ASSESSING INEQUALITIES IN REGISTRATION OF BIRTHS AND DEATHS IN BHUTAN

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1 ACKNOWLEDGMENTS

This report presents findings on the inequality assessment of births and deaths from 2017 to 2022, based on CRVS data obtained from the Bhutan Civil Registration System.

The report was developed in collaboration with UN ESCAP, Department of Civil Registration and Census, and the National Statistics Bureau. The authors included Mr. Tashi Dorjee, Chief Statistical Officer and Ms. Jigme Choden, Statistical Officer from NSB while Mr. Sonam Tenzin, Director General, NSB provided the overall guidance.

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Cover image: A little girl with her grandmother in front of their shop that sells traditional bamboo products in Sephu, Wangduephrodrang. © UN Bhutan.

2 EXECUTIVE SUMMARY

Civil registration is defined as the continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital life events in a population. However, it is important to distinguish between birth registration and the mechanism by which individuals acquire nationality because, if this relationship is misunderstood, it can stand in the way of the achievement of the goal of universal civil registration.[1]

Civil registration, and especially birth registration, is fundamental for accessing many services and benefits as well as a basic human right. Only by being recognized can individuals claim their right to equal chances and welfare.[2] As such, assessing the challenges of subgroups in being registered and addressing them is essential for human rights and to ensure all persons have access to and full inclusion in the CRVS system.

This report examines inequalities in the registration of births and deaths in Bhutan from 2017 to 2022, using data from the Civil Registration and Vital Statistics (CRVS) system maintained by the Department of Civil Registration and Census (DCRC). The analysis aims to identify disparities in registration completeness based on factors such as age, sex, and maternal age group to inform policy makers and planners.

The analysis of completeness of birth registration using the 2017 population and housing census data revealed that while there is no gender disparity, the completeness of birth registration rate for children born during the census period remains at 82.5% even by age of five. National projections further shows that the completeness rate has fluctuated over the years, reaching 83.2% in 2022, with no significant differences between sexes.

However, age-related disparities continue to persist. Birth registration completeness is lower, particularly notable among younger mothers aged 15–19, whereas completeness is highest among mothers in their early 30s and declines at both younger and older maternal ages.

Similarly, death registration rates have fluctuated over time, reaching 70.1% in 2022. However, registration remains notably lower among young children with 13.1% in 2022, for those under the age of eight years. Interestingly, female death registration rates are generally higher than those for males, particularly among individuals aged 80 and above. Overall, while improvements are observed across years, disparities between sexes and age groups remain, with females showing consistently higher completeness in key groups.

Based on the report, several recommendations are proposed to improve birth and death registration in Bhutan.

1 https://getinthepicture.org/sites/default/files/resources/Information_Note_E_%20Civil_Registration_Nationality_and_Human_Rights_0.pdf

2 https://crvs.unescap.org/sites/default/files/resources/Information%20note%20on%20inequality%20assessments.pdf

Strengthening public awareness campaigns is also crucial to educating families on the importance of timely registration. Additionally, improving data collection and integration through better inter-agency collaboration and adopting international standards, such as ICD coding for causes of death, can enhance data quality. Furthermore, strengthening CRVS governance and capacity by training officials can help bridge existing gaps.

While Bhutan has made significant progress in improving birth and death registration completeness, disparities persist across different demographic groups. Addressing these inequalities through targeted policy interventions, financial incentives, and awareness programs will help ensure a more inclusive, accurate, and effective CRVS system. This, in turn, will support Bhutan's broader development goals and align with global efforts to achieve universal registration under the Sustainable Development Goals (SDGs).

An elderly man keeps the tradition of bamboo weaving alive in Bjoka Village in Zhemgang. © UN Bhutan

3
BACKGROUND

A well-functioning Civil Registration and Vital Statistics System, better known as CRVS, uses inputs into and exits from a population register to provide governments with critical information on their population by age, sex and location, on which to develop policies and plan services. Good public health decision-making requires timely, reliable and actionable data on births and deaths, including cause of death, collected through these systems3. It is one of the preferred data sources for many demographic statistics with numerous indicators for the Sustainable Development Goals (SDGs) directly related to mortality and fertility are available from the civil registration.

Many countries face challenges with low civil registration completeness rates among specific population groups or regions. Access to registration is often hindered by factors such as gender, income, ethnicity, religion and geographic location. Marginalized populations- including those in rural, remote or border areas; minorities; indigenous peoples; migrants; noncitizens; asylum-seekers; refugees; stateless individuals; and those lacking documentation are at greater risk of exclusion if they cannot obtain the essential benefits tied to registration. These groups frequently encounter barriers such as financial costs, physical distance, languages and cultures differences, discrimination or legislative barriers.

The extent of these disparities often remains unknown due to insufficient data on who is being left behind and to what degree. In the absence of reliable disaggregated data, affected populations remain largely invisible, limiting their access to the rights and protections guaranteed by the State. Therefore, evaluating inequalities is crucial to addressing disparities in birth and death registration among various population groups.

The Ministerial declaration to Get Every One in The Picture[4] initiative in Asia and the Pacific has recognized the need to address disparities in civil registration completeness and coverage to ensure progress in registration. The declaration designated the period from 2015 to 2024 as the 'CRVS Decade.' The Royal Government of Bhutan (RGoB) is signatory to this commitment and has made significant progress in achieving the CRVS goals and targets by 2025.

Bhutan has implemented several measures to address the gaps in its civil registration and vital statistics (CRVS) system. These initiatives include conducting CRVS assessments, developing a Multi-sectoral National Strategic Action Plan (MNSAP 2021-2025), and simplifying registration procedures. Further, in July 2023, Bhutan formalized the CRVS Governance Structure to enhance coordination, planning, and monitoring of CRVS programs in the country. The governance structures include the National CRVS Steering Committee, the Inter-Agency CRVS Technical Committee, and the Dzongkhag CRVS Committee.

3 https://www.who.int/data/data-collection-tools/civil-registration-and-vital-statistics-(crvs)

4 https://getinthepicture.org/

As a part of its commitment, Bhutan has expressed interest to participate as one of the countries in the region to receive technical support to conduct an inequality assessment of the national CRVS system. This is the first such assignment and seeks to evaluate the completeness rates of births and deaths in the BCRS. Additionally, the project aims to enhance Bhutan's CRVS capacity and foster greater engagement, particularly among policymakers, to support the implementation of the findings from this assessment.

Girls line up for lunch in Buli School, Zhemgang. © UN Bhutan

4 CIVIL REGISTRATION AND VITAL STATISTICS SYSTEM IN BHUTAN

The Department of Civil Registration and Census (DCRC) under the Ministry of Home Affairs (MoHA) is maintaining a comprehensive population registry. It offers both online and offline civil registration and census services. Since the late 1980s, the DCRC has been recording vital events including births and deaths. Although the registration system is still in its infancy stage, Bhutan has successfully achieved 100 percent geographic coverage, and the completeness of registration continues to improves steadily.

Prior to 2002, Bhutan maintained a paper-based registration system called the Family Diary. It was managed by the respective districts (Dzongkhag), sub-districts (Drungkhag), and blocks (Gewog) levels. The birth and death records were updated only once a year.

In 2003, the DCRC began digitizing these records, transitioning to the Bhutan Civil Registration System (BCRS) fully in 2004. This system integrated citizenship card issuance with the registration of vital events and household records. During the same year, the Department of Immigration and Census got bifurcated into the Department of Civil Registration and Census (DCRC) and the Department of Immigration (DoI). The MoHA thereafter established Civil Registration and Census Offices (DCRCO) in all 20 Dzongkhags.

Subsequent improvements included the development of registration guidelines (2009), Standard Operating Procedure (2016), and the introduction of a web-based system under the Government to Citizen (G2C) project (2011) initiative. The project also established community centers at the Gewog level to improve accessibility. Altogether Bhutan has 230 registration points, including Gewogs, Dungkhags, Thromdes, and Dzongkhags. Applications can be submitted at any registration point, and acknowledgment receipt is being issued by the concerned officials upon receiving the required documents.

According to the Citizenship Act of Bhutan,1985, any children of Bhutanese parents must be registered within one year. Late registrations require justification but do not incur penalties. Annual census updates also capture unregistered births. Under the Immigration Rules and Regulations (2015), children born to a Bhutanese and foreign spouse must be registered within one year, with late registrations requiring verification but no penalties. The Citizen Act does not specify a registration deadline for deaths; however, most families register within a year to be eligible for rural life insurance. Deaths of children under eight years often go unreported due to the lack of incentives.

The births and deaths must be registered within one year and can be recorded either from the current place of residence or the permanent address. For birth registration, documents required include an application form, birth notification, parents' court marriage certificate, and a guarantor statement. Similarly for death registration, the documents required include an application form, the deceased's CID/Special Resident (SR) card, and a death notification or statement.

The management of the Civil Registration and Vital Statistics (CRVS) system in Bhutan is a collaborative effort involving three agencies viz the Ministry of Home Affairs (MoHA), Ministry of Health (MoH) and the National Statistics Bureau (NSB). The Department of Civil Registration and Census, MoHA takes a crucial role in maintaining the Bhutan Civil Registration System (BCRS). The MoH is responsible for issuing the notification of vital events such as births and deaths to the DCRC, while the NSB uses the data from the BCRS to analyzes and produce the annual Vital Statistics Report (VSR).

At present, CRVS stakeholders in Bhutan, including DCRC, DoI, and MoH, maintain separate systems for collecting and storing data related of vital events, such as birth and death. Despite operating independently, these agencies collaborate seamlessly to ensure the accurate registration of vital events.

Girls in remote Sakteng School in Trashigang. © UN Bhutan

5
DATA AND METHODS

The Department of Civil Registration and Census is responsible for maintaining the comprehensive registry of Bhutan's population. The function is supported by the Bhutan Civil Registration System (BCRS) a highly secure computerized system that ensures real-time, and dynamic updates on all vital events occurring across the country.

Of the 14 web-based civil registration and census services, registration of new birth and registration of death are the core services the department performs. The birth and death can be registered at any time of the year at any registration point. It can also be registered during the Annual Census Program which is carried out between November and January of the following year. Birth information is verified for accuracy and completeness at multiple stages: Operator Level, Level 1, Level 2, and Approval Level. In contrast, death registration follows three phases: Operator Level, Level 1, and Approval Level. All information is entered online into the BCRS system.

The DCRC stores and manages the citizenship database and is the sole custodian of the BCRS. In addition, the department also shares it with external systems like Government-to-Government (G2G) and, Government-to-Citizen (G2C) services, as well as corporate agencies. This data sharing is facilitated through an area network interlinking these entities, using an Application Programming Interface (API) that is centrally managed by the Government Technology Agency.

To facilitate smooth and efficient data sharing between the agencies, a Memorandum of Understanding (MoU) was signed between MoHA and the NSB in 2020 to support the reporting of vital statistics. The dataset on live births and deaths were obtained separately from the DCRC, while the data on total population figures were drawn from the population projection report (2017-2047) published by NSB. The dataset includes a range of variables, that can be used to evaluate the completeness of birth and death registrations in Bhutan.

5.1 Data Sources

Completeness refers to the percentages of vital events (such as births, deaths, and marriages) that are officially recorded in the civil registration system within a given country and time period. Estimating completeness entails calculating the ratio between the number of events recorded in the BCRS system (numerator) and the with the best estimated 'true' number of events (denominator. The denominator represents the expected total of vital events, which can be estimated using different methodologies recommended in the UN ESCAP guidelines.

As per the 'Guidelines on Estimating Completeness of Civil Registration of Vital Events',[5] to ensure accuracy, the numerator and denominator must align within the same spatial and temporal frame.

5 https://www.unescap.org/sites/default/d8files/knowledge-products/Guidelines_for_estimating_completeness_CRVS_ESCAP2022.pdf

When full or near-full coverage has not been achieved, completeness should be measured as the ratio of registered events to the expected number of events within the areas covered by the registration system, excluding regions where the system is not operational.

The process began with analysis of the variables of interest which were discussed and disaggregated during the Inception of workshop held in August 2024. Once identified, the availability of these variables from other data sources were investigated and requested.

The next step involves estimating the completeness of registration by comparing registered births and deaths with projected figures. In Bhutan the completeness is assessed using the direct method as recommendation made by ESCAP. The number of registered births and deaths (numerators) are obtained from BCRS while the projected totals (denominators) are obtained from Population Projections provided by the NSB and UNWPP websites.

A descriptive analysis is then carried out to explore disparities in registration access among vulnerable populations. This analysis involves disaggregating data by variables such as age, sex, and mothers age group. Although data on the educational attainment and occupation of the mother or the decease is available, it is not consistently updated in the BCRS. The details are typically updated only during the renewal of the Citizenship Identity Card (CID) which occurs every after 10 years or when an individual visits the DCRC office to update their information.

$$\textit{Completeness of Birth} = \frac{\text{Civil registration events}}{\text{Estimated 'true' number of events}} \textit{ x 100\%}$$

Table 1: Variables investigated for disaggregation and their viability for analysis

Variable	Investigated?	Viable for analysis of births?	Viable for analysis of deaths?
Sex	Yes	Yes	Yes
Age	Yes	Yes	Yes
Marital Status	Yes	No	No
Educational Attainment	Yes	No	No
Occupation	Yes	No	No
Geographical location	Yes	No	No
Income	Yes	No	No

5.2 Bhutan Civil Registration System (BCRS)

The data obtained through BCRS contain information on a child's date of birth, sex, place of birth, as well as mothers' educational qualification, site of birth, usual and permanent place of residence, age. It also captures some information about the father, including his name, and citizenship identity card number/inuque identification number.

To ensure the accuracy of data, each variable in the dataset was thoroughly examined, and data cleaning was performed where necessary. The primary focus of the data quality assessment was to identify data inconsistencies, duplicate records, errors in the date of occurrence versus the date of registration, discrepancies in registration duration, , missing information, and conflicting values. While, some duplicate entries were expected and removed during cleaning, others required clarification and correction in consultation with civil registration officials.

All erroneous entries are addressed based on the specific nature of the error. While most variables information are complete, certain variables like 'age of mother at birth', 'date of registration of events', still contain missing data, even after verification with DCRC. However, since these missing cases are relatively few, they are imputed using the average values for the respective variables.

Although majority of births in Bhutan are recorded through BCRS, there may be few instances where births are not captured-particularly for those involving foreign or expatriates' working in Embassies, IMTRAT, DANTAK and other International Organization. Conversely, births that occur outside Bhutan are recorded in the system.

5.1.2 Population Projection

Population projection is a scientific exercise that requires information of various demographic parameters at present as well as their recent trends. It calls for collating required information on baseline population, its age-sex distribution, fertility, mortality, sex ratio at birth, and migration. The components of population change are then modelled to anticipate future trajectory of these parameters, based on their past trends.[6]

One of the fundamental tasks is to undertake assessment of data quality using various demographic techniques. First, an assessment of the quality of baseline data on age-sex composition from the latest round of census is made in order to decide whether to use the data as available or make corrections such as smoothing. In addition, data on recent levels of fertility and mortality are examined. Where civil registration is not complete, other direct estimates and when necessary, indirect estimates of fertility and mortality are examined and the most plausible initial levels of fertility and mortality and recent trends are obtained.

The cohort-component method is the standard procedure employed in national population projections. This projects the components of population change, namely, births, deaths, and migration in future time periods and thus computes the projected population by age and sex. This requires projection of fertility, mortality, and net migration rates in future. Such projections are made by extrapolating recent trends and making any changes as felt to be appropriate. Often, alternative projections are made, called variants, corresponding to alternate assumptions on the components. The cohort-component projection is a well-recognized method in demographic literature and the United Nations

6 https://www.nsb.gov.bt/publications/census-report/

manuals describe the procedures in details. Various computer programs are available for performing projections. The package Demographic Analysis and Population Projection System (DAPPS) of the U.S.

Census Bureau has been used for making the national level population projections. It is generally not possible to apply the cohort-component method for sub-national projections because reliable estimates of various parameters for small regions are not available. Therefore, the shares of sub-national (in the case of Bhutan, Dzongkhag), are projected based on recent trends and applied to the national projection.

The projections for Bhutan have been carried out for a period of 30 years, that is, from the baseline of 2017 up to 2047. The reference period for both the censuses in Bhutan is 30th May of the Census year and population projections for future years has the same reference date.

For this assessment, both fertility and mortality projections are used. However, since the projections are available only by the mother's age and sex, the analysis is limited to this level of disaggregation.

5.1.3 United Nations World Population Prospects (UNWPP)

With each new edition of the World Population Prospects, the United Nations Population Division updates its estimates of historical demographic trends from 1950 to the present and projects future population changes through 2100. These estimates draw on all available data regarding population size, fertility, mortality, and international migration across 237 countries or areas, representing the global population. For the 236 countries or areas with at least 1,000 residents in 2023, the dataset provides comprehensive time series data on population size by age and sex, as well as the key components of population change—fertility, mortality, and migration—from 1950 to 2100.[7]

The accuracy of these estimates and projections depends heavily on the availability of reliable and timely demographic data. Such data are gathered through civil registration and vital statistics (CRVS) systems, population censuses, registers, and household surveys. Recent and historical information on population size, age and sex composition, and trends in fertility, mortality, and migration are essential for producing accurate population estimates for each country or area.

Accurate and up-to-date population counts are particularly important for determining the true size and demographic structure of populations.

5.1.4 Limitations of Census Data

As the foundation of all statistical data, is the census plays a critical role in updating population figures, which are essential for calculating various socio-economic and development indicators. In Bhutan, the population and housing census of Bhutan (PHCB) is conducted every 10 years, with its first census conducted in 2005. The most recent census took place from 30 May to 01 June 2017. The official reference time and date for the census enumeration was midnight of 29 May 2017. This means that the 2017 PHCB provides population data for Bhutan as of 00:00 hours on 30th May 2017 at the end of the three census days.

The census serves as a reliable source of data for this assessment report, providing detailed information at the most granular level. It captures key details about both mothers and children, including the mother's marital status and age, the child's sex, and the place and site of birth. To estimate total births

7 https://population.un.org/wpp/

during the reference period, the population aged 0 representing children who were alive during the census and born in the preceding year—is adjusted by adding the number of recorded deaths among children aged 0. The adjustment is made considering that the census tends to undercount children, particularly infants.[8] As a result, the analysis includes all children born between May 28, 2016, and May 29, 2017, including those who died before reaching age one. The numerator comprises registered births from BCRS, while the denominator reflects estimated total births calculated by combining the census count of children aged 0 and those deaths reported in same age group.

$$\textit{Completeness of Birth at age 0 using census data} = \frac{\text{Number of births occurred between 28th May, 2016–29th May, 2017 that are registered}}{\text{Children aged 0 emunerated in the census 29th May, 2017}}$$

Although there are benefits of using the census data, there are few limitations to using it including:

1. Though it was specified in manuals about inclusion of birth during the census period, in some cases, respondents may fail to accurately recall the exact birth date of birth of their children. This can lead to inaccuracies in reporting, affecting the estimate of births.
2. The 2017 PHCB is de-facto-based count whereas the data obtained from BCRS includes all those births that may have occurred to mothers living outside Bhutan and are registered in the country.
3. Children born and died before the census period might have been left out which leads to undercounting in the census.

5.3 Methodology and Data Sources for Death Registration Completeness

The primary source for estimating deaths to evaluate inequalities in death registration completeness was the recorded death data from DCRC through BCRS.

Similar to birth data, data on the death of a person is provided by DCRC and includes variables such as place of death, age of deceased, sex, and date of registration. While the dataset contains a variable for cause of death, it is not recorded properly and hence, it is difficult to recode as per the International Classification of Disease (ICD) system recommended by the World Health Organization (WHO). The data are cleaned by verifying and removing duplicate entries before analysis.

Additionally, mortality projections are used to estimate the level of death registration completeness.

8 O'Hare, W.P. 2017. An international perspective on the undercount of young children in the U.S. Census. Statistical Journal of the IAOS 33 (2017) 289–304.

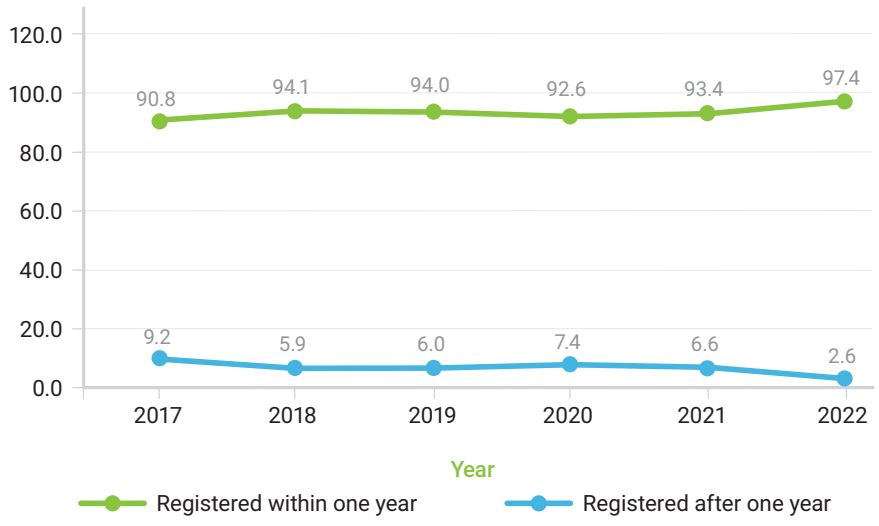
6 TIMELINESS OF REGISTRATION

According to the Citizenship Act, all births in Bhutan must be registered within one year of their occurrence. For reporting purposes, delayed registration refers to any event (birth or death) that is registered after more than one year from the date of occurrence. In this context, registration is defined as complete even if an individual has initiated the registration process by submitting the required forms or documents to the competent civil registry authority, or by starting an online application, rather than the completion of the process (i.e., the final approval of the registration). Timeliness of birth and death is analyzed using the administrative data provided by the DCRC from the year 2017 till 2022.

6.1 Birth Registration

Between. 2017 and 2022, there has been notable progress in the timely registration of births, with an increasing percentage being registered within one year of occurrence. Of the total births that occurred and registered between2017 and 2022, 93.7% of them were registered within the one year of occurrence. In 2017, 90.8% of births were registered on time, while a little less than one-tenth of the births were registered late. By 2022, the figure had improved significantly, with 97.4% of births registered within the first year and only 2.6% registered late, highlighting a strong upward trend in timely birth registration.

Figure 1.1: Timeliness of Birth Registration (2017-2022)



6.2 Death Registration

Of the total deaths that occurred and registered between 2017 and 2022, 91.5% were registered within one year of occurrence. This marks significant improvement in the timeliness of death registration over the years. Registration within one year rose steadily from 2,798 deaths in 2017 to 3,555 in 2022 – an increase of 27%. Meanwhile, delayed registrations (those made after one year) saw a sharp decline, dropping from 666 deaths to just 50 -a decrease of 92.5%. This shift indicates a clear trend toward more prompt reporting of deaths (figure 1.2).

Figure 1.2: Timeliness of Death Registration (2017-2022)

Over the years, registrations within one year have steadily increased, with a significant surge in 2022. In contrast, delayed registrations have declined sharply, indicating reduced systemic bottlenecks and increased compliance with timely reporting requirements.

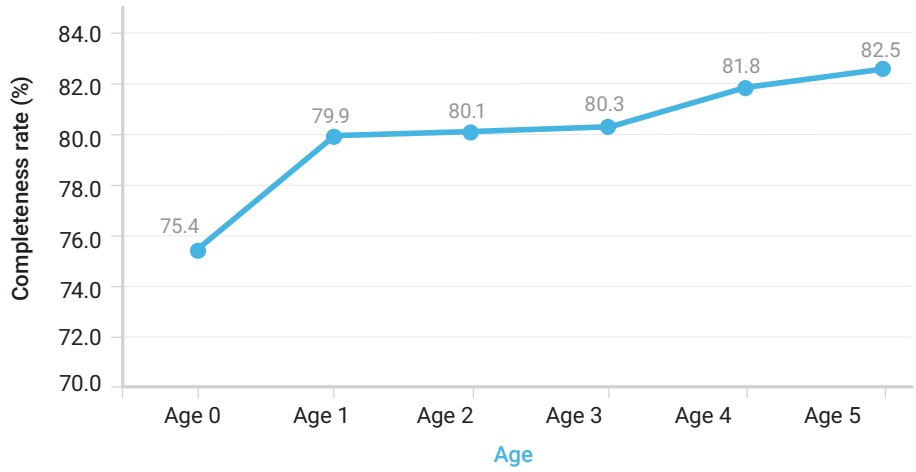
7 INEQUALITIES IN BIRTH REGISTRATION

7.1 Inequalities In Birth Registration Using 2017 Census Data

The census is a vital source of demographic information, particularly for analyzing birth patterns and trends. It provides comprehensive information on the number of children ever born, children surviving, and age-specific fertility, which are essential for assessing population growth and health of mothers and children.

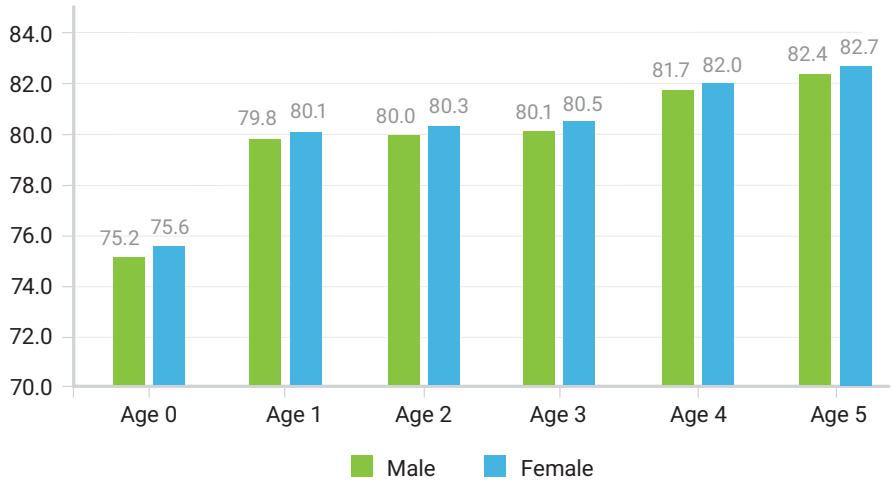
In 2017 census, data were examined by age and sex. Information on children aged zero (including both birth and death during the census period) was used to estimate the completeness of birth registration.

Figure 2.1: Birth registration completeness for the cohort of children aged 0 in the 2017 census



The figure 2.1 illustrates the gradual improvement in birth registration completeness rates by the age of the child, indicating progress in late registrations. Around 75.4% of children had their births registered before their first birthday, pointing to a gap in timely registration immediately after birth. By their first birthday (age 1), registration completeness increases notably to 79.9%, reflecting a considerable number of late registrations during the first year. By age five, completeness peaks at 82.5%, although a small proportion of children remain unregistered.

Figure 2.2: Birth registration completeness for the cohort of children aged 0 in the 2017 census by sex



The figure 2.2 illustrates the birth registration completeness rates by age at registration, disaggregated by sex (male and female). The data reveals minimal difference between males and females, with registration rates closely aligned across all age groups.

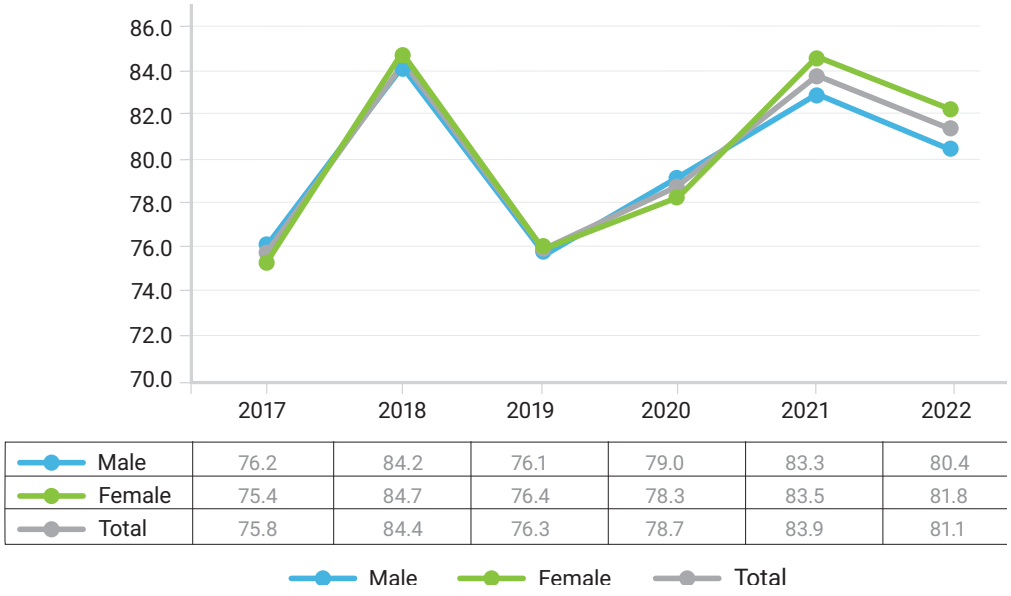
At age 0, the r completeness rate is 75.2% for males and 75.6% for females, showing a slight advantage for females immediately after birth. By age five, the highest registration rates are observed – 82.4% for males and it is 82.7% females.

This consistent pattern suggests that birth registration systems treat males and females equally, with no notable gender disparity. However, the overall registration levels highlight the need for improvement to ensure all children are registered at birth or soon after, regardless of sex.

7.2 Inequalities of Birth Registration using National Population Projection (NSB)

The figure 2.3 illustrates a general improvement in birth registration completeness within one year, despite some fluctuations over time. The rate was 75.8% in 2017 and saw a significant rise to 84.4% in 2018 reflecting a marked improvement in timely registration. This was followed by a decline to 76.3% in 2019, but the rate rebounded to 83.9% in 2021 and settled at 81.1% in 2022.

Figure 2.3: Birth Registration completeness by one year (2017-2022)

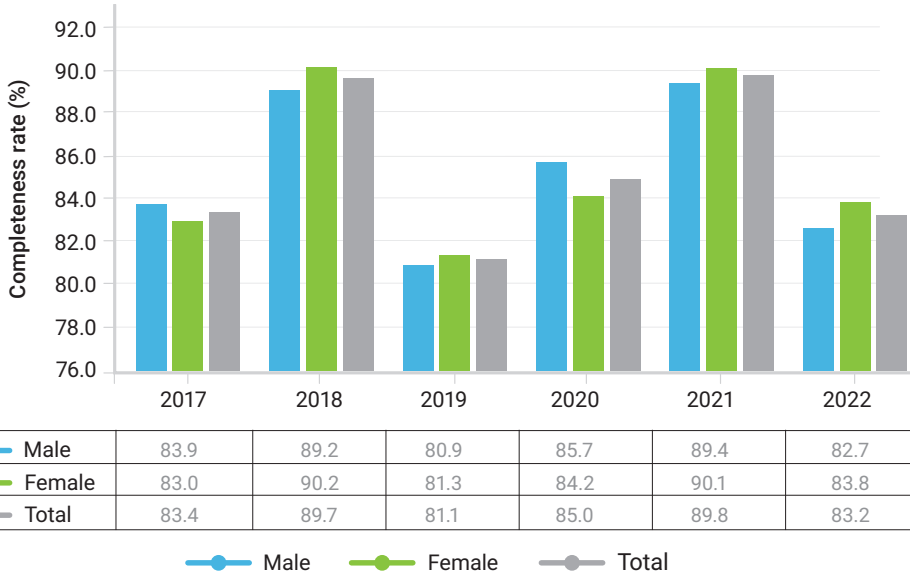


	2017	2018	2019	2020	2021	2022
Male	76.2	84.2	76.1	79.0	83.3	80.4
Female	75.4	84.7	76.4	78.3	83.5	81.8
Total	75.8	84.4	76.3	78.7	83.9	81.1

When disaggregated by sex, the completeness rates for males and females are generally comparable with females consistently showing slightly higher rates. For instance, in 2018, the completeness rate was 84.7% for females and 84.2% for males-a pattern that persisted in 2021 and 2022. These figures reflect progress in ensuring timely birth registration, though periodic fluctuations indicate the ongoing need to overcome challenges and maintain momentum toward universal and timely registration for all children (figure 2.3).

Including delayed registrations, the data from 2017 to 2022 reveals a general upward trend in birth registration completeness, despite some inconsistencies (figure 2.4). The completeness rate rose from 83.4% in 2017 to a high of 89.7% in 2018, indicating strong advancements in capturing both timely and delayed registrations. However, the rate dropped significantly in 2019 to 81.1%, potentially pointing to obstacles in sustaining progress. It recovered in 2020, reaching 85.0%.

Figure 2.4: Birth Registration completeness including delayed registration, by sex (2017-2022)



	2017	2018	2019	2020	2021	2022
Male	83.9	89.2	80.9	85.7	89.4	82.7
Female	83.0	90.2	81.3	84.2	90.1	83.8
Total	83.4	89.7	81.1	85.0	89.8	83.2

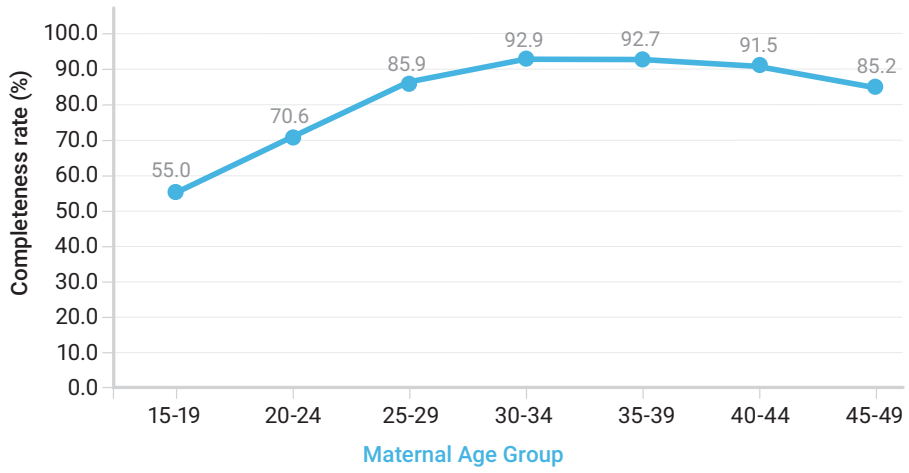
When disaggregated by sex, the completeness rate for male and female remains largely comparable over time, with females consistently showing slightly higher rates. For instance, in 2018, the completeness rate for females was 90.2%, compared to 89.2% for males. This pattern persisted in 2021 and 2022, with females continuing to hold a modest lead. Overall, the data reflects ongoing improvements in both timely and delayed birth registrations, highlighting the need for sustained efforts to close remaining gaps and achieve comprehensive coverage for all groups.

7.3 Inequalities of Birth Registration Using UNWPP

Birth registration is a basic right and vital step toward securing legal identity and access to essential services. However, the rate of registration often differs depending on mother's age. Maternal age reflects not only as a biological maturity but also socio-economic status, both of which can affect mother's capacity and decision to register a birth. Younger mothers, especially adolescents, may face barriers such as limited access to healthcare; lack of awareness, and social stigma, leading to delays or omission in registration. On the other hand, older mothers may face different difficulties, such as financial strain or limited interaction with formal institutions.

This section examines disparities in birth registration rates among various maternal age groups. By disaggregating birth registration data by age categories, we can identify which age groups are most vulnerable to under-registration and gain deeper insight into the factor driving exclusion.

Figure 2.5: Birth Registration completeness including delayed registration, by Maternal Age Group, 2022



The figure 2.5 illustrates the completeness rate of birth registration across different maternal age groups. The completeness rate starts at 55.0% for mothers aged 15-19 years, and rises steadily to 70.6% among those aged 20-24, reaching 85.9% in the 25-29 age group. The highest completeness rate of 92.9% is observed in the 30-34 age group, after which it gradually declines. This pattern suggests that birth registration is most complete among mothers in their early 30s, with lower rates observed at both younger and older ages.

8 NEED FOR FURTHER RESEARCH FOR BIRTH REGISTRATION

Although there is no major disparity in birth registration completeness between sexes, further investigation is needed to understand the underlying factors contributing to delays. Delayed birth registration often involves a complex process, highlighting the importance of addressing these challenges proactively to avoid future delays.

The current report disaggregates data solely by sex and age group of mothers, which limits its scope and depth of analysis. To support more informed and impactful policy decisions, it is crucial to broaden the scope by including disaggregation by location and other socio-economic factors. Incorporating variables such as geographic region, income; education, and occupation, we can provide deeper understanding of how these elements influence outcomes. This expanded analysis will uncover challenges faced by specific population groups enabling the development of more targeted and effective interventions to address existing inequalities.

Additionally, it is crucial to update the most recent data on the mothers' marital status and educational level to gain deeper understanding of potential disparities in birth registration. Including marital status in the analysis allows us to explore whether registration rates differed between married and unmarried mothers. This can offer valuable insights into the role social factors like marital status, play in influencing the completeness and accuracy of birth registration records. A deeper understanding of these dynamics can support the development of more targeted policy interventions to address existing gaps and enhance the effectiveness of registration systems.

Further, this report focuses solely on descriptive statistics. Future studies may include inferential analysis to provide deeper insights into inequality.

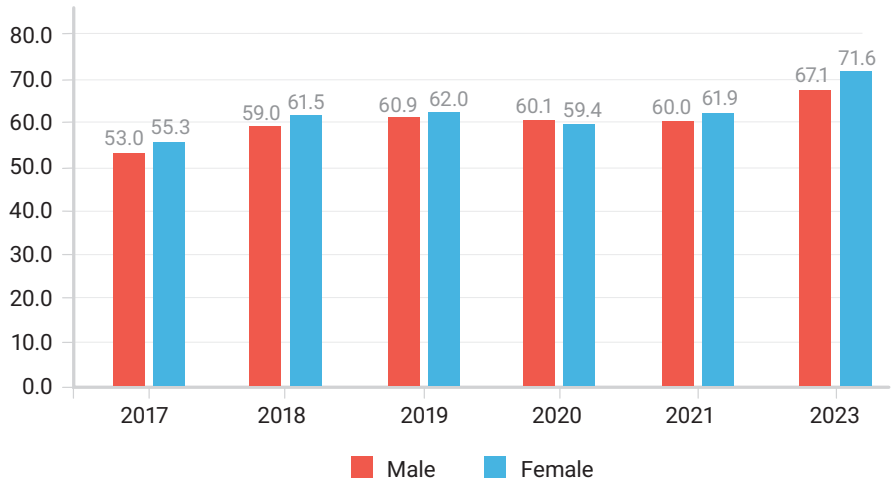
9 INEQUALITIES IN DEATH REGISTRATION COMPLETENESS

This section examines deaths occurred and recorded between 2017 and 2022, using data registered with the DCRC. It explores inequalities among the deceased by analyzing differences across sex and age group. Through this assessment, the report seeks to uncover potential disparities and trends that may provide insights into broader patterns of mortality during this period.

9.1 Inequalities in Death Registration using National Population Projection (NSB)

The figure 3.1 presents the completeness rate of death registration within one year by sex from 2017 to 2022, revealing a clear upward trend for both males and females. From 2017 to 2019, both sexes saw steady progress in registration completeness, with a slight dip in 2020, more pronounced among females. However, the rates recovered in2021, and showed a notable increase in 2022, particularly for females. This overall improvement indicates the effectiveness of the efforts to strengthen the death registration process, likely driven by improved accessibility, increased public awareness, or policy interventions.

Figure 3.1: Death Registration Completeness by within one year of death, by sex (2017-2022)



The figure 3.2 represents the death completeness rate, including both timely and delayed registrations, for the years 2017 to 2022. Overall, data shows a upward trend for both males and females, though with some year-to-year fluctuations.

Between 2017 and 2022, the completeness rate for males increased from 66.2% to 68.2%, while for females, it rose from 67.8% to 72.5%. Both sexes experienced moderate improvements from 2017 to 2018, followed by a slight dip in 2019. The sharpest drop occurred in 2020, likely due to the disruptions caused by the COVID-19 pandemic. Despite this setback, the rates stabilized in 2021, and rebounded notably in 2022 for both sexes.

Throughout the period, the completeness rate for females consistently remained higher than that for males. These trends indicate overall improvement in the effectiveness of the death registration system, including delayed registrations. However, the influence of external factors like the pandemic highlights the system's vulnerability. Addressing the persistent gender gap, particularly in enhancing completeness for male deaths remains important area for improvement.

Figure 3.2: Death Registration Completeness including delayed registration, by sex (2017-2022)

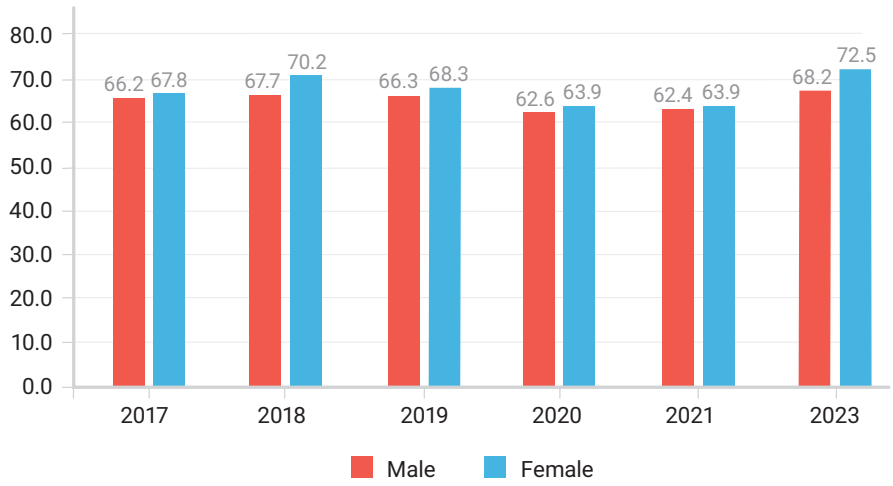
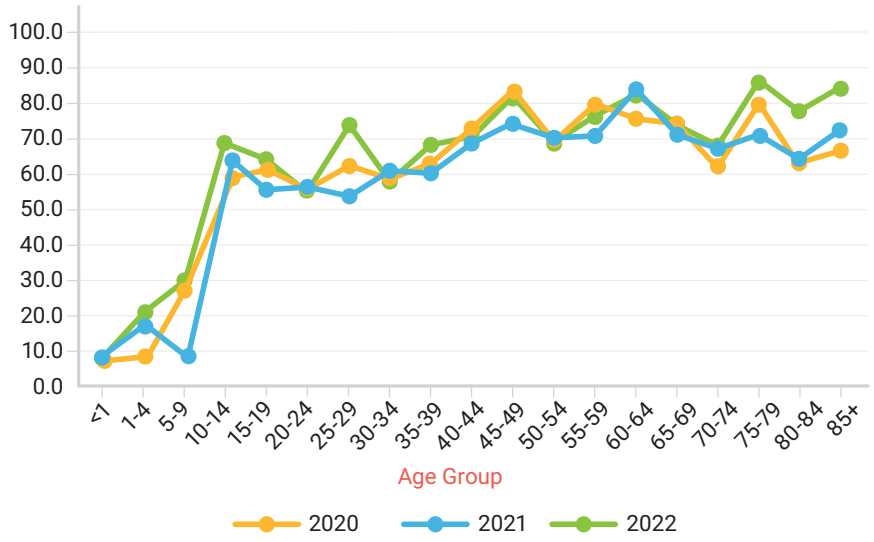


Figure 3.3: Death Registration completeness by age-group (2020-2022)



The figure 3.3 presents the death registration completeness by age group from 2020 to 2022, indicating the percentage of deaths that were officially registered within each age category. Across these three years, distinct pattern, and fluctuations emerge among the various age groups.

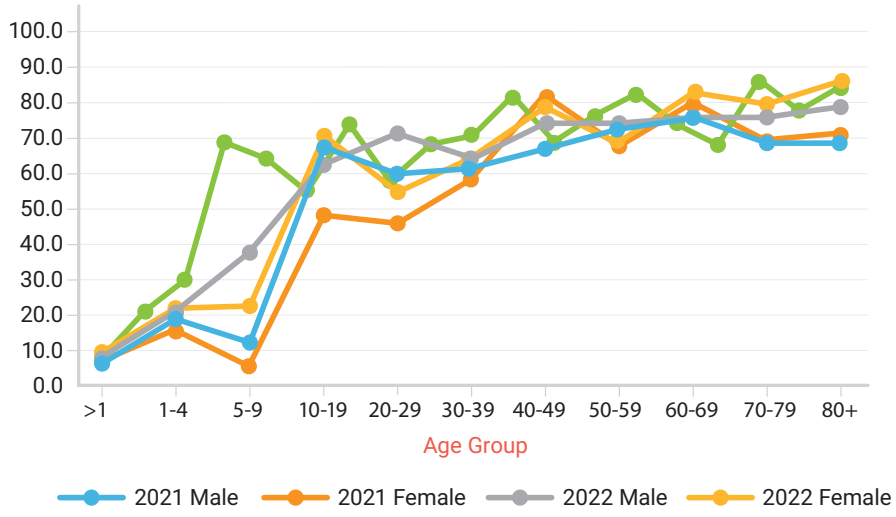
For infants under one year (<1), registration completeness increased modestly from 7.1% in 2020 to 8.1% in 2022. A significant upward trend is evident among children aged 1–4 years, where completeness more than doubled, from 8.4% in 2020 to 21.1% in 2022. Children aged 5–9 years experienced a fluctuating trend with 26.9% in 2020, a drop to 8.1% in 2021, followed by a sharp rise to 29.4% in 2022.

Among adults aged 20–39 years, registration completeness showed some variability. , While the 20–24 and 30–34 age groups experienced slight decline but a sharp increase in the 25–29 age group, from 62.8% in 2020 to 74.4% in 2022. In contrast, adults 40–64 years consistently exhibited high levels of completeness, with most groups showing either gradual improvements or stable percentages over time.

For those aged 65 years and older, death registration completeness is consistently higher, with some groups exhibiting significant increases. For instance, the 75–79 age group rose sharply from 80.1% in 2020 to 86.4% in 2022, while those aged 85+ years experienced a marked increase from 66.9% in 2020 to 85.0% in 2022. The 60–64 and 70–74 years age groups also demonstrated strong and steady performance, with completeness levels exceeding 60% throughout the period.

Overall, while registration completeness varied across age groups, there is a general trend of improvement over time, particularly for younger and older populations. However, the lower completeness levels in certain child and adolescent age groups highlight potential areas for targeted interventions to ensure more accurate and comprehensive death registration.

Figure 3.4: Death Registration completeness by age-group and sex (2021-2022)



The death registration completeness rate varies between males and females across different age groups, revealing distinct trends (figure 3.4). In early childhood (<1 to 9 years), female completeness is generally higher than male completeness, with the most notable difference seen in infants (9.2% for females vs. 7.4% for males in 2022).

However, in adolescence and early adulthood (10-29 years), males consistently have higher completeness rates than females, indicating better registration coverage for young males. This trend reverses from age 40 years onwards, where female completeness surpasses male completeness, especially in older age groups. The most significant gap appears in the 80+ category in 2022, where female completeness is 86.2% compared to 78.1% for males, suggesting that deaths among elderly women are more accurately registered.

Overall, while improvements are observed across years, disparities between sexes and age groups remain, with females showing consistently higher completeness in key groups.

Figure 3:5: Death Registration Completeness by special age-group (2017-2022)

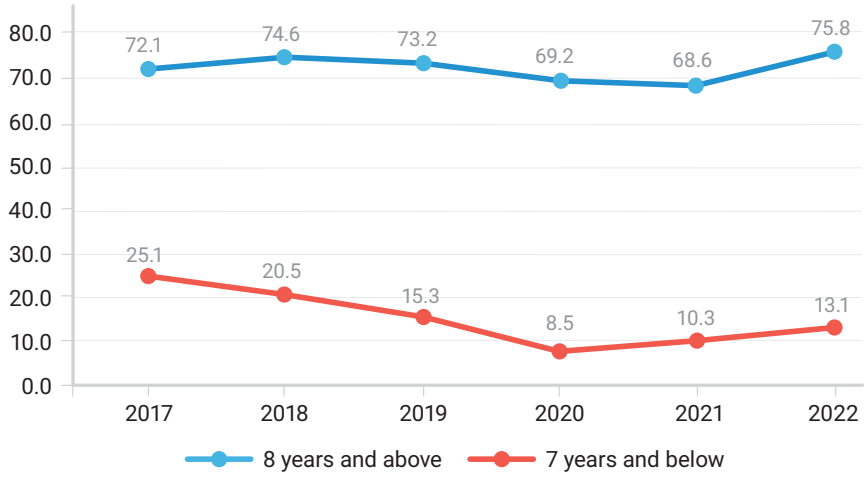
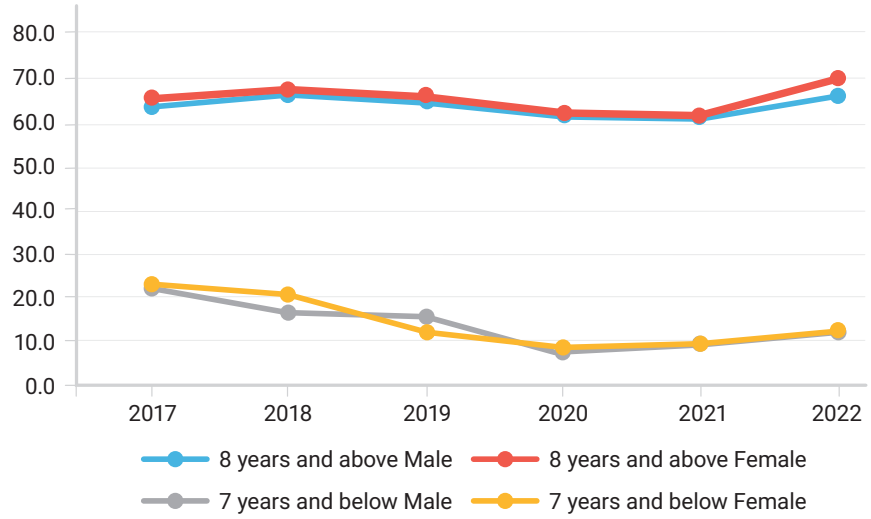


Figure 3.5 shows a clear difference in death registration rates between individuals aged eight years and above and those aged seven years and below. For the age group eight years and above, the registration rate fluctuates but shows an overall upward trend. It begins at 72.1% in 2017, increases to 74.6% in 2018, drops to 69.2% in 2020, and then stabilizes at around 75% in 2022, with a slight dip to 68.6% in 2021.

In contrast, the registration rate for those aged 7 years and below is consistently lower, starting at 25.1% in 2017 and steadily declining over the years, reaching a low of 8.5% in 2020. After a slight uptick to 10.3% in 2021, it increases slightly again to 13.1% in 2022. These trends highlight a significant gap in the registration of deaths among children under eight, with rates much lower than those for the older age group.

Figure 3.6: Death Registration Completeness by special age-group, sex (2017-2022)



The figure 3.6 presents registration statistics by sex for two age groups: individuals aged eight years and above, and those aged seven years and below, from 2017 to 2022.

For the age group of eight years and above, both male and female registration figures show some fluctuations over the years. The registration rates for males and females increased slightly from 2017 to 2018, peaks at around 73.83 % for males and 75.60 % for females in 2018.

For the age group of seven years and below, the trends show more variability between sexes. Male registration rates in this age group have consistently been significantly lower compared to females over the years., with the widest disparity occurred in 2018, when the male registration rate of 18.33% compared to 23.31% for females. There was a notable decrease in registration rates for both sexes in 2019, particularly for males, whose registration rate dropped to 16.9%. Female registration also declined to 13.16 % in 2019. The year 2020 saw a further decline for both sexes, with males registering just 7.96 %and females 9.17%. By 2021 and 2022, there was a slight increase in registrations for both males and females. Female registrations levelled off at approximately 13.57% in 2022, while male registrations increased to 12.83% in the same period.

This disparity can be linked to the Rural Life Insurance scheme, which mandates that all citizens aged eight years and above to contribute annually. As a result, families are more likely to register deaths in this age group, as doing so ensures they can claim the life insurance payout of Nu 30,000, which helps the family members to cover funeral expenses.[9] The higher registration rates for both males and females aged eight years and above suggest that the financial support provided by the Rural Life Insurance scheme plays a significant role in encouraging families to officially report the death.

Conversely, younger children, who are not covered by the scheme, show lower registration rates, possibly due to a lack of financial support for their families in handling funeral costs. The lower registration rates for those aged seven and below highlights the need for additional strategies to support death registration in younger populations, potentially through extending insurance coverage or providing alternative financial support.

Primary School children return home from school in Gomling Village in Zhemgang. © UN Bhutan

9 https://www.ricb.bt/products/life-insurance/life/rural-life-insurance-scheme/

10 FURTHER RESEARCH FOR DEATH REGISTRATION

Although there is no significant disparity, the data indicates that death registration completeness is slightly lower for males compared to females. This suggests the need for further investigation to understand the underlying factors contributing to this difference. Additionally, the overall completeness of death registration is lower among the younger population compared to older age groups. Specifically, children under the age of eight years show a significantly lower completeness rate compared to individuals aged eight years and above. This highlights a gap in the registration process for younger children, which may stem from the absence of incentives for timely registration.

To address this issue, a detailed review including the focused group discussion (FGD) to examine why such registration discrepancy exists in the younger age group may be worth exploring.

Further, there is a need to record the cause of death according to the ICD system managed by WHO. ICD coding enhances the quality, utility, and global relevance of mortality data, which is essential for advancing public health and addressing emerging health challenges.

Students take advantage of ample water supply to wash their plates after lunch in Buli School, Zhemgang. © UN Bhutan

11 CONCLUSION AND POLICY IMPLICATIONS

This report highlights the progress Bhutan has made in strengthening its Civil Registration and Vital Statistics (CRVS) system, particularly in achieving improvements in birth and death registration completeness over time.

While the overall trends are positive, the findings suggest that structural challenges, such as lack of financial incentives for certain groups hinders universal and timely registration. These barriers must be addressed to ensure that Bhutan's CRVS system becomes fully inclusive, enabling the country to meet its Sustainable Development Goals (SDGs) and provide accurate data for evidence-based policymaking.

11.1 Policy Recommendations

1. **In-depth analysis to find out low death registration for younger age group.**

   To address the low death registration rates among children below eight years, a detailed review including the focused group discussion (FGD) to examine why such registration discrepancy exists in the younger age group may be worth exploring. Further, the perceived religious and cultural belief which does not allow the normal funeral for those deaths happening to children below eight years of age should be studied and accordingly solution must be recommended.

2. **Enhancing Public Awareness Campaigns**

   Conduct targeted awareness campaigns to educate citizens on the importance of timely and accurate registration of vital events. Focus on marginalized populations, rural communities, and regions with lower registration rates to promote understanding and participation.

3. **Strengthening the Data Ecosystem for Reliable and Accurate CRVS Data**

   To enhance the effectiveness and accuracy of CRVS data, strengthening the data ecosystem is essential. This includes addressing data gaps, particularly those related to immigration, and resolving ambiguities in existing classifications. A key priority should be improving the accuracy, consistency, and clarity of the data by ensuring that the most up-to-date information on individuals is accurately recorded and maintained.

   The policy should focus on:

   - Standardizing Data: Implementing clear and consistent classification systems for all collected data is crucial to eliminate ambiguity and facilitate accurate comparisons across various sectors and regions. For example, causes of death should be categorized according to ICD coding to prevent misclassification and ensure alignment with international standards.

- Integrating Data: Improving the integration of various data sources, such as immigration data, is crucial for obtaining a more comprehensive view of vital statistics. A data sharing mechanism may be worked out between the two agencies to facilitate seamless data sharing while ensuring data security and preventing misuse. Additionally, there are opportunities to integrate the BCRS system with the judiciary system to obtain up-to-date information on the marital status of mothers and expand the scope of vital events beyond just births and deaths.
- Improving Data Governance: Implementing robust governance frameworks to ensure data is properly managed, secure, and accessible to relevant stakeholders, while protecting individual's privacy.

4. **Building Capacity of CRVS Stakeholders.**

   Invest in training programs for officials involved in the CRVS system to enhance their capacity to handle registrations efficiently and address inequalities. Provide technical resources and tools to improve the quality and completeness of registration data.

5. **Strengthen the CRVS data collection system.**

   While the basic information on child and mother is asked, there is also possibility of asking the current information on the information like mothers' current place of residence, occupation and educational attainment levels which could in turn help with the government with the relevant policy formulation.

By implementing these policy recommendations, Bhutan can address existing gaps in its BCRS system and ensure that all vital events are registered in a timely and equitable manner. This will not only support the country's developmental goals but also enhance its ability to provide accurate, inclusive, and actionable data for policymaking and resource allocation.

12

ANNEXURE: POTENTIAL DATA SOURCES FOR ESTIMATING THE COMPLETENESS OF BIRTH AND DEATH REGISTRATION

It is essential to understand the availability, accessibility, and limitations of different data sources used in quantitative inequality assessments. Additionally, data mapping helps determine the variables available in each dataset, whether they are consistently defined across sources, and if they can be used for accurate comparisons. Understanding the limitations of each data source is also crucial, as it allows to account for gaps, inconsistencies, or biases that may affect findings. Ultimately, this exercise strengthens the reliability and completeness of data used for assessing inequalities and informing evidence-based policies.

12.1 Potential Sources of Birth Data

Numerator: Registered Births from BCRS

The DCRC under MoHA is responsible for managing the BCRS in Bhutan. For this assessment, data on births that occurred from January 1, 2017, to December 31, 2022, and were registered from 1st January 2017 till 31st December 2023 is being shared.

Variables	Detailed/Status
Date of Birth	DoB of the child is collected in Birth Registration form for each child.
Date of Registration	Both the Date of Registration and Date of Approval are available and can be used to verify data consistency. If any inconsistencies are found, the data is cross-checked again within the system for validation.
Sex	Present
Usual place of residence	Information on present address like country, dzongkhag, gewog/thromde and village is collected for the child, which are later recorded into a standard format.
Place of Birth	Name of country, dzongkhag, gewog/thromde and village is collected for the child.
Mothers age	The mother's age is not directly recorded, but the unique identity number assigned to her is collected, which can be used to link and calculate her age at child birth.

Variables	Detailed/ Status
Mothers Education, Occupation	The mother's education level and occupation are not collected during birth registration. However, using the unique identity number, it can be linked to BCRS to determine her educational level and occupation. It is important to note that the variables may not always be updated, and the mother can update this information either by visiting the DCRC office in person or when renewing her CID card.
Fathers age	The age of father is not collected. But the unique identity number of the father is collected which can be linked to find their age.
Fathers Occupation	The occupation of father is not collected. But through the unique identity number, it can be linked to find their occupation. However, the father can update this information either by visiting the DCRC office in person or when renewing his CID card.
Wealth Quintile	Not collected

Denominators	Source	Detailed/Status
CENSUS AND SURVEYS		
Population and Housing Census (PHCB)	NSB	Census in Bhutan is conducted every 10 years. The last census was conducted in 2017 and the next scheduled in 2027.
National Health Survey	MoH	The NHS is a joint initiative of MoH and NSB and is conducted every 10 years. The recent NHS was conducted in 2023. Variables like sex of child, date of birth, mothers name, age, educational qualification and occupation were collected. The data are however unavailable during the conduct of this assessment.
Bhutan Living Standard Survey	NSB	BLSS is conducted every 5 years. The most recent survey was conducted in 2022. Information on child who are born in last 12 months prior to interview is collected by sex. Further, mother's educational qualification and wealth quantile are also collected.
Multiple Indicator Cluster Survey (MICS)	NSB	MICS is a joint initiative of NSB and UNICEF and the first MICS was conducted in 2010. The next MICS is scheduled to conduct in 2025.

ADMINISTRATIVE DATA		
Denominators	**Source**	**Detailed/Status**
School Enrolment Data	MoESD	Information like sex, date of birth, age, present address and permanent address are collected. The Annual Education Statistics is published annually and is accessible through MoESD website.
Health Facility Data	MoH	The information like child's sex, date of birth, place of birth, mother's unique identity number, date of birth, mother's education qualification, present address, fathers date of birth, educational qualification was collected during the birth notification and is maintained with MoH.
OTHER SECONDARY SOURCES		
Population Projection Bhutan (2017-2047)	NSB	Population projection report is published after every census period. The projection on birth were available by year, sex and age of the mother.
The 2024 UN World Population Prospects (UNWPP)	United Nations Population Division	The fertility projection is available by sex, year and age of the mother.

12.2 Potential Sources of Death Data

Numerator: Registered Deaths from BCRS

The DCRC maintain registered deaths inn their BCRS. For this assessment, data on deaths that occurred from January 1, 2017, to December 31, 2022, and were registered from 1st January 2017 till 31st December 2023 is being shared in excel version.

Variables	Detailed/ Status
Date of Birth	DoB of decease is collected in Death Registration form.
Date of Death	DoD of decease is collected in Death Registration form.
Date of Registration	Both the Date of Registration and Date of Approval are available and can be used to verify data consistency.
Sex	Present
Usual place of residence	Information on present address like dzongkhag, gewog/thromde and village is collected for the deceased, which are later recorded into a standard format.

Variables	Detailed/ Status
Place of Death	Name of dzongkhag, gewog/thromde and village is collected for the decease.
Cause of Death	Note on deceased illness/circumstances preceding the death is collected. However, there is no standard on the recording and the data cannot be used to identify the Cause of Death as per the International Standards.
Wealth Quintile	Not collected

Denominators	Source	Detailed/Status
CENSUS AND SURVEYS		
Population And Housing Census (Phcb)	NSB	Census in Bhutan is conducted every 10 years. The last census was conducted in 2017 and the next scheduled in 2027.
National Health Survey	MoH	The NHS is a joint initiative of MoH and NSB and is conducted every 10 years. Information on deaths in last five years are collected. Variables like sex of decease, date of birth and date of death are recorded.
Administrative Data		
Health Facility Data	MoH	The information like sex, date of birth, date of death, place of death, cause of death was collected. However, it should be noted that only around 43% of the death occurred in hospitals.
OTHER SECONDARY SOURCES		
Population Projection Bhutan (2017-2047)	NSB	Population projection report is published after every census period. The projection on deaths were available by year, sex, age and dzongkhag.
The 2024 UN World Population Prospects (UNWPP)	United Nations Population Division	The mortality projection is available by sex and year.

For more information, please visit:

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Statistics Division

United Nations Economic and Social Commission for Asia and the Pacific

United Nations Building
Rajadamnern Nok Avenue
Bangkok 10200, Thailand

escap-crvs@un.org

National Statistics Bureau

Royal Government of Bhutan
P.O Box # 338,
Thimphu, Bhutan

www.nsb.gov.bt

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