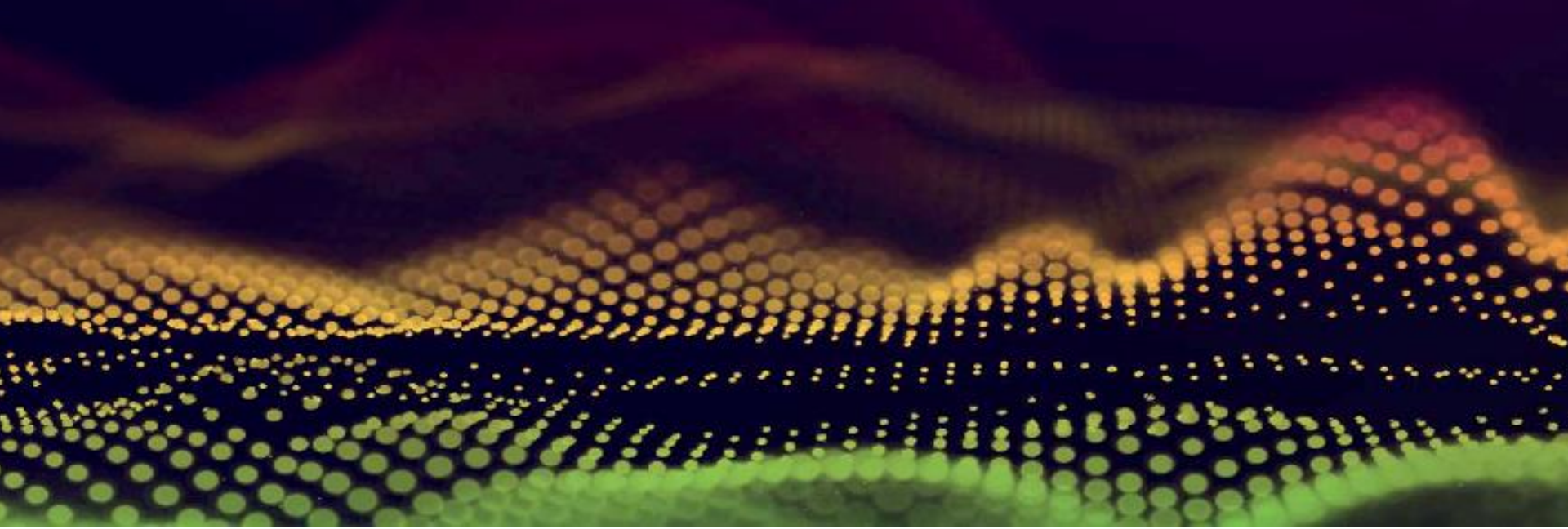

Doing research on data uses, needs & capabilities by local authorities

UBDC Training Webinar — 15th June 2021

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University of Glasgow

Urban Big Data Centre

Who we are

The **Urban Big Data Centre** (UBDC) is a research centre promoting the use of big data and innovative research methods to improve social, economic and environmental well-being in cities.

Dr Justine Gangneux : Research Associate with a background in sociology with a focus on digital technologies and data.

Dr Simon Joss : Professor of Urban Futures, and associate director of the UBDC with a background in policy analysis with special focus on urban technologies.

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Go to www.menti.com and use the code 3686 8078

1. What types of data does local government produce/use?

2. What do you think are the challenges of doing research on data with local authorities?

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Structure of the webinar

Four discussion points:

1. Understanding the landscape of local government and its data uses
2. Mapping data types and local government's data engagement
3. Designing a mixed-methods approach
4. Collaborating with key stakeholders

Drawing on research project examining Scottish local authorities' data engagement during COVID-19

https://ubdc.ac.uk/media/2202/scottish-local-government-during-covid-19-report-may-2021.pdf

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Understanding the landscape of local government and its data uses

- Complex organisational structure of local government
- Breadth of policy areas and delivery of a wide range of services

Figure 5: local authorities: main areas of responsibility

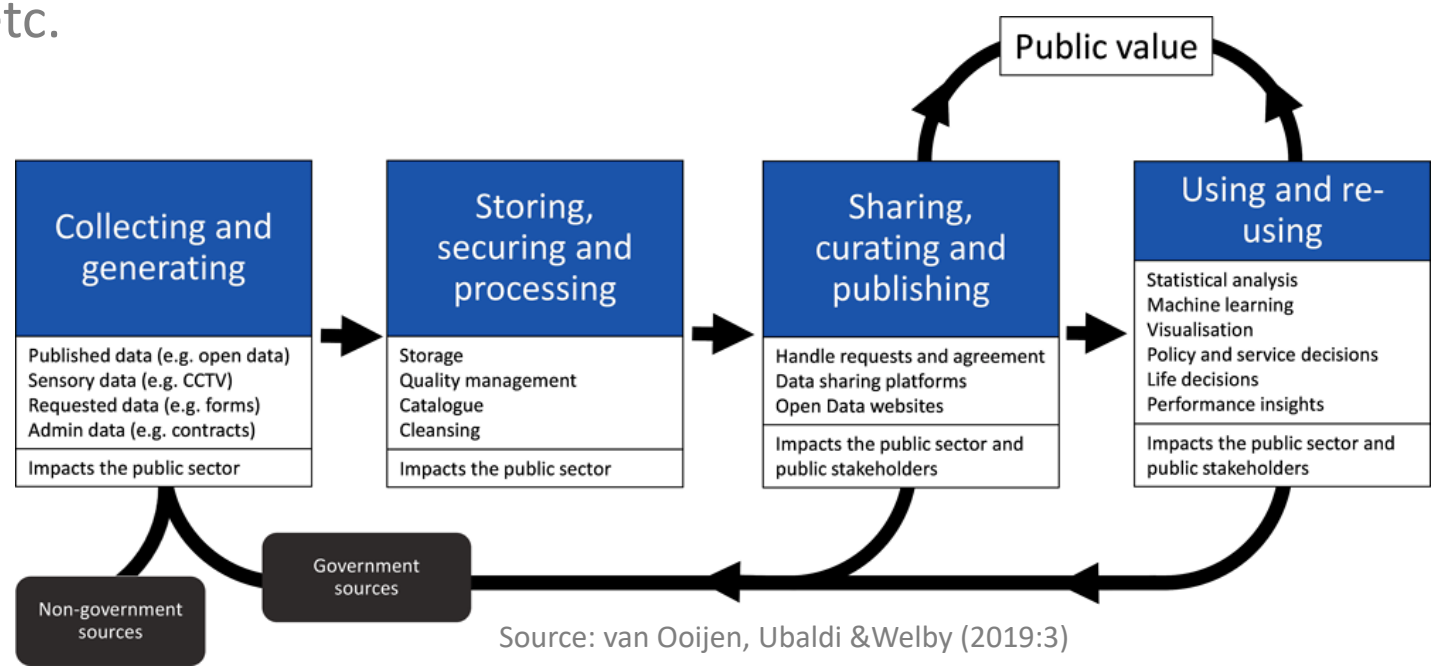
Source, SPICe, Financial Scrutiny Unit Briefing Subject profile – local government in Scotland, 2016.

Understanding the landscape of local government and its data uses

- Data sharing with other public sector organisations (e.g. Police Scotland, NHS bodies)
- Other entities (third sector organisations, private companies)
- Complex ecosystem of organisations at national/local levels: Improvement Service, Digital Office, etc.
- Leadership of Scottish Government on digital transformation

Understanding the landscape of local government and its data uses

- Different types of data activities: collecting/generating; storing, securing and processing; sharing, curating and publishing; using and re-using.
- Uses of data include operational monitoring, strategic decisions, services uptake and prediction of future trends, policy-making, etc.



Source: van Ooijen, Ubaldi &Welby (2019:3)

Defining and mapping data types

‘Data [...] the raw material produced by abstracting the world into categories, measures and other representational forms – numbers, characters, symbols, images, sounds, electromagnetic waves, bits – that constitute the building blocks from which information and knowledge are created’ (Kitchin, 2014:1)

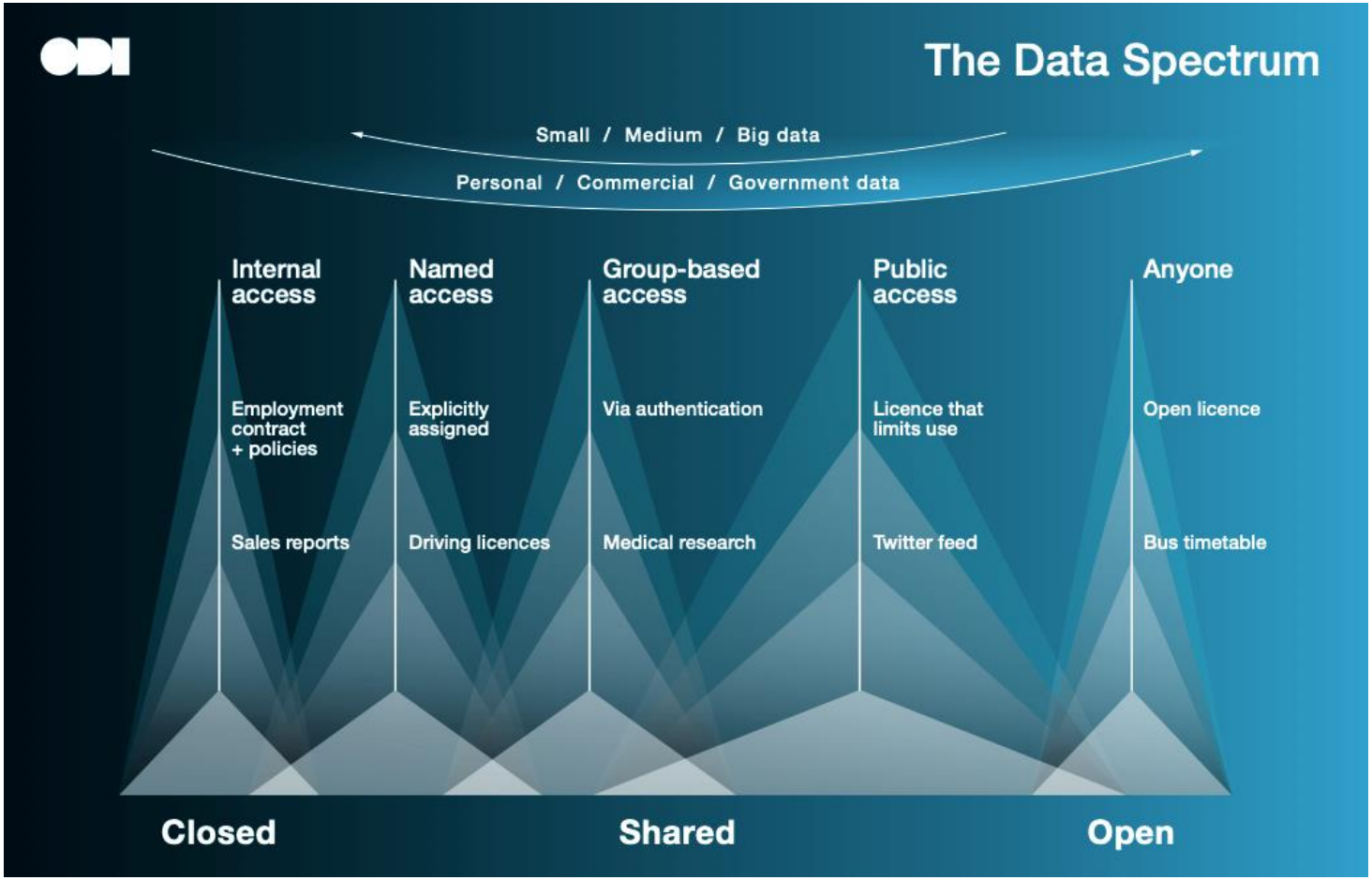
Defining and mapping data types

Table 2.1 Comparing small and big data

	Small data	Big data
Volume	Limited to large	Very large
Exhaustivity	Samples	Entire populations
Resolution and identification	Coarse and weak to tight and strong	Tight and strong
Relationality	Weak to strong	Strong
Velocity	Slow, freeze-framed/bundled	Fast, continuous
Variety	Limited to wide	Wide
Flexibile and scalable	Low to middling	High

Source: Kitchin, 2014, chapter 1

Defining and mapping data types



Source: Open Data Institute (ODI) (2020) The value of data. Summary Report. https://theodi.org/article/the-value-of-data/

One example: mobility

One example: What types of data does local government (e.g. Glasgow City Council) use/generate to understand mobility?

One example: mobility

- Public sector real time data:

  Traffic/bikes sensors (SCOOT)

  CCTV anonymised pedestrian counts (with UBDC)

- Public sector non-real time data:

  Cordons (bi-annual), Glasgow Household Survey (Annual), Census (2011), statistics for road accidents, etc

- Private real time/historic data:

  SPT, Scotrail, bus companies, etc.

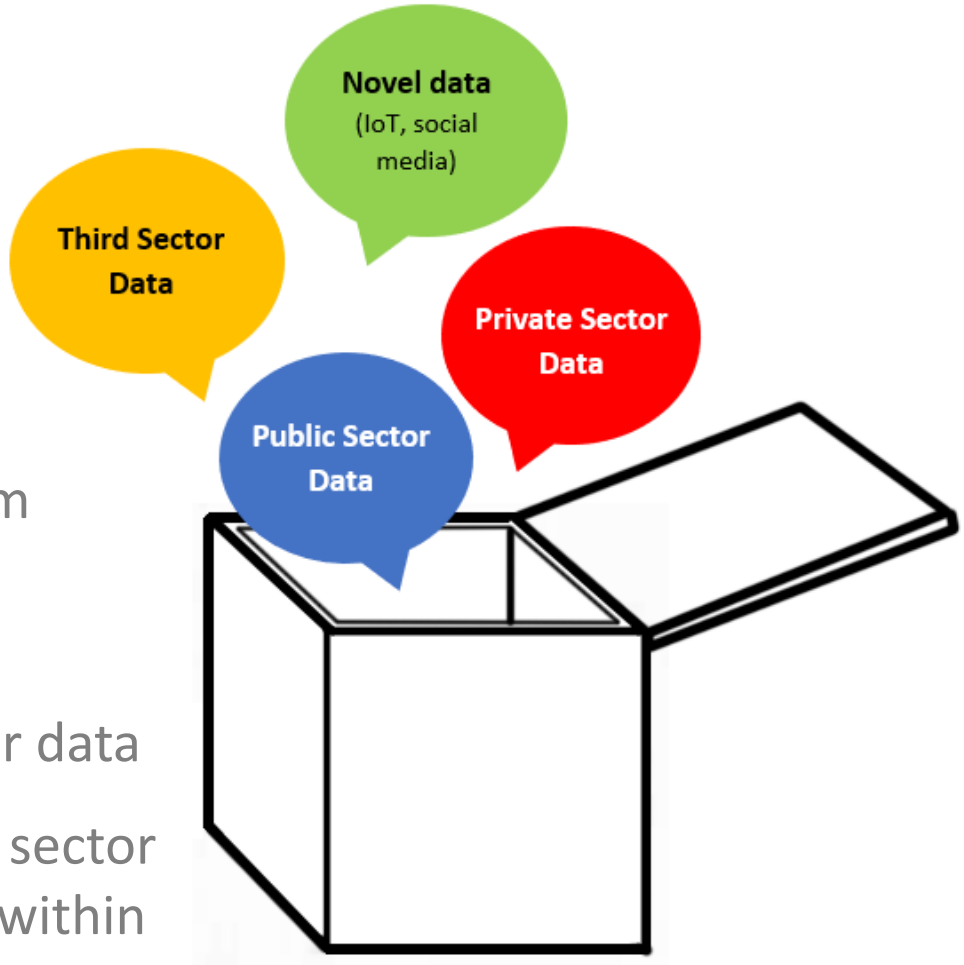
  Next Bike (API)

  Strava data (made available by company to cities)

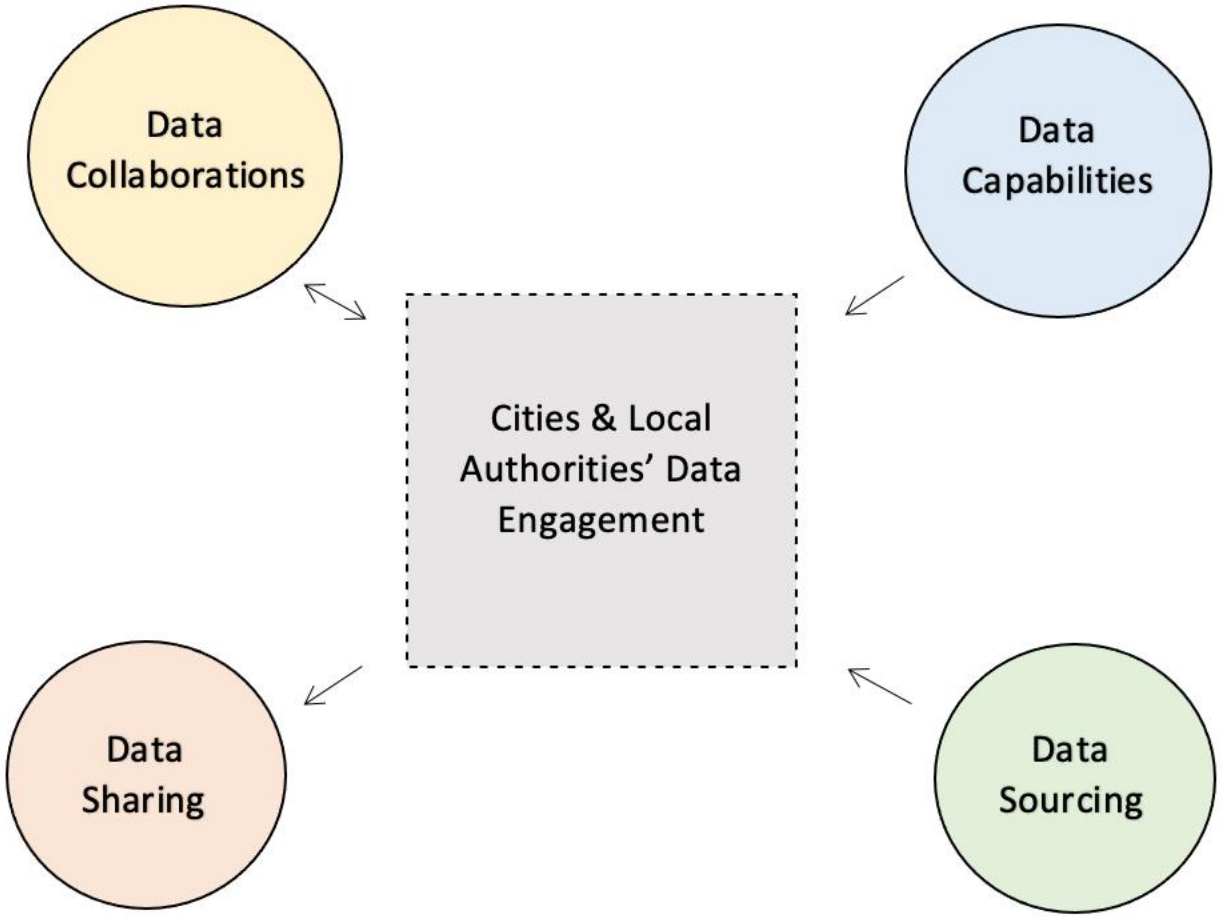
  Google mobility data

Defining and mapping data types

- Our typology:
  - (1) internal public sector
  - (2) external public sector
  - (3) third sector
  - (4) private sector
  - (5) novel
- Capture of the data ecosystem within which LG operates
- Distinction between internal/external public sector data
- Overlapping between private sector and novel data , in particular within smart city initiatives



Mapping local government's data engagement

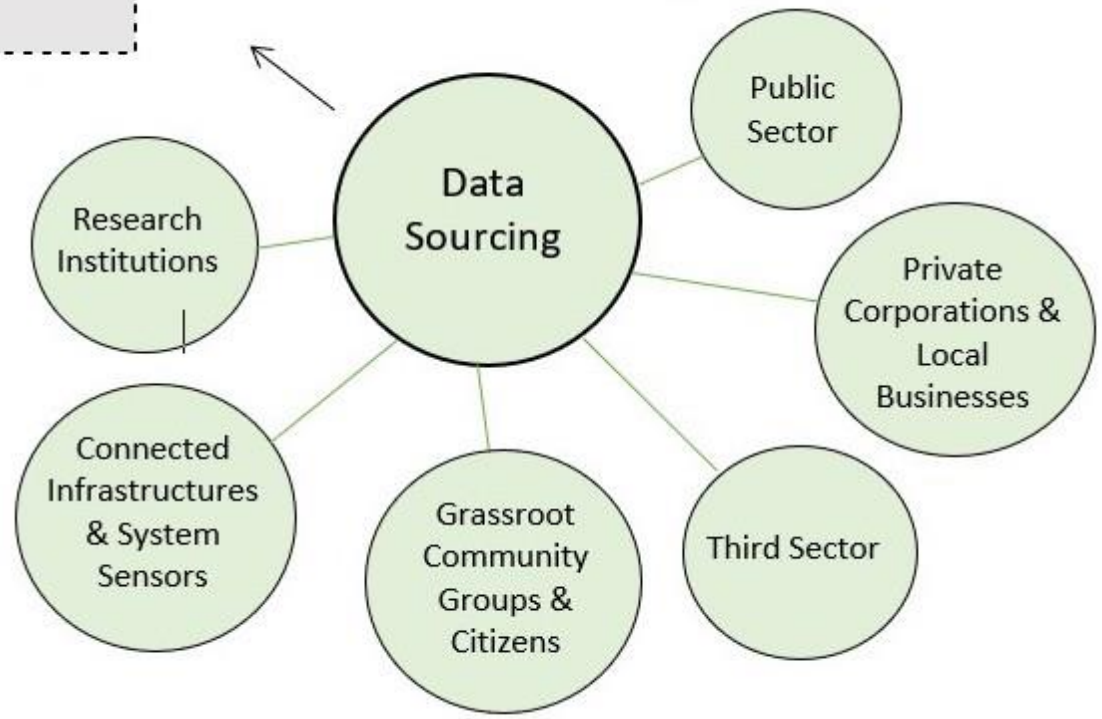


Mapping local government's data engagement

1. Data sourcing

Cities & Local Authorities' Data Engagement

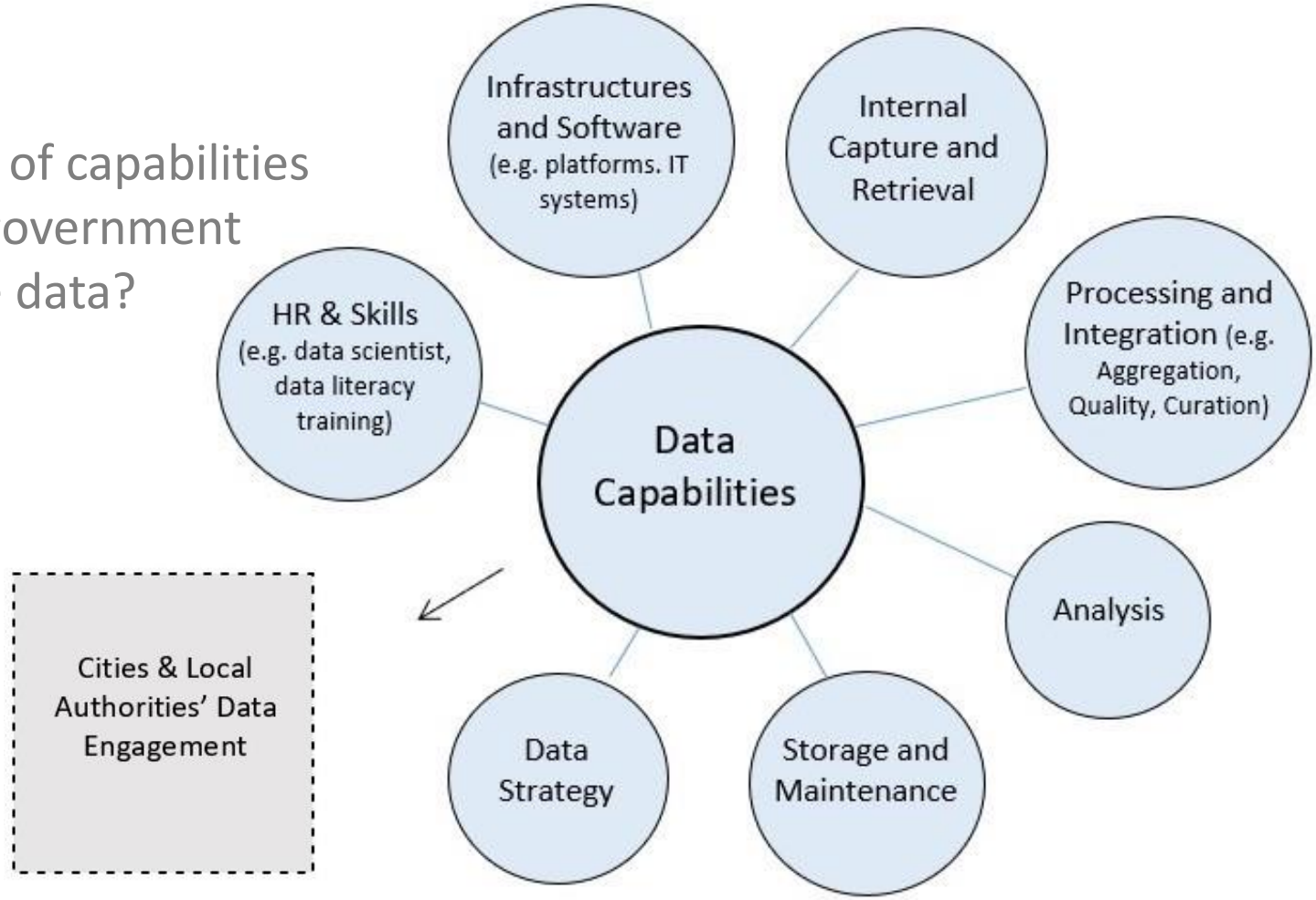
What sources of data does local government use?



Mapping local government's data engagement

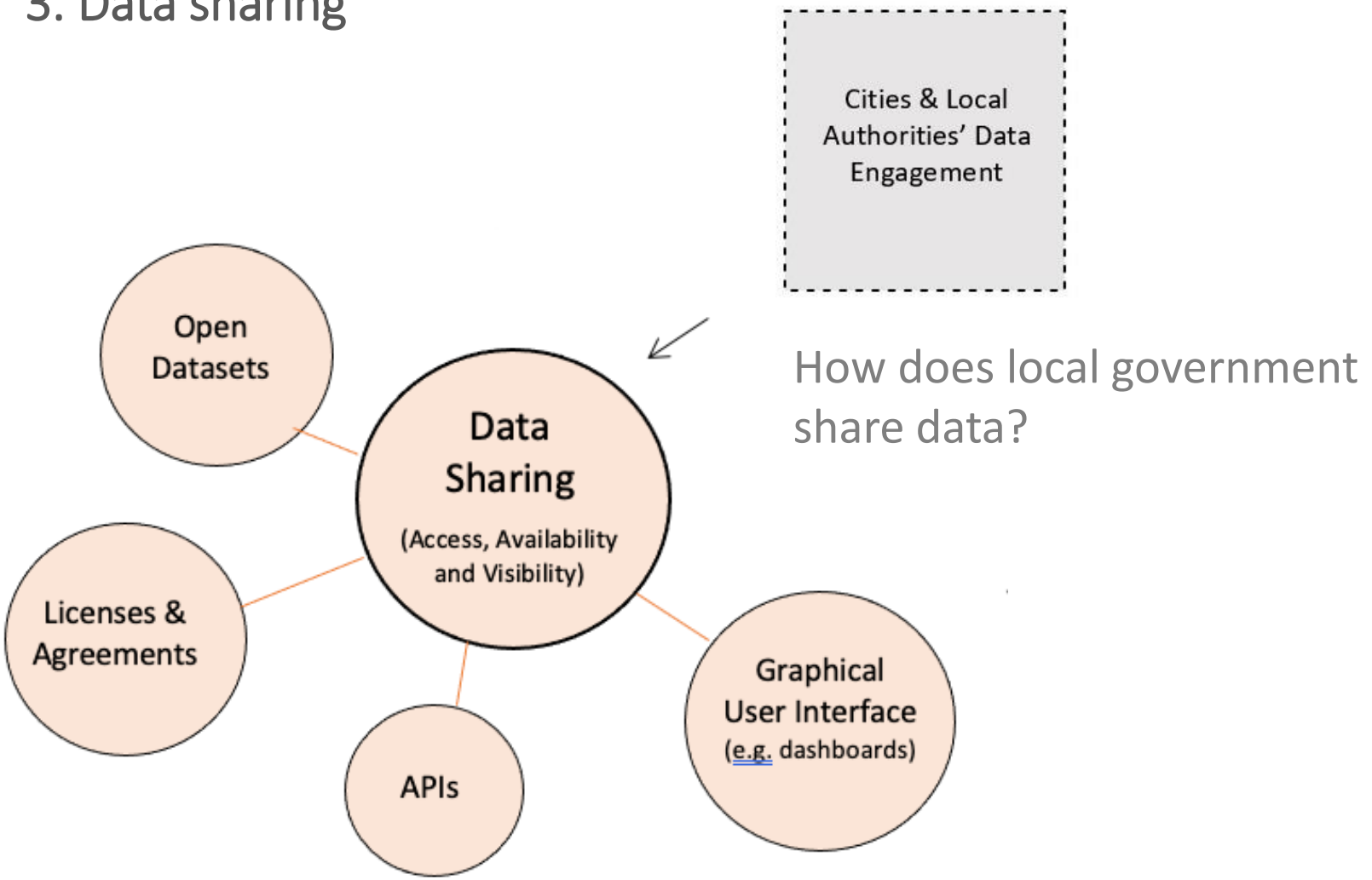
2. Data capabilities

What types of capabilities does local government need to use data?



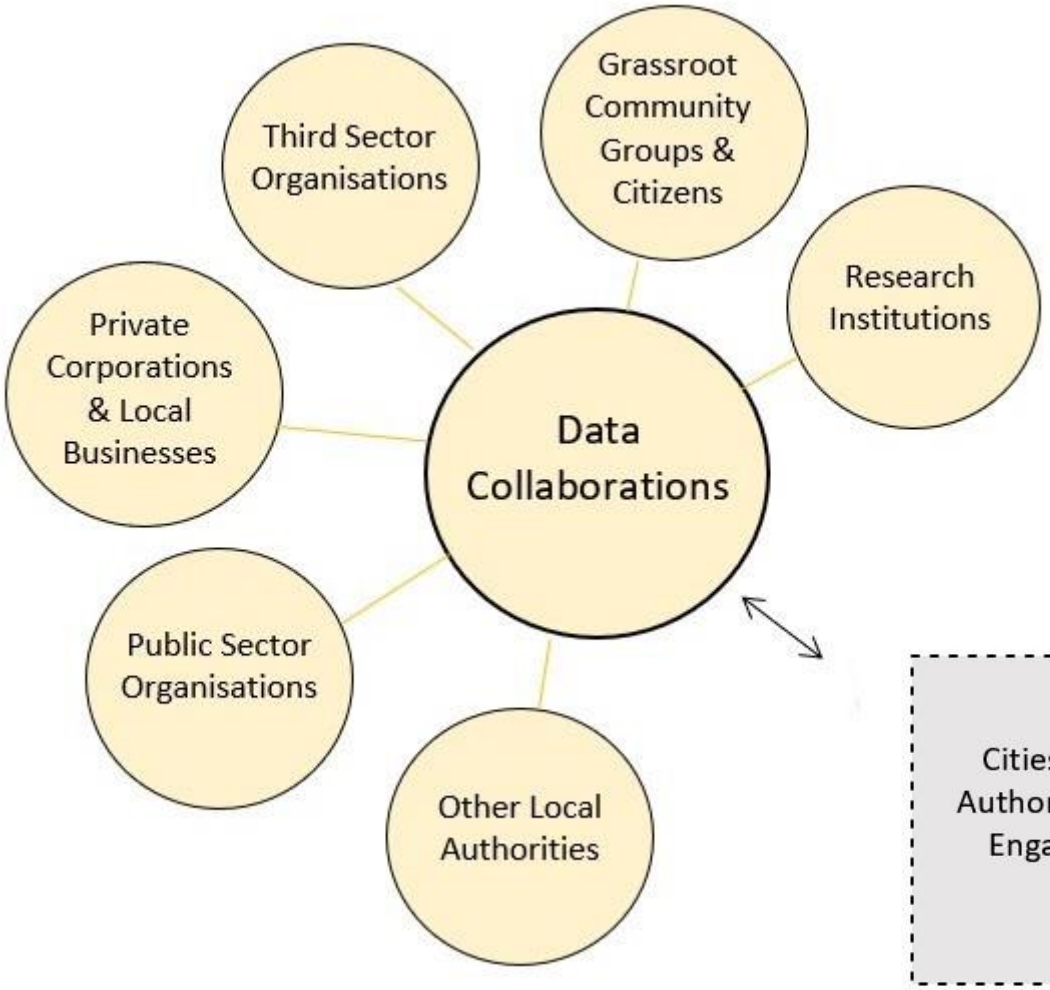
Mapping local government's data engagement

3. Data sharing



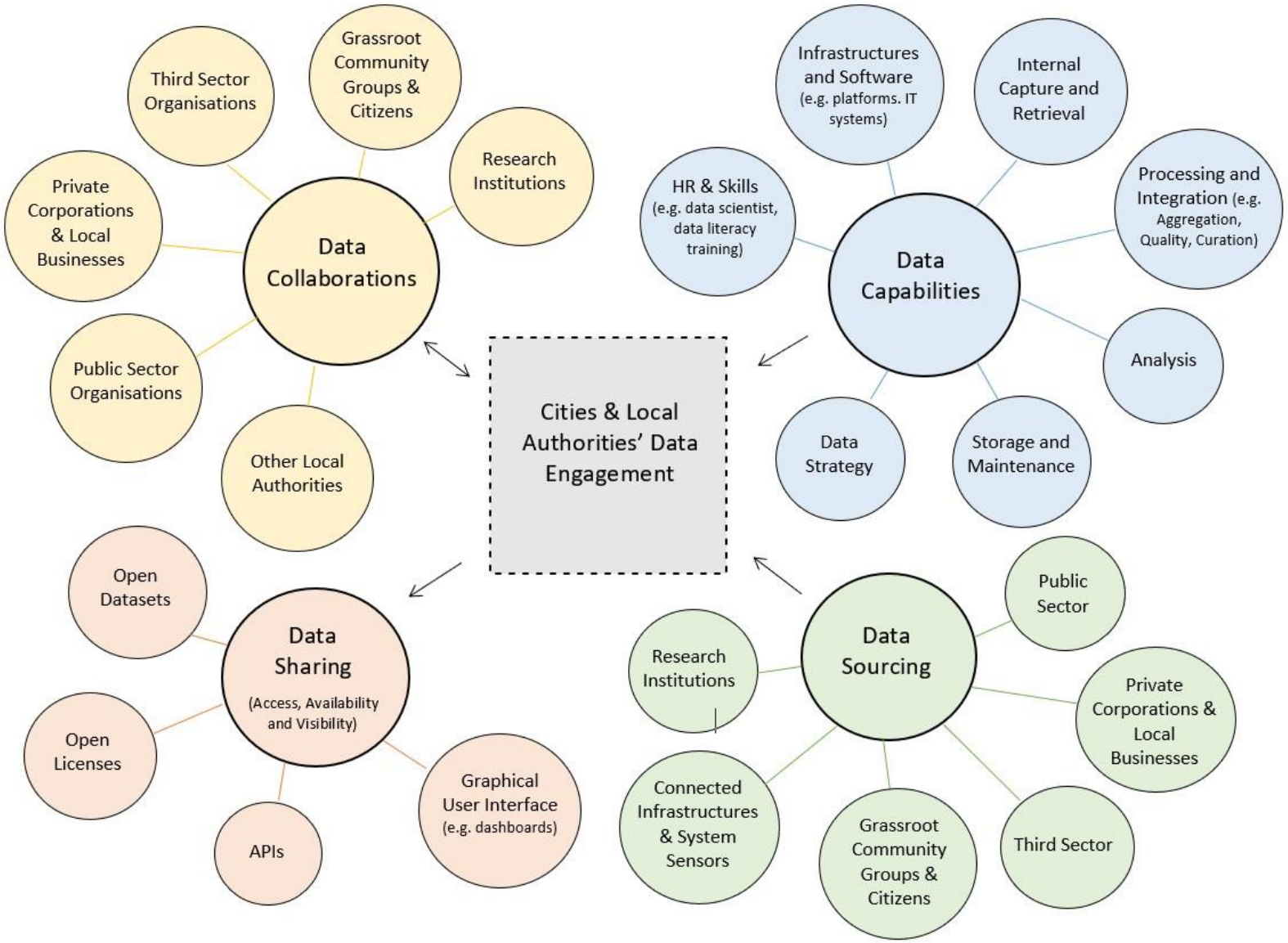
Mapping local government's data engagement

4. Data collaborations



Which stakeholders is local government collaborating with to collect, use and/or analyse data?

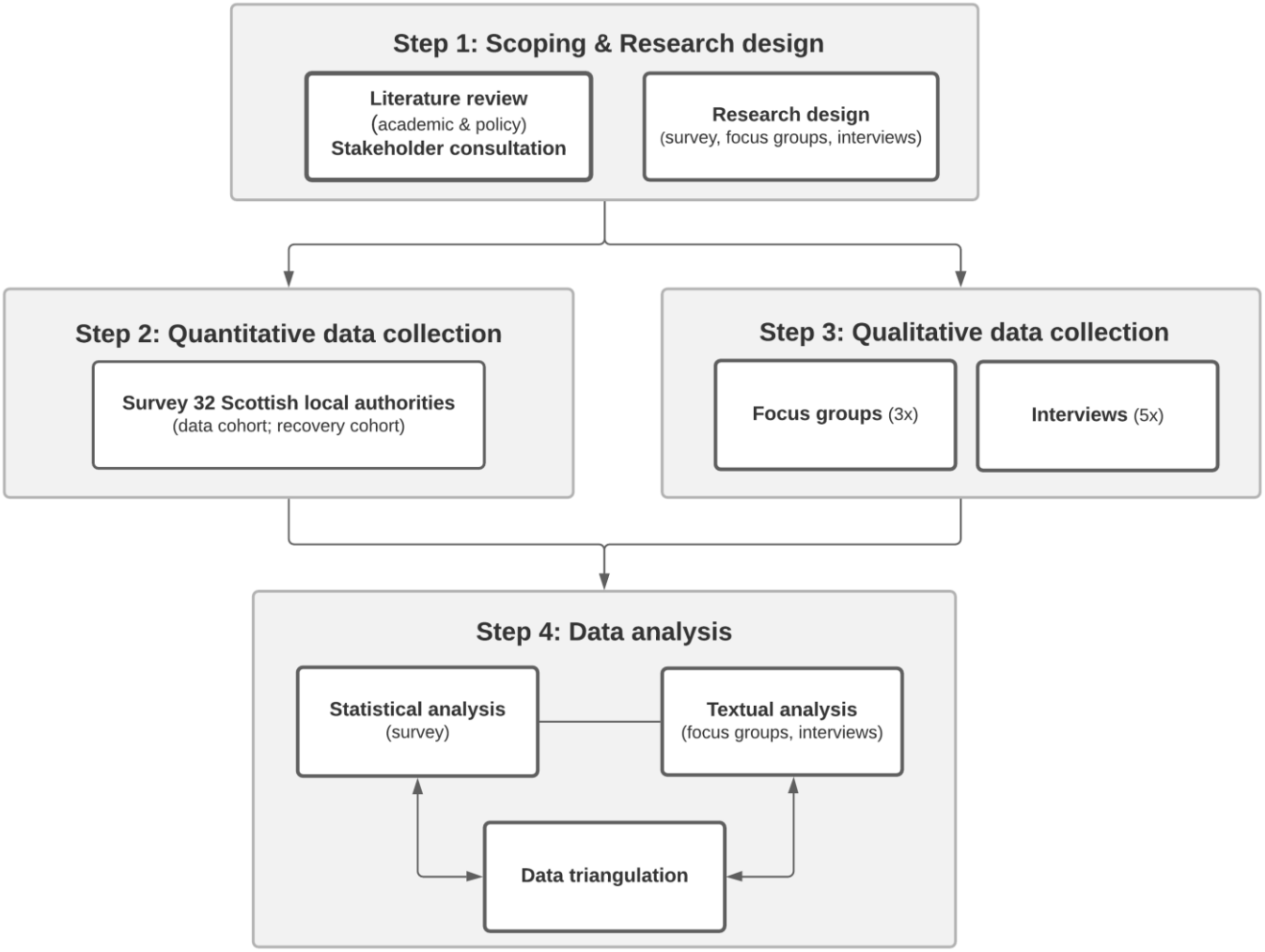
Mapping local government's data engagement



Mapping data types and data engagement

- Review academic and policy literature but also grey literature (e.g. blog posts by practitioners)
- Keep in mind your research objectives/questions (research project aimed to examine data collaborations/networks, particular interest in novel types of data)
- Use mapping/visualisation tools
- If possible, consult stakeholders/ practitioners to ensure that you are not missing any big area, and that they recognise the terminology you use
- Create several iterations, use different possible focuses/levels of detail, find the lens that helps you better understand your specific data-related questions: it is a process

Designing a mixed-methods approach



Designing a mixed-methods approach

1.Survey of the 32 Local Authorities

- Design of the survey: drawing on mapping/scoping exercise and in consultation with the Digital Office
- Sample = 64: 32 x 2

  1 ‘data’ specialist

  1 ‘recovery’ specialist
- Recruitment: Digital Office as gatekeeper for survey/focus groups

  Response rate: 70.3% (45 out of 64 participants)

  Response rate: 96.8% (31 out of 32 LAs)

Designing a mixed-methods approach

2.Focus groups

FG1: between local authorities
FG2: between local authorities & public sector organisations
FG3: between local authorities & third sector organisations

- Different scope for each focus group
- Similar structure to allow comparison
- Use of survey results as prompts

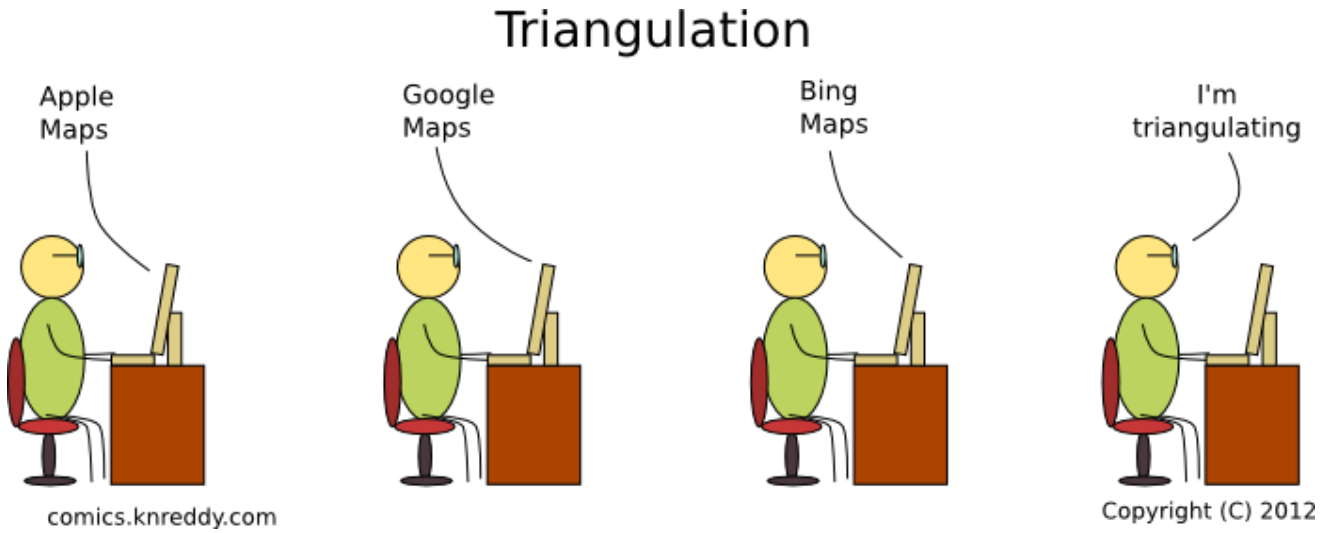
3.Expert interviews

Improvement Service; Scottish Cities Alliance; Socitm Scotland; Digital Office

Designing a mixed-methods approach

4.Data analysis

- Descriptive statistical analysis
- Textual analysis
- Triangulation
- Range of software to support analysis and visualisations



Designing a mixed-methods approach

- Follow ethical guidance
- Think about the order of each step and how they feed into one another
- Be aware of the time commitment required to prepare and organise each step
- Detail organisational requirements that are needed for each step (e.g. support to run FGs (note takers/ facilitator), online/face to face, etc)
- Consider skills/ software training (e.g. Nvivo, R)

Collaborating with key stakeholders

Collaborations:

- bring a variety of perspectives on a common research issue or question
- are informed by practitioner perspectives and thus improve the quality of research
- can facilitate access to hard-to-research organisations/ communities
- promote knowledge exchange, leading to change/ innovation

(Costley et al. 2010: 9)

Collaborating with key stakeholders

- Identify relevant partners
- Define boundaries (e.g. memorandum of understanding, type of involvement/tasks, time required)
- Set and manage expectations (e.g. role, timeline, aims and anticipated outcomes of research)
- Define communication procedures & collaborative tools (e.g. number of meetings, key contact person, Teams vs Zoom)

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References

Costley, C., Elliott, G. & Gibbs, P. (2010). Collaborative research. In Doing work based research: Approaches to enquiry for insider-researchers (pp. 102-114). SAGE Publications Ltd

Durrant, H., Barnett, J., & Rempel, E. S. (2018). Realising the benefits of integrated data for local policymaking: Rhetoric versus reality. Politics and Governance, 6(4), 18–28.

Giest, S. (2017). Big data for policymaking: Fad or fasttrack? Policy Sciences, 50(3), 367–382.

Giest, S., & Ng, R. (2018). Big data applications in governance and policy. Politics and Governance, 6, 4.

Janssen, M., Konopnicki, D., Snowdon, J., & Ojo, A. (2017). Driving public sector innovation using big and open linked data (BOLD). Information Systems Frontiers, 19(2), 189–195.

Kitchin, R. (2014). Conceptualising data. In The data revolution: Big data, open data, data infrastructures & their consequences (pp. 1-26). SAGE Publications Ltd

Kitchin R, McArdle G. (2016) What makes Big Data, Big Data? Exploring the ontological characteristics of 26 datasets. Big Data & Society. June. doi:10.1177/2053951716631130

Klievink, B., Romijn, B., Cunningham, S., & de Bruijn, H. (2016). Big data in the public sector: Uncertainties and readiness. Information Systems Frontiers, 19(2), 267–283.

Open Data Institute (ODI) (2020) The value of data. Summary Report. https://theodi.org/article/the-value-of-data/

van Ooijen, C., B. Ubaldi and B. Welby (2019), "A data-driven public sector: Enabling the strategic use of data for productive, inclusive and trustworthy governance", OECD Working Papers on Public Governance, No. 33, OECD Publishing, Paris.

Zeleti, F.A., Ojo, A. (2017) Open data value capability architecture. Inf Syst Front 19, 337–360.