

Identifying Regions of High Risk to Under-Registration of Births in Ecuador

Project Description

The right to identity and the right to birth registration are fundamental rights protected in international human rights law. Through birth registration, a formal relationship between the state and the citizen is formed, creating a legal obligation for the state to uphold and protect other political, economic and social rights and facilitate access to state benefits and opportunities. Governments have an obligation to provide birth registration services universally to all of their citizens but in many developing countries the barriers to registration remain considerable. Many governments in Latin America are currently undergoing major reforms toward achieving the goal of universal birth registration for their citizens.

According to UNICEF's 2011 State of the World's Children Report, approximately 10 percent of the region's children under five do not have a birth certificate. In Ecuador, the under-registration rate of children under five is estimated to be around 15 percent. There is a growing body of research examining the barriers to birth registration and identifying the factors that make people at greater risk for not having their birth registered and not having a birth certificate.

Using some of these hypothesized factors, this project attempts to analyze what regions of Ecuador have populations at higher risk of birth under-registration. This information can be used to inform public policy decisions related to identifying communities that should be targeted for birth registration campaigns, and identify locations where new civil registry offices should be installed, or where mobile registration units should visit.

Techniques

Identifying factors

In order to conduct this analysis, factors that are correlated with high rates of under-registration of births were identified.

- 1) Rural location - measured with an indicator of population density.

- 2) Parents with low schooling or who cannot read - measured by the illiteracy rate.
- 3) Difficult access to a civil registry office - measured by the mean parish distance to a civil registry office.
- 4) Inter-generational barriers to registration - measured by the percentage of individuals who lack a national identification card (and likely lack birth registration as well) and face more administrative hurdles when registering their own children's births.
- 5) Minority race and ethnicity status - measured by the percentage of the population that is of indigenous or Afro-Ecuadorian descent.

Joining census data to administrative boundaries

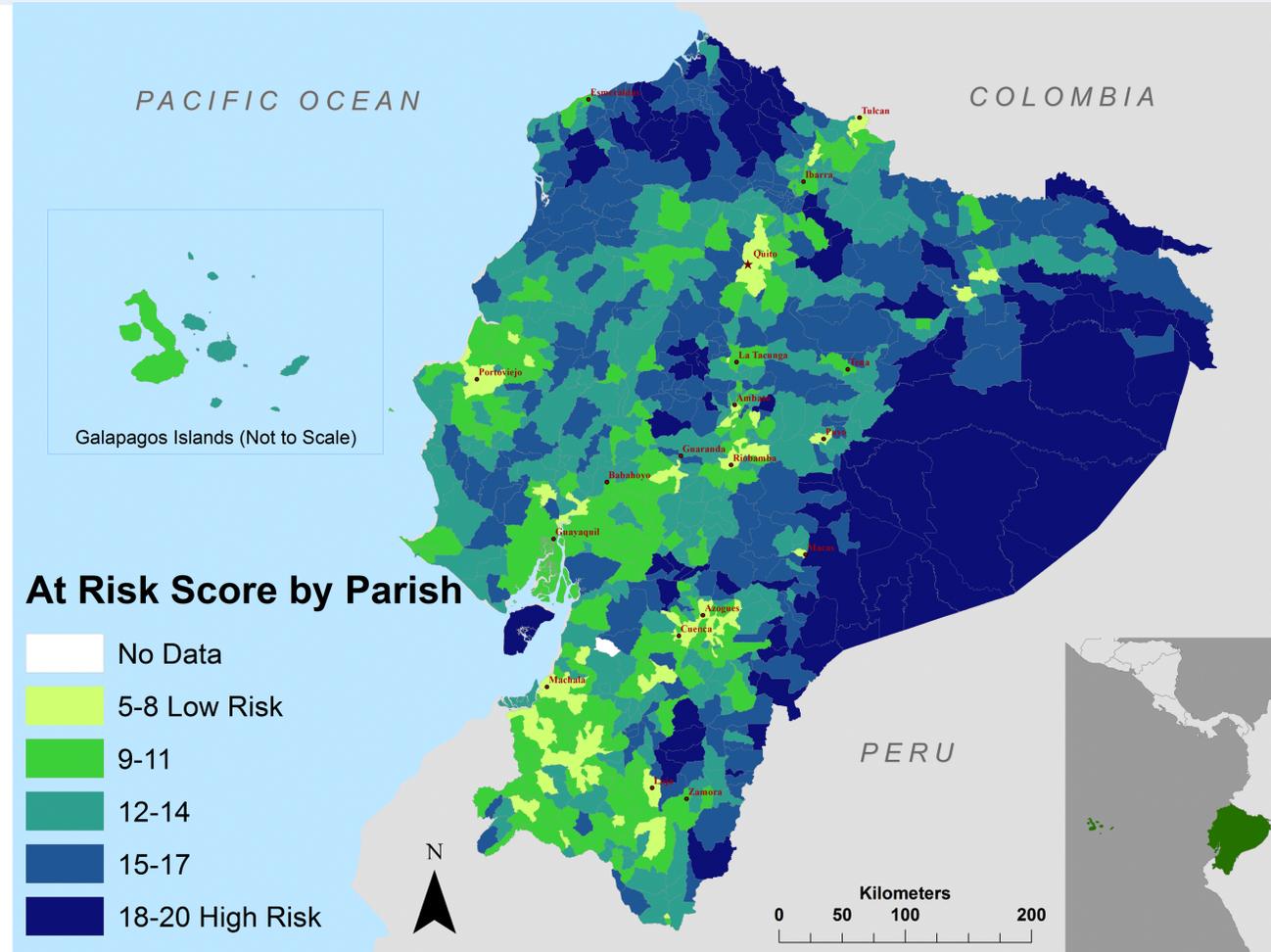
Data from Ecuador's 2010 Population and Housing Census was joined to administrative boundary shape files disaggregated to the parish level (level 3). The Census data used included parish population size (divided by parish area to calculate parish population density), number of illiterate individuals, number of individuals lacking a national identification card, size of the indigenous and Afro-Ecuadorian populations (these latter indicators divided by total population to calculate the parish percentages or rates).

Measuring distance to a civil registry

In order to create the factor of mean distance to a civil registry office, a shape file was created based on available latitude and longitude data for civil registry office locations. Using the Euclidean distance tool, a raster dataset was created with each raster's value signifying its straight-line distance from each raster cell to the nearest civil registry office point. Then, the mean distance to an office was calculated for each parish using the spatial statistics as table tool. This new table with mean distance calculations was then joined back to the census parish boundaries.

Assigning a "risk score" for each factor

Once each of the five maps listed above was created, the data was classified equally into four quantiles.



Each parish was assigned a "risk score" ranging from 1 to 4, based on how prone it might be to having a high birth under-registration rate (or low birth registration rate). In most cases data falling in the top quartile was assigned a high risk score of 4, while data in the bottom quartile was assigned the low risk score of 1. However, in the case of population density, the scoring was reversed, since areas with low population density have a higher risk of under-registration. In this case, the parishes falling in the top quintile, with highest density, received a low risk score of 1, while the bottom quintile received a high risk score of 4.

Limitations

This project only includes five of the major factors that the literature suggests may lead to low birth registration rates. This is certainly not an exhaustive list. One of the major factors that is not included in the analysis is a measure of income or poverty. Recent poverty data was not readily available for the entire country at the parish level. Even so, poverty is likely correlated with some of other factors, so the results may not have changed drastically had this factor been included.

In addition, the data available on civil registry office locations is not complete. The total number of civil registry offices is close to 1050, however it was very difficult to collect a comprehensive list of all offices and their addresses. The best list came from a website maintained by the Ecuadorian government listing offices that process citizens' paperwork. This website had a list of 461 offices with points imbedded into Google Maps. It was possible to extract latitude and longitude data from 448 of these points yet, only 299 points contained valid data. Therefore the factor

of distance to a civil registry is incomplete as it only contains around a third of Ecuador's total civil registry offices. Yet the same methodology could be used if a full dataset were available.

Results and Conclusions

There were 89 parishes that earned a high risk score of 18 or above. A total of 17 parishes received the highest score of 20. The higher risk parishes are generally in the western half of the country in the very remote Amazon region as well as in the northern part of the country along the border with Colombia. The lower risk areas occur near major cities and provincial capitals. Unfortunately, many of the high risk parishes identified are quite large in size; therefore it is difficult to pinpoint exactly where people live in these regions and where registration campaigns should specifically be targeted. Since many of these areas have disperse populations, it makes sense for the government to conduct periodic mobile civil registration campaigns to these regions rather than construct new permanent offices.

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Data Sources:

Ecuador Population and Housing Census, 2010

Ecuador Institute of Statistics and Censuses, 2010

Ecuador General Directorate for Civil Registration and Identification, 2010

Ecuador Institute of Statistics and Censuses, 2010

ESRI Maps 93

Parishes at Most Risk of Under-Registration of Births (Risk Score of 20)

	Parish	Province	Canton	Region
1	JIJON Y CAAMAÑO (CAB. EN RIO BLANCO)	CARCHI	MIRA	NORTH
2	TOBAR DONOSO (LA BOCANA DE CAMUNBI)	CARCHI	TULCAN	NORTH
3	EL CHICAL	CARCHI	TULCAN	NORTH
4	SANTO DOMINGO DE ONZOLE	ESMERALDAS	ELOY ALFARO	NORTH
5	TELEMBI	ESMERALDAS	ELOY ALFARO	NORTH
6	ALTO TAMBO (CAB EN GUADUAL)	ESMERALDAS	SAN LORENZO	NORTH
7	HUASAGA (CAB EN WAMPUIK)	MORONA SANTIAGO	TAISHA	CENTER
8	CAP. AUGUSTO RIVADENEYRA	ORELLANA	AGUARICO	NORTH
9	EL EDEN	ORELLANA	ORELLANA	NORTH
10	CURARAY	PASTAZA	ARAJUÑO	CENTER
11	CANELOS	PASTAZA	PASTAZA	CENTER
12	MONTALVO (ANDOAS)	PASTAZA	PASTAZA	CENTER
13	RIO CORRIENTES	PASTAZA	PASTAZA	CENTER
14	RIO TIGRE	PASTAZA	PASTAZA	CENTER
15	SARAYACU	PASTAZA	PASTAZA	CENTER
16	PAÑACocha	SUCUMBIO	SHUSHUFINDI	NORTH
17	TUTUPALI	ZAMORA CHINCHIPE	YACUAMBI	SOUTH

