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Abstract

Data about Indigenous populations in the United States are inconsistent and irrelevant. Federal and state governments and researchers direct most collection, analysis, and use of data about U.S. Indigenous populations. Indigenous Peoples' justified mistrust further complicates the collection and use of these data. Nonetheless, tribal leaders and communities depend on these data to inform decision making. Reliance on data that do not reflect tribal needs, priorities, and self-conceptions threatens tribal self-determination. Tribal data sovereignty through governance of data on Indigenous populations is long overdue. This article provides two case studies of the Ysleta del Sur Pueblo and Cheyenne River Sioux Tribe and their demographic and socioeconomic data initiatives to create locally and culturally relevant data for decision making.

Keywords

American Indian, Alaska Native, Indigenous, data, sovereignty, governance

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Data as a Strategic Resource: Self-determination, Governance, and the Data Challenge for Indigenous Nations in the United States

Indigenous nations, like all communities, require data to identify problems, to develop and prioritize solutions, to make strategic decisions and defensible policies, to influence external entities, and, most importantly, to bring the community's vision of a healthy and vibrant society to life. Yet Indigenous nations in the United States (U.S.) face a "data landscape" marred by sparse, inconsistent, and irrelevant information complicated by limited access and utility. While some data collected by others may be useful for tribes, the status quo of data collected about Indigenous Peoples or communities is not suitable to help address tribally defined needs (Cross, Fox, Becker-Green, Smith, & Willetto, 2004; DeWeaver, 2010; Freemantle et al., 2015; Red Star Innovations, 2013, 2015; Rodriguez-Lonebear, 2016; Tribal Epidemiology Centers, 2013; Westat, 2007).

Indigenous nations use data internally and externally. For example, tribes use data internally to monitor delivery of services, emerging needs of tribal populations, and the state of tribal lands and resources. Externally, tribes employ data to shape federal, state, and local policy and to influence resources management. Tribes also use data to apply for external funds from the federal government and others. However, the information that Indigenous nations in the U.S. possess or can access too often is gathered and administered not by the tribes, but by others (individuals, organizations, governments) for purposes defined by others (Bruhn, 2014; DeWeaver, 2010; Freemantle et al., 2015; Red Star Innovations, 2015; Rodriguez-Lonebear, 2016; Tribal Epidemiology Centers, 2013).

The first part of this article broadly outlines the state of population-based data for Indigenous Peoples in the United States. The second part provides two examples of tribal data sovereignty and data governance (for the Ysleta del Sur Pueblo and the Cheyenne River Sioux Tribe) where Indigenous nations directed their own demographic and socioeconomic data agendas. Each case study describes the data challenges the tribe faced, and the resulting initiatives, community engagement and education, and uses of the data. The article closes with a discussion of how data use enhanced the tribes' self-determination and governance as well as international, national, and tribal policy implications.

Indigenous Nations and Peoples in the United States

The 2010 U.S. Census reported 5.2 million Americans of American Indian or Alaska Native (AIAN) heritages, representing about 2% of the U.S. population (Norris, Vines, & Hoeffel, 2012). The single race AIAN population, or those individuals reporting AIAN heritage alone, comprised 2.9 million people, or 49% of those reporting AIAN heritage. As of May 2016, the federal government recognized 567 tribal nations (Bureau of Indian Affairs, 2016). There are 336 tribes in the lower 48 states with the remainder in Alaska. While there are no federally recognized Indigenous nations in Hawai'i, over 540,000 people self-reported as Native Hawai'ians in the 2010 U.S. Census (Hixson, Hepler, & Kim, 2012). In addition to federal recognition, 11 states recognized the sovereignty of 60 additional tribes in 2016 (National Conference of State Legislatures, 2016). Numerous unrecognized tribes also exist. Tribes in the U.S. span varied geographies from coastal ecosystems to desert climes to everything in between. U.S. tribes range in population from under 100 to over 300,000 citizens. The tribes represent a diverse array of cultures and governance styles, including theocracies, executives, and nations with strong regional governments.

The State of Data for Tribal Communities

Based on a review of the literature, we have identified five critical problems with Indigenous population data today. Data are often:

- a. Inconsistent,
- b. Irrelevant,
- c. Poor quality,
- d. Produced and used within an environment of mistrust, and
- e. Controlled by those external to the Native nations.

Inconsistent

Data on Indigenous populations in the U.S. are largely collected by the U.S. Census Bureau, federal and state agencies, tribes, and other entities (Cross et al., 2004; DeWeaver, 2010, 2013; Freemantle et al., 2015; Todd, 2012; Westat, 2007). Yet for Indigenous populations and nations, standardized data often do not exist (Rodriguez-Lonebear, 2016; Snipp, 2016; Tribal Epidemiology Centers, 2013). Where once the U.S. government and others reported data regularly—such as the biennial Bureau of Indian Affairs (BIA) labor force reports, Indian Health Service (IHS) statistics every two to three years, Bureau of Justice Statistics (BJS) annual data on American Indians and crime—the federal government no longer issues those reports with the same consistency or at all (Shalala, Trujillo, Harry, Skupien, & D'Angelo, 1997; Shalala, Trujillo, Hartz, & D'Angelo, 1999; U.S. Department of Health and Human Services, 2001, 2004, 2008, 2009, 2015; U.S. Department of Justice, 2012; U.S. Department of the Interior, 2015).

For example, the Indian Employment, Training, and Related Services Demonstration Act of 1992 (1992) mandated at least biennial reporting of BIA labor force data on the U.S. Indigenous population eligible for services from the U.S. Department of the Interior. Data included enrollment, service population, and labor force presented by state, region, and tribe. Tribes submitted data to BIA, but because of a lack of resources at the tribal level to collect and transmit data reporting was sometimes incomplete (Bureau of Indian Affairs, 2008; Capriccioso, 2012; Laverdure, 2012). BIA publication of these data occurred steadily from the 1980s until 2007, based on 2005 data (U.S. Department of the Interior, 2015). The BIA did not produce a subsequent report until the 2014 release of the 2013 report based on 2010 data (U.S. Department of the Interior, 2014). Data were not distributed for the years 2006 through 2009 and 2011 through 2016 (U.S. Department of the Interior, 2015). Compared to previous reports, the 2014 release changed methodologies by combining tribally submitted data with U.S. Census data. The report also stopped collecting some information, added information, and altered how tribes had to report other information. Such changes make it difficult for tribes to rely on these data for decision-making and effectively prohibit analysis of changes over time (U.S. Department of the Interior, 2014). The Department of the Interior cited inconsistencies and misunderstandings in reporting requirements and survey methodology errors as the reasons for the gap in reporting (Bureau of Indian Affairs, 2008; Capriccioso, 2012; Laverdure, 2012).

Irrelevant

Most data available to tribes are irrelevant for tribal use. For example, since the beginning of U.S. colonization, the federal government and other outsiders have defined metrics and measurements and collected socioeconomic and health information from and about tribes. Data collection in Indian country was driven by the administrative needs of federal agencies, not by the governmental needs of Indigenous nations. As a result, the data from the U.S. Census, administrative databases, and many surveys include self-reports of tribal affiliation, rather than tribal enrollment information or tribally designed specifications. This inadequately characterizes populations and insufficiently informs policy and resource allocation decisions (Bruhn, 2014; Cross et al., 2004; DeWeaver, 2010, 2013; Freemantle et al., 2015; Red Star Innovations, 2013; Rodriguez-Lonebear, 2016; Snipp, 2016; Todd, 2012; Westat, 2007).

For example, U.S. mortality data derived from vital statistics for Indigenous Peoples are not always available for tribal jurisdictions (Anderson, Copeland, & Hayes, 2014; Freemantle et al., 2015). In addition, collection methods do not allow tribes to assess rates for tribal citizens who live off the reservation. Compromising mortality data further, state vital statistics offices often inaccurately record race and ethnicity because it is reported by someone other than the individual or a family member (Rhoades, 2006; Westat, 2007). In some cases, the individual completing the death certificate makes a guess as to the deceased's race. To create mortality data that are useful for tribes, Freemantle et al. (2015) advocated for partnerships between Indigenous nations and government statistics offices, international networking and strategizing among Indigenous Peoples facing similar challenges, and national plans to address data shortages and inaccuracies.

Poor Quality

Data inaccuracies exist across sectors (Cross et al., 2004; DeWeaver, 2010, 2013; Freemantle et al., 2015; Westat, 2007). In 1928, the Meriam Report cited the lack of accurate statistics about Indians as a major problem and suggested the need for additional questions to better reflect the population (Lewis Meriam and Associates, 1928). Almost a century later, this problem persists. The U.S. Census Bureau, the only nationally comparable socioeconomic data source for jurisdictions including reservations, undercounts federal Indian populations to this day (DeWeaver, 2013; Lujan, 1990; Passel, 1976; Snipp, 1989; U.S. Census Bureau, 2012).

The U.S. Census Bureau and tribes have taken a number of steps to improve census counts. During the 1980 and 1990 U.S. Census processes, the Bureau attempted to improve their data on Indigenous Peoples by directly contacting tribal governments to share information about the decennial Census process (U.S. Census Bureau, 2007). The Bureau also hired Indigenous Peoples to work in its offices and collect data in their own communities. In addition, the Bureau distributed public relations information directly to tribes and at Indigenous conferences. At the advice of an American Indian Advisory Committee, the Bureau implemented a comprehensive enumeration on reservations by oversampling households in reservation communities for the 2000 U.S. Census (Maury & Pemberton, 2009). This process enhanced tribal data and statistical reports.

However, with the migration to collecting socioeconomic data using the American Community Survey (ACS) after the 2000 U.S. Census, the U.S. Census Bureau lost ground in their pursuit of improved

socio-economic data (DeWeaver, 2013). For example, the sample size each year is smaller than the previous long-form U.S. Census sample size; the ACS samples fewer than four million individuals per year while the 2000 U.S. Census long-form sampled 17.5 million. The ACS methodology resulted in undercounts of reservation populations: In 2010, the ACS extrapolation fell 14.8% below the 2010 U.S. Census count. The U.S. Census Bureau implemented changes to the ACS in 2011 to address issues of small sample size; the impact of these changes is yet uncertain—only the 2016 aggregated 5-year report will assess the impact of the 2011 change (DeWeaver, 2013).

Mistrust

Indigenous individuals and communities are often mistrustful of participating in or supporting data collection, not least because data on Indigenous Peoples have long been used in ways that Indigenous Peoples do not support (Beauvais & Trimble, 1992; Christopher, 2005; Cochran et al., 2008; Manson, Garrouette, Goins, & Henderson, 2004). In a contemporary incident, researchers obtained consent and collected blood samples from Havasupai tribal citizens in Arizona to study the genetics of diabetes. Researchers then used these blood samples for purposes not listed on the consent form, such as analyzing the genetics of schizophrenia, and shared the data publicly as well as with personnel outside the research study, which violated the trust between the researchers and participants as well as the tribe (Cochran et al., 2008; Shaffer, 2004).

Mistrust also stems from lack of community voice in the data collection process resulting from research conducted and policies made by “outsiders” or non-community members (Burhansstipanov & Dresser, 1994; Cochran et al., 2008; Israel, Eng, Schulz, & Parker, 2005; Kunitz, 1996; Pacheco et al., 2013; Roubideaux, 2002). Often researchers and policymakers failed to honor commitments related to projects and interventions. In large part, data are only shared with community members in technical language that is difficult understand or not returned at all. Further, researcher and policymaker ignorance or disrespect for Indigenous cultural practices, beliefs, and knowledge during research and other information gathering efforts led to community distrust of data and data collection processes.

External Control

External control of data leads to inconsistent and irrelevant U.S. Indigenous population data, and Indigenous Peoples’ mistrust of data. Researchers, local, state, and federal governments, as well as for and non-profit entities, create data about U.S. Indigenous nations and peoples (Bruhn, 2014; DeWeaver, 2010; Freemantle et al., 2015; Red Star Innovations, 2015; Rodriguez-Lonebear, 2016; Snipp, 2016; Tribal Epidemiology Centers, 2013). Gathered and administered for purposes defined by others, this information rarely meets tribes’ data needs in two important ways:

- a. Data do not exist to inform tribal needs, and
- b. Existing data cannot be aggregated in ways meaningful to tribes.

The United States collects data for monitoring and surveillance purposes (Rodriguez-Lonebear, 2016; Snipp, 2016). Often these data inform social, health, and other community services—programs created and defined by the federal government. Sometimes these data support less benign efforts to surveil and control populations. Either way, the information collected, analysis methods, and data use reflect federal

government priorities. Indigenous nations may have far different information needs that reflect Indigenous perceptions of vibrant, sustainable communities and nations. For example, consumption rates of a traditional food may be significantly higher than mainstream rates. Contaminant exposure calculations and guidelines are based on mainstream consumption rates. Tribal citizens may be at increased risk from contaminant exposure due to higher intake of traditional foods. Complicating decision-making further, an Indigenous community may not have access to timely or detailed exposure rates. Without adequate and timely information, communities cannot make informed decisions about maintaining cultural practices and roles related to the procurement, processing, and consumption of that food. Non-tribal data sources rarely inform critical issues such as these. Missing are the data—by and for Indigenous nations—that empower Indigenous nations to transform their communities.

Data also cannot be aggregated to levels useful for tribes, such as identifying the total population of tribal citizens or the number of tribal citizens and non-citizens in a particular geographic area. The inability to aggregate in such ways results from the plethora of tribal identifiers used by data sources. In her research, Rodriguez-Lonebear (2016) identified 10 data sources for tribes, from the U.S. Census to Indian Health Service to state and county agencies to tribal enrollment data. These 10 data sources had no less than seven ways of identifying tribes. Four used U.S. Census self-report questions. Six others utilized sources that varied from Certificate Degree of Indian Blood from the Bureau of Indian Affairs to blood quantum to lineal descent. In sum, the net effect of external control of Indigenous data is a complicated data landscape in which tribes must make policy decisions.

Tribal Innovations

Lack of consistent and relevant data that meets the needs and visions of Indigenous nations limits the ability of policymakers to make informed decisions, thereby hampering tribal self-determination and capable governance (Cross et al., 2004; DeWeaver, 2013; Freemantle et al., 2015; Rodriguez-Lonebear, 2016; Snipp, 2016).

The Indigenous data landscape stands as a call to tribes to cultivate a strategic relationship with data. In the U.S., strategies employed by, or that can be used by tribes and others, include advocating that federal government and other entities collect and analyze data more frequently (Cross et al., 2004; DeWeaver, 2013; Freemantle et al., 2015); creating meaningful partnerships and data sharing agreements with other governments (including other tribes) and data collection entities (Cross et al., 2004; DeWeaver, 2013; Freemantle et al., 2015; Tribal Epidemiology Centers, 2013); stewarding research through tribal institutional review boards and research regulations including data sharing agreements (Cross et al., 2004; Oetzel et al., 2015; Snipp, 2016); engaging the community in defining information needs and data indicators (Cross et al., 2004; Knudson et al., 2012; Oetzel et al., 2015; Red Star Innovations, 2013); and identifying needs and planning for the effective collection, management, and use of data at the tribal level as an essential part of everyday governance (Cross et al., 2004; DeWeaver, 2013).

The Indigenous Data Sovereignty Movement

A data revolution is afoot in Indigenous nations and communities worldwide. Positioned within an Indigenous rights framework and deriving from tribes' inherent rights to govern their peoples, lands, and resources, Indigenous nations are asserting their rights to the information about their nations, communities, and citizens (Kukutai & Taylor, 2016). In mainstream data discussions, *data sovereignty*

is the right of a nation to collect and manage its own data (Rouse, 2013), while *data governance* refers to the ownership, collection, control, analysis, and use of data (The Data Governance Institute, 2015). Indigenous nations have begun asserting Indigenous data sovereignty and instituting governance over their data.

Rodriguez-Lonebear and Rainie (2016) noted, “Indigenous data sovereignty is the right of a nation to govern the collection, ownership, and application of its own data” (para. 2). Critically, these data include information about nations and their communities, lands, resources, and citizens. Inherent in Indigenous nations’ rights to the information is the implied responsibility to govern data.

First, a caveat: technical issues and logistics too often overwhelm the way data is discussed. Privileging these nuts-and-bolts kinds of considerations without first deeply considering culture, values, and Indigenous nation goals puts the cart before the horse. Therefore, this article consciously emphasizes the primary strategic issues tribes might fruitfully consider as they move toward a future vision of Indigenous data sovereignty and Indigenous nation data governance.

Indigenous nation data governance represents the comprehensive process by which tribes address the collection, ownership, control, and application of their data (Bruhn, 2014). As tribal nations assert their self-determination and governance goals, they have critical decisions to make regarding their long-term investments and prioritization of resources. The responsibility for insuring that the right data is used for all these purposes—obtaining funding, planning tribal facilities and services, and making appropriate decisions at the tribal council level—rests with the tribe itself. Tribal use of tribal data, whether collected by the tribe or by others, lies at the heart of tribal data governance (Smith, 2016). What does the tribe need to know about its people and its resources that can further tribal development? What does the tribe already know—qualitatively or quantitatively? What does it need to know or know better?

Indigenous data sovereignty and governance of data for and about U.S. Indigenous nations and peoples ensures the purposeful collection and use of data to advance Indigenous aspirations for collective and individual wellbeing (Rodriguez-Lonebear, 2016; Rodriguez-Lonebear & Rainie, 2016; Te Mana Raraunga, 2016).

Internationally, such as in Australia, Canada, and New Zealand, efforts to respond to tribal data priorities by national statistics offices, regional or intertribal data initiatives, and tribal capacity and capability building abound (Kukutai & Taylor, 2016). In Canada, discussions of data sovereignty and data governance for Indigenous nations have resulted in developing Indigenous owned and controlled national datasets (First Nations Information Governance Centre, 2012, 2016; Martens et al., 2010; Smylie et al., 2011), as well as community-based, nation-driven data governance (British Columbia First Nations' Data Governance Initiative, 2015, n.d.; Mustimuhw Information Solutions Inc., 2016). Māori in Aotearoa (New Zealand) launched a national effort to assert sovereignty over information about Māori via the Te Mana Raraunga— Māori Data Sovereignty Network (Te Mana Raraunga, 2016). In addition, iwis (tribes) themselves have exerted control over the data about their peoples, environments, and businesses (Hudson, Farrar, & McLean, 2016). Indigenous nations in the United States have voiced the need for similar tribal control of data (National Congress of American Indians, 2016; Red Star Innovations, 2015).

A number of U.S. Indigenous nations have built or are now building technical capacities and partnerships designed to meet tribes' data needs and support their strategic visions (Berry, 2009; Champagne, 2012; Cornell & Kalt, 2007; Cross et al., 2004; Edwards, Morris, & RedThunder, 2009; Galloway, 1995; Harvard Project on American Indian Economic Development, 2006; Krepps & Caves, 1994; Wakeling, Jorgensen, Michaelson, & Begay, 2001). As we show with two case studies here, U.S. tribes have begun to interact with and embrace Indigenous data sovereignty and data governance as a means to assert their rights to create data by and for their nations and peoples.

Two Tribal Data Initiatives

As part of a larger research project on Indigenous health and tribal data sovereignty, we examined in detail two relatively recent strategic tribal data initiatives: a demographic and socio-economic data project of Ysleta del Sur Pueblo, and the Tribal Ventures Voices Research Project of the Cheyenne River Sioux Tribe.

Both tribes agreed to participate in the research and became partners in the entire process from conception to publication.¹ The research involved a review of relevant literatures, interviews and follow-up communications with Ysleta del Sur and Cheyenne River co-researchers, additional extensive conversations with those involved in these projects, and the analysis of a wide range of relevant documents, including reports and other materials produced by both of the tribal data projects.

The three main themes that emerged during the case study process were: these successful data efforts are:

- a. Strategically responding to data challenges;
- b. Engaging with the community to educate leaders and citizens about data; and
- c. Using data to inform policy decisions and resource allocation that strengthen Indigenous nation sovereignty.

Case 1: Ysleta del Sur Pueblo

Ysleta del Sur Pueblo (hereafter, Ysleta del Sur), located near El Paso, Texas, is the southern-most pueblo along the Rio Grande (Ysleta del Sur Pueblo, 2015a). Forced to march 400 miles from New Mexico by Spanish captors during the Pueblo Revolt, the Ysleta del Sur people established the current pueblo in 1682 (Ysleta del Sur Pueblo, 2015d). In 2014, Ysleta del Sur had about 3,000 citizens; over 1,700 lived on the almost 3,000 acre reservation and the surrounding tribal service area (Ysleta del Sur Pueblo, 2015a).

Data challenge. In 2007, Ysleta del Sur recognized shortcomings of the U.S. Census Bureau's 2000 decennial census—data used by the tribe, the federal government, and others to set policy, design programs, and allocate resources. The census data failed to reflect the serious decline in the pueblo's economy triggered by the State of Texas' 2002 closure of the Ysleta del Sur's gaming operations. The

¹ The University of Arizona Institutional Review Board approved the case study process. Appropriate tribal

tribe and its Economic Development Department desired, instead, more timely and accurate information to develop a community-driven, nation-based economic development strategy.

Tribal data initiative. In 2008, Ysleta del Sur implemented its Comprehensive Economic Development Strategy (hereafter, Development Strategy). The Ysleta del Sur Economic Development Department led the process of creating community and economic development goals and objectives to develop a roadmap that would support the nation in its quest to “create jobs, foster a stable and diversified economy, and improve living conditions” (Gomez, Riggs, & Simental, 2008, pp. 1-2). To meet the Development Strategy goals, Ysleta del Sur needed demographic and socioeconomic data to establish a baseline, monitor progress toward objectives, and implement changes as needed.

Ysleta del Sur embarked on an effort coined “Tiguanomics” (derived from the pueblo’s word for the people, *Tigua*), representing the “pueblo's efforts to transform into a data-driven nation through the enhancement of data collection and statistical analysis to promote informed decision making and improve tribal governance, programs and services” (Ysleta del Sur Pueblo, 2015b, para. 1).

Methodology and approach. Each year the enrollment office requires Ysleta del Sur citizens to update their contact information within 10 days of their birthday. In 2008, the Economic Development Department appended a survey to the annual paperwork to collect baseline data for the Development Strategy. The survey collected data on income, marital status, gender, educational attainment, employment status, job function, employment industry, veteran status, household size, social assistance, as well as household computer and internet access (Ysleta del Sur Pueblo, 2008). The resultant *Ysleta del Sur Pueblo 2008 Socio Economic Profile* provided up-to-date information that was either previously only available from the 2000 U.S. Census or not available at all (Ysleta del Sur Pueblo, 2008). As a result, Ysleta del Sur decided to collect demographic and socioeconomic data annually through the enrollment process.

The Ysleta del Sur Economic Development Department, enrollment office, and citizens designed and validated the research methodology in partnership with the Institute for Policy and Economic Development at the University of Texas at El Paso (Ysleta del Sur Pueblo, 2008, 2010, 2012b, 2012c). The survey uses a census approach, requiring citizens to respond to the survey as part of the annual enrollment information update. The Economic Development Department manages the survey. An interdisciplinary team informed the creation of survey questions that wove together cultural and local knowledge with Western epistemologies. The department’s director, an Ysleta del Sur citizen, contributed community and cultural knowledge as well as management and business expertise. A master’s-level data specialist employed by the Ysleta del Sur and University of Texas El Paso consultants brought Western scientific knowledge about sociology and economics to the process. The tribal enrollment office serves as the main data storage facility for all data at Ysleta del Sur (Ysleta del Sur Pueblo, 2015e). Annually, data are collected about population, poverty rates, household incomes, educational attainment, workforce and unemployment, and cultural participation (Ysleta del Sur Pueblo, 2010, 2012b, 2012c). From 2008 to 2014, the survey had an average 90% response rate.

The socioeconomic profiles also collected community-level data. The Economic Development Department collaborated with other tribal departments to analyze structural elements internal to Ysleta del Sur that affected the pueblo’s economy such as the availability of affordable housing and jobs,

enterprise revenues injected into the economy, and the monetary impacts of economic “leakages.” In addition to these internal inquiries, the socioeconomic profile also assessed external factors affecting the pueblo’s economic performance, including data on the health of the neighboring regional economy, the opportunities and threats to the pueblo’s economy posed by external trends and forces, and the availability of partners and resources for Ysleta del Sur economic development.

Community engagement and education. The success of the socioeconomic profile hinged on community engagement and empowerment. Citizens and leaders played a large role in the development of data collection instruments and methods. A committee composed of community members, leaders, and department heads provided guidance to the Economic Development Department staff. The department gathered citizen input through focus groups and planning sessions, and held community meetings to educate citizens and descendants on data terminology, to explain how Ysleta del Sur’s data differs from and expands on other available data, and to share how Ysleta del Sur’s government uses the data to make decisions. Demonstrating the benefits of data and including the community in the process yielded support from leaders and citizens and trust in the socioeconomic profile plan.

Internal data dissemination. The Ysleta del Sur Economic Development Department prepared tailored data products depending on the audience or use: a technical report for such purposes as grant writing and reporting to federal agencies, and a summary for the community distributed by mail and email.²

Additional surveys. As a result of the experience collecting socioeconomic data, Ysleta del Sur initiated other data initiatives to support strategic decisions. For example, the pueblo desired a land-use plan that included non-Indigenous land uses, such as economic development and land preservation, as well cultural land uses. Ysleta del Sur leaders decided that community engagement was key to developing a comprehensive land-use plan for the community. Thus, the pueblo engaged community members through a survey about preservation and use of lands. Citizens then participated in a community charrette, a meeting of all Ysleta del Sur community stakeholders, to resolve conflicts and map solutions to plan for the future together. As a result, the land-use plan discusses non-Indigenous uses for lands and describes the relationships between people and the land, individuals’ roles in the community, and the importance of land for cultural continuity (Ysleta del Sur Pueblo, 2012a).

The pueblo has also gathered information about alternative and renewable energy, created small-business profiles, and explored citizenship and blood quantum via surveys (Ysleta del Sur Pueblo, 2009, 2012a, 2013). The pueblo does not approach each data project in isolation. Rather, Ysleta del Sur collaborates with other entities to validate questionnaires, develop methods, and conduct analyses. These data collections efforts differed from those of the U.S. Census Bureau, research projects conceived outside of the community, and large national surveys. Ysleta del Sur determined needs, methods, analyses, reporting, storage, and use of these data.

Informing Policy Decisions and Resource Allocation

Internal data uses. The Development Strategy vision of economic development fostered cultural preservation and improved quality of life. The report’s intent was to create a “community” that would

² The reports are available on the Ysleta del Sur website: <http://bit.ly/tiguanomics>

support the pueblo's ability to keep Ysleta del Sur citizens together to maintain the vitality of Ysleta del Sur as a nation (Gomez et al., 2008). To enact this vision, the pueblo's goals included:

- a. Creating a business corporation with an independent board separate from Ysleta del Sur's tribal council,
- b. Building the community's housing inventory,
- c. Increasing the tax base through policy revision,
- d. Supporting workforce development and entrepreneurs, and
- e. Developing a tribal building program (Gomez et al., 2008).

The strategies to achieve these goals were based on data—socioeconomic, financial, and other—collected and analyzed by the pueblo. Seven years after adopting the Development Strategy, Ysleta del Sur can demonstrate through data that the strategies were successful: new jobs were created through the development corporation; the housing inventory was augmented making affordable housing more available for citizens; and the pueblo's youth, citizens, and leaders were educated on nation building strategies (Ysleta del Sur Pueblo, 2015c).

External data uses. Using its socioeconomic data, Ysleta del Sur successfully applied for and received funding from the U.S. Housing and Urban Development's (HUD) Indian Community Development Block Grant program. To encourage business entrepreneurship, the pueblo desired a suitable facility to provide business incubator services such as office and conference spaces, as well as computer services. In 2010, Ysleta del Sur applied for an Indian Community Development Block Grant to construct such a facility.

Initially, HUD rejected the pueblo's application based on U.S. Census Bureau and BIA data that indicated that the project would not primarily benefit low- and moderate-income persons on the reservation. However, Ysleta del Sur filed a challenge to the HUD ruling stating that the Census Bureau and BIA data HUD had used to make its determination was incorrect and lacked critical variables. For example, the Census Bureau data, derived from the 2000 census, failed to reflect the serious downturn in the pueblo's economy that had occurred after the 2002 closure of the Ysleta del Sur gaming operations (Gover, 2002; National Indian Law Library, n.d.). Also, the data used by HUD did not reflect movement of needy tribal members onto the reservation with the construction of new low-income housing as a result of a previous HUD grant (Joseph, 2008).

Ysleta del Sur provided HUD with the pueblo's 2010 socioeconomic profile data, as well as information about the survey design and methodology (Ysleta del Sur Pueblo, 2012b). The data showed that the majority of persons to be served by the proposed incubator facility, the Tigua Technology Enterprise Center, would be from on-reservation households that were of low-to-moderate income (Ysleta del Sur Pueblo, 2012b). Based on Ysleta del Sur's data to support its appeal, HUD approved the project (Office of Native American Programs, Office of Public and Indian Housing, U.S. Department of Housing and Urban Development, 2011).

Summary. At Ysleta del Sur, critical demographic and socioeconomic data, once solely gathered and used mainly by outsiders, are now collected and analyzed under Ysleta del Sur control. Ysleta del Sur leveraged an existing process, the updating of enrollment contact information, to collect locally relevant data at the community level. These data enhanced self-determination and governance through up-to-date, valid information on which the pueblo established culturally relevant economic priorities, strategic orientation, policies, and programs.

Case 2: Cheyenne River Sioux Tribe

The Cheyenne River Sioux Reservation (hereafter, Cheyenne River) “is home to the Cheyenne River Sioux Tribe’s four Ospaie (bands) of the Great Sioux Nation: the Mnicoujou, the Siha Sapa, the Oohe Numpa, and the Itazipco” (Cheyenne River Sioux Tribal Ventures, 2011a, para. 2). The tribe had nearly 20,000 enrolled tribal citizens in 2015 (Cheyenne River Sioux Tribal Ventures, 2015d). In 2014, about 10,600 people lived within the Cheyenne River reservation boundaries, almost 8,600 of whom were American Indian (Cheyenne River Sioux Tribal Ventures, 2015d). In contrast to the urban character of the Ysleta del Sur reservation, the Cheyenne River reservation covers a rural and remote area of almost 3 million acres (Cheyenne River Sioux Tribal Ventures, 2015d). On average, fewer than two people reside in each square mile of the reservation (Cheyenne River Sioux Tribal Ventures, 2015d).

Data challenge. The Cheyenne River reservation suffers from poverty. The 2000 U.S. Census recorded the median household income of about \$22,100; in 2005, the BIA reported 88% unemployment on the reservation (U.S. Census Bureau, n.d.; U.S. Department of the Interior, 2005). In response to these conditions, the tribe sought to establish a comprehensive plan to address reservation poverty. To create, enact, and assess the plan, the tribe needed data beyond that provided by the federal government. Specifically, Cheyenne River needed timelier data aggregated at the reservation level that included locally and culturally relevant variables (Cheyenne River Sioux Tribal Ventures, 2014).

Tribal data initiative. The Cheyenne River 2006 to 2016 poverty reduction plan, *A Path for Our People*, in partnership with the Northwest Area Foundation, seeks to create sustainable partnerships and strategies to address poverty on the Cheyenne River reservation (Cheyenne River Sioux Tribal Ventures, 2015a, n.d.). The Northwest Area Foundation provided seed money to establish Cheyenne River Sioux Tribal Ventures (hereafter, Tribal Ventures), an entity poised to enact the poverty reduction plan through a future- and prosperity-oriented, community-informed, Lakota values-based strategy (Cheyenne River Sioux Tribal Ventures, 2015a, n.d.). The Cheyenne River Tribal Ventures initiated the Voices research project to collect baseline demographic and socioeconomic data to meet the tribe’s needs (Cheyenne River Sioux Tribal Ventures, 2015b).

Methodology and approach. The Voices project used expertise in demography and survey methodology from Colorado State University to create a reliable and valid survey and data collection process (Cheyenne River Sioux Tribal Ventures, 2014). Extensive community engagement through meetings and focus groups guided the selection of survey variables, the length of the survey, question wording, and data collection methods (Cheyenne River Sioux Tribal Ventures, n.d.). The research employed a random, stratified, disproportionate sample; researchers contacted every fourth house in each reservation community and surveyed up to five families per structure since more than one family might live in a home (Cheyenne River Sioux Tribal Ventures, 2014).

The questionnaire, administered in person, collected (via 150 closed-ended questions) information about basic demographics; community characteristics; land use; housing; education; work history and skills; family income and expenses; childcare; saving, borrowing, and credit; microenterprise businesses; shopping; transportation; technology and communication; natural resource consumption; and cultural resources (Cheyenne River Sioux Tribal Ventures, 2015b). The survey instrument also allowed researchers to record open-ended responses to the questions (Cheyenne River Sioux Tribal Ventures, 2014).

Voices employed 38 people, nearly three-quarters of whom were tribal members (Cheyenne River Sioux Tribal Ventures, 2015b). In 2012 and 2013, the project conducted face-to-face surveys with 819 families living in 547 structures; 150 respondents consented to voice recording of their interviews (Cheyenne River Sioux Tribal Ventures, 2014). Researchers, in collaboration with Sweet Grass Consulting, LLC, employed quantitative and qualitative analysis methods using common coding and software to produce descriptive statistics and cross tabulations (Cheyenne River Sioux Tribal Ventures, 2014). The project's principal investigator and advisory committee reviewed and approved each analysis (Cheyenne River Sioux Tribal Ventures, 2014). Tribal Ventures stores the Voices data for future analysis and use (Cheyenne River Sioux Tribal Ventures, 2014).

Community engagement and education. A critical part of the Voices work has been engaging community in the poverty-reduction plan and research process, and sharing data with participants, tribal leaders, and citizens (Cheyenne River Sioux Tribal Ventures, 2014, n.d.). A series of community meetings shared project goals, solicited community input, and held discussions concerning how to create data about, by, and for the community (Cheyenne River Sioux Tribal Ventures, 2014, n.d.). Researchers also described in lay terms the process of data collection, analysis, and use (Cheyenne River Sioux Tribal Ventures, 2014).

A 14-member advisory committee guided the community-based project, including creation of the research protocol, survey questions, marketing, surveying, data analysis, as well as community and public presentations of project findings in collaboration with Voices staff and Colorado State University consultants. Voices community engagement was successful in building community trust in the research that gathered the many voices of community members that otherwise may not have come together.

Additional surveys. Voices' success led to an increased interest in additional surveys of populations living on the reservation. Voices revealed that 47% of Cheyenne River residents were unemployed; 42% of those unemployed were seeking employment (Cheyenne River Sioux Tribal Ventures, 2014). With a reservation population over 10,000, this translates to approximately 2,000 adults seeking work, documenting the great need for jobs on the reservation (Cheyenne River Sioux Tribal Ventures, 2014). Thus, in 2014, tribal and non-profit organizations collaborated to conduct a Cheyenne River Workforce Development Survey to gain a better understanding of the work force needs and assets in the community (Four Bands Community Fund, 2015). The researchers distributed survey invitations via email, postcards, and at businesses to supervisors, employees, and unemployed individuals. Using paper and e-forms, 428 participants responded, "41% were unemployed, 47% were employed, and 12% were employers/supervisors" (Four Bands Community Fund, 2015, p. 3). The survey findings informed the development of a reservation-wide strategy to increase the skills of individuals seeking permanent employment, while ensuring that employers build their capacity to effectively hire and retain qualified

employees. For example, the survey found that the three training areas most desired by those currently unemployed are bookkeeping and accounting, resume writing, and commercial driver's-license training. The Pine Ridge Area Chamber of Commerce recently began offering resume-building strategies as part of its job readiness series (Four Bands Community Fund, 2015).

Internal data dissemination. Data sharing occurred first with tribal citizens and the community. Voices staff conveyed survey results to Cheyenne River communities via:

- a. An executive summary,
- b. A “Data Matter” full-page serial in the local paper, and
- c. Community meetings with over 500 community members.

The 50-page Voices Executive Summary shared visually appealing infographics and provided photos and narrative explaining the research process, results, and staff roles (Cheyenne River Sioux Tribal Ventures, 2014).³ Voices also partnered with a local newspaper, the *West River Eagle*, to print a full-page “Data Matter” section on a bi-weekly basis (West River Eagle, 2015). “Data Matter” presented snippets of the Voices research outcomes around various themes such as education, shopping, and leadership.

Within five months of releasing the *Voices Executive Summary* the project began a wave of community and tribal organizational presentations that provided an overview of the research results. Staff completed 45 presentations in 12 weeks. This step sought to establish the accountability and credibility of the Voices research project and its results with the participants and communities first, *prior to sharing any findings with other tribes or entities*. Voices staff used these sessions to highlight data of particular interest to people and educate them about the importance of data and statistics. Tribal leaders and community members at the presentations indicated to Voices staff that seeing themselves in the data and family photos in the reports and presentations instills confidence in the data and the process.

Informing Policy Decisions and Resource Allocation

Internal data uses. Voices collected data on employment in categories that the federal government does not assess, such as participation in the arts microenterprise sector. Outside data sources had missed a vibrant and active economic sector: 78% of those surveyed by Voices participated in traditional arts and crafts sales enterprises as individuals or in groups of five or fewer people (Cheyenne River Sioux Tribal Ventures, 2014). The extent of this work had not previously been documented. The data helped to justify a microloan program from the tribe's community development fund to support the arts and crafts producers and to assist the artists in creating small businesses (Cheyenne River Sioux Tribal Ventures, 2011b, 2015e).

Voices also generated interest in tribal regulation and governance of research and data and in research as an activity by and for Cheyenne River people. The tribe has a Tribal Research Review Board ordinance in the approval process, and Voices staff members have begun conversations with leadership and

³ See <http://crttribalventures.org/strategies-initiatives/voices/>

departments about improving data stewardship and management. The Voices research processes and the move toward creating a Tribal Research Review Board are the first steps toward a comprehensive data governance plan.

Meanwhile, the Tribal Ventures staff and various organizations—including the Oglala Lakota College, reservation-based non-profits, the tribal health department, and others—collaborated to host a Cheyenne River Research Symposium (Cheyenne River Sioux Tribal Ventures, 2015c). The all-day symposium focused on steps needed to increase the quality and life expectancy for the Cheyenne River people through a better understanding of the importance and benefits of research now and for the future (Cheyenne River Sioux Tribal Ventures, 2015c). Leading researchers from Cheyenne River and beyond presented to over 150 participants. The event also included a student research competition for high school and college students to build enthusiasm and experience in collecting, using, and presenting data (Cheyenne River Sioux Tribal Ventures, 2015c).

External data uses. Other primarily reservation-based organizations utilized the Voices data for planning, education, grant applications, and to demonstrate need for funding requests and allocations. For instance, the local community development financial institution, Four Bands Community Fund, used the data to write grants, relying on information from the Voices findings, to secure resources to support local, traditional arts and crafts entrepreneurs in developing their businesses (Cheyenne River Sioux Tribal Ventures, 2014).

Summary. The Cheyenne River Voices research project exemplifies a large-scale, in-depth survey to provide local, relevant population data to guide tribal decisions and to direct funding. Voices data aid Cheyenne River in knowing who lives in what dwellings, who works where with what skills, and who takes care of children, among many other pertinent issues. Through Voices, the tribe developed the capacity to collect its own data, to tell its own stories, and to formulate creative solutions for the problems facing Cheyenne River communities. The tribe seeks to develop policies to collect, manage, and secure the data.

Strategic Responses to Critical Data Challenges

The Ysleta del Sur and Cheyenne River data projects demonstrate that a strategic approach to data sovereignty and data governance begins not with “What can we collect?” but with “What do we want to know?” In the face of inconsistent, irrelevant, and poor quality data, these two tribes mounted inquiries to determine their data needs. The tribes’ processes included data governance considerations such as:

- What types of data will best inform that knowledge?
- How will we collect, analyze, store, and use that information?
- Who will we partner with to improve the quality of the data?
- How will we engage the community in the process?

These questions are not unique to the two tribes or to communities in general. However, the answers may be very different from answers in non-Indigenous communities. The Ysleta del Sur and Cheyenne

River population data projects illustrate that tribes can address the five critical problems with Indigenous population data by producing consistent, relevant, high quality data controlled by the tribe. As a result tribal citizens, the federal government, and others trust the tribes collection, analysis, and use of the data to inform policy and allocate resources.

Inconsistent

Data are not regularly collected or may be inconsistent in frequency and variables. Ysleta del Sur Events such as the 2002 casino closure rendered decennial U.S. Censuses outdated. Ysleta del Sur's annual socioeconomic profile provides timelier data that respond to changes in population and labor statistics. Cheyenne River Cheyenne River's Voices research collected data on employment in categories that the federal government does not assess (i.e., participation in the arts microenterprise sector). Outside data sources missed a vibrant and active economic sector (i.e., some 78% of those surveyed by Voices indicated that they participated in microenterprise arts activities). In short, the tribes' strategic responses to inconsistent and irrelevant data produced higher quality and relevant population data controlled by the respective tribe.

Irrelevant

Available data do not inform the questions tribes have nor is it available at the level of aggregation that tribes need. Ysleta del Sur Ysleta del Sur Pueblo land-use survey included questions about land use for cultural practices and desired protection of those lands for such practices, data that is not gathered by outside agencies. Cheyenne River Cheyenne River did not have access to a broad range of socioeconomic and cultural data aggregated in ways that informed tribal policy. Strategic questions guided the creation of Voices research and subsequent surveys that provide data aggregated at the reservation level.

Poor Quality

Persistent data inaccuracies exist across sectors. In the face of poor quality socioeconomic data as a result of shifting economic conditions, Ysleta del Sur collected and used their own data to successfully challenge HUDs reliance on U.S. Census data. Cheyenne River produced workforce and employment data that illustrated a previously undocumented vibrant traditional arts and crafts sector. Non-profits and others validated and trusted these data, providing much needed resources to develop the sector.

Mistrust

Indigenous individuals and communities mistrust of data, its collection, and use is the result of past negative experiences with data collection and research, as well as lack of community involvement in data processes. While neither tribe documented past mistrust of data and research, both Ysleta del Sur and Cheyenne River engaged in community-based education and advisory processes to develop trust in the process and the data. The tribal researchers felt that these methods allowed tribes to gather diverse input from sometimes opposing factions and ask sensitive questions about culture, citizenship, and family life. As a result, the data reflect the broad array of topics relevant to life at Ysleta del Sur and Cheyenne River.

External Control

Much of the data that tribes can access or use has been collected or organized by others. Ysleta del Sur and Cheyenne River previously relied on socioeconomic data collected by the U.S. government, predominantly the decennial U.S. Censuses and the American Community Survey. Both tribes needed timelier data aggregated at the nation or reservation levels.

Ysleta del Sur and Cheyenne River developed nation-driven data initiatives based on each community's vision of a healthy, sustainable society. At both tribes, community engagement was an integral part of reclaiming Indigenous nation control over data. Community engagement at Ysleta del Sur and Cheyenne River extended began well before reporting findings to citizens. The tribes educated the community on data and created community-informed plans, processes, methodologies, and variables. In short, the tribes built community trust in data—from collection to use. Ysleta del Sur's land-use survey employed citizen input to create variables, interpret data, and develop a comprehensive land-use plan. The engagement processes resulted in data initiatives that wove together community knowledge and Western science, resulting in valid and reliable data. For Cheyenne River, through a series of community meetings, Voices educated the community about the importance of data, sought input on how the data would be collected (including the design and wording of the survey and questions), and described how the data would be used. Further, Voices trained tribal members in data collection, analysis, and presentation.

Leveraging the Power of Data for Self-Determination

Ysleta del Sur and Cheyenne River strategically responded to inconsistent, irrelevant, and poor quality data through a community-engaged process. The two tribal data projects resulted in higher quality and relevant population data that their citizens trust and the respective nation controls. At the crux of Indigenous nation data governance is data use. When tribes govern data, they begin with the question, "What do we want to know?" Once that knowing is in hand, data governance also implies using the information to enhance self-determination. Ysleta del Sur and Cheyenne River utilized their data in many ways. Internally, the tribes used these data to inform decision-making about tribal policy, identifying the nation's assets, allocate resources, track program and project progress, and to tell their own stories about their own peoples. Externally, the tribes used their data to access resources, advocate for external policy changes, and to tell their story to others. Table 1 provides examples of how strategic engagement with data by Ysleta del Sur and Cheyenne River enhanced self-determination, thereby benefitting tribal sovereignty and governance.

Table 1. Examples of Data for Tribal Self-Determination: Ysleta del Sur Pueblo and Cheyenne River Sioux Tribe

Data Purpose	Tribal Example	Enhanced Self-Determination
Inform internal policy decisions (Ysleta del Sur)	The federal government determined Ysleta del Sur citizen enrollment criteria; citizens needed at least 1/8 Ysleta del Sur blood quantum. The socioeconomic profile showed that the tribal population was diminishing because tribal descendants were not eligible to enroll as tribal citizens.	The data from the socioeconomic profile led to a survey of tribal citizen opinions on membership criteria. These data provided support for the implementation of an enrollment policy modifying past blood quantum requirements to increase enrollment and help secure the future of tribal descendants.
Identify nation's assets and allocate resources (Cheyenne River)	Voices research identified a vibrant traditional arts and crafts sector previously unaccounted for in federal government employment data collection efforts.	Tribal and local non-profit community entities developed support services to provide small business development and financial trainings for arts and crafts entrepreneurs.
Track program and department performance (Ysleta del Sur)	The tribe assessed citizen knowledge of financial literacy and nation building, used that information to design education programs, and then evaluated the programs using pre- and post-education assessments.	The data collection and analysis process allowed the tribe to design more effective programs to expand the capacity of individual tribal citizens to support self-sufficiency and self-determination.
Access resources (Cheyenne River)	The tribe's Voices and workforce surveys gathered data on citizens' work training, education, skills, and employment history, providing a more accurate and detailed picture of workforce needs and assets than federal government data.	Community non-profits, such as the local community development fund and chamber of commerce, used the tribe's data to create workforce development programs and to apply for and receive grants to help artists establish small businesses.
Advocate for external policy changes (Ysleta del Sur)	The socioeconomic profile and survey of tribal citizen opinions on citizenship criteria provide the most comprehensive available picture of who constitutes the tribe and what their current socioeconomic situations are.	Presented to the U.S. Congress in support of amending the Texas Restoration Act, allowing the tribe to determine citizenship criteria.
Tell the story of the tribe to the tribe and others (Cheyenne River)	The tribe collected locally relevant data on basic demographics, cultural activities, and economic activities via methods that that were both community and scientifically valid.	The tribe shared findings with tribal citizens, the local community, and non-profit organizations through reports, newspaper articles, and presentations.

Policy Implications

The Ysleta del Sur and Cheyenne River data initiatives included in this article as well as the tribal innovations shared above indicate that as Indigenous nations increasingly exert sovereignty over their data and begin to govern their information, the data become more relevant and consistent. These changes lead to better quality data for all data users, from tribal governments to non-profit entities to the federal government. To further support Indigenous data sovereignty and invest in institutions for Indigenous data governance, the following policy implications arise.

Considerations for Tribes

The exercise of Indigenous data sovereignty and the development of Indigenous nation data governance capabilities raise the following considerations for tribal governments:

- Indigenous nation development of institutions to govern the effective collection, management, and use of their data (e.g., tribal data governance policies and procedures, tribal research review boards, and data sharing agreements that protect tribal data), while allowing all those involved greater access to information for policy development and decision making; and
- Indigenous nation engagement of their communities and citizens in defining information needs, designing data collection tools, and interpreting the analyses.

Considerations for Others

Indigenous nations, academics, non-profit entities, and others should collaboratively advocate for the federal government, others governments, and private entities to:

- Acknowledge Indigenous data sovereignty;
- Include Indigenous data sovereignty and governance concepts in tribal, federal, and other governments and organizations' data policies and processes;
- Invest in tribal institutional capability building to govern data, not just training of individuals to collect and analyze data; and
- Leverage government-to-government relationships between Indigenous nations and other governments to improve data relevance and consistency at federal, state, and other levels (e.g., develop indicators with Indigenous nations so the data reflect tribal interests and concerns, collect and analyze data more frequently, develop statistical standards for identifying Indigenous Peoples to allow for comparison between data sets).

Considerations for Tribes and Others

Indigenous data sovereignty and effective Indigenous nation data governance entails Indigenous nation partnerships with other tribes, governments, and entities to leverage existing resources and to build on Indigenous aspirations for healthy, sustainable communities. Partnerships can be utilized to:

- Create tribally-driven, community-based data that can be compared across geographies or jurisdictions to inform policy and programming at state, regional, national, and international levels;
- Access expertise, such as survey methodologies and design, that are not locally available; and
- Share resources and strategies among Indigenous nations locally, regionally, nationally, and internationally to support Indigenous data sovereignty and inform Indigenous nation data governance efforts.

Only tribal nations can exercise Indigenous data sovereignty and practice data governance. However, tribal sovereignty with respect to data and Indigenous nation governance of data includes both data generated by tribes as well as data about tribal nations, communities, and citizens generated by others. Increasing data relevance, availability, and quality for all users of data on Indigenous Peoples, lands, and resources requires broad collaboration. Tribes, international Indigenous nations, federal and other governments, non-profits, and others must acknowledge Indigenous data sovereignty and support and invest in Indigenous nation institutions for data governance.

Conclusion

The two tribal data initiatives summarized in these case accounts demonstrate that community-based, nation-driven strategic data initiatives can yield previously unavailable information for policy decisions and resource allocation. Both initiatives are examples of Indigenous nations asserting data sovereignty. But they also demonstrate that it is not enough for tribes simply to take over data collection, even if they have the resources to do so. Indigenous data efforts, as these cases suggest, need to be strategically informed. Data methods, design, and collection will need to match the values and vision of the Indigenous nation, people, or community. Indigenous nations launching such initiatives will need to consider:

- a. An inclusive visioning and planning process that can establish the nature and purpose of the data that the particular community needs and wants and how the data will be governed; and
- b. What the nation needs and wants to know about its people, land, culture, resources, and operations.

The current data describing tribal communities and Indigenous populations in the United States today do not meet the needs of tribal governments and communities engaged in creating policies and programs to bring alive the tribal visions of healthy, vibrant, culturally-rich, and sustainable societies. The tribal data initiatives offered in this article argue for the self-determination, sovereignty, and governance benefits of investing in a different and more strategic approach to data for Indigenous

nations. Such an approach allows for Indigenous data sovereignty and control, enhances community trust in data, and may improve data availability, quality, and relevance.

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