Global Effects Of The Mexico City Policy

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This document provides an introduction to R Markdown, argues for its benefits, and presents a sample manuscript template intended for an academic audience. I include basic syntax to R Markdown and a minimal working example of how the analysis itself can be conducted within R with the `knitr` package.

Keywords: Mexico City policy, Global Gag Rule

Introduction

The issue of abortion in the United States is one that is fiercely debated and divides large segments of the population. These divides are inherently partisan and therefore have led to legislation. In 1984 the Reagan administration signed into law the "Mexico City policy", named for the city in which it was signed. The policy requires all non governmental organizations operating abroad to refrain from performing, advising on or endorsing abortion as a method of family planning if they wish to continue to receive receive federal funding.[1] The policy has had a tumultuous history, either being reinstated or rescinded depending on the party affiliation of the current president. Starting with Bill Clinton in 1993 the policy was rescinded, then restored by George W. Bush in 2001, rescinded again by Barack Obama in 2009, and most recently restored by Donald J. Trump in 2017[2].

At it's heart, the ban is propelled by the desire to limit the use of U.S. taxpayer dollars to pay for abortion or abortion-related services. The consequences of this ban include the termination of abortion related services such as; education, family planning, counseling, and training. The all or nothing nature of the ban would also cut off funds for non abortion related health services that would be offered at non governmental health providers. This presents some serious public health concerns for areas of the world where these services are essential for maternal health and prenatal care.

We hypothesized that the institution of the ban could lead to a reduction in family planning services which could then lead to an increase in induced abortions. By restricting the flow of funds into health clinics that provide services related to abortion among others, the U.S. government restricts the amount of care that can be provided to those utilizing those services. The aim of this project was to gather, analyze, and present data on the past effects of the Global Gag Rule and create a resource that assists our audience in understanding the scope of the policy, its observable impact on women's health, and the pathways through which it influences public health policy decisions outside of the United States.

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[1] The policy mandates that NGOs pledge to not "perform or actively promote abortion as a method of family planning" with non-U.S. funds as a condition for receiving U.S. global family planning assistance.

[2] As of Jan. 23, 2017, the policy extends to any other U.S. global health assistance, including U.S. global HIV and maternal and child health.

Related Work

The United Nations' Department of Economic and Social Affairs has conducted various research via nationally-representative surveys. Their dataset[3] (World Contraceptive Use 2016) contains information about prevalence and unmet family planning needs for 195 different countries/areas of the world from 1950 to 2015. This information is broken down by type of contraceptive and specific demand for family planning through different methods, which was gathered through about 15 conducted surveys across the world. These types of indicators are effective in assessing the progress of universal reproductive health-care and family planning information in a geographical area. The global gag rule has been known to threaten the funding of certain health-care organizations, which may have effects on the prevalence of contraceptive and family planning methods.

The World Health Organization (WHO) published a study[4] in partnership with the Stanford University Department of Medicine in 2011 analysing the effects of the "Mexico City Policy" on a set of sub-Saharan African countries. Specifically, this study attempted to determine whether a relationship exists between the reinstatement of the Mexico City Policy and the probability that a sub-Saharan African woman will have an induced abortion. The Stanford researchers looked at the relationship between a country's exposure to the Mexico City Policy and the odds of abortion among women of reproductive age between 1994 and 2008. In this way they were able to find a statistically significant[5] relationship between the introduction of the Mexico City Policy and an increase in induced abortions.

The U.S. Administration of International Development, as the major government agency in international aid, is responsible for reporting all official U.S. foreign aid to Congress. USAID maintains an extensively detailed database for reporting this data, which keeps records of foreign aid obligations and disbursements back to 1946. In addition to storing and reporting this data, USAID provides many projects under Barack Obama's open government initiative in order to encourage public collaboration on research and data analysis. The Foreign Aid Explorer[6] provides a dashboard for querying and downloading this dataset, but also includes its own visualizations and maps that provide informative breakdowns of global financial aid. This project was invaluable for obtaining and becoming familiar with the USAID dataset we performed analysis on.

Methods

While the World Contraceptive Use 2016 dataset included levels of contraceptive and family planning methods for an extensive number of countries across the world, we chose to analyze a certain subset of this data. After the raw excel data was downloaded from the United Nations' website, it required a substantial amount of cleaning because of the format of the column headers. Once the columns were renamed, records for countries in Sub-Saharan Africa were aggregated over time using dplyr. Reproductive health metrics for married/in-union women of reproductive age were examined across the time periods where the Mexico City Policy was active and inactive in the United States. Our hypothesis was that during periods where the policy was actively blocking funding, contraceptive prevalence would decrease, and unmet needs for family planning would

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[3]World Contraceptive Use 2016, includes country-specific estimates of these and other indicators, based on survey data available as of April 2016 dataset link

[4]United States aid policy and induced abortion in sub-Saharan Africa study, dataset

[5]Women living in highly exposed countries had 2.73 (95% CI: 1.95–3.82) times the odds of having an induced abortion after the policy's reinstatement than during the period from 1994 to 2000 or than women living in less exposed countries. summary

[6]USAID is responsible for reporting official U.S. Government foreign aid to Congress and the Organization for Economic Cooperation and Development (OECD) Foreign Aid Explorer website

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increase. This would make sense because the policy blocks the entirety of funding for an organization if it provides any abortion counseling, so many NGOs would not be able to operate.

In approaching this analysis we needed to use some unconventional methods of data sourcing. For the data on induced abortions and exposure to the "Global Gag Rule" (GGR) we scraped a `.html` table that the WHO made available through the Stanford paper published on their website. Unfortunately for us, the hierarchy of the table did not easily lend itself to reshaping in R so a considerable amount of work was done to convert it into a long form `.csv` file. We were curious about some of the potential public health effects that the ban could have had historically on an area such as maternal mortality. The hypothesis that maternal mortality would be higher after the ban was instituted was based on our intuition. We used a dataset from the World Health Organization covering maternal mortality rates from 1990 to 2015 for every country. From there we broke the data into subsets to focus on the 20 sub-Saharan countries that we had exposure data on and added those rates onto our dataset. After we had a complete dataset we performed a linear regression to gauge whether our hypothesis was correct. In the model we used the variation in policy exposure compared against variation in the rates of maternal mortality while subsetting for abortion rates in the targeted countries.

(PUT JOHNS METHODS HERE)

Results

An analysis of the United Nations' data revealed several key insights. Throughout the period of 1984 to 2014, among all Sub-Saharan African countries, Zimbabwe and Cabo Verde had the highest prevalence of contraceptives, especially modern ones, which include sterilization, intra-uterine device (IUD), implant, injectables, pills, condoms, barrier methods, LAM, emergency contraception and others. This indicates a strong presence of sexual education in the population. Zimbabwe, which has a "low" exposure to the Mexico City Policy, as found in the WHO analysis, appears to have a contraceptive prevalence level that is largely unaffected by the activity and inactivity of the policy, as there is an upward increase for every year except 2011. In 2014, 66.9% of heterosexual couples in Zimbabwe used modern or traditional contraception. On the other hand, one year after, only 5.7% of the same grouping in Chad used any form of modern or traditional contraception, which was extremely low. Mali, a country that is known to have a "high" exposure to the policy, did not rise and fall in contraceptive prevalence as we anticipated in correlation with changes in the legislation. Instead, it exhibited a slower but fairly steady upward trend, just as Zimbabwe did. The proportion of family planning demand satisfied by modern methods grew every year, however, the percent with unmet needs for family planning rose until around 2001 when it began to fall. As with these, and most of the other countries, there are not many obvious trends during the time periods when the Mexico City Policy was in effect.

In exploring the differences in the trends of induced abortion rates for the two main subsets of our data, we looked at the countries that were rated with a low exposure to the policy and countries rated with a high exposure. Though we saw an increase in abortion rates in countries that are considered highly exposed to the policy, the statistical significance was negligible.(Figure x.) The two curves were calculated from "observational data" using a locally weighted smoothing (lowess) method. The linear regression model that we performed used the variation in policy exposure evaluated against variation in the rates of maternal mortality to determine of a connection could be made between the variables. The model that we performed did not show that there was a meaningful relationship.
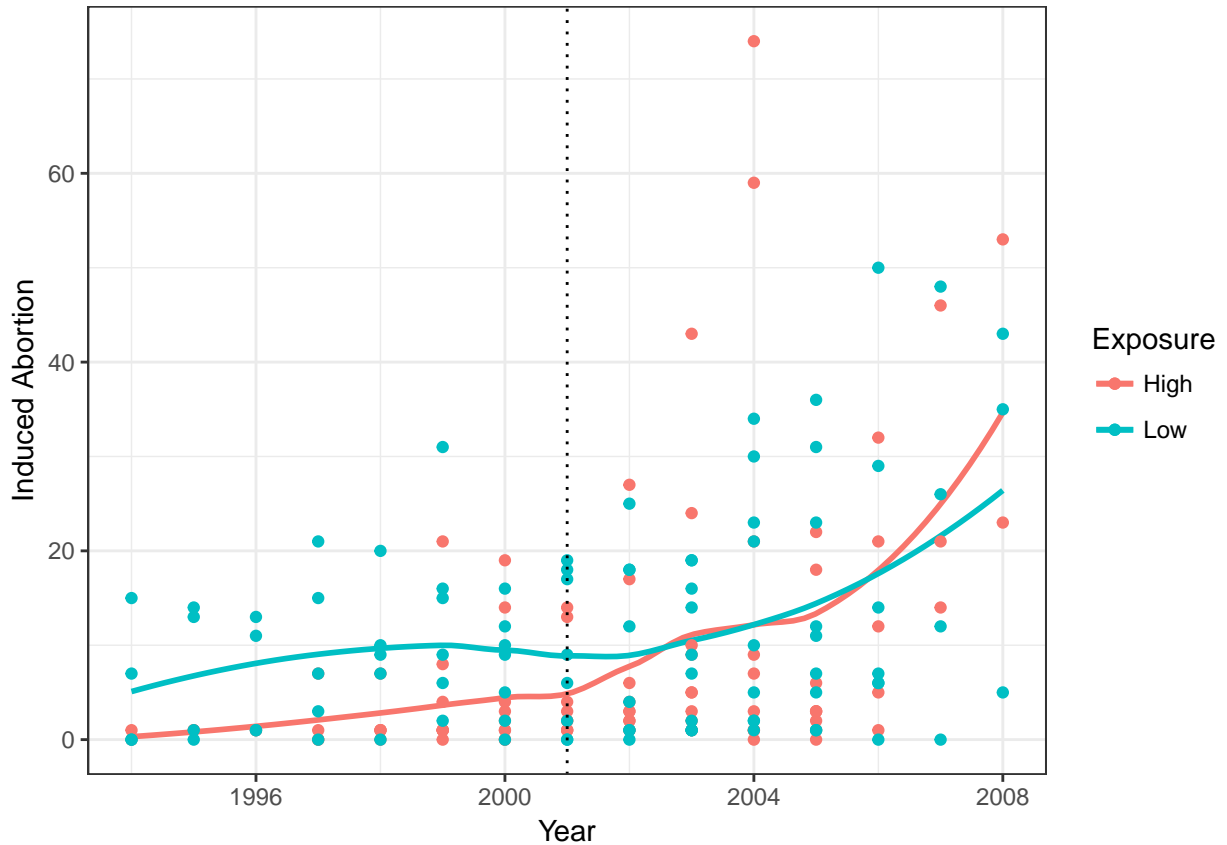
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Figure 1: Test

Discussion

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Future Work

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