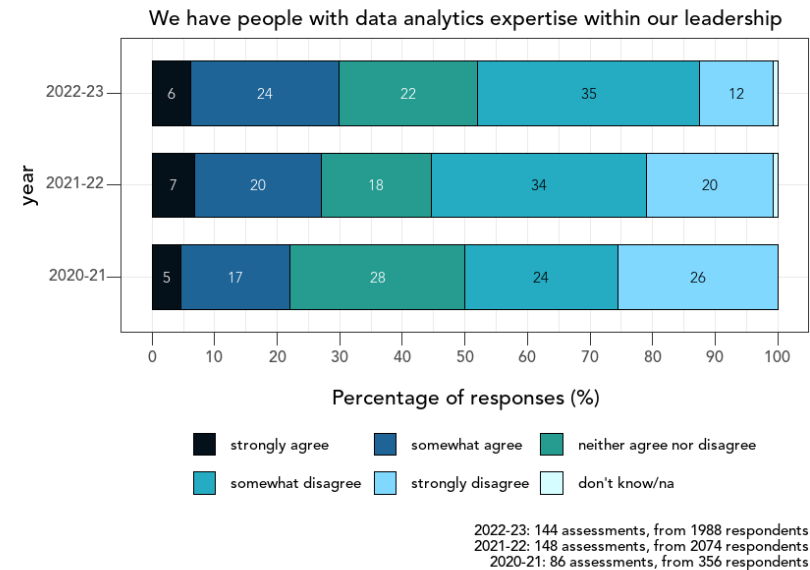
Our data is complete, accurate and, where necessary, kept up-to-date

year						
2022-23	4	17	21	41	17	1
2021-22	3	26	27	34	9	
2020-21	7	24	25	32	12	

Percentage of responses (%)

- ■ strongly agree
- ■ somewhat agree
- ■ neither agree nor disagree
- ■ somewhat disagree
- ■ strongly disagree
- □ don't know/na

2022-23: 145 assessments, from 2003 respondents
2021-22: 153 assessments, from 2094 respondents
2020-21: 88 assessments, from 364 respondents

D3. Thinking about the quality of data in your organisation as a whole, to what extent do you agree or disagree with the following statements?

What's happening in leadership?

Leaders are key to planning, decision-making and resourcing data maturity (and the second largest user group of our tool by role type, see Appendix 4 for the job profile of users). Overall scores for Leadership haven't shifted much in the last three years, though there are indications things are starting to change in some areas.
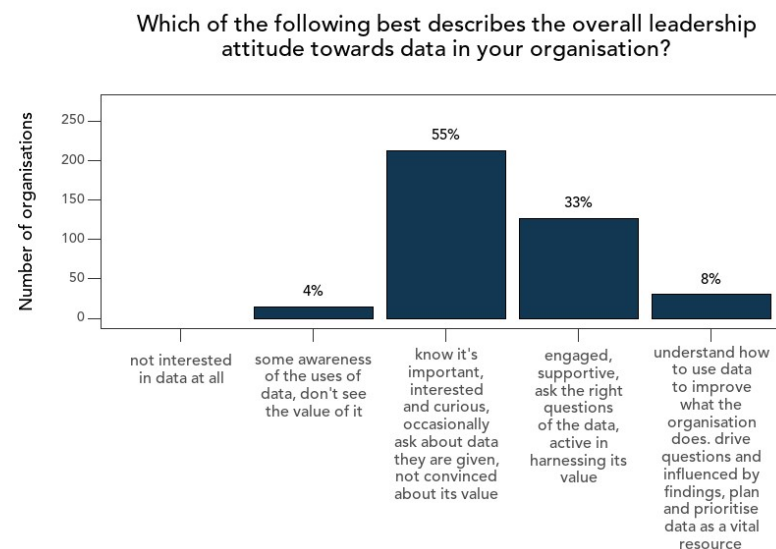
More say their organisation has an overarching business plan with defined measurable goals. 49% tend to agree in 2022-23 compared to 40% in 2020-21.

We have people with data analytics expertise within our leadership

year					
2022-23	6	24	22	35	12
2021-22	7	20	18	34	20
2020-21	5	17	28	24	26

Percentage of responses (%)

- ■ strongly agree
- ■ somewhat agree
- ■ neither agree nor disagree
- ■ somewhat disagree
- ■ strongly disagree
- □ don't know/na

2022-23: 144 assessments, from 1988 respondents
2021-22: 148 assessments, from 2074 respondents
2020-21: 86 assessments, from 356 respondents

L1. Thinking about your organisation, how much would you agree or disagree with the following statements?

More organisations say they have data and analytics expertise amongst their leadership. 30% tend to agree in 2022-23 compared with 22% in 2020-21. At the same time considerably fewer tend to strongly disagree down to 12% in 2022-23 compared with 26% in 2020-21.

On the whole, it's still the case that most organisations say leadership don't see the value in data, though attitudes to data appear to be shifting very slightly. There's a small increase in the proportion that say their leadership are actively harnessing the value from their data. However those that understand how to use data to improve what the organisation does, and plan and prioritise data as a vital resource have remained at a steady 8% over the last three years.

Which of the following best describes the overall leadership attitude towards data in your organisation?

Number of organisation assessments: 385

This research also shows data maturity is strongly related to leaders' investment in people, skills, learning and tools. Whilst arguably, 'enough' investment depends to a large extent on whether you are responsible for finding the resource or spending the resource, none-the-less the results do show clear differences for organisations at different stages of maturity. Those in the developing and mastering stages are far more likely to strongly agree that leaders invest enough.
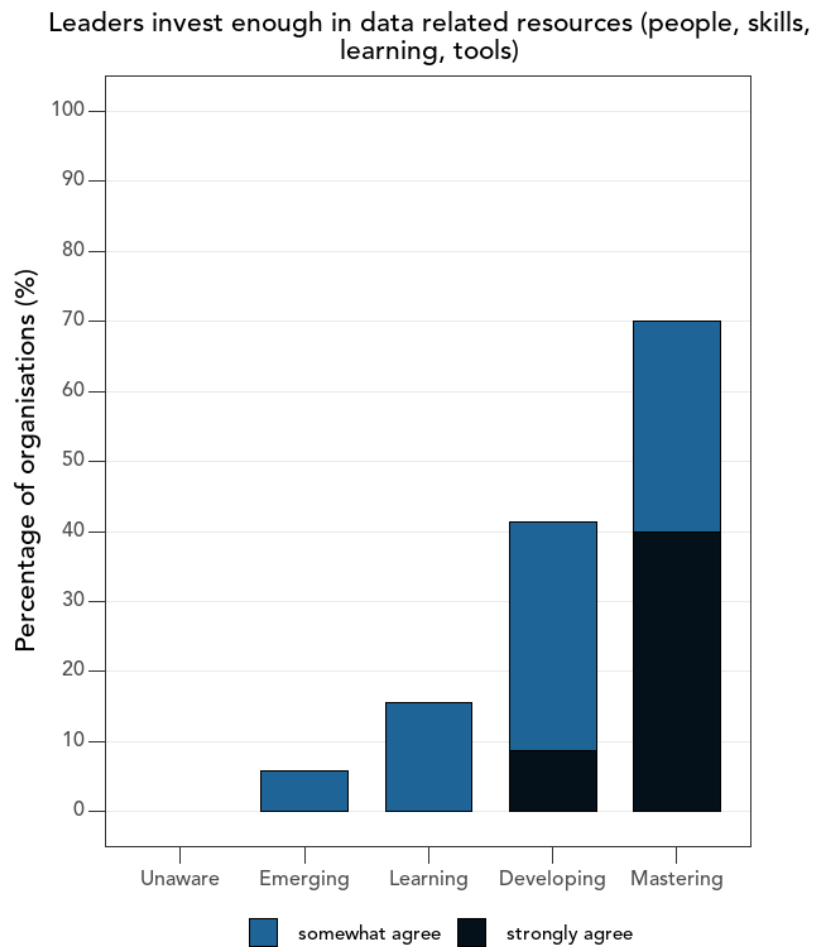
Leaders invest enough in data related resources (people, skills, learning, tools)

L1. Thinking about your organisation, how much would you agree or disagree with the following statements?

Where are the greatest weaknesses?

Skills and Analysis are consistently the weakest of the seven key themes, with little change in the scores over the last three years.

- Less than one in five say they have appropriate numbers of staff managing and developing their data capabilities.

- Less than a quarter say they have the right skills and capabilities to maximise the use of their data.

- Less than half say they analyse data in useful and meaningful ways. Most are doing simple descriptive analysis of past data, rather than deeper exploratory, experimental, or predictive analysis.

- Much reporting and analysis at a strategic level is manually collated from multiple sources. Just over a third have semi-automated reporting and fewer than 4% fully automated.

The elephant in the room

Some aspects of data and data management have growing environmental, legal, and resource-waste implications, yet are often overlooked in data strategies.

Environmental issues

As volumes of digital data in 'cloud' based systems continue to grow at high speed, the environmental impact of data centres cannot be ignored. Just 36% say their digital files and documents are well organised and managed. Although paper-based data collection (and storage) has rapidly reduced in the last three

years, 31% say they still use paper questionnaires and forms moderately or extensively.

The problem with the data centres that host our data in 'the Cloud' is that computation processes (which take place when people store or access their data) create heat – but in order to function efficiently, the technology must be kept cool at all times.

Many data centres use air conditioning to keep their computers at sufficiently low temperatures, and most of this energy comes from fossil fuels. Others have networks of pipes that carry chilled water around the servers, which cools more efficiently than air, but claims huge volumes of water in areas where it is often a limited resource. Data centres also have multi-system backups that ensure that as consumers, we can access our data at any time, regardless of whether there might have been a power outage (diesel generators will be used to tide us over) or a server has gone down (another will be waiting in the wings to take on the work).

Energy is therefore used not just for active data processing, but also to keep backup systems ready for action at any moment. Backup systems will sometimes account for more than 80% of a data centre's energy use[1]. Powering a single data centre can require as much energy as 50,000 homes, and as a collective, data centres use more energy than some nation states[2]. The process of manufacturing the technology also has a footprint of its own, and often creates hazardous, non-recyclable waste when decommissioned.

[1] https://www.nytimes.com/2012/09/23/technology/data-centers-waste-vast-amounts-of-energy-belying-industry-image.html
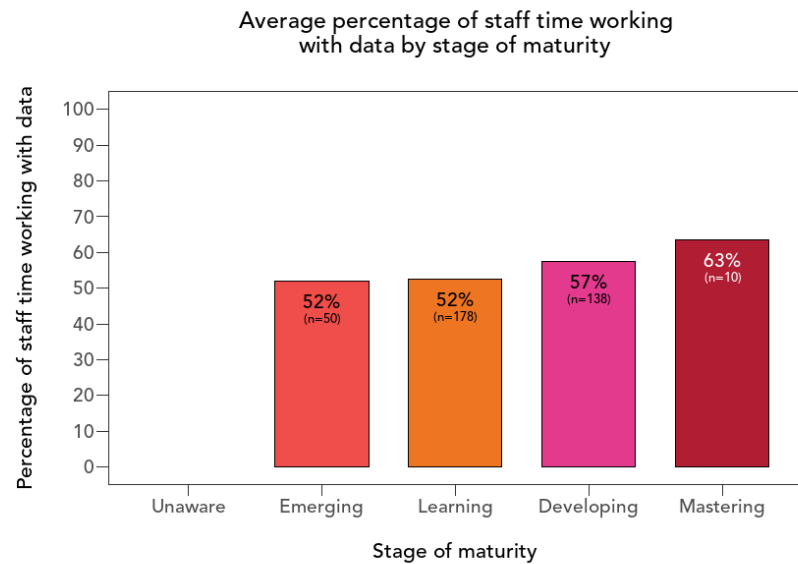[2] https://thereader.mitpress.mit.edu/the-staggering-ecological-impacts-of-computation-and-the-cloud/

The oft ignored end of data lifecycle

Only 40% say they delete data about identifiable individuals that is no longer necessary (despite this being one of the key principles of the 2018 Data Protection Act). So it appears the tail-end of the data life cycle appears to receive relatively little attention.

A large proportion of salary bill is spent on data, often for little reward

Salaries are usually among the highest areas of expenditure for nonprofits. Organisations in this research, regardless of their stage of data maturity say more than half their staff's time is spent working with data. Only a quarter of organisations say data is easily available and accessible to staff when they need it. Whilst there is much to be gained from technical efficiencies like reproducible analytics pipelines and interactive dashboards, it seems there is also much to be gained from good data management, governance, and housekeeping.

Average percentage of staff time working with data by stage of maturity

Percentage of staff time working with data

Emerging	52% (n=50)
Learning	52% (n=178)
Developing	57% (n=138)
Mastering	63% (n=10)

Stage of maturity

Number of assessments: 376

Reflections

Our research shows that the nonprofit sector is progressing in its data maturity. Those that are investing the extra effort and resources are reaping rich rewards for their organisations and those they serve.

Many still have a long way to travel on their data maturity journeys and there's a clear need for improved skills and support. This is especially so for leadership teams who are facing many new responsibilities that come alongside exciting opportunities.

We hope this research will stimulate policy makers and funders to channel resources into advancing data maturity. You can find out more about our data maturity assessments for organisations, cohorts, and partners here.

Appendices

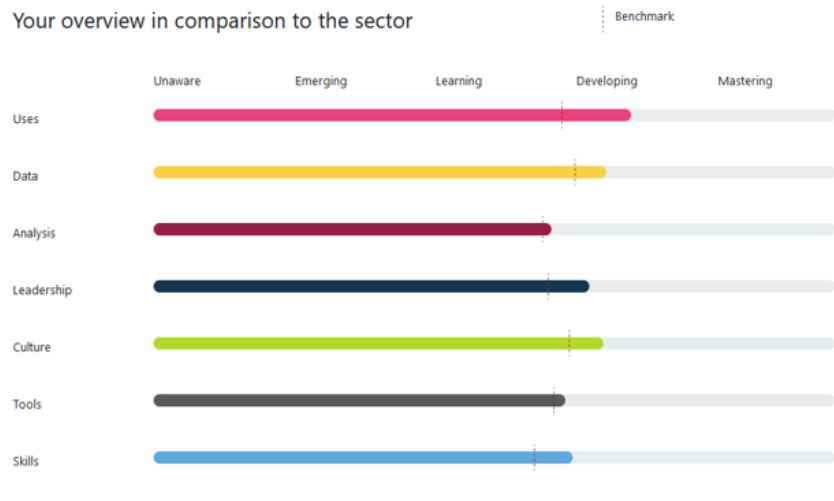## Appendix 1 Sample organisational data maturity assessment report

SUMMARY

You and your colleagues scored your organisation in the Developing Stage

This report is based on the aggregated responses from 133 people in your organisation who completed the assessment. Your organisation's overall score, based on the average across the seven themes, was **3.2** out of **5**. You and your colleagues have scored your organisation strongest in **Uses, Data, Culture**. Your aggregated responses indicate priority areas to focus on are likely to be **Analysis, Tools, Skills**.

Your overview in comparison to the sector

Benchmark

	Unaware	Emerging	Learning	Developing	Mastering
Uses					
Data					
Analysis					
Leadership					
Culture					
Tools					
Skills					

Overview by theme

Uses

3.5 out of 5
Developing

Purposes for collecting and analysing. Benefits and rewards.

FIND OUT MORE

Data

3.3 out of 5
Developing

Collection. Quality. Sources. Assets.

FIND OUT MORE

Analysis

2.9 out of 5
Learning

Type. Technique. Joining. Presenting.

FIND OUT MORE

Leadership

3.2 out of 5
Developing

Attitudes. Plans. Capability. Investment.

FIND OUT MORE

Culture

3.3 out of 5
Developing

Team Approach. Self-questioning. Openness. Protection.

FIND OUT MORE

Tools

3 out of 5
Developing

Storage. Type. Quality. Sharing. Integration.

FIND OUT MORE

Skills

3.1 out of 5
Developing

Capacity. Skills. Training. Access to Knowledge and Expertise.

FIND OUT MORE

About Data Maturity

To learn more about data maturity, how this assessment tool works and how it's helped organisations improve with data, there are a range of resources available.
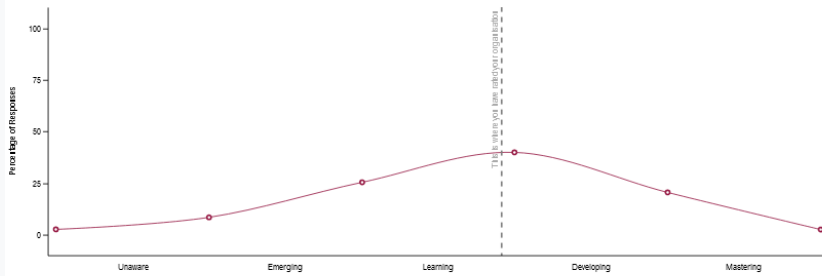
EXPLORE OUR RESOURCES

Analysis Overview

Based on your respondents' answers for analysis your organisation is currently
Learning

For analysis you and your colleagues scored your organisation
2.9 out of 5

The average score for analysis in the benchmark group is
2.9 out of 5

Analysis across the sector

Learning

- Whole organisation analyses are beginning to be performed on an ad-hoc basis.
- Beginning to focus on what analysis is meaningful and useful.
- Starting to identify what data should be routinely analysed and potentially automated.

- Analysis is more descriptive about what happened e.g. summarising the overview, averages, variation, range.
- Comparative trend analysis conducted over time (perhaps on an annual basis).
- Exploration and use of filters and cross tabs to delve further into data.

- Data is manually collated in reports using data from different sources.
- Data is manually reworked for presentation in written reports for different internal/external audiences.
- Learning how to create more sophisticated graphs though audiences may find them difficult to interpret and understand.

THE NEXT STAGE UP FOR YOUR ORGANISATION IS

Developing

- Embedding systems for analysing meaningful and useful data.
- More consistent and regular approach to data reporting and trends analysis on users/needs, activity, outcomes and impact.
- Monitors what's happening in present as well as what's happened in the past. Some forward looking analysis/forecasts may challenge views of future performance.

- Analysis is more diagnostic about where/why things happened e.g. exploring root causes, clustering patterns, anomalies, discovering differences and trends. Some attempts at A/B testing. Occasional use of predictive analytics in some areas.
- Aware of difference between correlation and causality.
- Routine data analysis is partially automated and partially manually collated from different sources.

- Presentation and communication of data is honed to ensure its meaning is understood. Some use of dashboards and/or businesses intelligence systems. Beginning to explore interactive data visualisation.
- Both static and real-time dynamic reporting conducted for different audiences, some may be available for non-specialists to independently access.

Appendix 2 About the data in this report

Dataset for 2022-23

The raw dataset for validated users between 1 April 2022 and 31 March 2023 includes 2045 responses from 206 organisations. Excluding commercial organisations, there are 1972 responses from 145 nonprofit organisations.

2022-2023		
	All sectors	Nonprofits
Respondents	2045	1972
Organisation assessments	206	145

Dataset for 2020-23

Since we launched the tool in 2019, we have collected responses from over 6000 users. From this, we have extracted a three-year dataset of user responses covering the financial years 2020-2023.

As this dataset spanned a three-year period, some organisations took multiple assessments in this time.

2020-2023		
	All sectors	Nonprofits
Respondents	4646	4475
Organisation assessments	532	387

Cleaning and validation

We excluded users using apparently personal email addresses (such as gmail or yahoo) or where the email address provided was not valid.

Where users provided organisational email addresses, we sought to confirm that the organisation existed. For UK organisations we accessed public registers such as Companies House, the Charity Commissions for the different parts of the UK, and the FCA Mutuals Register. For organisations apparently based outside of the UK or where we could not identify them on a UK register, we relied on information provided on their website.

For UK-based charities and companies, we identified the sector, type, age, turnover, location, and number of employees from the aforementioned publicly available records.

Organisation versus respondent level analysis

At a sector level, we are interested in understanding the data maturity of whole organisations. In most cases (around two thirds) a single response has been recorded for the organisation. Usually this is a single person on behalf of the organisation, though we know from our data and separate impact evaluations that it is not uncommon for multiple people to complete the assessment together as a group, especially in smaller organisations. Over a third of organisations have had multiple users complete the

assessment, and in some cases in large numbers. Where there have been multiple respondents from the same organisation within a defined time frame, the respondents' scores for each question have been calculated, combined and averaged to give a single organisational score.

Scoring and benchmarking

The measurement in our Data Maturity Assessment tool works by:

- scoring questions
- weighting questions
- grouping the weighted scored questions by theme
- taking an average of these to give overall theme scores
- averaging the seven theme scores to give a data maturity stage (based on a scale of 0 to 5 for Unaware through to Mastering).

All questions are normalised so that before weighting they contribute equally to the relevant theme and themes are normalised so that they contribute equally to the overall score for an individual organisation. Each question is assigned a weight: standard, high, or very high based on how important responses will be in determining important features or behaviours of data maturity.

Benchmarking enables comparison between one organisation and others. For the benchmarking in this report, we use the organisation level score for all questions, themes, and stages.

Appendix 3 Defining and categorising the nonprofit sector

As part of our data preparation process, we need to be quite specific about how we define the nonprofit sector. This is a well-known challenge to data people trying to describe sectors. In summary, all validated organisations were grouped in four broad sectors based on their legal type as follows:

- NGO (non-governmental organisation) – trusts, charities, social enterprises, charitable incorporated organisations, constituted non-governmental organisations with a social mission.
- Public sector – local, regional, national government, education, health
- University
- Commercial – public and private limited companies

The first three (NGO, Public Sector and Universities) are non-commercial organisations and are therefore combined in the analysis for the 'Nonprofit' sector. The legal types and validation approaches for each category are as follows:

NGO
For UK based organisations:

- Trust
- Scottish Charitable Incorporated Organisation
- Royal Charter

- Registered Society
- PRI/LTD BY GUAR/NSC (Private, limited by guarantee, no share capital)
- PRI/LBG/NSC (Private, limited by guarantee, no share capital, use of 'limited' exemption)
- Constitution
- Community Interest Company
- Charitable Incorporated Organisation (in England or Wales)

For non-UK based organisations:

- NGO (non-UK validated non-government or commercial entity with social mission)

PUBLIC SECTOR
- Public Sector (apparently a government entity)
- Academy Trust (a type of public education provider in England)

UNIVERSITY
Validated by url/website

COMMERCIAL

- Public Limited Company
- Private Limited Company
- Commercial (non-UK validated commercial)

Appendix 4 – Respondent profile by job role/s

Noting many people, especially in small and micro organisations which constitute the vast majority of charities and social enterprises, respondents are invited to select up to three job roles that describe what they do.

Job roles of respondents
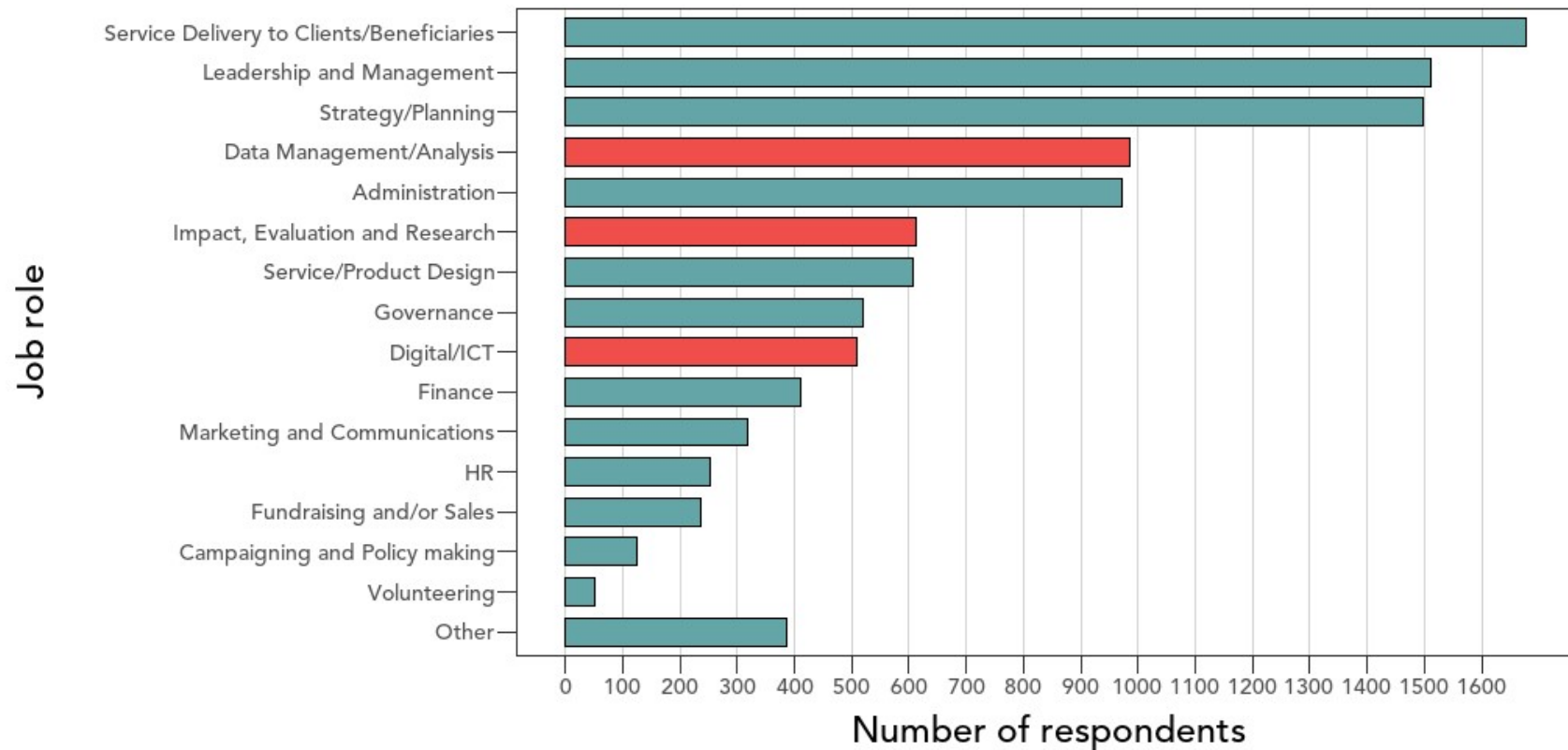
4431 unique respondents able to select up to 3 categories
Total selections made 10669

Appendix 5 Profile of organisations

Size

In our 2020-23 dataset we have 352 nonprofit organisations. We have many gaps in the data regarding number of employees and annual income. This is because of difficulties in accessing this data for non-UK organisations.

Number of organisations by number of employees

Number of organisations

Total number of organisations: 352

Number of organisations by annual income
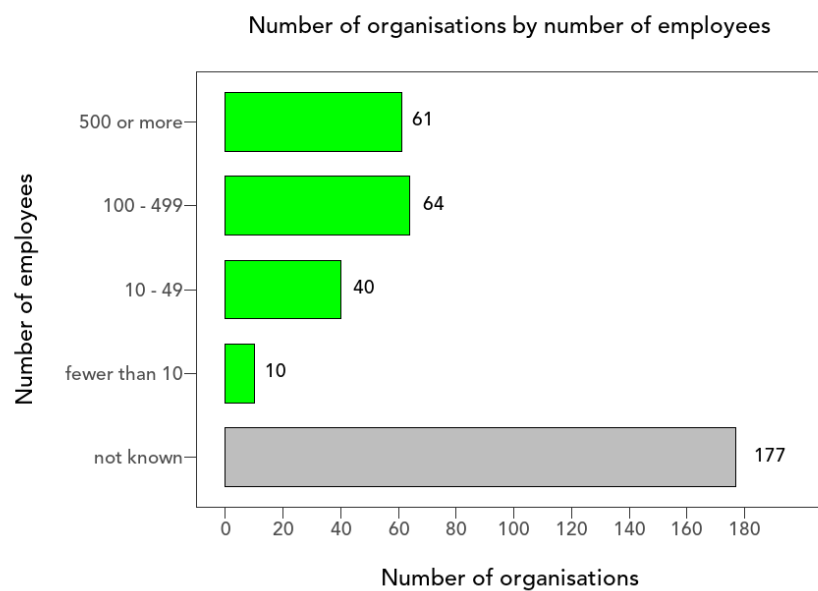
Number of organisations
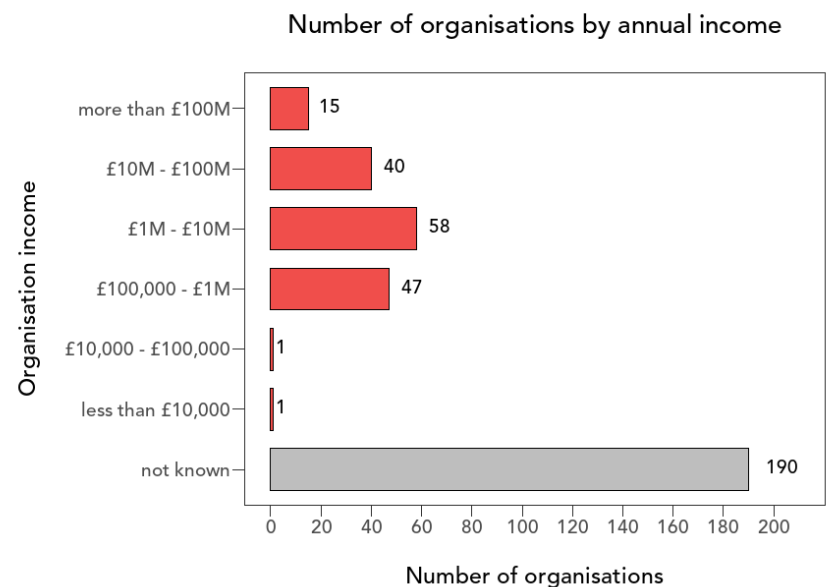
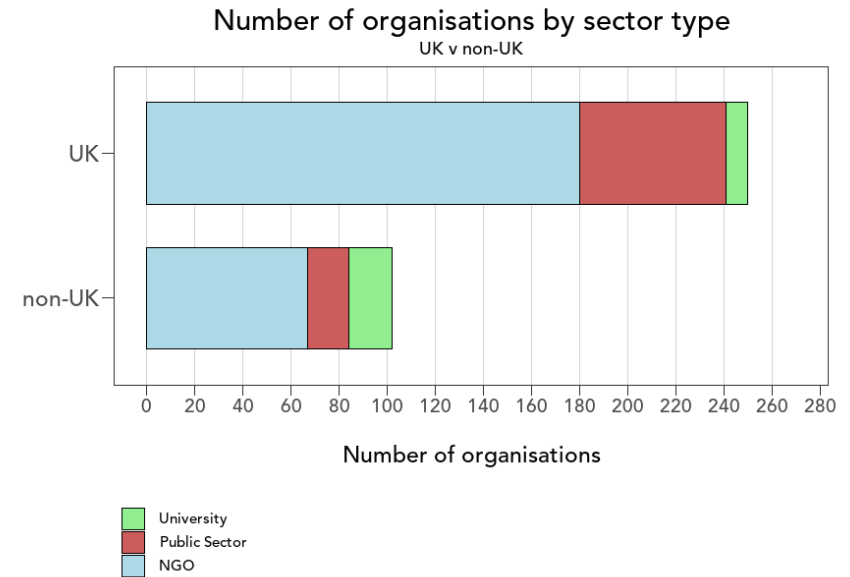Total number of organisations: 352

Activities

The most common activity type was health, followed by education, social services and local government. Regional government, scout and youth groups and employment and training were the three least common activity categories.

Number of organisations by activity category

Total number of organisations: 352

Location

Most organisations (71%) were from the UK. There was a slightly higher proportion of universities from non-UK countries.

Number of organisations by sector type
UK v non-UK

Total organisation responses: 352