



Community Data Ownership and Ethical Local-Governance Practices

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Abstract

The expansion of digital local government has increased the volume and strategic value of data generated through public services, community participation, mobility systems, environmental monitoring, civic platforms, social programs, and neighborhood-level administrative activities. Although such data can improve evidence-informed decision-making, public-service design, and local planning, conventional governance models frequently concentrate control in government departments, technology providers, or centralized data infrastructures while giving communities limited influence over how information about them is collected, combined, interpreted, shared, retained, or reused. Contemporary data-governance scholarship therefore increasingly distinguishes formal institutional control from legitimate community authority and participatory stewardship. OECD guidance treats data governance as a combination of technical, policy, and regulatory arrangements extending across the entire data lifecycle, while community and Indigenous data-governance frameworks emphasize collective benefit, authority to control, responsibility, ethics, and meaningful participation.

This paper develops an ethical community data-governance framework for local public administration. Using a structured conceptual synthesis of scholarly research and authoritative governance frameworks, it analyzes six dimensions: community representation, purpose transparency, consent and collective control, equitable benefit-sharing, privacy and security, and accessible grievance redress. The study argues that “community data ownership” should not be interpreted narrowly as an absolute property claim. Rather, it should represent a bundle of governance rights through which communities obtain meaningful influence over data purposes, access conditions, representation, secondary use, benefit allocation, and accountability.

A lifecycle governance matrix and an illustrative maturity analysis demonstrate how local authorities can convert these principles into operational practice. The findings indicate that ethical local data governance requires institutionalized community participation before data collection begins and throughout subsequent analysis, sharing, reuse, and evaluation. The paper concludes that trustworthy digital local governance depends not only on obtaining data about communities, but on developing legitimate arrangements through which communities participate in determining what those data mean, who may use them, for which purposes, and under what conditions.

Keywords: community data ownership; data governance; local government; data stewardship; data sovereignty; digital governance; participatory governance; public-sector ethics



1. Introduction

Local governments increasingly depend on digital data to understand population needs, allocate resources, monitor infrastructure, design public services, evaluate programs, manage environmental conditions, and support urban and rural planning. Contemporary digital-government strategies consequently treat reliable and well-governed data as a strategic public-sector resource. The OECD defines data governance broadly across technical, regulatory, institutional, and policy arrangements covering the data value cycle from creation to deletion, and its 2026 Digital Government Outlook emphasizes that connected digital infrastructure and well-governed data are central to reliable public-service delivery.

Greater availability of data, however, does not automatically create democratic or socially legitimate governance. Data concerning neighborhoods, mobility, community health, cultural practices, public-service use, environmental resources, housing conditions, or local economic activities can influence how public authorities characterize communities and determine priorities. Matthew Bui's work on community-driven urban data governance argues that data-driven initiatives should incorporate a wider range of local actors and local knowledge because dominant data environments can otherwise privilege institutional and corporate representations of communities. Research on digitally supported community monitoring likewise shows that communities may legitimately seek restrictions on access to sensitive information and greater control over how locally generated knowledge is reused.

The concept of community data ownership has therefore emerged as an important but complex governance proposition. Data do not fit comfortably within conventional ideas of physical property, and legal systems do not universally recognize an unrestricted community ownership right over every dataset associated with a population. Siddharth Peter de Souza and Kritika Bhardwaj demonstrate that even defining a “community” for data-governance purposes involves difficult questions of belonging, participation, representation, and the possibility of exit. Jan Oleszczuk Zygmuntowski similarly argues that data governance must address power, stakeholder interests, fundamental rights, public value, and economic interests rather than relying solely on technical or legal control mechanisms.

For this reason, the present study uses community data ownership as a governance concept rather than a claim of universal legal title. Ownership in this paper refers to a meaningful bundle of collective capabilities: participation in defining legitimate purposes, influence over access and reuse conditions, representation in governance bodies, protection of sensitive information, visibility into data flows, authority to question harmful uses, and a reasonable expectation that value created from community data will contribute to public or community benefit. This interpretation is consistent with participatory stewardship approaches and with the CARE Principles for Indigenous Data Governance, which emphasize Collective Benefit, Authority to Control, Responsibility, and Ethics.

The study responds to a practical gap between increasingly sophisticated local data infrastructures and comparatively limited institutional mechanisms for continuous community participation. OECD evidence published in 2026 indicates that stakeholder engagement exists in many national public-sector data strategies, yet involvement becomes substantially weaker in operational open-data planning and impact assessment. The challenge is therefore no longer simply whether public institutions should become data-informed, but how they can do so without converting citizens and communities into passive sources of extractable information.



2. Objectives of the Study

2.1 To Conceptualize Community Data Ownership for Local Governance

The first objective is to develop a governance-oriented interpretation of community data ownership that moves beyond the binary choice between unrestricted institutional ownership and unrestricted public openness. The study examines how community authority may be expressed through representation, stewardship, purpose limitation, access rules, consent mechanisms, accountability, and benefit-sharing. This objective responds to scholarship demonstrating that community data governance raises difficult questions regarding who represents a community, who may participate in decisions concerning its data, and how individual and collective interests can coexist.

2.2 To Identify Ethical Local-Governance Safeguards

The second objective is to identify safeguards that local authorities can institutionalize throughout the data lifecycle. These safeguards include transparent purpose definition, proportionate collection, community representation, meaningful consent where applicable, privacy protection, controlled access, responsible secondary use, benefit assessment, and accessible grievance mechanisms. OECD public-sector data guidance similarly places ethical governance within the broader management of data across its lifecycle rather than treating ethics as a one-time compliance exercise.

2.3 To Develop an Operational Community Data Stewardship Model

The third objective is to translate normative principles into a practical local-government framework. The proposed model connects specific governance responsibilities with the stages of planning, collection, storage, analysis, sharing, reuse, and retirement of community-related datasets. It is designed as an adaptable institutional framework rather than a universal legal template, because the appropriate balance between individual rights, collective interests, public benefit, and institutional responsibility depends on legal and social context.

3. Review of Literature

3.1 From Organizational Data Control to Community Stewardship

Traditional data governance was often concerned with how an organization could exercise authority over its internal data assets, maintain data quality, assign responsibilities, and control organizational access. Contemporary scholarship has expanded this perspective because data increasingly move across organizational boundaries and can shape public policy, market power, surveillance capacity, and social representation. Zygmuntowski describes this transition as a movement from internal data management toward a systemic governance problem involving fundamental rights, public interest, economic value, institutional trust, and stakeholder participation.

This transition is particularly consequential in local government. Municipal and community data are rarely produced by only one actor. They may emerge from administrative records, service interactions, environmental sensors, civic-reporting applications, public consultations, telecommunications, transportation networks, businesses, researchers, community organizations, and citizen-generated monitoring. OECD work on smart-city data governance emphasizes the importance of



data-sharing arrangements and standards across departments and levels of government while recognizing that governance is necessary for interoperability and responsible reuse.

Participatory data stewardship provides an alternative to a purely organization-centered model. The Ada Lovelace Institute describes participatory stewardship as an approach in which people can meaningfully inform, shape, and in appropriate circumstances govern the collection, use, storage, and sharing of data relating to them. Community-driven approaches similarly emphasize that local organizations and residents possess contextual knowledge that may be absent from centralized datasets or commercial digital platforms.

3.2 Collective Authority, Data Sovereignty, and Ethical Responsibility

Indigenous data-governance scholarship provides one of the most developed bodies of work on collective authority over data. The CARE Principles emphasize Collective Benefit, Authority to Control, Responsibility, and Ethics, directing attention to the people and purposes behind data rather than only to technical accessibility. These principles do not imply that all communities are interchangeable with Indigenous nations or that Indigenous sovereignty concepts can simply be transferred to ordinary municipal settings. They do, however, demonstrate that responsible governance can recognize collective interests and responsibilities that conventional individual-consent models may overlook.

Research on community-based monitoring provides practical evidence of this concern. Johnson and colleagues note that communities may wish to restrict access to sensitive local information and that open-data expectations are not always appropriate for Indigenous or locally grounded knowledge. Their review identifies mechanisms such as data-access agreements, tiered permissions, restrictions on sensitive data, and protocols governing secondary use.

Similarly, de Souza and Bhardwaj caution that a community cannot be treated as a homogeneous administrative category. Their analysis of community data emphasizes belonging, participation, and exit, showing why legitimate community governance must account for internal diversity and individual standing within the collective. Community representation must therefore avoid replacing centralized institutional control with another form of unaccountable gatekeeping.

3.3 Research Gap: Operationalizing Ethical Community Control

Existing research provides strong conceptual arguments for data sovereignty, data commons, participatory stewardship, public-interest data governance, and community-centered urban data practices. Yet Zygmuntowski observes that a substantial part of the data-commons literature remains conceptual and that practical institutional arrangements require greater attention to stakeholder relationships and operational processes. Bui likewise argues for wider participation of local actors in data-driven urban governance rather than allowing dominant institutional or corporate actors to define community realities unilaterally.

The unresolved problem is therefore how local authorities can translate community-oriented data principles into routine administrative practice. Ethical commitments may be stated at the policy level without being embedded in procurement rules, data-sharing agreements, analytical workflows, governance boards, or impact evaluation. OECD's 2026 evidence reflects this broader implementation gap: while 30 of 36 surveyed OECD countries reported policy initiatives supporting ethical data



management, only 19 of 36 reported incorporating ethical considerations into areas such as procurement or third-party handling beyond basic legal requirements.

This paper addresses that gap by developing a lifecycle framework that connects community authority with specific institutional controls. The contribution is not a claim that every dataset should become collectively owned in a strict legal sense. Rather, the framework seeks to establish circumstances in which the people represented by data receive genuine influence over its purposes, risks, access, interpretation, reuse, and resulting benefits.

4. Research Methodology

4.1 Research Design

The study adopts a structured conceptual-synthesis methodology. No beneficiary survey, municipal experiment, or original administrative dataset is presented as having been completed. The design was chosen because the research question concerns the integration of ethical principles, participatory governance, data stewardship, and local administrative practices rather than the estimation of a population parameter.

The analytical evidence base combines peer-reviewed scholarship with primary or authoritative institutional guidance. Sources were selected from data-governance, digital-government, Indigenous data-governance, urban governance, community-monitoring, data-commons, and participatory-stewardship literature. Particular weight was given to OECD publications, the Global Indigenous Data Alliance's CARE framework, the European Data Governance Act framework, and peer-reviewed research directly examining community data, local governance, or collective data stewardship.

4.2 Search and Evidence-Selection Procedure

Targeted searches were conducted up to August 12, 2026 using combinations of the terms community data ownership, community data governance, local-government data ethics, participatory data stewardship, data commons, community data sovereignty, local digital governance, and ethical public-sector data use. Sources were included when they directly contributed to at least one of the following analytical themes: community authority, data lifecycle governance, public-sector ethics, participation, privacy, public benefit, accountability, or grievance mechanisms.

Commercial commentary lacking a clear governance contribution was excluded from the core analytical corpus. Sources addressing Indigenous data governance were used carefully as conceptual and ethical guidance rather than as evidence that Indigenous sovereignty and ordinary municipal governance are legally equivalent.

4.3 Analytical Framework

Six governance dimensions were derived through thematic synthesis of recurring principles across the evidence base. The dimensions were subsequently mapped against local-government responsibilities to create an operational stewardship framework.

Table 1: Analytical Dimensions for Ethical Community Data Governance

Dimension	Central Governance Question	Ethical Requirement
Community Representation	Who legitimately participates in decisions concerning community data?	Inclusive and accountable representation
Purpose Transparency	Does the community understand why data are collected and how they may be used?	Clear purpose statements and use disclosure
Consent and Control	Can affected people influence collection, access, and significant secondary uses?	Context-sensitive consent and governance authority
Benefit-Sharing	Does data use generate identifiable community or public value?	Fair distribution and assessment of benefits
Privacy and Security	Are individual and collective harms from exposure or misuse minimized?	Proportionate access, security, and sensitivity controls
Grievance Redress	Can communities question, correct, restrict, or challenge problematic uses?	Accessible accountability and remedial procedures

The framework treats these dimensions as interdependent. Transparency without control may simply make extraction more visible, while consent without accessible information may become procedural rather than meaningful. Similarly, secure storage cannot establish ethical governance if communities have no influence over purposes or if resulting benefits are distributed inequitably.

5. Analysis

5.1 Ethical Risks Across the Community Data Lifecycle

The first analytical finding is that ethical risks begin before data collection. Local authorities frequently define a policy problem, select indicators, specify categories, and choose technological platforms before communities are invited to participate. Yet these early choices influence what becomes visible to decision-makers and what remains absent. Bui's community-driven urban-governance analysis demonstrates why locally grounded actors and forms of knowledge need to be included in data-driven initiatives rather than relying primarily on corporate or technocratic representations.

Collection creates another layer of responsibility. Governments should distinguish between information that is convenient to obtain and information that is necessary and proportionate for an identified public purpose. Community participation at this stage can reveal culturally sensitive categories, locally specific privacy concerns, exclusion risks, or unintended consequences that may not be evident to technical teams.

Storage and integration create additional concerns because combining apparently routine datasets may produce new inferences about neighborhoods or social groups. OECD's broader data-governance framework emphasizes privacy, intellectual-property concerns, empowerment, interoperability, and responsible management throughout the value cycle rather than only at the point of collection.

Sharing and secondary reuse may create the greatest distance between the community and the original context of data generation. Research on community-based monitoring notes that communities may authorize data for one purpose while objecting to later uses that were never discussed or approved. Tiered access arrangements, data-use protocols, attribution requirements, and use-specific agreements are possible institutional responses.

5.2 Proposed Community Data Stewardship Matrix

Table 2: Ethical Local-Governance Matrix for Community Data

Data Lifecycle Stage	Principal Ethical Risk	Recommended Community-Governance Practice	Institutional Responsibility
Problem Definition	Community needs defined externally	Participatory problem framing	Local authority and community representatives
Data Collection	Excessive or culturally inappropriate collection	Necessity review and contextual consultation	Data controller / responsible department
Classification	Categories misrepresent local realities	Community review of sensitive classifications	Data team and domain experts
Storage	Unauthorized access or excessive retention	Security controls and retention schedules	Data steward / information-security unit
Integration	New profiling created through dataset linkage	Impact assessment before linkage	Data-governance board

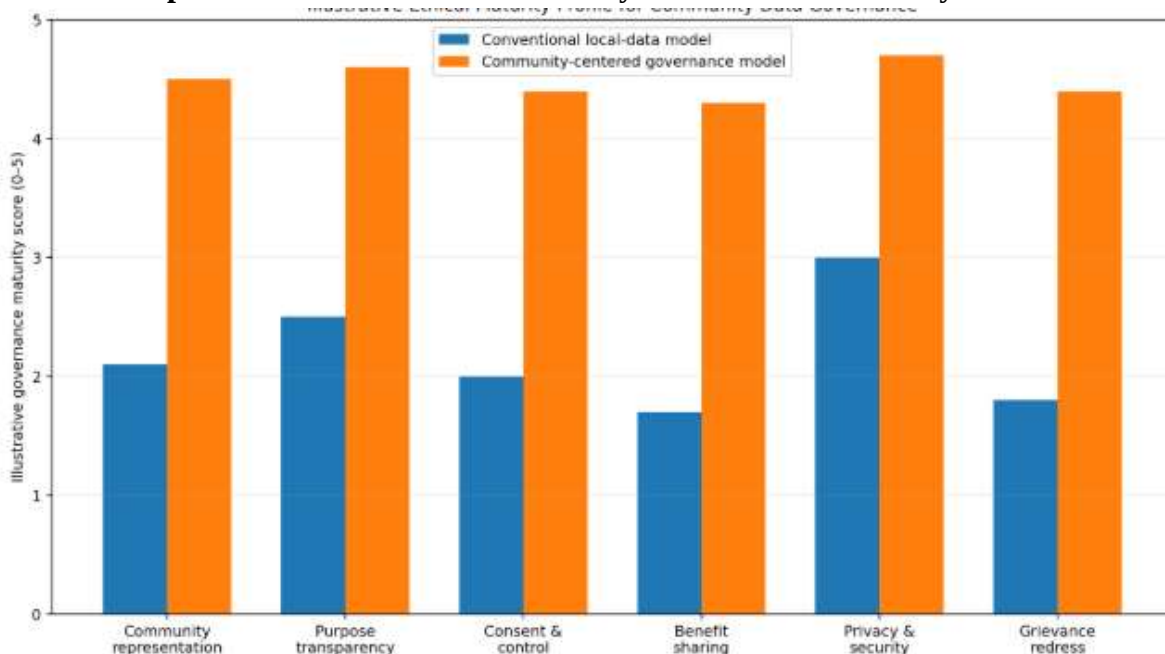
Source: Proposed by the author through structured synthesis of contemporary community-data and public-sector governance literature.

The matrix establishes an important principle: community involvement should not be restricted to consultation after a system has already been designed. Participation should influence the definition of the problem, collection practices, access conditions, interpretation, and decisions about secondary reuse.

5.3 Illustrative Ethical-Governance Maturity Analysis

To demonstrate how the framework could be applied, an illustrative maturity assessment was developed using a five-point scale. A score of 0 represents the absence of an established safeguard, while 5 represents a strongly institutionalized and regularly evaluated practice. The numerical values below are simulated for methodological demonstration; they are not observations collected from an actual local authority.

Graph 1: Illustrative Ethical Maturity Profile for Community Data Governance



The illustrative baseline assumes that a conventional local-data system performs comparatively better in technical privacy and security than in community representation, collective control, benefit-sharing, and grievance redress. This configuration is plausible as a conceptual example because organizational data programs often develop security and regulatory controls earlier than institutionalized participatory mechanisms. OECD's 2026 findings similarly suggest that public-sector ethical-data principles are increasingly recognized while stakeholder engagement and impact evaluation remain less mature in important areas of data governance.

The community-centered profile demonstrates that ethical improvement does not require abandoning security, administrative efficiency, or public-interest reuse. Instead, it adds governance capacities that are commonly underdeveloped: transparent purposes, representative participation, restrictions on inappropriate secondary use, benefit evaluation, and effective redress. The graph should therefore be interpreted as a diagnostic framework for institutional discussion rather than as empirical proof of performance differences.



6. Discussion

6.1 Ownership Should Be Understood as Relational Governance

The findings indicate that disputes concerning community data cannot be resolved simply by declaring that either individuals, governments, technology providers, or communities “own” all relevant data. Data can simultaneously contain information about identifiable individuals, reflect collective characteristics, result from public expenditure, incorporate private technological infrastructure, and generate wider public value.

A more workable approach is to conceptualize community ownership as relational governance authority. Under this model, communities need not possess an unrestricted right to prevent all public-interest use. Instead, legitimate governance requires meaningful influence over purposes, access, interpretation, representation, and benefit allocation.

This conception aligns with the CARE emphasis on authority, collective benefit, responsibility, and ethics while also acknowledging de Souza and Bhardwaj's warning that communities contain internal differences and that mechanisms for belonging, participation, and exit matter.

Community authority should therefore be accountable internally as well as externally. A neighborhood council, community organization, traditional authority, or advisory body should not automatically be assumed to represent every resident. Representation procedures need transparent selection rules, conflict-of-interest management, inclusion of marginalized voices, and mechanisms through which individuals can challenge decisions made in the name of the community.

6.2 Open Data and Community Control Are Not Necessarily Opposites

Open government data can strengthen transparency, research, innovation, and public accountability. OECD policy supports making data as open as possible while retaining appropriate restrictions where legitimate interests require protection. Its 2026 analysis also shows continuing expansion of open-data availability while noting persistent weaknesses in stakeholder engagement and impact measurement.

The ethical question is therefore not whether all data should be open or closed, but which level of access is justified for a particular dataset and purpose. A local authority might legitimately publish aggregated infrastructure information while restricting fine-grained cultural, environmental, health, or location data whose disclosure could expose individuals or communities to harm.

Johnson and colleagues demonstrate that digital community-monitoring systems already use mechanisms such as tiered permissions and data-use agreements to reconcile utility with community control. Such models provide a useful alternative to treating unrestricted openness as the sole indicator of responsible data policy.

The European Data Governance Act provides another relevant institutional perspective by seeking to increase trust in voluntary data sharing while establishing frameworks for public-sector data reuse, data-intermediation services, and data altruism. Although this regulatory architecture is jurisdiction-specific, its emphasis on trusted mechanisms illustrates how wider data availability can be pursued without abandoning governance responsibilities.

6.3 Ethical Data Governance as a Foundation of Local Trust

Local government occupies a distinctive position because many public decisions are experienced directly at neighborhood and household levels. Data concerning transport, waste management, housing, public health, environmental conditions, social programs, land use, licensing, public safety, and community infrastructure can shape resource allocation and administrative priorities.

A technically sophisticated data platform may therefore fail institutionally if residents believe that data are extracted without explanation, used for unexpected purposes, or shared with third parties without meaningful safeguards. Conversely, participation without operational authority may become symbolic. Zygmuntowski's work highlights institutional trust and stakeholder participation as important elements in the development of legitimate data commons, while participatory stewardship research emphasizes empowering people to shape how data are governed.

Ethical local governance should consequently create visible lines of responsibility. Residents should be able to identify which body controls a dataset, why it is held, who can access it, how long it will be retained, whether it may be combined with other information, and how misuse can be challenged. This approach also improves institutional learning. Complaints and community feedback should not be treated merely as reputational risks; they can reveal inaccurate categories, unforeseen privacy consequences, inequitable benefit distribution, inaccessible data practices, or inappropriate secondary uses. A mature data-governance system therefore incorporates grievance evidence into periodic policy review.

7. Conclusion

Community data have become increasingly valuable to contemporary local administration, but their usefulness creates responsibilities that cannot be satisfied solely through technical security or formal legal compliance. Local data may represent communities, influence public priorities, enable new forms of analysis, and generate economic or institutional value. For these reasons, communities should not be treated merely as passive sources from which data are extracted.

This paper has developed a conceptual-methodological framework in which community data ownership is understood as a set of meaningful governance capabilities rather than a universal claim of absolute property ownership. The proposed model identifies six connected dimensions: community representation, purpose transparency, consent and control, benefit-sharing, privacy and security, and grievance redress.

The lifecycle analysis further demonstrates that ethical governance must begin before data collection. Communities can reasonably contribute to defining the problem that data collection is intended to address, identifying locally sensitive information, reviewing categories, setting access expectations, considering acceptable secondary uses, interpreting findings, and evaluating resulting public benefit.

The central implication for local governments is that data about a community should increasingly be governed with the community. Such an approach does not eliminate the authority or responsibility of elected and legally constituted public institutions. Instead, it strengthens that responsibility by creating more transparent, participatory, context-sensitive, and accountable decision processes.

Future empirical research should test the proposed framework across municipalities, rural local authorities, Indigenous governance contexts, smart-city programs, community-health systems, environmental monitoring initiatives, and local social-service platforms. Such studies could examine whether stronger community control improves institutional trust, perceived legitimacy, data quality, willingness to participate, public-value generation, and the ability to identify harmful or inappropriate data practices.

The broader lesson is that ethical digital government is not determined by how much information a public institution can collect. Its legitimacy increasingly depends on whether the institution can demonstrate why information is needed, how it will be protected, who can influence its use, how communities will benefit, and what remedies exist when governance fails.

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