Social conservatism, sexuality, and stigma: The effect of a socially conservative government on HIV-testing

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Bachelor's Thesis

Abstract:
The global HIV/AIDS response has been under threat. Progress has been faltering and resources have been shrinking due to the COVID-19 pandemic and the war in Ukraine. HIV-testing is the first step in fighting the AIDS epidemic and governments play a large role here. This study tests with a linear regression whether a socially conservative government influences HIV-testing rates, controlling for GDP, state religion, region, HIV-prevalence, and democracy. The results find that having a socially conservative government has a negative effect on HIV-testing rates. A case study of Brazil corroborates this finding and shows that the socially conservative government has lowered demand for HIV-testing by reinforcing HIV-related stigma and discrimination. It is concluded that to end the AIDS epidemic we need to tackle the inequalities that perpetuate it. This thesis finishes by making recommendations such as the use of self-tests and community-led testing to reduce stigma.

Keywords: HIV-testing, socially conservative government, stigma.

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1. Introduction

In 2021, 38.4 million people were living with human immunodeficiency virus (HIV) and 650.000 people died of illnesses related to the immune deficiency syndrome (AIDS) (UNAIDS, 2022). While we know how to treat individuals with HIV and how to prevent people from being infected, the world has still got a long way to go in battling this epidemic. Since the emergence of antiretroviral therapy (ART), individuals infected with HIV are now able to live long and healthy lives. It is better for people to be diagnosed with HIV early on, allowing them to start with antiretroviral therapy (ART) immediately (WHO, 2017). But while treatment options are getting better, HIV-testing rates remain low in developing countries, such as Sudan and Mauritania (Montenegro et al., 2019, p. 1). To get treated for HIV, it is necessary to get tested first. Low HIV-testing rates result in people dying from AIDS even though there is HIV-treatment available which could save their lives. Thus, the first step in combatting the AIDS epidemic, is increasing HIV-testing rates.

Stereotypically, HIV/AIDS is mainly attributed to homosexuality, prostitution, and drugs. In many countries around the world, people living with HIV still suffer from stigmatization and exclusion. To illustrate, the Botswana AIDS Impact Survey of 2001 found that sixty percent of respondents indicated that they would not buy vegetables from a shopkeeper with HIV/AIDS (Letamo, 2003, p. 350). Stigma and discrimination remain the largest barriers to HIV-testing (UNAIDS, 2019). Recent literature shows that individuals who hold stereotypical attitudes towards people living with HIV report holding more conservative values and morals (Von Collani, 2010, p. 1750). Furthermore, conservative cultural and religious norms resist HIV/AIDS prevention messages focusing on the use of condoms and addressing sexual behavior (Aboud et al., 2010, p. 361).

Governments play an important role in promoting conservative norms and enforcing the social stigma around HIV/AIDS. A socially conservative government typically wants to distance itself from HIV because it is associated with gays, prostitutes, and drug users (Aboud et al., 2010, p. 366). When deciding to get tested for HIV, individuals are forced to trade off health benefits with social stigma costs such as being excluded from social interactions (Yang et al., 2022, p. 2). Social stigma costs are generally high in countries with a socially conservative government, and therefore recent literature proposes that having a socially conservative government may negatively influence HIV-testing rates.

However, there are some highly socially conservative countries in the world, such as Zimbabwe, which have one of the highest HIV-testing rates in the world (UNAIDS, 2020). In countries with highly socially conservative governments such as Zimbabwe, but also in Kenya and Malawi, the HIV/AIDS epidemic is on the decline due to increased condom usage and high HIV-testing rates (UNAIDS, 2020). Interestingly, these cases suggest that the relationship between a socially conservative government and HIV-testing might not be so clear cut as it seems.

Some scholars declared ideology an outdated concept which was unable to explain events after the Second World War (Bell, 1962; Lipset, 1969). However, recent studies have shown that there are indeed meaningful political and psychological differences between people self-identifying with different ideologies (Jost, 2006, p. 651). This suggests that it is still relevant to study political ideologies and their influence on current events such as the HIV/AIDS epidemic.

The first step in fighting the HIV/AIDS epidemic is increasing HIV-testing rates. To this end, it is crucial to understand which factors influence HIV-testing. Theory suggests that how socially conservative a government is can influence HIV-testing, but few empirical tests have been conducted to prove this. Therefore, this thesis will provide an empirical analysis of the relationship between a socially conservative government and HIV-testing, by trying to answer the following research question:

What is the effect of a socially conservative government on HIV-testing rates?

This study argues that having a socially conservative government negatively influences HIV-testing rates. This claim is corroborated by controlling for all relevant confounding variables in a linear regression using data from international expert surveys and UNAIDS. Recent literature explains the negative relationship between a socially conservative government and HIV-testing by both focusing on the supply and the demand side. According to existing theory, a socially conservative government limits HIV-testing due to 1) the government not being politically committed to provide for HIV-tests, 2) social stigma costs associated with HIV-testing, and 3) citizens not trusting that the government is working in their best interests. The case study of Brazil concludes that having a socially conservative government negatively influences HIV-testing by lowering demand for HIV-tests.

This thesis first explains the relevant theory regarding the relationship between a socially conservative government and HIV-testing. The subsequent section outlines the

research design, including the methods of data collection, operationalization, case selection, and methods of data analysis. Thereafter, the main results of the regression analysis and the case study of Brazil are discussed and linked back to theory. Finally, the last section includes a conclusion with a summary of the most important findings, the limitations of this research, and recommendations for future research.

2. Theory

Before turning to how a socially conservative government can affect HIV-testing, it is important to define both government social conservatism and HIV-testing. Social conservatives are more likely to conform to traditional social norms, for example, family structures, gender roles, and marriage norms. Social conservatism rejects expanded personal freedoms, such as abortion rights and same-sex marriages (Norris, 2019, p. 23). Social conservatism is usually contrasted with social liberalism which refers to progressive stances on socio-cultural issues, such as same-sex marriages and reproductive rights. When a government is socially conservative, it consists of socially conservative politicians who uphold traditional social norms (Claessens et al., 2020, p. 336-340). HIV-testing is the act of getting a test to check for HIV-infection. The most common type of HIV-test checks for antibodies against HIV in a sample of blood, urine, or fluid from the mouth. These tests usually take place at public testing facilities (Yang et al., 2022, p. 1).

How does a socially conservative government limit HIV-testing?

Political commitment

HIV/AIDS has long been recognized as a political crisis requiring a political solution (Fredland, 2001, p. 89). National governments play an important role in this respect, as evidence has shown that well-informed interventions by national governments have significantly reduced the spread of HIV in developing countries (Bor, 2007, p. 1585). However, political commitment to combatting AIDS in developing countries remains uneven. Some countries such as Uganda and Senegal quickly recognized HIV/AIDS as an emerging crisis and put it as a priority on their national agenda. Other countries such as South Africa, Zimbabwe, and Kenya have long denied HIV/AIDS as a national threat (Boone & Batsell, 2001, p. 7). Political commitment by national governments can help reduce the spread of HIV. To illustrate, national governments can create policies, programs, and interventions to combat HIV/AIDS. They can also help in alleviating HIV-stigma by educating the population, as is the focus of the next section (Bor, 2007, p. 1587).

Stereotypically, HIV/AIDS is mainly attributed to homosexuality, prostitution, and drugs. These things do not align with socially conservative values and therefore, socially conservative governments often wish to distance themselves from HIV/AIDS (Yang et al., 2022, p. 2). HIV/AIDS commonly does not appear to be high on the political agenda of a socially conservative government. Apart from any social stigma consequences this might have, it also has some very practical consequences. If something is not deemed a priority on the political agenda, there will be less time, money, and resources devoted to it (Castro et al., 2019, p. 345). In the case of HIV-testing, this means that there could be less HIV-testing facilities being built or that testing facilities are forced to close due to lack of resources.

To illustrate, Brazil used to be a frontrunner in HIV-treatment and prevention in the 1990s (Montenegro et al., 2019, p. 3). It was the first low- and middle-income country to implement TasP, PrEP and PEP strategies, which are three evidence-based HIV prevention interventions (McCormack et al., 2014, p. 41). However, in the last few years this has been completely turned around with the highly conservative Jair Bolsonaro becoming Brazil's new president. Bolsonaro's administration is working on downsizing the publicly funded healthcare system (SUS), which aimed to provide universal healthcare. This might leave thousands of people living with HIV/AIDS without medical care (Castro et al., 2019, p. 345).

The new Bolsonaro administration represents an extreme shift to the far right and includes very conservative politicians. This shift has had a negative impact on public policies addressing HIV. In an interview, Bolsonaro has said that "those with HIV should deal with it and exempt the government of this burden" (Montenegro et al., 2019, pp. 2-3). This quote illustrates that Brazil's conservative government is not politically committed to combat HIV/AIDS. By decreasing public health funds, Brazil's universal HIV treatment policies are in danger and less money is spent on creating testing facilities in rural areas (Montenegro et al., 2019, p. 4). Thus, this shows that a socially conservative government can decrease public health funding and thereby reduce the supply of HIV-tests, which is harmful for HIV-testing, prevention, and treatment.

Social stigma

As discussed in the previous section, conservative governments are generally not politically committed to combatting HIV/AIDS. This does not only lead to the government devoting less resources, time, and money to fighting HIV/AIDS, but it can also lead to the government reinforcing the social stigma that exists around HIV/AIDS which reduces demand for HIV-testing.

Stigma is a social process in which an individual or group is linked to a negative misconception or stereotype. It often results in loss of social status and limited opportunities (Lyons et al., 2022, p. 3). In the case of HIV/AIDS, this means that there is a belief that those infected with HIV are different from those in a 'normal' society who are unaffected. This leads to a process called splitting in which society is split into in-groups and out-groups. In-group members start projecting the risk of HIV to the out-group by linking HIV to behaviors they define as negative, such as men having sex with men, visiting sex workers, and use of drugs. This makes the in-group feel safe as it is easier to blame an outside group for the spread of HIV (Cort & Tu, 2018, pp. 144-145). Especially in the beginning of the epidemic, people with HIV were thought to be deserving of the consequences of their shameful behaviors and gained little sympathy (Babalola et al., 2009, p. 1513).

Social conservatives show little tolerance for individuals deviating from social standards and are therefore more likely to stigmatize people living with HIV. This makes social conservatives more discriminating towards HIV which results in a smaller in-group and a larger out-group (Terrizzi et al., 2013, p. 100). For example, a German study from 2005 shows that individuals who hold stereotypical attitudes towards people living with HIV report holding more conservative values and morals (Von Collani, 2010, p. 1750). Socially conservative governments generally promote socially conservative values which endorse social exclusivity and avoidance of the out-group (Terrizzi et al., 2013, p. 101).

Recent literature suggests that HIV-stigma is associated with reduced preventive behavior such as HIV-testing (Babalola et al., 2009, p. 1514). This is because the decision to get tested for HIV involves a trade-off between health benefits and social stigma costs, such as being excluded from social interactions (Aboud, 2010; Babalola et al., 2009; Lyons et al., 2022; Silva et al., 2021; Yang et al., 2022). Getting tested is a public act, because you need to get tested at a public testing facility. Acquaintances might see you entering or leaving the facility and might then also tell other people that they saw you, which can lead to social exclusion. To illustrate, the Botswana AIDS Impact Survey of 2001, drawn from 4500 households, found that sixty percent of respondents indicated that they would not buy vegetables from a shopkeeper with HIV/AIDS (Letamo, 2003, p. 350). The 'trade-off' here suggests that this strand of literature is rooted in rational-choice theory in which a rational individual is making a choice weighing off all possible costs and benefits (Scott, 2000, pp. 1-2).

Citizen trust

The previous two sections discuss what influences HIV-testing from a top-down point of view, assuming a large role for the government. However, it is important to note that HIV-testing is still an individual choice. There can be several outside influences, but in the end, it is the individual who decides whether to get tested for HIV or not. Returning to rational choice theory, an individual needs to have complete information to make an informed decision as to whether to get tested or not. So not only does an individual need access to HIV-testing, he or she also needs to know about things such as the risk of HIV, the costs of HIV-testing, and the available treatment options (Scott, 2000, pp. 1-2). Furthermore, the individual needs to trust that test results will not be shared and that, in the case of a positive test result, there is something that can be done about it. As mentioned in the previous section, getting tested for HIV is a public act and citizens living in socially conservative countries may not trust that their results will not be shared by people working at a testing facility (Aboud et al., 2010, p. 360). In other words, citizens can have confidentiality concerns. This means that they do not trust the health system, which can limit demand for HIV-testing.

Citizens do not only have issues with trusting the health system, but there can also be a general lack of trust in the government. Consequently, when a government is spending a lot of money on promoting HIV-testing, this does not necessarily lead to a higher testing rate. To illustrate, governments often struggle to enforce compliance with HIV-regulations when citizens do not perceive the state as legitimate (Levi et al., 2009, p. 355). With a socially conservative government, key population groups are less likely to trust that the government is working in their best interest. Key population groups are groups that are at higher risk of HIV due to specific higher-risk behavior. The five key populations according to UNAIDS are 1) gay men and other men who have sex with men, 2) sex workers, 3) transgender people, 4) people who inject drugs and, 5) prisoners (UNAIDS, 2020, p. 44). These five key populations are generally excluded and discriminated against by socially conservative governments.

Individuals learn to derive expectations about government intent based on shared characteristics with those in power and previous interactions with the government. Therefore, key populations, who are excluded and discriminated against, are inclined to distrust socially conservative governments. This means that they are likely to resist public health measures by the government even if they gain from them (Arriola & Grossman, 2021, pp. 808-809). Thus, even if a socially conservative government is spending a lot of money on promoting HIV-testing, key populations might still not be motivated to get tested. Due to previous negative experiences with the government, they might not believe that the government is working in

their best interest and therefore, they will not comply with public health measures even if these measures are beneficial for them (Arriola & Grossman, 2021, p. 818). To conclude, a socially conservative government can lower demand for HIV-testing by creating distrust in the health system and the government.

How does a socially conservative government enhance HIV-testing?

On the other hand, some scholars suggest that socially conservative governments are relatively more effective at destigmatizing HIV/AIDS than socially liberal ones. This can be explained by the 'Only Nixon can go to China' paradox where political reforms gain greater political support when proposed by an unlikely party (Cowen & Sutter, 1998, pp. 605-607). This paradox assumes that the public thinks that governments will only act according to their ideological preferences or according to private information that they have of what is in the national interest. This means that if a conservative government proposes a liberal policy, the public will infer that the new policy must be enhancing public welfare, seeing as the conservative government would never propose a liberal policy due to its ideological tendency (Cho, 2014, p. 309).

In the case of HIV/AIDS, it is surprising when a socially conservative government promotes HIV-testing seeing as it is not consistent with their ideology. Therefore, the population is more inclined to comply with preventive HIV-measures issued by a socially conservative government than they would be with a socially liberal government. Summarizing, socially conservative governments might be more effective at promoting HIV-testing because they signal more credibly that it is in the national interest to get tested.

Another way of looking at the relationship between a socially conservative government and HIV is that maybe a socially conservative government does not only influence HIV-testing, but also the spread of HIV more generally. For example, it could be the case that a socially conservative government can play a role in reducing the spread of HIV by stigmatizing sex. HIV is spread through sex, which means that if less people are having sex due to socially conservative norms, this could also reduce the spread of HIV (Mosley et al., 2022, p. 1520). Thus, a socially conservative government might not enhance HIV-testing necessarily, but it could still help in combatting HIV/AIDS.

Hypotheses

The discussion above shows that there are multiple ways to look at how a socially conservative government influences HIV-testing. However, no empirical analysis has been conducted to test which theory applies. Therefore, this thesis tests whether the following hypotheses hold:

H1: Countries with a socially conservative government have lower HIV-testing rates than countries with a socially liberal government.

H2: A socially conservative government decreases demand for HIV-tests which in turns lowers HIV-testing rates.

3. Research design

Methods of data collection

This study made use of multiple merged datasets. Data on how socially conservative the executive of a country is, comes from combining the 2019 Global Party Survey (GPS) (Norris, 2019) and the 2020 Database of Political Institutions (DPI) (Cruz et al., 2021). The GPS data comes from an international expert survey, drawing on 1,861 party and election experts (Norris, 2019). These experts estimate populist rhetoric, issue positions, and key ideological values for 1,043 parties in 163 countries (Norris, 2019, p. 5). It is important to note that there are some validity concerns when it comes to expert surveys on party positions. For example, experts may use different evaluation criteria and differ in their level of expertise (Martinez i Coma & van Ham, 2015, pp. 305-306). To test for internal validity, the GPS dataset includes data on whether estimates of party positions were influenced by personal characteristics and background of participants, such as nationality, age, gender, or ideological leanings (Norris, 2019, p. 7). The DPI (2020) dataset has data ranging from 1975 until 2020 and covering 178 countries. The DPI includes institutional and electoral results data (Cruz et al., 2021).

Data on HIV-testing rates came from AIDSinfo, which is the world's most extensive data collection on HIV led by UNAIDS (UNAIDS, 2020). UNAIDS annually provides modelled HIV estimates using the best available epidemiological and programmatic data to track the HIV epidemic (UNAIDS, 2020, p. 363). This data is collected by country teams which are primarily comprised of program officers, epidemiologists, demographers, and others from the national ministry of health, technical partners, and national AIDS bodies. Seeing as the data is checked by UNAIDS, this lowers the risk of reporting bias by countries. It is necessary to

model estimates as it is logistically impossible to count the exact number of people living with HIV, newly infected people, or people dying from AIDS-related causes (UNAIDS, 2020, p. 364). Lastly, data on control variables comes from either the mentioned datasets, the World Bank, or the 2014 Religion and State Project (RAS) which measures government religion policy for 183 countries (Fox, 2014).

Operationalization

The independent variable in this study is the level of government social conservatism, and the dependent variable is the HIV-testing rate. The independent variable was measured by combining data from the GPS and the DPI. The GPS contains data on how socially conservative political parties are all around the world. "Those with liberal values favor expanded personal freedoms, for example, on abortion rights, same-sex marriage, and democratic participation. Those with conservative values reject these ideas in favor of order, tradition, and stability, believing that the government should be a firm moral authority on social and cultural issues." (Norris, 2019). Political parties are rated from a scale of 0 to 10 on how socially conservative their values are. The DPI has data ranging from 1975 until 2020 on which political party is the largest government party in a country (Cruz et al., 2021).

How socially conservative a government is thus be measured by how socially conservative the largest government party is. The largest government party has a big say in what the government does. Therefore, the ideology of the largest government party will for the most part be representative of the government's ideology.

According to theory, a socially conservative government is expected to influence people's beliefs and attitudes. However, changing people's beliefs and attitudes is a process that takes multiple years and not something that happens overnight (Mishler & Rose, 2007, p. 823). That is why I looked at a five-year average of how socially conservative a government is to try to capture this process of changing attitudes and beliefs and to avoid problems of reverse causality. The independent variable measures the mean level of social conservatism of the largest government party from the period 2015 until 2019. This period is chosen because it has the most available data. I chose to exclude the year 2020 from the analysis because I expected a worldwide drop in HIV-testing rates due to the COVID-19 pandemic.

The dependent variable of HIV-testing was operationalized as the HIV-testing rate per country in 2019. This rate was calculated by dividing the number of HIV-tests in a country by the population size (which is measured as the total number of people living in a country in

2019). The data on HIV-testing numbers came from the UNAIDS 2020 dataset and the data on population size came from the DPI. Seeing as infants and children were also included in the number of HIV-tests as measured by UNAIDS, I have chosen to divide the number of HIV-tests by the entire population including children (UNICEF, 2016, p. 23).

Case selection

The countries included in the analysis were countries for which there was data available for both the independent and dependent variable. UNAIDS needed to have data for a country's HIV-testing number, the DPI needed to have electoral results of 2015-2019, and the GPS needed to include data on how socially conservative the biggest governments parties of 2015-2019 were. 54 countries were included in the analysis of which 6 were European. It is possible that these European countries caused a bias in the results because their experiences with HIV differ too much from the developing world. To make sure that the results were not biased, the regression was also performed on data excluding the European countries to see if the results were different.

Methods of data analysis

To test the first hypothesis, I compared countries with socially conservative governments and socially liberal governments with regards to their HIV-testing rates. However, only looking at these variables merely indicates whether there is a correlation present between the two variables. This thesis aimed to make sure that the effect on HIV-testing rates is caused by how socially conservative a government is and not by a confounding variable. Confounding variables are variables which can influence both the HIV-testing rate and how socially conservative a government is.

To avoid the risk of confounding variables causing the relationship between a socially conservative government and HIV-testing, I controlled for as many confounding variables as possible in a linear regression. This linear regression uses countries as the unit of analysis and must fulfil the following assumptions: 1) there should be a linear relationship between HIV-testing rates and the level of government social conservatism 2) the residuals of HIV-testing rates are normally distributed, and 3) observations are independent (Field, 2018, pp. 387-388). Theory proposes several important confounding variables to control for in this case.

Firstly, the region in which a country is located is added into the model. Region influences both the HIV-testing rate and how socially conservative a government is. To

illustrate, Africa is a region in which governments are commonly socially conservative and HIV-testing rates remain low (UNAIDS, 2020, pp. 240-242).

Secondly, GDP per capita is controlled for because rich countries generally tend to be more socially liberal and have higher HIV-testing rates as people have more money to get tested (Arshia et al., 2012, p. 1061; Dalgaard & Olson, 2013, p. 426). Thirdly, the analysis controls for whether a country has a state religion or not. This is because a government's social conservatism and state religion seem to be interrelated and countries with a state religion also generally have lower HIV-testing rates (Heineman, 1998, pp. 12-13; Scott et al., 2021, pp. 1-2).

Fourthly, the HIV-prevalence ratio is added as a control variable. When there is a higher risk of catching HIV, people are more likely to get tested because they have more reason to do so. Also, theory suggests that countries with a high risk of catching HIV also tend to have socially conservative governments (Aboud, 2010; Babalola et al., 2009; Lyons et al., 2022; Silva et al., 2021; Yang et al., 2022). The HIV-prevalence ratio is calculated by dividing the number of new infections occurring per year in a population by the number of persons living with HIV in that same population (UNAIDS, 2020, p. 377).

Fifthly, the level of democracy in a country is thought to influence both government social conservatism and the HIV-testing rate. Democracies tend to be more socially liberal and have higher HIV-testing rates (UNAIDS, 2022, p. 233). All in all, the regression analysis shows the effect of government social conservatism on HIV-testing rates while keeping all control variables constant. Thus, the variance explained by government social conservatism is independent of a country's region, level of GDP, state religion, HIV-prevalence ratio, and level of democracy.

This research design does have some limitations. Even though I have included the most important control variables as suggested by theory, it is always possible that there are other confounding variables not included in the analysis. For example, it could also be that the effect as measured by the regression is not caused by a socially conservative *government* but more generally by a socially conservative *society*. However, the case of Brazil shows that a government can experience a sharp shift in level of social conservatism while it is probable that social conservatism in society remained stable. Furthermore, with this research design it is hard to say something meaningful about the mechanism that is causing a specific effect on HIV-testing. This is because a regression with controls only measures an average effect across all countries and it does not look at cases in depth (Halperin & Heath, 2020, pp. 161-163). That is why I also do a case study of Brazil to test the second hypothesis.

Case study: Brazil

Over the past few years, Brazil went from having a socially liberal to a highly socially conservative executive and president. Although the wave of conservatism started in 2017, it really manifested itself in the Brazilian political system when the highly conservative politician Jair Bolsonaro became president in 2019 (Montenegro et al., 2019, p. 1). By looking at data from UNAIDS and other reports, I will investigate whether the government becoming more socially conservative coincides with a decrease in the HIV-testing rate, and if so, what is the nature of this relationship.

Brazil is chosen for this case study as it has experienced the sharpest shift in government ideology of the countries for which there was data available. The country went from a government social conservatism score of 1.5 in 2016 to 9.7 in 2019. Furthermore, it is hypothesized that a socially conservative government decreases the HIV-testing rate and therefore it makes more sense to look at a country which has become more socially conservative. If I would look at a country which has become more socially liberal and whose HIV-testing rate has increased, it could also be that the HIV-testing rate has increased simply because it follows a general trend of increasing HIV-testing rates in the world.

4. Analysis

Results linear regression analysis

The countries included in the regression analysis were Afghanistan, Albania, Belarus, Belize, Botswana, Cambodia, Cameroon, Chile, Cuba, Djibouti, Ecuador, El Salvador, Eritrea, Ethiopia, Gabon, Georgia, Ghana, Grenada, Guatemala, Guinea, Guyana, Haiti, Honduras, India, Indonesia, Jamaica, Kenya, Kyrgyzstan, Laos, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mexico, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nicaragua, Nigeria, Paraguay, Sierra Leone, Singapore, Sudan, Tajikistan, Thailand, Uganda, Uruguay, Uzbekistan, Vietnam, Zambia, and Zimbabwe. The mean GDP per capita of these countries was $8,603.95. Of the included countries, 6 had a state religion and 47 did not. Also, 18 countries were located in Africa, 15 in Asia and the Pacific, 15 in the Americas, and 6 in Europe. The mean HIV-prevalence ratio in the sample was 5.160. According to the Freedom House, 5 countries were considered free, 25 partly free, and 24 not free. Finally, the mean HIV-testing rate was 0.091 and the mean score of government social conservatism was 7.704.

First, I checked the data for linearity, normality, independence of observations, and signs of multicollinearity (Field, 2018, pp. 387-388). The Durbin-Watson test showed no cause

for concern regarding the independence of observations and there were no signs of multicollinearity (Field, 2018, p. 299). However, the P-P plots and scatterplot in Figure 1 showed cause for concern regarding linearity and normality. The distribution of government social conservatism scores were skewed, which is problematic for the interpretation of the analysis.

As data on government social conservatism were skewed, this variable was normalized by dividing values into 10 bins, each containing 10% of observations. To avoid non-linearity, I used the natural logarithm of the HIV-testing rate as the dependent variable in the linear regression analysis (Field, 2018, p. 345-350). Figures 1 and 2 shows the scatterplots of the relationship between government social conservatism and HIV-testing rate before and after binning and the log-transformation. These measures do not impact the estimated slope of a regression line describing the relationship between the two variables.

Figure 1. Scatterplot government social conservatism by HIV-testing rates without transformation.

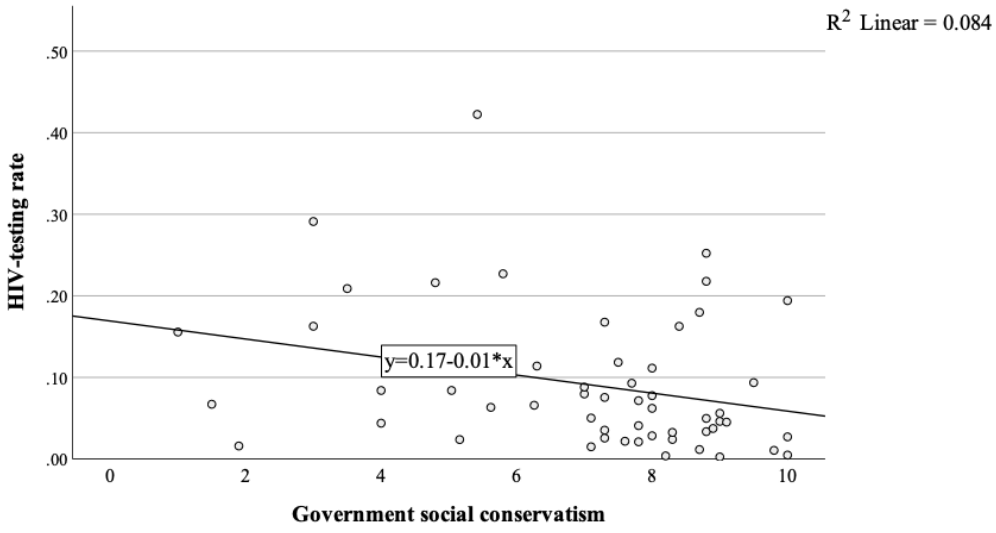
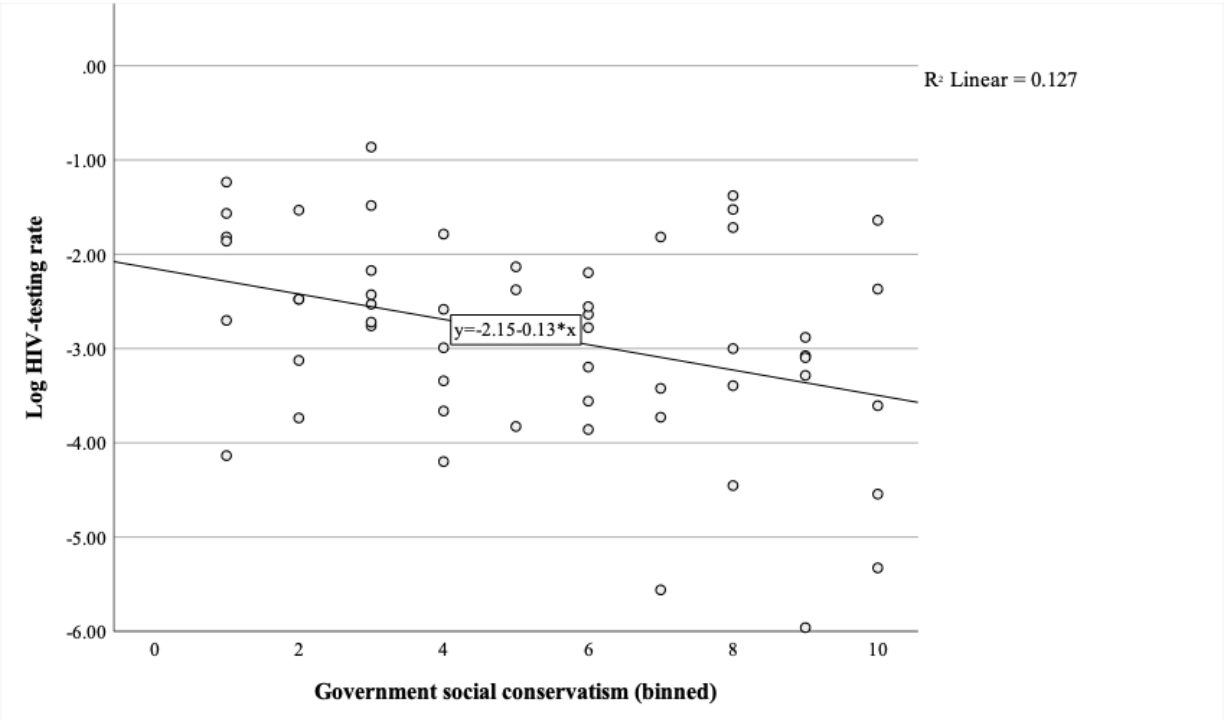


Figure 2. Scatterplot government social conservatism by HIV-testing rates with transformations.



The exact results of the applied regression analysis are presented in Table 1. This table includes two models. The first model, or control model, includes the control variables. The main predictor of government social conservatism is only included in the second model to investigate its added value. The second model suggests that a socially conservative government has a significantly negative effect on HIV testing rates when controlling for GDP, state religion, region, HIV-prevalence, and democracy ($p < 0.05$). The analysis shows the effect of government social conservatism on HIV-testing rates whilst keeping all control variables constant. The variance explained by government social conservatism is thus independent of a country's region, level of GDP, state religion, HIV-prevalence ratio, and level of democracy.

Table 1. Linear regression model of HIV-testing rate.

	Model 1	**Model 2**
Constant	-1.329	-0.777
	(0.876)	(0.903)
GDP	-1.754E-6	-1.600E-6
	(0.000)	(0.000)
State religion (Ref.: No)		
Yes	-1.227*	-0.920
	(0.492)	(0.507)
Region (Ref.: Europe)		
Africa	-0.422	-0.286
	(0.524)	(0.515)
Asia & Pacific	-0.629	-0.641
	(0.554)	(0.540)
Americas	-0.709	-0.819
	(0.569)	(0.557)
HIV-prevalence	-0.073	-0.091
	(0.056)	(0.055)
Democracy (Ref.: Free)	-0.371	-0.361
Partly free		
	(0.596)	(0.580)
Not free	-0.737	-0.479
	(0.614)	(0.614)
Government social conservatism		-0.117*
		(0.063)
R^2	0.227	0.283
Adj. R^2	0.089	0.137
N	53	53

Note: OLS regression coefficients with standard errors in brackets.

**** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.*

An increase of one unit in the level of government social conservatism, which is measured on a scale from 1 to 10, is associated with a 11.7% decrease in the HIV-testing rate ($p < 0.05$). In other words, the more socially conservative a government is, the lower the HIV-testing rate is in that country. This is in line with theoretical expectations described in the first part of the theory section (Arriola & Grossman, 2021; Babalola et al., 2009; Montenegro et al., 2019; Yang et al., 2022).

The model including the main predictor has an R^2 of 0.283 indicating that the model explains 28.3% of the variance in HIV-testing rates. The model explains over a quarter of the variance in testing rates. According to the interpretation rules by Cohen (1988), this model explains a substantial amount of variance in testing rates. However, this model also includes all control variables which means that the variance is not explained only by the government's level of social conservatism. The change in R^2 is 0.056 which indicates that the model including government social conservatism explains an additional 5.6% of the variance in HIV-testing rates compared to the control model. The regression model excluding European countries does not differ significantly from the model including European countries.

The only significant predictor in the control model is state religion. The control model suggests that when controlling for GDP, region, HIV-prevalence, and democracy, having a state religion decreases the HIV-testing rate by 122.7% ($p < 0.05$). This means that countries with a state religion have a lower HIV-testing rate. However, once government social conservatism is added into the model, this variable loses its significance. This can be explained by inspecting the semi-partial statistics. The semi-partial correlation suggests that state religion uniquely explains 10.7% of the variance in HIV-testing rates in the control model. Once government social conservatism is added into the model, state religion uniquely explains 5.4% of the variance in HIV-testing rates. It is probable that part of the variance explained by state religion in the control model, is better explained by government social conservatism in the second model. This means that state religion and government social conservatism are likely to explain overlapping variance in HIV-testing rates.

Discussion

The goal of this research was to provide an answer as to whether a socially conservative government influences HIV-testing rates. It was hypothesized that countries with a socially conservative government have lower HIV-testing rates than countries with a socially liberal government. I controlled for as many confounding variables as possible in a linear regression analysis. The results of the regression indicate that having a socially conservative government

does have a statistically significant negative effect on HIV-testing. Thus, the results in Table 1 are in line with H1. Furthermore, the analysis seems to suggest that having a state religion is associated with lower HIV-testing rates. It could be interesting for future research to further investigate this relationship to see if this relationship holds for other countries as well.

All in all, the results contribute to a clearer understanding of the relationship between a socially conservative government and HIV-testing. While there has been some literature linking a socially conservative government to HIV-related stigma, not a lot of empirical research has been done to test this theory.

When discussing the implications of this thesis, it is also important to note the limitations of this research. The most important limitation is the scope of the regression analysis. The analysis only includes HIV-testing rates measured at one specific moment in time due to data availability. However, this means that the observed effect of a socially conservative government on HIV-testing rates does not necessarily hold over time. Another important limitation is that the model only includes five control variables. As often is the case with regression analyses, it is always possible that there are other confounding variables influencing both how government social conservatism and HIV-testing. This means that the results of the analysis could be biased. To minimize the risk of omitting confounding variables, I have included the main confounding variables which are suggested by theory.

The last limitation regards the generalizability of the regression. The sample included only 53 countries due to lack of data. These countries also had relatively more socially conservative governments than socially liberal ones and only 6 of the 54 countries had a state religion. This makes it harder to generalize the findings of this research to the rest of the world. However, this distribution might still be representative of the world. All in all, these limitations impede the establishment of strong evidence for H1.

Case study: Brazil

This section looks at Brazil as a specific case. As shown in Figure 3, Brazil went from having a socially liberal (score of 1.5) to a highly socially conservative government (score of 9.7) in the span of just a few years. Although the wave of conservatism started in 2017, it really manifested itself in the Brazilian political system when the highly conservative politician Jair Bolsonaro became president in 2019 (Montenegro et al., 2019, p. 1).

Figure 3: Level of government social conservatism in Brazil per year.

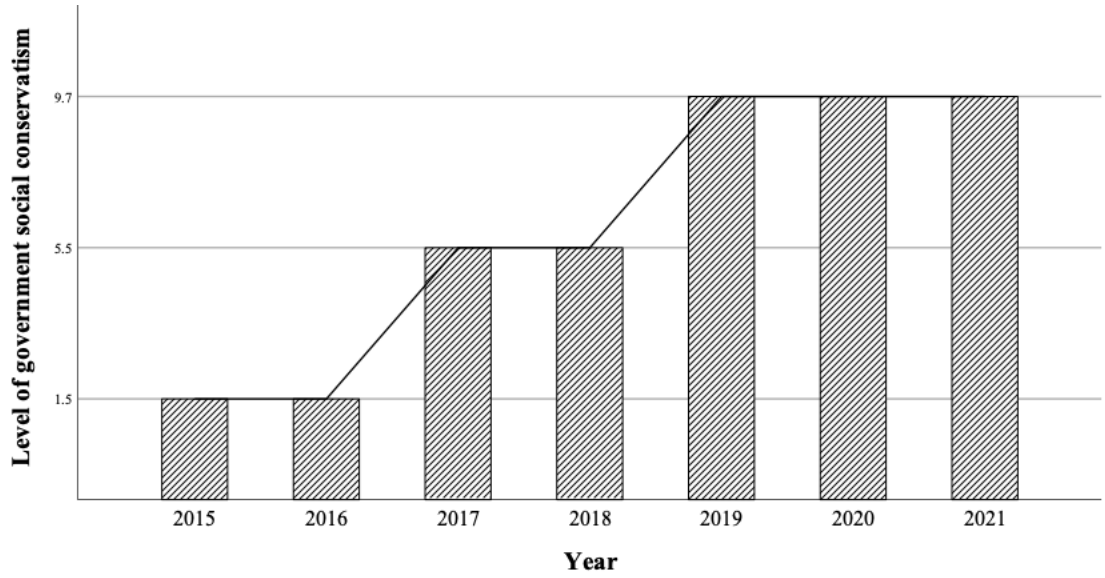
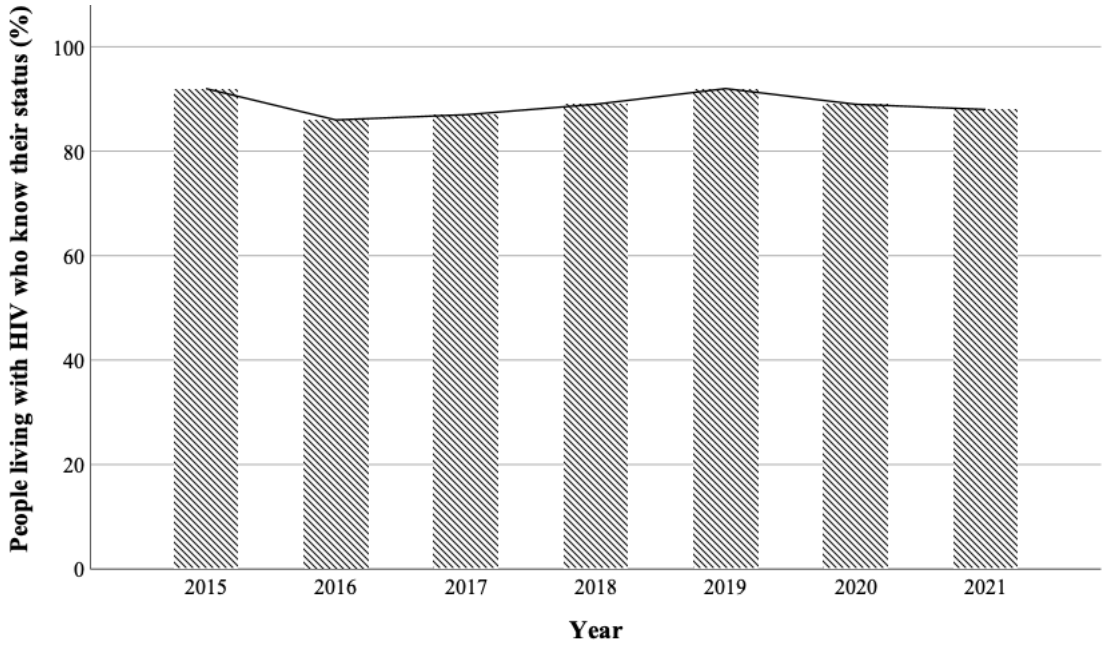


Figure 4 illustrates the percentage of people in Brazil living with HIV who know their status. Seeing as there is no data available on official HIV testing numbers, this is used as a proxy for the HIV-testing rate. The higher the percentage of people living with HIV who know their status, the higher the HIV-testing rate. The figure shows that this percentage has decreased from 92% in 2019 to 88% in 2021. It is important to note that the percent of people living with HIV who know their status is likely to change more slowly than HIV-testing rates. If testing rates decrease, there will still be many people knowing their HIV-status from previous tests. A small drop in the percent of people living with HIV knowing their status might thus still be significant.

Status awareness did also increase from 2016 to 2019 which contradicts the results of the linear regression seeing as the level of government social conservatism also increased from 2016 to 2019. A possible explanation for this could be that the effects of this shift in ideology are not felt overnight and can take multiple years to develop.

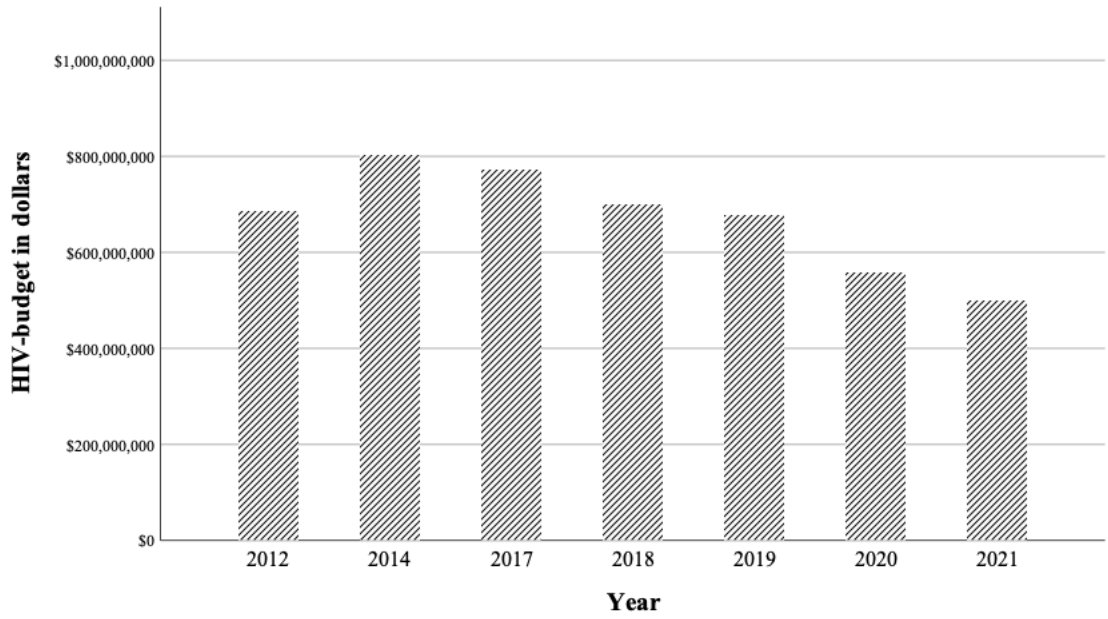
Figure 4: People living with HIV who know their status in Brazil per year.



Taken together, Figures 3 and 4 suggest a correlation between government social conservatism and the percent of people living with HIV who know their status. It is hard to conclude that government social conservatism has a negative effect on the HIV-testing rate based on these figures alone, but the linear regression does provide some support for this.

Now it is interesting to further investigate the mechanism behind this relationship. The theory section distinguishes supply and demand effects of a socially conservative government. Looking at several reports from the Brazilian government and UNAIDS, no evidence is provided of HIV-testing facilities closing in the period of the socially conservative government. On the contrary, Brazil is the only country in Latin America which has made self-testing kits for HIV-diagnosis available through public and private health services and pharmacies (UNAIDS, 2022, p. 296). This decision has been made by the Brazilian Ministry of Health in the face of the global COVID-19 pandemic (Hoagland et al., 2021, p. 101037). This suggests that the supply of HIV-tests has not gone down due to the socially conservative government. However, Figure 5 shows that the Brazilian HIV-budget has still gone down from 2017 onwards.

Figure 5: Brazilian HIV-budget per year.



Even though a lower budget does not necessarily translate to less money being spent on HIV-testing, it does harm the fight against HIV/AIDS in other ways. As argued in the theory section, a lower budget suggests that a government is less politically committed to combatting HIV/AIDS. This is also illustrated by the fact that the HIV/AIDS policy has been downgraded to a lower status within the Ministry of Health (Agostini et al., 2019, p. 4601). Furthermore, the name of the HIV/AIDS department was changed to the Department of Diseases of Chronic Conditions and Sexually Transmitted Infections, thereby intentionally excluding HIV/AIDS from the title (Daniels, 2019, p. 650).

There have not been only symbolic changes to HIV/AIDS. National and local government authorities have also reduced their public awareness campaigns against HIV/AIDS which play an important role in increasing knowledge about HIV/AIDS and reducing stigma and discrimination (Brandelli Costa, 2022, p. 16). These campaigns go against the religious and family values of the socially conservative government as they are aimed to fight a disease that still carries a lot of social stigma and discuss sexual behavior (Daniels, 2019, p. 650). Furthermore, the Bolsonaro administration has fired important AIDS program employees and dismissed entire entities such as the National Council for Combating Discrimination and Promoting the Rights of LGBTs (De Lima et al., 2022, p. 4090). All these organizational changes and the reduced autonomy of HIV/AIDS bureaucrats threaten Brazil's previous accomplishments in fighting HIV/AIDS.

Finally, the government's support of ideologies attributing negative characteristics to those living with HIV/AIDS could further increase social stigma and discrimination. According to a Brazilian study carried out in 2019, social stigma and discrimination remain the largest barriers to HIV-prevention and HIV-testing. This study is part of the People Living with HIV Stigma Index which investigates HIV-stigma around the world. The Brazilian survey uses data from 1,784 respondents in seven Brazilian capitals. The main findings of the study are that 64.1% of the respondents living with HIV or AIDS have suffered some form of stigma or discrimination. The most frequent consequences of stigma and discrimination are moral harassment, social exclusion, physical aggression, and even job loss (UNAIDS, 2019).

To conclude, this analysis suggests that it is likely that the socially conservative government in Brazil has decreased HIV-testing by reducing the demand for HIV-tests and not the supply of HIV-tests. Both supply and demand are needed for HIV-testing, but the analysis indicates that even though there was a lot of supply of HIV-tests, that did not matter as there was a lack of demand for HIV-tests induced by the socially conservative government. In other words, the results of this case study are in line with H2. Furthermore, it is likely that this lack of demand is caused by increased social stigma and discrimination.

5. Conclusion

This thesis aimed to research the effect of a socially conservative government on HIV-testing. This was done by controlling for GDP, state religion, region, HIV-prevalence, and democracy in a linear regression. The results indicated that having a socially conservative government negatively influences HIV-testing rates. The regression analysis was supplemented with a case study of Brazil to further investigate *how* a socially conservative government can limit HIV-testing. The findings of the case study suggest that socially conservative governments lower the demand for HIV-testing more than the supply.

This paper provides support for recent literature stating that socially conservative governments reinforce the social stigma existing around HIV/AIDS which results in less people getting tested for HIV. This is because the decision to get tested for HIV involves a trade-off between health benefits and social stigma costs, such as being excluded from social interactions (Aboud, 2010; Babalola et al., 2009; Lyons et al., 2022; Silva et al., 2021; Yang et al., 2022). Furthermore, socially conservative governments are found to lower demand for HIV-testing by creating distrust in the government (Arriola & Grossman, 2021; Levi et al., 2009).

The paper also suggests that socially conservative governments are less likely to decrease supply of HIV-tests although previous literature points to socially conservative governments being less politically committed to fighting HIV/AIDS and thereby decreasing public funding so that less money is spent on HIV-testing (Boone & Batsell, 2001; Bor, 2007; Castro et al., 2019; Montenegro et al., 2019). Finally, it contradicts recent literature arguing that socially conservative governments might be more effective at promoting HIV-testing because it is unexpected for them to behave this way as it goes against their ideological preferences (Cho, 2014; Cowen & Sutter, 1998).

The main limitations for this study concern the scope of the analysis and whether all relevant confounding variables were controlled for. The HIV-testing rates were only measured at one specific moment in time which makes it hard to conclude that the observed effect of a socially conservative government on HIV-testing rates holds over time. The risk with not controlling for all confounding variables is that it is impossible to make a causal claim regarding the relationship between a socially conservative government and HIV-testing rates. A recommendation for future research would be run the same analysis over time and to investigate current literature further to find other confounding variables to control for.

This thesis has important academic and societal implications. While there has been some literature on the relationship between a socially conservative government and HIV-testing, not many empirical analyses have been conducted to test this relationship. Therefore, by conducting an empirical analysis of the relationship between socially conservative governments and HIV-testing, this thesis can be seen as an important academic contribution. Furthermore, the current thesis is one of the first papers to specifically look at the effect of a socially conservative government instead of social conservatism in society.

The results of the regression analysis suggest that HIV-testing rates are low in countries with a socially conservative government. This implies that there are HIV-positive people in these countries not knowing their HIV-status and therefore also not getting the treatment they need. HIV/AIDS is not as dangerous as it used to be, because of the existence of treatments. However, if people are not getting treatment, it is still a life-threatening disease.

According to the 2022 UNAIDS report, the global HIV/AIDS response is under threat. Progress has been faltering and resources have been shrinking due to the COVID-19 pandemic and the war in Ukraine (UNAIDS, 2022, pp. 4-6). Stigma and discrimination have also increased in recent years which leads to more exclusion of HIV-positive people from healthcare systems but also from social interactions (UNAIDS, 2022, p. 92).

This thesis suggests that another reason for the stagnation of the global HIV/AIDS response is the increase of governments' social conservatism worldwide. The results of the case study show that a socially conservative government is likely to decrease HIV-testing by reducing demand for HIV-tests. Increasing HIV-testing rates is the first step in fighting the AIDS epidemic and therefore it is important to reverse the effect of a socially conservative government on HIV-testing.

One way to reduce the stigma around HIV-testing is for countries to provide more HIV self-tests in local pharmacies and public health services. Community-led testing has proven to be another effective strategy to ensure that key populations can access and benefit from HIV-treatment (UNAIDS, 2022, p. 98). Future policies and research should focus on these relatively new strategies for HIV-testing to fight HIV/AIDS.

And finally, seeing as AIDS is not the only communicable disease with a stigma around it, future research could examine the effect of a socially conservative government on other diseases such as tuberculosis, which is mainly associated with the poor. Recent global crises have taught us that we need strong services and shared solidarity (UNAIDS, 2022, p. 5). The only way to end the AIDS epidemic or other stigmatized diseases is by tackling the inequalities that perpetuate it.

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