

6 The Latin American Observatory of Population Censuses

Increasing statistical literacy through an academia-civil society network

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6.1 Introduction

Governments around the globe count their population. They have been known since almost five thousand years ago, from the dawn of organized societies (Grajalez, Magnello, Woods, & Champkin, 2013), and nowadays, countries conduct them around every ten years. Likewise, censuses have historically been fundamental for the state, science, and civil society. Today's cornerstone of statistical systems provides essential information for developing small area knowledge, sample frameworks for specialized surveys, and securing considerable technological and methodological investment in official statistics.

Despite the innovations in different information systems, such as alternative methods of demographic data, the relative ease of access, and specialized studies, modern censuses still represent a unique and powerful tool in Latin America to quantify and investigate demographic, social, and economic facts toward providing invaluable knowledge about population structure and dynamics. Users exploit census results, assuming they are valid and reliable due to homogenous and technical procedures. This traditional approach to census data has two limitations: first, it usually disregards the extra-statistical elements of the census, that is, its preparation, (political) contingencies, and additional technical factors that affect the outcomes; and second, even if users go beyond a purely instrumental approach to census results and pay attention to the socio-political context of their production, they generally analyze production processes in a framework of methodological nationalism, that is, neglecting the possibility of studying them across countries or regions. Usually, we understand population censuses as tools utilized by state agencies where governments extract information that later is employed to design public policies. As we know from valuable contributions such as Desrosières (2012) and Emigh, Riley, and Ahmed (2016), the census bases its definitions on social realities, and the outcomes are co-produced by societies.

How are censuses interpreted in spaces that are not academia or government? This chapter describes the experience of a project developed to minimize these limitations with a transdisciplinary tactic. The *Latin American Observatory of*

Population Censuses (OLAC) was formed in 2015 to analyze Latin American censuses' technical and non-technical matters. We describe its experience contributing insights that divulge what is frequently missing when we observe censuses in an isolated and exclusively statistical way by displaying the point of view of a third party that documents and analyzes the heterogeneity of population censuses regarding the social actors involved. At the same time, the initiative shows that there are open spaces in the Global South to discuss ideas about the census in conversational ways.

The rest of this chapter divides into three sections. First, we synthesize the conceptual *corpus* from where the Observatory² develops. Second, we describe the project's historical context and to which part of the literature it contributes and explains the mission accomplishments after seven years of work. Finally, we depict the crisis we faced during the 2020 census round, closing these thoughts with theoretical and practical questions for the future.

6.2 Theory of modern census

Paul Starr (1987), in his seminal work on the Sociology of Public Statistics, pointed out five types of interrogations that illuminate the objectification of products of statistical systems: the origins and development of the systems, their social organization, the cognitive organization, the uses and effects, and their current system change. The observation of state action implies the possibility of registering what states want to make visible in the socio-technical design of their efforts. The relative transparency of state actions is amplified when the object observed seems to have the appearance of a technical and objective device (Saetnan, Lomell, & Hammer, 2012). When we face statistical devices such as population censuses, we tend to assume that a significant proportion of its production is guided by balanced, technical, and scientific criteria (Prewitt, 2010) but quantifying governance technologies is also affected by political struggles (Davis, Fisher, Kingsbury, & Merry, 2015; Prévost, 2019). In the case of population censuses, the object produced by National Statistical Offices (NSOs) is the methodological documentation that formally claims to embrace the statistical production process. The task of the external observer is to realize that these documents are the very selective result of a diverse set of forces that interact when a census is conducted. Hence, where to start the critical observation of population censuses?

A relevant line of research highlighted the effects of governments on official statistics, particularly social and economic statistics (Desrosières, 2002). This work showed that official numbers shape government decisions. In specific cases, the literature displays the relationship between public policies and official statistics during modern censuses.³ It has documented, under long and medium-term perspectives, the growing position that official statistics were taking place in the political arena and the design and implementation of public policies (Ho, 2019) – for example, Otero (2006) in the case of Argentina. Although the literature is divided on how to conceptualize the census as a tool of democratic governance on the one hand and as an object of micropolitics on the other (Aragão & Linsi, 2020; Prévost,

2019, 2020; Prewitt, 2010), historically, official statistics are recognized as a pillar of democracy (Sullivan, 2020), underpinned by maximum transparency. Moreover, this recognition is essential since the construction of statistics is expensive for the public and companies.

In addition to providing legal frameworks for conducting censuses and financing, national states, many of them quite diverse, provide logistical support to carry them out. However, the participation of federal and local authorities in census operations coexists with many strains. On some occasions, the independence of the census can be compromised, and the population perceives the census as an administrative operation rather than a statistical one, diluting its primary objective. This situation may imply a lack of public confidence in using data and the guaranteed confidentiality of the information provided (Emigh et al. 2016). Despite having works of this nature for the current historical cycle, the panorama of the contemporary situation in the region shows the difficult task of building transparent and accessible data in Latin America, still in the 21st century.

This theoretical framework facilitated *OLAC* to deploy a systematic observation of population censuses in Latin America, considering the specificities of each statistical system and, especially, the social conditions behind them. The observation of censuses became a diverse set of text pieces published on an open access blog post that reported, analyzed, and interpreted the production of population censuses considering the particularities of each country. Additionally, the challenge was to embrace official actors and agents out of the state that likewise shapes the production of censuses, for example, unions, academicians, experts, and students. In this sense, to open the discussion with a broad audience, the objective of developing content related to the dissemination of science and following the idea of “public demography” by borrowing proposals from the field of sociology, in particular, those that aim to advance in a “public” discipline (Buroway, 2005).

6.3 Modern censuses in Latin America

While Latin America is changing rapidly, its demographic, social, and economic transformations require quality in public statistics. As economies, societies, and environments change, official statistics evolve and develop and have often grown in line with those changes (Schweinfest, 2020). However, at the same time, the reaction to the disruptive innovations arising from globalization, the structural adjustment of the economies, the solid technological advances, cultural changes, and the rate of change of official statistics seems not to accelerate in the NSOs of the region. The reasons for that can be diverse, but the common characteristic is the budgetary restrictions of the state organisms, where motivations for change are usually scarce, given the uncertainty of the working conditions of institutes workers and the constant political pressure to which they are subjected.

Due to restricted resources in Latin American nation-states and a lack of interest from political power holders, censuses and registration statistics were irregular before the first half of the 20th century. During the second half of the 20th century, a new period was reached, characterized by its technological development and

methodological standardization thanks to international organizations that promoted and even financed census operations. When global financial markets became more integrated, nation-states developed potential recipients of private and multilateral international credit. As potential debtors, states had to prove their creditworthiness, including the size of the economy, development, and poverty, among other indicators. For this, national accounts and censuses were needed. At the same time, there was growing attention to the development concept that came mainly from the United Nations (UN). To coordinate the creation of the required statistics, transnational statistics commissions such as the Economic Commission for Latin America and the Caribbean (ECLAC) and the Center of Demography for Latin America and the Caribbean (CELADE in Spanish) were formed. Together, economic and humanitarian forces created a homogenizing environment for states (Alonso & Starr, 1987; Prevost & Beaud, 2015; Schweber, 2006). Also endorsed by organizations that supported population control (Connelly, 2008), these two movements remained especially strong during the social and economic shifts that accompanied the demographic transition in Latin America and other regions within the Global South.

In the 2020 census round, plural social pressures on those responsible for carrying out census operations are perhaps more significant than in the previous four decades (Schweinfest, 2020). Fiscal austerity, increasingly advanced user expectations, technological innovation in data gathering, COVID-19, and the pressure to produce statistics using administrative records are just the tip of the iceberg in a long list of challenges facing the NSOs in Latin America. The discussion on methodological innovations has been going on for quite a while in the literature, primarily focusing on the cases of some countries in Europe and other high-income countries (Abbott, Tinsley, Milner, Taylor, & Archer, 2020; Coleman, 2013; Dygaszewicz, 2020; Scholz & Kreyenfeld, 2016; Valle, Jiménez, & Julián, 2020). In particular, the COVID-19 pandemic has brought attention to the difficulties of the traditional approach of census taking, implying gathering information on all people living on a specific territory at a given time by visiting them face-to-face. Consequently, many countries in Latin America have implemented population censuses with a combination of methods or plans to do so (for more information, please see the Appendix to the Introduction of this book).

In contrast with other regions like North America or Europe, there is a field to explore as an adequate input for formulating public policies or as an instrument for socioeconomic development. Even though its scope is challenging to measure, censuses are underused in the region. While there has been substantial attention to the construction of ethnoracial categories in Latin American censuses (e.g., Loveman, 2014), little attention has been paid to the systematic evaluation of census quality, in-depth data analysis, data dissemination in different formats, the institutional and political context under which they carried out methodological decisions, and the institutional correlation of the NSOs pre- and post-census. Many modern censuses (from the 1960s to the present day) tend to have metadata with insufficient documentation and inadequately systematized files, which makes such data unavailable in practice for sophisticated statistical analysis.

As if this was not enough, in recent census rounds in countries like Argentina, Brazil, and Ecuador, for example, alarms have been raised about the role of political power in the operations of the NSOs concerning issues such as confidentiality, reading, and use of individual data and the contexts and uses of census operations. Beyond the political dispute behind it, mistrust of the possibility of exposing personal data to internal and external abuse by various data producers has reoriented contemporary public perceptions regarding producers of official statistics from census information.

The actors involved in census taking in Latin America must be understood as an unequally structured field of hierarchies and networks (Bourdieu, 2014). Therefore, the Observatory has aimed to identify actors that play a role in the region and their background in terms of institutionalization, history, and political power. In Latin American countries, the role of expertise in censuses have been traditionally concentrated in the contributions of the ECLAC and its office CELADE and the Inter-American Development Bank (IDB). One of OLAC's missions' is to be critical with this concentration of knowledge, recognizing contributions from academia and non-affiliated experts. That is why we consider censuses an endeavor that includes social actors with distinctive distances to centers of power, including internal agents with unique interests across the field of experts.

6.4 The Latin American Observatory of Population Censuses (OLAC)

6.4.1 OLAC mission

OLAC organizes an independent, specialized, and participatory space to discuss the processes inherent to population censuses in the region (in particular, those of the 2020 round) from a civil society perspective. The operational objectives are:

- Promote population data in Latin America and expand the user base and understanding of population dynamics.
- Observe, propose, and update theories, methodologies, and tools that make it possible to understand and use population data in the region, including promoting transparency and creating a critical contribution to the production, analysis, and dissemination of census data, with an emphasis on the design of the 2020 round.
- Compare and compile methodologies and population information to contribute to a better understanding of the demographic dynamics of the region.
- Compile and promote studies on population issues in Latin America based on censuses.
- Create a collaboration network on population issues for academics in the area.
- Promote access to information and open data.

Under the premise that transparent and high-quality statistics benefit everyone, OLAC had, in principle, a project horizon of five years (2015–2020), but continues until the 2020 census round finishes and has addressed groups of users and

producers from different Latin American countries (Argentina, Brazil, Colombia, Ecuador, and Uruguay). With this interest in common, the website was online in August 2015.⁴

The criterion followed by OLAC is that the census processes can only be more democratic if there is greater participation in both the production and the use of data by the academy and the public (Eyraud, 2018) – in this sense, the blog language is Spanish and Portuguese promoting dialogue between academia, research institutes, independent data users, and the public. Using the two major Latin American languages is essential for empowering local actors, epistemic decolonization, and creating cultural capital (Swaan, 2010). As some scholars argue about other collaborative platforms (Wright, 2011), OLAC highlights the importance of peer exchange among users to acquire a specific census literacy/numeracy. Following ideas of equality, open access, participation, and deliberation in a domination-free environment, we build bridges between frontiers of producers and consumers of information, potentially making all readers contributors. Therefore, although focusing exclusively on censuses in Latin American countries, OLAC's scope is also global since the experiences of other countries have been incorporated into the analyses, particularly those where the Latin American community is relevant, such as the United States and Spain.

Emerging scientific and technological developments allow new questions about census processes and assess whether they present threats or offer opportunities for users or civil society. One of the group's evaluations based on these practices is that the recent census experience in Latin America (the 1960s and onwards) showed that these operations do not have the permanent resources to carry them out on their own and often need the support not only of national governments but also of international organizations, which influence, as in other social and economic areas, sovereign decisions of national states.

OLAC's proposal differs from international organizations, such as CELADE, The Census Project,⁵ The African Census Analysis Project,⁶ or databases such as IPUMS-I⁷ or specialized journals (*Journal of Official Statistics* or *Statistical Journal of the IAOS*) – to name a few programs with similar objectives.

First, since it is a project without funding (only the individual contribution of its members), without concrete institutional residence (has no affiliation with any university, research center, NGO, private company, or professional association), and second, it has an audience that tries not to constrain the expert, and finally, anyone can participate.

Most of these proposed dialogues are supported by the interests of its members and followers of the space. OLAC is characterized by bringing people with some common intellectual interest to read and criticize documents (scientific and non-scientific). Furthermore, this way, the group's proposal is given based on the experience of its members (who worked or have investigated the censuses in their respective countries), their different specialties, and academic training.

In addition to capitalizing on news and compiling documentation accessible to any user, the website promotes technical debates on demographic issues based on census data, providing a terrain that maintains a balance of institutional, academic,

and individual opinions. The OLAC team's evaluation was that although there were specific spaces for exchange, such as professional networks, both in statistics and demography, for example, the ProData Network of the *Latin American Population Association* (ALAP), or information being made available through the website of CELADE, little space was open to sharing ideas about censuses on a relatively regular basis, both for experts and the public. We sought to frame the conversations concerning censuses' purely methodological aspects by focusing on the institutional and organizational conditions in which those methodological decisions were made.

Including experts *and* the public as the target audience of our network was a pillar of the project. It started from the premise that population censuses have accumulated learning experiences that are not always socialized. Hence, there were three main criteria through which the OLAC project executed its objectives: open access, friendly dissemination, and academic collaboration. The website was meant to be an online forum for facilitating collaboration and wide dissemination of content. It has been updated relatively systematically every month by the team members, and at the same time, it has been free to access any content. In addition, a resources section was created where different forms of information related to censuses in Latin America are compiled, from questionnaires to manuals, reports, and data access procedures.

Thanks to the enormous increases in the computing power available and the evolution of ideas about demographic dynamics, the analysis of population processes in Latin America has become increasingly accessible and independent of researchers' institutional affiliation. Due to improvements in civil registration and vital statistics systems, the collection of demographic data in censuses, and the growing technological possibility of data exploitation, it is now possible to circulate access with a regional perspective without neglecting the theoretical and political debate behind the information built.

OLAC has observed census in Latin America since 2015, investigating methodologies, registering external experts' opinions, analyzing official statistics unions' roles, identifying regional convergences, and promoting public debates with actors from inside and outside statistical offices. The Observatory also deployed analyses and investigations, paying attention to scientific evaluations of coverage, under-reporting, selection of questions, costs, benefits, and estimations' accuracy. This task did not imply indifference to the technical details of the operations. Still, it allowed us to criticize the census process through an integrative lens regarding the complete production chain.

Two conceptual criteria complement this vision. First, the knowledge of conducting censuses is usually standardized and formalized in academic and bureaucratic centers in the Global North (Santos, 2018), a consequence of historical experiences regarding the operation and the infrastructures in traditional centers of knowledge production. While contributions from the Global North are positive and help the Latin American region avoid determined mistakes, the Observatory aims to add a perspective from the region, understanding the problems generated in countries with different realities compared to high-income countries. This is

particularly important regarding statistical infrastructures, public budgeting, social forces participating in guarding the production of public statistics such as the census, and the differentiated set of needs that societies have in the Global South. If we define census as the tool to obtain critical population data about society, and if societies go through distinctive development processes, it is clear to reconsider the content and scope of national public statistics. At first view, we could take this as self-evident; however, when we analyze the sources and references of scientific production of censuses in the region, it usually is the case that a conceptual variation must complement the realities of our countries.

6.4.2 *Implementation and achievements: articles, resources, and sections*

The plan developed by the group has outlined a series of sections on its page, catering to various visitors. Different users have consulted the resource sections, students, NSO workers, and international organizations of the region, as inferred from communication with visitors who interacted directly with the site editors or left public comments. The OLAC page has received, from its inception until mid-2022, more than 150,000 visits. The visits have grown yearly; in the first half of 2022, the blog received 25,500 visits from 19,000 visitors. The ten countries where the most visits originated were Mexico, Argentina, Colombia, Ecuador, the United States, Brazil, Peru, Spain, and Chile. The webpage contains the census questionnaires and, in addition to technical discussions on census issues, the Observatory has served as a repository of technical documents regarding censuses in the region.

One of the Observatory's main activities is producing short articles written by the group's researchers and collaborators. Although there is no formal editorial committee and the authors are responsible for their texts, all published articles need approval from the active members of the Observatory to ensure the technical quality of posted content.

The articles (more than 150 in total) published on the site in the five years since its foundation has dealt with several topics related to population and housing censuses, mainly in Latin America, and their intersection with sociodemographic aspects, policies, and public statistics (Athias, 2016; Campos, 2016c, 2016e; Sacco, 2016b, 2019c, 2022; Villacís, 2015, 2019c, 2021a). The contents published on the OLAC page have highlighted population and housing censuses as the primary source of demographic and socioeconomic information in the region's countries due to administrative records' weaknesses and household surveys' limitations in terms of providing small area information (Borges, 2016a, 2016b; Campos, 2015, 2016d; Sacco, 2016b, 2019c, 2022). The importance of censuses to measure and characterize minorities and marginalized populations has also been pointed out (Campos, 2016a). Censuses remain the only source of information for small areas on various topics, as household surveys do not produce information at this geographic scale (Urdinola, 2018). Administrative records – not only in Latin America – are often inaccurate and incomplete, and different systems are not integrated (Borges, 2016a, 2016b; Campos, 2015, 2016d; Sacco, 2016c).

Some articles describe how to access the documentation on principles, recommendations, and manuals to carry out the population and housing censuses. Other reports have discussed using census data in sociodemographic analysis in the region for research on fertility and reproductive behavior, migration, mortality, and occupation (Campos, 2016b; Marria & Campos, 2016; Minamiguchi, 2019; Sacco, 2016a; Sacco, & Borges, 2018; Sacco, & Fanta, 2017; Urdinola, 2017b, 2020b). In this sense and connected to the Observatory's objective of promoting the use of census data, the articles have also offered an extensive discussion on accessing census data in Latin American countries, examining the different existing modalities (Nathan & Sacco, 2016; Sacco, 2017; Vázquez, 2015).

Concerning technical and operational issues, the quality and coverage of Latin American censuses has been widely discussed on OLAC's website. Conceptual aspects of the collection of different topics have also been debated, such as what is the best way to ask about age (Nathan, Sacco & Borges, 2017), the possibilities of measuring inequality and poverty (Sacco, 2016a; Urdinola, 2018), issues related to population health (Borges, 2017a, 2020; Urdinola, 2020a; Villacís, 2020b, 2020c, 2021b), and the relevance of incorporating the measurement of mortality (Queiroz, & Sacco, 2018), conceptual aspects of quantifying migration (Campos, 2016b; Nathan, 2018), information regarding occupations (Sacco, 2016a, 2016c) and the year of birth of the first child (Borges, 2015; Nathan, 2015). Another conceptual aspect that received attention was discussing the advantages and disadvantages of conducting a *de facto* or *de jure* census in the region's countries, the subject of debate in four articles. The set of articles published on the OLAC website clarifies a substantial discrepancy in the quality and coverage of the Latin American censuses, both between countries and over time (Villacís, 2017b, 2018a, 2018b; Williams, 2019). At the same time, despite different conceptual aspects that reflect the particularities of each country, there has been a standardization of census data collection processes within the Latin American region, primarily due to international recommendations and the exchange of experiences between countries.

A great variety of articles has been written in recent years to fulfill the objective of producing critical material for census processes and data, with an emphasis on the design of the 2020 round censuses (Borges, 2015, 2017b; Sacco, 2019a; Villacís, 2020a, Urdinola, 2021). For example, pieces of investigation have analyzed the organizational heterogeneity of the region, revealing a "census disparity" (Villacís, 2019a), meaning the differences in the statistical capacity between countries due to their census experiences. This has implications not only in descriptive terms but also has helped to interpret reasons behind organizational and operative achievements or operational failures. The disruption in the planning and execution of censuses in the region is a reality familiar to several countries, represented by the irregularity in the periodicity of the application of censuses, their postponement, and cancellation, which has been a recurring theme of the articles a transversal issue in many government areas in the Global South (Merry, 2019). For example, the non-completion of population counts, particularly in Brazil (Borges, 2021) and Mexico in the last decade, has been discussed, as well as the delay in carrying out various censuses, such as the postponement of censuses in Colombia (Sandoval, 2018; Urdinola, 2016a, 2016b, 2017a), no definitions about the date of carrying out

the censuses of Argentina (Sacco, 2019b), El Salvador (Tresoldi, 2018), Guatemala, among others. More recently, some articles discussed the impact of the COVID-19 pandemic in the next census round (Borges, Urdinola, Villacís, & Sacco, 2020).

To contribute to the debate on planning and executing the 2030 census in the region, *OLAC* has paid particular attention to evaluating the recent experiences in Latin America and other areas to consider lessons learned. It has been identified that the recurrent economic, political, and institutional crises in the region are factors that have affected the quality of censuses. Furthermore, the structural aspects related to the organization of NSOs have also played an essential role in their quality. The 2010 census round in the region had some drawbacks, aggravated by a shortage of human and financial resources, a lack of autonomy for statistical institutes, and difficulties coordinating the census within the national and international statistical systems. The prominent examples of failure are the censuses of Chile and Paraguay, both carried out in 2012 (Neupert, 2017). These censuses were by far the worst in their countries regarding quality and coverage. Experiences from developed countries have also been discussed. The contrasts between the event of the last Canadian census and the difficulties faced by the most recent census in Australia differed in terms of communication, financing, and the momentum of social cohesion experienced by the countries (Villacís, 2016b, 2017a). The planning and processes that led to the unsatisfactory results of these two experiences were discussed in various articles published by the Observatory. The 2018 Colombian Census recommendations have also been addressed (Borges, 2019a, 2019b; Villacís, 2019b). One of the lessons learned is that long-term investments to develop solid national statistical systems, in which statistical bodies play a critical role, are fundamental to ensuring the quality of censuses. This involves, among other things, providing financial and human resources for them. Furthermore, censuses must be adequately planned, and the NSOs need to have guarantees that they can conduct their technical project. In addition, a permanent technological update plan is recommended, and careful with implementing new methodologies or collection systems.

Another topic of discussion present in at least five articles published on the blog is technological and methodological innovations in censuses, such as self-completed internet questionnaires, use of administrative records, and incorporation of Big Data in official statistics (Borges, 2016b; Campos, 2016d). Several potentialities of Big Data have been identified. Still, the articles also indicate the need for a census combined with traditional surveys, where demographic censuses are essential, which implies that these are complementary sources (Villacís, 2016a, 2021c).

6.5 The 2020 census round in Latin America

Increasingly, population censuses, and official statistics, in general, are forced to differentiate themselves from the emergence of modern technologies that disseminate an enormous amount of information today (MacFeely, 2016). Furthermore, three factors weigh in the 2020 census round and make it a particular challenge for Latin American countries. First, the advent of the Covid-19 pandemic disrupts the operational plans of each statistical office in the region. The second issue is

each country's local institutional capabilities and competence to adapt to organizational challenges. The third element is the regional and local economic conditions, which directly influence the comfort or adjustment that each country needs to go through. Together, these factors determine that we face one of the most complex and challenging scenarios in the recent history of census statistical operations in Latin America. The coverage, quality, and efficiency results are still early to analyze, but we would like to outline three scenarios on the possible impact of these challenges.

In the best scenario, we will have statistical offices with an economic and adaptive aptitude to organize (or continue to organize) a census under the impact of the pandemic; or due to their execution schedules, they were only slightly impacted by its effects. In an intermediate scenario, we will have statistical offices that, although they have the institutional capacity and tools to face crises, have nonetheless been affected by the economic imbalances before and after the pandemic. This situation makes them vulnerable to changes in their schedules and methodological planning. The third case, the most pessimistic scenario, involves countries with little institutional strength and high vulnerability to economic shocks and pandemic impacts. In these cases, census taking might be completely abandoned, or data quality could be severely impaired.

It is not easy and not very responsible to attempt to predict which way those Latin American countries that have yet to implement their censuses will take with certainty. However, *OLAC* has analyzed the institutional logic behind census taking and proposes three factors as relevant when identifying related challenges: heterogeneous institutional preconditions, the external shocks from the pandemic, and the economic crisis; together, they are likely to impair the quality, opportunity, and efficiency of the region's census operations. This implies that the intellectual, organizational, and interinstitutional efforts should focus on solving the problems resulting from missing census data for at least ten years. In this direction, we would like to raise some urgent questions: Will it be necessary to rethink the role of population projections? What steps should be taken to avoid the naive reliance upon administrative registry systems plagued by problems of under-coverage and over-coverage simultaneously? What intra- and inter-regional collaboration mechanisms are needed to support the looming statistical deficit supposedly induced by COVID-19 and its impact on public policies lacking new or high-quality data?

Population censuses result from institutional and governmental conflicts and struggles that must be visible and understood – accepting censuses as an isolated analytical tool or as a mere producer of social data neglects the responsibility and need to understand these devices as entities inserted in complex social and institutional realities. The analyst who ignores this distinction is in danger of using information that, in extreme cases, has no practical utility or functionality. An analyst can take advantage of the information produced only once the dynamics that lead to running a census have been considered. Using census data gathered under sensible planning schedules, with budgets managed according to needs and questionnaires elaborated through processes valuing public participation and scientific contributions, is not comparable to data from an erratically performed census deprived of resources and without a participatory approach.

For these reasons, OLAC is at the forefront of those aware that the upcoming decade requires even more work and commitment to understand and alert census stakeholders about the probable data quality conditions. Failure to do so would naturalize the alarming absence and deficiency of census information and allow decisions to be made based on questionable primary data sources. This problematization is particularly necessary due to an unmistakable trend in which governments value data-based policies, but without questioning too much the origin of that data or, when process automation requires high efficiency of information management, underestimate the necessity to understand the origin of that information.

Finally, OLAC's challenge lies in didactics. Censuses produce countries' crucial, demographic, social, and economic statistics. Observing censuses' management, organization, deficiencies, and strengths require new didactic concepts. For example, there is an increasing demand for technical indicators in social stratification, more complexity in treating gender and race, and more dimensions in the analysis of poverty (income, basic needs, consumption, and subjective poverty, among others) that users demand to be quantified. In this context, describing the scope and limitations of censuses requires increasingly complex didactic processes, which are not easily implemented in a digital environment.

For this reason, it is essential that the Observatory improves and redesigns the channels and formats of its analyses to facilitate the communication of messages that lie within its competence and turn the communication process into a two-way mechanism where we ensure that the information is received and understood. Of course, these challenges summon the need to build bridges, form alliances, and generate responsible academic and intellectual communities. This chapter intends to make a step in this direction.

Notes

- 1 Authors in alphabetical order, all authors collaborated equally in all sections of the chapter.
- 2 We use Observatory in the same sense as the acronym OLAC.
- 3 We are using the label modern the label modern as some other authors in the literature, for example Baffour, King, and Valente (2013), Ventresca (1995), Whitby (2020).
- 4 <https://observatoriocensal.org/>.
- 5 <https://thecensusproject.org/>.
- 6 <http://www.acap.upenn.edu/>.
- 7 <https://international.ipums.org>.

References

- Abbott, O., Tinsley, B., Milner, S., Taylor, A. C., & Archer, R. (2020). Population statistics without a census or register. *Statistical Journal of the IAOS*, 36, 97–105. doi:10.3233/SJI-190593
- Alonso, W., & Starr, P. (Eds.) (1987). *The politics of numbers*. New York, NY: Russell Sage Foundation.
- Aragão, R., & Linsi, L. (2020). Many shades of wrong: What governments do when they manipulate statistics. *Review of International Political Economy*, 29(1), 88–113. doi:10.1080/09692290.2020.1769704

- Athias, L. (2016). Recomendações internacionais sobre estatísticas sociais e como importantes institutos de estatística divulgam seus temas, com destaque para a área social. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/02/02/recomendacoes-internacionais-sobre-estatisticas-sociais-e-como-importantes-institutos-de-estatisticas-divulgam-seus-temas-com-destaque-para-a-area-social/>
- Baffour, B., King, T., & Valente, P. (2013). The modern census: Evolution, examples, and evaluation. *International Statistical Review/Revue Internationale de Statistique*, 81(3), 407–425.
- Borges, G. (2015). Avaliação dos censos demográficos brasileiros. *OLAC*. Retrieved from <https://observatoriocensal.org/2015/11/24/avaliacao-dos-censos-demograficos-brasileiros/>
- Borges, G. (2016a). ¿Se acabaron los conteos intercensales de población en Latinoamérica? ¿Qué hacer ahora? *OLAC*. Retrieved from <https://observatoriocensal.org/2016/01/20/se-acabaron-los-conteos-intercensales-de-poblacion-en-latinoamerica-que-hacer-ahora/>
- Borges, G. (2016b). Estatísticas oficiais na era do Big Data: ainda precisamos de censos demográficos? *OLAC*. Retrieved from <https://observatoriocensal.org/2016/07/25/estatisticas-oficiais-na-era-do-big-data-ainda-precisamos-de-censos-demograficos/>
- Borges, G. (2017a). A investigação da saúde nos censos demográficos do Brasil*. *OLAC*. Retrieved from <https://observatoriocensal.org/2017/01/31/a-investigacao-da-saude-nos-censos-demograficos-do-brasil/>
- Borges, G. (2017b). Where are our kids? The undercount of children in the Latin American censuses*. *OLAC*. Retrieved from <https://observatoriocensal.org/2017/12/19/where-are-our-kids-the-undercount-of-children-in-the-latin-american-censuses/>
- Borges, G. (2019a). Lições aprendidas para a garantia de um censo de qualidade. *OLAC*. Retrieved from <https://observatoriocensal.org/2019/04/28/licoes-aprendidas-para-a-garantia-de-um-censo-de-qualidade/>
- Borges, G. (2019b). O que podemos aprender com as avaliações recentes do Censo 2018 da Colômbia? *OLAC*. Retrieved from <https://observatoriocensal.org/2019/07/16/o-que-podemos-aprender-com-as-avaliacoes-recentes-do-censo-2018-da-colombia/>
- Borges, G. (2020). Demografia e epidemia no Brasil. *OLAC*. <https://observatoriocensal.org/2020/03/24/demografia-e-epidemia-no-brasil/>
- Borges, G. (2021). Do we need a census in the middle of a pandemic? *OLAC*. Retrieved from <https://observatoriocensal.org/2021/04/16/do-we-need-a-census-in-the-middle-of-a-pandemic/>
- Borges, G., Urdinola, P., Villacís, B., & Sacco, N. (2020). El impacto del COVID-19 en la ronda censal de América Latina y el Caribe. *OLAC*. Retrieved from <https://observatoriocensal.org/2020/03/26/el-impacto-del-covid-19-en-la-ronda-censal-de-america-latina-y-el-caribe/>
- Bourdieu, P. (2014). *On the State: Lectures at the College de France, 1989–1992*. Cambridge, England: Polity Press.
- Burawoy, M. (2005). Por una sociología pública. *Política y sociedad*, 42(1), 197–226.
- Campos, M. (2015). Census limits: A reference to marginal populations. *OLAC*. Retrieved from <https://observatoriocensal.org/2015/11/22/census-limits-a-reference-to-marginal-populations-or-individuals-departed-from-the-average-population/>
- Campos, M. (2016a). Rights groups say male/female option insufficient in Census. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/01/12/rights-groups-say-male-female-options-insufficient-in-2016-census/>
- Campos, M. (2016b). International out-migration measures based on information from former residents. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/01/01/international-out-migration-measures-based-on-information-from-former-residents/>
- Campos, M. (2016c). Os censos e a construção da realidade. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/04/15/os-censos-e-a-construcao-da-realidade/>

- Campos, M. (2016d). Censos e “Big Data”: fontes concorrentes ou complementares? *OLAC*. Retrieved from <https://observatoriocensal.org/2016/11/17/censos-e-big-data-fontes-concorrentes-ou-complementares/>
- Campos, M. (2016e). Responding to the census: Should it be mandatory? *OLAC*. Retrieved from <https://observatoriocensal.org/2016/01/25/responding-to-the-census-should-it-be-mandatory/>
- Coleman, D. (2013). The twilight of the census. *Population and Development Review*, 38, 334–351. Retrieved from <http://www.jstor.org.ezaccess.libraries.psu.edu/stable/23655303>
- Connelly, M. J. (2008). *Fatal misconception: The struggle to control world population*. Cambridge, MA: Belknap Press of Harvard University Press.
- Davis, K. E., Fisher, A., Kingsbury, B., & Merry, S. E. (2015). *Governance by indicators global power through quantification and rankings*. Oxford, England: Oxford University Press.
- Desrosières, A. (2002). *The politics of large numbers: A history of statistical reasoning*. Cambridge, MA: Harvard University Press.
- Desrosières, A. (2012). Words and numbers: For a sociology of the statistical argument. In A. R. Saetnan, H. M. Lomell, & S. Hammer (Eds.), *The mutual construction of statistics and society* (pp. 41–63). New York, NY: Routledge.
- Dygaszewicz, J. (2020). Transition from traditional census to combined and registered-based census. *Statistical Journal of the IAOS*, 36, 165–175. doi:10.3233/SJI-190566
- Emigh, R. J., Riley, D., & Ahmed, P. (2016). *Changes in censuses from imperialist to welfare states: How societies and states count*. New York, NY: Palgrave Macmillan.
- Eyraud, C. (2018). Stakeholder involvement in the statistical value chain: Bridging the gap between citizens and official statistics. In Eurostat (Ed.), *Power from statistics: Data, information and knowledge. Outlook report* (pp. 103–106). Luxembourg: Publications Office of the European Union.
- Grajalez, C. G., Magnello, E., Woods, R., & Champkin, J. (2013). Great moments in statistics. *Significance*, 10(6), 21–28. doi:10.1111/j.1740-9713.2013.00706.x
- Ho, J.-M. (2019). *Social statisticalization: Number, state, science* (Dissertation). Cornell University, New York.
- Loveman, M. (2014). *National colors: Racial classification and the state in Latin America*. Oxford: Oxford University Press.
- MacFeely, S. (2016). The continuing evolution of official statistics: Some challenges and opportunities. *Journal of Official Statistics*, 32(4), 789. doi:10.1515/jos-2016-0041
- Marria, I., & Campos, M. (2016). Zika virus and demography. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/02/22/zika-virus-and-demography/>
- Merry, S. E. (2019). The sustainable development goals confront the infrastructure of measurement. *Global Policy*, 10(S1), 146–148. doi:10.1111/1758-5899.12606
- Minamiguchi, M. (2019). Evolução dos municípios brasileiros mais populosos. *OLAC*.
- Nathan, M. (2015). ¿Vale la pena preguntar la edad de la madre al nacimiento del primer hijo en los censos? *OLAC*. Retrieved from <https://observatoriocensal.org/2015/11/24/vale-la-pena-preguntar-la-edad-de-madre-al-nacimiento-del-primer-hijo-en-los-censos/>
- Nathan, M. (2018). Población y residencia habitual: ¿un problema de los censos? *OLAC*. Retrieved from <https://observatoriocensal.org/2018/04/02/poblacion-y-residencia-habitual-un-problema-de-los-censos/#:~:text=Este%20problema%20suele%20agudizarse%20en,como%20en%20el%20de%20destino>
- Nathan, M., & Sacco, N. (2016). Modos de acceso a los datos censales en los países de América Latina. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/06/17/modos-de-acceso-a-los-datos-censales-en-los-paises-de-america-latina/>

- Nathan, M., Sacco, N., & Borges, G. (2017). ¿Cuál es la mejor manera de preguntar la edad en un censo de población? *OLAC*. Retrieved from <https://observatoriocensal.org/2017/04/24/cual-es-la-mejor-manera-de-preguntar-la-edad-en-un-censo-de-poblacion/>
- Neupert, R. (2017). La planificación en el Censo de Chile. *OLAC*. Retrieved from <https://observatoriocensal.org/2017/09/13/la-planificacion-en-el-censo-de-chile/>
- Otero, H. (2006). *Estadística y nación: una historia conceptual del pensamiento censal de la Argentina moderna, 1869–1914*. Ciudad de Buenos Aires, Argentina: Prometeo Libros.
- Prévost, J.-G. (2019). Politics and policies of statistical independence. In M. J. Prutsch (Ed.), *Science, numbers and politics* (pp. 153–180). Cham, Switzerland: Springer International Publishing.
- Prévost, J.-G. (2020). Independent official statistics: Origins and challenges. *Canadian Public Administration*, 63(2), 318–323. doi:10.1111/capa.12377
- Prevost, J. G., & Beaud, J. P. (2015). *Statistics, public debate and the state, 1800–1945: A social, political and intellectual history of numbers*. New York, NY: Taylor & Francis.
- Prewitt, K. (2010). What is political interference in federal statistics? *The ANNALS of the American Academy of Political and Social Science*, 631(1), 225–238. doi:10.1177/0002716210373737
- Queiroz, B., & Sacco, N. (2018). ¿Es relevante incorporar la medición de la mortalidad en los censos de América Latina y el Caribe? *OLAC*.
- Sacco, N. (2016a). Desigualdad social y censos de población: en búsqueda de una relación relegada. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/02/24/desigualdad-social-y-censos-de-poblacion-en-busqueda-de-una-relacion-relegada/>
- Sacco, N. (2016b). Sobre las irregularidades detectadas en el Censo 2010 de Argentina. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/08/17/sobre-las-irregularidades-detectadas-en-el-censo-2010-de-argentina/>
- Sacco, N. (2016c). 5 cosas que hay que saber acerca de los clasificadores de ocupación: el caso de los cuatro últimos censos de población de la Argentina. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/02/12/5-cosas-que-usted-necesita-saber-acerca-de-los-clasificadores-de-ocupacion-el-caso-de-los-cuatro-ultimos-censos-de-poblacion-de-la-argentina/>
- Sacco, N. (2017). ¿Cómo hacer un censo de población? *OLAC*. Retrieved from <https://observatoriocensal.org/2017/08/24/como-hacer-un-censo-de-poblacion/>
- Sacco, N. (2019a). Brasil debate a pleno su censo de población. *OLAC*. Retrieved from <https://observatoriocensal.org/2019/05/10/brasil-debate-a-pleno-su-censo-de-poblacion/>
- Sacco, N. (2019b). El futuro del Censo de Población 2020(?) en Argentina. *OLAC*. Retrieved from <https://observatoriocensal.org/2019/06/24/el-futuro-del-censo-de-poblacion-2020-en-argentina/>
- Sacco, N. (2019c). La estadística militante y el censo 2020. *OLAC*. Retrieved from <https://observatoriocensal.org/2019/12/06/la-estadistica-militante-y-el-censo-2020/>
- Sacco, N. (2022). El Censo de Población 2022 de Argentina. *OLAC*. Retrieved from <https://observatoriocensal.org/2021/11/04/se-privatiza-el-censo-de-poblacion-de-argentina-pon-nicolas-sacco-penn-state/>
- Sacco, N., & Borges, G. (2018). Are fertility differentials converging in Argentina and Brazil? *OLAC*.
- Sacco, N., & Fanta, J. (2017). ¿Quiénes son las mujeres sin hijos en Argentina? *OLAC*. Retrieved from <https://observatoriocensal.org/2017/02/15/quienes-son-las-mujeres-sin-hijos-en-argentina/>
- Saetan, A. R., Lomell, H. M., & Hammer, S. (Eds.) (2012). *The mutual construction of statistics and society*. New York, NY: Routledge.

- Sandoval, J. (2018). Periodicidad en los Censos de Población y la Demografía en Colombia. *OLAC*. Retrieved from <https://observatoriocensal.org/2018/01/18/periodicidad-en-los-censos-de-poblacion-y-la-demografia-en-colombia/>
- Santos, B. d. S. (2018). *The end of the cognitive empire: The coming of age of epistemologies of the South*. Durham, NC: Duke University Press.
- Scholz, R., & Kreyenfeld, M. (2016). The register-based census in Germany: Historical context and relevance for population research. *Comparative Population Studies*, 41(2), 175–204. doi:10.12765/CPoS-2016-08
- Schweber, L. (2006). *Disciplining statistics: Demography and vital statistics in France and England, 1830–1885*. Durham, NC: Duke University Press.
- Schweinfest, S. (2020). Censuses at the end of the second decade of the 21st century. *Statistical Journal of the IAOS*, 36, 11–12. doi:10.3233/SJI-200618
- Starr, P. (1987). The sociology of official statistics. In W. Alonso & P. Stan (Eds.), *The politics of numbers* (pp. 7–58). New York, NY: Russell Sage Foundation.
- Sullivan, T. A. (2020). Coming to our census: How social statistics underpin our democracy (and Republic). *Harvard Data Science Review*, 2(1). doi:10.1162/99608f92.c871f9e0.
- Swaan, A. d. (2010). Language systems. In N. Coupland (Ed.), *The handbook of language and globalization* (pp. 56–76). Malden, MA: Wiley Blackwell.
- Tresoldi, J. (2018). Llevando al siguiente nivel proyectos colaborativos de datos geoespaciales. *OLAC*. Retrieved from <https://observatoriocensal.org/2018/10/31/llevando-al-siguiente-nivel-proyectos-colaborativos-de-datos-geoespaciales/>
- Urdinola, P. (2016a). El anhelo a los Incas: un año más sin censo de población y vivienda en Colombia. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/05/05/el-anhelo-a-los-incas-un-ano-mas-sin-censo-de-poblacion-y-vivienda-en-colombia/>
- Urdinola, P. (2016b). Los censos en tiempos de guerra... o paz. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/12/09/los-censos-en-tiempos-de-guerra-o-paz/>
- Urdinola, P. (2017a). Censos y Padrones de Población: Doble es mejor que uno. *OLAC*. Retrieved from <https://observatoriocensal.org/2017/05/19/censos-y-padrones-de-poblacion-doble-es-mejor-que-uno/>
- Urdinola, P. (2017b). Los censos y los migrantes en el siglo XXI. *OLAC*. Retrieved from <https://observatoriocensal.org/2017/11/21/los-censos-y-los-migrantes-en-el-siglo-xxi/>
- Urdinola, P. (2018). Censos y mediciones demográficas para poblaciones o áreas pequeñas. *OLAC*. Retrieved from <https://observatoriocensal.org/2018/05/21/censos-y-mediciones-demograficas-para-poblaciones-o-areas-pequenas/>
- Urdinola, P. (2020a). Pandemia, poblaciones indígenas y Censos Nacionales de Población y Vivienda. *OLAC*. Retrieved from <https://observatoriocensal.org/2020/07/06/pandemia-poblaciones-indigenas-y-censos-nacionales-de-poblacion-y-vivienda/>
- Urdinola, P. (2020b). La medición de la inequidad y la pobreza en los censos de población y vivienda colombianos. *OLAC*. Retrieved from <https://observatoriocensal.org/2020/01/23/la-medicion-de-la-inequidad-y-la-pobreza-en-los-censos-de-poblacion-y-vivienda-colombianos/>
- Urdinola, P. (2021). Censos en la era del envejecimiento. *OLAC*. Retrieved from <https://observatoriocensal.org/2021/06/16/censos-en-la-era-del-envejecimiento/>
- Valle, J. L. V., Jiménez, A. A., & Julián, M. P. (2020). Moving towards a register based census in Spain. *Statistical Journal of the IAOS*, 36, 187–192. doi:10.3233/SJI-190516
- Vázquez, A. (2015). ¿Cómo los usuarios pueden procesar datos censales en América latina? *OLAC*.
- Ventresca, M. J. (1995). *When states count: Institutional and political dynamics in modern census establishment, 1800–1993* (PhD thesis). Stanford University, Stanford, CA.

- Villacís (2015). De la dependencia a la interdependencia estadística. *OLAC*. Retrieved from <https://observatoriocensal.org/2015/11/19/de-la-dependencia-a-la-interdependencia-estadistica/>
- Villacís, B. (2016a). Tecnocensos, o censos para humanos. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/03/15/tecnocensos-o-censos-para-humanos/>
- Villacís, B. (2016b). Trudeau no es Turnbull. *OLAC*. Retrieved from <https://observatoriocensal.org/2016/09/15/trudeau-no-es-turnbull/>
- Villacís, B. (2017a). La década perdida. *OLAC*. Retrieved from <https://observatoriocensal.org/2017/03/11/la-decada-perdida/>
- Villacís, B. (2017b). Dejemos de evadir los censos de derecho*. *OLAC*. Retrieved from <https://observatoriocensal.org/2017/10/18/dejemos-de-evadir-los-censos-de-derecho/>
- Villacís, B. (2018a). Dejemos de evadir los censos de derecho II. *OLAC*. Retrieved from <https://observatoriocensal.org/2018/07/22/dejemos-de-evadir-los-censos-de-derecho-ii/>
- Villacís, B. (2018b). Dejemos de evadir los censos de derecho III – Final. *OLAC*. Retrieved from <https://observatoriocensal.org/2018/11/18/dejemos-de-evadir-los-censos-de-derecho-iii-final/>
- Villacís, B. (2019a). Disparidad Censal. *OLAC*. Retrieved from <https://observatoriocensal.org/2019/04/14/disparidad-censal/>
- Villacís, B. (2019b). Primeros resultados del Censo de Población y Vivienda de Colombia 2018. *OLAC*. Retrieved from <https://observatoriocensal.org/2019/07/06/primeros-resultados-del-censo-de-poblacion-y-vivienda-de-colombia-2018/>
- Villacís, B. (2019c). Matrices de Análisis Censal. *OLAC*. Retrieved from <https://observatoriocensal.org/2019/11/10/matrices-de-analisis-censal/>
- Villacís, B. (2020a). 10 razones para suspender el Censo de Población del 2020. *OLAC*. Retrieved from <https://observatoriocensal.org/2020/03/21/10-razones-para-suspender-el-censo-de-poblacion-del-2020/>
- Villacís, B. (2020b). Censos en tiempos de pandemia. *OLAC*. Retrieved from <https://observatoriocensal.org/2020/03/18/censos-en-tiempos-de-pandemia/>
- Villacís, B. (2020c). Los efectos de la pandemia en el censo de población ecuatoriano. *OLAC*. Retrieved from <https://observatoriocensal.org/2020/11/24/los-efectos-de-la-pandemia-en-el-censo-de-poblacion-ecuatoriano/>
- Villacís, B. (2021a). Projections vs Censuses: a brief note on their political impact. *OLAC*. Retrieved from <https://observatoriocensal.org/2021/04/29/3689/>
- Villacís, B. (2021b). La pandemia y los censos de cuatro sistemas estadísticos. *OLAC*. Retrieved from <https://observatoriocensal.org/2021/04/06/la-pandemia-y-los-censos-de-cuatro-sistemas-estadisticos/>
- Villacís, B. (2021c). La innovación tecnológica y los censos de población. *OLAC*. Retrieved from <https://observatoriocensal.org/2021/08/25/la-innovacion-tecnologica-en-los-censos-de-poblacion/>
- Whitby, A. (2020). *The sum of the people how the census has shaped nations, from the ancient world to the modern age*. New York, NY: Basic Books.
- Williams, I. (2019). Censo de derecho. Comentario al conteo de población. *OLAC*.
- Wright, E. O. (2011). A call to duty: ASA and the wikipedia initiative. *ASA Footnotes*, 39(8), 1,6,8. Retrieved from https://www.asanet.org/wp-content/uploads/fn_2011_08.pdf