



Executive Summary

Local government across Scotland, as elsewhere, was at the forefront of the rapid response to the COVID-19 pandemic. It delivered essential services to communities, provided support to local businesses, contributed to test, trace and local outbreak monitoring, and furnished central government and public sector organisations with granular information and intelligence. This, and more, put a sudden, great demand on local authorities, forcing them to adapt quickly and engage in innovation.

Gathering information, collecting evidence and generating intelligence have been central to how local governments responded to the COVID-19 crisis. In turn, this has put the spotlight on data, prompting questions about how local authorities have identified and handled arising data needs; how they have used and analysed data; what related challenges they have encountered; and what innovation opportunities they have pursued.

This report provides comprehensive answers to these questions based on a research project conducted between autumn 2020 and spring 2021. The project was led by the University of Glasgow's Urban Big Data Centre (UBDC), which combines a national data service with world-leading research into the social, economic, and environmental well-being of cities. The research was funded by the UK's Economic & Social Research Council and implemented in collaboration with the Digital Office for Scottish Local Government. Its purpose was to generate applied research to help inform policy and practice on how local government across Scotland can optimise data practices as we move through, and out of, the crisis. Beyond Scotland, this report should be of interest to various stakeholders active in data policy, governance, and practice: the issues, challenges, and opportunities identified broadly resonate with data-related developments elsewhere.

Research design and methodology. The research underlying this report was generated using a combination of quantitative and qualitative methods. An online survey, with 20 mainly closed questions, was carried out in November-December 2020 to obtain a systematic picture of local authorities' engagement with various aspects of data (use, needs, capabilities) during the COVID-19 pandemic. Respondents were prompted to comment on different phases: the initial crisis (spring 2020), the ongoing period (late autumn 2020) and the near future (spring-summer 2021). A total of 64 participants were invited to complete the survey, with two people (a data specialist and a recovery specialist) from each local authority being sent the invitation. 45 participants (70.3%) from 31 (out of 32) local authorities completed the survey. Next, three focus groups were carried out in March-April 2021 to elicit complementary qualitative information: one brought together local authority participants in discussion among themselves; another engaged local authority participants in conversation with participants from public sector organisations (NSS NHS Scotland and Police Scotland) and the Scottish government; and a third combined local authority participants with third sector participants. Additionally, individual expert interviews were carried out in spring 2021 with four organisations operating across Scotland: the Improvement Service, the Scottish Cities Alliance, the Society for Innovation, Technology and Modernisation (Scottish branch), and the Digital Office for Scottish Local Government. The research data was examined using descriptive statistics (survey) and quantitative-qualitative textual analysis (focus groups and interviews). The different data outputs were triangulated to ensure validity and align multiple perspectives. Ethical approval for the research was obtained from the University of Glasgow.

The report contains 15 key findings, which are organised in four overarching themes as follows:

Theme 1: Rapid response and innovation with focus on public sector data. The research confirms that local authorities experienced both a sudden increase in data demands and an acute intensification of data use. For example, 83% of survey respondents stated that there was an increase in internal data sharing, 79% indicated the use of new data sources, and 74% confirmed increased data collection. According to one focus group participant, 'there were lots of new reporting requirements and we were also being supplied data from new sources that we hadn't had before'. Significantly, respondents rated the importance of public sector data for managing the pandemic far higher than private sector data and novel (smart) data: 89% of respondents found internal public sector data in the early stage of the pandemic to be 'very important' and a further 17% 'quite important'. In contrast, only 4% of respondents rated private sector data 'very important' and 27% 'quite important', with 13% rating it 'not at all important'. Similarly, only 4% of respondents considered novel data (for example, cellular data, crowdsourced data and IoT data) to have been 'very important' and only 27% 'quite important'; 22% considered novel data to have been 'not at all important'.

That the main focus was on public sector data is largely explained by the nature of the crisis, which created an urgent need for on-the-ground information about local communities (for example, health, social welfare and education) and businesses (for example, rate relief and grants). Nevertheless, the low figures for private sector data and novel data use are remarkable. In the latter case, some participants indicated a relative lack of technical familiarity and queried related benefits. In both cases, however, participants expressed the view that these data sources would gain in importance in the future.

Theme 2: Existing challenges amplified. While local authorities demonstrably immersed themselves in data collection and analysis, they encountered numerous challenges along the way, to do with on the one hand, the quality of data itself and, on the other hand, with the wider complexity of local government structures. One survey respondent summed up the main challenges thus: 'lack of joined-up data; lack of easy access to data; lack of sufficient data analysts'. This was echoed by an average rating of 4 on a scale of 1-5 (5 being the most challenging) for 'ensuring data quality and standards'. More pronounced still, 'data integration', which includes data interoperability and matching, was rated 4.2 by survey participants. These challenges were not new, but the crisis exposed and amplified them significantly. Participants identified in particular the need for agreed data standards and common identifiers if data is to be used and shared effectively, both within and across local authorities. Although considerable progress has been achieved in this respect as a direct result of the pandemic, participants were clear that significant further efforts are required to be able to harness data more fully.

Apart from data quality, participants also highlighted the complexity of local government concerning both internal 'silo' structures (and related questions of data ownership and responsibilities) and the persistence of legacy systems, which render data interoperability and integration difficult. It is also reported that gaps in data skills and data literacy are additional areas of concern: the former encompasses technical and analytical know-how; the latter more broadly capabilities of understanding and using data in support of policy – and decision-making. Not surprisingly, participants flagged up the investment dilemma: if progress achieved with data engagement is to outlast the pandemic, then proper investment will be required to support it, albeit against a background of a continuing funding squeeze on the public sector.

Theme 3: Growing demand for cross-sectoral data sharing. A key aspect of the accelerated data use was the significant increase in data sharing across the public sector, particularly between local authorities and the NHS. 70% of survey respondents stated that data sharing had increased, and 65% reported the use of bespoke data sharing agreements. Participants positively noted the efficiency of data sharing arrangements under time pressure. As one participant put it, 'we could turn something around in a few days that normally would have taken about four or five months'. Another positive outcome of the crisis is the evident commitment to working together across public sector organisations, for example by using common data sharing protocols and, more generally, engaging in knowledge exchange through various networks such as the COVID-19 Data Intelligence Network. That said, participants cautioned against regressing to previous fragmented practice in case the innovative momentum is not maintained. Indeed, they highlighted several areas of cross-sectoral data governance that continue to be disjointed and that need addressing (for example, duplication of efforts and lack of visibility of what data is available), with one participant unfavourably referring to a 'cottage industry' approach to data sharing. A separate, major finding relates to data sharing with the third sector, which participants characterised as very much ad hoc and hyper-local. Third sector participants perceived related data access demands on them as onerous, given limited technical and human resources, and the relationship was often seen as one-sided. On their part, local authority participants explained the difficulties of collating and integrating data from multiple third sector sources. However, both sides agreed that the third sector is an essential source of both quantitative and qualitative data.

Theme 4: Opportunities for joined-up data practices in the public interest. When prompted to consider the future, participants broadly agreed that recent achievements provided opportunities for further innovations in data policy and practice in Scotland. For one thing, there was optimism that the value of data would no longer just be recognised by small teams of data specialists in local authorities, but instead be recognised across the organisations, and become embedded more firmly in policy – and decision-making processes. In the words of one participant, the response to the pandemic has widely demonstrated 'how powerful data can be'. In addition, participants expressed commitment to building on cross-sectoral data sharing by developing stronger collaboration across local government. This would help both to increase efficiencies by reducing duplicate efforts and to nurture a shared learning environment. Participants saw a particular value in strengthening existing cross-national networking arrangements. Last, but not least, participants raised a wider, fundamental issue: namely, how to place the public interest more firmly at the centre of data policy and practice. Participants agreed that to secure public trust in local government's data handling, the purpose of data collection and use needs to be stated clearly, and tangible benefits to the public need to be demonstrated.

Based on these findings, a series of policy and practice recommendations have been distilled, aimed at enhancing data applications, governance, and culture in local government. These are addressed to data specialists as well as wider users of data, both within local government and across public sector organisations and the wider data community. They can be found on pages 27-28.