

Assignment 1: HIV prevalence

Sample

The sample is from the GapMinder Data, the largest observational study for understanding of statistics about social, economic, and environmental development at local, national, and global levels.

The sample includes annual estimates for prevalence of HIV infection (hivrate quantitative variable) among individual persons 15-49 years old and total estimated numbers of infected, all ages per country. The sample includes estimates of total urban population (urbanrate quantitative variable) for each country compiled by national statistical offices. Number of countries (n=214) is considered where the number of inhabitants is more than 100,000. My hypothesis is that there is a strong correlation between the HIV rate and urban rate for 214 countries considered in my sample.

Data Collection Procedure

Data for HIV rate were collected by data reporting procedure in countries with different income. In high-income countries, national case reporting is combined with variable extent of HIV testing in risk groups. In most medium and low-income countries, HIV prevalence is monitored using antenatal care surveys and demographic health surveys. Data for most countries (n =214) are estimates obtained from UNAIDS/WHO in 2009. Data for urban rate were calculated using World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects in 2008.

Measures

The measure of HIV prevalence (hivrate – quantitative response variable) was drawn from country level surveillance data compiled by the UNAIDS organization in their database (<http://www.unaids.org/en/dataanalysis>), and made available for download through the Gapminder web site (www.gapminder.org). It

measures the estimated HIV prevalence in percentage for number of people living with HIV per 100 population of age group 15-49 for each country in 2009.

The measure of urban rate (urbanrate – quantitative explanatory variable) was drawn from country level surveillance data compiled by national statistical offices (calculated using World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects), and made available for download through the Gapminder web site (www.gapminder.org). It measures the percentage of total urban population for each country in 2008.