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ID4D
IDENTIFICATION FOR DEVELOPMENT

ID4D
GLOBAL DATASET
Volume 1 | 2021 Global ID Coverage Estimates

WORLD BANK GROUP

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WORLD BANK GROUP

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ABSTRACT

This paper aims to estimate the number of people globally who do—and do not—have government-recognized proof of identity ("ID"). This work is an update to the most recent estimate produced in 2018, which found that just under 1 billion people did not have official identification to prove who they are. The World Bank's Identification for Development (ID4D) Initiative collected new data for this analysis: two rounds of survey-based data on ID ownership for adults (in partnership with the Global Findex Survey), as well as new administrative data acquired through outreach to ID authorities. By incorporating this data with the data sources used in 2018 and updating the methodology accordingly, we find that as of 2021 there are just under 850 million people globally without official proof of their identity. Around half are children, and the vast majority live in lower-income countries in Africa and South Asia. Analysis using individual-level survey data demonstrates that these 850 million are at a high risk of exclusion from basic services and economic opportunities and are among the most marginalized in their communities. Bridging this ID ownership gap is thus critical for ending extreme poverty, promoting shared prosperity, and realizing the global commitment to "Leave No One Behind."

This paper is the first in a series that will accompany the release of the 2021 ID4D Global Dataset; while it estimates global access to ID, subsequent papers and data will focus on the quality and characteristics of ID and civil registration (CR) systems worldwide. For more, see http://id4d.worldbank.org/global-dataset.

ABOUT ID4D

The World Bank Group's Identification for Development (ID4D) Initiative harnesses global and cross-sectoral knowledge, World Bank financing instruments, and partnerships to help countries realize the transformational potential of identification (ID) systems, including civil registration (CR). The aim is to enable all people to exercise their rights and access better services and economic opportunities in line with the Sustainable Development Goals. This is especially important as countries transition to digital economies, digital governments, and digital societies, where inclusive and trusted means of verifying identity are essential to ensure accessibility and data protection.

ID4D operates across the World Bank Group with global practices and units working on digital development, social protection, health, financial inclusion, governance, gender, and data protection, among others. To ensure alignment with international good practices for maximizing development benefits and minimizing risks, ID4D is guided by the 10 Principles on Identification for Sustainable Development, which have been jointly developed and endorsed by the World Bank Group and over 30 global and regional organizations (see http://idprinciples.org).

ID4D makes this happen through its three pillars of work:

1. Thought leadership, research, and analytics to generate evidence and fill knowledge gaps

2. Global public goods and convening to develop and amplify good practices, foster collaboration across regional and global stakeholders, and support knowledge exchange

3. Country and regional action through financial and technical assistance to realize inclusive and trusted ID and civil registration systems

The work of ID4D is made possible through support from the Bill & Melinda Gates Foundation, the UK Government, The French Government, The Norwegian Agency for Development Cooperation (Norad), and the Omidyar Network.

To find out more about ID4D and access our other publications, visit www.id4d.worldbank.org.

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The 2021 Identification for Development (ID4D) Global Dataset update was a significant undertaking that would not have been possible without the support and dedicated efforts of a large team. This work was led by the authors of this report, Julia Clark, Anna Metz, and Claire Casher, under the guidance of ID4D Practice Manager Vyjayanti Desai. The authors wish to acknowledge, with deep gratitude, the many people who contributed to the Dataset project as well as this report on the Global ID Coverage Estimates, which is the first in a series to accompany the Dataset release.

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EXECUTIVE SUMMARY

Being able to prove who you are matters for equitable, sustainable development.[1] Yet many people—particularly those living in lower-income countries[2] and who are part of marginalized and vulnerable groups—are unable to obtain official forms of identification (ID) that provide proof of their legal identity.[3]

To fully tackle this challenge, we must understand its scope: the number of people globally who do—and do not—have official proof of identity (henceforth "ID"). To this end, the World Bank's Identification for Development (ID4D) Initiative published the first estimate of global ID coverage in 2016. These figures were updated in 2017 and 2018 to incorporate new sources of data, including administrative data on ID registration and credentials collected by ID4D through country-level surveys. In 2018, ID4D estimated that just under 1 billion people did not have an ID, representing nearly 1 in 8 people globally (World Bank 2018).

This paper provides updated estimates of global ID coverage for 2021 that take advantage of new data sources and a revised methodology. This includes the incorporation of two rounds of survey-based data on ID ownership for adults collected by ID4D in partnership with the Global Findex survey and new administrative data gathered by ID4D via direct outreach to ID authorities. The availability of new data has also led to necessary updates to the calculations and created opportunities for improving the global coverage estimate methodology. **As of 2021, we estimate that there are just under 850 million people globally without official proof of their identity.**

1 As recognized, inter alia, through Sustainable Development Goal (SDG) Target 16.9: "to provide legal identity for all, including birth registration" by 2030. See also: https://id4d.worldbank.org/guide/good-id-supports-multiple-development-goals.

2 The term country, used interchangeably with economy in this paper, does not imply political independence but instead refers to any territory for which authorities report separate social or economic statistics.

3 "Official" ID is provided by, on behalf of, or recognized by governments, and can include both "legal" ID (which provides proof of legal identity) and "functional" ID required for a specific sector or purpose (e.g., voting, travel, social security, etc.). For more information, see World Bank (2022a).

METHODOLOGY

Given the absence of a single metric to measure ID coverage available across all countries, we follow a similar approach to 2018 and other previous estimates. This approach uses a combination of metrics that take advantage of available data and align with the changing nature of ID access throughout a person's lifetime. Coverage rates are calculated across 194 countries with available data, and then summed to arrive at the global total.

To calculate coverage for each country, we first divide the population into "children" and "adults" according to a cutoff age determined by the data sources (typically between 15-18). We estimate coverage for children by applying the under-5 birth registration rate—the official indicator for measuring progress toward Sustainable Development Goal (SDG) 16.9—to the population below the cutoff age. To estimate coverage for adults, we select between available metrics that either directly measure or provide a reasonable proxy of the country's foundational ID for adults, which is typically a national ID or similar credential. For 129 countries, we use newly available data from the ID4D-Findex survey, which directly measures adult ID ownership in 2017 and 2021. For the remaining countries, we use a combination of administrative data on registrations collected directly from ID agencies, voter registration rates, and birth registration rates, depending on data availability and country income levels.

In revising the methodology for the 2021 global ID coverage estimates, our primary aim was to integrate new ID4D-Findex survey data and improved administrative data, and to maximize the proportion of the world's population covered in the estimates. We have also adopted more clear and uniform rules for selecting among secondary data sources to provide reasonable global-level estimates while minimizing the need for subjective judgement calls for each country.

The expanded set of metrics and data sources allow for the application of multiple models for estimating coverage to better triangulate the ID coverage gap and account for uncertainty. Although we have identified a primary estimation model—which we believe represents a reasonably conservative estimate of the global ID coverage gap—we capture remaining uncertainty by providing a range of estimates using alternate metrics and data selection rules. We also publish multiple indicators and replication data that may be used to calculate adult and child coverage estimates.

KEY FINDINGS

- **We estimate that just under 850 million people do not have official proof of ID—around 1 in 9 globally.** Over half of those without proof of their identity are children whose births have not been registered. Over 90 percent (some 760 million) live in low-income countries (LICs) and lower-middle-income countries (LMICs), over half (around 470 million) live in Sub-Saharan Africa, and 1 in 4 (over 200 million) live in South Asia. Altogether, around one-third of adults in LICs do not have an ID.

- **A number of countries have made progress in closing gaps in birth registration and identification.** However, the change from the 2018 estimate—just under 1 billion people without ID—represents a mix of improvements in ID coverage (potentially between 100-200 million), methodology changes and the addition of new data sources (notably, the ID4D-Findex survey data).

- **Within countries, the gap in ID ownership primarily affects marginalized and vulnerable groups.** Although some improvements have been made in reducing women's gap in ID ownership, some 35 percent of women living in LICs still do not have an ID, compared with 27 percent of men, a gap of 8 percentage points. Similarly, we see gaps based on age, income, education, employment, and rural versus urban location. For example—in countries with lower levels of ID coverage—adults with only a primary education are about 9 percentage points less likely to own an ID than those with secondary or higher education, controlling for other demographic characteristics.

- **Onerous procedures, inefficiencies, and documentary requirements remain a significant barrier to obtaining an ID for people in many countries.** Nearly 40 percent of adults without an ID globally report that they do not have an ID because they lacked the necessary documents. This number is even higher in LICs, where people are more likely to lack birth certificates and other prior documentation, and millions are at risk of statelessness. Worldwide, applying for an ID remains too expensive for approximately 36 percent of adults without one, either due to direct and/or indirect costs. A large portion of these indirect costs may also be due to long travel times to apply for, obtain, or correct an ID (reported as a barrier by approximately 40 percent of adults without ID), which increase transportation and opportunity costs due to lost work.

- **Not owning an ID prevents hundreds of millions of people from accessing services and fulfilling rights.** Globally, around 1 in 3 adults without an ID reported difficulty using financial services, receiving financial support from the government, or applying for a job. Nearly 40 percent of adults without an ID reported difficulties obtaining a SIM card or mobile phone service, while around 25 percent had problems receiving medical care. Beyond access to basic services and economic opportunities, around a third of adult without an ID reported this as a barrier to being able to participate in elections.

- **Beyond bureaucracy, improvement in service quality and public trust are essential.** In addition to the difficulty of the process itself, we find that just under 1 in 5 adults without an ID (approximately 18 percent) report that they "do not feel comfortable

giving their personal information" as a reason. There may be multiple reasons for this discomfort, including general levels of mistrust in the institutions or systems or concerns about how that data is being collected or used, and/or discomfort with the processes involved in providing their data. However, it highlights the importance of ensuring high service standards and building trust in ID and CR systems.

LIMITATIONS

The 2021 global estimates reflect our best understanding of current global and regional ID coverage gaps, based on the data that is (or was) currently available. However, as with all data analysis they have a number of limitations, including potential errors or biases in the measurement of survey and administrative data, challenges in combining multiple years and sources of data, and in the variable nature of ID ownership across countries and over a person's lifetime. In addition, the change in estimates from 2018 to 2021 should *not* be treated as a time series. While this paper attempts to assess how much ID coverage has improved since the last estimates, the change from 1 billion to 850 million represents a combination of progress on closing the ID coverage gap, changing demographics, and improvements to data and methodology including the incorporation of the ID4D-Findex survey data.

Furthermore, while access to ID is essential, it is also crucial that the systems created to provide identification are trusted, well-governed, and fit for purpose to support development goals and protect people's data and rights.[4] Although we estimate that around 850 million people do not have the basic identity credentials they need, that is not to say that the other 7-plus billion people around the globe have good ID, or that ID practitioners should be motivated by ID and civil registration (CR) system coverage alone. To allow for further exploration of ID system features beyond coverage, forthcoming papers will provide additional analysis along with the publication of a new set of qualitative data.

POLICY RECOMMENDATIONS

Despite notable progress in many countries, ensuring universal access to identification (ID) and civil registration (CR) is an essential right and priority for equitable, sustainable development. This is particularly urgent as lack of ID disproportionately affects people in lower-income countries and the most vulnerable groups in society, and without ID or CR people may not be able participate fully in social, economic, and political life. Key policy recommendations include:

- **Governments and other stakeholders must deliberately work to reduce or eliminate barriers that continue to prevent people from obtaining official or legal**

4 The Principles on Identification for Sustainable Development at http://idprinciples.org, which have been endorsed by over 30 organizations including the World Bank Group, set out essential guidelines and characteristics for ID systems that aim to support the achievement of development outcomes.

proof of their identity. This includes removing inequalities, onerous documentary requirements, and fees for basic documents and services, both by reforming relevant laws and regulations and improving business processes and customer services standards. It requires finding ways to make ID services more convenient and user-friendly, including simplifying procedures and locating service points closer to where people live or work.

- **Proactive, comprehensive engagement and communication with communities, local leaders, and civil society organizations is also essential.** Where ID providers do not have a good understanding of people's needs and the barriers they face in terms of registration, coverage is likely to be low. Robust information and education campaigns, ongoing feedback during implementation, and sensible grievance redress mechanisms are needed to build trust and help people take advantage of the opportunities having official proof of identity can provide. Transparent and frequent involvement with civil society and community-based organizations—particularly those representing the interests of marginalized and vulnerable groups—can help identify and unlock key bottlenecks to boosting accessibility and enhancing coverage.

- **Monitoring and improving access to ID requires better, regular data collection.** This paper highlights how data availability and comparability impede efforts to assess the scale of the global ID coverage challenge, and the same applies within countries. This is particularly the case for understanding ID and civil registration coverage by age, particularly for older children. Countries and development partners must invest in improving data collection on identification systems through multiple channels. Including ID indicators in censuses and other national and subnational survey efforts would help produce improved estimates at the country level about which groups are at the highest risk of exclusion. There is also more work to be done by ID authorities in defining and monitoring key indicators that can allow them to effectively track trends in registration, credential issuance, and system performance with direct relevance to inclusion objectives.

The World Bank's ID4D Initiative is committed to helping implement the above recommendations, both through our direct support for countries implementing or improving ID and civil registration systems, and our global and country-level data and research. This includes continued updates to the Global ID Coverage estimates, which we expect to release every three years to align with Findex data collection. We also welcome new ideas and partnerships for improving data collection and analysis to ensure that countries and the global community have the information they need to build inclusive and trusted ID systems.

GLOBAL ID COVERAGE IN 2021

1

INTRODUCTION

Being able to prove who you are matters for equitable, sustainable development.[5] Yet many people—particularly those living in lower-income economies and who are part of marginalized and vulnerable groups—are unable to obtain official forms of identification (ID) that provide proof of their legal identity.[6] Such IDs are often required for participation in economic, social, and political life and the fulfillment of rights; without them, people may not be able to access social assistance, legal protection, education, or healthcare, open a bank account or obtain a SIM card, secure employment in the formal sector, operate a business, or hold land or other assets in their own name.

To meet this challenge, is it important to assess the number of people globally who do—and do not—have government-recognized proof of identity (henceforth "ID"). However, while under-5 birth registration is the Sustainable Development Goal (SDG) indicator for target 16.9 (legal identity for all)[7] and provides an essential metric for children, measurement of ID coverage for the adult population is complex and has historically lacked standardized indicators and data collection. To help fill this gap, the World Bank's Identification for Development (ID4D) Initiative published the first estimate of global ID coverage in 2016, using under-5 birth registration rates (BRR) for children and voter registration rates (VRR) as a proxy of ID coverage for adults. These figures were updated in 2017 and 2018 to incorporate new sources of data, including administrative data on ID registration and credentials collected by ID4D through country-level surveys.[8] As of 2018, ID4D estimated that just under 1 billion people did not

5 As recognized, inter alia, through Sustainable Development Goal (SDG) Target 16.9: "to provide legal identity for all, including birth registration" by 2030. See also: https://id4d.worldbank.org/guide/good-id-supports-multiple-development-goals.

6 "Official" ID is provided by, on behalf of, or recognized by governments, and can include both "legal" ID (which provides proof of legal identity) and "functional" ID required for specific sector or purpose (e.g., voting, travel, social security, etc.). For more, see the *Principles on identification* (World Bank 2022).

7 Indicator 16.9.1 is the proportion of children under age 5 whose birth is registered with a civil authority.

8 A new set of estimates was initially planned for 2019 but postponed to allow for the inclusion of 2021 Findex survey and a more robust data collection effort to also include qualitative indicators on ID systems globally (forthcoming).

have an ID, representing approximately 13 percent of the world's population (World Bank 2018).

This paper provides new estimates of global ID coverage for 2021 that take advantage of new data sources and a revised methodology. This includes the incorporation of two rounds of survey-based data on ID ownership for adults collected by ID4D as part of the Global Findex survey (Demirgüç-Kunt et al. 2022, Demirgüç-Kunt et al. 2018) and supplemented by new administrative data gathered via direct outreach to ID authorities. As detailed in the sections below and in the appendices, we conduct multiple robustness checks to assess the validity of our analysis and the impact of methodological changes and new data sources. Replication data and code for this paper will be published via ID4D's website (http://id4d.worldbank.org), and readers are encouraged to download and customize these materials for their own use.

As of 2021, we estimate that approximately 850 million people in the world do not have an official ID, and over 90 percent of this total represents people living in lower-middle-income and low-income countries. In addition, around half of this 850 million are children, and half live in Sub-Saharan Africa. In line with World Bank (2018) and Metz and Clark (2019), analysis using the ID4D-Findex survey data also show that the remaining ID coverage gap is largely concentrated among potentially disadvantaged groups, including women, younger people, less-educated people, rural dwellers, and those living in poverty. Although the existing data has limitations, these estimates provide a big-picture assessment of the scale of ID access globally and help focus our efforts on the areas and people with the greatest inequalities.

The survey data also give insights into the reasons why people do not have an ID and the difficulties they face as a result. Among adults living in low-income countries (LICs), the most reported reason for not having an ID are documentary requirements, distance to registration points, and high costs. Such issues are compounded when cumbersome registration procedures require multiple visits by design or due to problems with understaffing or absenteeism, long-wait times, unclear policies or procedures, or technical failures.[9] About 1 in 3 people in LICs report difficulty accessing financial services, receiving financial support from the government, applying for a job, and participating in elections without an ID. As more countries reach near-universal ID coverage, those who remain without access are more likely to be left behind in the absence of proactive inclusion measures.

The 2021 global estimates reflect our best understanding of current global and regional ID coverage gaps, based on the data that is (or was) currently available—*however, they should not be used as a time series.* The change from the 2018 estimates of just under 1 billion to the 2021 estimates of approximately 850 million people without ID represents a combination of progress on closing the ID coverage gap, changing demographics, and improvements to data and methodology including the incorporation of the ID4D-Findex survey data. Still, the data show that coverage gaps in many countries are narrowing over time, and a handful of countries have made large gains in ID ownership and birth registration rates.

However, while access to ID is essential, it is also crucial that the systems created to provide identification are trusted, well-governed, and fit for purpose to support development goals and protect people's data and rights.[10] Although we estimate

9 See, for example, Hanmer et al. 2021.

10 The Principles on Identification for Sustainable Development at http://idprinciples.org, have been endorsed by over 30 organizations, including the World Bank Group. They set out essential guidelines and characteristics for ID systems that aim to support the achievement of development outcomes.

that around 850 million people do not have the basic identity credentials they need, that is not to say that the other 7-plus billion people around the globe have good ID, or that ID practitioners should be motivated by ID and civil registration (CR) system coverage alone. To allow for further exploration of ID system features beyond coverage, forthcoming papers will provide additional analysis along with the publication of a new set of qualitative data.

The remainder of this paper provides a brief background followed by an overview of data and methodology before presenting the global ID coverage estimates. In addition, it includes a more in-depth analysis of the correlates of ID ownership for individuals using the ID4D-Findex survey data. It concludes with a discussion on the interpretation and limitations of the results, as well as core policy implications and directions for future research.

2

BACKGROUND AND APPROACH

Interactions with government and some private sector services often require an "official" or "legal" form of identification (ID) that provides proof of a person's identity as recognized under the law. The objective of this paper is to estimate the number of people who do not have such forms of ID, and as a result are potentially excluded from full participation in economic, political, and social life. These estimates are designed to provide the global community with a reliable indication of the scale of this problem and the people most likely to be affected.

As noted above, measuring ID ownership is not a straightforward task. People may use a variety of documents and credentials to prove who they are for official purposes or when transacting in the private sector, and the precise nature of which ID is required for which purposes can vary across and within countries, by service provider or agency, and importantly, over a person's lifetime. Children are primarily identified through birth registration and birth certificates. Birth registration is well established as essential for child protection, fulfillment of rights, access to education and other services, and the ability to obtain other IDs later in life (UNICEF 2019a). In addition, the proportion of children under age 5 whose birth is registered with a civil authority is the official indicator for SDG Target 16.9.

For adults, the picture is more complex. Many adults—particularly in low- and middle-income countries—never had their births registered and rely instead on other forms of official documentation (Gelb and Diofasi Metz 2018). Even for those whose identity was established and documented at birth, other IDs are frequently needed later in life to interact with government and the formal economy (e.g., a tax identification number for filing taxes, a social security card for collecting benefits, a voter ID for casting ballots, or a passport for traveling). People may have a constellation of IDs that serve one purpose but not another, each with varying degrees of formality and legal recognition (Gelb and Clark 2013).

Given these heterogeneous realities and measurement challenges, there is no single metric that perfectly captures the totality of ID ownership within and across countries. Despite this complexity, however, nearly all countries in the world have one or more "foundational" systems that provide legally recognized identity credentials, such as certificates, ID numbers, and cards.[11] While the name and characteristics of these ID systems varies by country, they are often national ID systems, population registers, civil registration systems, or other similar systems. Enrollment in many of these foundational systems is mandatory, and they typically provide legally recognized credentials that may be accepted and/or required for accessing a broad range of government and private sector services. In addition, they are also often required or helpful to obtain many of the other IDs that people use for specific functions (such as passports, drivers' licenses, or voter IDs).[12]

Our overall approach is therefore to measure coverage of (a) birth registration for children and (b) ownership of the country's foundational ID for adults (e.g., a national ID or similar credential). This follows the approach of previous editions of the ID4D Global Dataset and acknowledges the changing nature of ID across a person's lifetime. Where a direct measure of a country's foundational ID is not available—or in the few countries where one does not exist—we use either voter registration or birth registration as a proxy measure for adult ID ownership, as described in more detail below.

11 All countries in the world have established civil registration systems (UNICEF 2022a, UNSD 2022) and over 80 out of 198 countries included in the forthcoming ID4D Global Dataset have a national ID system, population register, or similar foundational system that provides a legally recognized ID to adults and in some cases also children. The exceptional countries which do not have a national ID system or population register include primarily North American and Commonwealth countries—including Australia, Canada, Ireland, Jamaica, New Zealand, the United Kingdom, and the United States—and some smaller island nations. In most of these countries, other "functional" or sector-specific ID systems have become the de facto identifier or ID credential across purposes (e.g., the social security number in the United States).

12 For a more detailed discussion of various definitions of ID, including official, legal, foundational, and functional, see World Bank (2019 and 2022).

3

METHODOLOGY

This section describes the data sources and methodology used for the global estimates and individual-level analyses of ID ownership. In revising the methodology for the 2021 global ID coverage estimates, our primary aim was to integrate new ID4D-Findex survey data and improved administrative data, and to maximize the inclusion of a majority of the world's population in the estimates. We have also adopted more transparent and uniform rules for selecting among available data sources that provide reasonable global-level estimates while minimizing the need for subjective judgement calls for each country.

In addition, the expanded set of metrics and data sources allow for the application of multiple models for estimating coverage to better triangulate the ID coverage gap and account for uncertainty. Although we have identified a primary estimation model, which we believe represents a reasonable and conservative estimate of the global ID coverage gap, we capture remaining uncertainty by providing a range of estimates using alternate metrics and data selection rules. We also publish multiple indicators and replication data that may be used to calculate adult and child coverage estimates. [13] We hope this will improve the usability of the data by other researchers, while highlighting the fact that no single indicator can paint a complete picture of the gaps in ID coverage in any country or globally.

The availability of different indicators and data sources by country is shown in Appendix 1. Updates to the methodology and the different models employed are further described below and

13 In previous years, ID4D published a single spreadsheet that included results and calculations for all countries, along with additional qualitative data (such as the name of the ID system, level of digitalization, etc.). This year, we have made multiple improvements to increase the usability of data for analysis and improve replicability and ease of interpretation. This includes aggregating an ID series in the World Bank DataBank (available at http://databank.worldbank.org) to consolidate country-level metrics related to ID, including birth registration, birth certification, ID4D-Findex data, and publishing replication code and files for the global estimates analysis, so other researchers can more easily extend this work. Additional qualitative data will be released subsequently as part of a series of papers.

validated through a series of robustness checks detailed in Appendix 3. Unless specifically noted, the methodology described is the same as that used in the previous estimates (World Bank 2018).

DATA

Figure 1 and Table 1 provide an overview of the primary data sources used to estimate global ID coverage and their availability across 198 countries.[14] As in 2018, this includes a mix of survey and administrative data, and we use the term "ID coverage" as a generalization to cover various measurements of individual ID ownership, birth registration and certification, administrative data on ID registration, and voter registration represented by the data. However, with the addition of the ID4D-Findex survey data, the majority is now survey-based and directly measuring people's reported ID ownership or birth registration. While there are limitations with survey data (as discussed below), this represents a leap forward in data availability and a significant improvement over the 2018 edition of the estimates, which used voter registration as a proxy of ID ownership for adults for most countries.

Table 1. Global Data Indicators and Sources for ID Coverage

Metric	Description	Source(s)	Data Years	Countries available[1]
Under-5 birth registration rate ("BRR").	The share of children under 5 whose births have been registered with a civil authority (as reported by their parent or by authorities)	Survey and administrative data compiled by UNICEF (2022a); Multiple Indicator Cluster Surveys (MICS) for Kosovo and Malawi, and NFHS-5 for India. For the few countries where the above is unavailable, we use UNSD (2022) data on "birth registration completeness" as a proxy (see discussion below)	Varies: 2000–2021	195[1]
Birth certificate prevalence rate ("BCR")	The share of children under 5 for whom a birth certificate has been issued.	Survey data compiled by UNICEF (2022a, 2022b); MICS (Kosovo and Malawi) and NFHS-5 (India)	Varies: 2006–2021	144
Adult ID ownership rate ("ID4D-Findex")	The share of adults 15+ who report personally owning the foundational ID (national ID or similar credential).[3]	ID4D-Findex survey, collected in partnership with the Global Findex[2]	2017, 2021	130
ID system registration rate ("Admin")	The share of people registered in the foundational ID system.	ID4D questionnaires completed by relevant authorities based on administrative data.	2019, 2021/2022	79
Voter registration rate ("VRR")	The share of adults above the voting age registered to vote.	IDEA indicator on number of registered voters as reported by administrative sources (IDEA 2022). ACE Electoral Knowledge Network as the source of voting age eligibility data (ACE 2022).	Varies: 2006–2022	187

[1] Out of 198 countries included in the ID4D Global Dataset. See References for full citations and URLs of non-ID4D sources. UNICEF data on BRR are available for 181 countries; however, some are not included in these 198 countries.

[2] For the full Findex survey, see Demirgüç-Kunt et al. (2018, 2022).

[3] The ID ownership question was asked of all respondents ages 15 and older; however, we exclude observations where the respondent had not yet reached the age of eligibility for obtaining the ID. For more details, see Appendix 3.

14 As in previous years, we attempt to include 198 countries in the ID4D Global Dataset, excluding smaller nations and territories for which data are generally unavailable or which lack independent ID systems. In our primary models, four economies are excluded from the calculations due to lack of data. See Appendix 4 on exclusion criteria.

As illustrated in Figure 1, while these data cover the full range of ages, our ability to disaggregate by age is limited (except for birth registration data from UNICEF which is disaggregated for each year 0–4).[15] Furthermore, there is low availability of data measured at ages 5 to 15: this age group includes only ID4D administrative data for those countries that reported disaggregated figures. The indicators and data sources are described in more detail in the following sections, along with strategies for determining the "cutoff age" between children and adults and selecting between multiple secondary metrics when available.

Figure 1. Data Availability and Disaggregation by Age

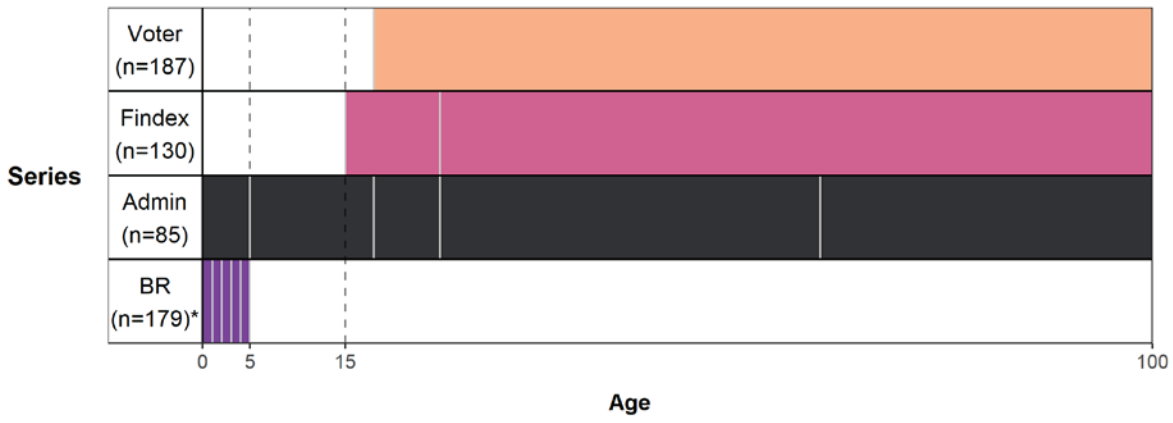


*Figure shows age ranges commonly available for ID coverage metrics across 198 countries included in the ID4D Dataset, including birth registration and certification ('BR') (UNICEF 2022a), ID4D-Findex ('Findex') survey data, ID4D administrative ('Admin') data, and voter registration ('Voter') (IDEA 2022). UNICEF (2022a) covers 182 countries, but three are not in our sample; for 15 countries, we rely on UNSD (2022). Not all 85 countries with administrative data have breakdowns by each age group.

Birth Registration and Certification

To estimate the share of children without proof of identity, we use the official indicator for SDG 16.9 compiled by United Nations Children's Fund (UNICEF) on the "Percentage of children under age 5 whose births are registered (by sex)", also commonly referred to as the "under-5 birth registration rate" and abbreviated as "BRR" throughout this paper (UNICEF 2022a). This includes three types of data: survey data from Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS),[16] administrative data reported in the UNSD Vital Population and Vital Statistics Report or collected from civil registration and vital statistics (CRVS) authorities, and other sources including census and other national surveys.

UNICEF BRR data are available for 181 countries covering 80 percent of the global population and 179 of the countries included in the ID4D Global Dataset.[17] In the case of India, Malawi, and Kosovo, we take estimates directly from recently published surveys that were released after the SDG reporting period

15 Although ID4D-Findex data can be disaggregated by year according to the respondents' age, the sample size is not sufficient to generate reliable estimates for smaller age ranges; for this reason, we disaggregate by only two age categories: 15–24 and 25 plus. Birth certification rates reported directly from the MICS/DHS surveys are also often disaggregated by year.

16 The MICS and DHS surveys measure the percent of children ages 0–59 months whose births were registered with civil authorities at the time of the survey as reported by their mothers or guardians. This differs from data derived from CRVS systems (including UNSD data) that typically report the "proportion of live births that were registered within a year or the legal time frame for registration applicable in the country" (UNICEF 2022a). By capturing registrations that measures provide a more accurate estimate of the percentage of children under five whose births were registered as of the data collection date.

17 Three countries with UNICEF BRR data are not included in the ID4D Global Dataset: Montserrat, Turks and Caicos, and Cook Islands.

was closed and thus did not appear in the UNICEF dataset as of July 2022 (International Institute for Population Sciences and ICF 2021; National Statistics Office 2021; Kosovo Agency of Statistics and UNICEF 2020).[18] For 15 countries not included in the UNICEF data, we use the UNSD measure of birth registration completeness as in previous years of the ID4D Global Dataset (UNSD 2022).[19]

In addition, UNICEF has recently compiled data on birth certification rates for children under the age of 5 for 144 countries (UNICEF 2022a), while additional data is available for Kosovo directly from the MICS. Birth certification rates (BCR) are significantly lower than birth registration rates in many countries, with differences of more than 50 percentage points in the most extreme cases, including in Rwanda, Solomon Islands, and Sierra Leone. In alignment with the official SDG indicator for target 16.9, and to avoid inflating the ID coverage gap, we therefore continue to use the under-5 BRR for our primary estimates. However, we run alternative models using the BCR to measure coverage for children for the countries where this data is available (see Appendix 3). If this metric were used instead of BRR where available, it would increase the ID coverage gap estimate by approximately 150 million vis-à-vis our primary estimation model.

Because there is no globally available data on birth registration coverage for older age groups, we also apply the under-5 BRR to children above age 5 and up to the cutoff age (discussed below), as done in 2018. While this may either over- or under-estimate the number of children without ID, depending on the context, it remains the most viable and consistent option in the absence of other systematic sources of data. See Appendix 3. Alternative Specifications and Robustness Checks for additional discussion and analysis of this approach.

Newly in 2021, our main model also uses BRR to estimate coverage for the adult population for high- and upper-middle-income (HIC and UMIC) countries that lack ID4D-Findex or administrative data, and other countries that lack any other type of data. In most HICs and UMICs, BRR is estimated to be at or close to 100 percent, and so applying this rate to the entire population adds little to the global total. However, it allows us to eliminate the 2018 exclusion criteria that removed HICs and countries with no foundational ID systems from the global ID coverage estimation.[20] As a result, the 2021 estimates include data from countries representing over 99 percent of the global population, compared with around 66 percent in 2018. In the case of LICs and LMICs without ID4D-Findex or administrative data, we continue to use VRR in our primary model, as described below.

ID4D-Findex Survey Data

The World Bank's Global Findex is a nationally representative survey conducted by Gallup, Inc. that measures access to financial services and other core indicators covering 91 percent of the world's population. In 2021, the Findex survey was carried out in 123 countries, with approximately 1,000 respondents in each. Samples are representative of the population over age 15 and designed to generate reliable gender-disaggregated insights (along with other individual age-, income-, and schooling-related analysis) at the country level.[21]

18 Kosovo is not included in the UNICEF dataset and therefore the numbers are taken directly from the most recent MICS report (Kosovo Agency of Statistics & UNICEF 2020). For India, the recently published National Family Health Survey (NFHS-5; 2019-21) reports a BRR rate of 89 percent, while UNICEF (2022a) reports data from the NFHS 2015-16 (80 percent).

19 UNSD (2022) data measure the completeness of birth registration. While related, these represent a slightly different measure than the under-5 birth registration rate. However, following previous editions of the dataset, we use these to be able to include some larger countries (e.g., China, South Korea, Malaysia, Libya, and Kuwait) that do not have UNICEF data and would otherwise be excluded from the estimates. In some cases, UNSD data are presented as a range (e.g., 90-99 percent); in such cases, we use the median of the range (e.g., 94.5 percent). This is a small change from the 2018 methodology, which used the minimum of the range (e.g., 90 percent).

20 See Appendix 5, for a description of the exclusion criteria used in 2018.

21 For more information on the Findex survey and a full discussion of the 2017 and 2021 methodologies, see Demirgüç-Kunt et al. 2017 and 2022.

Through a collaboration between ID4D and Global Findex, the 2017 and 2021 rounds of this survey included multiple questions related to identification that we use for both global coverage estimates and individual analysis on correlates with ID ownership and barriers to access. To measure ID ownership, the survey asked respondents whether they personally owned the country's foundational ID.[22] We have data on this question from 112 countries in 2021, and 98 in 2017, for 130 countries total. For more details on the ID4D-Findex survey data and survey instrument, see Appendix 2 and Appendix 6. For countries where 2021 Findex data was not collected, we use 2017 estimates where available.[23] In addition to the global estimates, we use the 2021 Findex to analyze individual-level trends, as detailed in Section 4 Results and Appendix 8.

On average, we consider the ID4D-Findex survey data to be the most reliable global measure available for adult ID coverage for multiple reasons. First, it closely approximates the concept we are trying to measure: the number of adults with proof of their identity, represented by ownership of the country's de jure or de facto legal ID. Second, as with birth registration rates, survey-based measures are likely to better reflect people's current ID ownership relative to administrative reports, and they overcome some of the data quality issues associated with the latter (noted below). For IDs in particular—when people may have registered but not received an ID, or where IDs are lost or stolen over time—administrative records may frequently be out of date, and surveys may provide a more dynamic measure of actual ownership. At the same time, there are also limitations to this data, including the potential for biased results or not fully representative samples. These limitations are discussed in more detail in Section 5.

Administrative Data

As part of the 2021 ID4D Global Dataset, we fielded a questionnaire to ID agencies[24] in 126 countries to collect and validate information about these systems. As in 2018, this included requests to provide administrative data on (1) the number of people registered in the system by age group and gender, and (2) the number of people who had been issued with the primary credential (e.g., a national ID card). These questionnaires were fielded by the ID4D team and World Bank country offices between August 2021 and May 2022, including a follow-up period to clarify and validate responses.[25] A similar questionnaire was fielded in 2019, although the ID4D Global Dataset was ultimately not published that year to allow for a more comprehensive review and update.[26] For 2021/2022, information on ID system registration was received from 51 countries, and on credential issuance from 43 countries.[27] In 2019 we received data on registrations and credentials from

22 For each country, the survey used the actual term for the foundational ID in the local language; in most cases, this is the "national ID card" or similar. For two countries without a foundational ID, respondents were asked about a functional ID that has become the de facto or primary general-purpose ID (in Canada, this was the social insurance number; in Jamaica, this was the voter ID, which people use predominantly and colloquially refer to as the "national ID"). See Appendix 2 for terms.

23 Due to the COVID crisis, data collection for the 2021 Findex was delayed or transitioned to phone interviews in multiple countries; in a few cases, phone-based data collection was determined to be infeasible or invalid. For this reason, Findex data were not available as of 2022 in a handful of countries. An additional survey round is planned in 2022 for the following countries, with expected release in 2023: Azerbaijan, Botswana, Chad, Comoros, Democratic Republic of Congo, Eswatini, Ethiopia, Gambia, Guatemala, Lesotho, Madagascar, Mauritania, Mexico, Niger, Turkmenistan, and Yemen. When available, data for these countries will be added to the ID4D indicator series in the World Bank's DataBank and available at http://id4d.worldbank.org/global-dataset. However, new data from these countries is not expected to affect the global estimates in a significant way. Using the data we have—including 2017 Findex, voter registration, and birth registration—the total adult ID coverage gaps in these countries are estimated at around 61 million. Even if coverage in these countries changed by 10 percent on average (much greater than the average change we have seen in other countries), this would change the global estimates by only plus or minus 6 million.

24 Authorities responsible for the country's foundational ID system(s).

25 As a result of the data collection schedule and variation in reporting between countries, the administrative data received in these questionnaires represents a range of dates from 2020 (month not specified by respondent) to April 2022.

26 A new set of global estimates were initially planned for 2019, continuing the trend of yearly updates. However, this release was postponed to include the 2021 Findex survey results and complete a more robust data collection effort to enhance qualitative indicators.

27 In total, we received 59 questionnaires in 2021/22 (a relatively high response rate of just under 50 percent), but not all had ID registration or credential numbers.

76 countries in total; together, this is a significant increase in response rate compared to the 2018 survey, when data was only available for 36 countries.

Like the ID4D-Findex survey data, registration totals are directly related to our targeted concept of ID ownership; however, this administrative data also has limitations that make it a less consistent or reliable source than survey data in some cases. While some countries' ID systems can report the number of unique and living people that have registered or currently own an ID based on detailed administrative data, many more are only able to count the cumulative total registrations or credentials issued over time. As confirmed by a number of questionnaire respondents, these total registration figures can often include people who are now deceased or live outside the country, and/or duplicates of the same person. This is often more likely in cases where ID systems do not receive regular updates from CR systems when a person has died.

Furthermore, not everyone who is registered may be in possession of a (valid) physical ID credential. They may no longer have their credential (if it has been lost, stolen, or expired), or they may not have received it yet (there may be a lag between registration and credential issuance). Similarly, administrative data on credentials issued is often not a reliable source on the number of valid credentials associated with a unique person, but instead reflect the totality of credentials issued over a given period, without accounting for lost, stolen, expired, or re-issued IDs. For these reasons, we use the ID4D-Findex survey data as our primary source for adults and use administrative data on total registrations when this is not available.[28]

To calculate an administrative coverage rate, reported registration figures are divided by the total population above the cutoff age in the data year (either 2019, 2020, 2021, or 2022). Administrative coverage rates used as part of primary estimation models are included in Appendix 2; however, they are not directly comparable with the ID4D-Findex rates or across countries. As shown in Appendix 3, these rates are on average higher than ID ownership rates calculated using the ID4D-Findex survey data.

Voter Registration

The original (2016) edition of the ID4D Global Dataset used voter registration rates as the primary indicator for adult ID coverage. We continue to use this measure as a proxy in countries where neither survey nor administrative data is available. It reasonably approximates adult ID ownership in many countries, as voter ID cards sometimes serve as accepted forms of official identification, particularly in countries with low-coverage foundational ID systems. In addition, registering to vote often requires some other form of identification. However, there are important limitations with voter registration rates as a proxy for measuring ID coverage.

As with administrative data, voter registration numbers may also exceed the resident population size in cases where deceased or duplicate voters are not removed or where they include people living abroad. In addition, whether or not a physical voter identity credential is issued—and if so, whether or not it constitutes an officially recognized identity credential—varies by country, as do the requirements for voter registration. In cases where voting in elections is mandatory, people may be registered to vote automatically with little involvement in the process or ID proofing (Rosenberg and Chen 2009;

28 In a departure from 2018, we use only registration totals for estimation rather than a mix of registration or credential numbers depending on the country. While the number of credentials issued would be more comparable to the ID4D-Findex data (asking whether a person owns an ID), in practice we have found that this data has been less consistent over the years, particularly when countries are rolling out new credentials (e.g., an updated smartcard) that have not yet reached high coverage, but the population still owns and uses older forms of the ID. In addition, credentials are frequently re-issued when they are lost and expired, which means that these can exceed the population as with registration numbers that include migrated or deceased persons. We have, therefore, uniformly adopted registration for the 2021 estimate as the more reliable number on average and to improve consistency across countries, and because the 2021 questionnaire did not include disaggregation of credential numbers by gender or age.

Schumacher and Connaughton 2020). Conversely, low voter registration rates often reflect broader realities of the political system or country demographics beyond the issue of identification. For example, in countries with relatively high shares of residents who are ineligible to vote (for example, migrant workers), using voter registration rates as a proxy is likely to lead to an overestimation of the number of people without ID.[29]

To calculate voter registration rates, we obtain the number of registered voters in the most recent parliamentary or presidential election from the International Institute for Democracy and Electoral Assistance (IDEA) database on voter turnout. This is available for 187 countries, with election years spanning 2006 to 2022 (IDEA 2022).[30] To calculate voter registration rates, we divide the number of registered voters by the number of eligible voters in that year using a list of legal voting ages obtained from the ACE Electoral Knowledge Network (ACE 2022). This is an update of the 2018 methodology, which simply subtracted the number of registered voters from the most recent election (e.g., 2016) from the eligible population in the dataset year (2018).[31]

GLOBAL ESTIMATION STRATEGY

The primary goal of this paper is to provide an updated estimate of global ID coverage and gaps at the global level. As in years past, we calculate these estimates by applying the various metrics described above to child and adult populations at the country level and then sum these for world, regional, and income-level totals.[32]

Increases in data availability allow us to take a more nuanced approach for the 2021 estimates than in 2018 or previous years. Rather than providing a single estimate, we run multiple alternative models to better capture and account for measurement uncertainty and diverging metrics. This section describes the data source selection method for our primary global estimates model and alternate models, setting a cutoff age for adult versus child populations, and then calculating aggregate estimates.

Data Selection

Given that the ID4D-Findex survey data provide the most direct measure of adult ID ownership, these data anchor our estimates, supplemented by other data sources when they are unavailable. For countries where multiple metrics of adult ID coverage are available, our primary selection model (1a) chooses metrics in the following order of preference based on availability: (i) ID4D-Findex survey data (also called "Findex" below), (ii) administrative data ("Admin"), (iii-a) voter registration ("VRR") for LICs and LMICs, or (iii-b) birth registration rates (BRR) for UMICs and HICs. If voter registration is not available for a LIC or LMIC, BRR is used instead. For each metric, we use the most recent year of data available.

We believe this model (1a) is the most reliable given the improved accuracy of the survey-based data in directly measuring ID ownership among adults. Furthermore, although the potential errors related to administrative and voter registration data are largely the same—e.g., that records may not be unique or not updated to reflect deceased persons or migration—

29 In the 2018 dataset, voter registration rates were adjusted for Gulf Cooperation Council (GCC) countries to account for the large shares of the population that are comprised of non-national foreign residents who are ineligible to vote, using estimates on "International migrant stock" from UNDESA. In 2021, we no longer make this adjustment due to the use of BRR to estimate adult coverage rates for HICs (including GCC countries) and UMICs for which neither ID4D-Findex survey nor administrative data is available.

30 Somalia is included in the IDEA voter registration database but excluded from our analysis given the extreme age of the data (it's most recent elections are from 1984). Of the 187 economies with election data, all but 8 are from 2017 or later. Of the 16 countries for which we use voter registration rates in our primary estimation model, years range from 2015–2022.

31 Applying a consistent rate based on the year for which data is available is better aligned with the methodology used for other indicators such as birth registration rates and ID4D-Findex survey data. This method avoids overestimating ID coverage in countries where more time has passed since the last election year. See Appendix 4 for a discussion of this change.

32 We provide results by gender only for the countries with ID4D-Findex data, as gender-disaggregated birth registration and ID administration data are only available for some countries and are not available in the IDEA voter registration database.

we select administrative data from ID agencies as a second-choice measure under the assumption that it is a more direct measure of ID ownership in most cases. The correlation between ID4D-Findex rates and administrative coverage rates is also higher than between Findex and voter or birth registration rates.[33]

Whether or not voter registration or birth registration rates are a better proxy in the absence of our first and second-choice data depends, of course, on the country. However, for HIC and UMICs where Findex and administrative data are available, we can see that ID ownership rates tend to be close to universal (greater than 98 percent), and therefore typically closer to their BRR rates (typically 100 percent) than their voter registration rates. This is particularly the case in richer countries where voter registration is not mandatory or automatic (such as in the US) or where there are large shares of the population who may not be eligible to vote (such as in countries with high levels of migrant labor). Conversely for LMICs and particularly LICs, BRR rates are often significantly lower than ID ownership rates, whereas voter registration may offer a more realistic view of those with access to government-recognized ID.

To test these assumptions, we run a series of alternate models for selecting the adult metric, shown in Table 2. In model 1b, only voter registration is used as the third choice for all countries that do not have Findex or administrative data; conversely under model 1c, BRR is used as the third choice for all countries that do not have Findex or administrative data. While our primary model is intended to reduce potential overestimates of the ID coverage gap, these alternate models represent a less conservative approach—and in the case of model 1b, an approach similar to 2018 with the addition of Findex data. In addition, we include two models that select Findex first, and where this is unavailable, then either the metric with the highest value (model 2a) or the lowest value (model 2b). Together, these models help account for uncertainty by providing reasonable lower- and upper-bounds to our primary estimates.

Table 3 summarizes the result of the selection models in terms of the distribution of various data sources used. See also Appendix 2 for the full table of ID ownership rates by country and administrative data used in the primary model.

Cutoff Age and Population

We use age- and sex-disaggregated population estimates from the UN's World Population Prospects

33 For the 35 countries that have birth registration, Findex and administrative data from 2021, and voter registration, the correlation between Findex and administrative data is 0.72, while the correlation between Findex and voter registration rate is 0.49. The correlation between Findex 2021 and BRR is 0.47.

Table 2. Data Selection Models for Global Estimates

Model	Adult Metric Selection Rule	Child Metric
1a. Primary – income-based	Findex > Admin > Voter (if LMICS, LICs) OR BRR (if UMICs, HICs)	BRR
1b. Voter as third choice	Findex > Admin > Voter > BRR	BRR
1c. BRR as third choice	Findex > Admin > BRR > Voter	BRR
2a. Lower bound	Findex > maximum {Admin, Voter, BRR}	BRR
2b. Upper bound	Findex > minimum {Admin, Voter, BRR}	BRR

Note: Findex refers to ID4D-Findex survey data, Admin to administrative rates from ID agencies, VRR to voter registration rates, and BRR to birth registration rates. Selection is based on World Bank country classification, where LIC is low income, LMIC is lower-middle income, UMIC is upper-middle income, and HIC is high income.

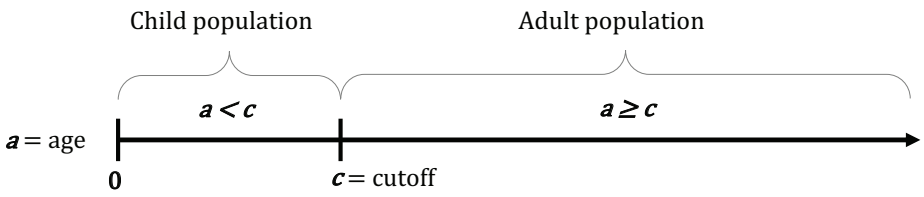
Table 3. Adult Data Sources Based on Model Selection

Model	Number of Countries by Adult Coverage Metric						Total
	Findex 2021*	Findex 2017	Admin 2021	Admin 2019	Voter (most recent)	BRR (most recent)	
1a (primary)	111	18	8	6	16	35	194
1b	111	18	8	6	46	5	194
1c	111	18	8	6	0	51	194
2a	111	18	4	3	22	36	194
2b	111	18	3	1	29	32	194

*2021 ID4D-Findex survey data is available for 112 economies; however, Taiwan, China, is dropped from the estimates due to the lack of birth registration data. See Appendix 4 for more information on exclusion criteria.

(WPP) to apply the various ID metrics to the global population (UNDESA 2022a).[34] Following the 2018 approach, each country's population is divided into two groups using a "cutoff age," with the child population equal to the number of people below the cutoff age, and the adult population equal to the number of people at or above the cutoff age (see Equation 1). Due to data limitations, the cutoff age varies depending on the adult data source and does not always equal the actual age of majority within the country;[35] the terms "child" and "adult" as used in this paper are therefore approximations.

Equation 1. Cutoff Ages



where **cutoff** c varies by economy and is based on the adult metric used, the age when a person is eligible to get the ID (ID_{age}), and the age when a person is eligible to vote ($Voter_{age}$):

$$Findex: \quad c = ID_{age} \text{ or } 15, \text{ whichever is greater}$$

$$Admin: \quad c = ID_{age} \text{ or } 5, \text{ whichever is greater}$$

$$Voter: \quad c = Voter_{age}$$

$$BRR: \quad c = 15$$

For ID4D-Findex survey data, the cutoff is the age at which people are eligible to register for or obtain the ID (henceforth the "ID age"),[36] unless this is less than the minimum age of Findex respondents (15 years old) in which case 15 is used. Where administrative data are used, the cutoff is also set to the ID age, unless this age is less than 5 years old—for example, if people are eligible to register from birth—in which

34 As the latest edition of WPP was released in 2022, figures for 1950–2021 are estimates; for the few cases of administrative and election data where 2022 figures are required to calculate administrative data or voter registration rates, we use the "medium scenario" projections, which are the projections deemed to be most likely by the UN and assume "a decline of fertility for countries where large families are still prevalent, a slight increase of fertility in several countries where women have fewer than two births on average over a lifetime, and continued reductions in mortality at all ages" (UNDESA 2022b, p. 28).

35 Ideally, we would be able to measure the number of people above and below the age of majority in a country and globally (typically 18 years old) that do and do not have ID. However, as noted in Figure 1, there is limited data available for the 5–15 age range and disaggregating by age is not possible with every metric. As with data selection, our goal is to adopt a general rule that is feasible for most countries and produces a reasonable estimate of the scale of ID ownership globally.

36 Data on the ID age come from the 2021 ID4D Global Dataset. Cutoffs by country are listed in Appendix 2.

case it is set to 5.[37] Where voter registration is used, we used the age of eligibility for voting, which is 18 in nearly every country. Finally, for countries where birth registration is used for adults, the cutoff age is set to 15 to match the majority of other countries;[38] effectively, however, this means under-5 BRR is applied to the entire population. Appendix 3. provides additional analyses using alternate cutoff ages.

Calculations

We calculate adult coverage rates for each country i, in data year j using the metrics selected for each country and model, as shown in Equation 2. This requires different approaches depending on the metric, as our main data sources include both survey data (ID4D-Findex) and administrative data (ID and voter registration totals); for birth registration, we used the rates provided by UNICEF or UNSD.

For ID4D-Findex, we calculate country-wide average ID ownership rates in the most recent year (2021 or 2017) using the economy-level survey weights available in the Global Findex Dataset. For ID administrative data, we divide the reported number of people registered by the population above the ID age in the data year (typically the year it was submitted to ID4D, ranging from 2019–2021); for voter registration, we similarly divide the total number of registered voters for the most recent election by the voting age population in that year.[39] Where ID administrative data or the voter registration data show that the number of people registered is larger than the population above the cutoff age, the coverage rate is censored to 100 percent.[40]

Equation 2. Coverage Rates for Each Country by Metric

$$Findex_i = HasID_{ij}$$

where $HasID_{ij}$ is the survey-weighted mean ID ownership in economy i in data year j

$$Admin_i = \frac{RegisteredID_{ij}}{PopID_{ij}}$$

where $RegisteredID_{ij}$ is the number of people registered in the ID system, and $PopID_{ij}$ is the number of people at or above the ID age in economy i in data year j

$$Voter_i = \frac{RegisteredVoters_{ij}}{PopVoters_{ij}}$$

where $RegisteredVoters_{ij}$ is the number of people registered to vote, and $PopVoters_{ij}$ is the number of people at or above the voting age in economy i in data year j

$$BRR_i = BRR_i$$

where BRR_i is the most recent under-5 birth registration rate (for UNICEF) or reported birth registration completeness (if UNSD) statistics in economy i

37 For administrative data in countries where people are eligible to apply for the ID from birth, we set the ID age to 5, applying birth registration rates for the population 0–4, and adult ID rates to the population over 5. This is done in recognition of the fact that birth registration is the primary pathway for children to establish their legal identities and birth certificates are often the required documents for school enrollment (UNICEF 2019a, Blitz et al. 2014). However, it is important to note that in many countries where the ID age is 0, it is because there is a population registration system that combines civil registration (CR) and ID, typically issuing a unique identity from birth. In these cases, the BRR and ID registration rates for the 0–4 population should be identical or very similar. Future work can explore this in more depth using countries where administrative data is available and disaggregated by age.

38 If we set the cutoff age to zero, this would result in the same total number of people without ID, but they would all be classified as "adults," skewing the distribution of those without ID toward adults and away from children.

39 This is a change from the 2018 methodology, where ID registration and voter registration totals were subtracted from the 2018 population to arrive at the number of unregistered people. In this edition, by first converting these totals into rates using the population in the data year, we avoid underestimating coverage in cases where populations have grown significantly since data was collected. However, this also assumes that registration rates have remained constant since the data were collected.

40 ID system records and/or voter registration numbers may exceed the population for multiple reasons, including the existence of deceased people in the registry, duplicate records, large shares of the country's registered population living abroad, and inaccuracies in the underlying population estimates.

Using the appropriate cutoff age (see Equation 1), we then (a) divide the 2021 population of each country *i* and (b) apply the selected metric to the adult population, and the birth-registration rate to the child population for each, as shown in Equation 3. Finally, we (c) sum these totals across countries to arrive at the global totals. If no data is available for a country to estimate either the "child" or "adult" ID coverage rate, the country is excluded from the global coverage estimate calculation (4 out of 198 in total). This is a substantial change from 2018, which applied multiple exclusion criteria based on income and ID coverage rates.[41] In addition to global totals, we also aggregate the estimates at the regional level and based on the World Bank's country income and lending classifications (World Bank 2021).[42]

Equation 3. Calculating Children and Adults without ID

For each economy i, define:

$$PopChild_i = \sum Pop_i, age < c_i$$

$$PopAdult_i = \sum Pop_i, age \geq c_i$$

where Pop_i is the 2021 population, and c is the cutoff for economy i based on the metric selected

Then calculate:

$$NoIDChild_i = (1 - BRR_i) \times PopChild_i$$

where BRR_i is the most recent under-5 birth registration rate (for UNICEF) or reported birth registration completeness (if UNSD)

$$NoIDAdult_i = (1 - Rate_i) \times PopAdult_i$$

where $Rate_i$ is either $Findex_i$, $Admin_i$, $Voter_i$, or BRR_i (see above for definitions)

Finally, sum across countries to arrive at the global totals:

$$\text{Estimated global population without ID} = \sum_{i=1}^{n} (NoIDChild_i + NoIDAdult_i)$$

ID4D-FINDEX ANALYSIS

In addition to the global coverage estimates, we use the 2021 ID4D-Findex survey data to examine the correlates of ID ownership, the barriers people face to obtaining an ID, and the difficulties they face accessing services without one. As noted above, this analysis relies on a series of additional questions in the Findex survey, which are detailed in Appendix 6. This includes:

1. *Whether or not the respondent cited the following as a reason they did not have the ID:*
    - It is too expensive
    - Does not have the necessary documents
    - Has to travel too far to apply
    - Owns another form of identification issued by the government
    - Does not need an ID for any purpose

41 In 2021, Eritrea; the Federated States of Micronesia; and Taiwan, China are dropped due to lack of BRR in either the UNICEF or UNSD datasets. Somalia is dropped due to lack of reliable adult data, and because the BRR is so low that applying it to the entire country's population would inflate estimates of the number of people without ID. In 2018, 47 out of 198 countries were excluded from the estimates based on the following criteria: (a) HICs with BRRs greater than 99 percent; and (b) countries with no foundational ID system and a BRR greater than 95 percent. For more details see Appendix 4.

42 Note, we use the 2021/22 income classifications because they best align with a majority of our data collection. However, there are updated classifications in place beginning 1 July 2022; chances from 2021/22 are summarized here: https://blogs.worldbank.org/opendata/new-world-bank-country-classifications-income-level-2022-2023.

- Does not feel comfortable giving personal information

2. *Whether or not the respondent reported difficulty with the following because they did not have the ID:*
    - Receiving financial support from the government
    - Using financial services
    - Obtaining a SIM card/mobile phone service
    - Participating in elections
    - Applying for a job
    - Receiving medical care
3. *Demographic and socioeconomic characteristics:*
    - Age
    - Marital status
    - Workforce status
    - Education
    - Income
    - Location in urban or rural area

For each question, we subset the sample to include respondents above the ID age and calculate survey-weighted means at the global, and/or regional and income levels, and in some cases also by gender. To examine the relationship between ID ownership and various demographic characteristics we run logit models predicting whether a respondent has an ID based on demographic and socioeconomic characteristics, with country-level fixed effects and design-based standard errors. We limit this analysis only to countries where total ID ownership is below 90 percent to ensure a sufficient sample size of those with and without ID.[43] The full results of these models are included in Appendix 8.

43 Although the Findex survey is representative at the national level and for gender and other demographic groups, the sample size is not large enough to meaningfully examine correlates of not owning an ID or the barriers and difficulties faced by those without ID in countries where only a few respondents report not having an ID. For this reason, analysis of barriers and difficulties without an ID focuses only on countries with lower levels of ID ownership, where the sample of respondents without an ID is sufficient for statistical inference.

4

RESULTS

Using our primary model, we estimate that there are just under 850 million—or 1 in 9—people globally without official proof of their identity. Around half are children, and the vast majority live in the developing world. Analysis using individual-level survey data demonstrates that these 850 million are at a high risk of exclusion from basic services and economic opportunities and are among the most marginalized in their communities. Bridging this ID ownership gap is thus critical for ending extreme poverty, promoting shared prosperity, and realizing the global commitment to "Leave No One Behind."

GLOBAL ID COVERAGE ESTIMATES

Table 4 and Figure 2 show the contribution of different regions and income level categories to the global number of people without ID for the primary estimation model (model 1a, see discussion in Methodology). Overall, we estimate that some 850 million people in the World do not have ID. Over 90 percent (some 760 million) live in lower-middle income and low-income countries. Over half (56 percent or over 470 million) live in Sub-Saharan Africa, while around 1 in 4 (over 200 million) live in South Asia.

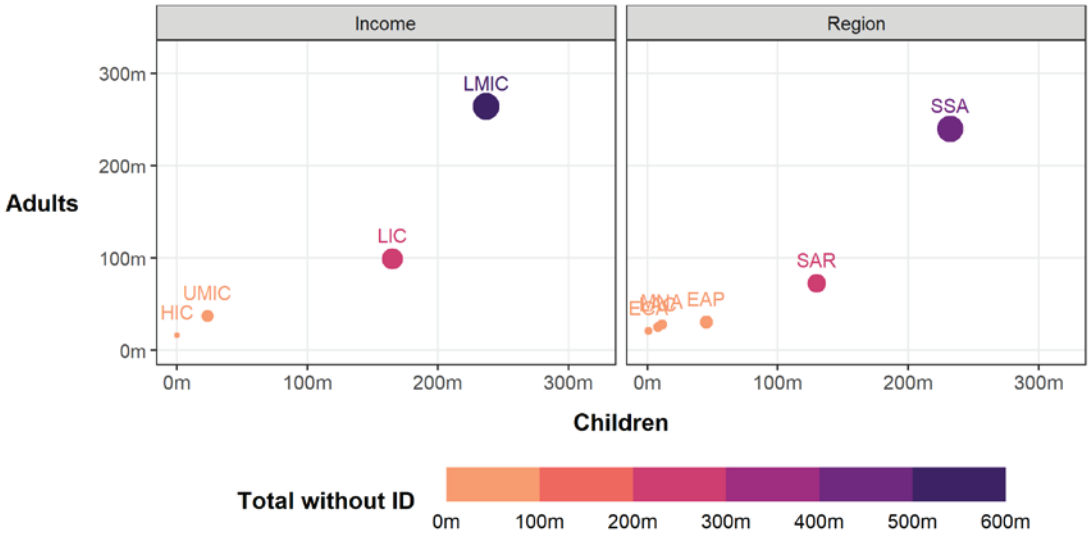
Table 4. 2021 Global ID Coverage Estimates, by Region and Income Group

	N	Estimated People without ID in 2021 (Millions)			Percent of Total
		Children	Adults	Total	
World	**194**	**426**	**417**	**843**	**100%**
Region					
East Asia Pacific (EAP)	31	45.0	30.4	75.4	8.9%
Europe and Central Asia (ECA)	53	0.7	20.6	21.4	2.5%
Latin America and Caribbean (LAC)	33	8.2	24.7	32.9	3.9%
Middle East and North Africa (MNA)	21	10.9	27.9	38.8	4.6%
N. America	2	-	0.7	0.7	0.1%
South Asia (SAR)	8	129.6	72.5	202.1	24.0%
Sub-Saharan Africa (SSA)	46	231.9	240.0	471.9	56.0%
Income*					
High-Income Countries (HICs)	60	0.2	16.2	16.4	1.9%
Low-Income Countries (LICs)	25	164.9	99.1	264.0	31.3%
Lower-Middle Income Countries (LMICs)	54	236.6	264.1	500.7	59.4%
Upper-Middle Income Countries (UMICs)	54	23.2	37.3	60.4	7.2%

* In the 2021 World Bank lending groups, Venezuela does not have a classification and is therefore not included in the income results.

Note: Calculations based on data from the 2021 and 2017 ID4D-Findex survey, administrative data collected by ID4D in 2019-2021, birth registration data (UNICEF 2022b, UNSD 2022), voter registration data (IDEA 2022), and World Population Prospects (UNDESA 2022a). The cutoff between "adults" and "children" varies by country, according to the data source used. Typically, it is 15 or the year of eligibility for obtaining the adult ID, whichever is higher.

Figure 2. Population Without an ID by Age, Income Group, and Region



Graph shows the total estimated number of children and adults without ID, as well as totals, by income and region. Calculations based on data from the 2021 and 2017 ID4D-Findex survey, administrative data collected by ID4D in 2019-2021, birth registration data (UNICEF 2022b, UNSD 2022), voter registration data (IDEA 2022), and World Population Prospects (UNDESA 2022a). The cutoff between 'adults' and 'children' varies by country, according to the data source used. Typically, it is 15 or the year of eligibility for obtaining the adult ID, whichever is higher.

Estimating the Coverage Range

Table 5 gives the results of alternative models for selecting adult data to bound our estimates. Our primary model gives an estimate of just under 850 million people without ID, which is slightly on the conservative side compared to other selection models. At the high end—if we chose the *lowest* of the other available metrics for countries without survey data as in model 2b—the estimate of those without ID would be around 100 million higher, at nearly 950 million. Conversely, if we chose the *highest* of the other available metrics for countries without survey data, as in model 2a, the estimated number of people without ID would be about 50 million lower, just shy of 800 million.

The models that use either voter registration (model 1b) or birth registration (model 1c) for all countries without ID4D-Findex or administrative data, estimate between 30 and 50 million more people without ID than our primary model due to the trends discussed above. As further illustrated in Figure 3, we can see the resulting variation between these models comes from LICs and LMICs (primarily across Sub-Saharan Africa where birth registration rates are lower on average than voter registration rates), and in HICs (where birth registration rates are typically universal but voter registration is lower). We take this as reasonable support for our preferred model, which minimizes the possibility of overestimating the gap in ID coverage by largely accounting for the correlation between coverage metrics and income group.

Table 5. 2021 Global ID Coverage Using Alternate Data Selection Models

	N	Data Selection Model				
		1a (primary)	1b	1c	2a	2b
World	**194**	**843.2**	**893.5**	**875.0**	**790.2**	**947.0**
Region						
East Asia Pacific (EAP)	31	**75.4**	80.6	80.5	75.2	86.1
Europe and Central Asia (ECA)	53	**21.4**	28.2	21.4	21.4	28.2
Latin America and Caribbean (LAC)	33	**32.9**	33.7	32.9	32.9	33.8
Middle East and North Africa (MNA)	21	**38.8**	43.5	38.8	38.3	47.3
N. America	2	**0.7**	33.5	0.7	0.7	33.5
South Asia (SAR)	8	**202.1**	202.1	202.0	202.0	202.2
Sub-Saharan Africa (SSA)	46	**471.9**	471.9	498.7	419.7	515.9
Income*						
High-Income Countries (HICs)	60	**16.4**	63.6	16.4	16.4	66.9
Low-Income Countries (LICs)	25	**264.0**	264.0	291.4	262.8	291.5
Lower-Middle Income Countries (LMICs)	54	**500.7**	500.7	505.1	448.9	522.9
Upper-Middle Income Countries (UMICs)	54	**60.4**	63.5	60.4	60.3	64.0

* In the 2021 World Bank lending groups, Venezuela does not have a classification and is therefore excluded from the income grouping.

For each model, adult *da*ta selected in the following order, based on availability:

1a: ID4D-Findex > ID4D administrative data > voter registration if low- or lower-middle income; birth registration if upper-middle or high-income

1b: ID4D-Findex > ID4D administrative data > voter registration > birth registration

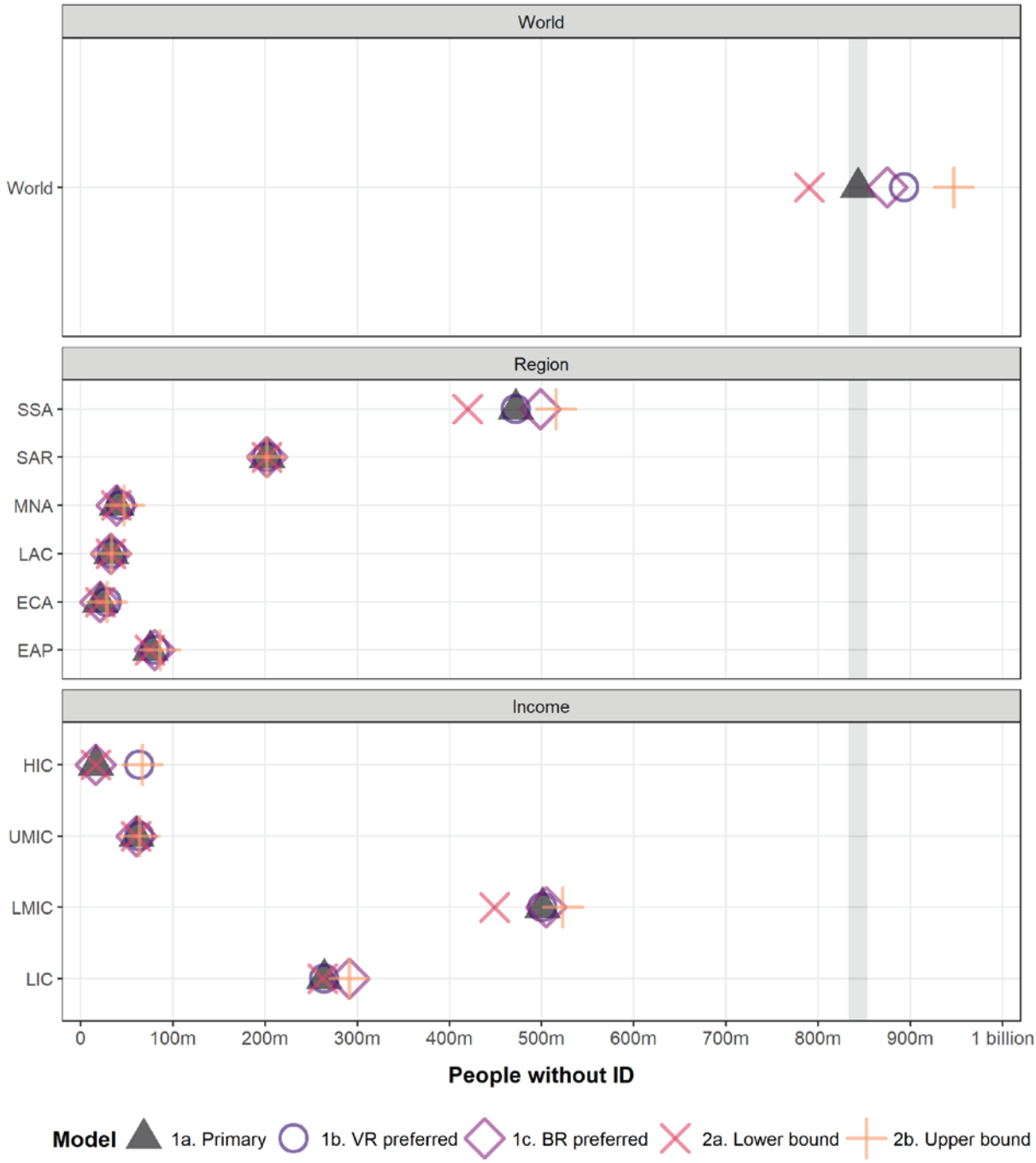
1c: ID4D-Findex > ID4D administrative data > birth registration > voter registration

2a: ID4D-Findex > maximum value of {ID4D Administrative data, voter registration, and birth registration}

2b: ID4D-Findex > minimum value of {ID4D Administrative data, voter registration, and birth registration}"

Sources: 2021 and 2017 ID4D-Findex survey, administrative data collected by ID4D in 2019-2021, birth registration data (UNICEF 2022b, UNSD 2022), voter registration data (IDEA 2022), and World Population Prospects (UNDESA 2022a).

Figure 3. Estimates by Model, Region, and Income Group



Graph shows estimates of the number of people worldwide without an ID, broken down by region, income, and model for selecting the metric used to calculate coverage by adult. Each model selects ID4D-Findex data when available. As a second choice, models 1a, 1b, and 1c select administrative data. If neither is available, the primary model 1a picks voter registration for lower- and lower-middle-income countries (LICs and LMICs) and birth registration for upper-middle- and high-income countries (UMICs and HICs). Conversely, model 1b prefers voter registration regardless of income, while model 1c prefers birth registration regardless of income. Models 2a and 2b select ID4D-Findex data when available, and then select either the maximum or minimum of the remaining metrics, respectively.

There are, of course, other potential models and assumptions, a few of which are further explored in the appendices. For example, adding birth certification rate (BCR) into the selection set would increase the estimates of children and adults without ID by approximately 150 million (see Appendix 3). And while we believe our primary estimates are a reasonable approximation of the scale of the global gap in ID ownership, the appropriateness and accuracy of various metrics to understand coverage *within* each country may require a more tailored approach. We therefore encourage readers to explore the data and replication code available via ID4D's website (http://id4d.worldbank.org/global-dataset).

Examining Changes from 2018 to 2021

As noted above and in more detail in Appendix 5, the change from the estimate of just under 1 billion people without ID in 2018 to 850 million people without ID in 2021 represents a mix of methodological changes, increases in data availability and actual changes in ID coverage. Therefore, it is difficult to identify precisely how much of this change represents improvements in ID coverage—that is to say, the number of people who did not have an ID in 2018 but have one now. However, we can look at countries with multiple measurements of the same indicators over time to provide some indication of how much coverage rates have improved.

Using the counterfactual approach described in Appendix 3, we apply the 2021 methodology to data that was available in 2018--including both the actual data used in the 2018 estimation, as well as the 2017 Findex data—to control for changes in methodology. For the 124 countries where the same metrics are used in both years, we find a decrease in the estimated number of people without an ID of around 157 million. Around 100 million of this representing higher birth registration rates for children, while about 50 million from increased ID coverage rates for adults.

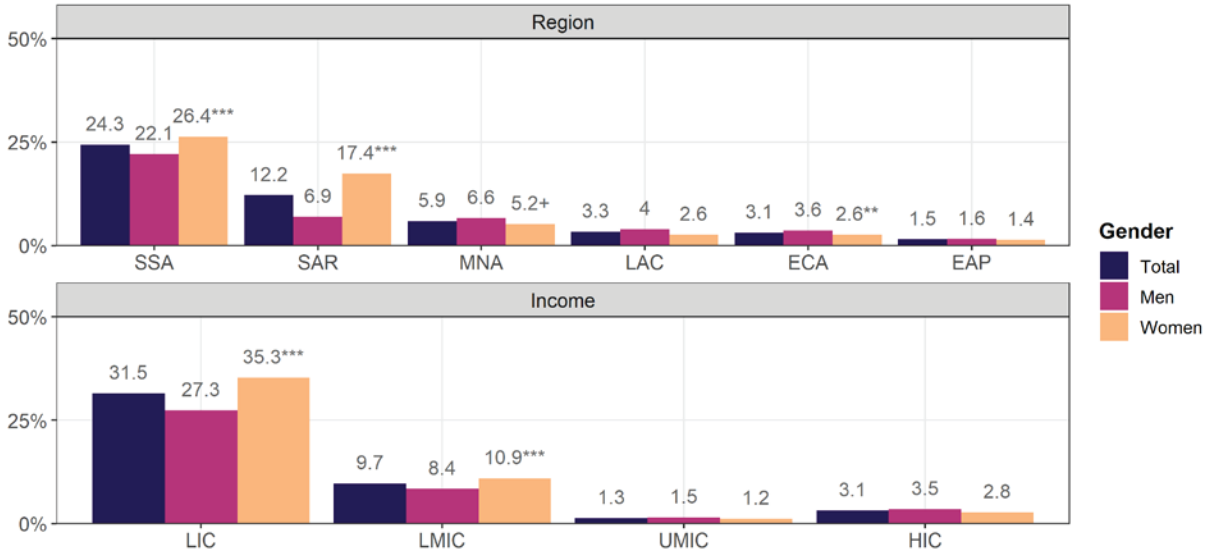
However, most of this 157 million difference is the result of big leaps forward in either ID ownership or birth registration in a handful of larger countries.[44] Of the 124 countries with the same data metric in both years, coverage improved in 73 but decreased in 38. In 13 countries, changes in coverage rates were so small they had no real effect on the estimates of people with or without ID in the country. This analysis does not provide a complete picture of changes in global ID coverage since 2018, given the partial sample of countries that have consistent metrics over time, and the fact that many birth registration and voter registration figures used in 2018 were significantly older (e.g., in the case of birth registration in India). However, it provides an indication that while not every country has made progress, global ID coverage has increased in the last 5 years, likely on the order of 100 to 200 million.

44 For example, India's birth registration increased from 71.9 percent as of the 2013-2014 (the figure used in the 2018 estimates), to 80 percent as of the NFHS 2015-16, and 89 percent as of the NFHS-5; 2019-21. Given lags in measurement such as this, it is difficult to assess the precise changes from 2018-2021. However, we estimate that changes over the past five years are on the order of 100-200 million.

INSIGHTS FROM THE ID4D-FINDEX SURVEY

Using available ID4D-Findex (2021) data, we also explore ID ownership rates for adults across regions and income groups. On average, 31.5 percent—approximately one-third—of adults in LICs do not have an ID, compared with 10.9 percent in LMICs, and 1–3 percent in UMICs and HICs (Figure 4). Around 1 in 4 adults in Sub-Saharan Africa (SSA) does not have an ID; of the 31 countries with an estimated ID coverage of less than 90 percent, 19 are in SSA. We also see persistent gap in ID ownership among women and other groups, which are discussed in more detail below.[45]

Figure 4. Adult ID Ownership Gaps by Region, Income, and Gender (ID4D-Findex 2021)



Graph shows mean percent of people who do not own an ID, calculated with global weights. Includes Sub-Saharan Africa (SSA), South Asia (SAR), Middle East and North Africa (MNA), Latin America and Caribbean (LAC), Eastern and Central Asia (ECA), East Asia and Pacific (EAP) and across lower-income (LIC), lower-middle-income (LMIC), upper-middle-income (UMIC), and high-income (HIC) countries. Stars denote statistically significant ID ownership rates for women vs. men at the 95-percent (*), 99-percent (**), and 99.9-percent (***) confidence levels. Includes respondents ages 15 and over who are also above the eligible age for obtaining the ID; for 2021, SAR does not include India. Source: ID4D-Findex Data (2021).

Correlates of ID Ownership

The 2017 ID4D-Findex data provided strong evidence that unequal access to ID is highly correlated with demographic characteristics including gender, income, education, and geographic location (Metz and Clark 2019). The 2021 round allows us to update this analysis and provide additional insights on barriers and difficulties for those without ID.

45 The set of countries for which Findex data is available has changed between 2017 and 2021. There are 32 countries, mostly HICs, for which data on ID coverage is newly available in 2021. There are 18 countries for which data on ID coverage was available in 2017, but not in 2021, including Azerbaijan, Belarus, Botswana, Chad, Ethiopia, Guatemala, Haiti, India, Lesotho, Madagascar, Mauritania, Mexico, Montenegro, Niger, Rwanda, Trinidad and Tobago, Turkmenistan, and Yemen. For this reason, the regional and income group estimates for 2021 are not directly comparable with 2017.

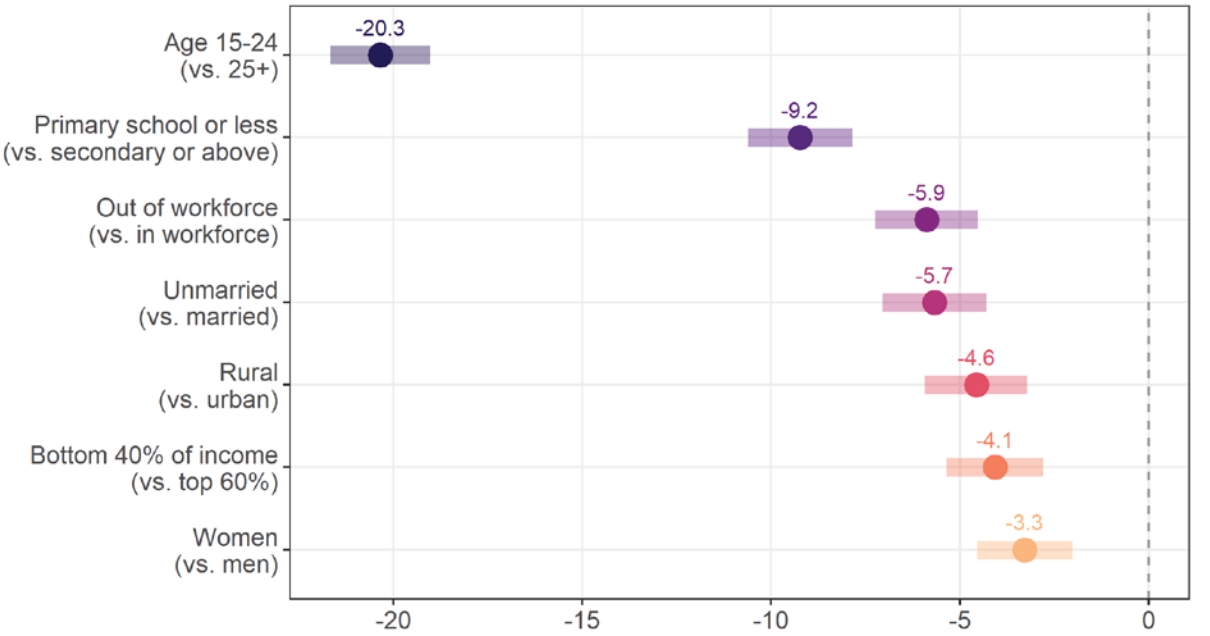
Figure 5. ID Ownership Rates by Economy, Income Level, and Demographic Group

Graph shows average ID ownership by income classification and demographic group. Information on rural versus urban location is only available for the subset of economies where face-to-face data collection was possible in 2021. Includes respondents ages 15+ who are also over the eligible age for obtianing the ID. Income groups are based on the 2021 World Bank classification and include low income (LICs), lower-middle income (LMICs), upper-middle income (UMICs), and high-income countries (HICs). Source: ID4D-Findex data (2021).

In 2021, we again find strong correlations between ID ownership and various demographic factors, primarily concentrated in lower-income countries. Adults in LICs are less likely to have an ID when they are below 25 years old, have only primary schooling or less, are out of the workforce, are female, are in the bottom 40 percent of the income distribution, and live in rural areas (see Figure 5). These same gaps are also statistically significant in LMICs, although except for age, they are much smaller. In higher-coverage UMICs and HICs, gaps in ID ownership by these demographic groups are virtually non-existent.[46]

46 Differences in ID ownership in each of these six demographic categories are statistically significant at the 95 percent level or above in LICs and LMICs. For HICs, the only statistically significant gaps are for age and rural versus urban location; for UMICs, only age is significant.

Figure 6. Individual-level Predictors of ID Ownership in Lower-Coverage Countries



Graph shows marginal effects from a logit model where the dependent variable is whether the person has an ID. Models use survey weights and design-based standard errors, and include country fixed effects. Includes respondents age 15 plus who are also over the age of eligibility for obtaining the ID. Estimates reported with 95% confidence intervals; all are statistically significant at the 95% level or above. Source: ID4D-Findex data (2021).

In countries with ID coverage below 90 percent, each of these demographic factors remains a statistically significant predictor of ID ownership, even after controlling for other variables (see Figure 6).[47] For example, a person under ages 15–24 is around 20 percentage points less likely to have an ID than a person 25 or older, even if they have the same level of education, gender employment status, marital status, income-level, and location. Similarly, all else equal, the average adult in a country with lower levels of ID coverage are about 9 percentage points less likely to own an ID than those with secondary education or higher; between 4–6 percent points less likely to own an ID if they are out of the workforce (versus a person in the workforce), unmarried (compared with a married person), live in rural areas (compared with an urban resident) or belong to the poorest 40 percent of household (compared with adults in the richest 60 percent). In addition, women in such countries are about 3 percentage points less likely to own an ID than men.

Gender Gap in Access to ID

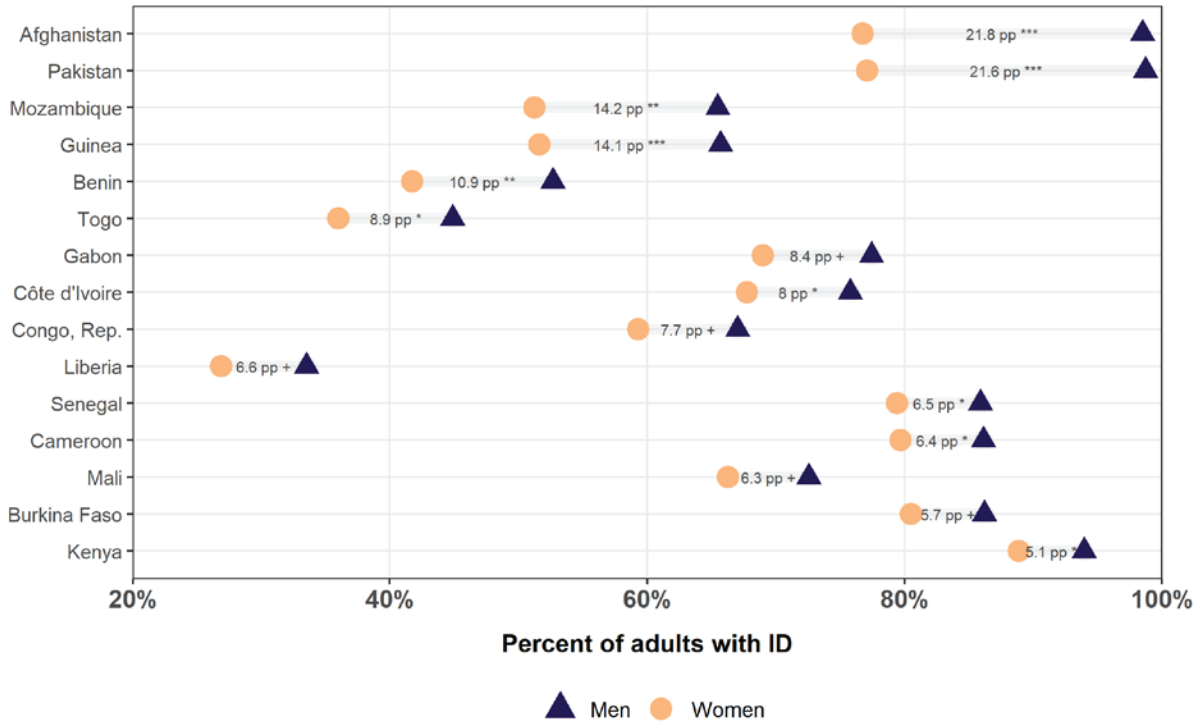
Although gender is not the largest predictor of average ID ownership globally, it continues to be a key factor in access to ID in many lower-income countries.[48] in LICs alone, for example, an estimated 35 percent of women living in LICs do not have an

47 Figure 6 plots the coefficients of logit models that regress ID ownership on various demographic characteristics and include country-level fixed effects and design-based standard errors. For a table of the regression results, see Appendix 8.

48 The broader Global Findex survey uses a binary (male/female) classification for gender. However, based on Lebbos et al. (2021), Totapally et al. (2019), and other research we expect that gender minorities including transgender and non-binary people may also have lower levels of ID coverage in many countries. This may be due to discrimination, persecution, and/or burdensome documentary procedures.

ID in 2021, compared with 27 percent of men, a gap of 8 percentage points statistically significant at the 95 percent confidence level (see Figure 4). Of the 45 LICs and LMICs with data in 2021, 14—or nearly 1 in 3—have gaps for women greater than 5 percentage points and statistically significant at the 90 percent level or above (see Figure 7).

Figure 7. Countries with Largest ID Gaps for Women



Graph includes countries with a gap in ID coverage between men and women greater than 5 percentage points. Includes respondents ages 15+ who are over the eligible age for obtaining the ID. Stars denote statistically significant differences at the 99.9 (***), 99 (**), 95 percent (*), and 90 percent (+) levels. Source: 2021 ID4D-Findex Data.

Despite these persistent issues, many countries have made significant progress in increasing relative ID coverage for women since 2017 (see Figure 8). In others, however, the disparity in ID coverage between men and women has stagnated or slightly worsened between 2017 and 2021. A few of the countries with large gaps in 2017 (including Ethiopia, Niger, and Madagascar) have had delays in 2021 Findex data collection due to COVID-19, and so we are unable to assess progress in this paper.

Figure 8. Changes in the Gender Gap Over Time

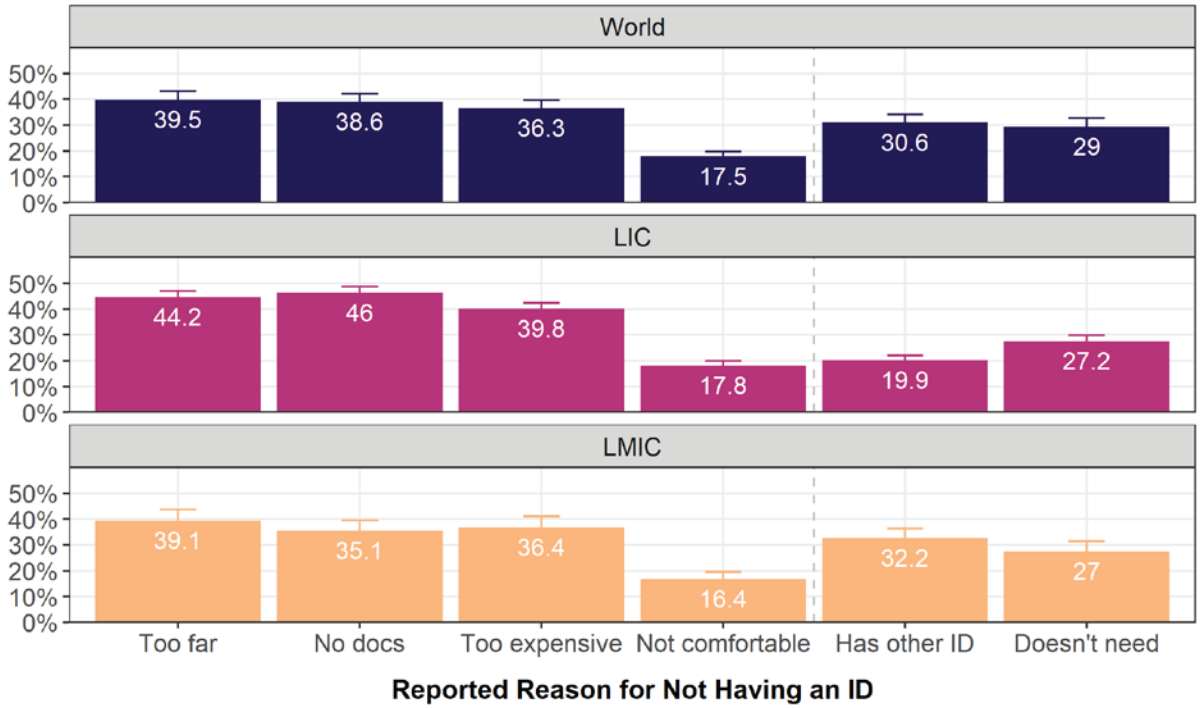
Graph shows size of gap between men and women's ID ownership in countries with a gap greater than 5 percentage points in either 2017 and/or 2021. Stars indicate statistically significant gender gaps at the 99.9 percent (***), 99 percent (**), 95 percent (*), and 90 percent (+) levels. Includes respondents age 15 and older who are also above the eligible age for obtaining the ID. Findex 2021 results are not yet available for Chad, Ethiopia, Madagascar, and Yemen; ID-ownership questions were not collected for Liberia in 2017. Source: ID4D-Findex (2017, 2021).

Barriers to Obtaining an ID

In 2021, we improved the measurement of the Findex question on why people did not have an ID to better capture specific dimensions of the process that make it difficult. As shown in Figure 9, onerous documentary requirements remain a significant barrier to obtaining an ID for people in many countries. Globally, nearly 40 percent of adults without an ID reported that they lacked the necessary documents. In addition, obtaining the ID remains too expensive for approximately 36 percent of adults without one, either due to direct and/or indirect costs. A large portion of these indirect costs may also be due to long travel times to apply for, obtain, or correct an ID (reported as a barrier by approximately 40 percent of adults without ID), which increase transportation and opportunity costs due to lost work.

Many of these barriers are even higher in lower-income countries, with 46 percent—or nearly 1 in 2—of adults in LICs without an ID reporting that they do not have the documents required to apply. Based on previous work, we also know that within countries, these burdens are most likely to fall on disadvantaged women and other commonly marginalized groups, such as persons with disabilities, low-literacy, minority language speakers, and sexual orientation and gender identity (SOGI) minorities (Hanmer et al. 2021, Lebbos et al. 2021, World Bank 2021b, World Bank 2020).

Figure 9. Barriers to ID Ownership: Cumbersome, Bureaucratic Journeys



Graph shows reasons (multiple selection) for not having the country's foundational or primary ID, reported by those without one. Means are globally-weighted and bars show a 95 percent confidence interval. Includes respondents ages 15 and over who are also above the eligible age for obtaining the ID. Source: ID4D-Findex Data (2021).

In addition to the difficulty of the process itself, we also find that adults in many countries report that they "do not feel comfortable giving their personal information" as a reason for not owning an ID (approximately 18 percent). The reasons for this discomfort may be multiple, including concerns about what data is collected and how it be used by ID authorities, and/or discomfort with the processes involved in providing their data, such as poor treatment or harassment by registration officers (Hanmer et al. 2021, Lebbos et al. 2021). This question might also be capturing general levels of mistrust in the institutions or systems. While unpacking this new indicator will require deeper investigation that is context-specific, it highlights the needs for countries to close existing trust and/or knowledge deficits.

Finally, as in 2017, we also see more "demand-side" reasons for not having an ID, including people reporting that they perceive no need for the ID (29 percent of those without ID globally) or that they have another ID (around 30 percent). Both responses are more common among wealthier countries where ID coverage is close to universal, and/or other forms of trusted ID, such as passports, are likely to be more widely held. This data does not fully reveal whether or not these other IDs respondent own are sufficient to access to all the services they likely to need over their lifetime and all the rights to which they are entitled (including proof of legal identity). However, it does provide some indication that many people with "low demand" for the country's main ID also face other difficulties.

For example, although around a third of people gave not needing any identification or having another ID as *one* reason they did not own their country's foundational ID, only 16 percent said that these were the *only* reason(s) they did not own it. As shown in Table 6, respondents who reporting having another ID still mentioned other barriers to obtaining identification at similar rates to the full sample. Users who state they have no need for the ID also report lacking documents, the ID being too expensive, or too far away at relatively high rates. People with self-proclaimed low demand for the ID also appear to be less comfortable registering than the global average, suggesting a potential relationship between low levels of demand and low trust to be explored further in future research.

Difficulties without ID

In 2021, we also included a new series of questions asking people if they had ever faced challenges accessing various services, opportunities, or rights as a result of not having an ID. Average responses to these questions are shown in Figure 10. Globally, around 1 in 3 of those without an ID reported difficulty using financial services, receiving financial support from the government, applying for a job, and/or voting in elections as a result of not having one. Nearly

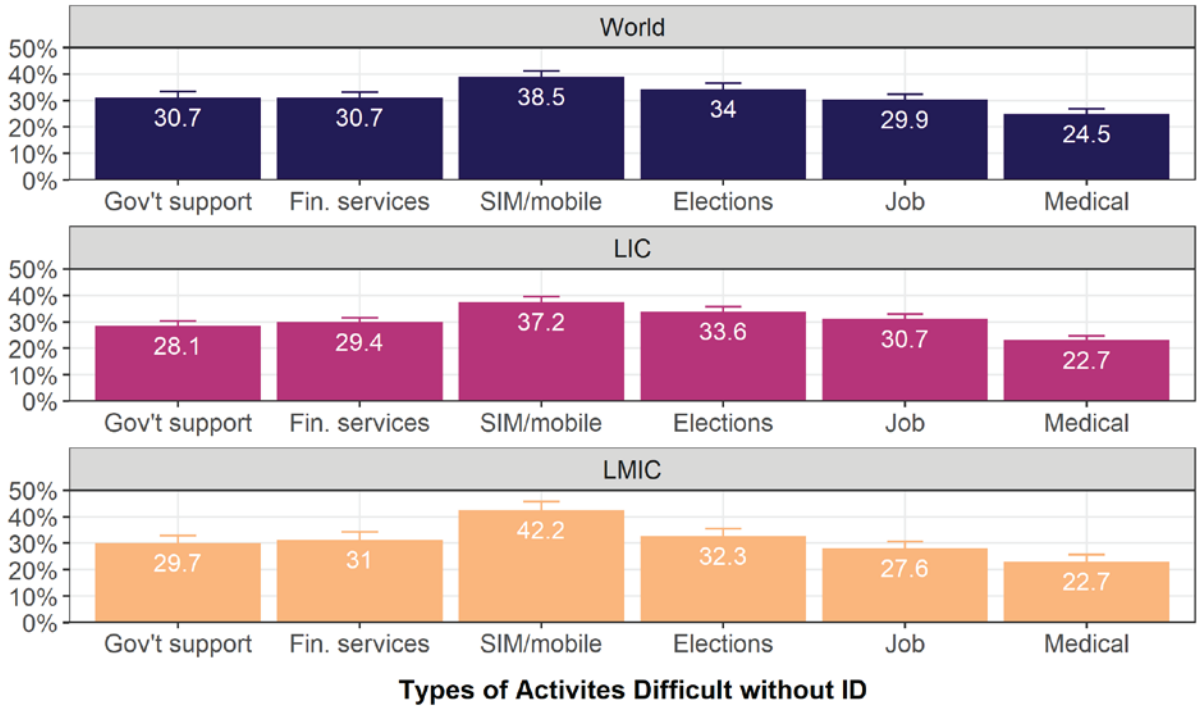
Table 6. Interrelated Barriers for "Low Demand" Users

Other Reported Reasons for Not having the Foundational ID ...	Respondents Who "Have Another ID" (%) n = 1596	Respondents Who "Have No Need" (%) n = 1440	All Respondents without ID (%) n = 9505
No documents	42.4	50.6	38.6
Too expensive	36.2	39.4	36.3
Too far	38.2	47.6	39.5
Not comfortable	22.8	29.5	17.5

Note: Multiple responses possible; means calculated with global weights. Source: ID4D-Findex (2021).

40 percent of those without an ID reported difficulties obtaining a SIM card or mobile phone service, while around 25 percent had problems receiving medical care. Although there are some differences, the relative ranking of difficulties across type of activities is relatively similar for LICs and LMICs. Given the global estimate of 850 million people without ID, this implies that not having an ID has been a constraint on access to services and the fulfillment of rights for hundreds of millions of people.

Figure 10. Impact of Not Having an ID: Difficulty Accessing Services, Rights, and Opportunities



Graph shows difficulties accessing various services, benefits, and rights (multiple selection) as a result of not having the country's foundational or primary ID, reported by those without one. Means are globally-weighted and bars show a 95 percent confidence interval. Includes respondents ages 15 and over who are also above the eligible age for obtaining the ID. Source: ID4D-Findex Data (2021).

The difficulty of accessing financial services without an ID is also reflected in the Global Findex 2021 results. For example, 27 percent of unbanked adulted reported lacking the documentation needed to open an account at a financial institution. Unbanked adults were more likely to cite these barriers in economies such as Colombia (43 percent), Tanzania (50 percent), and Uganda (50 percent). Lack of ID also hampers access to mobile money accounts. Some 30 percent of unbanked adults in Sub-Saharan Africa reported they do not have the documentation needed to open a mobile money account. In Liberia, Mozambique, South Sudan, and Tanzania more than 40 percent of unbanked adults cited lack of documentation as a barrier (Demirgüç-Kunt et al. 2022).

More in-depth data collection and analysis are needed to contextualize these results locally. However, these findings underscore the critical role that access to identification plays in unlocking access to services in both the public and private sectors and enabling people to exercise their rights. It furthermore points to the urgency of closing remaining gaps in access to identification and ensuring that future generations can easily prove who they are from birth.

5

DISCUSSION

Counting the number of people who do not have proof of identity worldwide is a challenging task. Fortunately, the availability and quality of data on ID coverage are steadily improving, even as some areas of uncertainty remain. As of 2021, there are two rounds of ID4D-Findex survey data on ID ownership available from 2017 and 2021, covering the population aged 15+ across 130 countries. In addition, the amount of administrative data on ID coverage collected by ID4D in 2019 and 2021 has more than doubled since 2018. Birth certification rates are also now compiled by UNICEF for nearly three-quarters of the world's countries, providing a more complete picture of children's access to identity documentation.

KEY FINDINGS AND LIMITATIONS

These new data sources and improved methodology have enabled a more precise estimation of global ID coverage gaps for 2021, with less reliance on voter registration as a proxy indicator. While no single indicator provides a perfect measure at all ages, in combination these give a reasonable estimate of the scale of the global identification gap and help focus efforts on the areas with the greatest need. In particular, this paper advances our knowledge on multiple topics:

- **Scale and location of the ID coverage gap.** While there has been some improvement over time, 1 in 9 people globally still lack proof of their identity. Even as the estimates change over time, we see that the problem of access to identification is overwhelmingly concentrated in the developing world, and mostly in lower-income economies in Sub-Saharan Africa and South Asia. At the same time, while most people in higher-income countries have an ID, many millions do not. The 2021 update to the estimates is able to better capture this using data from 194 countries.

- **Who still does not own an ID, and why.** As with most development indicators, there is a strong correlation between vulnerability and marginalization, and the probability of not having an ID. Although some improvements have been made, large gaps in ID ownership still remain with regard to gender, age, income, education, employment, and rural versus urban location. This is the result of multiple, complex barriers, including onerous documentary requirements, the need to travel long distances, and direct and indirect costs. Other barriers—including potentially lack of trust—also reduce demand for and ownership of ID.

- **Impact of not having an ID for individuals.** Not owning an ID compromises hundreds of millions of individuals' rights and access to services. Globally, around 1 in 3 adults without an ID reported difficulty using financial services, receiving financial support from the government, or applying for a job. Nearly 40 percent of adults without an ID reported difficulties obtaining a SIM card or mobile phone service, while around 25 percent had problems receiving medical care. Beyond access to basic services and economic opportunities, around a third of adult without an ID reported this as a barrier to being able to participate in elections.

As noted above, these results are also subject to a few limitations that may lead to over- or underestimation of the global ID gap. These include:

- **Data sources with mixed methodologies and time frames.** The estimates contain a mix of survey data (birth registration rates taken from surveys and Findex) and administrative data (birth registration rates derived from UNSD, ID system data, and voter registration). While this provides the most complete estimate at the global scale, given the lack of uniform data, it means that comparisons between countries with differing data sources are not possible. Similarly, we are *combining different years of data*. While we use the most recent year of available data available, these vary across countries and metrics (e.g., findex data vs. BRR). In addition, while Findex and ID administrative data were collected within the last year, the latest birth registration data in 93 countries is more than 5 years old; of the countries that rely on voter registration as a proxy for adult ID coverage, there are 9 countries where the last election was more than 5 years ago (2016 or before). Coverage estimates for adults and children also often have different source years, with adult coverage estimates typically being more recent (see Appendix 1).

- **Mixed set of indicators.** In addition to combining survey and administrative data, the coverage estimates include indicators measuring both *registration* in a system (i.e., birth registration rates, in ID systems,[49] voter registration rates) as well as ownership of a credential (i.e., Findex ID ownership rates). In cases where obtaining a birth certificate or an ID automatically results from registering in a system, measuring registration alone may be a sufficient indicator of who does (or does not) have proof of their identity. However, this is not always the case, particularly in developing countries (e.g., see Bhatia et al. 2017). To the degree that owning IDs does not flow directly from registration, our estimates—particularly for children—may be *underestimating* the number of people without ID.

49 As part of ID4D's survey of ID agencies, we collect data on the number of people issued credentials. In the 2018 edition of the dataset, whether or not the number of people registered or issued with a credential was used varied by country. For 2021, we have used only registration figures to improve standardization because of larger credential data limitations.

- **Potential measurement errors in ID data.** As discussed in Section 2, there is the potential for measurement error in both administrative and survey-based data and the underlying population estimates from the UN's World Population Prospects (WPP). To the extent that administrative data includes deceased or non-resident populations or duplicate entries, it may be *underestimating the number of people without ID.* Survey data can also have inaccuracies, including social desirability bias[50] or lack of knowledge[51] (UNICEF 2013; Reed et al. 2021) that could result in inaccurate estimates of coverage. To the degree that surveys are biased or unable to reach the poorest or most marginalized groups (due to remoteness, residing in a conflict-affected area, respondents being unwilling to talk to people not from within the community)—i.e., those who are least likely to have ID—they may also contribute to *underestimating the ID* coverage gap. In countries where phone ownership is heavily correlated with having an ID (e.g., due to SIM registration requirements), phone surveys may be systematically over-estimating ID ownership. The opposite could be true if surveys had a harder time reaching people who are the *most likely* to have ID, such as face-to-face surveys where wealthy people living in gated community (although this source of bias may be less likely).

- **Population data.** Finally, there are potential inaccuracies in the underlying population data, particularly in cases where it might rely heavily on modeling assumptions. Furthermore, because WPP data (UNDESA 2022a) is based on the *de facto* population and often makes adjustments to under-counting in censuses, it can often mean higher population numbers than those in official statistics. For this reason, our estimates of voter registration and administrative registration rates may be *lower* than those calculated by ID agencies themselves. numbers than based on country analyses.

In addition to the above challenges, this paper also highlights persistent weaknesses in measuring access to ID globally:

- **Birth registration and ID ownership for older children.** Although it is not yet available for every country, the ID4D-Findex data represents a significant advancement in measuring and comparing ID ownership for those 15 years and older. However, we still lack robust, standardized data on BRR for children ages 5-14 for many countries. This is particularly important for those countries where birth registration remains low, and rates in ownership may vary significantly by age.

- **ID ownership for non-nationals.** States have an obligation to provide legal identification to all people who reside on their territory, and to register the births of all children.[52] In practice, however, some countries allow all residents—including non-nationals—to register in the foundational ID system (e.g., a national ID), while others maintain separate systems to provide documentation for non-nationals. ID ownership data from the latter are not captured here.

50 For example, respondents may report that they have registered a child's birth or own an ID themselves—even if this is not the case—to conform with real or perceived expectations.

51 For example, research by Reed et al. (2021) (needs reference) in Tanzania found that of 2,500 women surveyed following childbirth at a major hospital in the capital, nearly half incorrectly believed that the birth notification form was the birth certificate.

52 See, inter alia, the 1951 Convention on the Status of Refugees, Article 27; the 1954 Convention on the Status of Stateless Persons, Article 27; and the Convention on the Rights of the Child (CRC) Article 7.

Furthermore, residents excluded from a country's main ID system may have other official IDs, such as passports or national IDs issued by their country of origin, residence permits, or other IDs issued by the host country. In some cases, these IDs may enable them to access basic services or rights; in other cases, they may not be widely accepted IDs, and non-nationals may struggle to participate in the country or obtain legal protections. These issues are most often faced by forced or irregular migrants, including those displaced during conflict (Manby 2016). Given the complexity of these issues, a combination of these factors may result in an over- or underestimation of the country-level coverage gap depending on the specific individual or country-level factors. For example, if individuals have IDs from their country of origin and their host countries, they could be counted in our data twice if administrative data from the country of origin include people who have migrated. More systematic data is needed both on non-national ID policies and on coverage numbers for people with various legal statuses within a country.

- **Impact of COVID-19 on services and data collection.** We have seen the pandemic impact ID and CR services in multiple ways and potentially opposing directions depending on the country or locality. Since early 2020, restrictions on travel and movement, office closures, long lines and backlogs, and safety concerns have often delayed or prevented people from registering births and obtaining identity credentials. At the same time, government response to COVID—including emergency assistance—has often involved registration in benefits systems that have linked to, facilitated, or motivated people to obtain new identity documents, potentially driving up coverage in other cases (World Bank 2022b). Unfortunately, the pandemic has also had a major impact on implementation of routine and ad-hoc surveys and censes, which have created difficulties in accurately measuring these potential shocks and lasting influence. More work is needed to better understand the impact of this crisis on individual's access to ID and the operation of ID and CR systems, and to help build more resilient systems in the future.

POLICY RECOMMENDATIONS

Although data indicates that ID coverage gaps in some countries are narrowing both among children and adults over time, more must be done. Closing the remaining gaps requires sustained commitment from policymakers and the global community. This is particularly urgent as lack of ID disproportionately affects people in lower-income countries and the most vulnerable groups in society, and without ID people may not be able to participate fully in social, economic, and political life.

In addition, in countries that have recently concluded large-scale registration efforts, such as, it will be important to ensure continuous access to civil registration and identification for children and adults, so that ID coverage gaps do not begin to grow over time. Additional efforts may also be needed to address dips in civil registration and identification due to COVID-related office closures and mobility restrictions—whose impact may not be fully reflected in the currently available data—so that temporary disruptions do not turn into permanent coverage and accessibility gaps. Key recommendations for stakeholders include:

> **Governments and other stakeholders must deliberately work to reduce or eliminate barriers that continue to prevent people—particularly those living in LICs and groups such as women, children and young adults, low-income individuals, and those living in rural areas—from obtaining official or legal proof of their identity.** This includes removing inequalities, onerous documentary requirements, and fees for basic documents

and services, by reforming relevant laws and regulations and improving business processes and customer service standards. It requires finding ways to make ID services more convenient and user-friendly, including simplifying procedures and locating service points closer to where people live or work. Analysis of the ID4D-Findex survey data shows that these specific barriers are actively preventing people from obtaining an ID; identifying and targeting them should therefore be a priority. In addition, integrating, linking, or co-locating ID and civil registration (CR) services can help streamline processes for individuals and ensure access to identity throughout a person's lifetime.

Proactive, comprehensive engagement and communication with communities, local leaders, and civil society organizations is also essential. Where ID providers do not have a good understanding of people's needs and the barriers they face regarding registration, coverage is likely to be low. Robust information and education campaigns, ongoing feedback during implementation, and sensible grievance redress mechanisms are needed to build trust and help people take advantage of the opportunities that having official proof of identity can provide. Transparent and frequent involvement with civil society and community-based organizations—particularly those representing the interests of marginalized and vulnerable groups—can help identify and unlock key bottlenecks to boosting accessibility and enhancing coverage. Given that significant shares of the global ID4D-Findex respondents who do not have ID gave 'I don't need it' and/or 'I'm not comfortable giving my personal information' as reasons why, the potential benefits of improved engagement and communication for overall ID coverage are significant.

Monitoring and improving access to ID requires better, regular data collection. This paper highlights how data availability and comparability impede efforts to assess the scale of the global ID coverage challenge, and the same applies within countries. This is particularly the case for understanding ID and civil registration coverage by age, particularly for older children. Countries and development partners must invest in improving data collection on identification systems through multiple channels. Including ID indicators in censuses and other national and subnational survey efforts would help produce improved estimates at the country level for groups at the highest risk of exclusion. There is also more work to be done by ID authorities in defining and monitoring key indicators that can allow them to effectively track trends in registration, credential issuance, as well as system performance with direct relevance to inclusion objectives. Such measures must be able to be disaggregated by gender and, where possible, other demographics to ensure equal access and performance across potentially vulnerable and marginalized groups.

ID4D and the World Bank also are committed to supporting these aims and helping implement the above recommendations through our direct support for countries implementing or improving ID and civil registration systems, and our global and country-level data and research. This includes continued updates to the Global ID Coverage estimates, which we expect to release every three years aligned with Findex data collection. We also welcome new ideas and partnerships for improving data collection and analysis to ensure that countries and the global community have the information they need to build inclusive and trusted ID systems.

This paper is the first in a series drawing on new data collected for the 2021 ID4D Global Dataset. Ensuring universal access to civil registration and

identification is a core step toward unlocking the potential of good identification to benefit people, public administration, service delivery, and economic transformation. However, other aspects, such as ease of use, safeguarding people's privacy and data, achieving operational and financial sustainability are also critical aspects of ID system success. Therefore, while the volume and quality of data about civil registration and ID systems and related research are steadily growing, more detailed quantitative and qualitative work is needed on the qualities and characteristics of other aspects of these systems. To that end, the ID4D Global dataset also includes a rich set of indicators on key features of ID systems across the world. Future papers and data releases will explore these results in depth.

REFERENCES

AbouZahr, C., de Savigny, D., Mikkelsen, L., Setel, P. W., Lozano, R., Nichols, E., Notzon, F. and Lopez, A. D. 2015. Civil registration and vital statistics: progress in the data revolution for counting and accountability. *Lancet* (London, England), 386(10001), 1373–1385. https://doi.org/10.1016/S0140-6736(15)60173-8.

ACE. 2022. Voter Registration: What is the legal voting age in the national elections? ACE Electoral Knowledge Network. https://aceproject.org/epic-en/CDTable?view=country&question=VR001 (accessed 15 April 2022).

Bhatia, A., Ferreira, L. Z., Barros, A., & Victora, C. G. 2017. Who and where are the uncounted children? Inequalities in birth certificate coverage among children under five years in 94 countries using nationally representative household surveys. *International Journal for Equity in Health*, 16(1), 148. https://doi.org/10.1186/s12939-017-0635-6.

Blitz, B., Apland, K., Lagaay, M., Yarrow, E., Lakshman, R. & Hamilton, C. 2014. Birth Registration and Children's Rights: A Complex Story. Plan International: Surrey, UK. https://www.planinternational.be/sites/default/files/2017-09/birth_registration_and_childrens_rights_full_report_1.pdf (accessed 12 December 2022).

Bradley, P. M. 2017. "The Invisibles: The cruel Catch-22 of being poor with no ID." *The Washington Post.* https://www.washingtonpost.com/lifestyle/magazine/what-happens-to-people-who-cant-prove-who-they-are/2017/06/14/fc0aaca2-4215-11e7-adba-394ee67a7582_story.html (accessed 9 May 2022).

Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution. Washington, DC: World Bank.

Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, and Saniya Ansar. 2022. Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19. Washington, DC: World Bank. doi:10.1596/978-1-4648-1897-4.

Gelb, A. and Clark, J. 2013. Identification for Development: The Biometrics Revolution. *CGD Working Paper.* Center for Global Development: Washington, DC.

Gelb, A. and Diofasi Metz, A. 2018. *Identification Revolution: Can Digital ID Be Harnessed for Development?.* Center for Global Development: Washington, DC.

Hanmer, L. C., Esquivel-Korsiak, V., and Rohini P. 2021. Understanding the Gender Gap in ID : Key Research Findings and Policy Lessons from Nigeria - Evidence Note. Washington, D.C. World Bank Group. http://documents.worldbank.org/curated/en/632411615961644201/Understanding-the-Gender-Gap-in-ID-Key-Research-Findings-and-Policy-Lessons-from-Nigeria-Evidence-Note

IDEA. 2022. The Number of Registered Voters, Voter Turnout Database. https://www.idea.int/data-tools/question-view/439 (accessed 15 April 2022).

International Institute for Population Sciences (IIPS) and ICF. 2021. National Family Health Survey (NFHS-5), 2019-21: India. Mumbai: IIPS. https://dhsprogram.com/pubs/pdf/FR375/FR375.pdf.

Kosovo Agency of Statistics. 2012. "Population by sex, size-class of locality and age 2011." https://askdata.rks-gov.net/pxweb/en/ASKdata/ (accessed 15 April 2022).

Kosovo Agency of Statistics and UNICEF. 2020. 2019–2020 Kosovo Multiple Indicator Cluster Survey and 2019–2020 Roma, Ashkali and Egyptian Communities Multiple Indicator Cluster Survey, Survey Findings Report. Prishtina, Kosovo: Kosovo Agency of Statistics and UNICEF. https://www.unicef.org/kosovoprogramme/media/1871/file/Kosovo%20MICS%202020.pdf (accessed 31 March 2022).

Lebbos, T. J., Esquivel-Korsiak, V. Clark, J. 2021. ID Systems and SOGI Inclusive Design, Washington, DC: World Bank. https://documents1.worldbank.org/curated/en/803981634587620467/pdf/ID-Systems-and-SOGI-Inclusive-Design.pdf.

Manby, B. 2016. *Identification in the Context of Forced Displacement.* Washington, D.C.: World Bank Group. https://documents1.worldbank.org/curated/en/375811469772770030/pdf/Identification-in-the-Context-of-Forced-Displacement-Identification-for-Development-ID4D.pdf

Metz, A. and Clark, J. 2019. *Global ID Coverage, Barriers, and Use by the Numbers: An In-Depth Look at the 2017 ID4D-Findex Survey.* Identification for Development Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/727021583506631652/Global-ID-Coverage-Barriers-and-Use-by-the-Numbers-An-In-Depth-Look-at-the-2017-ID4D-Findex-Survey.

National Statistical Office. 2021. Malawi Multiple Indicator Cluster Survey 2019–20, Survey Findings Report. Zomba, Malawi: National Statistical Office. https://mics-surveys-prod.s3.amazonaws.com/MICS6/Eastern%20and%20Southern%20Africa/Malawi/2019-2020/Survey%20findings/Malawi%202019-20%20MICS%20Survey%20Findings%20Report_English.pdf (accessed 31 March 2022).

Pelowski, M., Wamai, R. G., Wangombe, J., Nyakundi, H., Oduwo, G. O., Ngugi, B. K., and Ogembo, J. G. 2015. Why Don't You Register Your Child? A Study of Attitudes and Factors Affecting Birth Registration in Kenya, and Policy Suggestions. The Journal of Development Studies, 51:7, 881–904, https://doi.org/10.1080/00220388.2015.1010156

Reed, S., Shabani, J., Boggs, D. et al. 2021. Counting on birth registration: mixed-methods research in two EN-BIRTH study hospitals in Tanzania. *BMC Pregnancy Childbirth* 21 (Suppl 1), 236. https://doi.org/10.1186/s12884-020-03357-1.

Rosenberg, J. S. and Chen, M. 2009. Expanding Democracy: Voter Registration Around the World. Brennan Center for Justice: New York, NY. https://www.brennancenter.org/sites/default/files/legacy/publications/Expanding.Democracy.pdf (accessed 9 May 2022).

Schumacher, S., and Connaughton, A., 2020. "From voter registration to mail-in ballots, how do countries around the world run their elections?". Pew Research Center website, 30 October 2020. https://www.pewresearch.org/fact-tank/2020/10/30/from-voter-registration-to-mail-in-ballots-how-do-countries-around-the-world-run-their-elections/ (accessed 9 May 2022).

Totapally, S., Sonderegger, P., Rao, P., Gosselt, J., and Gupta, G. 2019. State of Aadhaar Report 2019. Dalberg, 2019. https://stateofaadhaar.in/download-reports.php

UNDESA. 2022a. World Population Prospects 2022, Online Edition. United Nations, Department of Economic and Social Affairs, Population Division. https://population.un.org/wpp/Download/Standard/Population/ (accessed 23 August 2022).

UNDESA. 2022b. World Population Prospects 2022: Summary of Results. United Nations, Department of Economic and Social Affairs, Population Division. https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022_summary_of_results.pdf (accessed 25 August 2022).

UNICEF. 2013. Every Child's Birth Right: Inequities and trends in birth registration. UNICEF: New York. https://data.unicef.org/resources/every-childs-birth-right-inequities-and-trends-in-birth-registration/ (accessed 7 September 2022).

UNICEF. 2015. Unequal at Birth: Disparities in Birth Registration in East Asia and the Pacific. UNICEF EAPRO: Bangkok. https://www.unicef.org/eap/reports/unequal-birth#:~:text=Highlights,education%2C%20social%20services%20and%20protection (accessed 9 May 2022).

UNICEF. 2019a. Birth Registration for Every Child by 2030: Are we on track?, UNICEF, New York. https://www.unicef.org/media/62981/file/Birth-registration-for-every-child-by-2030.pdf (accessed 9 May 2022).

UNICEF. 2019b. "Despite significant increase in birth registration, a quarter of the world's children remain 'invisible'". UNICEF Australia press release, 11 December 2019. https://www.unicef.org.au/about-us/media/december-2019/despite-significant-increase-in-birth-registration (accessed 9 May 2022).

UNICEF. 2022a. UNICEF Global Databases. Received from UNICEF by email correspondence on June 9, 2022.

UNICEF. 2022b. "Indicator 16.9.1: Proportion of children under 5 years of age whose births have been registered with a civil authority." SDG Indicators Database. United Nations Department of Economic and Social Affairs. https://unstats.un.org/sdgs/dataportal/database (accessed 31 March 2022).

United Nations. 1989. *Convention on the Rights of the Child.* U.N. General Assembly Resolution 44/25. https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child

UNSD. 2022. Population and Vital Statistics Report: Vol. LXXIII (January 2022). United Nations Statistics Division. https://unstats.un.org/unsd/demographic-social/products/vitstats/ (accessed 31 March 2022).

University of Sydney. 2015. "No identity: One in five Aboriginal births unregistered in western Australia." ScienceDaily, 3 July 2016. www.sciencedaily.com/releases/2016/07/160703115732.htm (accessed 9 May 2022).

World Bank. 2018. ID4D Global Dataset. Available at: https://datacatalog.worldbank.org/int/search/dataset/0040787,

World Bank. 2019. ID4D Practitioner's Guide. Identification for Development. Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/248371559325561562/ID4D-Practitioner-s-Guide.

World Bank. 2020. Creating Disability Inclusive ID Systems (English). Identification for Development Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/967741605683569399/Creating-Disability-Inclusive-ID-Systems

World Bank. 2021a. "World Bank Country and Lending Groups." https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups.

World Bank. 2021b. People's Perspectives on ID and Civil Registration in Rwanda: Research Report. Identification for Development Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/279741611941779893/People-s-Perspectives-on-ID-and-Civil-Registration-in-Rwanda-Research-Report

World Bank. 2022a. *Principles on Identification for Sustainable Development*. http://idprinciples.org.

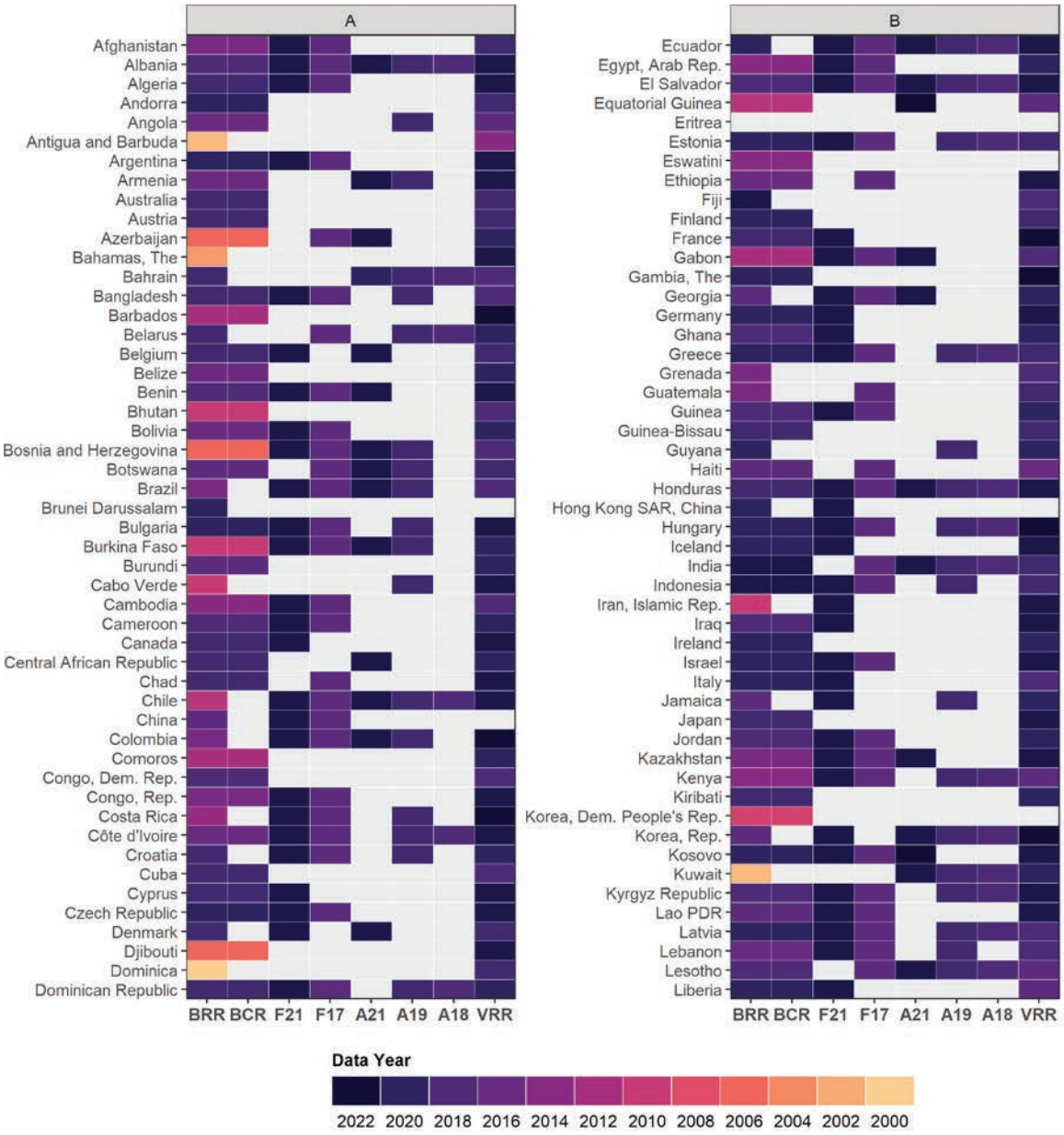
World Bank. 2022b. The Role of Digital in the COVID-19 Social Assistance Response. Washington, D.C.: World Bank Group. http://documents.worldbank.org/curated/en/099830009302217091/P1731660f8c52f062092ac00d53c648bac7

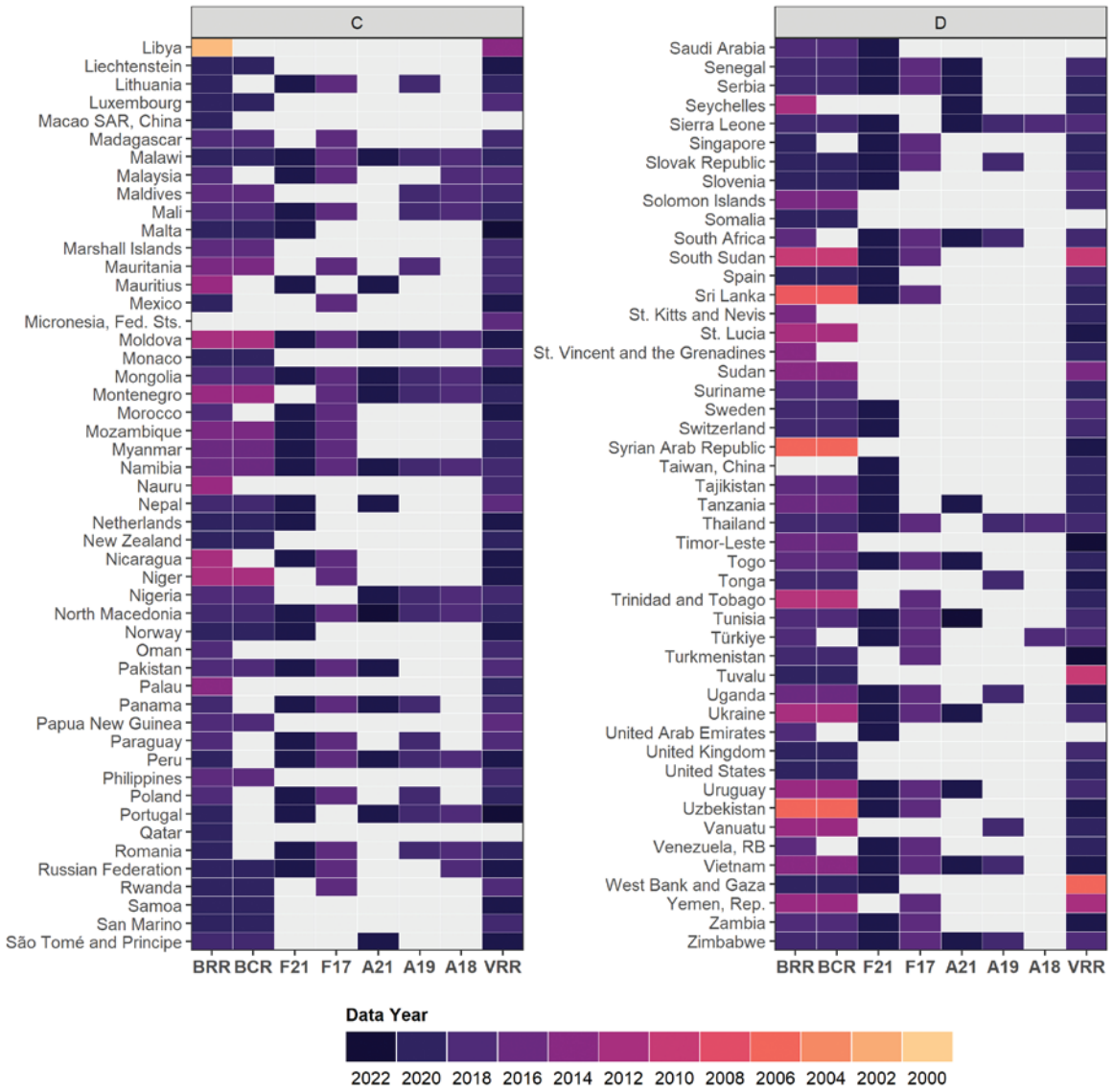
APPENDICES

APPENDIX 1.
DATA AVAILABILITY

Figure 11 shows the availability of ID coverage metrics by source and data year, organized by region. Metrics include birth registration rate (BRR), birth certification rate (BCR), ID4D-Findex ID data from 2021 and 2017 (F21 and F17, respectively), ID4D administrative data from 2018–2021 (A21, A19, A18, respectively), and voter registration rates (VRR).

Figure 11. Data Availability by Country, Metric, and Year





Graph shows availability of ID coverage metrics by data year, including BRR (birth registration rate, from UNICEF with UNSD as a secondary source), BCR (birth certification rate, from UNICEF); F21 and F17 (ID4D-Findex data from 2021 and 2017, respectively); A21, A19, and A18 (ID4D administrative data from 2021, 2019, and 2018, respectively); and VRR (voter registration rate, from IDEA).

APPENDIX 2. ADULT ID COVERAGE BY COUNTRY

ID4D-FINDEX SURVEY DATA

The ID4D-Findex Series can be downloaded for 2021 and 2017 from the ID4D website (https://id4d.worldbank.org/global-dataset) and directly from the World Bank's DataBank (http://databank.worldbank.org). For convenience and ease of reference, Table 7 reproduces this data, disaggregated for men and women.

Table 7. ID4D-Findex Adult ID Ownership, by Gender (2021, 2017)

Economy	ID	Age*	ID Ownership (%) 2021			ID Ownership (%) 2017		
			Total	Women	Men	Total	Women	Men
Afghanistan	Tazkira (تذکره)	15+	87.4	76.7	98.5	71.4	48.4	94.2
Albania	Identity Card (Leternjoftim)	16+	97.0	97.1	96.8	92.8	92.1	93.5
Algeria	Carte nationale d'identité (CNIBE)	15+	96.7	97.3	96.1	95.1	94.5	95.7
Argentina	Documento Nacional de Identidad (DNI)	15+	98.6	98.2	99.1	99.3	99.4	99.2
Azerbaijan[1]	Identity Card (şəxsiyyət vəsiqəsi)	15+				98.8	99.0	98.5
Bangladesh	National Identity Card (NIC)	15+	86.6	86.9	86.4	82.9	81.3	84.6
Belarus	**Паспорт** (Passport)	15+				98.9	99.2	98.6
Belgium	National Identity Card (Identiteitskaart/carte d'identite/ Personalausweis)	15+	99.1	99.6	98.6			
Benin	Carte nationale d'identité	15+	47.0	41.7	52.6	45.9	36.9	55.1
Bolivia	Cédula de Identidad	15+	97.9	98.2	97.7	97.7	97.6	97.7
Bosnia and Herzegovina	Identity Card (Lična karta)	16+	96.8	96.0	97.6	94.5	95.2	93.7
Botswana[1]	National ID Card (Omang)	16+				96.8	97.2	96.4
Brazil	State-Issued ID Card (RG)	15+	96.2	97.6	94.9	98.4	98.3	98.5
Bulgaria	Identity Card	15+	99.3	99.0	99.6	99.3	100.0	98.5
Burkina Faso	Carte Nationale d'Identité Burkinabe (CNIB)	15+	83.1	80.5	86.2	80.8	74.9	86.2
Cambodia	Khmer Nationality Identity Card (អត្តសញ្ញាណប័ណ្ណសញ្ជាតិខ្មែរ)	15+	89.6	92.5	86.3	88.6	88.9	88.3
Cameroon	Carte nationale d'identité (CNI)	18+	82.8	79.7	86.1	85.3	83.7	86.9
Canada[2]	Social Insurance Number	15+	97.8	96.5	99.2			
Chad[1]	Carte nationale d'identité (CNI)	18+				39.0	21.0	58.7
Chile	Cédula de Identidad	15+	99.2	99.2	99.1	98.8	99.1	98.5
China	居民身份证 (Resident Identity Card)	15+	99.7	99.6	99.8	98.6	98.4	98.8
Colombia	Cédula de Ciudadanía	18+	96.9	97.3	96.4	98.9	99.2	98.6
Congo, Rep.	Carte nationale d'identité	16+	63.2	59.3	67.0	59.8	56.7	62.9
Costa Rica	Tarjeta / Cédula de identidad	18+	94.6	94.0	95.2	97.8	97.4	98.3
Côte d'Ivoire	Carte nationale d'identité	15+	71.8	67.7	75.7	68.0	68.7	67.4
Croatia	Identity card (Osobna Iskaznica)	15+	99.6	99.8	99.4	99.4	99.3	99.5

Economy	ID	Age*	ID Ownership (%) 2021			ID Ownership (%) 2017		
			Total	Women	Men	Total	Women	Men
Cyprus	Identity Card	15+	87.4	87.3	87.5			
Czech Republic	Civil Card (Obcansky prukaz)	15+	99.1	99.9	98.3	98.5	99.2	97.8
Denmark	CPR number (Personnummer)	15+	98.5	98.4	98.7			
Dominican Republic	Cédula de identidad y electoral (CIE)	16+	91.0	90.9	91.1	89.9	90.7	89.2
Ecuador	Cédula de Identidad	15+	97.5	97.4	97.6	99.5	99.4	99.6
Egypt, Arab Rep.	(National ID Card) بطاقة الرقم القومي	16+	97.3	97.7	96.9	93.7	90.2	97.2
El Salvador	Documento único de identidad (DUI)	18+	97.0	96.6	97.4	96.3	95.8	96.9
Estonia	ID Card (ID-kaart)	15+	98.0	99.1	96.6	98.6	98.2	99.0
Ethiopia[1]	Kebele ID Card	18+				64.2	54.1	74.8
France	Carte nationale d'identité (CNI)	15+	93.8	94.2	93.4			
Gabon	Carte nationale d'identité	16+	73.0	69.0	77.4	69.9	67.2	72.7
Georgia	National ID card	15+	95.1	97.0	93.0	94.1	94.1	94.1
Germany	Identity Card (Personalausweis)	15+	95.7	95.9	95.4			
Ghana	National Identity Card (GhanaCard)	15+	86.7	84.7	88.9			
Greece	Identity Card (ΔΕΛΤΙΟ ΤΑΥΤΟΤΗΤΑΣ)	15+	97.7	98.2	97.2	92.8	94.4	91.1
Guatemala[1]	Documento personal de identificación (DPI)	18+				93.0	93.3	92.7
Guinea	Carte Nationale d'Identite	15+	58.6	51.6	65.7	44.6	39.4	49.6
Haiti	Carte d'identification nationale	18+				79.5	83.0	75.8
Honduras	Tarjeta de Identidad (DNI)	18+	92.8	92.8	92.7	93.2	91.6	94.9
Hong Kong SAR, China	Hong Kong Identity Card (HKID)	18+	98.1	98.0	98.4			
Hungary	Identity Card (Személyazonosító igazolvány)	15+	98.9	99.7	97.9	99.7	99.6	99.8
Iceland	National ID number (Kennitala)	15+	99.7	100.0	99.3			
India	Aadhaar Number	15+				96.8	96.7	96.8
Indonesia	Identity Card (KTP)	17+	96.7	97.7	95.7	95.8	95.7	95.9
Iran, Islamic Rep.	National Identity Card (Kart-e-Melli)	15+	86.6	89.8	83.5			
Iraq	National Identity Card	15+	94.2	94.0	94.4			
Israel	Identity Card (Teudat Zehut)	16+	98.2	98.6	97.7	99.1	99.7	98.5
Italy	Identity Card (Carta d'identità)	15+	97.9	98.6	97.3			
Jamaica[3]	National Identification Card or National ID (Voter ID)	18+	82.7	85.4	80.0			

Economy	ID	Age*	ID Ownership (%) 2021			ID Ownership (%) 2017		
			Total	Women	Men	Total	Women	Men
Jordan	(Civil Status ID Card) بطاقة الأحوال المدنية	18+	96.8	97.9	95.8	95.3	95.4	95.3
Kazakhstan	National passport/ID card	16+	98.9	99.2	98.5	93.8	92.7	95.0
Kenya	National ID card	18+	91.4	88.9	93.9	94.3	93.0	95.6
Korea, Rep.	Resident Registration Card (주민등록증)	17+	96.8	97.4	96.3			
Kosovo	ID card	16+	95.2	94.2	96.2	92.7	94.2	91.2
Kyrgyz Republic	National ID Card / National passport	16+	93.6	93.1	94.1	93.2	92.8	93.6
Lao PDR	Identity Card	15+	55.3	55.3	55.4	40.7	40.8	40.7
Latvia	Identity Card / passport (Personas Aplieciba)	15+	98.8	99.5	97.9	98.9	98.8	99.1
Lebanon	(ID Card) بطاقة الهوية	15+	97.0	96.8	97.2	96.7	96.8	96.6
Lesotho[1]	National Identity Card	16+				70.9	69.1	72.7
Liberia	National ID Card	15+	30.1	26.9	33.5			
Lithuania	Identity Card (Asmens Tapatybės Kortelė)	15+	92.4	92.1	92.6	81.5	80.7	82.3
Madagascar[1]	Carte d'identité nationale (CIN)	18+				85.4	80.5	90.9
Malawi	National Identity Card (NIC)	16+	85.1	86.8	83.3	16.0	16.1	16.0
Malaysia	Identity Card (MyKad)	15+	95.9	95.7	96.0	94.2	94.3	94.1
Mali	Carte NINA	15+	69.3	66.3	72.5	70.7	63.1	78.5
Malta	Identity Card (Karta Tal-Identità)	15+	98.6	98.4	98.8			
Mauritania[1]	Carte d'identification	15+				89.1	88.4	89.8
Mauritius	National Identity Card	18+	98.9	99.1	98.6			
Mexico[1]	Clave Única de Registro de Población (CURP)	15+				89.2	88.3	90.2
Moldova	Identity Card (Buletin de identitate)	15+	98.8	98.5	99.2	97.1	96.9	97.3
Mongolia	Citizen Identity Card of Mongolia (Иргэний үнэмлэх)	16+	98.1	98.4	97.8	97.6	98.3	96.9
Montenegro[1]	Identity Card (Lična karta)	15+				93.8	95.6	92.0
Morocco	Carte d'Identite Nationale	15+	93.8	92.4	95.3	92.7	92.9	92.6
Mozambique	Bilhete de identidade (BI)	15+	58.1	51.2	65.5	58.2	51.5	65.3
Myanmar	Citizen Scrutiny Card (နိုင်ငံသားစိစစ်ရေးကတ်)	15+	87.8	89.2	86.3	88.8	87.2	90.6
Namibia	National ID Card	16+	91.3	91.8	90.7	91.9	93.4	90.1
Nepal	Citizenship certificate	16+	88.0	86.2	90.0			
Netherlands	Dutch Identity Card (Nederlandse Identiteitskaart)	15+	95.1	96.8	93.3			

Economy	ID	Age*	ID Ownership (%) 2021			ID Ownership (%) 2017		
			Total	Women	Men	Total	Women	Men
Nicaragua	Cédula de Identidad	15+	90.2	87.9	92.8	89.8	89.5	90.1
Niger[1]	Carte nationale d'identité	15+				44.8	32.0	57.1
North Macedonia	National Identity Card	15+	97.9	97.3	98.5	94.0	95.1	92.8
Norway	National Identity Number	15+	99.5	100.0	99.0			
Pakistan	Computerized National ID Card (CNIC)	18+	88.3	77.1	98.7	86.5	77.5	95.1
Panama	Cédula de Identidad Personal (CIP)	18+	97.8	98.1	97.5	95.3	96.9	93.6
Paraguay	Cédula de Identidad	15+	99.3	99.4	99.2	99.6	99.2	100.0
Peru	Documento Nacional de Identidad (DNI)	17+	97.6	98.4	96.7	98.9	98.9	99.0
Poland	Identity Card (Dowód osobisty)	15+	98.4	98.8	97.9	93.3	94.5	91.9
Portugal	Cartão de cidadão / Bilhete de Identidade de Cidadao Nacional	15+	95.6	96.4	94.8			
Romania	Identity Card (Carte de Identitate)	15+	99.2	99.6	98.9	99.0	98.7	99.4
Russian Federation	Internal Passport (Внутренний Паспорт)	15+	98.7	99.4	97.8	97.9	99.2	96.5
Rwanda	National Identity Card (NID)	16+				92.9	91.5	94.4
Saudi Arabia	National ID card	15+	98.6	97.3	99.4			
Senegal	Carte nationale d'identité	15+	82.5	79.4	85.9	72.6	72.1	73.1
Serbia	Identity card (Lična karta)	15+	99.3	99.6	98.9	96.7	97.4	95.9
Sierra Leone	National Identity Card	15+	61.5	64.1	58.7			
Singapore	National Registration Identity Card (NRIC)	15+	96.9	97.7	95.9	94.7	92.1	97.5
Slovak Republic	Identity Card (Občiansky preukaz)	15+	99.6	99.8	99.3	99.4	99.5	99.4
Slovenia	Identity Card (Osebna izkaznica)	15+	95.4	96.7	94.0			
South Africa	Smart Card ID / Green Barcoded ID	16+	94.1	94.2	94.0	92.4	91.0	93.9
South Sudan	National ID Card	17+	13.2	11.7	14.9	21.7	11.6	32.0
Spain	Documento nacional de identidad (DNI)	15+	96.0	96.2	95.7			
Sri Lanka	National Identity Card (NIC)	15+	92.5	94.4	90.5	92.1	89.7	94.9
Sweden	Personal Identity Number (Personnummer)	15+	100.0	100.0	100.0			
Switzerland	Identity Card	15+	95.0	95.1	94.8			
Taiwan, China	National Identification Card	15+	98.8	99.4	98.2			
Tajikistan	National Passport / ID card	16+	85.6	84.1	87.3			
Tanzania	National ID Card (Kitambulisho Cha Taifa)	18+	60.3	58.8	61.9			
Thailand	Thai National ID Card	15+	98.9	99.8	98.0	99.5	99.0	100.0
Togo	Carte nationale d'identité	15+	40.3	36.0	44.9	39.6	31.6	47.7
Trinidad and Tobago	National Identification Card	15+				94.9	93.9	96.0

Economy	ID	Age*	ID Ownership (%) 2021			ID Ownership (%) 2017		
			Total	Women	Men	Total	Women	Men
Tunisia	Carte D'Identité Nationale (CIN)	18+	98.8	98.9	98.7	96.5	95.2	97.8
Türkiye	Türkiye Identification Number (Türkiye Cumhuriyeti Kimlik Numarasi)	15+	96.2	97.2	95.1	96.7	95.7	97.6
Turkmenistan[1]	паспорт (Passport)	16+				98.4	98.2	98.6
Uganda	National ID Card	15+	72.5	72.8	72.2	81.4	80.5	82.3
Ukraine	Ukrainian National Passport / ID card	15+	99.0	98.9	99.0	97.3	98.4	95.8
United Arab Emirates	Identity Card (Emirates ID)	15+	89.8	94.1	88.2			
Uruguay	Documento de identidad	15+	100.0	100.0	100.0	99.7	100.0	99.5
Uzbekistan	National Passport	15+	92.3	92.1	92.6	94.5	96.0	92.8
Venezuela, RB	Cédula de Identidad	15+	98.8	99.0	98.7	98.3	98.1	98.6
Vietnam	Citizen ID Card (Căn cước công dân, CCCD) / ID Card	15+	97.0	96.9	97.0	94.1	95.9	92.1
West Bank and Gaza	Identity card (hawiyya)	16+	96.1	95.9	96.3			
Yemen, Rep.[1]	Identity Card	15+				48.9	27.4	74.0
Zambia	National Registration Card (NRC)	16+	93.9	93.6	94.2	89.0	87.2	90.9
Zimbabwe	National Identity Card (NID)	16+	85.5	86.9	84.0	86.2	84.9	87.7

Notes:

* The Findex survey includes respondents age 15+; for the purpose of this analysis, we exclude respondents who are above 15 but below the age of eligibility for obtaining the ID. This avoids artificially deflating the ownership rates by including those who are not yet eligible to obtain it.

[1] Data collection in these countries was delayed due to COVID-19 but is expected to be available in 2023.

[2] Canada does not have a foundational ID (e.g., a national ID), so the survey asked about ownership of the social insurance number which is widely used across the government and private sector for identification.

[3] Jamaica did not have a de jure national ID at the time of survey data collection; instead, the data measure ownership of the voter ID, which is the most commonly held and used ID and was colloquially referred to as the 'national ID' during the survey period.

SELECTED ADMINISTRATIVE DATA

In addition to the data presented in Table 7, our primary model for estimating Global ID coverage uses administrative data for 14 countries without ID4D-Findex survey data, shown in Table 8. This data was obtained through questionnaires fielded to ID agencies by ID4D between 2019–2022.

Table 8. Administrative Data Used in Primary Global ID Coverage Estimates

Economy	ID System	Data Year	Age[1]	Reported Registrations[2]	Group Population[3]	Calculated Coverage (%)[4]	Note
Angola	Bilhete de identidade (BI)	2019	6	22,027,509	25,596,346	86.1	*
Armenia	National ID System	2021	5	3,467,144	2,608,055	100.0	
Bahrain	Civil Registration System (CRS)	2020	5	1,370,570	1,375,340	99.7	
Cabo Verde	Bilhete de Identidade/ Cartão Nacional de Identificação	2019	5	569,720	525,416	100.0	*
Central African Republic	National ID System	2021	18	893,145	2,411,966	37.0	*
Equatorial Guinea	National ID System	2022	15	646,000	1,030,216	62.7	*
Guyana	Guyana Identification Card	2019	14	663,365	583,708	100.0	*
Kuwait	Kuwait ID System	2021	5	4,348,807	3,991,248	100.0	
Maldives	National ID Card	2019	5	459,360	465,820	98.6	*
Nigeria	National Identity Management System (NIMS)	2021	5	66,740,457	178,570,524	37.4	
São Tomé and Principe	Civil Identification System	2021	5	89,408	192,729	46.4	
Seychelles	National Population Database (NPD)	2021	5	155,687	97,959	100.0	
Tonga	National Identity Card	2019	14	65,546	70,088	93.5	*
Vanuatu	Vanuatu National ID card	2019	5	254,900	259,834	98.1	*

Footnotes:

[1] The cutoff age, set to the minimum age of eligibility for registering in the ID system or 5 years old, whichever is higher.

[2] Either the total number of registrations or the number of registrations at or above "age" (see *), as reported by the ID agency. In some cases, these numbers may include deceased persons, duplicates, or those no longer resident in the territory.

[3] Total population in the territory at or above "age" in the data year (2019, 2020, 2021, or 2022), from UNDESA (2022a).

[4] Coverage rate is reported registrations, divided by the group population at or above "age." It is censored to 100 percent if the number of registrations is greater than the population.

* Disaggregated registration numbers by "age" are unavailable; instead "reported registrations" are the total number of registrations in the system. Calculated coverage rates assume that all registrations are above the eligible age.

APPENDIX 3. ALTERNATIVE SPECIFICATIONS AND ROBUSTNESS CHECKS

This appendix provides a series of alternative specifications and robustness checks for the global estimate methodology described above. This includes deeper analysis related to (1) the use of birth certification rates instead of birth registration rates, (2) using birth registration rates for older children, (3) the changes between the 2018 and 2021 estimates, and (4) restricting the ID4D-Findex sample to those above the ID age. As with the main estimates, data and replication code for these analyses will be available at http://id4d.worldbank.org/global-dataset.

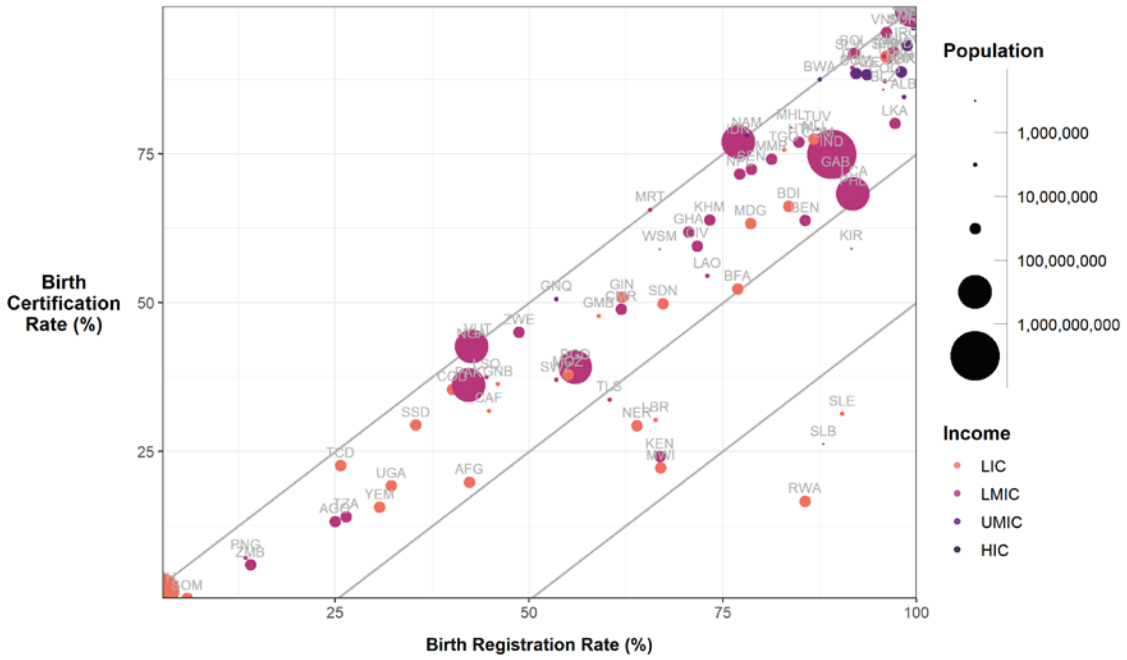
BIRTH CERTIFICATION VS. REGISTRATION RATES

Birth certification is an important aspect of children's ID coverage, but historically birth certification rates have not been comprehensively compiled in a cross-country manner. To our knowledge, the most comprehensive analysis of this type has been by Bhatia et al. (2017), in which the authors used household survey data from 94 countries to calculate birth certification and birth registration rates and examined inequalities in coverage. UNICEF (2019a) also provides global and regional estimates and country-level data for a handful of Eastern and Southern African countries. Both Bhatia et al. and UNICEF find significant gaps between birth registration and birth certification rates. UNICEF, in its 2022 Database has now made available BCR data for 144 countries, which have also been included into the ID4D DataBank series available at http://databank.worldbank.org.

The primary source for data on birth certification rates are DHS and MICS surveys, which employ slightly different question structures for this topic. Both ask caregivers to report whether a child has been registered and whether a birth certificate was issued. This creates three categories of response: "birth registered, with a certificate," "birth registered, no certificate," and "birth not registered." The DHS combines all three outcomes as responses to question, whereas the MICS question is multi-step and probes further by asking the respondent to show the birth certificate if they can (in an attempt to mitigate confusion with other documents).

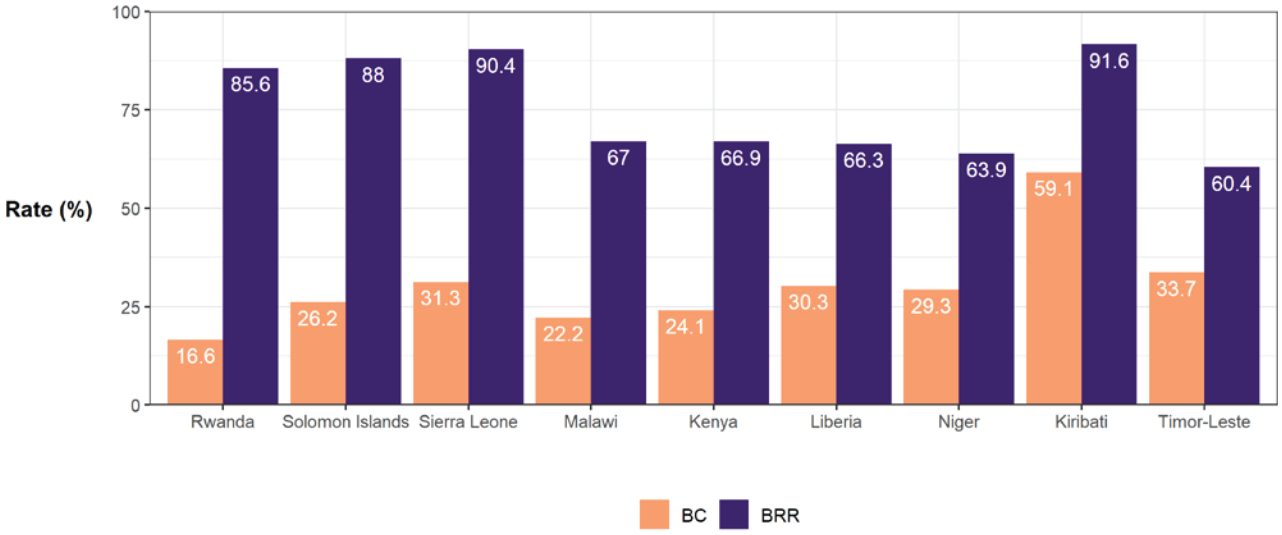
The 2022 UNICEF Database includes BCR for 144 countries, and we obtain the same data directly from the Kosovo survey report. These are derived from the most recent DHS and MICS surveys, allowing us to perform an updated analysis of the global trends identified by Bhatia et al. (2017). This 2022 data also covers an additional 51 countries, compared to that paper's data. Our findings mirror previous analyses that birth certification significantly lags behind birth registration rates in nearly all countries. Figure 12 and Table 9 illustrate this relationship. Figure 13 displays the nine countries with gaps between birth registration rates and birth certification rates greater than 25 percentage points, out of the 145 countries with BCR data available. Three countries—Rwanda, Solomon Islands, and Sierra Leone—have gaps greater than 50 percentage points.

Figure 12. Birth Registration vs. Certification Rates, by Income Group



Graph plots birth registration and certification rates for latest year available in UNICEF dataset (released May 2022), except for India (taken from the National Family Health Survey, 2019-20), and Malawi and Kosovo (taken from their respective 2019-20 MICS). Uppermost line shows equal birth registration and certification rates, while the middle and bottom lines show ranges where birth certification lags registration by 25 and 50 percentage points, respectively.

Figure 13. Countries Gaps between BCR and BRR Greater than 25 Percentage Points



Graph plots birth registration (BRR) and certification (BC) rates for latest year available in UNICEF dataset (released May 2022), for countries with a gap in rates greater than 25 percentage points.

Birth certification is difficult to measure and there may be multiple reasons for the gap between birth registration and birth certification rates. The simplest explanation is that while the birth was registered, the birth certificate was either never collected, lost, or misplaced. Other reasons include measurement errors, which may affect both birth registration and certification rates, such as a false positive response if the respondent mistakes another document (i.e., a birth notification form prepared by the health facility or a receipt printed during birth registration) for an official birth certificate. Social desirability bias may also come into play if respondents believe that an affirmative response is what is expected of them. If these measurement errors are indeed prevalent, this would suggest that the global ID coverage gap could be significantly larger among children than previously thought.

Given the extremely low BCR rates in many countries, using this data for our global ID coverage estimates would significantly increase the number of people without an ID, particularly given that we would be applying this rate not only to children under 5, but also to those age 5 to the cutoff age. If BCR data were used instead of BRR data for our primary estimation model—including as a proxy for the 5–17 population—the estimate for the global ID coverage gap would increase to 975 million. This would be an approximate 150 million increase over the estimates using BRR. This jump in the coverage gap is primarily driven by countries like Bangladesh, India, Kenya, Niger, Pakistan, the Philippines, and Rwanda which are (relatively) populous and have a significant difference between BRR and BCR rates.

Table 9. Using Birth Certification in the Global Estimates

	A. Primary Model Using BCR for Children (Millions)				B. Primary Model Using BCR for Children and Adults (Millions)		
	N	*Children*	*Adults*	*Total*	*Children*	*Adults*	*Total*
World	194	573	417	989	573	417	990
High-Income Countries (HICs)	60	0.2	16.2	16.4	0.2	16.2	16.4
Low-Income Countries (LICs)	25	206.7	99.1	305.8	206.7	99.1	305.8
Lower-Middle Income Countries (LMICs)	54	338.9	264.1	603.0	338.9	264.1	603.0
Upper-Middle Income Countries (UMICs)	54	25.4	37.3	62.6	25.4	37.3	62.7

* In the 2021 World Bank lending groups, Venezuela does not have a classification and is therefore excluded from this table.
Note: Calculations are done using our primary model, but panel A uses birth certification rate (BCR) for children where this is available, instead of birth registration rate (BRR), while panel B uses BCR where available for children and for adults in countries where BRR would have been used as the adult metric. BRC data come from UNICEF (2022a).

COVERAGE FOR OLDER CHILDREN

Data on birth registration coverage for children over 5 (or adults) are not commonly or uniformly available across countries. For this reason, we apply the under-5 BRR rate for all children in the population between 0 and the cutoff age, as in previous versions of the global estimates. While we employ this method due to the unavailability of data, it will not always provide an accurate picture of ID coverage for children in countries that have not had near-universal birth registration for the past few decade years—primarily LICs and LMICs.[53] This bias can occur in two directions:

A. For countries that have recently improved birth registration rates, *more recent BRRs* would be higher than older ones (i.e., the probability of timely birth registration for children 0–4 would be higher than for those 5–14 years, the most common cutoff age). In this case, applying the under-5 BRR to older children could *underestimate the number of people without ID*.

B. *Conversely, birth registration rates can increase a child's age* as parents register births late, for example, by waiting until a birth certificate is required for school enrollment or other purposes (AbouZahr et al. 2015, Pelowski et al. 2015). In countries with lower levels of timely birth registration, this could mean differences in BRRs between younger and older children (i.e., the rate for 5–14 would be higher than the rate for 0–4). In this case, applying the under-5 rate to older children would *overestimate the number of people without ID*.

In the absence of birth registration data for older children that are available for all countries, it is difficult to check which of these opposing effects is stronger. Furthermore, we do not have sufficient administrative data disaggregated for the 5–15 age group to compare BRR vs. ID coverage for older children. Still, we can get a hint of some potential trends by looking at yearly registration rates for ages 0–4 where disaggregated data is available. For 104 countries, data derived from MICS and DHS surveys provides disaggregated BRRs for 0–11 months, 12–23 months, 24–35 months, 36–47 months, and 48–59 months. Among these countries, the overall population weighted average BRR for 0–11 months is approximately 4.4 percentage points lower than the rate for 48–59 months, which translates into an under-5 BRR that is 0.9 percentage points lower than at 48–59 months (see Table 10). For LICs, where birth registration rates are lowest, the difference between 0–11 months and 48-59 months is 2.3 percentage points, with an under-5 rate that is 0.1 percentage points lower than for children 48–59 months. As shown in Figure 14, however, these averages hide some significant variation at the country level, where we see trends of both increasing and decreasing BRR for children under 5.

53 Nearly all countries for which we use birth registration for adults in our primary estimates are HICs and UMICs with recorded 100 percent BRRs, and so the effect of this bias in these cases is quite limited.

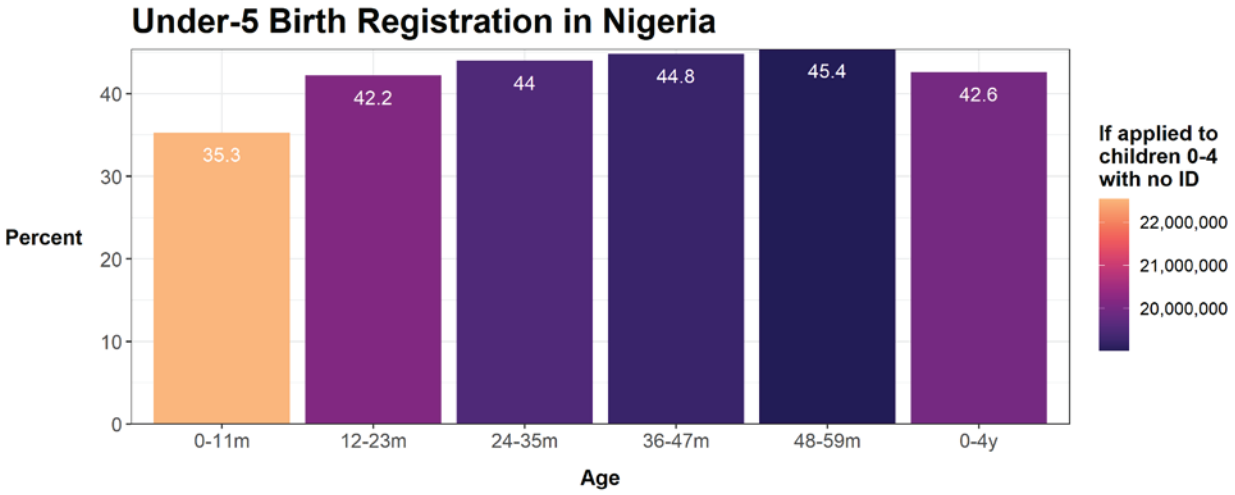
Still, these findings indicate that on average, birth registration rates do increase slightly over the first 4 years of life and that the may continue increasing to some degree after the child reaches the age of 5. This would suggest that our methodology of applying the most recent under-5 BRR to older children may somewhat overestimate the number of children without ID. However, given that (a) no systematic data on coverage for older children is available cross-nationally, and (b) most other methodological choices in our estimates are on the conservative side (e.g., see Section 4 and other sections of Appendix 3, and Appendix 4), we believe this continues to be a reasonable approach. As more data become available—or for those countries where there is age-disaggregated data on birth registration and/or ID coverage for older children, improvements to this methodology may be possible.

Table 10. Comparing Yearly BRRs for Children Under 5 from MICS and DHS Data

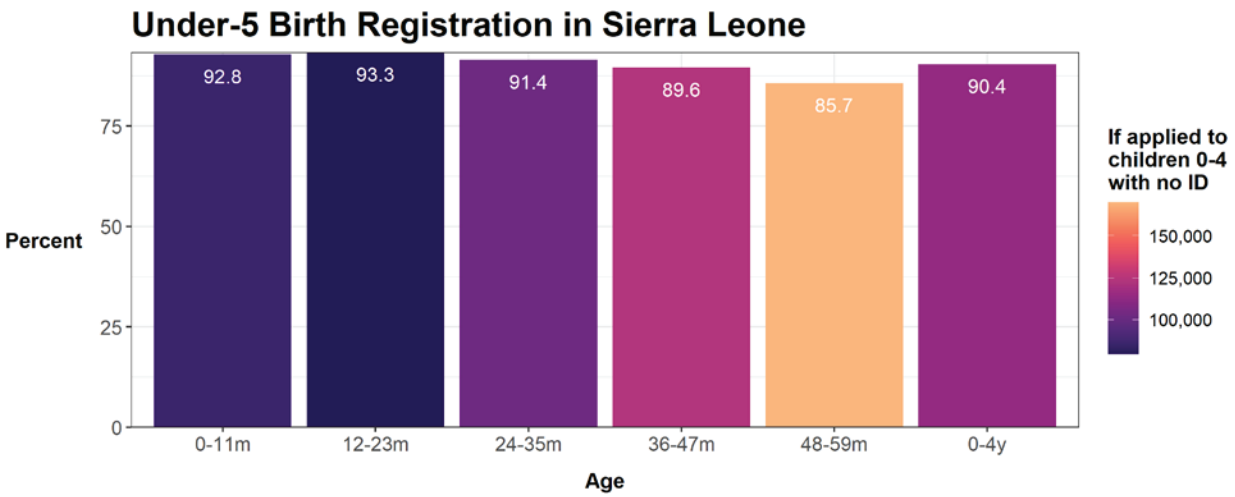
	Months					Under-5 rate	Difference between under- 5 and 48–59m
	0–11	*12–23*	*24–35*	*36–47*	*48–59*		
World	**67.6**	**71.9**	**72.2**	**71.8**	**71.9**	**71.1**	**−0.8**
SSA	42	47	48	47.6	47.9	46.5	–1.4
SAR	69.4	73.2	73.2	72.5	72.5	72.1	–0.4
EAP	86.1	91.2	91.3	91.1	91.8	90.3	–1.5
LAC	89.9	97	97.5	98	98.2	96.3	–1.9
ECA	97.7	99.1	99.6	99.4	99.4	99	–0.4
MNA	89.5	91.2	91.6	91.7	91.6	91.1	–0.5
LIC	45	48.4	48.2	47.2	47.3	47.2	–0.1
LMIC	68.6	73.2	73.6	73.3	73.4	72.4	–1
UMIC	93.9	97.8	98.3	98.5	98.4	97.5	–0.9
HIC	94.7	99.6	99.2	99.9	100	98.8	–1.2

Note: Table shows population-weighted averages. Includes 104 countries with age-disaggregated birth registration rates and population data.
Source: UNICEF (2022b), UN World Population Prospects (2019), Kosovo (2020), Malawi (2021).

Figure 14. Example Country-Level Trends in BRRs for Children Under 5



Graph shows percentage of children under age 5 whose births are registered by age group. Source: UNICEF (2022b).



Graph shows percentage of children under age 5 whose births are registered by age group. Source: UNICEF (2022b).

EXPLORING CHANGES FROM 2018 TO 2021

As noted in the introduction, the 2018 and 2021 coverage estimates should not be treated as a time series—that is to say, the difference between them does not represent changes in ID coverage alone. Rather, it represents a mix of actual coverage improvements, changes in data sources due to the availability of new data (e.g., the ID4D-Findex data, and new administrative data), and other methodological changes summarized in Appendix 5. This includes the use of birth registration data for adults in some HICs and UMICs—which in turn led to the inclusion of more countries in the calculations—the changes in how we calculate voter registration and administrative coverage rates instead of using raw totals and applying the BRR to the 0–4 population in all countries, including where the ID age is 0. Some of these factors are also inter-dependent. For example, a country where the source of data changes from voter registration in 2018 to another source in 2021 will also likely have a change in the cutoff age that leads to a change in the composition of the population to which the child and adult rates are applied.

In this section, we run two tests to unpack these numbers using counterfactual scenarios. The first is to apply the 2021 methodology to the data available in 2018, which gives us an idea of the total impact of the changes in *data availability and coverage rates*. The second is to apply the 2018 methodology to the data we are using for 2021, which this provides an approximation of the total impact due to the changes in methodology. Neither comparison is perfect, given the interdependence and multi-facet nature of these changes, however, they help validate the 2021 methodology and provide some useful data on how we should interpret our results.

COUNTERFACTUAL 1: 2021 METHODOLOGY WITH 2018 DATA

If we had applied the 2021 methodology to data available in 2018, including both the data used in the actual 2018 calculations, as well as the 2017 round of the Findex, the 2018 estimate would have been 969 million. This is slightly lower but on par with the actual 2018 estimate of 987 million, but significantly (126 million) higher than our 2021 estimates. Comparing these counterfactual 2018 estimates with our primary model in 2021 reflects both actual improvements in actual coverage, as well as the effect of newly available data, *holding the methodology constant*.

These effects are disaggregated in Table 11. For 125 countries using the same metrics in both 2018 and 2021, there has been a decrease in the estimated number of people without ID by around 157 million. In parallel, the availability of better data—including newly available ID4D-Findex and administrative data in 2021—reduces the estimates by approximately 24 million. Finally, there are 28 countries that would have used the same metrics in 2018 and 2021 but have not had any changes in value, either because coverage rates were already 100 percent (in the case of birth registration rates in many HICs), or because there is no more recent data. We still see a slight difference of 8 million in the number of people without an ID in these countries, but this is an artifact of applying constant rates to increasing populations.

Table 11. Estimated Effect of Changes in Data Values

Change	Description	Difference (Actual – Counterfactual)		
		Total	*Adults*	*Children*
Value of metric only	Change in value from 2018	–157	–57	–100
Which metric is used	New metric available for 2021	+24	+33	–9
None	Same data and/or value from 2018	+8	+4	+4
	Total	–125	–19	–106

Difference columns provides approximations of the impact of changes in the underlying data on our estimates of the number of people without ID in 2021. These calculations use a counterfactual scenario where we apply the 2021 methodology to data that was available in 2018—including that used in the original 2018 calculations, and the 2017 round of the ID4D-Findex survey—and compare this our primary 2021 estimates. This holds constant methodological changes and allows us to partially identify the magnitude of changes on the estimated number of people without an ID resulting from improved data sources and actual improvements to ID coverage.

COUNTERFACTUAL 2: 2021 DATA WITH 2018 METHODOLOGY

In the second counterfactual analysis, we explore the impact of various methodological changes by applying the 2018 methodology to the 2021 data. This counterfactual excludes ID4D-Findex data (using administrative and then voter registration for all countries), uses a cutoff age of 5 even when the ID age is 0, and subtracts voter and administrative registration totals from the 2021 population instead of calculating rates. Under this scenario, our 2021 estimate would have been 902 million, or around 58 million higher than our primary model.

As shown in Table 12, we can disaggregate these results based on the type of methodological change, *holding the data values constant.* A large portion of this change comes from the addition of new ID4D-Findex data, and particularly the use of survey instead of administrative data. This is a result of the fact that ID ownership rates indicated by the survey data are lower, on average, than the coverage rates provided by administrative data for the reasons outlined in Section 3. In addition, we see that changes in how we calculate voter registration rates (VRR) and administrative coverage rates, have reduced the estimates slightly as expected, reducing the probability that these calculations were inflating results. A large impact also comes from the inclusion of additional countries, as a results of using BRR for HICs and UMICs, and removing other 2018 exclusion criteria—if we had applied these criteria in 2021, 58 countries would have been excluded from the calculations, accounting for an additional 34 million people without ID.

Table 12. Estimated Effect of Methodology Changes

Change	Description	Difference (Actual – Counterfactual)		
		Total	*Adults*	*Children*
Which data is used	Switch from Admin to Findex	–61	–135	+74
	Switch from Voter to Findex	–2	+8	–9
	Switch from Voter to BRR	–3	–3	–0
Calculations	Change in VRR calculations	–10	–10	+0
	Change of admin cutoff age to 5	–15	–35	+20
	Change in admin calculations	–2	–2	+0
Exclusion criteria	Additional countries included	+34	+20	+14
	Total	–58	–157	+98

Difference columns provides approximations of the impact of various methodological changes on the 2021 dataset estimates, using a counterfactual scenario where we apply the 2018 methodology to the 2021 data. This holds constant the data values themselves, and allows us to partially identify the magnitude of these changes on the overall estimated number of people without an ID.

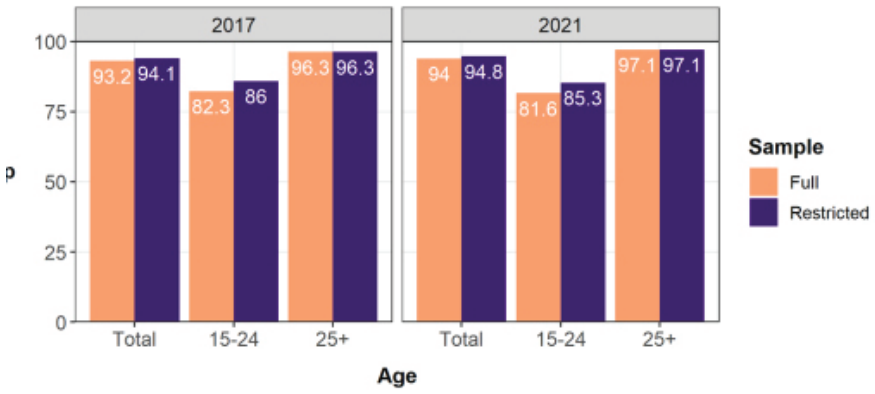
FINDEX SAMPLE RESTRICTIONS

The Findex survey includes respondents aged 15 and older, and analysis of this data in the financial sector typically includes this full sample (Demirgüç-Kunt et al. 2022). However, following Metz and Clark (2019), we restrict the sample for individual-, country-, and global-level calculations to include only those respondents who are over the age when people become eligible to obtain the ID.[54] Respondents under this age would generally not be expected to have the ID, and by dropping these observations, we avoid potentially underestimating adult ID ownership rates among eligible adults.[55] This restriction, therefore, provides more realistic snapshots of the ID gap in specific countries, and better aligns with the global estimates methodology of selecting cutoff ages based on the data source and country's ID age.

54 In total, this drops just under 1,400 observations in 2021 (around 1.2 percent of the data), and 1,680 observations in 2017 (around 1.6 percent of the data) from our analysis.

55 In both 2017 and 2021, a minority of respondents younger than the ID age report that they have the ID. The fact that some people do report obtaining the ID before the age of eligibility may be due to discretion or exceptions in policy (e.g., some countries allow minors to obtain the ID in certain circumstances with parental permission), or errors in reported age or ID ownership.

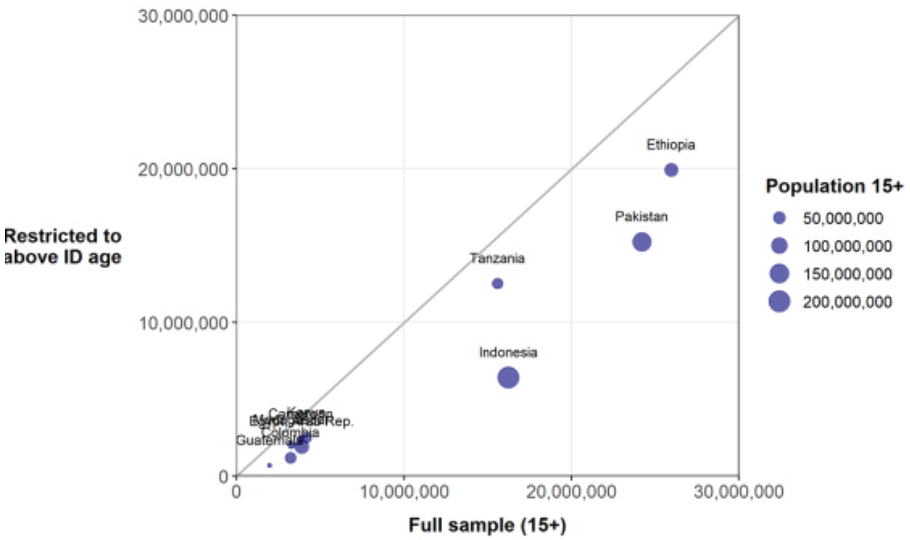
Figure 15. Global ID Ownership with Restricted vs. Full Findex Sample



Graph shows mean ID ownership, calculating using global survey weights. Here, the 'full' sample includes all respondents ages 15 and over, while the 'restricted' sample includes only those respondents over the minimum eligible age for obtaining the 'foundational' or primary ID in their economy. Note that the composition of economies with data available has changed between 2017-2021. Source: ID4D-Findex (2017, 2021).

Restricting the Findex sample to only those above the ID age has only minor effects on globally-weighted Findex averages (see Figure 15). However, limiting the sample significantly impacts national-level ID ownership rates for a small set of individual countries. In Cameroon, for example, dropping observations for respondents below age 18 (the minimum to apply for the national ID card) increases the 2021 estimates of adult ID coverage by 7.2 percentage points, from 75.5 to 82.8 percent. Figure 16 shows cases where restricting the sample changes estimates of adult coverage by 1 million or more.

Figure 16. Impact of Findex Age Restriction on Estimates of Adults without ID



Graph compares the number of adults without ID using (a) the full Findex sample of 15+ and (b) a sample that is restricted to those who are above the age of eligibility for obtaining the ID. Includes economies where the difference between the full and restricted samples is greater than 1 million. Source: ID4D-Findex (2017, 2021).

As summarized in Table 13, aggregating across countries using the restricted rates reduces the number of adults without an ID by approximately 45 million compared with the full sample. However, in addition to changing the estimates for adults, restricting the Findex sample to those above the ID age also shifts the overall cutoff age upwards in a handful of countries, increasing the size of the child population to which BRR is applied. For example, if the ID eligibility age is 18, the Findex rate would be applied to the population 18+, with the BRR applied to ages 0–17 (instead of 0–15 if the ID age was set to 15). As a result of restricting the Findex sample, the total number of children without ID is 26.4 million higher than it would be if the full sample was used. Combining this with the adult figures, the net difference is approximately 18.6 million people, with the restricted sample providing a slightly more conservative estimate of the ID gap.

Table 13. Impact of Findex Age Restriction on Global Estimates

Findex Sample	Estimated Population without ID in Economies with Findex Data		
	Adults	*Children*	*Total*
Full	309	311	620
Restricted	264	337	601
Difference	*–45*	*26*	*–19*

Note: Includes 130 economies where Findex data is used in the global estimates. Calculated by summing the number of adults and children without ID across these economies alternately using the "full" sample of respondents ages 15 and older, or the "restricted" sample that drops respondents who are younger than the age of eligibility for obtaining the ID.

APPENDIX 4.
EXCLUDED COUNTRIES

The 2018 ID4D Global Dataset provided information on 198 countries,[56] but used only 151 countries for the global ID coverage estimates due to a lack of reliable data on adult coverage for HICs and some instances of missing (proxy) data for children and/or adults. For the 2021 estimates, our goal has been to maximize the number of countries included, which has been possible with the addition of Findex data and the change in methodology to use birth registration rates (BRR) for higher-income countries for which we do not have Findex or administrative data. This Appendix specifies those countries excluded in 2021 and discusses the removal of the 2018 exclusion criteria in more detail.

2021 EXCLUSIONS

Four of the 198 countries covered by the ID4D dataset are excluded from the 2021 estimates (Table 14). Eritrea; Taiwan, China; and the Federated States of Micronesia are excluded because they do not have birth registration data from the UNICEF or UNSD datasets. In addition, Somalia is excluded because its under-5 BRR is extremely low (5.9 percent) and we do not have alternate coverage metrics for adults. Because Somalia does not have a national ID or similar foundational system, adults use a variety of identity documents in their daily lives; while data suggests that coverage of these is low, it is likely to be higher than 5.9 percent.[57] Therefore, we exclude Somalia to avoid inflating the ID coverage gap by applying the BRR to the entire population.

Table 14. Countries Excluded from 2021 Estimates

Country	Income	Under-5 Birth Reg. (%)[1]	ID Ownership (%)[2]	Voter Reg. (%)[3]	2021 Population[4]	Global Pop. (%)
Eritrea	LIC	–	–	–	**3,620,312**	**0.046**
Taiwan, China	HIC	–	98.8	98.6	23,859,912	0.302
Micronesia, Fed. Sts.	LMIC	–	–	100	113,131	0.001
Somalia	LIC	5.9	–	–	17,065,581	0.216
Total					**44,658,936**	**0.565**

Notes: LIC = low-income; LMIC = lower-middle income; HIC = high-income.
[1] UNICEF (2022).
[2] ID4D-Findex (2021).
[3] IDEA (2022).
[4] UNDESA (2022a).

56 The following territories and jurisdictions that may have some of the data sources used in this paper have not historically been included in the ID4D Global Dataset or coverage estimates given their small population size, lack of a distinct ID system, and/or lack of data: Åland Islands, American Samoa, Anguilla, Aruba, Bermuda, Bonaire, Sint Eustatius and Saba, British Virgin Islands, Cayman Islands, Channel Islands, Cook Islands, Curaçao, Falkland Islands (Malvinas), Faroe Islands, French Guiana, French Polynesia, Gibraltar, Greenland, Guadeloupe, Guam, Holy See, Isle of Man, Martinique, Mayotte, Melanesia, Montserrat, Netherlands Antilles, New Caledonia, Niue, Northern Mariana Islands, Polynesia, Puerto Rico, Réunion, Saint Helena, Saint Pierre and Miquelon, Sint Maarten, St. Martin, Svalbard and Jan Mayen Islands, Turks and Caicos Islands, US Virgin Islands, Wallis and Futuna Islands, and Western Sahara.

57 Previous editions of the dataset used voter registration from Somalia's 1984 elections (available in the IDEA, 2022). However, these numbers do not provide an accurate picture of current ID ownership in the country (for example, even if all 1984 voters were issued a voter card, this would only be held by the portion of the population 55 or older in 2021).

Together, these countries represent less than one percent of the global population, so their omission is not likely to have major effects on the estimates, particularly because the largest of the three—Taiwan, China—has a near universal ID ownership rate. However, we can use the mean ID ownership rates for low-income countries (68.5 percent) to estimate the order of magnitude. If we applied this rate to the total populations in Eritrea and Somalia, this would increase the global estimate of people without ID by approximately 6.5 million.

2018 CRITERIA

As noted above, 47 countries were excluded from the 2018 coverage estimates due to lack of reliable data on adult ID coverage. These exclusions were made due to a lack of data and to avoid over-inflating the estimated number of people without ID by over-reliance on voter registration rates, which are typically lower than assumed ID ownership rates in high-income countries (HICs) in particular. Two criteria were applied:

1. **HICs with BRRs greater than 99 percent.** A total of 44 HICs without administrative data and with birth registration rates greater than 99 percent were excluded to avoid overestimating the ID coverage gap by applying the voter registration rate.[58]

2. **Countries with no foundational ID and BRRs greater than 95 percent.** Similarly, non-HIC countries without foundational ID systems—and therefore, no administrative data—were excluded from the global estimates if they had a BRR higher than 95 percent; in 2018, this criterion was applied to two countries (Turkmenistan and Marshall Islands).[59]

In addition, **China was excluded** as neither administrative nor voter registration data was available to measure adult ID coverage in 2018.

In 2021, we now have Findex data as a primary source of adult ID coverage for many of the 47 countries excluded in 2018 estimates, including a number of HICs, China, and Turkmenistan. Table 15 shows the remaining countries that would continue to meet the 2018 criteria.[60] For this paper, we have taken a different approach to maximize the number of countries included in the global coverage estimates while also minimizing the likelihood of over- or underestimation. Rather than excluding them from the estimates, we apply under-5 birth registration rates for both the adult and child populations in these countries. Given reported birth registration rates of 100 percent in most of these countries, this does not affect the estimated number of people without ID globally; however, it means that the ID coverage estimates reflect data from a larger share (over 99 percent) of the global population.

58 This criterion was initially adopted to avoid overestimating the ID coverage gap in HICs like Australia, Germany, France, Switzerland, and the United States, where voter registration rates would often suggest a 10 percent or even larger ID coverage gap, even though the true share of adults without proof of identity is believed to be significantly lower. Had these countries been included using voter registration in 2018, the global ID coverage gap would have been about 80 million higher (i.e., closer to 1.1 billion).

59 See Appendix 5, Errata for exceptions.

60 Updated data for the Marshall Islands indicate a BRR of 83.8 percent (UNICEF 2022a)—compared with 95.9 percent from the 2007 DHS that was used in the 2018 dataset—so it no longer meets the second exclusion criterion.

Table 15. Countries that Would Meet 2018 Exclusion Criteria in 2021

Country	Income	Foundational ID	Under-5 Birth Reg. (%)[1]	Voter Reg. (%)[2]	2021 Population[3]
Andorra	HIC	–	100	43.0	**79,034**
Australia	HIC	–	100	83.1	25,921,089
Austria	HIC	Identity Card	100	85.1	8,922,082
Brunei Darussalam	HIC	Smart Identity Card	99.9	–	445,373
Finland	HIC	Identity Card	100	100.0	5,535,992
Ireland	HIC	–	100	93.4	4,986,526
Japan	HIC	Individual Number Card	100	98.7	124,612,531
Liechtenstein	HIC	Identity Card	100	63.3	39,040
Luxembourg	HIC	Identity Card	100	53.0	639,321
Monaco	HIC	Monegasque Identity Card	100	23.0	36,686
New Zealand	HIC	–	100	90.8	5,129,728
Oman	HIC	Omani ID Card	100	22.3	4,520,471

Notes: HIC = high-income. [1]UNICEF (2022a), [2]IDEA (2022), [3]UNDESA (2022a).

Importantly, it is also extremely unlikely that any country has achieved perfect continuous coverage of birth registration or the adult ID system. However few they may be, people in high- and upper-middle-income countries without proof of their identity are likely to face significant barriers to political, economic, and social participation, and to be among the most marginalized.[61] For these reasons, it is important to continue tracking progress on access to identity credentials across all countries. We hope that including more HICs in the Findex data collection is the first step toward this goal, and highlights that the need for better data is worldwide.

61 See, for example, a report from University of Sydney (2016) on significantly lower birth registration rates among Aboriginal groups in Australia.

APPENDIX 5. SUMMARY OF CHANGES FROM 2018

METHODOLOGY CHANGES

Table 16 summarizes broad changes to the global coverage estimate methodology from the 2018 version of the dataset, and the general impact that this has on the 2021 estimates, using 2021 data. As a result of these changes, the 2018–2021 estimates should not be considered as a time series—i.e., the differences between 2018 and 2021 represent a mixture of methodology changes and changes in ID coverage. See Appendix 3 for more analysis of potential alternative methodologies and the impact of methodological changes.

Table 16. Methodology Changes for Global Estimates, 2018-2021

Parameter	2018 Method	2021 Method	Rationale for Change	Effect on 2021 Coverage Gap Estimates
Sources for adult ID coverage	*Primary:* Administrative data from ID4D questionnaire *Secondary:* voter registration rates	*Primary:* Survey data from Findex; *Secondary:* Administrative data from ID4D questionnaire *Tertiary:* voter registration rates (LICs and LMICs); birth registration rates (UMICs and HICs)	Findex survey offers improved measurement over administrative data and now has sufficient coverage to be the default measure of adult ID coverage. Using BRR for HICs and UMICs, where BRR has been historically much higher, is a better proxy for adult ID coverage than VRR.	Around 70 million *less* than they would have been if Findex and BRR were not used for adults
HICs with BRR greater than 99.99% and Countries with no ID and BRR greater than 95%	*Exclude* from estimates when administrative data is unavailable (see Appendix 4)	*Include* in estimates	To maximize inclusion of countries for better global representation; with more Findex and administrative data, and the use of BRR for adults in HIC and UMICs, there is less concern about underestimating coverage.	Around 50 million *more* that it would have been if these criteria were still applied
Calculating administrative coverage	*Subtract the total* number of people registered in the ID system from total population above the cutoff age in the dataset year (2018).	*Calculate administrative rates* by dividing the number of people registered in the ID system by the population above the cutoff age in the data year. (2019, 2020, 2021, or 2022). These rates are then applied to (multiplied by) the adult population in the dataset year (2021).	Enable incorporation of multiple years of administrative data while accounting for population growth; create parallel metrics to match birth registration, ID ownership, and voter registration rates.	About 2 million lower than if total registrations were subtracted from the 2021 population

Parameter	2018 Method	2021 Method	Rationale for Change	Effect on 2021 Coverage Gap Estimates
Cutoff age for administrative data	Cutoff age equals ID age. If people are eligible to register at 0 years only, the administrative data is applied to the entire population	Cutoff age equals ID age or 5, whichever is higher. Rather than applying the 0+ admin rate to the entire population, BRR is *always applied* to the 0–4 age group.	Ensure BRR is the primary metric used for all children under 5.	About 10 million less than if the cutoff age was kept at 0 for countries with ID registration from birth
Calculating voter registration coverage	*Subtract the total* number of registered voters in the election year (e.g., 2016) from population above the voting age in the dataset year (2018).	*Calculate voter rates* by dividing the number of registered voters by the population above the voting age in the election year. These rates are then applied to (multiplied by) the adult population in the dataset year (2021).	Improve accuracy of estimate by accounting for population growth; create parallel metrics to match birth registration rates and ID ownership rates.	About 10 million less than if we had subtracted the number of registered voters from the 2021 adult population
Countries with UNSD BRR recorded as a range (e.g., 90–99%)	Take the *lower number* of the range (e.g., 90%)	Take the *mean* of the range (e.g., 94.5)	To better account for uncertainty and avoid underestimating coverage.	Slight decrease in number of people without ID

ERRATA

When replicating the 2018 methodology and using this data for cross checks, a few errors and updates were identified:

1. **Belize.** Belize does not have a foundational ID system for adults and had a BRR of 95.7 percent as of 2015. It therefore met the exclusion criteria applied in 2018 but was included in the calculations. This had little impact on the overall totals, adding 43,994 to the global estimate of people without ID.

2. **Turkmenistan.** In 2018 and prior ID4D Datasets, Turkmenistan was classified as not having a foundational ID system for adults. Because it had a birth registration rate of 99.6 (MICS 2015-2016) it was excluded under criteria two (see above). However, Turkmenistan has a "domestic passport" system that issues widely-held credentials commonly used as proof of official ID, and in the 2021 Dataset is classified as a foundational system.

3. **Corrected ID ages.** We have revised the ID mandatory and/or minimum eligible ages for 11 countries thanks to better quality data.

APPENDIX 6.
ID4D FINDEX QUESTIONS

The following ID-related questions were included in the 2021 Findex survey and asked in 113 countries. For a full discussion of the Findex methodology and data characteristics, see Demirgüç-Kunt et al. (2022).

FIN46. Do you personally have [a/an insert local terminology for foundational ID]?

	CIRCLE ONE RESPONSE:
Yes	1
No	2
(I have applied, but not yet received it)	3
(DK)	4
(Refused)	5

(If code 1 FIN46/WP21399, Skip to FIN50/WP21414; If code 3 in FIN46/WP21399, Skip to FIN49/Text before WP21408; Otherwise, Continue)

FIN48. Please tell me whether each of the following is A REASON why you do not have [a/an insert local terminology for foundational ID]? Is it because…? (Read Items, FIN48A first then random order)

		Yes	No	(DK)	(Refused)
FIN48A	You have another form of identification issued by the government	1	2	3	4
FIN48B	You don't need an ID for any purpose	1	2	3	4
FIN48C	It is too expensive	1	2	3	4
FIN48D	You don't have the necessary documents	1	2	3	4
FIN48E	You need to travel too far to apply	1	2	3	4
FIN48F	You do not feel comfortable giving your personal information	1	2	3	4

FIN49. Have you ever had any difficulty doing any of the following because you did not have [a/an insert local terminology for foundational ID]? (Read Items, random order)

		Yes	No	(DK)	(Refused)
FIN49A	Receiving financial support from the government	1	2	3	4
FIN49B	Using financial services	1	2	3	4
FIN49C	Obtaining a SIM card/mobile phone service	1	2	3	4
FIN49D	Participating in elections	1	2	3	4
FIN49E	Applying for a job	1	2	3	4
FIN49F	Receiving medical care	1	2	3	4

APPENDIX 7. ID AUTHORITY QUESTIONNAIRE

As part of the 2021 ID4D Global Dataset, we fielded a questionnaire to ID agencies responsible for the primary foundational ID system to collect and validate key information about these systems. Section A of this questionnaire included requests to provide administrative data on (1) the number of people registered in the system by age group and gender, and (2) the number of people who had been issued with the primary credential (e.g., a national ID card). The remaining sections concerned the features of the system's credential(s), registration process, and data management. These questions and the responses received will be featured in a forthcoming paper.

These questionnaires were fielded by the ID4D team and World Bank country offices between August 2021 and May 2022, including a follow-up period to clarify and validate responses.[62] The questionnaires were prepared in English and translated to one of the other World Bank Group official languages (Arabic, Chinese, French, Portuguese, Russian, and Spanish) and other languages, on demand, when appropriate for the country context.

The parts of the questionnaire pertaining to ID coverage are as follows:

Please answer the Questionnaire about the **[SYSTEM NAME] (henceforth "ID system")** and **[CREDENTIAL NAME] (henceforth "ID")**, which we understand to be the primary ID system and government-issued credential for adults in [COUNTRY]. If this is incorrect, or there are other related systems or identity credentials managed by your agency or department, please provide this information below:

The questions in this section are intended to understand the coverage of the [SYSTEM NAME] across [COUNTRY]'s existing resident population. If possible, **please provide figures that include only unique, living persons currently residing in the territory**, excluding (a) deceased persons and/or (b) those who currently reside outside of the territory. If this is unknown, or these figures include deceased persons or non-residents, please note this information under the "2021 Update" column.

62 As a result of the data collection period and variation in reporting between countries, the administrative data received in these questionnaires represents a range of dates between 2020 (month not specified) and April 2022.

QUESTIONS	PREVIOUS INFORMATION Provided in 2019 or earlier	2021 UPDATE Please provide updated figures
A1. What is the total number of people currently registered in the system? Please also note the date (e.g., July 31, 2021) as of which this data is correct	[Previous figure included here, if known]	
A2. What is the total number of people registered by gender?		
Female	[Previous figure included here, if known]	
Male	[Previous figure included here, if known]	
Other	[Previous figure included here, if known]	
A3. What is the total number of people registered by age group?		
Less than 5 years old (0-4)	Unknown	
5 - 17	Unknown	
18 - 25	Unknown	
26 - 65	Unknown	
Over 65	Unknown	
A4. Of those registered, how many have been issued with a/n [CREDENTIAL NAME]?	[Previous figure included here, if known]	

APPENDIX 8. FINDEX REGRESSION RESULTS

Table 17 below shows the results of logit regression models using the 2021 ID4D-Findex survey data to predict ID ownership based on demographic covariates, illustrated in Figure 6. See Methodology and Appendix 6 for a more detailed description of the variables.

Table 17. Predictors of ID Ownership

	Respondent Has an ID			
	ID Ownership <90 Percent		Low-Income Countries (LICs)	
	(1)	(2)	(3)	(4)
Female	-0.155***	-0.214***	-0.165**	-0.208***
	(0.040)	(0.042)	(0.060)	(0.061)
Bottom 40% of income	-0.295***	-0.265***	-0.474***	-0.407***
	(0.040)	(0.043)	(0.061)	(0.062)
Out of workforce	-0.301***	-0.384***	-0.422***	-0.454***
	(0.043)	(0.046)	(0.067)	(0.067)
Primary school or less	-0.606***	-0.603***	-1.079***	-0.954***
	(0.043)	(0.046)	(0.068)	(0.069)
Under 25	-1.335***	-1.328***	-1.182***	-1.176***
	(0.045)	(0.048)	(0.070)	(0.070)
Unmarried	-0.317***	-0.370***	-0.243***	-0.314***
	(0.044)	(0.046)	(0.066)	(0.066)
Rural		-0.298***		-0.507***
		(0.045)		(0.069)
Constant	3.599***	3.897***	4.048***	4.337***
	(0.141)	(0.147)	(0.157)	(0.166)
Country Fixed Effects	Y	Y	Y	Y
Observations	29,931	24,919	10,787	10,787
Log Likelihood	-13,504.860	-11,576.380	-5,331.762	-5,291.130
Akaike Inf. Crit.	27,083.730	23,218.750	10,697.520	10,618.260

Note:

*p<0.05; **p<0.01; ***p<0.001

Logit models using survey weights and design-based standard errors. Models 1-2 are restricted countries with ID coverage less than 90 percent; models 3-4 include low-income countries (LICS) only. Includes respondents ages 15 plus who are also over age of eligibility to obtain the ID. Income groups are based on the World Bank's 2021 classification. Information on rural vs. urban location only available for the subset of countries where data collection was done face-to-face.

Source: ID4D-Findex Data (2021).

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