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Indian Census 2021 Impact of COVID-19 on its Operation & Implementation

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ABSTRACT

In the current post-pandemic triggered health crisis, timely and reliable disaggregated data and statistics are critical to understanding, managing, and mitigating the human, social, and economic losses affecting billions of people. However, the disruptions to such regular and reliable data production operations such as national-level censuses caused by the lockdown of coronavirus disease (COVID-19), combined with an unprecedented surge in demand for information to monitor the spread of the virus and mitigate its impact, have presented unprecedented challenges to the data and the statistical community at the global, regional, and worldwide levels.

In addition, the pandemic struck at a time when many countries, India included, were already struggling with severe resource constraints and facing urgent calls from all sectors of society to fill the serious data gaps needed to usher in a decade of action with effective, targeted measures to achieve the Sustainable Development Goals (SDGs). Building on the available qualitative data the current research aims to explore and analyze the problems standing in the way of accurate, safe, and prompt data collection in light of the Covid-19 pandemic, by conducting an in-depth study of the now postponed Indian census 2021.

Keywords: *Census, India, data, Sustainable Development Goals, SDGs*

I. INTRODUCTION

The Indian decennial Census is one of the world's largest administrative exercises conducted in the world every 10 years, wherein a 72-year-old democracy tries to safely, correctly and, timely collect crucial personal, private and, public data of more than a billion people. And no matter how well the government of the day plans and executes it, the census, and the data it collects, remains riddled with controversies. The main reason for this remains the fact, that in India census data is largely collected manually, by around 2 lakh specially trained enumerators who go door-to door.

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Forced to work long hours on a meagre salary, with little, and often no support infrastructure, these enumerators usually manually enter citizen data in government-issued forms and formats dramatically increasing the chances of factual errors in feeding data and compromising data security.

As a worried citizen and a concerned researcher, this then is the source of my motivation to undertake a detailed study on census data collection methods, with the long-term intention of opening a discourse on ways and means of making the Indian census more citizen-friendly and reliable by incorporating various information communication technologies in it.

Problem Statement:

Despite the advancements in technology, the process of conducting a census in India remains largely dependent on paper-based methods, which can result in inefficiencies, inaccuracies, and higher costs. In light of these challenges, the objective of this research is to examine the potential benefits and limitations of adopting a paperless, technology-based paradigm for capturing, processing, and storing census data in India, while drawing from the experience of China. This research aims to identify the key factors that contribute to the success of such an approach and provide recommendations for the implementation of a paperless census in India. In the present research, it is contended that -

1. In any given democracy the national policies and decision-making are all centred around its citizens. The common man, the average citizen, stays at the centre of gravity.
2. To ensure policies at both central and state levels are effective, they need to be based on accurate, reliable, and timely data.
3. Therefore, the main emphasis of all concerned governments should be to develop new and innovative data collection methodologies, which are both, qualitatively and quantitatively sound, relatively inexpensive, and above all infallible.

Methodology and Tools

To find answers and look for alternative solutions, the study will use mostly qualitative data. The main methods of gathering data and facts will be:

- **Literature Review:** A thorough literature review of relevant academic journals, books, and reports would be conducted to understand the current state of paperless census operations in India and China. This review would provide the background information and set the foundation for the research.

- **Case Study Analysis:** To gain a deeper understanding of the paperless census operations in India and China, a case study analysis would be conducted. This would involve collecting data through interviews, surveys, and observation to understand the best practices, challenges, and solutions for implementing paperless census operations.
- **Data Collection:** Both main and secondary data would be collected. Primary data would be collected through surveys and interviews of relevant stakeholders such as government officials, technology experts, and census data users. Secondary data would be collected from relevant sources such as government reports, academic journals, and online databases.
- **Theoretical Framework:** A theoretical framework would be developed to provide a systematic understanding of the key factors that influence the implementation of paperless census operations in India and China.
- **Ethical Considerations:** Ethical considerations such as informed consent, confidentiality, and data protection would be taken into account while conducting the research.
- **Conclusion and Recommendations:** Based on the findings of the research, conclusions and recommendations would be made for implementing paperless census operations in India. This would involve identifying best practices from the case study analysis, evaluating the strengths and weaknesses of the existing framework, and providing policy recommendations for overcoming the challenges and threats in the implementation of paperless census operations in India.

Overall, the methodology and tools used for conducting research would involve a comprehensive review of relevant literature, case study analysis, data collection, and analysis, development of a theoretical framework, and ethical considerations. These methods would provide a systematic and in-depth understanding of the key factors that influence the operation and implementation of the now postponed 2021 census in India, and more importantly, provide insights to make informed decisions regarding all such upcoming census and survey operations in the country.

II. IMPACT OF COVID-19 ON STATISTICAL ACTIVITIES

The world was not prepared for the viral scourge that hit Wuhan, China in December 2019. While no one is still sure where and how the first case of the COVID-19 viral outbreak occurred, everyone, today stands impacted directly or indirectly by it. Leaving millions of personal tragedies and losses in its wake, the viral outbreak that started as a localized epidemic soon took on the horrendous shape of a pandemic in our highly globalized world of the 21st century.

In recent times, the statistical community has encountered unparalleled obstacles in statistical operations, coupled with a surge in the need for data to track the impacts of the global pandemic.. The COVID -19 survey of national statistical offices conducted by the Statistics Department of UN DESA and the World Bank Development Data Group² found that by May 2020, more than half of the population and housing censuses, agricultural censuses, and business or establishment censuses scheduled for 2020 had to be postponed, especially in low- and middle-income countries. And by October 2020, nearly three out of four national statistical offices in all regions had stopped all or part of their in-person data collection, with serious consequences for many important statistical programs.

The first challenge facing national statistical systems around the world was maintaining the operational continuity of regular statistical production processes and timely data dissemination, as major surveys and polls had to be postponed or suspended. In response, national statistical offices had to rapidly adjust their fieldwork protocols and switch to telework. They also had to adapt their workflows to move from face-to-face to telephone and Web-based data collection and to make greater use of administrative records and new sources of information.

The active participation of national statistical offices in high-level government efforts to assess potential policy responses to the pandemic COVID -19 was critical because high-quality, authoritative data supported the urgent actions and decision-making processes needed. For example, the Palestinian Central Bureau of Statistics produced economic forecasts to help policymakers assess the impact of the closure measures over time. Ghana's statistical services used telephone call records to assess the impact of interdiction measures through an analysis of demographic mobility and conducted telephone COVID -19 rapid surveys in close collaboration with the private sector. And Chile's National Statistics Office launched a geostatistical data platform in 2020 to identify active COVID -19 cases and provide sociodemographic data based on census data and economic statistics.

III. IMPACT OF COVID -19 ON HOUSING AND POPULATION SURVEYS

According to the UN, the ability to assess the development and impact of development policies accurately and consistently at the national and especially at the subnational level can be hampered by the lack of detailed and comprehensive statistics that only the population and housing census can provide. Census data are essential for accurately planning service delivery related to the location and construction of hospitals, schools, and transportation infrastructure; allocating budgetary resources; delineating electoral districts; and monitoring the implementation of the 2030 Agenda for Sustainable Development at lower levels, to name a

few examples.

The DESA/Statistics Division has conducted a series of surveys since the outbreak of the pandemic, held an expert group meeting (February 2021) to assess the negative impact of the pandemic COVID-19 on the implementation of the 2020 World Population and Housing Census Programme, and launched an online dashboard in May 2021 as a tool for continuous updating of national censuses at [https://unstats.un.org/unsd/demographic-social/census/ COVID-19/](https://unstats.un.org/unsd/demographic-social/census/COVID-19/).

As per this DESA/STAT dashboard, of the 110 national censuses for which data were available and scheduled (pre-pandemic) for 2020 and 2021, 71 (65%) have either been postponed or are of unknown status, and 39 have been conducted or are scheduled to be conducted by the end of 2021, with several of them significantly extending the census period.

IV. NEED FOR A CENSUS IN COVID TIMES

According to the UN's World 2020 Programme, population and housing censuses are considered to be among the most significant sources of data required for designing, executing, and overseeing policies and programs that target inclusive socioeconomic development and environmental sustainability.

It also recognizes the significance of population and housing censuses as a vital resource to offer disaggregated data required to evaluate advancements in the 2030 Agenda for Sustainable Development. This holds particular relevance while gauging the status of people based on various characteristics such as income, gender, age, race, ethnicity, migration status, disability, and geographical location.. Finally, it calls on all member states to conduct a population and housing census or otherwise produce small-area census statistics at least once during the 2015–2024 period.²

In addition, experts pointed out that censuses conducted during the pandemic COVID-19 may reveal trends, changes, and patterns in society that were not seen in previous censuses, although the extent to which these trends and changes will be significant is not yet clear. Such new trends, changes, and patterns will affect the comparability of census data over time. Certain census topics are particularly vulnerable due to the impact of COVID-19, such as internal and international migration (due to border closures, banning of international flights, etc.), labor force participation (in terms of a number of employed and unemployed, hours worked, location of work, commuting time), school enrolment and attendance (impact of online education), and

² *Policy implications of the disruption of the implementation of the 2020 World Population and Housing Census Programme due to the COVID-19 pandemic* (no date) United Nations. Available at: https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/PB_118.pdf.

housing and living arrangements (usual residence; temporary housing due to COVID-19). Similarly, for questions on births, deaths, and migration, it was recommended that the exact date of such an event be collected whenever possible, rather than asking about the occurrence of events during a reference period.

V. IMPACT OF COVID-19 ON CENSUS PARAMETERS & DESIGN

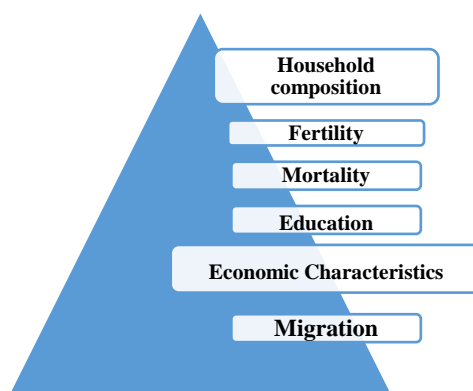
Beginning on March 11, 2020, COVID-19 is considered an international pandemic. Although the magnitude and duration of the impact of the pandemic on social and economic activities in countries were not known at the time, UNSD, as the Secretariat for the 2020 World Program, recognized that public health measures (social distancing, mobility restrictions, etc.) and possible reallocation of budgetary resources could have an impact on statistical activities and acknowledged the need to continuously monitor the ongoing COVID-19 impact on PHCs.

Regarding the same, several areas of concern have been identified, including:

1. Census timeline
2. Budget
3. Questionnaire
4. Method of collection (multi-mode)
5. Quality of results (coverage, topics, comparability)

Particularly worrying was the situation of countries preparing to conduct a census in the peak census years of 2020 and 2021.

Table 1- Census Parameters measures likely to be affected by the Pandemic.



Source: DESA, Statistics Division

<https://unstats.un.org/unsd/demographic-social/meetings/2021/egm-covid19-census-20210209/docs/s05-07-unsd.pdf>

VI. CHALLENGES IN COLLECTING DATA IN COVID TIMES

In the current global health crisis, timely and reliable disaggregated data and statistics are

critical to understanding, managing, and mitigating the human, social, and economic losses affecting billions of people. But the disruptions to regular data production operations caused by the lockdown of coronavirus disease (COVID-19), combined with an unprecedented surge in demand for information to monitor the spread of the virus and mitigate its impact, have presented unprecedented challenges to the data and the statistical community at the global, regional, and worldwide levels. In addition, the pandemic struck at a time when many countries were already struggling with severe resource constraints and facing urgent calls from all sectors of society to fill the serious data gaps needed to usher in a decade of action with effective, targeted measures to achieve the Sustainable Development Goals (SDGs).

Most countries have opted for a traditional census, in which each household is surveyed by enumerators using tablets or paper questionnaires or by self-reporting via the Internet. The measures taken by countries to mitigate the impact of the pandemic—lockdowns, closure of non-essential services, and working from home to name a few—had a negative impact on the preparations and implementation of the demographic and domestic census. This resulted in the postponement of census preparations and activities or the extension of the census period to an unprecedented length (in some cases, nearly a year), which negatively impacted the quality and reliability of census statistics.

The full impact of the COVID -19 pandemic on all dimensions of the well-being of the global population is certainly immeasurable and difficult to fully quantify. However, the impact of the pandemic on the conduct of population and housing censuses in 2020 and 2021 relates to the conduct and quality of the censuses, comparability with previous censuses, interpretation of the resulting census statistics, the future of the censuses, and the availability of reliable disaggregated statistics that are critical to monitoring the implementation of development policies and their impacts in the upcoming years of the 2020s³.

Table 2.

Potential effects of COVID-19 on Census

- Sharp decline in international migration
- High unemployment rate
- Higher mortality rate for older people
- Mobility from institutional population to household population
- Distribution of population by small geographic areas might be affected

Source: DESA, Statistics Division

³ Ibid.

<https://unstats.un.org/unsd/demographic-social/meetings/2021/egm-covid19-census-20210209/docs/s05-07-unsd.pdf>

VII. INDIAN CENSUS 2021

In India, the government's intention to conduct the 16th census in 2021 was announced in the Gazette of India on March 28, 2019. A conference for data users was held in April 2019, where it was announced that 330,000 enumerators will be deployed and that they will be encouraged to use their own smartphones, although a paper version will also be available, which enumerators will then have to submit electronically. The survey will be conducted in 16 languages to make it easier for people to fill in their data correctly⁴.

Table 3 - Census 2021 – Scale & Magnitude

States/UTs: 36
Districts: 734
Census Charges: 18,000*
Villages: 6.5 lakhs*
Towns/Cities: 8,000*
Enumeration Blocks: 25 lakhs*
Enumerators & Supervisors: 31 lakhs*
Questionnaires: 16 languages
Instruction manuals: 18 languages
* Approximate numbers



Source: Census of India 2021

In India, the pandemic has hit the country like a tsunami. In a March 25, 2020, press release, the government stated, "Due to the outbreak of pandemic COVID-19, the highest alert level has been declared by the Government of India. On March 24, 2020, the Ministry of Home Affairs issued guidelines for strict implementation by the national, state, and union territory governments to contain the COVID-19 epidemic as best as possible.

Many state and UT governments have also declared states of emergency. The Ministry of Health and Family Welfare, Government of India, has recommended various precautionary measures, including social distancing. In view of this, the first phase of the 2021 census and NPR update, which were to commence on various dates fixed by the state governments and UT from April 1, 2020, and various related field activities, is postponed till further notice. Rs. 12,000 crores has been reserved for the country's first digital census⁵.

⁴ NewIndianXpress (2019) *Census 2021 will be done via mobile app, says officials*, *The New Indian Express*. The New Indian Express. Available at: <https://www.newindianexpress.com/nation/2019/apr/10/census-2021-will-be-done-via-mobile-app-says-officials-1962359.html> (Accessed: April 3, 2023).

⁵ Sharma, N. and Varma, S. (2019) *Digital Census in 2021; Amit Shah proposes idea of multipurpose ID card*, *NDTV.com*. NDTV. Available at: <https://www.ndtv.com/india-news/home-minister-amit-shah-says-mobile-app-will-be-used-in-census-2021-it-will-be-a-transformation-from-2105523> (Accessed: April 3, 2023).

VIII. INDIA'S FIRST DIGITAL CENSUS

What also made this round of the census special was the ubiquitous use of technology. In September 2019, Union Home Minister Amit Shah said the 2021 census would be a "*digital census*," conducted entirely digitally through a cell phone application. He also proposed the idea of a multi-purpose card ID for every citizen, which would include a passport, Aadhar, and voter card. Speaking at an event in Delhi to mark the ground-breaking of Jangana Bhawan, the office of the Census Bureau, he said, "*A mobile app will be used in the 2021 census.*" It will be a transformation from a paper census to a digital census. "*We can have a single card for all applications like Aadhaar, voter cards, bank accounts, passports, driver's licenses. That's potential.*" He also shared the news that a new, separate app is being developed to capture the data on apple as well as Android phones.

Mr. Shah also said that the National Population Register (NPR) is being prepared for the 2021 census for the first time, and it will prove to be a game changer. Explaining the many advantages of having a digital census Mr. Shah emphasized that "*If a child is born and does not die by the time he or she turns 18, should he or she not then be able to vote automatically without applying for a voter ID card?*" said Mr. Shah. This he argued can help solve "*problems of law and order, and gender equality*."⁶

Finance Minister Nirmala Sitharaman confirmed the same in her 2021-22 budget speech in February 2021 when she said, "*Due to the ongoing pandemic, the 2021 census in India will be conducted digitally.*" This census will be the first in India's history to be held digitally, marking India's transition "*to the digitization of government and public services.*" She further said that the government has allocated 3,768 million rupees for the upcoming census⁷.

IX. INDIAN CENSUS 2021-PLANNING

The Registrar General of India and Census Commissioner Vivek Joshi said the 2021 census will be conducted in two phases. In the first phase, house lists will be compiled in any two months chosen by the states between April and September 2020. In the second phase, the actual population census will be conducted in February 2021, followed by the revision round on March 15, 2021. The cutoff date will be March 1, 2021, in most states and October 1, 2020, in Jammu

⁶ *ibid*

⁷ *Budget 2021: Census to go Digital for the first time with rs 3,768 crore allocation (2021) India Today.* India Today. Available at: <https://www.indiatoday.in/business/budget-2021/story/budget-2021-census-to-go-digital-for-the-first-time-with-rs-3768-crore-allocation-nirmala-sitharaman-1764702-2021-02-01> (Accessed: April 3, 2023).

and Kashmir and some areas of Himachal Pradesh and Uttarakhand⁸.

Table 4 - Detailed Proposed Plan of undertaking the Indian 2021 Census

<p>Phase-1: House listing & Housing (HLO) Census and updation of National Population Register</p> <ul style="list-style-type: none"> • April to September 2020 (a period of 45 days as chosen by the State Govt.) • 30 days for HLO and 15 days for updation of NPR • Postponed due to outbreak of COVID-19 pandemic <p>Phase-2: Population Enumeration (PE)</p> <ul style="list-style-type: none"> • 9th to 28th February 2021 • 1st to 5th March 2021 (Revisional Round) <p>Phase-3: Data Dissemination</p> <ul style="list-style-type: none"> • Provisional population – within 3 weeks • HLO data – 6 to 8 months • PE data - Village-wise primary data – within 1 year • Other PE data and Finalization of NPR data – within 2 years

Source: Census of India 2021

X. INDIAN CENSUS 2021-METHODOLOGY

To further make things easy for responders, the census has been designed to ensure internet availability is needed only for the registration of the enumerator and uploading of data. At no other stage of data collection is the internet required. Specific Mobile Apps and web applications have been created in at least 16 languages for census data collection, such as:

1. House listing and Housing Census OFFLINE Mobile App
2. Mobile app for Geotagging of Enumeration Blocks
3. Self-Enumeration web application for updation of NPR
4. National Population Register OFFLINE Mobile App
5. Population Enumeration OFFLINE Mobile App powered with code directories for descriptive entries.

XI. INDIAN CENSUS 2021-TRAINING

The Census design envisioned a three-tier structure of trainers to train 33,00,000 enumerators and supervisors. Out of the total 90 National Trainers, 60 were to be chosen from ORGI and 30 from the faculties of State Administrative Training Institutes (ATIs). The design called for Master Trainers who were to be chosen from States and some from Directorates of Census Operations. However, all 43,000 field trainers were to be from various states and union

⁸ NewIndianXpress (2019) *Census 2021 will be done via mobile app, says officials*, *The New Indian Express*. The New Indian Express. Available at: <https://www.newindianexpress.com/nation/2019/apr/10/census-2021-will-be-done-via-mobile-app-says-officials-1962359.html> (Accessed: April 3, 2023).

territories.

Table 5- Model of Online Census Data Collection 2021

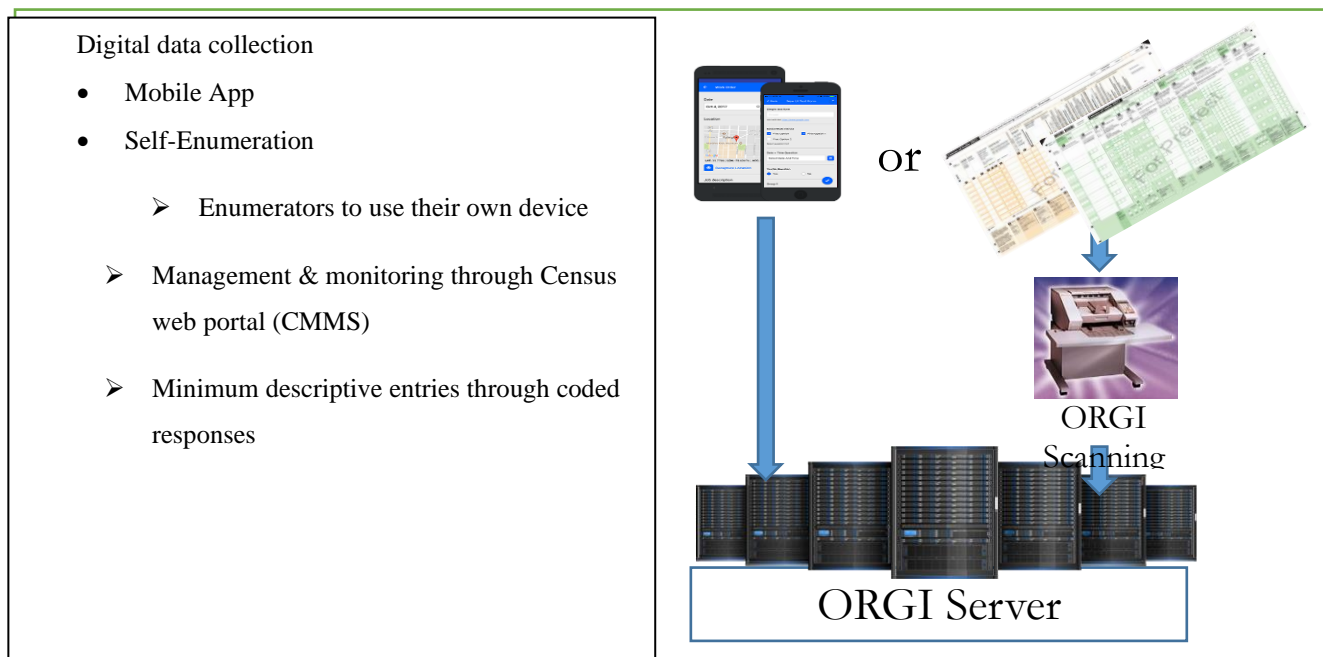
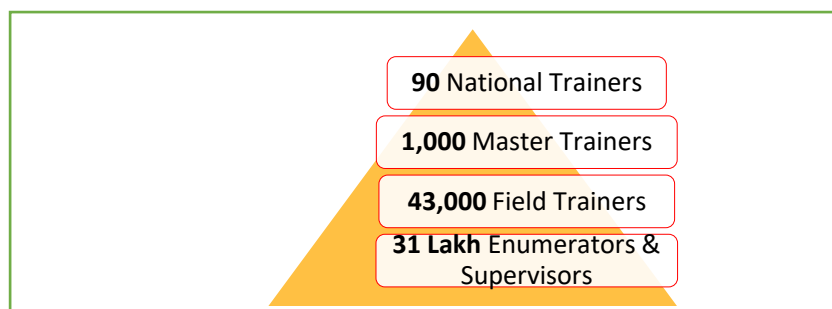


Table 6 – Snapshot of Training & Manpower for Census 2021



Source: Census of India 2021

XII. EXPECTED EFFECTS OF COVID-19 ON CENSUS 2021

The office of the register General of Census has noted that the pandemic may affect the following Census Measures.

1. Migration
2. Workers
3. Fertility
4. Population attending educational institutions
5. Rural-Urban distribution of population
6. Distance to travel place

7. Access to the internet
8. Ownership status

However, their overall effect may vary depending on the actual year in which the Census finally takes place.

XIII. POSTPONING THE CENSUS 2021

The lack of detailed census statistics in the 2020s will make it difficult to evaluate the effects of national development policies, according to the UN. It continues to urge all of its Member States to uphold their unwavering commitment to the goals of the 2020 World Population and Housing Census Programme and to continue planning and getting ready to conduct a population and housing census when the national circumstances allow, taking into account international and regional recommendations and utilizing recently developed methodological solutions and successful national practices⁹. "The census is not only a head count exercise," said Home Secretary Rajiv Gauba, "it also provides invaluable socioeconomic data that forms credible basis for informed policy formulation and resource allocation. The nation's plans for economic growth and social welfare programs for its citizens are reformulated with the help of the census's reflection of the country's shifting demographic and socioeconomic conditions¹⁰.

However, all Census-related activities were put on hold due to the unplanned COVID-19 outbreak. The Indian Census of 2021 has officially been put on hold indefinitely until further orders from the Ministry of Home Affairs (MHA) are addressed in Lok Sabha on February 8, 2022. Nityanand Rai, Minister of State for Home Affairs, responded in writing to a question in the Lok Sabha that the Census 2021 will be carried out in two phases in accordance with the guidelines of the Census Act of 1948. The housing census and house listing were conducted between April and September 2020, and the population count was between February 9 and 28. But he is reported to have said, "*Census-related field activities have been postponed until further orders due to the COVID-19 pandemic*" according to the report¹¹.

The third wave of the COVID-19 pandemic was expected in January 2022, but according to officials with the Union Home Ministry, no decision has been made regarding when to conduct the census and update the NPR. States have been informed by India's Registrar General and

⁹ Supra Note 2.

¹⁰ Supra Note 5.

¹¹ Standard, B. (2021) *Census 2021 related field activities postponed due to covid-19: Govt, Business News, Finance News, India News, BSE/NSE News, Stock Markets News, Sensex NIFTY, Union Budget 2023*. Available at: https://www.business-standard.com/article/current-affairs/census-2021-related-field-activities-postponed-due-to-covid-19-govt-121072700849_1.html (Accessed: April 3, 2023).

Census Commissioner that the central government has forbidden changing the boundaries of districts, subdivisions, taluks, police stations, etc. until June 2022, according to a representative of the Home Ministry. It is not possible to begin the census before October because the boundaries of administrative and police units have been fixed until June 2022¹².

XIV. CONCLUSION

Census is a critical tool for governments to gather information about their populations. This information is used to make important decisions about resource allocation, planning, and policy development. The COVID-19 pandemic has presented significant challenges for conducting censuses, with many countries having to adapt their plans and procedures to ensure the safety of their citizens and census workers.

In conclusion, the post-pandemic triggered health crisis has highlighted the critical importance of timely and reliable disaggregated data and statistics to manage and mitigate the human, social, and economic losses affecting billions of people worldwide. However, disruptions to regular data production operations caused by the COVID-19 lockdowns, combined with an unprecedented surge in demand for information, have presented unprecedented challenges to the data and statistical community at global, regional, and local levels.

Moreover, the pandemic has further compounded the resource constraints and urgent need to fill data gaps to achieve Sustainable Development Goals (SDGs) in many countries, including India. It is imperative that stakeholders continue to work collaboratively to ensure that accurate and actionable data is available to inform effective decision-making and achieve a more sustainable and equitable world.

¹² <https://economictimes.indiatimes.com/news/india/census-unlikely-anytime-soon-as-fear-of-3rd-wave-of-covid-19-looms-large/articleshow/88671125.cms?from=mdr>

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