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‘Just because we can, does it mean we should?’ The integrated data infrastructure in Aotearoa, and its implications for Māori

Daphne Boey, Jennifer Campbell-Meier, Spencer Lilley, and Janet Toland

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Abstract

Introduction. This paper discusses the importance of data in Māori society and Māori Data Sovereignty in Aotearoa New Zealand.

Method. A descriptive case study is presented of the Integrated Data Infrastructure (IDI), a trove of interlinked and de-identified data about people that is the cornerstone for evidence-based policy decisions in Aotearoa New Zealand. The case study highlights existing issues Māori have with regards to the collection and use of their data.

Analysis. The IDI is examined in relation to its historical and cultural context, taking into account the ongoing impacts of colonisation with respect to the ownership and management of data. Discussed are the safety mechanisms of the IDI, secondary data use, and social & cultural licence.

Conclusion. The paper concludes by acknowledging that the right of Māori to exercise their self-determination of how data is collected, stored, and accessed remains aspirational and there is a need for Māori to have greater control over the data and who has access to it.

Introduction

To Māori, tangata whenua (indigenous people) of Aotearoa New Zealand (hereafter Aotearoa), Māori data is ‘information or knowledge that is about or from Māori people’ (TMR, 2018). This can include personal data, or information about language, culture, resources or environments. Māori data encompasses not just a broader range of types than Western data, but also ways of recording them (Kukutai et al., 2020).

Māori data is taonga (treasure), and this distinction is key to understanding Māori Data Sovereignty (MDS) as ‘distinct to other nation-based notions of data sovereignty’ (Ruckstuhl, 2022). As taonga, data falls under the sovereignty of Māori as stated in Article 2 of Te Tiriti (*‘tino rangatiratanga... o ratou taonga katoa’*), (Waitangi Tribunal, 2024). Data is ‘relational, not just to an individual, but to the collective...[and] current generations act as kaitiaki’ (Ruckstuhl, 2022). MDS is thus a way for Māori to fulfil their role of kaitiaki (stewards) for data.

This paper discusses the importance of data in Maori society and looks at the impacts of colonisation and differing worldviews on that. This is done by highlighting some ethical concerns about the integrated data infrastructure (IDI), heralded by many as being world-leading (Mitchell, 2022): a data repository of aggregated administrative data from multiple sources, that forms the basis for evidence-based policy decisions in New Zealand. To that end, historical context is provided, together with a discussion of key concepts related to Māori data, followed by analysis of the IDI as a case study.

Historical context

Archaeologists determined the first Polynesian (who became Māori) arrivals in Aotearoa between AD 800 and 1300 (Waitangi Tribunal, 2011). Māori had a sophisticated knowledge system before the British made landfall: evidence of organised society, horticulture, tools and trade can be found (Wilson, 2020). Unruly settlers in the 19th century led residents of Aotearoa to raise issue with the Crown, which culminated in the signing of Te Tiriti O Waitangi (The Treaty of Waitangi) (Keane, 2012). Importantly, two versions exist, and differing translations are a key point of contention (Orange, 2023): The First Article in the Treaty, written in English, gave the Queen ‘all the rights and powers of sovereignty’, while the Queen was given ‘*kāwanatanga katoa*’ in Te Tiriti. The latter is also what most rangatira (Māori chiefs) signed (Waitangi Tribunal, 2024). *Kāwanatanga* more accurately translates to governance (Te Aka Māori Dictionary, n.d.) and thus, Article 1 asserts the right for the Crown to govern the land while remaining subject to Māori sovereignty (*tino rangatiratanga*).

This lays the foundation for much of the interaction between the Pākehā (European) system and its indigenous population, which extends to data as well. Divergent understandings between the peoples continued: Māori valued reciprocity, and land transactions under customary law not seen as ‘sale’ but ‘*a transfer of particular rights which remained subject to Māori rights to the land*’ (Boast, 2015). This was not the case, as the Land Acts of 1800s showed how Pākehā purchasing land in manners ‘*not necessarily conducive to the well-being of the indigenous population*’ (Boast & Black, 2010) whittled the approximately 80% Māori-held land in 1860 to 27% in 1910, with the entire South Island ‘*in settler hands*’ (Ministry for Culture and Heritage, 2021).

Key concepts

This section discusses concepts and ideas explored in the case study.

Māori data sovereignty (MDS)

MDS is about ‘*respecting Māori data and the ability for Māori communities to exercise power over data usage and outputs*’ (Greaves et al., 2023). It ‘*supports the realisation of Māori and iwi aspirations... [and] is a key mechanism for enabling self-determination and innovation*’ (Hudson, 2016).

There are parallels between data and self-determination, starting with the emphasis on 'sovereignty' in both instances. Kukutai & Cormack (2020) assert 'Māori Data Sovereignty reflects a longstanding aspiration for rangatiratanga'. They continue: 'Indigenous Data Sovereignty is both a critical enabler of Indigenous self-determination...and a powerful tool for Indigenous resurgence and decolonisation'.

Due to the history of colonisation, Māori have little trust in the colonial system as subjects of data and anxiety about racial discrimination and how, while 'seemingly neutral, data could be applied for...the detriment of Indigenous peoples' (Davis, 2016). There is also concern about the relevance of advice, support or policy made without understanding of the impacts of colonisation (Greaves et al., 2023) – or worse, in their absence (Davis, 2016). This reflects what Walter (2016), as cited by West et al. (2020), describes as the 5Ds: 'disparity, deprivation, disadvantage, dysfunction and difference; all of which increase the potential for collective stigmatisation'.

Further, the loss of sovereignty and marginalised position Māori hold results in difficulty to influence misguided narratives made about them from the data, but also 'limited ability to engage in, or influence policies' (West et al., 2020). The embedded assumption that 'West is best' that justified colonisation, assimilation and discrimination is also what excludes Māori from key areas of the data ecosystem. Kukutai et al. (2021) terms it 'hierarchies of evidence', which positions indigenous knowledge as 'lacking intellectual rigour or validity'.

Challenges are compounded when considering the divergence in worldviews between the two groups: for Māori, sovereignty 'is always in a relational sense' (Ruckstuhl, 2022), and that 'notions of property, ownership and privacy (Western in origin) are foreign to a normative and social system that emphasises totality and interconnectedness' (Kukutai & Cormack, 2020).

This stems from Māori cosmogony, where all things descend from primal parents Ranginui and Papatūānuku (Hikuroa, 2017). Whanaungatanga (kinship; reciprocity) and whakapapa (genealogy; relationships) are defining principles from a Te Ao Māori perspective: everything is connected and can be traced back to Ranginui and Papatūānuku (highlighting whakapapa); our interconnectedness means the need for whanaungatanga to uphold the mauri (life force) of all we encounter. Importantly, Māori cosmogony also means that inanimate objects are not 'impersonal thing[s]... [everything] is united through this web of common descent' (Waitangi Tribunal, 2011).

Closely related to the idea of upholding mauri is kaitiakitanga, or guardianship that arises from whakapapa and whanaungatanga – 'the obligation of kinsfolk to nurture or care for their relations'. It relates not just to the physical act of caring, but also the caring for of 'spiritual aspects... [such as] mauri' (Waitangi Tribunal, 2011). Māori fulfil their role as kaitiaki in regard to data in Aotearoa.

Data colonialism

Ultimately, the language around 'data unlock[ing] opportunities' (NZ Data Futures Partnership, 2016) frames data as a natural resource and 'implicitly centres extractive logics' (Kukutai & Cormack, 2020). Privileging Western approaches to harnessing the power of data and knowledge exacerbates this, resulting in 'a continuation of the processes and underlying belief systems of extraction, exploitation, accumulation and dispossession that have been visited on Indigenous populations through historical colonialism' (Kukutai & Cormack, 2020).

Ruckstuhl (2022) references the assumption of terra nullius, or land without a master, which underpinned much of colonial logic. She also parallels that to data today: datum nullius, 'a blank slate on which could be constructed the edifice of a distorting "colonial archive"'.

While Māori are not a monolith, colonisation was significant and traumatic. Data practices that centre around extractivism is seen as

a 'replaying' of a familiar colonial experience, whereby 'resources' are seen to be open for exploitation and extraction of profit, with little regard for Indigenous knowledge systems and ways of conceptualising benefit (Kukutai & Cormack, 2020).

Case study: integrated data infrastructure

Statistics New Zealand (StatsNZ) was formed in 1956. As the national statistics office, StatsNZ not only produces statistics about New Zealand society, but is also the 'lead agency for government-held data' (StatsNZ, 2024).

StatsNZ manages the IDI, a trove of interlinked and de-identified data about people that sits as the cornerstone for evidence-based policy decisions in Aotearoa. Formally established in 2011, the IDI began 'as a technical exercise in data aggregation' (Sporle et al., 2020) and is the culmination of the incremental linking of datasets held by StatsNZ and government agencies at various times (Greaves et al., 2023). The IDI harnesses the power of data to 'provide insight into our society and economy' (StatsNZ, 2022a) and drive 'data-driven innovation' (NZ Data Futures Partnership, 2016).

Researchers use the IDI to conduct cross-sector research that provides insights into our society and economy. A notable example is COVID-19 spread modelling during the pandemic. The IDI has wide reach – data sources include StatsNZ, government agencies, and even researchers who apply to 'integrate their datasets to the IDI' (Greaves, et al., 2023).

Despite its potential, the IDI suffers from low public awareness (Gulliver et al., 2018) and was criticised as having been 'established without due democratic process' (Greaves, et al., 2023), as its creation was justified under the existing statistics act 1975 and privacy act 1993, meaning no new legislation – or its accompanying parliamentary process – was required.

Analysis

Safety mechanisms of the IDI

To minimise harm that could result from the misrepresentation of Māori, and as an example of the Crown honouring Te Tiriti, StatsNZ has a working relationship with both Te Mana Rauaunga (TMR) and the Data Iwi Leaders Group (DILG). The former's purpose is to advance MDS as described in its Charter (Te Mana Rauaunga, 2018), while the DILG is 'a subcommittee of the Iwi Chairs Forum, a platform for sharing knowledge and information amongst tribal authorities in Aotearoa' (Sporle et al., 2020). As a network of professionals with their own experience and expertise in data, research, policy and MDS, TMR is well-placed to undertake operational work with government agencies and DILG technical advisors; DILG's political mandate enabled them to engage directly with Government with regards to Māori data governance (Sporle et al., 2020).

This resulted in the Mana Ōrite Relationship Agreement, where parties can 'realise the potential of data to make a sustainable, positive difference to outcomes for [Māori]' (StatsNZ, 2021). It also led to the creation of Ngā Tikanga Paihere (Sporle et al., 2020) to guide appropriate use of data in the IDI, with a focus on how 'Māori and other underrepresented populations are used for research purposes' (Jones et al., 2022).

Ngā Tikanga Paihere, designed to provide cultural protection, sits alongside a broader safety framework: 'Five Safes', referring to conditions ensuring safe access to data (StatsNZ, 2022b). The former draws from Māori tikanga (cultural lore; guidelines) to derive good data practices 'through cultural connection' and assesses the 'cultural appropriateness of research for Māori... urges prioritis[ing] Māori participation and community relationships' (StatsNZ, 2022b). Five Safes 'provides access to integrated data if "five safes" conditions are matched': people, projects, settings, data, and output (StatsNZ, 2022b). StatsNZ vets researchers who apply to use the IDI, limiting data access through 'a secure virtual environment in approved data labs', and reviewing research outputs before they are released (Greaves et al., 2023).

It is arguable if these are sufficient (Sporle et al., 2020). Ngā Tikanga Paihere remains a guideline, and the enforced Five Safes framework provides high-level protection against the leak and misuse of data, but much of the effort revolves around confidentiality and safety to protect the individual identities from whom data originated (StatsNZ, 2022b). ‘*Safe people*’ refers to researchers who are technically competent; while ‘*Safe projects*’ are based on if a project is done ‘*in public interest*’. It’s also uncertain if safe use outside of StatsNZ can be ensured, as ‘*there is no standard procedure for ensuring the ethical use of IDI data*’ due to the lack of ‘*a centralised statutory body responsible for oversight of research ethics in New Zealand*’ (West et al., 2020). Further, researchers beyond government institutions are granted access to the IDI if they pass Five Safes, such as think tanks – which can exacerbate these concerns.

The inclusion of Ngā Tikanga Paihere alongside Five Safes is welcome and necessary but does beg critical analysis of whether it can be effectively utilised by researchers, especially in the context of Māori perspectives devalued in favour of Western frameworks because of colonisation, addressed above.

Secondary data use

The IDI’s operation is entirely in secondary data use, and aggregated data was ‘*collected as part of routine transactions with state agencies, by busy staff who may be untrained, and are seldom users of the data they collect*’ (Greaves et al., 2023). The variety of sources from which data is aggregated means different ‘*context...[and] ways... by different people... for different systems and purposes*’, which bring to question how appropriate it is to aggregate them. Administrative data not originally intended for research/policy ‘*may not reflect robust research processes*’ (Greaves et al., 2023). Even StatsNZ recommends contextual use of data: ‘*using the right data in the right context can substantially improve decision-making and... avoid generating potentially harmful outcomes*’ (StatsNZ, 2018).

There is also a ‘*lack of clear, established consent processes for secondary data use*’ (Sporle et al., 2020). Further, additional datasets can be added to the IDI (StatsNZ, 2024). These are ‘*data not collected as official statistics, for example independent survey or NGO/independent provider data*’ (Radio NZ, 2018 as cited by Greaves et al., 2023). The literature is clear on how survey or data collection design can impact the data that is collected (see for example, Lietz, 2010). Including datasets beyond official government statistics or administrative data opens the IDI up to exponential impact from concerns outlined above.

For Māori, these issues are compounded – the IDI concentrates existing issues Māori have with regards to the collection and use of their data, for example in deficit framing, being overrepresented (e.g. justice records) (West et al., 2020), or underrepresented due to lack of institutional trust (e.g. census) (Davis, 2016), or conclusions made about Māori deemed to be objective even though it neglects crucial historical or social context (Greaves et al., 2023).

Social and cultural licence

In lieu of actual consent for secondary data use, this permission is instead, said to ‘*rely on social license*’ (Greaves et al., 2023), which leverages on the trust New Zealanders have for Statistics NZ to act as stewards (Sporle et al., 2020).

Trust and the social licence with respect to data kaitiakitanga is however complex when one factors in ‘*Aotearoa’s context of ongoing colonisation and contemporary disparities*’ (Greaves et al., 2023). This is despite the commitment to co-governance, and on top of various frameworks and safeguards implemented with Māori consultation, because of general mistrust ensuing expectations of ‘*non-performativity*’ (Kukutai & Cormack, 2020). As Greaves et al. (2023) note, ‘*the power... sits with the state, which minimises the autonomy and control that Māori can exercise.*’ Social licence is also not a static concept and can be rescinded any time (Hudson, 2016).

TMR is critical about the use of social licence and clarifies this is due to the lack of distinction 'between individual and community acceptability of data use and sharing' in addition to the fact that social license is informal. To them, social licence only seeks consent from individuals; a cultural licence should be extended to obtain permission 'based on the trust that iwi and Māori Treaty Partners have'. This is because 'group acceptance through mandated structures is a more appropriate barometer of trust for data that can be aggregated to represent a group' (Te Mana Raraunga, 2017).

Conclusion

The right of Māori to exercise their self-determination of how data is collected, stored, and accessed remains aspirational. Although users of the IDI are expected to adhere to Five Safes and Ngā Tikanga Paihere, this necessitates a high trust environment, which strengthens the argument for a need for Māori to have greater control over the data and who has access to it. Further, this enables Māori to fulfil kaitiaki responsibilities and ensure their perspectives and worldviews remain intact.

In Aotearoa, Te Tiriti paved the way for Crown-Māori relations that support 'the right to self-determination' as declared in United Nations Declaration on the Rights of Indigenous Peoples (United Nations, 2007). With regards to data, this relationship has led to formal partnerships with indigenous advocacy groups, the development of a high-level data governance model and IDI-specific protections. Despite that, fears about data colonialism are warranted, advances towards bicultural governance have been critiqued for its 'non-performativity' (Kukutai & Cormack, 2020).

This case study on the IDI is two-pronged – to highlight potential problematics of the platform and how these issues are exacerbated by historical context. This is especially so when considering the IDI's origins as the tool that enabled the National government's Social Investment, a transactional approach that sees its citizens as numbers on a page to manipulate (Baker & Cooper, 2018). Data, inherently non-neutral, can become weaponised in policy, and trickle-down effects could occur, such as changing the nature and approach of social service providers (e.g. NGOs), where services are built around funding, which is directed by government objectives – in this case, investment rather than protection (O'Brien, 2020). Additionally, questions about who needs intervention, the legitimacy of data practices, and the politics of data need to be answered (Baker & Cooper, 2018), but by whom? These are considerations that necessitate greater research into current operations of the IDI, to determine if the rights of New Zealanders, particularly Māori are impinged, and if the platform is ultimately boon or bane.

About the authors

Daphne Boey is an early-career scholar who has just graduated with a Masters in Business (Professional) at Victoria University of Wellington, New Zealand. Specialising in applied data analytics and sustainability, her focus areas intersect ethics, sustainability, data, government and policy. She is currently researching on Māori data sovereignty, and implications for bicultural environmental governance. A mid-career transition into academia, Daphne is in the process to undertake her doctorate in 2025.

Jennifer Campbell-Meier is Senior Lecturer in the School of Information Management, Te Herenga Waka - Victoria University of Wellington and former Programme Director for Information Studies. Jennifer published in the areas of information behaviour, digital inclusion, and professional development.

Spencer Lilley is an Associate Professor at the School of Information Management, Victoria University of Wellington, New Zealand. His research interests include indigenous information

behaviour, and the indigenisation of galleries, libraries, archives, museums, and records management institutions.

Janet Toland is an Adjunct Professor at the School of Information Management, Victoria University of Wellington, New Zealand. Her research interests are social and ethical aspects of the history of computing and sustainable information systems.

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