

Measuring indigenous populations across nations: Challenges for methodological alignment

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Abstract. The social and political importance of the world's Indigenous peoples is highlighted by the United Nations and by a range of National Statistical Organisations and government agencies internationally who aim to identify and address some of the distinct social and economic characteristics observed in Indigenous populations. This paper outlines the historical and social context around enumeration and measurement of Indigenous peoples in Australia and offers an outline of current operational approaches across administrative and survey data. It also gives a comparative account of approaches taken by the United States of America, Canada and New Zealand, discussing historical contexts, their notions of Indigeneity and the collection methodology employed. Considerations are then offered toward the development of an internationally consistent approach to the measurement of Indigenous peoples. While Indigenous data is collected and compared across nations, collection methodologies differ, making comparisons less reliable and giving rise to the consideration for a standard international recording methodology. This preliminary review of current approaches and the documentation of known collection issues are of value in encouraging a wider strategic discussion around approaches to Indigenous statistics amongst nations.

Keywords: Indigenous, population, census, Australia, New Zealand, Canada, United States of America

1. Introduction

The social and political importance of the world's Indigenous peoples is highlighted by the United Nations (UN) and by a range of National Statistical Organisations (NSOs) and government agencies internationally who aim to identify and address some of the distinct social and economic characteristics observed in Indigenous populations. The disparate social and economic outcomes observed in Indigenous populations internationally (compared to their non-Indigenous compatriots) require rigorous, thoughtful and appropriate approaches to national (and state and

local area level) statistics in order to inform effective public policy and support Indigenous self-governance.

Australia's Aboriginal and Torres Strait Islander peoples occupy a unique place in Australian society and culture. According to the most recently available population estimates, there were 669 881 Aboriginal and Torres Strait Islander people in Australia (on 30 June, 2011) comprising 3% of the overall population. There is a need to understand the full picture of Aboriginal and Torres Strait Islander people's access to various forms of social and economic capital, and understand the differences from other population groups in Australian society. Accurate and consistent statistics in this area are needed in order to plan, promote and deliver essential services, and monitor changes in various dimensions of well-being for Aboriginal and Torres Strait Islander peoples.

The measurement of a nation's Indigenous population is a contentious and complex exercise. In Australia, the method for collecting information about

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¹The analysis and views presented in this paper are those of the authors and do not necessarily represent those of the Australian Bureau of Statistics.

Aboriginal and Torres Strait Islander peoples is via self-identification questions. The ABS Standard Indigenous Question (SIQ) is used in all ABS data collections, and is also used across a wide range of government agencies and Australian Aboriginal and Torres Strait Islander organisations. While the SIQ is widely employed, there remain a number of differing approaches to the collection and storage of Indigenous status information across organisations, which can lead to inconsistencies in official statistics. Although self-identification is widely recognised as an appropriate methodology for enumerating Indigenous populations, there are limitations and implications for the resulting statistics that must also be recognised.

This paper outlines the historical and social context behind the enumeration and measurement of Indigenous peoples in Australia and offers an outline of current operational approaches across administrative and survey data, including the Census of Population and Housing. It then discusses the approaches to Indigenous statistics currently employed in Australia, New Zealand, Canada, and the United States of America (USA).

The logistical and conceptual considerations involved in developing an international framework for Indigenous statistics are beyond the scope of this paper. However, a preliminary review of current approaches and the documentation of some known issues are of value in encouraging a wider discussion about Indigenous statistics amongst nations.

To this end, suggestions are offered in exploration of an internationally consistent collection methodology for Indigenous statistics, aiming toward the development of a consistent approach to the measurement of Indigenous peoples. While Indigenous data is collected and compared across nations, collection methodologies differ, making comparisons less reliable and giving rise to the consideration for a standard international recording methodology.

2. Background

The 2011 Australian Census of Population and Housing marked the 40th anniversary of the inclusion of Aboriginal and Torres Strait Islander peoples in Census counts. Over four decades the methodologies behind collecting Indigenous information have changed dramatically. Of relevance to this paper is the evolution of Census question approaches in relation to Aboriginal and Torres Strait Islander people that re-

sulted in the question's current formulation. The ABS SIQ is now used to collect information on this population from surveys and administrative by-product data, as well as the Census.

The motive for the initial inclusion of an Aboriginal identification question on Census forms between 1933 and 1966 was to remove those who reported being '50 per cent or more Aboriginal' from the national population count. This reflects historical conceptions of 'race' that were linked to biological measures such as 'blood quatum', both in Australia and elsewhere [8].

As recognition of the rights of Indigenous peoples changed, so too did the statistical information collected on this population. In 1967, a referendum was held to amend the constitution to allow the inclusion of Aboriginal people in Census counts of the Australian population. This led to changes in the first Census following the 1967 referendum. In 1971, the 'race' question on the Census was changed to allow individuals to identify based on what they deemed their racial origin to be, irrespective of their 'blood origins' [1]. The question was changed to omit references to blood-quotums, asking instead for the 'racial origin' of the respondent, with 'Aboriginal' and 'Torres Strait Islander' included as response options. The question was further altered for the 1981 Census, this time in response to public discontent with the use of the word 'racial' and to reflect the three part definition of an Aboriginal or Torres Strait Islander person (for policy purposes) adopted by the Federal Cabinet in 1978. The definition, still widely accepted as the Commonwealth Definition, states that:

'An Aboriginal or Torres Strait Islander is a person of Aboriginal or Torres Strait Islander descent who identifies as an Aboriginal or Torres Strait Islander and is accepted as such by the community in which he or she lives' [7].

The Standard Indigenous Question still in use today was thus implemented:

Is the person of Aboriginal or Torres Strait Islander origin?

Response options: 'No', 'Yes, Aboriginal' and 'Yes, Torres Strait Islander'

(For persons of both Aboriginal and Torres Strait Islander origin, mark both 'Yes' boxes).

The ABS SIQ is based upon the Commonwealth working definition but does not include the third element of the Commonwealth definition, namely that 'an Aboriginal or Torres Strait Islander is a person who is accepted as such by the community in which he or she

lives'. Collecting information on the basis of community acceptance is often impractical in a survey or administrative data collection setting and can lead to inaccuracies; for these reasons, it is not included in the ABS Standard.

While the approach taken in the early 20th century required individuals to be directly descended from at least one 'full-blood' Aboriginal parent, the current definition allows any individual with an Aboriginal and/or Torres Strait Islander ancestor to legitimately identify as Indigenous, at least for the purposes of data collection. This 'hypo descent' definition, given high rates of inter-marriage with the non-Indigenous population, potentially creates an ever-growing population of people who could reasonably identify as Indigenous.

The ABS SIQ is used consistently across all ABS data collections, and is also used by some government agencies and other data collectors. Recent research conducted by the ABS highlighted the value of having a consistent question wording across all data collections [2]. It is envisaged that encouraging the use of the ABS SIQ will remain an objective of the ABS as the leader of the National Statistical Service (NSS).

3. Operational measurement

The statistical variable 'Aboriginal and Torres Strait Islander Status' is endorsed by the Ministerial Council of Immigration and Multicultural Affairs as one of the four Minimum Core Indicators of the standard set of indicators for use in measuring cultural and linguistic diversity [6]. The set has been progressively implemented in administrative and service settings to provide data to determine, measure and monitor service needs, and to provide a measure of cultural diversity in its broader sense.

In order to meet the requirements for nationally comparable Aboriginal and Torres Strait Islander Status data, the ABS has determined that the following principles must be met:

- The SIQ must be asked for each contact between a person and the agency;
- Indigenous Status data must be assessed to be of acceptable quality, including levels of unknowns, before it can be published as part of national statistical collections; and
- Indigenous Status data must be stored appropriately in recording systems, and be able to be extracted and transferred in an appropriate fashion

While each agency may have unique issues in recording Indigenous information, there are some key overarching issues that affect the quality of Indigenous information available from various data collections.

4. Key challenges

4.1. System limitations

The most common issue preventing the collection of high quality data is linked to inefficiency of current Information Technology (IT) systems. Many Australian government agencies have system challenges that reduce the quality of data collected, do not have the ability to collect data at all, or do not have the capability to move data from one system to another (either within a sector or across sectors). It is important to understand that IT systems are designed to support business processes of agencies and not generally explicitly for statistical purposes. Often, trying to retrospectively fit these standards and work flows does not align with ideal statistical points of measurement.

This issue has the largest impact on data quality; without a commitment to amend or replace current systems, there is little that can be done to circumvent the problem. For most agencies experiencing this issue, progress is unlikely to be made until IT systems are upgraded.

4.2. Lack of contact to support appropriate data collection

There are certain circumstances where the ability to record an individual's Aboriginal and Torres Strait Islander status is not possible due to a lack of contact with a person, which is required to ask the SIQ. The collection of data in the Australian judicial system is a good example of this. Given the rise in non-court prosecutions for various minor crimes in Australia, individuals may be parties to matters that are counted in official statistics, but where there has not been any opportunity for them to be asked about their Indigenous Status or for an SIQ to be recorded. As government processes become increasingly streamlined, similar issues may arise in the future where governments aim to reduce expenditure by taking operations online, again resulting in an inability for the SIQ to be asked.

4.3. Data collector discretion

The quality of administrative data relies in part on data collection staff consistently entering information correctly to produce high quality statistics. Due to differences in recording practices in jurisdictions and the sheer amount of staff that hold responsibility for data collection, it cannot be assumed that every staff member is recording data correctly on every occasion, which affects the data quality. The organisational culture in terms of recording and reporting data, and the rigour of staff training conducted about data collection also plays an important role in the quality and validity of data, as does the ease of use of an organisation's data entry system.

4.4. Principles of question design: validity and reliability

While question design methodology for the current SIQ is unclear, an examination of the data item on the basis of the principles of validity and reliability can yield some perspective on its current usage and the results it generates.

The ABS SIQ can be considered reliable on the basis that, when presented with the question, focus groups have indicated they would answer the question consistently across contexts were they presented with it multiple times [2]. The actual data across datasets indicate otherwise [19], however numerous issues to do with context, collection methodology, perceived outcomes and relationships with entities that ask the question have been identified as contributing to this variability in responses [3]. To this end, it is important to consider the various influences on the usage, understanding and responses to the question beyond its wording.

Whether the question is a valid measure of the construct to be measured is a more fraught issue. Common approaches to validity such as face, content and construct validity seem to be left somewhat wanting in the current context; defining the Aboriginal and Torres Strait Islander population for the purposes of measurement is as complex an issue now as ever, with unprecedented pressure placed on its accuracy in the context of social policy, even as the enumerated population continues to increase beyond demographically explainable levels.

Clarity needs to be developed around exactly what the question intends to measure. The 'hypo descent' philosophy applied to Indigenous identification in Australia, while appropriately inclusive, has contributed to

increases in the size of Aboriginal and Torres Strait Islander population due to the inclusion of people with any degree of Indigenous ancestry in the group of people considered to be Indigenous. While this is no doubt preferable to more restrictive approaches taken elsewhere in the world, consideration must be given to the function of such broad population measures in light of the importance of statistical consistency in its measurement. Barnes [4] offers a lucid comment on the nature of Indigenous population counts in discussing the variable and somewhat nebulous nature of Indigenous population counts and the imprecise meaning of populations constructed by a singular question about origin (in the Australian context): "we can go no further than to say that the population represented by the counts is 'those people who chose to respond affirmatively to the Indigenous status question'" (pp. 10).

5. International comparisons

5.1. New Zealand

New Zealand recognises the Maori people as its Indigenous population; 15% of New Zealanders identify as Maori in response to the 'ethnicity' question on the New Zealand Census. Maori people are enumerated by the data item:

Which ethnic group do you belong to?

As in Australia, the New Zealand government considers a person to be a Maori if he/she has Maori ancestry and identifies as Maori. Census respondents are able to report multiple ethnicities, and research in New Zealand has identified demographic distinctions between the subgroups identifying as 'sole Maori' and Maori in combination with some other ethnicity.

Some findings suggest that individuals who reported having sole Maori identity had better outcomes in areas including mental health and criminal offending than those who reported Maori identity and identity with another ethnic group [12,14]. Other findings however suggest that outcomes in other areas, such as cannabis use and educational attainment did not vary according to Maori cultural identification [11,13]. Some researchers have suggested a 'gradient' of disadvantage associated with ethnic affiliations ranging from 'sole Maori' to singular European and other non-Maori ethnicities [5].

The climate around enumeration of Indigenous peoples in New Zealand is influenced by the long-established

shed Treaty of Waitanga [17] that recognises the role of Maoris as New Zealand's first peoples. Work is underway to develop a Maori Statistics Framework, reporting on issues that affect Maori people in culturally appropriate ways and involving Maori people in the development of Maori statistics. Administrative data on Maori people appear to be relatively robust; this may be due to the relatively large proportion of New Zealanders who identify as Maori (compared with other nations with Indigenous groups), New Zealand's relatively small population size and its impact on the complexities of compiling national statistics (compared to, for example, the USA) and the comparatively inclusive and positive social environment around Maori 'ethnicity'.

5.2. Canada

Canada's Indigenous population comprised 3.8% of the total population at the 2006 Census. Three key groups are recognised within the Canadian Indigenous population: North American Indian (60% at 2006 Census), Métis (33%) and Inuit (4%) [20]. As in Australia, Canada's Indigenous population is larger in the younger age groups relative to the non-Indigenous population and growth levels beyond what is attributable to demographic change have been observed in Canada in recent decades.

Issues with data quality in Canada's Indigenous statistics include inconsistent health data, caused by a disconnect between health service providers used by Indigenous people. This is made more difficult by the targeted provision of services to registered Indians (registered under the Indian Act) only; Canadian Aboriginal people who are part of the Inuit or Métis populations do not always have access to these targeted services. This may mean that data on their service usage is not as thorough as for North American Indians (commonly referred to as First Nations Peoples). Where Indigenous people make use of mainstream health services, the services do not necessarily collect Indigenous status information, and the reporting of this to statistical agencies is inconsistent. Broadly, Census data can be thought of as the only nationally reliable dataset containing information about Canada's total Indigenous population [10], though undercount and data quality issues are noted as an issue in all Censuses, particularly in terms of enumerating geographically dispersed sub-populations. More general data, such as vital statistics and immunization data, are also subject to inconsistencies in collection and report-

ing across provincial jurisdictions. Inconsistencies also exist across health data collection and reporting for the three Indigenous groups in Canada. Most information collected and reported is for North American Indians, while very little data is available on the Métis population. As the Métis population is the fastest-growing within Canada's Indigenous peoples [20], it can be expected that this will be an area of ongoing interest for Canadian statistical organisations.

Issues with Indigenous enumeration and measurement in Canada are underpinned by the lack of a consistent legal definition for Indigenous peoples. While the Indian Act specifies who may register as an Indian, non-status Indians are not clearly defined, and there is no clear consensus for a definition of Métis or Inuit (in terms of specifying who may identify as part of each group) [10]. As a result, data collectors stipulate their own parameters for the Indigenous population and this can be expected to lead to inconsistencies in identification in data sets, aside from the lack of standardised reporting of Indigenous status data.

For the purposes of Census collection, Canada's Indigenous peoples are enumerated on the basis of four criteria:

- Ethnic origin (including Aboriginal ancestries)
What were the ethnic origins of this person's ancestors?
- Aboriginal identity
Is this person an Aboriginal person, that is, North American Indian, Métis or Inuit?
- Registration as a Treaty Indian
Is this person a Treaty Indian or a Registered Indian as defined by the Indian Act of Canada?
- Membership of an Indian Band of First Nation
Is this person a member of an Indian Band/First Nation?

Canada's addition of the Aboriginal identity question in 1986 is noteworthy, as Statistics Canada acknowledged concerns expressed by Aboriginal groups that ancestry does not necessarily predict or determine an individual's identification with a group to which they have biological links.

Currently, participants are able to report multiple Indigenous and non-Indigenous group affiliations on the Census. The populations of Indigenous people delineated by these criteria overlap (though they can be isolated for data analysis), but are not identical. Indeed, the variations between the four groups identified by the Census question make clear the need for consistent definitional approaches to the enumeration of Indigenous peoples for the purposes of international compar-

ison, as well as for consistent national data to inform policy.

5.3. *United States of America*

In the USA, the Indigenous population is for the most part comprised of two subgroups: American Indians and Alaska Natives; these make up 1.5% of the US population. For some statistical purposes, Native Hawaiians and Pacific Islanders are also considered within the Indigenous population. These subpopulations have been included as a separate category since the 2000 Census [16], but as their population representation is comparatively low (0.3%), statistics on Indigenous peoples in the US tend to focus on American Indians and Alaska Natives; certainly there is a paucity of data sets that can provide data at the group level for Native Hawaiians and Pacific Islanders [23]. Enumeration on the US Census is by self-identification, in response to the question:

What is this person's race?

A list of 'races', including 'American Indian or Alaska Native' (along with Asian Indian, Japanese, etc.) are provided, and respondents who mark this box are requested to provide the name of their enrolled or principal tribe. Multiple 'race' responses are permitted.

The US Census Bureau defines American Indians (AI) and Alaska Natives (AN) as "people having origins in any of the original peoples of North and South America (including Central America), and who maintain tribal affiliation or community attachment" [21, p. 2]. Indigenous identification in the USA occurs within a structure of government recognition of Native American Indian tribal groups. A register of tribal groups is maintained by the US government and a policy is upheld around the engagement of US government agencies with tribal governments.

The parameters of Indigeneity may therefore vary between data collection contexts – an individual applying for Bureau of Indian Affairs Services must provide evidence of their recent Indian ancestry and/or membership of a recognised Tribe, whereas the self-identification methodology applied in the US Census requires no substantiation of Indigenous status.

Inconsistencies in the way data is collected across administrative and survey contexts (outside of Census counts) create issues for nationally comparable statistics on Indigenous peoples. Indigenous status question wording varies between collection instruments, as does collection methodology; where the Indigenous

status data item is present in data sets, it is not always collected by self-identification and, where collection staff are responsible for reporting Indigenous status, misreporting has been shown to occur inconsistently across jurisdictions. A range of data collection issues highlight the need for consistent Indigenous status reporting at local, state and national levels as a minimum in order to generate meaningful statistics on AI/AN peoples for US social policy. The lack of accuracy and consistency in measures of Indigenous peoples has critical implications for policy. Limitations in the measurement and recording of healthcare disparities [15] and healthcare needs and service usage in elderly American Indians and Alaska Natives [18], as well as widespread miscoding of Indigenous status in death certificate reporting [9] are just a few examples of this. Improvement of this data at the national level may also allow more significant contributions to the international discourse on Indigenous peoples.

6. **Towards an internationally consistent methodology**

While it can be argued that all countries with Indigenous populations could implement improvements to statistical programmes aimed at enumerating Indigenous peoples, it is also true that an internationally consistent approach to data collection methodology would allow for more accurate comparisons. This would increase opportunities for collaborative program and policy development, statistics that can be more closely compared (with recognised limitations) and a consistent international discourse on addressing the impacts of colonialisation.

In 1986 the UN Working Group on Indigenous Populations offered the following description of what is meant by Indigenous community, peoples and nations:

"Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies . . . , consider themselves distinct from other sectors of the societies now prevailing in those territories. . . They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems" [22].

This description, however, offers little guidance as to what might be a useful administrative or legal definition for the purpose of the nation state attempting to enumerate, recognise the rights of, or develop policy for the benefit of, Indigenous peoples. Consequently, different countries have found different ways forward; some emphasising self-identification, others focusing on verifiable descent and affiliation with recognised Indigenous groups.

The following issues should be considered in the development of an international best practice standard for measuring Indigenous populations. Fundamental issues of definition would need to be resolved, including the underpinning philosophy of biological descent and/or personal identification as the essential marker of Indigeneity. Beyond this, consideration of response options would help to further define the target group/s for measurement: multiple responses to questions about Indigenous status, where an individual could reasonably identify with (or report biological linkages to) more than one Indigenous group, or where an individual could report both Indigenous and non-Indigenous heritage, may be valuable to NSOs and policymakers. Examination of Indigenous populations at the levels of disaggregation allowed by multiple responses may identify sub populations defined by sole group membership or mixed heritage, with the potential to identify differing needs, geographic distribution, demographic characteristics and components of population change. Certainly recent research has suggested links between singular and multiple group affiliations in Indigenous populations and a range of outcomes and demographic characteristics [5]. Further work in this area may help to elucidate those groups most appropriately targeted by social policies and programs aimed at eliminating disadvantage associated with Indigeneity. Given the high rate of inter-marriage observed in Indigenous populations [19], it is reasonable to expect that the populations of people who could report both Indigenous and non-Indigenous ancestry, origin and/or group affiliation will continue to grow, and that the opportunity to report and acknowledge their linkages to both (or multiple) groups would be well-received within these groups.

Other precepts should guide efforts toward an internationally consistent methodological approach. The sovereignty and enduring tenure of Indigenous peoples must be recognised in any effort towards measurement or enumeration for national statistics, and particular regard must be given to the ethics of labelling and targeting groups for whom scrutiny has in some

instances been associated with dispossession, violence or marginalisation.

Question wording or data collection methodologies should not give rise to discrimination against, or indeed in favour of, the group/s being enumerated. Any measure of Indigeneity should be treated separately and as distinct from measures of ethnicity. Indigenous peoples are recognised as having a unique and enduring relationship to the nation of their origin, and the rights and entitlements afforded by their tenure distinguish them from ethnic groups residing in the same nation but originating elsewhere. To conflate Indigeneity with ethnicity is to fundamentally fail to recognise the position of Indigenous peoples in a nation's population.

Before more appropriate international methodologies can be implemented, domestic operational issues must first be addressed. The sheer number of organisations involved in collecting data on Indigenous status raise challenges for the implementation of any new approach, yet perhaps the very nature of inconsistent procedures across data sets should highlight the need for consistent data collection methodologies both within and between nations with Indigenous populations.

A consideration in the development of an internationally consistent approach to data collection may be the implementation, at the national level, of requirements that all data collection organisations in areas of critical policy importance for Indigenous peoples (including health, education, social services and crime and justice) implement a standard procedure for the collection of Indigenous status, and contribute to statistics through consistent reporting mechanisms.

A focus on internationally consistent measurement of Indigenous populations may encourage the assessment, and improvement, of data collection methodologies within participating nations. This improvement in data quality at the national level would increase the relevance and utility of statistics for international comparison. Reporting in a consistent manner would allow for more productive discussions about the needs of these groups (where similar demographic characteristics are identified across countries), and about social policy approaches aimed at addressing these needs. More meaningful comparisons between components of population change may also be possible. This would encourage greater knowledge sharing between governments and Indigenous groups in terms of social policy and approaches to official statistics.

7. Conclusion

In any discussion around the enumeration and measurement of Indigenous peoples, it should be borne in mind that Indigenous populations are socially constructed and comprised of rich cultural influences and diverse socio-histories. Accepting that the present-day ‘picture’ of Indigenous populations is simply yet another ‘period’ in their history, it is important to recognise that the concrete measurement of Indigenous populations for statistical and policy purposes is something of an ephemeral goal, and these measures may always lack the certainty that would allow rigorous statistical investigations and comparisons. An effort toward internationally consistent measurement of Indigenous populations would serve only to reduce the impediments to effective collection and reporting of Indigenous statistics at the national level and for the purposes of international comparison and discussion. It would not alleviate the impact on national statistics of the many social, political, cultural and historical issues influencing the place and role of Indigenous peoples in their countries of origin.

Despite the differing cultural and historical contexts in which the Indigenous populations of Australia, New Zealand, Canada and the US exist, it is clear that consistent statistics on their size, social and economic outcomes and other demographic characteristics are important to the ongoing understanding of their needs, their strengths and the rich cultural heritage with which their resident nations are imbued. Measures of Indigenous populations that allow international comparison would contribute to more productive discourse around the circumstances and roles of Indigenous peoples. It is nevertheless recognised that standardising collection methodologies across countries would not be without its challenges, and would by no means create an aggregated ‘international Indigenous population’. Stark differences in the social, cultural and political interrelationships between Indigenous and non-Indigenous populations make this impossible, yet the current differences between enumeration methodologies (and underpinning philosophies) make these groups more statistically disparate than they need really be. Were all countries with Indigenous populations to measure these groups in a statistically comparable way, international discussions around Indigenous statistics would at least be comparing groups on a consistent conceptual base. The vision is to provide more dynamic and meaningful Indigenous statistics to facilitate informed strategic policy decisions and allow more effective comparisons between outcomes for Indigenous groups internationally.

Acknowledgements

The authors are indebted to colleagues at the Australian Bureau of Statistics and Statistics Canada for their time and attention in reviewing this work. Thanks are due in particular to Dr Siu-Ming Tam, Fiona Dowsley and Suraksha Maharaj (ABS) and Eric Guimond and Eric McGregor (Aboriginal Affairs and Northern Development Canada).

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