

Exploring practical and ethical dilemmas when conducting research with small population groups in First Nations communities: Privileging stories as data, and data as stories



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Abstract

Purpose When working with small population groups, answering consequential research questions to rigorous scientific standards can be challenging due to limited sample sizes impacting statistical power. Creating translational solutions can be additionally challenging when cultural and language differences exist. Therefore, researchers must learn to walk in two worlds. This paper explores practical and ethical dilemmas encountered when conducting research with small population groups in First Nations communities, and the opportunities afforded by privileging stories as data, and data as stories.

Methods This study drew on experiences of co-researching with small groups of First Nations young people and Elders in diverse communities, to elucidate the importance of co-designing context-responsive methodologies and developing shared methodological language to achieve meaningful outcomes. While small samples typically produce less precise and generalisable findings, they can be particularly powerful

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for the communities involved and produce important findings with the potential to inform policymakers, service providers and practitioners to enhance population outcomes. Shared, iterative, reflective practice identified that conventional methods of research design and data analysis, and highly technical scientific language, were often not fit for purpose; therefore, innovative approaches are needed to progress urgent issues impacting wellbeing.

Main findings Co-designing innovative methodologies that align with both Indigenous ways of knowing and scientific paradigms is both possible and powerful. Specifically, this study centred knowledge production on curating stories: the gathering of rich individual stories (idiographic design using mixed methods case studies) to generate high-impact knowledge; and systematically drew together a rich tapestry of many stories (idiothetic design using integrative analysis of case studies) to distil locally relevant cumulative wisdom and attain a bridge to more generalisable findings that inform theory development (as a more viable alternative to using nomothetic, large-scale research design). While individual stories were initially privileged as data, the importance of collective (larger scale) data as ‘community stories’ was also found to be useful and accessible in a community context; data must be translatable as meaningful stories to guide action.

Principal conclusions Drawing on mixed methods provided rich stories capturing both a breadth and depth of understanding of complex issues.

Keywords: Statistical power; Data sovereignty; Nomothetic; Idiographic; Idiothetic; First Nations young people

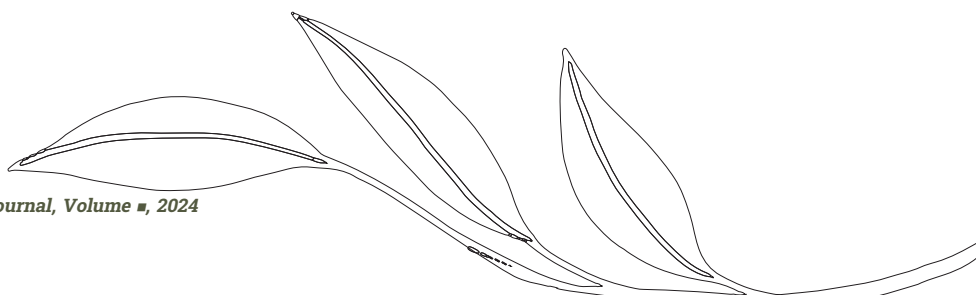
Highlights


- The propositions presented in this manuscript are both highly important and innovative.
- Co-designing innovative methodologies that align with both Indigenous ways of knowing and scientific paradigms is a powerful way to generate high-impact knowledge, to distil locally relevant cumulative wisdom and attain a bridge to more generalisable findings and theory development.
- This manuscript highlights the importance of collective (larger scale) data as ‘community stories’; to be useful and accessible in a community context, data must be translatable as meaningful stories to guide action.
- Drawing on mixed methods provided stories with both breadth and depth of understanding of complex issues.

Introduction

This paper examines the methodological challenges and ethical dilemmas that were faced in documenting the research findings from the ARC Indigenous Discovery funded project: Young Indigenous Peoples’ Resilience and Wellbeing (#IN170100008). Navigating a complex and personal topic with a hard-to-reach

group of young people presented the usual array of challenges; the COVID pandemic further sharpened the focus on the researchers’ responsibilities and the importance of honouring the commitment made to the participating communities. This paper reflects that journey and the unexpected learnings that arose from it. These challenges required extra effort to make the





project work, but beyond that they gave a better understanding of the methodological needs and opportunities of working with small populations on complex issues. By learning to ‘walk in two worlds’ it enabled elements of scientific tradition to be blended with Aboriginal and Torres Strait Islander ways of understanding knowledge and information. It is hoped that this paper will be the beginning of a conversation with other research teams and communities facing similar challenges.

Using both quantitative and qualitative data to explore young people’s resilience and social and emotional wellbeing (SEWB) in diverse contexts, this research aimed to improve programs and services to optimise outcomes for First Nations young people. The theoretical framework for this study drew on a holistic conception of First Nations SEWB as ‘a positive state of mental health and happiness associated with a strong and sustaining cultural identity, community and family life that provides a source of strength against adversity, poverty, neglect, and other challenges of life’ (Holland et al. 2013). Linked to resilience, First Nations SEWB is a complex and multidimensional concept encompassing connections to land, culture, spirituality, ancestry, family, community, kin and Country (Dudgeon and Walker 2015).

There are an estimated 160,000 First Nations young people (aged 15–25 years) in Australia, representing 4.57% of all young people in Australia, with approximately 38% (57,000) living in major cities, 44% (66,000) living in inner and outer regional areas, and a further 18% (27,000) living in remote and very remote communities across the country (Australian Bureau of Statistics 2021). First Nations populations across Australia are culturally and geographically diverse and include discrete communities varying in population size from 30 to 1,000 people.

This vast geographical spread and historical and cultural diversity has significant implications for gathering data that are contextual, disaggregated and meaningful for local communities. At the same time, they must provide policymakers and program and service providers with broad and generalisable trends with respect to what works and what does not, and why. The complexities of context have thwarted policymakers in their attempts to develop programs and initiatives to Close the Gap in education, health and social services, and other indicators of wellbeing. The current practice of reporting outcomes using aggregated data measures does not allow for more nuanced understandings of where or why various Close the Gap initiatives have been successful or otherwise in supporting First National holistic health and wellbeing (Dudgeon et al. 2014).

Most discrete communities are located on traditional homelands and have locally specific issues and concerns; these relate to a range of social and cultural determinants that First Nations families need to have addressed for their children and young people to flourish in their everyday lives. Many communities are arguing for the right to collect, analyse and use their own data to meet their own needs – a sentiment that is consistent with the emerging commitment to Indigenous Data Sovereignty and Governance (Maiam nayri Wingara 2018; Walker et al. 2017). The 2021 National Partnership agreement to Close the Gap acknowledges that disaggregated data and information are most useful to First Nations organisations and communities to obtain a comprehensive picture of what is happening in their communities and make decisions about their futures (<https://www.closingthegap.gov.au/national-agreement>).

Drawing on the team’s own Indigenous-led quantitative and qualitative research experience across two diverse



Australian First Nations settings, issues that can arise for Indigenous and non-Indigenous researchers when working with small populations are described in this paper to address specific community-led issues and research priorities. The ethical roles and responsibilities that researchers have in meeting the needs and expectations of stakeholders, including members of communities, are considered. In addition, the resultant importance of co-designing approaches to research are discussed, to overcome some of the practical, ethical and conceptual challenges when working with smaller populations.

In positioning this discussion, it is believed that, when invited to work alongside communities, the onus is on researchers to learn to *walk in two worlds* – to bring best scientific traditions and also tune in to local ways of knowing. Looking for points of methodological convergence has been vital in creating strong, high-impact solutions through the development of trusted ways of working, anchored in deep understanding of local context. Researchers must also learn to *speak in two languages* – to consider how the language of scientific traditions maps onto Indigenous ways of knowing and learning. This paper discusses some of the ways in which bridges have been built between these two traditions. Trust and mutual respect are vital elements: they enable project teams to innovate together, to reflect together, to go beyond the traditions of both researchers and communities and to forge new ways of understanding and addressing local challenges.

Methods

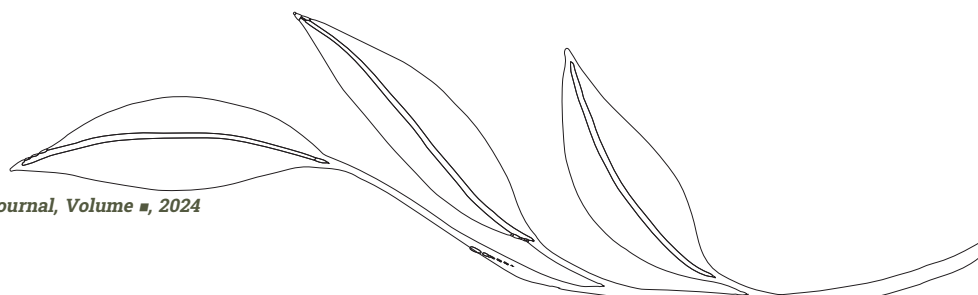
Beginning the journey: looking for solutions in hard-to-reach places


A survey was co-designed with First Nations young people and Elders to undertake this research, so as to understand First Nations young people's perspectives

and experiences of resilience. This was an extensive process spanning almost a year, and centred on robust consideration of questions from three existing instruments: the Connor-Davidson Resilience Scale (Connor & Davidson 2003), Child and Youth Resilience Measure (Liebenberg et al. 2011) and Strong Souls (Thomas et al. 2010). Participants in this sample completed a self-reported survey covering demographic information, family circumstances, resilience, SEWB (including suicide ideation), relationships, drug and alcohol use, and attitudes towards cultural knowledge. It was recognised that more information would be needed, so young people completing the survey were invited to participate in a face-to-face in-depth interview to further investigate their knowledge, understandings and perspectives surrounding SEWB, cultural identity and their experiences with services in supporting various aspects of their wellbeing.

The sample for the quantitative component of this study comprised 255 young First Nations people aged 15–25 years, from two diverse communities. Of these, 138 participants resided on Whadjuk Noongar Country in the Perth metropolitan area, Western Australia (WA), and 117 participants were living on Gamilaroi Country in the Coledale area of Tamworth, a rural town in New South Wales (NSW). A total of 17 young people in WA and 15 young people in NSW participated in the qualitative interviews.

With respect to the quantitative component of this study, all three psychometric instruments are generally well-regarded as usable, quality instruments for measuring youth resilience (Connor & Davidson 2003; Langham et al. 2018, Liebenberg, Ungar & Van de Vijver 2011). Importantly, Elders felt that these instruments captured relevant aspects of resilience in Aboriginal young people. Strong Souls has previously





been validated as an effective measure of SEWB for First Nations young people (Thomas et al. 2010). This study intended to determine young people's perspectives and experiences of resilience and wellbeing in diverse contexts.

As part of the broader study, a PhD candidate investigated the useability and validity of the three instruments that comprised the survey with First Nations young people, using a Rasch modelling approach to assess psychometric properties of the constructs of resilience and SEWB based on survey participant responses to various questions. Two papers have already been published examining the Connor-Davidson Resilience Scale and Strong Souls instruments, respectively, against Rasch measurement assumptions (Gorman 2021a; 2021b). These findings present important new information about the potential challenges in using these existing instruments, given limitations of the constructs developed to measure the effectiveness of interventions (programs and services) designed to promote resilience and wellbeing in Aboriginal young people. Specifically, they highlight the challenges of using instruments validated for large populations to measure resilience and wellbeing when working with distinct population groups in diverse contexts. The findings of a study by Langham and colleagues (2018) justify 'further local explorations of positive development that reflect local constructions of doing well under conditions of adversity' (p.11). They acknowledge the diversity among 'Indigenous Australian youth, who have varied and unique cultural beliefs and practices, histories, and experiences of colonization that would be of influence' (p.10) and the need for greater understanding of youth resilience 'through constructivist methods that prioritize students' voices to share their understanding and experiences' (p.11).

These findings of limitations in the measures also highlight the importance of never relying on a single data source to understand complex issues (Tashakkori & Teddlie 2010) and reinforce this study's commitment to including in-depth interviews with young people and Elders to contribute to the interpretation and analysis of findings. All measures are imperfect. However, conventional scientific frameworks dictate that with more measures comes the demand for a larger sample size. A critical challenge in this study was recruiting and retaining a sufficiently large sample of young people, especially during the COVID pandemic. This meant that planned group-level analyses did not reach statistical power, resulting in questions about the value and viability of some aspects of the study. However, it was agreed that, given the significant commitment and contributions of individual participants and communities, it was ethically imperative that decisions about whether to continue to use the survey findings were guided by their critical value to these core stakeholders. These pragmatic and ethical considerations drove the investigation of alternate methodologies and means of analysis that constituted a stronger 'fit' for the context and primary drivers of the research.

Time to reflect – emerging practical and ethical dilemmas

Working to understand complex and persistent challenges to health and wellbeing in small, distinctive, marginalised communities required iterative, shared reflection about what methodological options were likely to be effective, ethical and meaningful. This Indigenous research centre works from the premise that being effective includes: adopting decolonising methodologies; acknowledging Indigenous Data Sovereignty principles; incorporating National Health and Medical Research Council and Australian Institute of Aboriginal and Torres Strait Islander Studies values



and principles of working in Indigenous contexts; being culturally respectful and responsive; being timely in the context of urgent need, such as in the case of the COVID-19 pandemic; and critically undertaking work that is likely to provide valid and reliable results that can drive impactful and locally accepted and meaningful change.

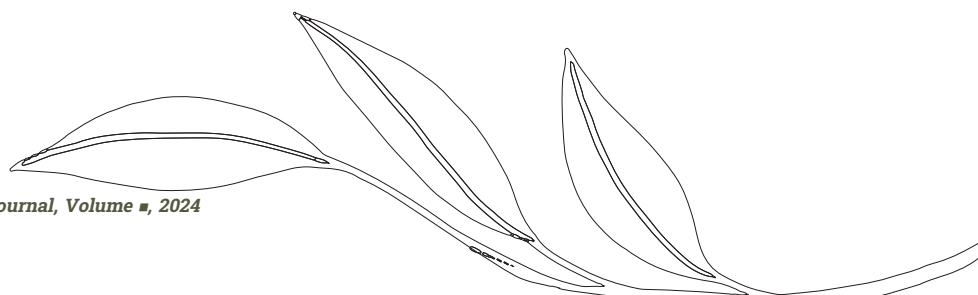
Designs and methodological techniques should be capable of supporting the exploration/understanding of inequalities – and their causes – but also of discovering unique and enduring strengths of individuals, families and communities in the face of adversity (Smallwood et al. 2021). In the case of First Nations peoples this includes the ongoing colonial legacies. Poor design and methods (including those that presume a large sample size is needed to achieve adequate analytical power) coupled with unforeseen circumstances can impede the production of this knowledge and opportunities to act to support positive change.

This multidisciplinary and multicultural team led by the First Nations senior author was cognisant that when collaborating with smaller communities, such as First Nations communities, researchers must navigate a path that is congruent with specific cultural needs and concerns, to produce information that communities, governments and other stakeholders including Aboriginal Community Controlled Organisations can use to best support the desired outcomes. This can involve negotiating conflicting world views to be able to achieve some form of consensus on what constitutes knowledge that can be valued by the community or communities that are driving the research, as well as broader scientific communities and governments committed to building an evidence base.

Individual and community levels of analysis are often of most interest to local community members and

leaders, who usually want to know what is happening and what will work in their own local communities. In addition, many homeland communities that are geographically remote and relatively small in population size often sit disjunctively with conventional large-scale (nomothetic) research designs. These typically employ quantitative methods that require large numbers of participants to establish ‘power’ for drawing conclusions and/or predictions at a population level (universal laws), which can then be used to make inferences about the needs of local communities (specific instances). However, for many First Nations Elders and leaders of small communities and community-controlled organisations, this seems to be a circular and circuitous route for finding answers to urgent questions; in short, these methods can lack face validity and fail to achieve equitable wellbeing outcomes specific to community needs and priorities. It is crucial to apply culturally responsive research designs that meet community aspirations, expectations, needs and priorities when working with First Nations communities.

Failure to achieve adequate statistical power when using such methods of analysis threatens the ability of researchers to draw confident conclusions from research data, with considerable implications for research and researchers and those for whom the research is intended to benefit. Pragmatically, in the end, studies in the large-scale tradition also often lack feasibility. Many end up being underpowered for statistical analysis due to the challenges of engaging large numbers of comparable communities with multiple complex measures, or the results, by design, ‘smooth out’ or even erase local nuances, which may be the most important part of the data for individual communities. Such erasure can also represent a failure of design, where power has been calculated based on some total



population outcome/effect rather than on identifying critical variance between sub-populations within the target sample (Leppink 2021).

Large-scale methods also, pragmatically, tend to be at 'arms-length' through surveys and collection of 'back-end' service-user data – a feature that has inherent risks when working cross-culturally. Arms-length processes are well understood to be influenced by demand characteristics inherent in groups where there are power differentials between researchers/service providers and clients/participants. Demand characteristics are implicit forces that may unduly influence responding, lack of responding or interpretation of responses (Corneille & Lush 2023).

Considering a paradigm shift to community-centred research methodologies and data analysis: Who decides?

First Nations communities in Australia have consistently and clearly indicated that they do not share or privilege the dominant research culture world view of universal causalities; hence, dominant positivist, 'nomothetic' methodologies that are built on this premise and seek to reveal 'universal truths' and predictable patterns may be neither necessary nor the best fit. Further, it is increasingly being agreed that quantitative analyses are imperfect when investigating complex phenomena (Onwuegbuzie & Hitchcock 2022; Wagenmakers et al. 2022) and that triangulation of mixed methods may provide more trustworthy outcomes (Hammerton & Munafò 2021; Santos et al. 2020). Qualitative research methodologies are currently more frequently preferred because the epistemological base is not one of generalisation but rather entails rich description of bounded research questions. Many Indigenous decolonising qualitative methodologies have emerged from this tradition (Bagele 2020; Rigney 1999; 2003; Dudgeon et al. 2020; Martin & Mirraboopa 2003; Smallwood et al. 2022;

Usher et al. 2021; Usher et al. 2022). There are clear points of alignment with First Nations social practices, particularly around issues such as who can be a knower, the handing down or passing on of knowledge and the ideological underpinnings of qualitative approaches. However, qualitative methodologies have their own limitations (including, for example, social demand characteristics that may be in operation with interview methodologies in marginalised groups) with lack of generalisability being a major issue, particularly with population-focused work (Corneille & Lush 2023; Plano Clark & Ivankova 2015).

Even though there has been a reluctance by many First Nations people to engage with quantitative research (Walter 2005; Walter & Andersen 2016), there has been an acknowledgement of the potential value of deconstructing and decolonising Western quantitative approaches into approaches that may be more acceptable to First Nations researchers and communities (Hayward et al. 2021; Roy 2014; Thurber et al. 2020). Elders in the current study team felt that the surveys used were relevant and may be more accessible for young people. Roy (2014) argues that methodologically-sound epidemiological survey research that employs principles of cultural safety and social justice, conducted in partnership with the community, can meaningfully contribute to promoting Aboriginal population health and healing research.

At this juncture of finding new methodological solutions, it was important to this team that this study 'weaved a research methodology at the interface' of Indigenous knowledge and conventional scientific methods, as described by Ryder et al. (2020), and in doing so, to privilege Indigenous ways of knowing and explicitly consider any points of intersect with scientific traditions from this cultural vantage point.



Placing stories at the heart of things

It was clear throughout this study that stories are at the heart of things. Researchers are increasingly understanding that ‘stories are data’ (Murveit 2023); the current team also became strongly committed to the idea that ‘data are stories’ (Bleakley 2005). The team also came to understand that ‘stories as data’ is not uniquely the province of qualitative interview or yarning methodology (although this is commonly how it is described in the literature). Quantitative data can also speak to individual stories, as rich stories emerged from the survey responses and interviews; together they provided more potent messages about resilience than either dataset considered alone. Whether considering qualitative or quantitative data, drawing out the ‘human face’ in the data is vital to make meaning of what was gathered and to fulfilling the commitment to the Elders and communities with whom the team worked.

The importance of ‘data as stories’ was also multilayered in this project. First was the understanding that from curated collective data emerges a narrative that extends beyond ‘stories of individuals’ and constitutes the ‘story of communities’. Second was the understanding that there is also an imperative with large-scale quantitative data to look beyond the statistical analysis and prioritise pulling out the stories from the data. Telling the stories in these data ensured that this study remained community oriented and that the research processes were transparent and trustworthy (able to be easily understood by laypersons). Sharing these stories with the community also meant that this study remained strength-driven (as opposed to deficit-based), had respect of the importance of place and recognised the right of First Nations people to exercise ownership over Indigenous data (Hayward et al. 2021).

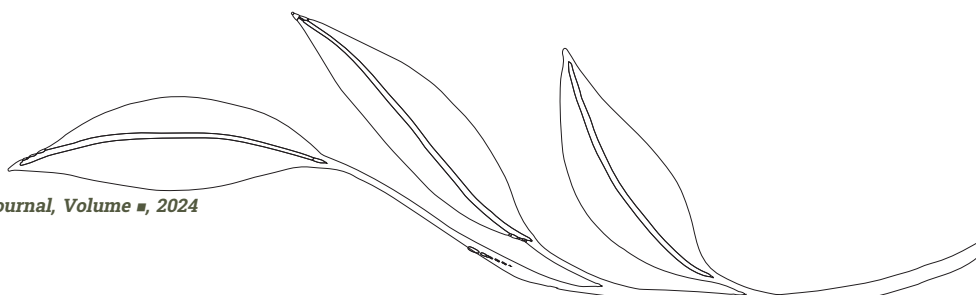
Privileging stories encouraged deep thought about ‘scale’. For both pragmatic and ethical reasons, this study needed to move away from nomothetic large-scale methods towards methods that illuminated key issues through case studies, prioritising local context and deep knowledge (depth over breadth).

While the power of stories is a central principle in Indigenous research methodologies, the validity of such methodologies is less strongly understood in the broader scientific community. In supporting other researchers to consider these options when working with First Nations people or other small communities, the case is made in the pages that follow.

Centring mixed methods stories in knowledge production: Engaging with idiographic and idiothetic methodologies

At face value, the concept of a story-centred research method seems less aligned with the dominant nomothetic research tradition and more aligned with ‘idiographic’ approaches to research (case studies), and the potential of more ‘idiothetic’ approaches, particularly when working with smaller populations.

Simply put, nomothetic and idiographic approaches refer to the desire to generalise (nomothetic) or to specify (idiographic). Nomothetic approaches describe generalisable knowledge, principles, categories or laws derived across a population of individuals. They are primarily intended to statistically consider multivariate relationships between elements across groups of individuals – the focus is on interindividual differences as predictors of differential outcomes at the population level. Nomothetic analytic approaches use quantitative data and privilege universal laws and principles through minimising variance in measurement. Sample size, as a marker of representativeness and ‘power’ of statistical analysis, is key: can this sample size provide a reliable outcome





given the hypothesised effect size?. The smaller the sample, the less likely the chance of meeting this requirement. Nomothetic approaches have been the dominant methods used in Western research paradigms for several decades and remain particularly influential. However, researchers need to remain aware of the tendency to accept that nomothetic statistics are more reliable and universally valid, as this ignores the fact that, as in all forms of research, those who drive the research agenda do so with their own assumptions that are socially produced (Zwiener-Collins et al. 2021). Other (albeit less commonly used) approaches are available that speak to different levels of explanation in answering complex questions in contexts that are not suited to large-scale investigations – these include idiographic and idiothetic approaches.

Idiographic approaches focus on the study of individual cases and stories, to describe the meaning of specific, contingent, unique and often cultural phenomena. An idiographic approach is designed to consider how a constellation of elements is relevant for a particular individual or specific case/instance, generally (though not always) without consideration of general laws or principles. Case studies are the most recognised idiographic methodology. Idiographic methods may draw on quantitative or qualitative data and combine both to develop a rich profile of complex issues. Idiographic studies may be interested in an individual at one point in time or longitudinally. Idiographic researchers may also be interested in how general laws or principles manifest in unique ways in the individual person (Krauss 2008). Idiographic data analytic methods are heavily used in qualitative humanistic or social sciences research; however, as Renner et al. (2020) note, they are also used in quantitative studies in neuroscience (Garrett et al. 2018), brain-computer interfaces (Lotte et al. 2018), cognitive domains (Karch

et al. 2015), sleep research (Wrzus et al. 2012) and political sciences (Meyer et al. 2019).

Each method has its limitations. Nomothetic techniques can ‘clarify by abstracting the most important bits of information’ but also ‘obfuscate by submerging into average individual differences that are vital to the understanding of the phenomena under investigation’ (Pervin 1984). Idiographic approaches see the person as a whole but may focus on a case that turns out to be unusually idiosyncratic and thus may have limitations in drawing wider inferences to other communities (note: this is only a concern if inference is the intention).

The key difference between nomothetic and idiographic approaches is captured in Figure 1 below (Beltz et al. 2016). The idiothetic approach is also illustrated and will be discussed next.

An idiothetic bridge built on rich stories: from specific to general, rather than general to specific

An alternate pathway to move from individual stories to understanding communities, or broader ‘generalisation’ when using idiographic methodologies, can be forged through consideration of multiple case studies, cumulative stories considered as a collective – this can be referred to as an idiothetic bridge. The fundamental premise of an idiothetic approach is that information collected and analysed at the individual (idiographic) level should be capable of additional analysis at the aggregate level. An idiothetic approach involves systematic combining and curating of stories or case studies (quantitative or qualitative) to distil key wisdom that may strengthen confidence in making recommendations for practice or inform theory development – where theory is reiteratively compared with real-world examples and in turn shape the development of theory using an abductive logic (Dubois & Gadde 2022).



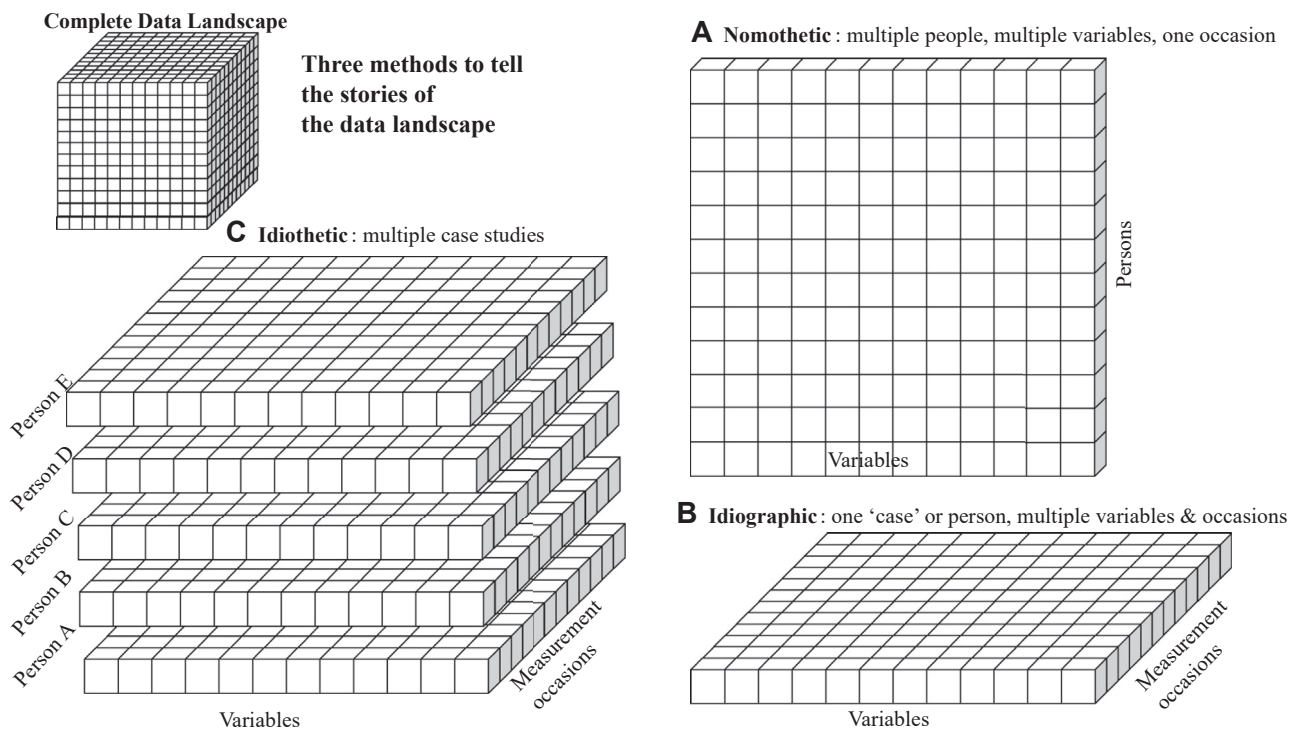


Figure 1: Three methods to tell the stories of the data landscape (based on Cattell's (1966) data box). (A) Nomothetic analysis highlights inter-individual variation that support population inferences; (B) Idiographic analysis highlights intra-individual variation; (C) Idiothetic analysis draws together consideration of intra- and inter-individual variation to support community-level inferences and potential population inferences depending on the number of case studies.

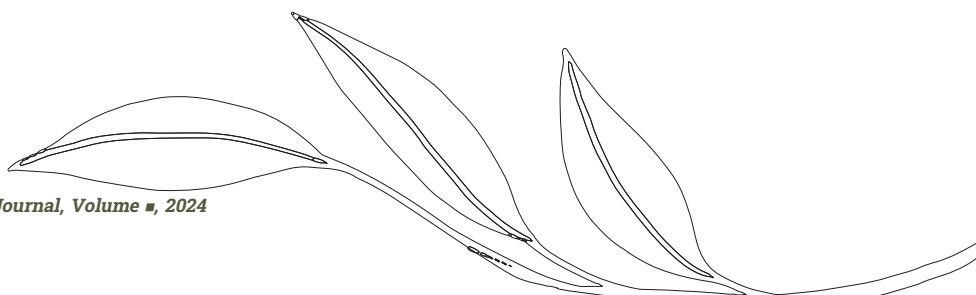
An idiothetic approach can utilise quantitative or qualitative data and looks for patterns across individual profiles (or case studies) gleaned from idiographic measures and methods, which measure individually selected variables and functional relationships. This 'bottom-up' kind of aggregation (as opposed to the 'top-down' aggregation of nomothetic methods) provides a bridge between nomothetic and idiographic approaches, as suggested by Lamiell (1981, 2018) in his landmark discussion of personality psychology. Idiothetic approaches are yet to be fully defined or explored (Haqiqatkhah 2019; Jaccard & Wood 1986; Krauss 2008) but offer great potential in circumstances when universal prediction and

inference is not the primary goal, but where local prediction based on rich local data is critical.

In sum, an idiothetic approach may involve detailed (qualitative and/or quantitative) data about individuals being considered as a curated collective of case studies or stories for the purposes of understanding community-level demographics or making community-level predictions.

Quantitative idiothetic analysis

Idiothetic analysis negates the need to use large-scale population statistics and meet assumptions about statistical power that are predicated on the intention





to make universal prediction. However, the baby should not be thrown out with the bathwater. It is important to acknowledge that poor statistical outcomes can also be a failure of design, where power has been calculated based on some total population outcome/effect and not on determining important differences between sub-populations or cultural groups that are part of the target sample. Idiographic and idiothetic methods may still draw upon emerging statistical approaches that analyse single case study datasets, although certain quantitative techniques are better suited to a smaller-scale community sample, leading to improved confidence in a result with a given small sample (Etz et al. 2015; Fok et al. 2015). Latent class approaches, for example, can potentially provide robust results with a small sample. Applying unsuitable quantitative techniques can create a problem of inadequate power when more would be achievable through a nuanced design. There is still scope for development of quantitative techniques that suit small-scale sample data. Bayesian techniques are an example, which are still developing and gaining in popularity (Van de Schoot et al. 2013).

It should also be noted that having enough statistical power is necessary to draw accurate conclusions and make accurate inferences about a population using sample data. However, it is not as relevant if using population data (data on all community members) to draw accurate conclusions about that population (community).

Qualitative idiothetic analysis

Idiothetic analysis of qualitative cases prioritises idiosyncratic cases that may be illustrative, exploratory or cumulative. In contrast to nomothetic statistical approaches, it does not look for deviations from a central normative tendency, but rather takes a

profiling approach, looking for rich description to adequately capture complex phenomenon.

Combined qualitative and quantitative idiothetic analysis

A mixed methods case study design recognises that drawing together both quantitative and qualitative data about an individual or group of individuals may afford the closest understanding and estimation of the complexities of real life with the fewest analytic constraints – it is designed to capture complexity (Reid 2012). An idiothetic mixed methods case study design considers a compilation of rich case studies with the purpose of understanding and mapping the intersect of individuals within a group or community. This method truly appreciates that the devil is in the detail in complex communities (Campbell et al. 2013).

Although there are many purists who do not believe that nomothetic and idiographic/idiothetic approaches are compatible, there are others who believe that they can be complementary and have the potential to generate a process of theoretical emergence, with each providing confirmational opportunities for the other. Through a process of reconciliation of each level of observation, new questions can arise that would not have been independently elicited from either (Onwuegbuzie 2012; Nastasi 2022). This is the approach that the current team are taking in their own research.

Completing the circle: Telling the strongest story with young people and communities by combining nomothetic and idiothetic, qualitative and quantitative approaches

This study adopted a combination of analytic approaches to consider the main variables derived from the three resilience measures used in the survey and from the qualitative interviews with young people recruited in different settings, including youth and recreational services, secondary schools, universities





and employment in the Indigenous Youth Resilience and Wellbeing project.

Individual and collective stories were integrated as data; and a commitment was made to interpret complex data as stories when translating findings into action with local communities. Through this story-telling lens, applying and integrating both qualitative and quantitative frameworks to data analysis in complex contexts represented an exciting, and potentially impactful, opportunity. The team hoped to provide an example of where ‘connecting theory generation with theory testing, linking theory and practice, and linking general/nomological description/ explanation with idiographic understandings of the human world’ works well (Johnson et al. 2010 cited in Onwuegbuzie 2012).

Importantly, given the nature of this study and study population, the mixed method approach intersected with a transformative and decolonising theoretical framework, which was strength-based and promoted individual and community empowerment to address issues of social justice. It kept the human face of things as a touchstone in this work. Integrating transformative theory with mixed methods approaches enabled analysis of both the qualitative and quantitative data collected to reveal the relationships between the impacts of colonisation, unjust social systems and structures, interpersonal discrimination and structural racism (Thurber et al. 2022) and contemporary policies and practices to improve young First Nations resilience and wellbeing.

Consistent with this proposal, Fok et al. (2015) argued that

Qualitative inquiry can more completely inform basic findings in quantitative designs with insufficient power to

explore interactions and multivariate relationships, and mixed methods affords opportunities to capitalize upon the strengths of both methodological traditions. (p.6)

Small sample research that merges qualitative and quantitative analytic strategies has produced important results. Fok et al (2015) described a range of innovative statistical methodologies and methods that can maximise statistical power for analyses of interventions conducted with small, culturally distinct samples including dynamic wait list research designs, Bayesian approaches, matching and imputation; strategies for reducing error and bias in measures; and using qualitative methods and mixed methods combining qualitative and quantitative data (p.9).

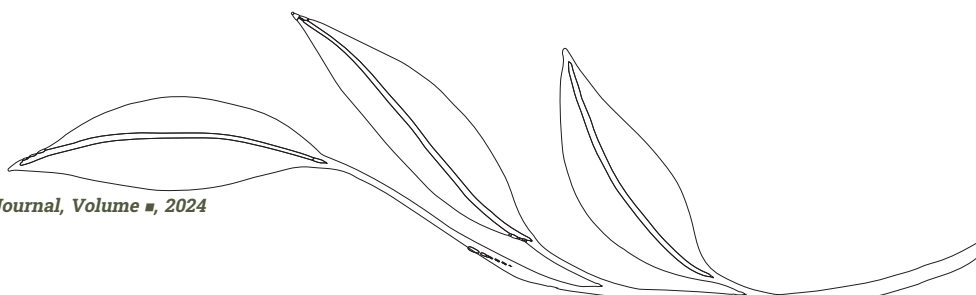
In sum, we have come full circle to community story-telling through rich individual stories, as a principal way of knowing.

Changing the system to be fit for purpose: How do we create systems to support individual and community story-telling?

Protecting stories through developing protocols for data safety and security

Idiographic approaches come with greater accountability for data security. In addition to the usual reasons for data security, retaining detailed information and stories (case studies) about individual people can be identifying for individuals and small communities. This richness is both its strength and poses additional challenges related to adhering to privacy principles.

Idiographic analyses can also be strengthened by systematic retention of case-level data. Data repositories provide researchers with a location to preserve and store their research datasets and outputs. Repositories provide a means of ensuring the





preservation and longer-term availability of data, making subsequent aggregation possible. Data repositories also support replication of results; subsequent analysis when more advanced methods are developed; third party access to data, enabling more work to be done on existing data; linkage of these data to other sources to improve power (and other aspects); and combining with other similar sources for a wider, aggregated analysis. Considerations around ethics and data sovereignty are critical to the development of successful data repositories.

These methodological issues are highly relevant in Australia and other colonial contexts where Indigenous Data Sovereignty has become an increasingly important issue to better understand and address many intractable problems such as high rates of incarceration, out of home care, poor health, education and employment outcomes, high suicide rates and poverty. For example, in 2018 the *Maiam nayri Wingara* Indigenous Data Sovereignty Collective developed a set of Indigenous Data Governance protocols and principles at the inaugural 'Indigenous Data Sovereignty Summit'. These protocols and principles recognise the right of First Nations people to:

- 1) Exercise control of the data ecosystem, including: creation, development, stewardship, analysis, dissemination and infrastructure.
- 2) Data that are contextual and disaggregated.
- 3) Data that are relevant and empower sustainable self-determination and effective self-governance.
- 4) Data structures that are accountable to Indigenous peoples and First Nations.
- 5) Data that are protective and respect individual and collective interests ([Maiam nayri Wingara 2018](#)).

To effect positive change, Indigenous Governance requires new paradigms, methodologies and tools, and

data collection and analytical methods to identify what works, what does not work and why. Moreover, effective Indigenous Data Governance has the potential to empower First Nations peoples to have access to accurate local level data to make the best decisions to support their communities and people in the ways that meet their developmental needs and aspirations. The discussion around the value of adopting an idiopathic approach becomes more compelling in research with First Nations communities when considered with respect to these principles and protocols, particularly Principles 2 and 3.

Discussion

Working with small communities is a priority when issues of disadvantage and marginalisation are present. In such circumstances, developing a local evidence base to inform change is critical to maximise the allocation of precious resources and meet the needs, expectations and priorities of community members. Traditional research methods favouring large-scale quantitative data collection and nomothetic (normative) analysis may not be fit for purpose.

The centrality of stories in Indigenous ways of knowing and learning has provided guidance for this team to select research methodologies that are fit for purpose in the context of working with small communities to answer locally critical questions. Rich case studies that capture complexity through mixed methods and multiple data sources reflect, and do justice to, the complex nature of the context in which the team works.

In understanding the complexities of intersecting forces in small communities, case studies and small-scale projects can be powerful, favouring context and depth over generalisability. This approach is also more amenable to co-design principles and transparency





for key stakeholder-participants to develop local initiatives. Idiographic approaches afford an opportunity to draw together mixed methods data through statistical and non-statistical means to better understand the needs and nuance of local circumstances.

Nomothetic and idiographic methodologies have traditionally been considered as antithetical (Dunn 1994). Nomothetic research rests on the assumption that a snapshot of individuals at one time point is sufficient to characterise individual processes. However, there has been a lot of discourse about the limitations of this process (Beltz et al. 2016). In opposition to this way of thinking, supporters of the idiographic approach recognise the difficulty in generalising the results from an individual level to analysis of a group of people (Castro-Schilo & Ferrer 2013). Idiographic approaches provide a bridge between these two methods through (statistical and non-statistical) aggregation of case studies. Idiographic analysis offers a way forward for locally relevant, impactful data analysis in small communities; it draws together individual stories to tell the story of communities.

Limitations

This study identified both the challenges and potential methodological solutions in conducting an appropriately rigorous and meaningful statistical analysis with a small sample population; specifically, in this case, investigating young First Nations people's resilience and wellbeing. As such it was largely exploratory, justifying the need for innovative methodologies in analysing the data on the basis that the sample size identified in the initial research design was not achieved. Ethically, the findings need to be presented to communities in a meaningful way to support positive changes in policies, programs and services intended to promote young First Nations people's resilience and wellbeing (Reid et al. 2021).

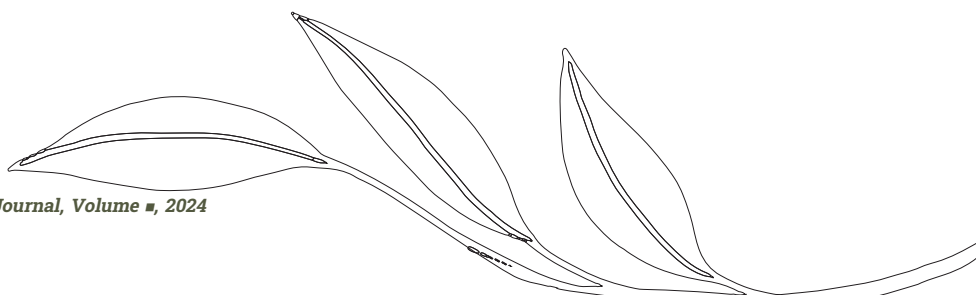
Whilst this may appear to be retro-fitting the analytical design, it was more about becoming more able to 'see the wood for the trees' as the research journey progressed – about learning from the communities with whom the team worked. It carefully charted a new direction for researchers facing similar challenges and dilemmas to build alternative mixed method design options into their studies with small sample populations from the start.

A second limitation was that the proposed methodology to the data have not yet been fully applied and conclusive results have not been provided to demonstrate the efficacy of the proposition; however, that was not the intention of this study – it was purely a methodological and theoretical exploration. A search of literature related to working with small sample populations was conducted using both quantitative and qualitative data analysis techniques to determine the best methodological way forward that was aligned with this epistemological, ontological and axiological frame for conducting research with First Nations populations (Dudgeon et al. 2020). This exploratory phase identified the limitations of using conventional quantitative methods alone and provided insights to the benefits and need to consider the complexities of context and culture when conducting research with small population samples, to understand and address the social determinants contributing to health inequities.

It is therefore necessary for researchers and communities to make decisions about what constitutes the best approach to the way forward.

Conclusions

Entrusted to provide meaningful feedback to communities and Elders of the Whadjuk Ngoongar and Gamilaroi Nations, and key stakeholder services





committed to supporting young people's resilience and wellbeing, this study was persuaded and inspired by Onwuegbuzie's (2012) edict that research teams

should strive for what is the radical middle... a new theoretical and methodological space in which a socially just and productive coexistence among all research traditions is actively promoted, and in which mixed research is consciously local, dynamic, interactive, situated, contingent, fluid, strategic, and generative. (p.192)

This research project found that working with distinct and small populations (in this case First Nations young people) presents important insights and ethical and practical challenges for researchers related to achieving statistical power and therefore prediction and generalisable conclusions in the scientific tradition. However, given that the primary focus was on maintaining the commitment to the principles of Indigenous Data Sovereignty and National Health and Medical Research Council guidelines in Indigenous contexts in this paper, it is argued that when working with smaller populations, there is a need to anchor investigations in stories as data, and data as stories – to carefully consider the potential benefits of using idiographic approaches, so that idiographic (individual) level information is able to be aggregated to nomothetic (aggregate) level.

It is intended that all participants involved in this study will benefit from the analysis and interpretation of data that were directly drawn from their communities. More broadly, it is hoped that there will be additional benefits to larger populations, communities and other research consumers from combining data where possible and appropriate. The team intended to show that even studies with small numbers can be useful to establish a possible negative or positive impact that

can then be considered in other studies or within the practice environment. Research should not be just about getting as many participants as possible; rather, consideration needs to be given to ensure that studies make sense in the local context and help to find answers to meaningful research questions. This is particularly so when working with First Nations communities or sub-population groups within those communities, such as young people in different geographical contexts.

Conflicts of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Ethics

This Indigenous young people's resilience and wellbeing study was conducted with the approval of the Western Australian Aboriginal Human Ethics Council (796), Murdoch University Human Ethics (070918) and the University of New England Human Research Ethics Committee (2017-122), and AH&MRC HREC Reference (1353/17).

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The team wish to acknowledge the recent passing of Dr Lowitja O'Donoghue AC CBE and pay tribute to her unwavering commitment and enduring legacy to improving the health and wellbeing outcomes of Aboriginal and Torres Strait Islander peoples. We feel





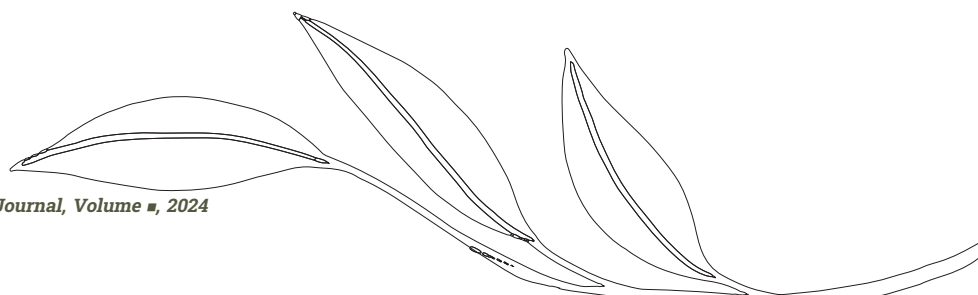
deeply honoured and privileged to be publishing this article in the newly established Journal carrying her name.

Credit Author Statement

CR, RW contributed to the conceptualisation; all authors contributed to methodology and formal analysis; CR, RM, KU, RM, CS and DJ contributed to the writing of the original draft and review and editing; RM and KU funding acquisition.

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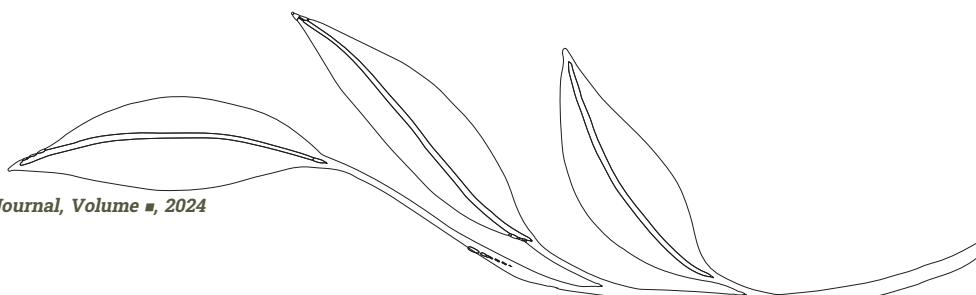
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