A Postmaterialist Explanation for Homophobia in Africa:

Multilevel Analysis of Attitudes Towards Homosexuals in 33 African Countries

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Master's thesis

Spring 2018

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Abstract

This thesis advances a modified version of Inglehart's Postmaterialist thesis as an explanation for homophobia in Africa. My argument is that economic development substantially contributes to creating a Postmaterialist public culture – part of which is tolerance for homosexuality – when triggering three mechanisms: a) Increasing general living standard, b) spreading public education and c) moving demand for labor away from agriculture and industry towards the service sector. In the absence of sufficient economic development, or alternatively if economic development does not trigger these key mechanisms, homophobia is likely to persist. The mechanisms are unlikely to be triggered in natural resource dependent countries due to the *resource curse*. Putting this argument to the test, the thesis uses multilevel modeling and mediation analysis on an original dataset consisting of Afrobarometer survey data for 33 African countries (N=47.821) as well as a number of country-level variables. The analysis in complimented with a smaller analysis of World Value Survey data for seven countries over time. The Postmaterialist explanation of homophobia is compared with two alternative explanations of homophobia in Africa: The colonial-era laws that criminalize same-sex intimacy, and religion.

The results give substantial support to the theoretical argument presented and the explanation is of comparable importance and robustness to the dominant explanations in the literature. The finding has profound implications for theory and policy. First and foremost by showing that homophobia in Africa is maintained by deep-seated material conditions. This seems to indicate that external pressure on African states to end anti-gay policies and rhetoric is unlikely to work in the absence of economic development. But also by locating the resource curse as a key obstacle for realizing the tolerance-promoting effects of economic development.

Acknowledgments

Jeg vil først og fremst takke min veileder Siri Gloppen. Helt siden hun veiledet bacheloroppgaven min i 2014 har hun støttet meg akademisk på en rekke måter: Fra å inkludere meg på Centre on Law and Social Transformation og prosjektet *Political Determinants of Sexual and Reproductive Health,* til feltarbeid i Zambia i 2017, og ikke minst gjennom gode råd og diskusjoner under skrivingen av masteroppgaven. Dette har jeg satt uendelig stor pris på.

Jeg vil takke Michaël Tatham, Michael Alvarez, Ingvild Skage og Vegard Vibe for gjennomlesninger av tidligere utkast og for konstruktive kommentarer. Jeg vil også rette en særlig takk til Ingvild og Vegard som i to år har gitt meg betydelig inspirasjon gjennom deres eget arbeid på LGBT-politikk i Afrika.

Takk til Synnøve Eikefet for språkvask av oppgaven.

Masteroppgaven hadde ikke vært like gøy å skrive uten det fantastiske miljøet på lesesalen. Særlig vil jeg takke Simen, Åsgeir og Marius for veldig givende (og lange) diskusjoner.

Takk til Mari for tålmodigheten og for å ha gjort studietiden til en veldig god tid.

Til slutt vil jeg takke mine foreldre som alltid har støttet og oppmuntret meg gjennom mine mange interesser og prosjekter.

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1 Introduction

1.1 Research question

Although hostile attitudes towards homosexuals and state oppression of homosexuality exist all around the world, Africa has over the years become infamous in this regard. From Robert Mugabe, president of Zimbabwe, calling gays "worse than dogs and pigs" in 1995, to Uganda's 2009 *Anti-Homosexuality Bill* that initially would introduce death penalty for acts of "aggravated homosexuality", the topic of "African homophobia" has reached the attention of media worldwide (Shoko 2010; Ireland 2013). While much of the world has moved in a more liberal direction on the issue, hostility towards homosexuals are actually getting worse in many African countries (Ireland 2013).

In the literature on homophobia in Africa, two dominant explanations are the colonial-era laws that criminalize same-sex intimacy, and religious conservatism, particularly with respect to Evangelical Christianity and Islam. This thesis will mainly examine a third explanation that has largely been ignored in the literature, namely that of the Postmaterialist thesis. The Postmaterialist thesis expects tolerant public values to emerge as a consequence of economic development and higher living standards. An implication would be that low levels of economic development could facilitate homophobia. This explanation will be pitted against the established explanations in the literature. This is done firstly, to assess the robustness of the Postmaterialist explanation when the other major explanations are also factored in, and secondly, to compare the strength and explanatory power of the Postmaterialist thesis vs. the other explanations. The research question for this thesis will be the following:

Can the Postmaterialist thesis explain homophobia in Africa?

I have restricted the research question to deal with negative attitudes about *homosexuals* only. This is mainly due to the fact that available survey data ask respondents about homosexuals. I can therefore not justify drawing inferences about attitudes towards LGBT or LGBTIQ+[1] people. Undoubtedly, attitudes towards groups such as homosexuals, bisexuals, intersex and

[1] *Lesbian, Gay, Bisexual, Transgender, Interesex, Queer* and others.

queers are interlinked (Copp and Koehler 2017). However, there are not any large-scale survey data for Africa – to the best of my knowledge at least – asking people about these other groups.

The question is also restricted to deal with *attitudes* about homosexuals, and not the saliency of the issue. Much of the literature on homophobia in Africa is concerned with the politicization of homosexuality. However at this point, limited data means that only popular attitudes on the issue and not perceptions of how important the issue is will be investigated.

1.2 Background for the Research Question

On January 26 2011, David Kato, a prominent LGBT-rights activist in Uganda was bludgeoned to death in his home in Kampala (Rice 2011). The year before, Kato was depicted on the front cover of the newspaper *Rolling Stone*[2] under the headline "100 pictures of Uganda's Top Homos Leak". On the side it said "Hang Them". The paper claimed that the homosexual community would "recruit 1.000.000 innocent children by 2012". It went on to list the names and addresses of alleged homosexuals (Rice 2010).

The politicization of homosexuality in Uganda, which has spawned incidents such as the one described above, arguably could not have happened were it not for the widespread negative public attitudes towards homosexuals. In Uganda, these attitudes are not new. According to Pew Global, the share of the population that says "Homosexuality should not be accepted by society" was 95 percent in 2002 and 96 percent in 2013 (Kohut et al. 2013, 23). This tells us that while the heavy saliency that the issue has had in recent years may be new, the homophobic attitudes have in this case been there for some time.

Homophobia in Africa is often portrayed as a monolithic concept that exists to the same extent across the continent. Research has shown that this is not the case. For example, Awondo, Geschiere, and Reid (2013) demonstrates that between Senegal, Cameroon, Uganda and South Africa cultural perceptions of homosexuals are wildly different. In addition, the *prevalence* of negative attitudes towards homosexuals varies substantially between countries in Africa. Figure 1.1 gives a glimpse at this variation. Perhaps it is because of the

[2] Not to be confused with the American magazine with the same name.

misconception that homophobia is omnipresent across Africa that "its specific conditions of production and circulation are overlooked, and homophobia is often a 'conceptual cognate' for Africa itself" (Biruk 2014, 448). However, the fact that attitudes *do* vary between African countries and between individual within the countries opens the possibility of trying to explain these variations. This is where the current thesis comes in.

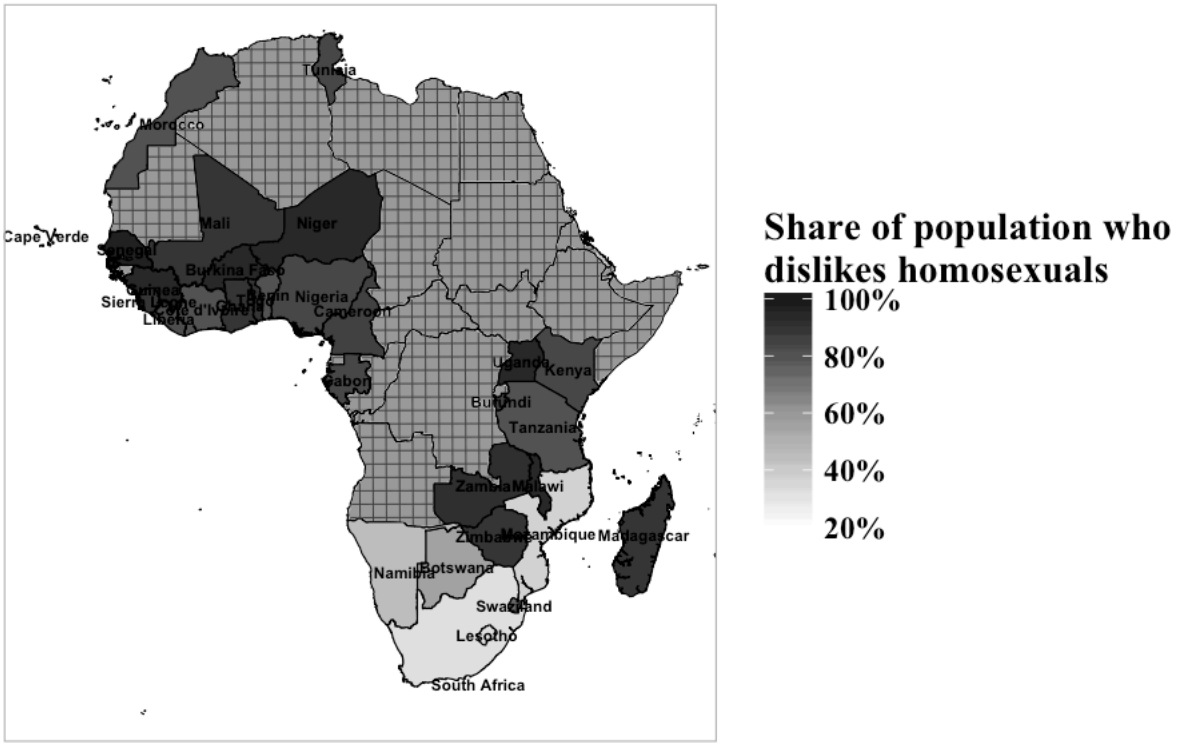

Fig. 1.1 Level of homophobia by country. Source: Afrobarometer (2016); author's calculations.

1.3 Contribution

The current thesis is located at the crossroads between two literatures. The first is a relatively new and growing literature that deals with homophobia in Africa specifically. The foci of this literature include the growing politicization of homosexuality across the continent (Grossman 2013); the relationship between homosexuality and religion (Van Klinken and Chitando 2016); and the relationship between homosexuality, colonialism, perceptions of *africanness* and modernity (Epprecht 2013; Kaoma 2012). The second literature is the Postmaterialism literature (Inglehart 1977; Inglehart and Baker 2000; Inglehart and Welzel 2005). This grew out of modernization theory and has over the years built a theoretical and empirical case for the notion that economic development creates tolerant public values over time.

The thesis aims to contribute to both literatures. It contributes to the literature on homophobia in Africa in the following ways:

- It provides the first study of what explains attitudes towards homosexuals in Africa that uses nationally representative survey samples of many African countries (N = 33). This has not been possible before due to a lack of data.
- It statistically tests some of the major explanations of homophobia in this literature, namely religion and the colonial era laws that prohibit same-sex intimacy.
- It incorporates economic underdevelopment, and in particular the Postmaterialist thesis, as an explanation for homophobia. This kind of explanation has been largely ignored in the literature. The thesis empirically demonstrates the importance of this explanation.

The thesis contributes to the literature on Postmaterialism in the following ways:

- It investigates the validity of the Postmaterialist thesis in the African context for a highly relevant topic, namely attitudes towards homosexuals.
- It theoretically modifies the Postmaterialist thesis by identifying the resource curse as an important barrier to realizing the tolerance-promoting effects of economic development. The empirical analysis supports this proposition.

1.4 Central Findings

The analysis finds that economic development is strongly associated with less homophobia,. But the effect is indirect. It is mediated through the general standard of living, educational level and size of the service sector in a country. This is line with the Postmaterialist thesis. However, while there is a strong effect of economic development for regular economies, there is no effect at all for natural resource dependent countries. It is argued that this is explained by the lack of invectives on government in these states for redistribution and investment in education. This finding supports a modification of the Postmaterialist thesis in line with the resource curse theory. In comparison with the established explanations in the literature, the modified Postmaterialist explanation is comparable in strength and robustness.

1.5 Structure

In chapter 2 I will explain how the Postmaterialist thesis works as an explanation for homophobia in Africa and also explain the logic behind the two more dominant explanations in the literature. In chapter 3 I will present the data I will be analyzing and discuss the operationalizations I have chosen for the variables of interest. In chapter 4 I discuss the methods I will be using, the main ones being multilevel logistic regression and mediation analysis. Chapter 5 is devoted to the analysis itself. Lastly, in chapter 6 I will discuss the findings and conclude with regards to the theoretical expectations.

2 Theory

The goal of this chapter is to show how the Postmaterialist thesis fits as an explanation of homophobia in Africa. Furthermore I will discuss two alternative explanations that are often argued in the literature as reasons for homophobia: The colonial era-laws that prohibit same-sex intimacy, and religion. All three explanations imply empirically testable hypotheses that I will present as I go along. First however, I will define and critique the central term of this thesis, *homophobia*.

2.1 Defining Homophobia

What is homophobia? In line with previous research I here define homophobia as "fear and dislike of lesbians and gay men" (Britton 1990, 423). This definition covers individual negative attitudes towards gays, as opposed to other types that have been researched, such as institutional homophobia. Institutional homophobia includes systematic forms of discrimination practiced by agents such as the government and private companies (Raja and Stokes 1998, 118).

Although homophobia is a widely used term, it is not unproblematic. Scholars have criticized the term on a number of grounds. The main arguments are the following: The term implies that anti-gay sentiment constitutes a *phobia*, even though the phenomenon does not fall under standard definitions of phobia as given by medical manuals for instance; the term implies a pathology, which it technically is not; the term overstates the importance of individual fear at the expense of other forms of discrimination that gays face, such as institutional discrimination; and in addition to being to narrow, in practice it is used vaguely, referring to a wide range of phenomena from the thoughts of individuals to the actions of governments and organizations (Herek 2004, 9-11). Still, the term has become the standard way of describing hostility towards gays in Africa among gay rights organizations and journalists (Ireland 2013), and this leads scholars such as Van Klinken and Chitando (2016, 3) to use the term while acknowledging it limitations. In agreement with this line of reasoning, I would also add that regardless of the term used, the most important aspect is to define it clearly.

2.2 Why Does it Matter if the Postmaterialist Thesis can Explain Homophobia in Africa?

There is a noteworthy argument being made in the literature on homophobia in Africa. Namely that direct external pressure on African states from western governments or international organizations to protect LGBT-people could actually be harmful to the cause. This is because such pressure, which often takes the forms of aid conditionality and condemnations, feeds into a growing perception on the continent that the West is engaged in "cultural imperialism" and seeks to spread homosexuality, a "Western construct", to Africa. Hence, homosexuality has in some contexts become dangerously central in debates about African autonomy and anti-imperialism. This is not to say that external pressure cannot work in the short term, but that in the longer term it could have adverse effects, particularly on public opinion (Awondo, Geschiere, and Reid 2013; Demone 2016).

Malawi is a case in point. After a gay man and a transgender woman had been arrested and charged with "sodomy" in 2009, the governments of "the United Kingdom, the United States, Norway and Germany, as well as organizations such as the International Monetary Fund, the World Bank, Amnesty International and Human Rights Watch expressed their condemnation (…) and threatened to cut off aid" to Malawi (Demone 2016). Even though the couple was eventually pardoned by the president, Demone (2016) shows that the incident bolstered a popular perception that "pitted Malawi against the developed world" (Demone 2016, 376). Consequently, McNamara (2014, 92) reports from fieldwork in Northern Malawi that "[p]eople in the villages I stayed in are adamant that homosexuality comes from the West and that donor governments are enforcing it on unwilling Africans". Demone (2016) argues that aid conditionality "seems to be a blunt instrument that does little to change embedded views". McKay and Angotti (2016) show that the political rhetoric of western cultural imperialism on the issue of homosexuality has also been heavily professed in Nigeria and Uganda. Similarly, Hoad (2007) discusses a peculiar episode in Zambia in the late 1990s when LEGATRA, an LGBT rights organization, tried to establish itself despite hostility from the government. The Norwegian ambassador intervened on the side of LEGATRA, upon which the Zambian government claimed that "homosexuality is a Norwegian conspiracy" (Hoad 2007, 83-84). The overall point that emerges from these kinds of episodes is summarized well by Awondo, Geschiere, and Reid (2013, 161): "On a practical level, one truism does emerge despite all

differences: interventions from outside Africa—whether from politicians or activists— that prescribe certain values can very easily turn out to be counterproductive".

As I will show, the Postmaterialist thesis implies that economic underdevelopment can explain homophobia in Africa. Specifically, the expectation would be that a tolerant public opinion is strongly associated with higher levels of economic development, and on the other hand is almost absent in less developed countries. This is explained by innate properties of poverty, low educational levels and the industrial structure of low-income countries. If this were the case, it would mean for African countries that fundamental changes in public opinion are unlikely to happen at low levels of development. This again indicates that direct external pressure on a country to suddenly liberalize its policies and rhetoric regarding homosexuality will – in absence of economic development – at best yield small results and at worst create backlash. But if the Postmaterialist explanation of homophobia does apply to Africa, then it would also mean that a tolerant public opinion could be expected to emerge as economic development happens, so long as it benefits the general population.

2.3 The Postmaterialist Thesis and its Relevance for Homophobia in Africa

> "Apart from disasters and wars, no other phenomenon affects people's daily lives more massively and brings changes that are more immediately felt than socioeconomic development" (Inglehart and Welzel 2005, 22).

Through a number studies, Ronald Inglehart and his colleagues have developed what has come to be known as the Postmaterialist thesis (Inglehart 1977; Inglehart and Baker 2000; Inglehart and Welzel 2005). Considered by the authors a revised version of the famous and controversial modernization theory, its central claim is that socioeconomic development leads to great changes of culture and values within a society. Socioeconomic development here refers to a number of closely related processes, the main ones being economic growth and rising standards of living, rising educational levels and occupational specialization (Inglehart and Baker 2000; Inglehart and Welzel 2005, 24-25). These factors tend to shift the focus of the people from mainly caring about material issues (such as physical and economic security), to increasingly caring about immaterial issues (such as rights, freedoms and the quality of life). In the terms of Inglehart they go from a *survivalist* value orientation to a *self-expressive* value orientation. Part of this grand shift in values is the increased acceptance of sexual

diversity, in particular the acceptance of homosexuality. In fact one of the five survey items that Inglehart and Baker (2000) uses to measure the dimension *survival vs. self-expression values* is the degree to which people see homosexuality as justifiable. To the degree that people are survival-oriented they also disapprove of homosexuality (Inglehart and Baker 2000, 24). Empirically demonstrating the association, the authors analyze World Value Survey data for 65 countries, covering 75 percent of the world's population, and find a strong positive effect of socioeconomic development on self-expression values. As a logical consequence, Postmaterialism implies that socioeconomic *underdevelopment* can explain homophobia.

Africa is the most economically underdeveloped continent in the world (UN DESA 2009, Chapter 2) *and* has the highest level of homophobia in terms of public opinion (Kohut et al. 2013). Seen through the lens of the Postmaterialist thesis, this is no coincidence, but a predictable correlation. What further supports this proposition is the fact that studies of homophobia in the West consistently find a significant correlation between country affluence and tolerance towards homosexuals (Slenders, Sieben, and Verbakel 2014; Gerhards 2010; van den Akker, van der Ploeg, and Scheepers 2013; Kelley 2001). Yet, in the literature on homophobia in Africa, the Postmaterialist explanation has largely been ignored. The only major argument in this literature that implies some effect of socio-economic development is the one claiming that homosexuals have been used as scapegoats by opportunistic politicians trying to distract the population away from social and economic turmoil (Thoreson 2014; Biruk 2014; Awondo, Geschiere, and Reid 2013).

However, applying the Postmaterialist thesis to the African continent requires an important adjustment. We know from the "resource curse" literature that there is something special about a country that has its affluence from an abundance of natural resources. In this context, affluence will likely not have the effect of creating a more tolerant public opinion. I will argue that this is because such states are not incentivized to use the affluence to raise living standards and invest in public education the same way as other states are. This situation applies for a considerable number of the countries in Africa and must therefore be taken into account.

2.3.1 Economic Affluence at the Individual Level and at the Country Level

As a starting point, Inglehart (1977) observed that in the more affluent societies people are freer from material concerns and can focus their attention on the "subjective quality of life". In these societies the predominant values are post-materialist rather than materialist. In making this argument, Inglehart builds on the work of Abraham Maslow who famously conceptualized a hierarchy of human needs in which people will first strive to ensure basic survival and then increasingly focus on covering needs such as "love, belonging, and esteem" (Inglehart 1977, 22). But what does this mean for their view on homosexuality? As Slenders, Sieben, and Verbakel (2014) point out, where survival is uncertain, diversity of any kind may be perceived as threatening. This would also apply for sexual diversity. Tolerance for new ideas and out-groups naturally comes with a certain risks: A risk that society will change in unpredictable ways. However, if people feel sure that they and their family will have their basic needs covered for the foreseeable future, they are likely more willing to accept that risk. In sum, economic insecurity breads conservative values, while freedom from want breads liberal values.

Lending support to the existence of such a mechanism, Svallfors (2006) interrogates class value differences in four western states and finds that working class people are more skeptical towards "out-groups" than are people of middle and higher classes. Also, Persell, Green, and Gurevich (2001) finds that economic distress tend to make people more intolerant of homosexuals specifically. One of the reasons, they argue, is that "individuals experiencing greater economic distress are more likely to be consumed with self-interested, instrumental activities", increasing animosity and consequently intolerance.

At the individual level then, people who are economically secure will have more tolerant attitudes than people who must constantly worry about covering basic necessities. Inglehart, however, is more concerned with affluence at the country level (Inglehart and Baker 2000). The point here is that when economic development raises the living standard of segments of the population, the overall culture and public discourse of the society will change towards Postmaterialism. These changes will affect all people of the society, including the people who are economically insecure. In practice this would mean that economically insecure people in wealthy countries would be more tolerant than their counterparts in poor countries because the dominant values of their societies are different.

If we apply the arguments above to the case of homophobia in Africa, the Postmaterialist thesis would firstly imply that in a typical African country with high levels of poverty, a large share of the population would be expected to have a materialist (or *survivalist*) value orientation because they are not economically secure. This value orientation is strongly associated with conservative attitudes in general, so they would be inclined to disapprove of homosexuality. Secondly, given that poor material conditions have been there for a long time, the general culture of the society has a conservative orientation. Therefore, in a poor country also the rich would to a certain extent share these values because they are part of the culture. Africa's wide spread poverty could thus be a factor perpetuating homophobia.

This reasoning is in line with the segments of the Africanist literature that have touched upon economic explanations for homophobia. Thoreson (2014) takes a political economy approach to episodes of homophobia in Malawi, Uganda and Senegal. He argues that among the factors that influence "expressions of [anti-gay] animus" are the material well-being and equality of the population, factors which are decisively shaped by the nation-state (Thoreson 2014, 36). Similarly, Biruk (2014) shows that the wave of homophobia in Malawi that ensued after a gay engagement ceremony in 2009 cannot simply be attributed to this single incident. Rather, homophobia happened in tandem with a severe political and economic crisis, partly brought on by cuts in conditional donor aid. The crisis forced to the surface debates about national autonomy and Malawi's relationship with the West. In this context homophobia became a predominant frame of discourse.

Furthermore, several scholars have also argued that African leaders and politicians have used homosexuals as scapegoats to direct attention away from social and economic turmoil (Ireland 2013, 55; Kennedy 2006, 60; Awondo, Geschiere, and Reid 2013). Robert Mugabe, former president of Zimbabwe, has been a noticeable proponent of this strategy, but also former Namibian president Sam Nujoma, who repeatedly referred to homosexuals as the primary problem facing the country (Kennedy 2006, 60). Hence, we have already seen how economic hardship in the African context may facilitate homophobia through the need for political leaders to find scapegoats for real societal problems.

The effect of individual level well-being and country level affluence on attitudes towards homosexuals has also been tested in larger cross-national studies. Studies of attitudes towards

homosexuality in the West typically find that country affluence measured in GDP per capita has a strong positive effect on tolerance. Slenders, Sieben, and Verbakel (2014) conducts a multilevel analysis of attitudes towards homosexuals for 40 European countries and finds that GDP per capita alone explains *over half* of all country-level variation. Andersen and Fetner (2008) also found a strong effect of country affluence in their multilevel survey data analysis of 35 democracies. Alozie, Thomas, and Akpan-Obong (2017), which is the major cross-national study trying to explain Africa's high level of anti-gay attitudes, found that individual level poverty negatively impacts tolerance. However, because they only had data for 6 African countries they did not include any country-level variables; hence they could not test the effect of country affluence.

Although Africa is the poorest continent on earth, affluence levels do vary to a meaningful extent between countries. In the sample of 33 African countries that will be used in this thesis, GDP per capita ranges all the way from $18,300 in Mauritius to $790 in Liberia. If the theory were accurate, one would expect to see this translate into different levels of tolerance towards homosexuals.

2.3.2 Education

So far I have only discussed how country affluence is associated with homophobia through affecting the general living conditions of the population. A second avenue for the effect of economic development on tolerance is through education. Education is considered to make people more knowledgeable, intellectually independent and willing to question dogma (Inglehart and Welzel 2005, 28). These are traits that have the potential to make a person more accepting of diversity in general, and hence could increase tolerance for homosexuals (Vogt 1997). In many cases, education would perhaps directly teach such acceptance (van den Akker, van der Ploeg, and Scheepers 2013). This however, seems quite unlikely in many of the African countries that have deeply established homophobic cultures. On the contrary, it has been argued that traditional gender norms that sustain homophobia in Sub-Saharan Africa, are often supported by the educational systems (Amnesty International 2013, 47). Despite of this, education is expected to have a tolerance increasing effect indirectly by enhancing peoples' general ability to reason and by exposing them to a multitude of new ideas (Andersen and Fetner 2008).

Empirically, educated people are on average more liberal across a range of issues than are less educated people (Hyman and Wright 1979). The positive effect on tolerance towards homosexuals was found at the individual level through multilevel analysis by van den Akker, van der Ploeg, and Scheepers (2013), but the effect was not significant when looking at national educational levels. Inglehart and Welzel (2005, 37-38) argue that part of the effect of education on tolerance is due to the fact that it is mainly people who have their basic needs covered (see 2.3.2) who get educated. But even when controlling for class background, Andersen and Fetner (2008) find that education significantly increases tolerance for homosexuals. Furthermore Alozie, Thomas, and Akpan-Obong (2017) attribute part of Africa's high level of homophobia to low educational levels across the region.

However, educational levels are closely related to economic conditions. As Inglehart argues, education is an indicator that someone has grown up under relatively secure economic condition: "Throughout the world, children from economically secure families are most likely to obtain higher education" (Inglehart and Welzel 2005, 37). Since education requires time and resources doing activities that do not immediately generate income, people who are economically insecure might not be able to afford it. Moreover, given that setting up public educational institutions requires considerable state resource, the threshold for doing it would be higher in poor countries than in richer countries. This argument is supported by empirical analysis: Castles (1989) sets out to explain varying levels of educational expenditure with data for 18 OECD countries and finds that GDP per capita is the single most important predictor.

Still, while economic development may increase educational levels, we must acknowledge that reversed causality is highly likely: It is well established that more and better education facilitates economic growth by improving the efficiency of labor. This is the conclusion of Barro (2013) who analyzed panel data for over 100 countries.

2.3.3 Post-industrialization

While Inglehart has mainly focused on economic security and education as the mechanisms through which economic development increases tolerance, Bell (1973) emphasized the transformation of industry. Particularly important was the tendency for economic and technological development to move much of the work force from the industrial sector to the

service sector. Inglehart and Baker (2000) notes that for Bell, the shift from industry to service means that people go from a working situation where they mainly deal with machines and "fabricated nature", to a situation where they mostly deal with other people and symbols. The shift causes the workers to increasingly care about post-materialist issues (such as the quality of life) at the expense of materialist issues (such as economic security). Inglehart and Baker (2000, 22) describes the mechanism as follows:

> *The hierarchical organizations of the industrial age required (and allowed) little autonomous judgment, whereas service and knowledge workers deal with people and concepts, operating in a world in which innovation and the freedom to exercise individual judgment are essential. Self expression becomes central.*

The authors demonstrate using the World Value Survey data that the share of people working in the service sector is strongly correlated with the level of self-expression values in a society (Inglehart and Baker 2000).

Even though the changing nature of work is theorized to directly influence self-expression, of which acceptance of homosexuality is part, none of the major previous studies of attitudes towards homosexuals has tested this relation. Given that African countries are at different points in their industrial development, and thus have varying shares of workers in the service sector, one would expect these differences to translate into different levels of tolerance.

2.3.4 Summary of the Relationship Between Country Affluence and Homophobia

It has now been argued that richer countries tend to have more tolerant populations. Furthermore, it has been argued that this is because economic development has three important consequences: 1) it raises the general living standard of the population, 2) it facilitates the spread of public education and 3) it moves demand for labor from the industrial and agricultural sector towards the service sector. These are believed to be preconditions for a culture of self-expression, part of which is tolerance towards homosexuals. In a poor country that has not had much economic development, such a culture would not emerge. To the contrary, in this context we would expect a strong materialist and survivalist culture, which breads conservative values. The general argument is illustrated in Figure 2.1:

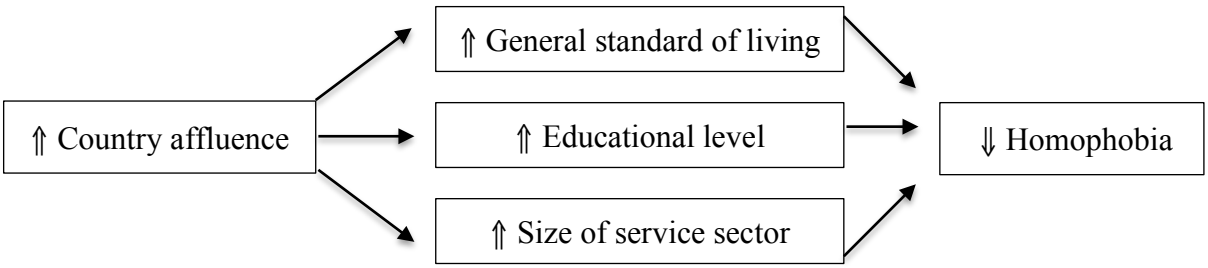

Fig. 2.1 The relationship between country affluence and homophobia. ⇑=*Increasing*, ⇓=*Decreasing*. The figure shows the mechanisms through which country affluence is associated with homophobia.

2.3.5 Accounting for the Resource Curse

In line with the reasoning above, economic affluence would not *necessarily* create a tolerant public opinion: It would depend on the degree to which development triggers these three mechanisms. In this respect, we know from the literature on the so-called "resource curse" that countries that have an abundance of natural resources face some special challenges. I will highlight two points from this literature that are particularly relevant.

The first point is that when states get a large portion of their revenues from natural resource rents,[3] the need to collect taxes from the populations diminishes. Taxes have historically been an important prerequisite for popular influence on government. In early modern Europe monarchs started levying taxes on the population to finance warfare. Because it would have been very difficult to collect taxes without cooperation from the taxpayers, they were given some influence on government to induce compliance. From this foundation grew modern democratic institutions. This is the "no taxation – no representation" argument. In a rentier state the government can survive without taxes and therefore doesn't need to allow for popular influence (Venables 2016). Supporting this argument, Michael Ross has shown that when the ratio between taxes and government benefits increases in undemocratic states, demand for democracy increases (Ross 2004). Without popular influence on government, traditional demands for fair redistribution of income and wealth and raising of the general living standards would likely fall on deaf ears. One would thus expect that in natural resource dependent countries economic development does not lead to increases in living standards like

[3] In almost all countries, except the Untied States, subsoil resources are state property (Venables 2016).

in regular economies. If this were the case, then a crucial mechanism for creating tolerant public values is not triggered.

The second point is that natural resource dependent countries educate their populations to a lesser extent than other countries. From an economical perspective education can be thought of as developing a country's "human capital". Higher educational level makes for a more productive labor force, which increases economic development (in addition to creating liberal values as I have discussed). States that perceive their natural resources as their most important economic asset are not incentivized to invest in human capital for development like other states. It is therefore no surprise that natural resource abundance is inversely related to spending on education and school enrolment (Gylfason 2001). To the extent that this is the case, economic development in natural resource dependent countries does not trigger the second mechanism discussed above, rising educational levels.

In sum one should not expect to see economic development meaningfully reduce homophobia in natural resource dependent countries since the affluence created is not adequately translated into higher living standard and educational levels for the general population.

2.3.6 Summary of Theoretical Expectations for the Socio-Economic Factors

Individual level

H1: The higher a person's living standard the less likely they are to dislike homosexuals

H2: The more education a person has attained the less likely they are to dislike homosexuals

Country-level

H3: People living in more affluent countries are less likely to dislike homosexuals, as long as the country is not dependent upon natural resources

H4: The effect of country affluence is mediated through the general standard of living, educational level and size of the service sector

2.4 Alternative Explanation 1: Criminalization of same-sex intimacy

Now I will discuss two other explanations of homophobia that must be taken into consideration to get a more comprehensive understanding of the phenomenon. In the literature that tries to explain the roots of homophobia in Africa, a key factor is the sodomy laws that prohibit same-sex intimacy, largely imposed by the colonial powers in the 19th century (Epprecht 2013; Gupta 2008; Shoko 2010; Tamale 2013). 32 African countries have kept these laws to this day. Therefore the share of countries that criminalize same-sex intimacy in Africa is the highest in the world. The punishments vary all the way from fines and relatively short prison sentences in countries like Zimbabwe and Liberia to the death penalty in parts of Nigeria and Somalia (Carrol 2017, 37-38). But how do the laws impact public homophobia? Human Rights Watch, in its meticulous report on colonial sodomy laws (Gupta 2008, 6-7), argue that these laws relegate groups such as homosexuals "to inferior status because of how they look or who they love" and that "[t]hey hand police and others the power to arrest, blackmail, and abuse" them. Mark Epprecht argues in his *History of a Dissident Sexuality in Southern Africa* that one of the crucial effects of criminalization was to get the mass of the population to internalize hostility towards same-sex intimacy. It became "common sense" to be repulsed by expressions of homosexuality. Sexuality in general became closely linked to a strictly dichotomous idea of gender identity: Men and women have clearly defined sexual roles that must not be deviated from. A logical extension of this idea was that if a man engaged in sexual acts with another man, he was not truly masculine (Epprecht 2013, 135-136).

We know from decades of research within legal theory that law, and especially criminal law, affects attitudes by signaling to the population what are the dominant norms of society (McAdams 2000; Tyler 1990). This is called the "expressive function" of the law as opposed to its sanctioning function. The explanations as to why people actually change their behavior in accordance with the law are often based on rational choice theory. McAdams (2000) presents it in the following way: People behave, at least to some extent, according to what they predict will be approved or disapproved by others. Approval (or *esteem*) from other members of society could be perceived as an end in itself or as an instrument to gain something else. Furthermore, people do not have perfect information, which makes them sensitive to cues of what are "good values". The law is a strong signal of the dominant norms

of society, perhaps particularly if there is a perception that the government represents its citizens when making and enforcing laws. Hence people adjust their attitudes and behaviors according to the law (McAdams 2000).

Nevertheless, one should not forget that public opinion also affects the law, not just the other way around. Indeed we have seen in Sub-Saharan Africa that upswings in homophobia can lead to the introduction of new anti-gay legislation: After the national debate in Uganda in 2009 around the proposed "Anti-Homosexuality Bill", new anti-gay legislation was passed in Malawi in 2010, Nigeria in 2011 and Liberia in 2012 (Grossman 2013, 2). Perhaps especially in more democratic states one would expect popular opinion to affect the law since the public should have more influence on policy in general.

However, it is very uncommon for countries that have never had criminalization of same-sex intimacy at all, to introduce it in modern times. Burundi in 2009 is one of the few examples of this (HRW 2009). In the vast majority of African countries criminalization of homosexual acts was imposed by the colonial powers. In fact, anthropological evidence suggests that homosexuality has existed since time immemorial in Africa and that before colonization in many parts of the continent it was tolerated. For example, woman-woman marriages have been recorded in over 40 ethnic groups, and in Uganda, which is now world-know for its oppression of homosexuals, the Buganda Kingdom had a long tradition of homosexuality (Amnesty International 2013, 14-16). Some have even argued that homophobia did not exist in Africa before colonization. Ireland (2013) cites Ntuli (2009, 12) who argues that in the pre-colonial days: "If there was negativity towards homosexuals, [then] it was no more than a mild dislike".

The colonial powers introduced penal codes in their territorial possessions that in many cases punished "sodomy" or "unnatural offences" with long prison sentences. Britain was by far the most committed to spreading criminalization of homosexual acts. From 1860 onwards, Britain used the colonial Indian penal code's Section 377, which forbids "carnal intercourse against the order of nature", as basis for similar provisions across their territories (Han and O'Mahoney 2014). Unlike Britain, France had decriminalized homosexuality in 1791, as did Belgium (then a French possession) in 1795. Still, according to Human Rights Watch (Gupta 2008, 6-7), France imposed such laws in cases like Senegal, Cameroon and Benin as a form

of social control. In general though "[o]ther colonial powers [than Britain] had far less impact in spreading so-called sodomy laws".

Hence, in the vast majority of African cases, to the extent that there exists a systematic relationship between criminalization of homosexual acts and homophobia, it is likely criminalization that caused the attitudes and not so much the other way around.

Country-level

> *H5: People living in countries that criminalize same-sex intimacy more harshly are more likely to dislike homosexuals.*

2.5 Alternative Explanation 2: Religion

> "A closer look soon makes clear that generally, religion is part and parcel of the anti-homosexuality language that is voiced, and policies that initiated, by political leaders and other public figures." (Van Klinken and Chitando 2016, 1)

Religion is perhaps the most cited explanation for homophobia, irrespective of geographical location. This comes from the fact that most religions consider homosexuality as unnatural and immoral (Yip 2005) and therefore religious people are more likely to have homophobic attitudes than are non-religious people (Adamczyk and Pitt 2009). Christianity and Islam are by far the biggest religions on the African continent, with the former at 47 percent of the total population and the latter at 40 percent (Encyclopaedia Britannica 2009, 302). For the Christians, condemnation of homosexuality can be justified by several passages in the both the New and the Old Testament. However, none state the point more clearly than Leviticus 20:13: "If a man lies with a male as with a woman, both of them have committed an abomination; they shall surely be put to death; their blood is upon them." (ESV Study Bible 2011). For the Muslims, both the Koran and the Hadith (teachings of the Prophet) are clear that homosexuality is not allowed. One of the more relevant passages of the Koran reads: "How can you lust for males, of all creatures in the world, and leave those whom God has created for you as your mates. You are really going beyond all limits." (Gerhards 2010, 16). Depending on how literally one interprets these passages, adherents of Christianity or Islam could perceive homosexuality as opposed to "the will of God" and therefore condone it as well as encourage others to adopt the same attitude (Adamczyk and Pitt 2009, 339).

One would think that for people who are highly religious (i.e. religion is a big part of their lives), religious norms would be an important influence on their attitudes. Since religion generally regards homosexuality as a sin, people who are more religious would be more inclined to disapprove of homosexuality than less religious people. This is also what previous large-*N* studies have found (van den Akker, van der Ploeg, and Scheepers 2013; Adamczyk and Pitt 2009).

Within the literature on African homophobia however, it is not so much religion in itself that is seen as vital for homophobia, but rather some types of politically active religious movements, mainly rooted in Conservative Protestantism and Islam (Van Klinken and Chitando 2016). I will discuss each of these in turn, starting with the former.

2.5.1 Conservative Protestantism

With *Conservative Protestantism* I refer to the Pentecostal, Evangelical, Charismatic and related denominations that historically began as a reactionary movement to theological liberalism in the US and Europe at the start of the 20th century. There is little agreement on a common definition in the literature and scholars have used a range of largely overlapping terms including "fundamentalists", "Evangelicals", "born-again" and "Renewalists" (Woodberry and Smith 1998; Marsden 2006, 43-63). In Africa, Conservative Protestants are one of the fastest growing religious groups. They have gone from constituting 5 percent of the population of the continent in 1970 to a remarkable 17 percent in 2005 (Grossman 2013, 9).

Conservative Protestants are different from the *Mainline Protestants* (Lutherans, Methodists, Presbyterians etc.) in several key aspects. Pew Public Life and Religion did an extensive survey of Christians in ten countries around the world (Pew 2006, 5-8), and found that people who identify as Pentecostal and Charismatic are more likely than other Christians to interpret the Bible literally as the actual words of God, attending church services where tongue speaking and healing are practiced, and saying that they are familiar with exorcism. Furthermore they are more likely than other Christians to believe in modern day miracles, the return of Jesus in their lifetime, "the end of times" and the divine rescue of true believers before doomsday (what is called "the rapture of the Church"). Also, quite importantly, Pentecostals in particular are more likely than other Christians to "share their faith with non-

believers" and want the government to "make the country Christian", as opposed to have a separation between church and state (Pew 2006, 23, 61-66).

Conservative Protestants tend to condemn homosexuality based on a literal interpretation of the Bible. Not only that, Burdette, Ellison, and Hill (2005, 183) argue that for many Conservative Protestant sexuality is a public concern: Homosexuality is often perceived as a serious threat to both the family and society as a whole, which must be countered with political mobilization and state regulation.

In Sub-Saharan Africa, there are have been several episodes of Conservative Protestant organizations ramping up popular homophobia in order to get parliament to pass harsh anti-gay legislation. A common argument in the literature is that these organizations are strongly supported and encouraged by US evangelical organizations seeking to transform sexual politics in Africa. The reasoning is that the US-based organizations are loosing ground at home because of continuing social liberalization in the West and therefore migrate their "culture war" to African countries where the public as well as political leaders are more open for their fundamentalist theology (Kaoma 2009, 2012). The best example of this is perhaps the "Anti-Homosexuality Bill" in Uganda in 2009 that would initially introduce the death penalty for cases of "aggravated homosexuality". Kaoma (2012, 29) argues that the bill came as a "direct response" to a seminar entitled "Seminar on Exposing the Homosexuals' Agenda", held by the US-based organization *Family Life Network*. The seminar featured pastor Scott Lively, author of the book *The Pink Swastika,* which blames homosexuals for the Nazi holocaust. In the US, Kaoma argues, Scott Lively and his associates are considered hatemongers, but in countries like Uganda, Rwanda and Kenya, they get to meet ministers, speak before parliament and express their views in state media.

Other scholars have warned not to underestimate the agency of local religious and political leaders in developing homophobia. Klinken (2014, 12) argues that in Zambia for instance there is little evidence of American influence in the anti-gay mobilization that has been taking place in recent years. However, irrespective of the degree to which US-based organizations are driving the mobilizations, it is clear that Conservative Protestants in Africa general seem more homophobic and more eager to spread their views and influence politics than Mainline Protestants.

The only previous cross-national survey-based study of attitudes towards homosexuals in Africa (Alozie, Thomas, and Akpan-Obong 2017) found a strong relationship between perceiving religion as important and disapproving of homosexuality. However, the study did not sort the respondents into religious groups with the reasoning being that "none of the major world religions endorses homosexuality". This ignores the central claim within the literature on homophobia in Africa that certain denominations are driving public and political homophobia.

2.5.2 Islam

Islam is also often mentioned in the literature as an important source of homophobia. Adamczyk and Pitt (2009) argue that in general, sexual morality seems to be particularly important in Muslim communities. This might explain why they find in their cross-national study that Muslims in general have more disapproving attitudes towards homosexuals than people of other religions. At the state level, it is noteworthy that all of the 8 states in the world that actively practice the death penalty for same-sex intimacy have a Muslim majority population and uses Islamic law (*sharia*) as the legal basis for the punishment (Carrol 2017, 40).[4]

In Africa, Muslim organizations have been vocal advocates against homosexuality, not unlike the Conservative Protestants. In Senegal for instance, a wave of politicized homophobia ensued after the tabloid magazine *Icône* in 2008 printed photographs allegedly taken at a gay wedding. The incident, Thoreson (2014) explains, led to outcry among Islamic organization urging the government to prosecute and punish people violating the country's criminal provision against same-sex sexual conduct. A government-led crackdown on LGBT-people and organizations began, which was repeatedly justified with reference to Islam. Prime Minister Souleymane Ndeéné Ndiaye stated that homosexuality is an "aggression against Islam" (Thoreson 2014, 34). However, the author argues that an important precondition for this development was Senegal's rising poverty, unemployment and food insecurity. These

[4] These are: Iran, Saudi Arabia, Yemen, Sudan, the southern parts of Somalia, 12 states in Nigeria, local courts in Iraq and the ISIL occupied areas of Syria. Five more states have the death penalty for same-sex intimacy codified but do not practice it: Afghanistan, Pakistan, Mauritania, Qatar and United Arab Emirates (Carrol 2017, 40). I might add that all of these are also Muslim majority countries and self-declared as either Islamic republics (in the case of the former three) or Islamic monarchies (in the case of the latter two).

economic factors caused popular discontent, which was channeled by Islamic religious groups and politicians towards morality issues and in particular, homosexuality.[5]

Another illustrative example is Egypt. According to ILGA, Egypt is "one of the most hostile States to LGBTI people on the planet" even though the country does not formally criminalize same-sex intimacy (Carrol 2017, 8). Tolino (2016) argues that public perceptions of homosexuality in Egyptian society are strongly informed by Islamic morality. The author investigates the judiciary in particular, and argues that even though Egypt has no Islamic law per se, homosexuals are being prosecuted on dubious legal grounds motivated by the presence of Islamic morality. One can also see manifestations of this morality in Egyptian politics when parliamentarians use Islamic formulas during official speeches (Tolino 2016, 58-59).

2.5.3 Summary of Theoretical Expectations of Religious Factors

With both Conservative Protestants and Muslims I have argued the reasons for expecting that they themselves are more negative towards homosexuals than people of other religions, and why they are likely to affect public perceptions and politics. We can separate these expectations into individual and country level hypotheses. In addition – going back to the start of the discussion – religiosity in general is expected to be associated with more homophobic attitudes. The hypotheses are formulated as such:

Individual-level

> *H6: People who are more religious are more likely to dislike homosexuals than less religious people.*

> *H7: Among religious denominations, Conservative Protestants and Muslims are the most likely to dislike homosexuals*

Country-level

> *H8: The higher a country's share of Muslims and Conservative Protestants are, the more likely its inhabitants are to disapprove of homosexuals*

[5] This argument seems to resonate well with the Postmaterialist explanation.

2.6 Control variables

In addition to the three main explanations for homophobia in Africa that have now been presented, there is need to control for some other factors that have been shown in previous studies to affect attitudes towards homosexuals. At the individual level there is age and gender, and at the country level there is political regime, economic inequality and colonizer.

2.6.1 Age

Previous studies have found that younger people are more tolerant towards homosexuals than older people (Adamczyk and Pitt 2009). It is unclear whether this is a life cycle effect or a cohort effect. However, the latter is the more common explanation. The idea is that people form their attitudes early in life and these attitudes are stable through out the rest of life. Younger people have grown up at times when homosexuality was more accepted than older people. Hence homophobia is less prevalent among younger generations (Slenders, Sieben, and Verbakel 2014).

2.6.2 Gender

Women are in general found to be more tolerant than men. There have been different explanations as to why this is. One explanation poses that in many societies women in particular are raised to be "caring, nurturing and supportive" which may have a positive effect on tolerance for homosexuals (Lottes and Kurilof 1994). Another argument is that homosexuality is perceived as deviating from certain gender roles, and that men take more offence from this than women (Slenders, Sieben, and Verbakel 2014).

2.6.3 Political Regime

The effect of living in a more democratic state on tolerance towards homosexuals is not straightforward. Previous research has found that people living in more democratic states have more *political tolerance* (Peffley and Rohrschneider 2003). Political tolerance is here an index that may include a respondent's opinion on allowing homosexuals to have comparable possibilities as others. The authors suggest that this is due to the fact that people in more democratic states have more democratic values. A core democratic value is tolerance for other

citizens and their rights. Thus, people in democracies go through a "democratic learning" process which affects their tolerance, unlike people in non-democracies.

On the other hand, Grossman (2013) found in his study of the saliency of LGBTs in Sub-Saharan Africa that political competition (i.e. more democracy) *increases* the saliency of the topic. He suggests that this is because political competition incentivizes politicians to campaign on issues that are broadly supported in the public, like is the case with intolerance for homosexuals in many African countries. However, saliency is not the same as intolerance. Therefore it could be the case that democracy both increases the saliency of the issue and spreads more tolerant values. Regardless, this explanation must be accounted for because the more wealthy countries are more likely to be democracies (Robinson 2006), so it is possible that democracy could explain both tolerance and economic development.

2.6.4 Inequality

Andersen and Fetner (2008) study of attitudes towards homosexuals in 35 democracies argue that the Postmaterialist thesis has, despite its emphasis on living standards, ignored the issue of economic inequality. They find empirically that as inequality increases, tolerance decreases. I would argue that this *is not* an expectation that follows directly from Inglehart's reasoning. The main point of the Postmaterialist thesis is that *economic distress* causes materialist attitudes (i.e. intolerance). It could well be the case that everyone in a country are well off (implying strong postmaterialist values and tolerance), but that inequality is high. Similarly, everyone could be in severe economic distress, but inequality could be low. Actually, high inequality does not indicate anything about the general standard of living (in absolute terms) in a country. One could, however, argue that inequality matters because it weakens social trust which again reduces tolerance (Andersen and Fetner 2008, 944; Uslaner 2002). Of course it is then puzzling why the most gay-friendly country in Africa, South Africa, is also considered the most unequal country in the world (Beaubien 2018). Still I choose to include the variable as a control since Andersen and Fetner (2008) did find the variable to be important.

2.6.5 Colonizer

Lastly, it is necessary to control for a country's colonizer. As was discussed with regards to criminalization of same-sex intimacy, the British were markedly more concerned with such criminalization in their territories than the other colonial powers. This must be controlled for in case both the criminalization and homophobia is explained by having been colonized by Britain.

2.7 Different explanations for different countries?

As much as one would like to give a general answer to the question "what explains homophobia in Africa?" we must acknowledge the possibility that homophobia might have different explanations in different countries. The first indication of this is the fact that although we consistently talk about homophobia "in Africa" or in "Sub-Saharan Africa", these terms are mostly geographical categories. On the issue of homophobia for instance, it seems somewhat arbitrary to assume that homophobia in Tunisia and Zambia are of a common type, but not Tunisia and Jordan. Awondo, Geschiere, and Reid (2013) argue that homophobia is actually different phenomenon altogether across different African societies. As they say: "There is a world of difference, for example, between the image of the homosexual as un Grand (a rich and powerful "Big Man") who imposes anal penetration as a supreme form of subjection (as in Cameroon or Gabon, where homosexuality is associated with witchcraft and other occult forces (…)) and the often quite marginal persons who become victims of gay persecution in other contexts" (Awondo, Geschiere, and Reid 2013, 146).

I have presented four distinct individual level explanations for homophobia in this chapter, namely standard of living, education, religion and religiosity. In addition to the fact that homophobia is a heterogeneous phenomena across the African continent, these phenomena that are expected to explain homophobia are also heterogeneous. For example, education might have different content depending which country's school system we are talking about. Religiosity might have different effects depending on what religion a specific person adheres to, and so on and so forth. Therefore, in the analysis of the individual level hypotheses, there are strong reasons to check not just if there is an overall effect, but how the effect might be different across different countries.

3 Data and measurement

The purpose of this chapter is to present the dataset that I will analyze and how I have chosen to operationalize and measure the variables of interest. I will be using an original dataset consisting of 1) individual survey-data from the Afrobarometer round 6 (N=47.821) covering 33 countries (Afrobarometer 2016) and 2) country-level variables gathered from The World Bank, ILGA and the UN.

3.1 Dataset

In order to investigate the ability of the Postmaterialist thesis to explain homophobia, it would have been ideal to use data gathered over time. This would have made it possible to more convincingly demonstrate that development actually comes before tolerance for homosexuals in time, which is a condition for causal inference. There are few surveys covering the African continent that asks respondent questions regarding the issue of homosexuality. To the best of my knowledge the only ones that have done so are the World Value Survey (WVS), Pew Global and Afrobarometer. However, both the WVS and Pew present us with some serious challenges regarding low country coverage and the fact that the countries in their datasets have been surveyed at widely different times.[6] Therefore the Afrobarometer data will be the main survey dataset used. However, I will towards the end of the analysis look briefly at the WVS data for 7 African countries that have been surveyed more than once.

The major disadvantage of the Afrobarometer survey is that they have only asked about homosexuality in their latest round (nr. 6), which was gathered in 2014/2015.[7] This means that over-time comparison is not possible. This drawback will be somewhat remedied by

[6] The WVS, while having surveyed some 15 African countries on the question of homosexuality since the early 1990s, changes from round to round which countries are included in the survey, presumably to get more cross-national coverage. Furthermore, the fact that the cross-sectional data are gathered at different times, anywhere within a 20-year period, makes it hard to compare countries in any controlled manner. The Pew Global data suffer from the same problem: Only Ghana, Kenya and Uganda have been surveyed at more than two occasions and the other African countries have been survey at different points in time within an 11-year period.

[7] They have continued asking this question in round 7, which is currently being implemented. However, this round will not be completed until June 2018.

considering the WVS data over time. The big advantage with the Afrobarometer data, however, is the unprecedented cross-national coverage. The 6thround of the surveyed asked nationally representative samples in 33 African countries about their attitudes towards homosexuals. This coverage is far beyond what is the case with WVS and Pew.

However, as the Afrobarometer organization says, countries are not picked at random to be part of a survey round: ”Among criteria that Afrobarometer uses to determine whether to implement a survey in a particular country are the availability of funding, security conditions in the country, and the ability of citizens in that country to speak freely”(Afrobarometer 2018a). This means that the sample of countries in the dataset will have an overrepresentation of the more democratic African states. This fact further strengthens the need to control for regime type when specifying the regression models.

3.2 Dependent variable

I measure the dependent variable, personal homophobia, using the following question from the Afrobarometer survey:

> “For each of the following types of people, please tell me whether you would like having people from this group as neighbors, dislike it, or not care: Homosexuals.”

The respondent chooses an answer on a 5-point Likert scale from strongly like to strongly dislike. Figure 3.1 shows the distribution of the dependent variable.

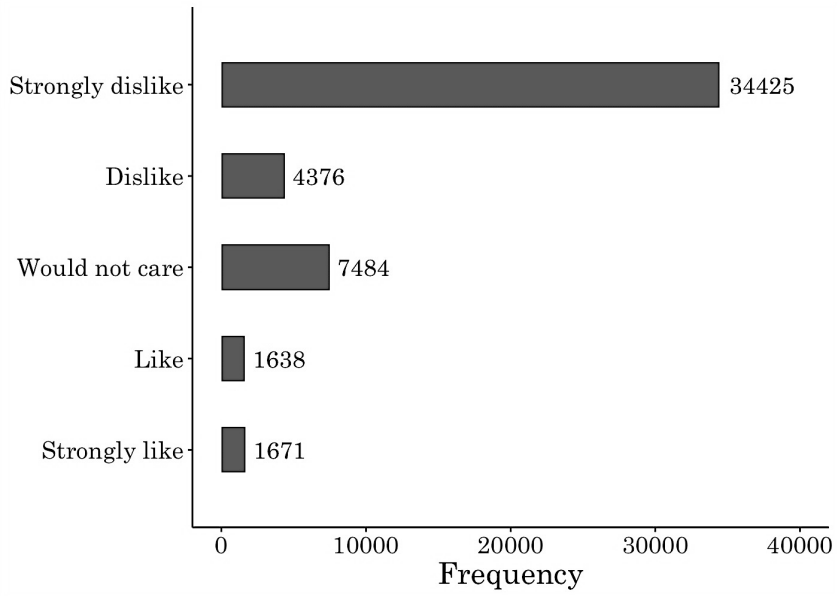

Fig. 3.1 Frequency distribution of the Afrobarometer homosexuality variable.

I recode the dependent variable into a binary outcome where:

1 = "Strongly dislike" or "Dislike",

0 = "Would not care", "Like" or "Strongly like".

I do this for two reasons. Statistically, the variable cannot be considered continuous and used directly in a linear regression model.[8] And theoretically, I am interested in explaining the acceptance/non-acceptance divide, and to this end, differentiating between "would not care", "like" and "strongly like" is not particularly helpful. With the way I dichotomize the variable, one can now say that 1 means "homophobic attitude" and 0 means "tolerant attitude".

It is not *obvious* however that the cut-off point should be set here. Another way of doing it would be to look at the "strongly dislike" category vs. the rest. One could say that in this category are the people who are more *strongly* or *actively* homophobic. Since this is also a reasonable way of doing it I will run the full multilevel model with both operationalizations of the dependent variable as a form of robustness check and because there could be differences in what explains homophobia and "strong homophobia". In addition, I also run the full model with the Likert scale treated as continuous, even though it is not a true continuous variable.

[8] Since continuous implies that the variable has a natural zero and that the distance between steps of the scale are equal.

Country	% That dislikes homosexuals		
Senegal	97 %	Lesotho	84 %
Guinea	96 %	Tunisia	83 %
Niger	96 %	Morocco	83 %
Uganda	95 %	Liberia	83 %
Burkina Faso	95 %	Gabon	83 %
Malawi	94 %	Benin	82 %
Zambia	93 %	Cote d'Ivoire	81 %
Sierra Leone	93 %	Tanzania	81 %
Mali	90 %	Swaziland	74 %
Togo	90 %	Botswana	57 %
Zimbabwe	90 %	São T. and P.*	54 %
Burundi	90 %	Mauritius	50 %
Ghana	89 %	Namibia	45 %
Madagascar	89 %	Mozambique	39 %
Cameroon	88 %	South Africa	32 %
Kenya	86 %	Cape Verde	25 %
Nigeria	84 %		

* São Tomé and Príncipe

Table 3.1 Country sample. The table shows the countries were the Afrobaromter homosexuality question was asked, as well as the mean value on the dependent variable, *dislike homosexuals* (0/1), multiplied by 100 so that it can be read as the percentage of people who hold this view in each country. NB: The numbers will not be the same as regular descriptive statistics for the Afrobarometer homosexuality variable since I have removed missing values (don't know/no answer).

3.3 Individual level explanatory variables

3.3.1 Standard of living

The Afrobarometer survey does no longer include a simple income variable because the answers proved highly inaccurate (Cheeseman 2014). As an alternative some scholars have combined the different questions in the survey that have to do with access to basic necessities

to create an additive scale of living standard. I construct and additive scale from 0 to 7 based on seven questions recoded as dichotomous variables. The first four dichotomous variables are: The respondent and his/her family has never in the last year gone without enough … 1) food / 2) water / 3) medical care / 4) cooking fuel. And the last three are: The respondent has … 5) a water source inside the house / 6) a toilet inside the house / 7) working electric connection to the house. This is almost the same as the variable constructed in (Mattes 2014), however I also add access to electricity because this should also be regarded as a basic necessity. Given that this scale measures the number of basic material necessities that the respondent has covered, it captures the experienced living conditions as reported by the respondents. The indicators that make up the index are quite objective in nature and leave little room for differences in subjective judgment. By defining standard of living this way, I also avoid the problems regarding lack of comparability that are associated with direct income measures.

3.3.2 Education

Education is measured on a 10-point scale ranging from "No formal schooling" to "Post-graduate". Since the Postmaterialist thesis has a general expectation pertaining to all levels of education, the variable is not recoded in any way.

3.3.3 Religion

The Afrobarometer's religion variable has over 40 different values capturing a large diversity of denominations, especially within Protestantism. The categories that are needed to properly test the theoretical expectations regarding religion are: Mainline Protestants, Conservative Protestants, Catholics, Muslims and non-religious. Starting with the ones that are most straightforward: To measure if a person is catholic, the category "Roman Catholic" is used. The Muslim category is constructed by combining "Muslims only", Sunnis, Shias and four other local denominations.[9] The non-religious category consists of atheists and agnostics. It is more challenging to distinguish denominations as either Mainline or Conservative Protestants. A number of different definitions have been proposed for the term Conservative Protestant. Grossman (2013) uses Ranger's (2008, 225) definition, which is a kind of "shortcut

[9] *Ismaeli, Mouridiya Brotherhood, Tijaniya Brotherhood* and *Qadiriya Brotherhood.*

definition". He defines them as "not the Roman Catholics, not the mainline Protestants […], not the classical African Initiated Churches, but the rest". I use this criteria in combination with Smith's (1990) classification of Protestant denominations and regard the following denominations as Conservative Protestants: Baptist, Pentecostal, Evangelical, Mennonite, Seventh day Adventist, Calvinist, Church of Christ and Salvation army. The Mainline Protestants category is made up of the following denominations: Anglican, Lutheran, Methodist and Presbyterian.

3.3.4 Religiosity

The closest to a measure of religiosity that the Afrobarometer Survey contains is a question that asks the respondents how frequently they practice their religion, not counting weddings and funerals. The question contains examples such as prayer, reading a religious book and attending a religious service. The respondents answer on a 7-point scale from "never" to "more than once a day". This operationalization has the advantage of directly tapping into how big a part of the respondent's life religion represents. On the other hand there is the disadvantage that religions vary a lot with regards to how common it is expected to practice. In Islam for instance, it is quite common to pray five times a day, while this is not the case in most Protestant denominations. However, this will to some extent be remedied in the regression models by controlling for the religion of the respondent so that any correlation with Islam for instance, is adjusted for.

3.4 Country level Explanatory variables[10]

3.4.1 Affluence

Like several studies before (Slenders, Sieben, and Verbakel 2014; Andersen and Fetner 2008), I measure country affluence with GDP per capita at purchasing power parity[11]. Purchasing power parity adjusts the GDP per capita with respect to what we might call the

[10] With all the country level data that are extracted from other sources I register the value for the year in which the Afrobarometer survey was conducted in that country, i.e. either 2014 or 2015.
[11] Presented in constant 2011 international dollars.

actual value of money in each country. This makes the numbers more comparable (World Bank 2018b).

3.4.3 General standard of living

As explained in chapter 2, GDP per capita is not the same as the general standard of living in a country. To measure the general standard of living in a country, I aggregate the living standard index created from the Afrobarometer survey for the individual level up to the country level (i.e. the average index score for each country). Here, I could have used a measure such as proportion of population living below $2 per day. However, this type of variable would not capture the extent to which people have their basic necessities covered (which is what is theoretically interesting in this context) as well as a nationally representative survey that asks directly about this.

3.4.4 Educational level

To measure the educational level of each country I use the Education Index score that is part of the Human Development Index (UNDP 2015). This is calculated for a given country by combining the mean years of schooling with the expected years of schooling in that country.

3.4.5 Post-industrialization

I measure the degree of post-industrialization (i.e. to what extent the country has moved away from an industrially based economy) with the share of people employed in the service sector. Data for each country is gathered from the World Bank who has extracted the data from the International Labor Organization (World Bank 2018a).[12]

3.4.6 Natural Resource Dependent

The International Monetary Fund (IMF) regards a country as natural resource dependent if it gets more than 20 percent of its exports or more than 20 percent of its fiscal revenue from

[12] It would have been interesting to investigate service sector work as an individual level variable. Unfortunately however, the occupation variable in the Afrobarometer dataset does not allow for this since service sector jobs and industrial sector jobs are collapsed together in the category ”Unskilled manual worker (e.g., cleaner, laborer, domestic help, unskilled manufacturing worker)” (Afrobarometer 2016).

nonrenewable natural resources (International Monetary Fund 2012; Venables 2016). I use this operationalization in deciding which countries in my sample that are natural resource dependent. Specifically, I go by the list that is found in the online appendix for Venables (2016).[13] The following countries in my sample are regarded as resource dependent (from poorest to richest): Liberia, Niger, Guinea, Mali, Zambia, Nigeria, Cameroon, Côte d'Ivoire, Gabon and Botswana.

3.4.7 Criminalization of same-sex intimacy

To measure the level of criminalization of same-sex intimacy for each country, I use data from International Lesbian, Gay, Bisexual, Trans and Intersex Association (ILGA), which each year publishes a detailed report called *State-Sponsored Homophobia* (Carrol 2015), documenting legislation regarding homosexuals for almost every country in the world. I create a variable that has the same categories as ILGA's measure of criminalization, with the only exception that I distinguish between countries that have decriminalized same-sex intimacy and countries that have never criminalized it in the first place. This is important since the former category could contain countries that have never had a public discourse about homosexuality at all, and therefore the issue of criminalizing it has never been raised. In other words, the two categories may represent widely different reasons for the absence of criminalization. In line with ILGA's approach, I code the harshest punishment that is used in a given country. This has some implications. Firstly, if a county has several legal provisions penalizing same-sex intimacy, the one with the harshest penalty is registered as the law of the land. Secondly, if a country has different punishments in different areas, the harshest one is registered. This is only the case for one country, Nigeria, which has the death penalty in the northern states but a milder punishment in the southern states.

3.4.8 Share of Muslims and Conservative Protestants

The shares of Muslims and Conservative Protestant are calculated for each country based on how many of the respondents in the Afrobarometer-sample for that country who fall under the

[13] This can be found at: https://assets.aeaweb.org/assets/production/articles-attachments/jep/app/3001/30010161_app.pdf

category “Muslim” and “Conservative Protestant” as defined in the individual level-variable *religion* above.

3.5 Control variables

3.5.1 Political regime

To measure the degree of democracy for each country I use the Polity IV Index (Polity IV 2017). One country, São Tomé and Príncipe, has not been evaluated by Polity. To avoid dropping this country, its score for political regime was imputed with its Freedom House score for the relevant year (Freedom House 2015, 25), adjusted to the scale that Polity IV uses.

3.5.2 Inequality

Also like previous studies (Andersen and Fetner 2008), I measure income inequality at the country level with the GINI index. The GINI index ranges from 0 to 100 where 0 represents perfect income equality and 100 represents perfect inequality. The most recent GINI estimate from the World Bank varies by country all the way from 2005 for Gabon to 2013 for Burundi with the median year being 2010. However, one would generally expect economic inequality not to vary much from year to year, so presumably this does not affect the results much

3.5.3 Colonizer

I measure colonizer as the colonizer that a country gained independence from. The data on this are extracted from Boddy-Evans (2018).

3.6 Descriptive statistics

	Mean	Standard deviation	Min	Max
Individual-level variables				
Dislike homosexuals	0,80	0,40	0	1
Age	37,3	14,6	18	105
Male	0,51	0,50	0	1
Rural resident	0,57	0,49	0	1
Standard of living	3,30	2,09	0	7
Education	3,45	2,17	0	9
Religious practicing	3,76	1,78	0	6
Religion				
Mainline Protestant	0,10		0	1
Conservative Protestant	0,15		0	1
Roman Catholic	0,22		0	1
Muslim	0,25		0	1
Other	0,27		0	1
Country-level variables				
Polity score	4,82	4,24	-9	10
Colonizer				
Other	0,13		0	1
Britain	0,55		0	1
France	0,31		0	1
Level of criminalization				
Decriminalized	0,14		0	1
Never criminalized	0,22		0	1
1 month – 2 years	0,10		0	1
3 – 7 years	0,29		0	1
8 – 13	0,14		0	1
14 – Life	0,07		0	1
Death penalty	0,05		0	1
GDP per capita (in $1.000)	4,38	4,63	0,785	18,256
Natural resource dependent	0,26	0,44	0	1
GINI index score	43,2	8,11	30,8	63.4
Education index score	48,2	11,4	20,6	72.5
Service sector share	37,7	17,7	6,20	76.3
Share of Muslims	25,2	29,7	0,08	99,75
Share of Conservative Protestants	14,4	9,50	0	29,67

Table 3.2 Descriptive statistics. The descriptive statistics are unweighted.

4 Analytic strategy and methods

In this chapter I outline how I will analyze the Afrobarometer data in order to test the hypotheses presented in chapter 2. The main method utilized will be multilevel logistic regression. Furthermore, mediation analysis will be used to test the mechanisms between economic development and homophobia. Table 4.1 provides a recap of the hypotheses under investigation as well as the corresponding variables from the dataset.

		Hypothesis	**Variables used for testing**
Individual level	H1	*The higher a person's living standard the less likely they are to dislike homosexuals*	• Respondent's Standard of living
	H2	*The more education a person has attained the less likely they are to dislike homosexuals*	• Respondent's educational level
	H6	*People who are more religious more likely to dislike homosexuals than less religious people.*	• Respondent's degree of religious practicing
	H7	*Among religious denominations, Conservative Protestants and Muslims are the most likely to dislike homosexuals.*	• Respondent's religious affiliation
Country level	H3	*Inhabitants of more affluent countries are less likely to dislike homosexuals, as long as the country is not dependent upon natural resources.*	• Country's GDP per capita at PPP in $ (2011)
	H4	*The effect of country affluence is mediated through the general standard of living, educational level and size of the service sector.*	• Country's GDP per capita PPP in $ (2011) • Country´s general standard of living • Country's percentage of people employed in the service sector • Country's Education Index score
	H5	*People living in countries that criminalize same-sex intimacy more harshly are more likely to dislike homosexuals.*	• Country's law on same-sex intimacy
	H8	*The higher a country's share of Muslims and Conservative Protestants are, the more likely its inhabitants are to dislike homosexuals*	• Country's share of Muslims • Country's share of Evangelical Protestants

Table 4.1 Hypotheses table.

4.1 Building a Case for a Causal Relationship

Some general words about causality are in order. I reckon there are three minimum requirements for demonstrating a causal relationship between an explanatory variable X and an outcome Y (Oppewal 2010): 1) There must be co-variation between X and Y, 2) X must come before Y in time and 3) alternative explanations must be ruled out. Number 1 is rather simple to fulfill: It merely requires the researcher to show that X and Y correlates. Number 2 can be more difficult, however I would argue that in some cases it is simple: One does not need time-series data to know that age (X) comes before attitude towards homosexuals (Y). With many variables reverse causality is impossible or highly unlikely (for instance that a person first forms an opinion on homosexuality and then in some magical way this affects their age). Number 3 is usually the hardest one: Save for randomized experiments, one can never be completely sure that one has controlled for all possible alternative explanations of why X and Y correlate.

Regression analysis – be it multilevel regression or other variants – on any dataset that does not have a time dimension can fulfill number 1, partly number 3, but not number 2. It can establish the existence of a correlation between X and Y and it can rule out the alternative explanations *that we know of and can control for*.[14] This is what the rest of this thesis will mainly be devoted to: Investigating if, and under what conditions, there is a correlation between economic affluence and homophobia, and do this while controlling for the alternative explanations that have been discussed in the chapter 2. However, even if there is a correlation between affluence and attitude towards homosexuals that is unlikely to be spurious, we are still left with the problem of which direction causality runs: Is it economic development that causes tolerance, or is it tolerance that causes economic development? Or both? After I have presented the quantitative analysis, this question will be discussed based on the findings and existing literature. The central concern here will be: To what extent does reverse causality seem plausible (i.e. tolerance causing economic development)? If the answer were to be "to a small extent", I would conclude that the analysis has given substantial support to the claim that economic development causes tolerance for homosexuals in Africa.

[14] But there is always the possibility that we are ignoring unknown factors that are relevant, or alternatively, don't have data for important variables.

4.2 Theoretical and Statistical Reasons for Multilevel Analysis

My main theoretical reason for using multilevel analysis is that my theory chapter (chapter 2) implies that homophobia is a multilevel phenomenon: It can be explained both by individual level characteristics (for instance that more educated people are less homophobic) and by country level characteristics (for instance that people living in countries that criminalize same-sex intimacy are more homophobic). In order to take both types of explanations into account, one needs multilevel modeling. Also, by investigating an explanation such as economic affluence at both levels, we can get a deeper understanding of how this variable works.

Statistically, it is clear that if respondents in a cross-country dataset answer similarly to their fellow countrymen on the dependent variable (i.e. their answers are correlated within countries), this violates an important assumption of regular (flat) regression, namely that observations should be independent from one another. The consequence of ignoring this violation and going through with regular regression would be standard errors that are less accurate. One can measure the degree to which observations are correlated within groups with the Intra-Class Correlation Coefficient (ICC) (Hox, Moerbeek, and van de Schoot 2017, 4-7). The ICC can tell us to what extent attitudes towards homosexuals in Africa are similar within countries. The more similar attitudes are within countries the less variation there is within countries, and the more variation there is *between* countries. The coefficient varies from 0 to 1. We can imagine if the ICC was 1. This would mean that all Zambians answered the same, all Nigerians answered the same, all Kenyans answered the same, etc. It would also mean that attitudes about homosexuals depended entirely on what kind of country one lives in and had nothing to do with individual differences. Hence the ICC can also be read as the proportion of total variance in Y that is *between* countries. Some have argued that the ICC must be over a certain threshold in order to justify multilevel regression. Christophersen (2013, 112) for instance, sets this threshold at 0.05. Others, such as Nezlek (2011, 53-54) have argued that multilevel data implies a multilevel model no matter what the ICC is.[15] As I will come back to in the chapter 5, the ICC for my dependent variable is 0.29, which clearly indicates that the assumption of independent observations is violated.

[15] This is because, as (Nezlek 2011) convincingly demonstrates, effects of level 1 variables can vary a lot between groups even if ICC=0.

4.3 The Case for Logistic Regression

Irrespective of whether or not one does multilevel regression or regular regression one must decide on what kind of distribution the dependent variable represents. This has implications for what kind of regression that is appropriate. Here there is a simple rule of thumb: If the dependent variable is continuous then linear regression, if it is dichotomous then logistic regression (Sommet and Morselli 2017). As was argued in chapter 3, the homosexuality variable in the Afrobarometer dataset should for the purposes of this thesis be dichotomized. Therefore logistic regression will be used for all models.

Logistic regression uses log transformation to "force" the estimated effect to vary between 0 and 1; otherwise it would have been possible to get an estimated probability to dislike homosexuals of 110 percent, which would not make sense. The regression coefficients therefore come out as log odds. These can be converted to odds ratio, which are easier to interpret and is what will be done in this thesis. An odds ratio is simply the ratio between two odds.[16] I will explain its interpretation with an example: If the effect of *age* on the dichotomous outcome *dislike homosexual* has an odds ratio of 1.30, it means that for one units increase in age (1 year) the odds of disliking homosexuals increases by a factor of 1.30. In other words the odds increases by 30 percent. If, on the other hand the odds ratio is below 1, say 0.80, it means that the odds of dislike homosexuals *decreases* by 20 percent for one units increase in age. Still though, it can be difficult to fully comprehend the effect size of an odds ratio. Therefore in chapter 4, in addition to reporting odds ratios, I will calculate and plot the predicted probabilities of the outcome Y (dislike homosexuals) at different values of the explanatory variables of interest.

4.4 Basics of Multilevel Logistic Regression

Most social sciences research questions require the researcher to take into account that individuals interact with their society: People are influenced by the social contexts they are part of and influence these contexts back (Hox, Moerbeek, and van de Schoot 2017, 1). The reesearch question for this thesis is in a broad sense about how individuals form their attitudes towards homosexuals. In this regards, multilevel regression lets us disentangle the effects of

[16] *Odds* is here defined as the probability that an outcome will occur divided by the probability that it will not occur. If the probability of tolerating homosexuals is 20%, then the odds will be 0,2/0,8= 2,5.

individual level factors (gender, age, living standard etc.) from the context effects (economic development, laws, etc.) (Sommet and Morselli 2017). Still, the normal properties of regression analysis are there: Importantly, when looking at the regression coefficient for a single variable in a model with several variables we see the effect of that variable when holding the others constant.

When using multilevel logistic regression, the important thing to keep in mind is that we are not estimating the effect of X on Y for a simple respondent *i*, but respondent *i* in country *j*. With multilevel regression we take into account that country *j* may have both an intercept and a regression slope for a specific individual level effect that is different from the overall intercept and slope (Sommet and Morselli 2017).[17]

Also, it is important to note that relationships between variables at the individual level and at the country level are mathematically independent from one another (Nezlek 2011, 5). In other words, it could be the case that at the country level there is a correlation between the number of wealthy people in a country and how positive average popular opinion on homosexuality is. However, technically speaking, this does not mean at the individual that wealthy people are on average more tolerant towards homosexuals than non-wealthy people. To infer this would be to make an *ecological fallacy* (Nezlek 2011, 7).[18]

4.5.1 Assumptions

The standard assumption of regular regression that observations are independent from one another does not apply to multilevel regression, as I have discussed. Furthermore, since we are doing logistic regression, several other assumptions also don't apply: This includes

[17] The basic formula for multilevel logistic regression can be formulated as such for a model with one individual level variable (Sommet and Morselli 2017): Logit(*odds*) = B_{00} +(B_{10} + u_{1j}) * x_{ij} + $u_{0j,}$ where:
B_{00} is the overall intercept;
(B_{10} + u_{1j}) is the overall effect (or the *fixed slope*) of x + the deviation of country *j*'s specific slope from the overall slope;
x_{ij} is the observed value of x for respondent *i* in country *j*; and
u_{0j} is the deviation of country *j*'s specific intercept from the overall intercept.

[18] In case this is difficult to grasp, here is a more intuitive example: Imagine (hypothetically) that the more immigrants a country has, the more votes anti-immigration parties get. Clearly, it would be wrong to conclude from this that an immigrant is more likely to vote for anti-immigration parties than non-immigrants. A more reasonable explanation would be that in countries with more immigrants, a larger share of the *non-immigrants* vote for anti-immigration parties.

heteroscadistic and normally distributed residual term and linear relationships between the independent variables and the outcome (Sommet and Morselli 2017). However, an important assumption that still applies is that independent variables are not correlated with each other (absence of multikolinearity). We can check whether this is a problem by estimating variance inflation factors (VIF) for the independent variables. VIF scores above 10 are generally considered to merit further investigation (IDRE 2018). VIF scores for the variables used in the main model in the analysis can be found in Appendix A. None of them are above 10 so there does not seem to be a violation of this assumption.

Some have argued that a minimum number of groups (50 for instance) are required to get precise estimates in multilevel regression (Maas and Hox 2005). However, Gelman and Hill (2007) argue that this is "misguided", because even with few groups, multilevel regression will still perform better than the alternative, which would be regular regression ignoring any intra-class correlation (Gelman and Hill 2007, 275). Nevertheless, they emphasize that with a small number of groups (<5) the added benefit of doing multilevel regression will be small (Gelman and Hill 2007, 247). This study has 33 countries, which are the level 2 units.

4.5.2 Explained variation

There is no agreement as to a measure of explained variation in multilevel analysis, such as with adjusted R^2 in flat linear regression. However, I will use mainly two indicators. The first is Akaike's Information Criterion (AIC). AIC is an index that measures how good a model fits the data (Hox, Moerbeek, and van de Schoot 2017, 50). For a multilevel model it is calculated by adding the deviance of the model *d* and the number of variables in the model *q* times 2:

$$\text{AIC} = d + 2q$$

This means that AIC is reduced when the data deviation around the model goes down, but also that smaller models automatically have a lower AIC than bigger once. This is because smaller models (read: simpler explanations) are preferred. For models fit on the same dataset with the same estimation method, lower AIC indicates a better model (Hox, Moerbeek, and van de Schoot 2017, 50). There is no obvious rule as to how much lower AIC should be for model A compared to model B for us to choose model A. However, based on the reasoning in Burnham and Anderson (2004, 270-271), as a rule of thumb, I regard a reduction in AIC

between 2 and 10 to give moderate support to model A compared to model B and >10 to give strong support. The Schwarz's Bayesian Information Criterion (BIC) is a similar measure that more harshly penalizes big models. However, Hox, Moerbeek, and van de Schoot (2017) recommends AIC for multilevel models. In the analysis, I will report both AIC and BIC for the main models, but mainly discuss AIC results in line with the recommendation of Hox, Moerbeek, and van de Schoot (2017).[19]

It also possible to get a sense of the proportion of explained country-level variation by calculating the change in ICC from one model to another. If the expectations were that a country-level variable should account for a proportion of the country-level variation in homophobia, then we would expect to see ICC decrease when this variable is added. By calculating the share of the ICC that goes away when adding a variable X, we can get an estimate of how large a portion of the ICC X accounts for (Austin and Merlo 2017).[20]

4.5.3 Random Slopes

A common critique of the general quantitative approach in social science is that the researcher often does not take into account causal heterogeneity: By mostly looking at *mean effects* the possibility that explanations might be different across cases is underplayed (Mahoney 2001). This is a highly valid point with regards to homophobia in Africa, as was explained in chapter 2. In multilevel modeling, one can effetely investigate how the effects of lower level variables vary between groups by specifying random slope terms (Sommet and Morselli 2017). In our case, this means that we are able to estimate the specific effect of, say, education, for each country. Change in AIC can be used to see if it improves the model to specify such a term.

4.6 Mediation Analysis

As discussed in the chapter 2, it is important to try to find out not just *if* economic development has an effect on tolerance but *how* it has an effect. The expectation from the

[19] AIC has also recently been found to be asymptotically equivalent to leave-one-out cross validation, which is considered the gold standard for testing if models are overfit (Fang 2011). This means that, in the long run, minimizing AIC will be the same as minimizing the leave-one-out cross validation error.

[20] This is calculated in the following way $(ICC^{M0} - ICC^{M1})/ICC^{M0}*100$, where ICC^{M0} is the model without X and ICC^{M1} is the model with X added.

Postmaterialist thesis is that low–income countries are more homophobic because they have low living standards, low educational levels and a small share of the population working in the service sector. Mediation analysis lets us test to what degree this actually

The basic idea of mediation analysis is the following: We have a situation where we have shown that variable X affects variable Y.[21] However, in many cases theory says that it is not X directly that affects Y. Instead, X increases M, which again increases Y. It is possible to estimate to what degree the effect of X goes through M. In order to do this we need three modeled effects: The effect of X on Y, the effect of X on M, and the effect of M on Y (Bommae 2016).

Just to be clear: This is *not* the same as an *interaction effect* – or *moderation effect*. By specifying an *interaction* we see how two or more variables interact to create a different effect than they would have separately. A *moderation effect* is a type of interaction where we are interested in how the effect of one variable differs depending on the values of another variable (i.e. under what conditions are there an effect?) (Hall 2013). This is not the case here: For example I have not set out to investigate the extent to which the effect of country affluence is different for highly educated vs. poorly educated countries, but the extent to which country affluence affects education level, which again affects tolerance.[22]

To perform mediation analysis with a multilevel logistic model, I use the R-package *mediation* (Tingley et al. 2014). The package can be used to estimate the proportion of the effect of X on Y that is mediated through M. The package also gives uncertainty measures for the estimated proportion through simulations. The simulation method is called a "quasi-Bayesian Monte Carlo method based on normal approximation".[23] The method overcomes the

[21] Some have argued that this is a precondition since else there would be no effect to mediate (Baron and Kenny 1986). Others argue that even if there is no statistically significant relationship one can still use mediation if there is a strong theoretical expectation of mediation (Shrout and Bolger 2002).

[22] A moderation effect is, however, the appropriate way to test H3: *People living in more affluent countries are less likely to dislike homosexuals, as long as the country is not dependent upon natural resources*, since this clearly expects an effect of country affluence *under the condition* that the variable *natural resource dependent* is 0.

[23] This method requires the specification of two models: X → M and X + M → Y. Comparing these two, we get an estimate of the size of the mediated effect through M, or as it is called in the package, *average proportion mediated*. The uncertainty measure for the estimated proportion is calculated using simulations. Specifically, the potential values of the mediator variable are simulated based on its sampling distribution. Then, the outcome (Y) it simulated based on these values of the mediator, and then the proportion of mediation is calculated. After

major limitation of earlier forms of mediation analysis that could only deal with linear regression models (Tingley et al. 2014). However, a drawback of the method is that for multilevel models it only allows for testing of one mediator at a time.

4.7 Weighting

Since the data we are dealing with are survey data, weighting must be addressed. The Afrobarometer data that will be used in the analysis consists of 33 nationally representative surveys. The goal of any "nationally representative survey" is obviously to make it representative for the country in question. The best way to ensure this is to give all citizens of a country an equal probability of being selected to participate in the survey. However, in practical economical terms, this is not possible to do directly. Survey organizations therefore use carefully designed procedures in order to get as close to this ideal as possible. The Afrobarometer describes their sampling method as a "clustered, stratified, multi-stage, area probability sample" where they stratify the sample first based on the main sub-national unit (province, state, etc.) and then by urban/rural areas to make sure the coverage is adequate (Afrobarometer 2018b). In practice though, some sectors of the population will always be overrepresented and some will be underrepresented compared to the actual demographic composition of the country. In order to adjust for this, the respondents are given different weights according to their demographical characteristics so that the overall results will be more representative of the actual population in the country. Furthermore, weighting is required at the country-level since some of the countries in the dataset have a sample of 2400 and others have 1200 respondents. With weighting this is adjusted so it will be as though the same amount of respondents were sampled in each country. Both within and between country weighting will be applied to all the regression models using Afrobarometer's *Combinwt* (Afrobarometer 2018b).[24]

doing this many times – normally 1.000 times – we get an estimate of the uncertainty around the estimate, expressed in the form of confidence intervals and p-values (Imai, Keele, and Tingley 2010, 9).

[24] Since weighting is applied, the standard errors are recalculated according to the weights. They therefore come out – by default – as *robust standard errors* with Stata'a *melogit* command (Stata 2018).

4.8 Outline of the analysis

The analysis will proceed in six main steps: First, the bivariate relations between the main explanatory variables of interest and the outcome (homophobic attitude) will be presented to get a first impression of how they are related. Second I will specify an empty model and estimate, using the ICC, how much variation in homophobia is at the individual level and at the country level respectively. Third, multilevel logistic regression will be used to estimate the effects of the country and individual level variables on homophobia. Fourth, mediation analysis will be used to assess the question raised by H4, namely *how* does economic development impact homophobia? Fifth, I will do a robustness check of the results by changing the operationalization of the dependent variable. And lastly, I will supplement the analysis with a brief look at WVS data over time for the 7 African countries for which such data is available.

5 Results

5.1 Bivariate relations at the country-level

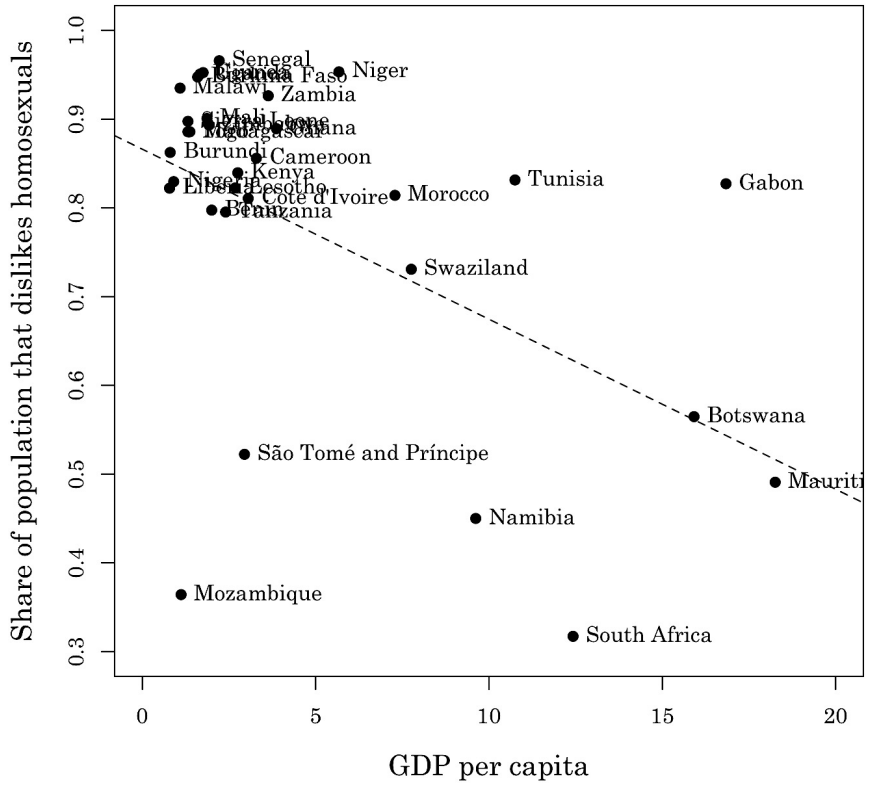

Fig. 5.1 GDP per capita and homophobia. The line is an Ordinary Least Square regression line.

Figure 5.1 shows the relationship between country affluence measured in GDP per capita and level of homophobia. The plot tells an interesting story: Most of the countries in the sample are both very poor and very homophobic, thus clearly clustered in the upper left hand corner. There is a tendency that when GDP increases, homophobia diminishes (Spearman's r = -.42). Such is the case with South Africa and Namibia for instance, which are relatively rich and tolerant in the African context. However, there are some notable outliers: Gabon is quite rich but still as homophobic as the poorest countries. If my theoretical arguments are accurate, this has to do with the fact that Gabon is natural resource dependent. On the other end there is Mozambique and the island nation of São Tomé and Príncipe, which despite low economic affluence is among the least homophobic countries.

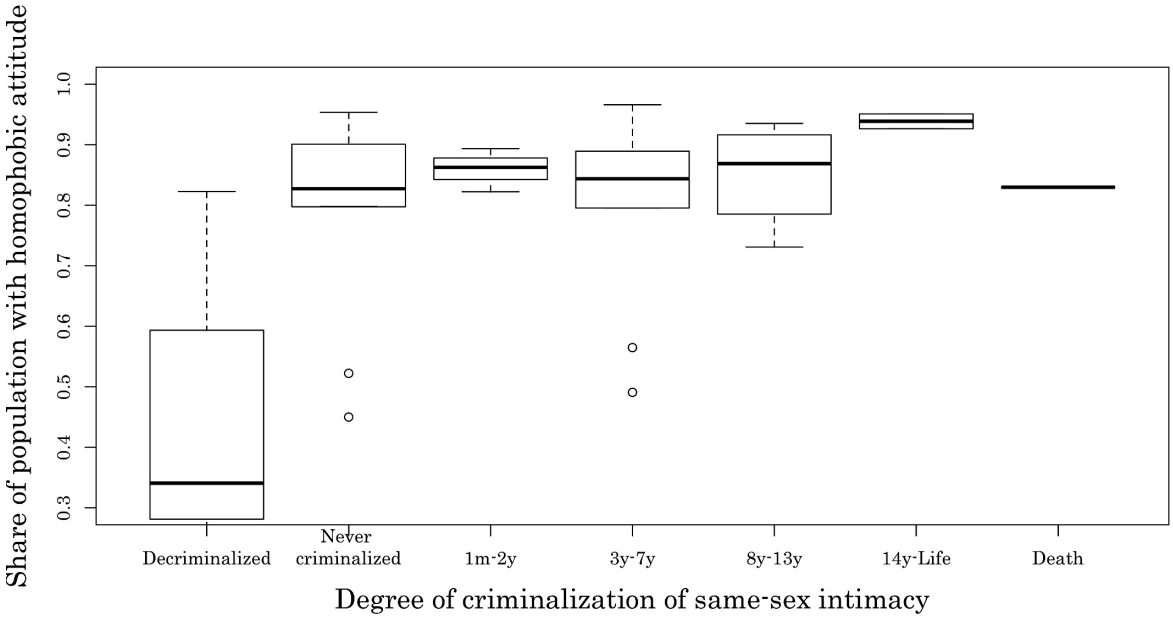

Fig. 5.2 Criminalization of same-sex intimacy and homophobia. Boxplots: A box contains 50 percent of the countries in that group (25^{th} percentile to 75^{th} percentile). The black line inside the box is the median for the group. Dots represent outliers.

In figure 5.2 we see a series of boxplots representing the levels of homophobia in groups of countries based on their laws regarding same-sex intimacy. There are two interesting patterns to take note of. Firstly, there is an enormous difference in the level of homophobia between the countries that have decriminalized same-sex intimacy and all the other groups. The few countries that have decriminalized are South Africa, Cape Verde, Lesotho and Mozambique. The median share of the population that dislikes homosexuals among these countries is about 35 percent, as opposed to minimum 80 percent in all of the other groups. Secondly, the countries that have never criminalized homophobia are generally almost no less homophobic than the countries that have the harshest laws against same-sex intimacy.

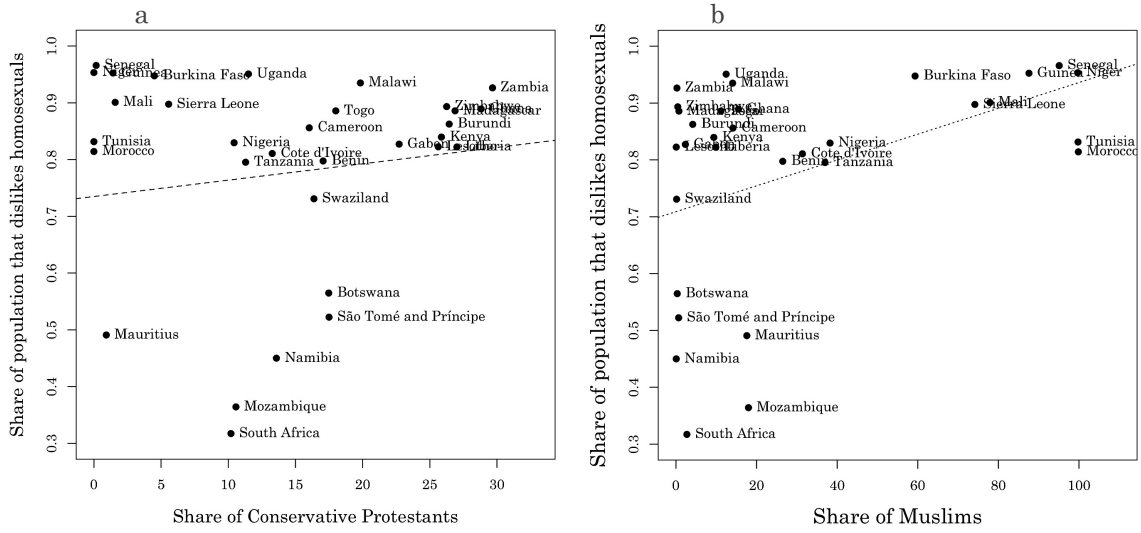

Fig. 5.3 Shares of Conservative Protestants and Muslims and homophobia. The plots illustrate the need to control for one variable when looking at the other. The lines are Ordinary Least Square regression lines.

Figure 5.3 shows the relationship between shares of Conservative Protestants and Muslims on one side and level of homophobia on the other. The "a"-plot shows that when looking at the full sample of countries there is no relationship between share of Conservative Protestants and level of homophobia. But this is probably for a very specific reason: There is a cluster of Muslim majority countries that are quite homophobic and have few Conservative Protestants. Similarly we see that the relationship between share of Muslims and homophobia in plot b is also quite weak (Spearman's r = .35), likely because of the cluster of homophobic countries that have few Muslims but many Conservative Protestants. The plots suggest a strong need to hold one of the variables constant while looking at the other and not draw inferences from the descriptive statistics alone.

Interesting to note however in both plots is the lack of outliers in the lower right-hand corners, meaning that while there are countries with low shares of Conservative Protestants and Muslims that are still strongly homophobic, there are no good examples of countries with high shares of these groups that are *not* strongly homophobic.

5.2 Some Remarks on Model Diagnosis

Before getting into the models it is necessary to say something about model diagnostics. The full model with both country and individual level variables (Table 5.3, Model 6) was inspected for cases with unreasonable leverage on the results using the Cook's Distance formula (See Appendix A, fig. 1 for the full plot). It was found that the island nation of Mauritius could not be predicted well by the model and substantially altered the overall results. In line with standard statistical theory (Fox 1991, 29-34) the case is therefore removed from the final model (Table 5.4, Model 7) as to not distort what seems to be a reasonable model for the remaining cases. However, all previous models (including the full model 6) are estimated on the full sample so that the reader can compare the results before and after removing Mauritius. The predicted probabilities that I will use to illustrate effects throughout the rest of this chapter are all based on the final model (Model 7).

5.3 Empty Model

The very first model we want to inspect is the empty model, which contains no independent variables (shown in Table 5.1). The most important number to take note of in the empty model is the Intra-class Correlation Coefficient (ICC) at .290. This means that 29 percent of the variation in homophobia is between countries, while 71 percent is within countries. 29 percent is a high share, which indicates that the similarities of answers within a given country must be taken into consideration when modeling the phenomena so as to not get biased estimates. This is also indicated by the country level constant variance, which is significant at the 0,1 percent level. These results already gives support to a common argument in the literature (Awondo, Geschiere, and Reid 2013), namely that homophobia varies a lot between African countries, disproving the simplified notion that Africa is uniformly homophobic. In the country-level results the task will be to explain these variations.

	Model 0: Empty model	
	Odds ratio	SE
Constant	5.079***	1.026
Var(cons.[country])	3.827***	1.272
ICC	.290	
AIC	31348.19	
BIC	31365.74	
N (respondents)	47.821	
N (countries)	33	

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

Table 5.1 Empty model. The data are weighted according to Afrobarometer's recommended weight *Combinwt*. Source: Afrobarometer Round 6 (2016).

5.3 Individual Level Results

I will now investigate the results for standard of living, education, religious denomination and religiosity at the individual level. As mentioned in the chapter 2, homophobia is a heterogeneous phenomenon and it is likely that these explanations vary a lot in strength from country to country. For this reason, I will first investigate *the overall effect* and statistical significance of the variables. Then I will look at how the effects vary across countries by letting the regression slopes vary by country (what is called *random slopes*).

Model 1 in Table 5.2 shows the individual level variables by themselves. Model 7 in Table 5.4 shows the individual level variable controlled for all the country-level variables. There are some differences in the strengths of effects, but not in significance.

5.3.1 Standard of Living

Not surprisingly, the odds ratio for standard of living in Model 7 is below 1 (0.97) and significant. This tells us that the higher a respondent's living standard, the less likely they are to dislike homosexuals. How much less? By calculating predicted probabilities we can get a more intuitive measure of the overall effect. A person with none of their basic material needs covered (water, food, health care etc.) have an 85 percent probability of disliking homosexuals, while a person with all 7 needs covered have an 82 percent probability. In other words, the effect is quite weak.

	Model 1: Individual		Model 2: Economic		Model 3: Criminalization	
	Odds ratio	SE	Odds ratio	SE	Odds ratio	SE
INDIVIDUAL VARIABLES						
Age	1.009***	.001	1.010***	.001	1.009***	0.001
Gender (Male=1)	1.130**	.052	1.129**	.052	1.130**	0.052
Rural (0/1)	1.231***	.076	1.231***	.076	1.231***	0.076
Education (0/10)	0.931***	.016	0.932***	.016	0.931***	0.016
Standard of living (0/7)	0.967*	.016	0.968*	.015	0.967*	0.014
Religion (baseline = *Mainline protestant*)						
Evangelical protestant	1.145	.089	1.145	.089	1.144	0.089
Roman Catholic	1.015	.080	1.014	.080	1.015	0.081
Muslim	1.354*	.175	1.353*	.178	1.346*	0.173
Other	1.061	.087	1.063	.088	1.058	0.087
None	1.079	.143	1.080	.144	1.077	0.142
Religiosity (0/6)	1.044***	.014	1.044***	.014	1.044***	0.014
COUNTRY VARIABLES						
GDP per capita (in $1000)			0.901**	.028		
Colonizer (baseline = *Other)*						
Britain					1.179	0.677
France					3.822	2.634
Level of criminalization (baseline = *Decriminalized)*						
Never criminalized					1.602	1.173
1 month – 2 years					8.213***	3.651
3 – 7 years					3.179	2.239
8 – 13 years					7.414**	5.288
14 – life					16.68***	10.84
Death penalty					5.569**	3.566
Share of Conservative Protestants						
Share of Muslims						
MODEL STATS						
ICC	.247		.200		.121	
AIC	30917		30909		30904	
BIC	31031		31032		31088	

N (respondents)	47.821	47.821	47.821
N (countries)	33	33	33

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

Table 5.2 Models 1-3: Individual, economic and criminalization. The data are weighted according to Afrobarometer's recommended weight *Combinwt*. Source: Afrobarometer Round 6 (2016); Carrol (2015); IMF (2012); World Bank (2018a; 2018b); author's calculations.

Does the effect vary between countries? By specifying a random slope term we can check this. Letting the effect of standard of living vary between countries results in a much better fit of the data than not doing so (AIC is reduced by 41). This indicates that the effect does indeed vary substantially between the countries. Furthermore, we can see exactly how the effect varies from country to country by plotting the effect for each country in a choropleth map (see figure 5.4). The map shows that in the vast majority of cases higher living standard is associated with less homophobia. The relationship is strongest in the countries that have the darkest color (i.e. Tunisia, Malawi, Kenya, etc.). In countries such as Zambia and Uganda there is no correlation. In a few cases, such as Tanzania and Mozambique, the relationship is actually opposite: The respondents with higher living standards report more homophobic attitudes than people at lower levels. This is quite surprising, and could be difficult to explain with existing theory. It also partly accounts for the weak overall effect.

Hypothesis 1:*The higher a person's living standard the less likely they are to be homophobic* is supported by the overall results, which show a mild significant effect. In most countries people at higher standards of living *are* less likely to report that they dislike homosexuals. However, we should take note that the effect varies a lot between countries.

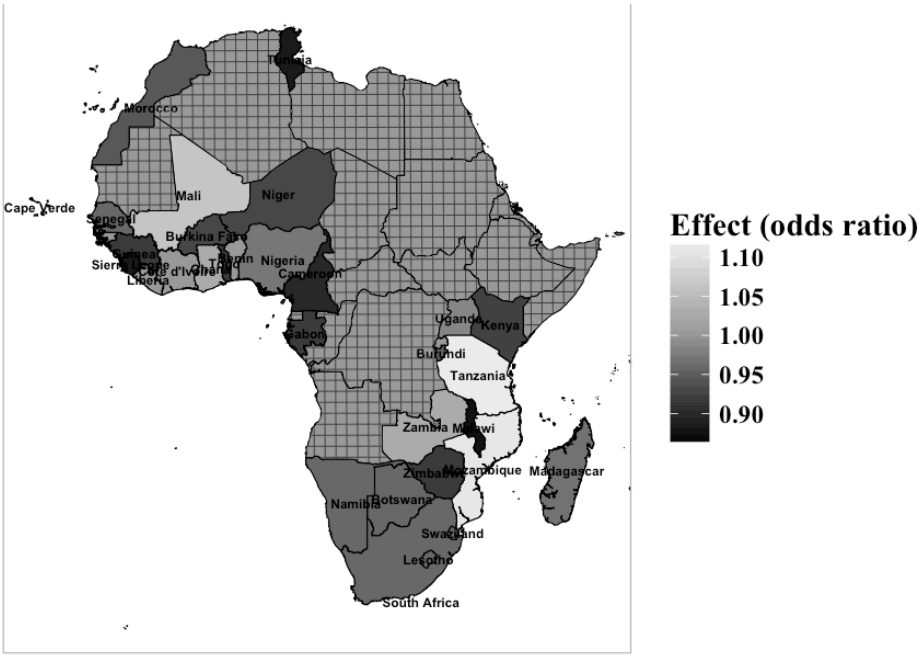

Fig. 5.4 Choropleth map of the effect of standard of living (0-7) on the probability of disliking homosexuals. The effect sizes are the random slopes for each country estimated from a version of model 1 (table 5.1) with random intercepts and random slopes for the standard of living variable.[25] This model, as well as the numbers for the map can be found in Appendix B. The mean effect of standard of living is 0.96 (p<0.05).

5.3.2 Education

Education also shows a significant negative effect (odds ratio at 0,92): More education is associated with being less likely to dislike homosexuals. And the effect is stronger than that of living standard: The overall probability of disliking homosexuals goes from 83 percent for a person with no education to 74 percent for a person at the highest educational level.

Again we can check if the correlation between education and attitude towards homosexuals vary between countries. When a random slope term is specified for education, AIC drops by 68, which is a clear sign that the effect does vary substantially. Just like with the living standard variable, the country-specific effects can be explored with a choropleth map (see Figure 5.5). The map illustrates that across the continent people who have attained more

[25] Optimally, the random slope and intercept models should be based on the full model with country-level variables. However, when applying random intercepts to the full model, it did not converge.

education are less inclined to express homophobia. But again the effect is quite strong in some countries (Tunisia, Senegal, Sierra Leone, etc.) and non-existent in other countries (Mozambique, Zambia, Cameroon etc.). There are practically no countries however, where the more educated respondents are more homophobic than the less educated.[26]

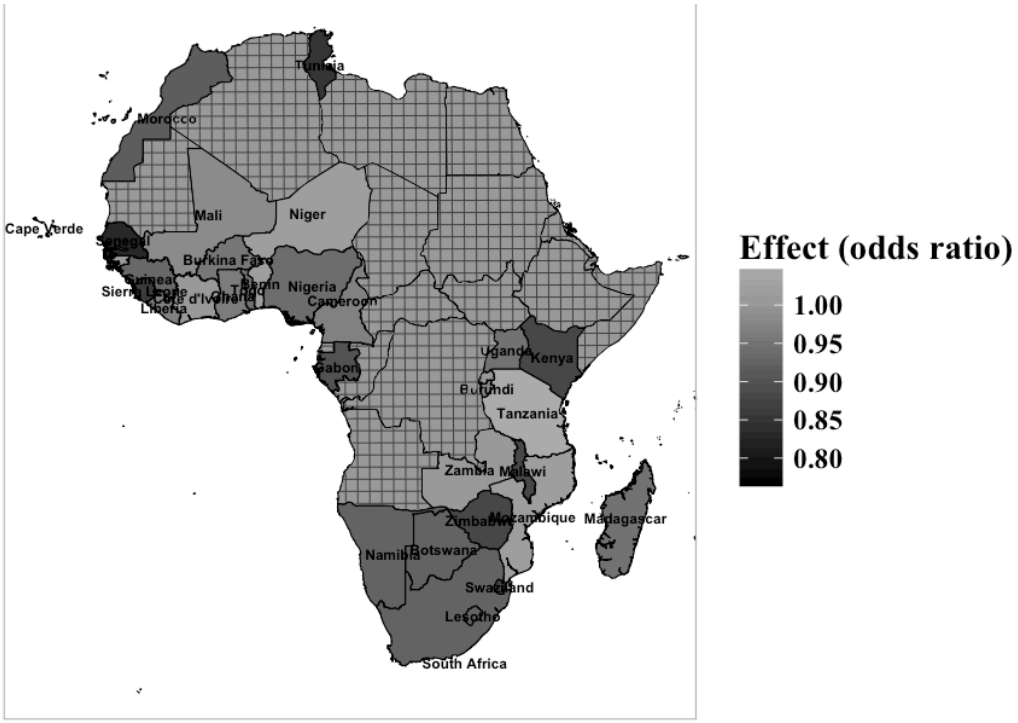

Fig. 5.5 Choropleth map of the effect of education (0-9) on the probability of disliking homosexuals. The effect sizes are the random slopes for each country estimated from a version of model 1 (table 5.1) with random intercepts and random slopes for the education variable. This model, as well as the numbers for the map can be found in Appendix B. The mean effect of education is 0.93 (p<0.001).

In general Hypothesis 2*: The more education a person has attained the less likely they are to be homophobic* seems to be accurate. However, the extent to which education diminishes homophobia is context specific. In Mozambique for instance, the highly educated are no less homophobic than the uneducated. In Senegal on the other hand, there is a great difference in their attitudes.

5.3.3 Religion

Looking at the overall differences between how people of different religious denominations feel about homosexuals, it tells us that compared with Mainline Protestants all the other

[26] Four countries technically have odds ratios above 1, but this is by quite small margins (odds ratio= 1,045 in the case of Tanzania, which is the highest).

groups are more likely to dislike homosexuals. Muslims are the most homophobic, followed by Conservative Protestants, people with no religion, people with other religions and then Roman Catholics. Only Muslims however are significantly different from Mainline Protestants. If we calculate the overall predicted probabilities, it is clear that the effect is quite weak: Muslims have on average an 82 percent probability of disliking homosexuals versus 79 percent for Mainline Protestants.

It is particularly interesting that people with no religion are essentially no different in their attitude towards homosexuals than are religious people. This finding serves as a serious blow to the idea of religion *in itself* as a leading cause of homophobia in Africa. If that were the case, one would obviously expect atheists and agnostics to be more tolerant on average than religious people. However, this is not seen in the data.

If a random slope is specified for religion AIC *increases* by 82. In others words letting the effect of religion vary by country leads to a much worse fit of the data. This indicates that the effect does not vary much between countries. Because if it had, we would expect that allowing for this varying effect would improve the model, which it does not.

5.3.4 Religiosity

Religiosity has a significant positive effect on disliking homosexuals (odds ratio=1.048): The more a respondent reports that they practice their religion the more likely they are to dislike homosexuals. Predicted probabilities tells us that a person who never practices their religion has an 81 percent probability of disliking homosexuals vs. 85 percent for a person who practices every day.

This applies for almost all the major religious denominations. Figure 5.6 plots the effect of religiosity by denomination. As we can see the effect holds for all denominations, expects for Catholics: A Catholic who practices their religion daily is no more inclined to dislike homosexuals than a Catholic who never practices.

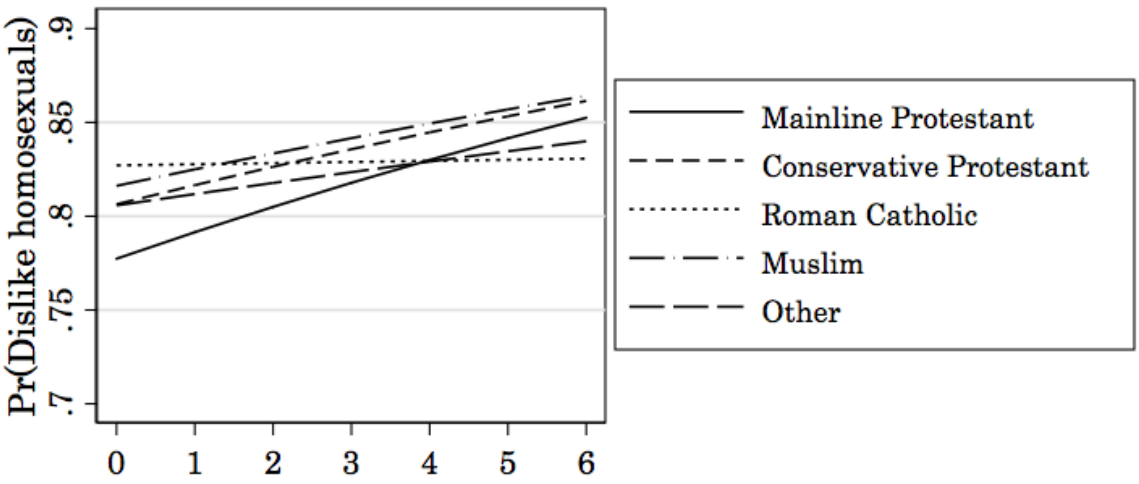

Fig. 5.6 Effect of religiosity for different religious denominations. The effect of religiosity is not significantly different between denominations, except for the difference between Roman Catholics and Mainline Protestant, which is significant at the 6%-level. The "None"-category is excluded.

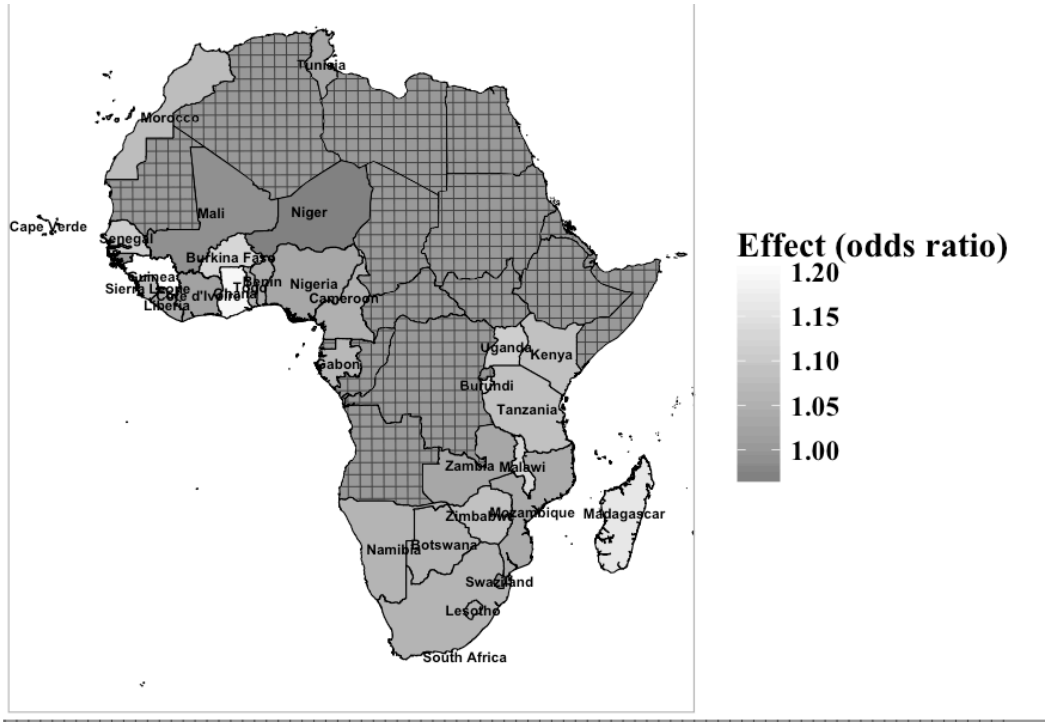

Fig. 5.7 Choropleth map of the effect of religiosity (0-6) on the probability of disliking homosexuals. The effect sizes are the random slopes for each country estimated from a version of model 1 (table 5.1) with random intercepts and random slopes for the religiosity variable. This model, as well as the numbers for the map can be found in Appendix B. The mean effect of religiosity is 1.048 (p<0.001).

The effect of religiosity on attitude towards homosexuals also varies to some extent between countries (AIC drops by 19 when adding the random slope term). Figure 5.7 shows how the

effect of religiosity varies by country. There are countries where religiosity doesn't matter for attitude towards homosexuals. Examples would be Mali, Niger and Zambia, as seen on the map. Then there is a cluster of countries on the African west coast where it matters a lot: Ghana, Senegal, Guinea, etc. The results give support to H6: *People who are more religious are more likely to dislike homosexuals than less religious people.*

5.3.5 Interactions between the individual level variables

Differences in attitudes towards homosexuals become greater when looking at the interactions between individual level characteristics. Consider the following two people: The first is a highly educated person with all their basic material needs covered. The person belongs to one of the Mainline Protestant denominations, but very rarely practices their religion. The predicted probability that this person dislikes homosexuals is 69 percent, i.e. considerably lower than the average, but still most likely not accepting of homosexuals. Even if we add that this person is a 20-year-old urban woman, the probability only goes down to 62 percent. The second person has not attained any education and has none of their material needs covered. The person is a devoted Muslim who practices their religion daily. This person has a 91 percent probability of disliking homosexuals. The probability goes to 93 percent if we add that the person is a 60-year-old rural man. Hence the attitudinal difference between our two hypothetical people at opposite extremes is definitely noticeable, but both would most likely report that they dislike homosexuals.

5.3.6 Summary of Individual Level Results

Supporting the Postmaterialist thesis, the individual level results showed that out of the four individual level variables that were tested with control variables, education had the largest effect: From bottom to top of the education scale the probability of disliking homosexuals goes from 83 percent to 74 percent. However, as expected the results strongly suggest that the strength of the effect varies from country to country, which became clear when looking at the choropleth map. The results of standard of living showed that being more economically secure does make a person less likely to express homophobia, even when controlling for education and religiosity. But the effect was rather weak, partly because the effect clearly ran the opposite direction than expected (higher living standard = *more likely* to express homophobia) in two cases: Mozambique and Tanzania.

Furthermore, the results showed that the only religious denomination that stands out as more homophobic than the others are Muslims. Surprisingly, non-religious people are no less homophobic than Mainline Protestants, Conservative Protestants, Catholics or other denominations. People who more frequently practice their religion are a little more likely to dislike homosexuals. This is true for all religious denominations expect for Catholics.

	Model 4: Religion		Model 5: All three		Model 6: Full model	
	Odds ratio	SE	Odds ratio	SE	Odds ratio	SE
INDIVIDUAL VARIABLES						
Age	1.009***	.001	1.010***	0.001	1.010***	0,001
Gender (Male=1)	1.130**	.052	1.130**	0.052	1.130**	0,052
Rural (0/1)	1.233***	.077	1.231***	0.077	1.233***	0,077
Education (0/10)	0.931***	.016	0.931***	0.016	0.931***	0,016
Standard of living (0/7)	0.967*	.015	0.967*	0.015	0.968*	0,015
Religion (baseline = *Mainline protestant*)						
Conservative protestant	1.143	.089	1.144	0.089	1,142	0,089
Roman Catholic	1.016	.081	1.017	0.081	1,016	0,081
Muslim	1.337*	.174	1.338*	0.174	1.337*	0,174
Other	1.061	.088	1.062	0.087	1,06	0,088
None	1.079	.142	1.084	0.142	1,078	0,142
Religiosity (0/6)	1.045***	.014	1.045***	0.014	1.045***	0,014
COUNTRY VARIABLES						
Polity IV			0.991	0.026	0,994	0,024
GINI Score			1.000	0.019	0,996	0,019
Colonizer (baseline = *Other)*						
Britain			1.329	0.532	1,704	0,666
France			1.860	0.962	2,189	1,034
Level of criminalization (baseline = *Decriminalized)*						
Never criminalized			1.742	0.886	1,45	0,645
1 month – 2 years			2.922	1.662	3.064*	1,737
3 – 7 years			2.534	1.345	2,358	1,210
8 – 13 years			3.214*	1.808	2.944*	1,613
14 – life			7.947***	4.560	6.430***	3,545

Death penalty			2.453	1.340	1,704	0,979
Share of Conservative Protestants	1.110***	.016	1.059**	0.023	1.041*	0,021
Share of Muslims	1.034***	.006	1.019**	0.007	1.016*	0,006
GDP per capita			0.947	0.034	0.910**	0,030
Natural res. dependent (1/0)					1,003	0,276
Natural res. dependent*GDP pc					1,063	0,049
MODEL STATS						
ICC	.130		.067		.060	
AIC	30896		30892		30892	
BIC	31027		31111		31129	
N (respondents)	47.821		47.821		47.821	
N (countries)	33		33		33	

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

Table 5.3 Models 4-6: Religion, all three and full model. The data are weighted according to Afrobarometer's recommended weight *Combinwt*. Source: Afrobarometer Round 6 (2016); Carrol (2015); IMF (2012); World Bank (2018a; 2018b); author's calculations.

	Model 7: Final model		Model 8: *Strongly dislike* as DV		Model 9: Continuous DV	
	Odds ratio	SE	Odds ratio	SE	Coef.	SE
INDIVIDUAL VARIABLES						
Age	1.009***	0.001	1.008***	0.002	0,003***	0,001
Gender (Male=1)	1.154***	0.050	1.140***	0.039	0,044**	0,015
Rural (0/1)	1.194**	0.070	1.149*	0.075	0,051*	0,024
Education (0/10)	0.923***	0.014	0.937***	0.012	-0,023***	0,006
Standard of living (0/7)	0.965*	0.014	0.970*	0.013	-0,013*	0,006
Religion (baseline = *Mainline protestant*)						
Conservative protestant	1.143	0.090	1.198**	0.069	0,072**	0,024
Roman Catholic	1.069	0.070	1.076	0.067	0,044	0,024
Muslim	1.212*	0.116	1.269*	0.126	0,077*	0,031
Other	1.029	0.083	1.046	0.083	0,026	0,029
None	1.091	0.141	1.076	0.134	0,049	0,046
Religiosity (0/6)	1.048***	0.014	1.037*	0.017	0,015**	0,005
COUNTRY VARIABLES						
Polity IV Score	0.973	0.024	0.994	0.033	-0,018	0,011
GINI Score	1.017	0.019	1.005	0.022	-0,005	0,008
Colonizer (baseline = *Other)*						

Britain	1.595	0.600	2.002	0.942	0,158	0,194
France	2.175	0.937	2.617	1.421	0,361	0,232
Level of criminalization (baseline = *Decriminalized)*						
Never criminalized	1.362	0.555	1.072	0.548	-0,023	0,209
1 month – 2 years	2.794	1.545	2.876	2.029	0,258	0,283
3 – 7 years	1.888	0.869	1.893	1.211	0,127	0,244
8 – 13 years	2.572*	1.187	2.346	1.481	0,320	0,238
14 – life	5.456**	2.845	3.915*	2.330	0,534*	0,234
Death penalty	2.283	1.165	1.098	0.688	0,229	0,213
Share of Conservative Protestants	1.059**	0.020	1.025	0.028	0,030**	0,009
Share of Muslims	1.024***	0.007	1.015	0.009	0,009**	0,003
Natural res. dependent (1/0)	0.834	0.255	0.928	0.344	-0,042	0,137
GDP per capita	0.871***	0.031	0.843***	0.039	-0.047**	0,017
Natural res. dependent*GDP pc	1.110*	0.053	1.151*	0.069	0.043^	0,022
MODEL STATS						
ICC	.053		.041		.079	
AIC						
BIC						
N (respondents)	46,640		46,640		46,640	
N (countries)	32		32		32	

^ $p < 0.06$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5.4 Models 7-9: Final model and two alternative DVs. The data are weighted according to Afrobarometer's recommended weight *Combinwt*. AIC and BIC are not shown since they would not be comparable across models with different dependent variables. Source: Afrobarometer (2016); Carrol (2015); IMF (2012); World Bank (2018a; 2018b); author's calculations.

5.4 Country level results

5.4.1 Economic development

I will start by looking at the effect of country affluence measured in GDP per capita. Model 2 in Table 5.2 shows that the higher GDP per capita of a country is, the less likely a respondent from that country is to dislike homosexuals. The effect is significant when only controlling for the individual level variables. However, in the models where I control for the alternative country level explanations criminalization and religion, as well as the control variables political regime and GINI inequality (Model 5 and 6, Table 5.3), the effect of GDP per capita is no longer significant.

It is hardly surprising that GDP per capita is not significantly related to homophobia when looking at the overall effect. My argument in the chapter 2 was that the effect should exist for regular economies but not for natural resource dependent economies. Is this the case in the empirical data? This can be checked by specifying an interaction effect. Model 6 shows the results from adding an interaction between GDP per capita and whether or not the country is natural resource dependent. The effect of GDP per capita now becomes significant at the 0,5 percent level. But the interaction between GDP per capita and natural resource dependent is not significant. As already mentioned, this full model was checked for cases with unreasonable leverage on the results and Mauritius clearly stands out as such a case (see Appendix A). Model 7 is fit without Mauritius. In this model, GDP per capita is significant at the 0,1 percent level. Secondly, the interaction term is itself positive and significant, which means that the effect of country affluence is indeed weaker for natural resource dependent countries. But how big is the difference?

One can get a sense of the magnitude of the difference by plotting the predicted probabilities of expressing homophobia for a respondent in a natural resource dependent country and a regular economy at different levels of GDP per capita. This is what I have done in Figure 5.8. The pattern is clear: For natural resource dependent countries, the tolerance-inducing effect of affluence is non-existent. For all others the effect is huge: The probability of expressing homophobia goes from about 86 percent in a country with a GDP per capita of $2.000 down to 42 percent for a country at $18.000. This is controlled for all the individual level characteristics as well as political regime, economic inequality, colonizer, level of criminalization of same-sex intimacy, share of Muslims and share of Conservative Protestants.

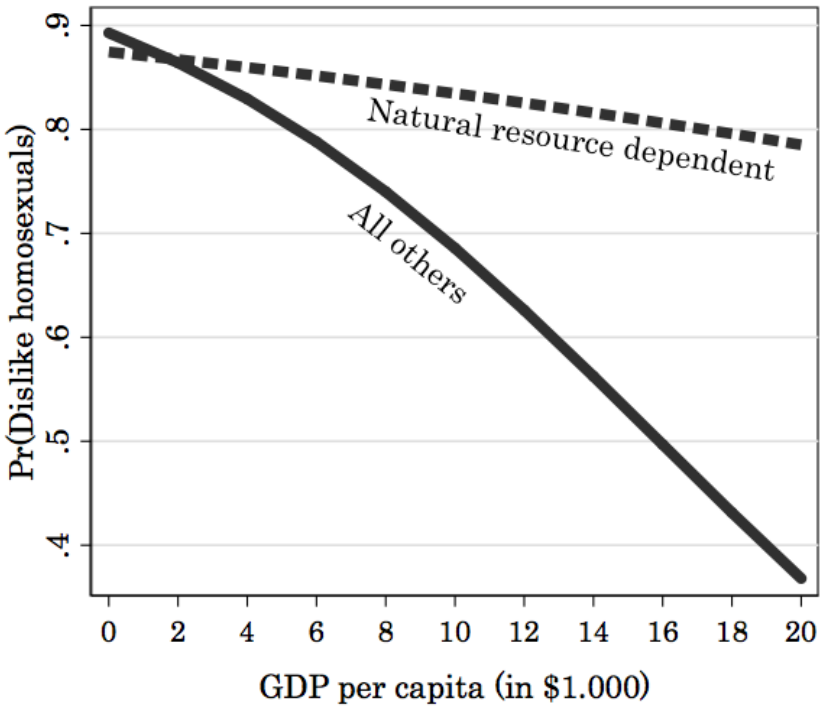

Fig. 5.8 Interaction between GDP per capita and natural resource dependent. The Y-axis is predicted probabilities estimated form Model 7. The interaction is significant (p<0,05) as seen in Model 7.

To assess how much variance this explanation accounts for, we can first look at the ICC, which tells us the proportion of country level variation in homophobia. The ICC of Model 1 (Table 5.1) – which has no country level variables – is 0,247. By adding GDP per capita, natural resource dependent, and their interaction, the ICC goes down to 0,174.[27] In other words, this explanation accounts for 29,6 percent of country level variation.[28]

Next we can remove GDP per capita and natural resource dependent, as well as their interaction, from the full model 7 and see how this affects the fit of the data, which is measured by the AIC. With these variables dropped the AIC increases by 6,[29] indicating that the full model is somewhat worse without GDP per capita, natural resource dependent and their interaction included. In other words we would be advised to keep these variables in the model.

[27] This model can be found in Appendix C.
[28] (0,247-0,174)/0,247*100
[29] The AIC estimates can be found in Appendix D

These results supports H3: *People living in more affluent countries are less likely to dislike homosexuals, as long as the country is not dependent upon natural resources,*

5.4.1.1 Why is Affluence at the Country Level Associated with less Homophobia?

It was argued in the chapter 2, in line with Inglehart's Postmaterialist thesis, that affluence at the country level likely diminishes homophobia when it is used in certain ways. Inglehart emphasizes three mechanisms: Through increasing the general living standards, through increasing educational levels and through moving the workforce from agriculture and industry to the service sector. We can get an indication of how accurate this claim is by checking if the effect of country affluence, measured in GDP per capita, is mediated through these three variables. This is done with mediation analysis. With mediation analysis we can answer with a certain amount of precision a question like *to what extent is the effect of GDP per capita on homophobia accounted for by educational levels?* However, as mentioned in the chapter 4, using mediation analysis with a multilevel model only lets us look at one mediator at a time.[30]

What do the results show? Table 5.5 shows the results when each of the three above-mentioned variables is defined as a mediator of the effect between GDP per capita and homophobia. The general impression is that all three variables do indeed mediate the effect. The indirect effect (i.e. through the mediator variable) is significant below the 5 percent level in the case of general living standard and size of service sector, but only significant at the 10 percent level for the education variable. The general living standard of the country accounts for 53 percent percent of the effect of GDP per capita. Education is estimated to mediate approximately 100 percent of the effect, and size of service sector 95 percent. In practice, this means that the entire effect of GDP per capita is mediated when using educational level or service sector size as mediator. The findings give support to H4: *The effect of country affluence is mediated through the general standard of living, educational level and size of the service sector.*

[30] This is with the R package *mediation.*

	X: GDP per capita *Y: Dislike homosexuals*	Average proportion mediated	p-value
M-1	General standard of living	53 %	<0,05
M-2	HDI Education Score	≈100 %	<0,1
M-3	Share of population working in service sector	95 %	<0,001

Table 5.5 Results from mediation analysis. The results show three alternative mediators of the effect of GDP per capita on the probability of disliking homosexuals. For each mediator (M1-3) a total of 1.000 simulations were run based on Model 6 (table 5.2) with the Nat.Res.Dep. variable added and with the mediator variable added, and an identical model but with the mediator as dependent variable instead of homophobia. See *analytic strategy and methods* for specifics.

5.4.1.2 Why is there no Effect for Natural Resource Dependent Countries?

It has now been established that there is a strong association between the affluence of a respondent's country and the probability that they express homophobia, as long as the country is not natural resource dependent. Furthermore, the mediation analysis showed that the effect of country affluence is significantly mediated through general living standards, educational levels and post-industrial development, measured in size of the service sector. Putting two and two together we are left with the question: Is there no tolerance-inducing effect of economic development in natural resource dependent countries because development in such contexts does not adequately trigger these mechanisms? If this were the case it would strengthen the argument that these mechanisms are important.

Table 5.6 shows simple Person correlations between GDP per capita and the three mechanisms for both natural resource dependent countries and all others. As we can see, country affluence is strongly and significantly related to living standards, educational levels and service sector size for regular economies. This is not true for natural resource dependent countries: For them there is no correlation between GDP per capita and living standards. This is just like one would expect since governments in these countries are not incentivized to listen to popular demands in the same way as in other economies. Furthermore the correlation between GDP pc and education and GDP pc and size of service sector is weaker than for regular economies. For natural resource dependent countries none of the correlations are

significant (partly due to low *N*), while all are significant at the 0,1 percent level for all other countries. The results in Table 5.5 seen in the light of the two previous sections indicates that it *is* because of the weak association between country affluence on one side and living standards, educational levels and service sector size on the other in natural resource dependent countries, that we don't see any tolerance-inducing effect of economic development in these countries.

	Natural resource dependent (*N*=10)	All others (*N*=23)
GDP pc vs. Living Stand.	0.20	0.85***
GDP pc vs. Education	0.62*	0.81***
GDP pc vs. Service sector	0.63*	0.83***

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5.6 Pearson correlations between GDP per capita and the three tolerance promoting mechanisms.

5.4.2 Criminalization of Same-Sex Intimacy

I will now look at the results form the two alternative explanations, starting with criminalization of same-sex intimacy. Model 3 in Table 5.1 shows the effect of the variables criminalization and colonizer only controlled for the individual level variables. As expected, the results show that living in a country that criminalizes same-sex intimacy in most cases significantly increases the odds of disliking homosexuals compared to the countries that have decriminalized. If we jump to the final model (Table 5.4, Model 7), the criminalization-variable still shows significant effects but when controlling for religious composition of the countries, political regime and economic factors, only respondents in the countries that punish homosexual acts with between 8 years and life in prison are significantly different in their attitudes from respondents living countries that have decriminalized. Still there does seem to be a pattern that harsher criminalization increases the odds of disliking homosexuals. The slight reduction in homophobia for respondents in the death penalty category is likely due to the fact that only Nigeria falls under this category. And as already mentioned in chapter 3 death penalty in Nigeria is only used in some northern states.

Figure 5.9 shows predicted probabilities for the criminalization variable. Perhaps the most striking thing about this plot however, is that in the countries that don't criminalize same-sex intimacy an average respondent is still very likely to express homophobia (just above 70 percent). Of course, we must be careful with drawing strong conclusions here: The countries that have decriminalized homosexual acts have done so at different points in time.[31] In cases such as Lesotho, which decriminalized in 2012, the norm signaling effect of the law has not had much time to work.

Using the ICC, like was done with the economic variables, we can calculate how much of the country-level variations in homophobia that is accounted for by level of criminalization and which colonial power the countries gained independence from. From Model 1 to Model 3, ICC decreases from 0,247 to 0,121, which means that this explanation accounts for 51 percent.[32] The importance of the explanation is also indicated by the increase of AIC when dropping the variables from the full Model 7.[33] The AIC then increases by 3,25, which means that the model becomes a little worse without these variables but not as much as when dropping the economic variables.

The overall results support hypothesis H5: *The harsher a country criminalizes same-sex intimacy the more likely its inhabitants are to dislike homosexuals.*

The data show no effect of colonizer on homophobia in Model 6. When running the model without controlling for level of criminalization, there still is no significant difference between having been colonized by Britain or France compared to other colonizers as regards homophobia.

[31] All the way from South Africa in 1998 to Lesotho in 2012.
[32] (0,247-0,121)/0,247*100= 51,01
[33] As seen in Appendix D

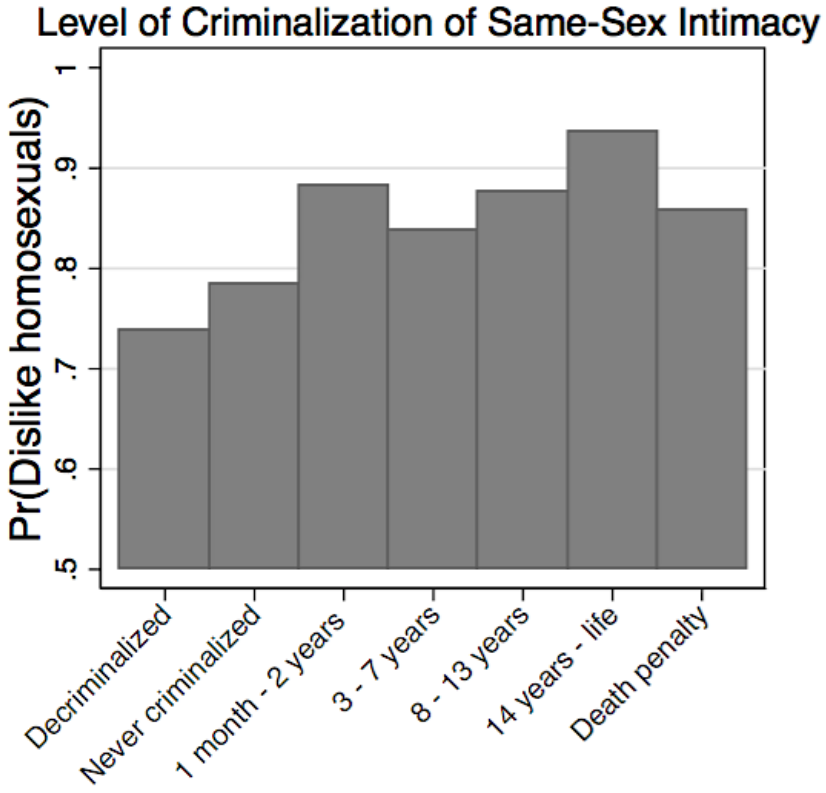

Fig. 5.9 Predicted probabilities of disliking homosexuals at different levels of criminalization of same-sex intimacy. Only 8-13 years and 14-years – life are significantly different from decriminalized.

5.4.3 Share of Muslims and Conservative Protestants

Next, we will look at how the presence of Muslims and Conservative Protestants affects homophobia. It was already established in the individual model that Muslims and Conservative Protestants are *themselves* more likely than the other denominations to dislike homosexuals (however, only Muslims significantly so). Now we will see how *the share* of Muslims and Conservative Protestants in a respondent's country affects their likelihood of disliking homosexuals.

The reader might remember from the bivariate plots (Figure 5.3) that neither of the variables seemed to have any noteworthy effect because they likely confound each other. The results in Model 4 confirm this suspicion: When added together in the regression model so that one is held constant when looking at the other, both the share of Muslims and share of Conservative Protestants in a respondent's country significantly increases the odds that they dislike homosexuals. The effects are still positive and significant when controlled for GDP per

capita, economic inequality, colonizer and level of criminalization. One can know that the effects are not just because these groups are themselves more homophobic since we are controlling for the individual's religion.

This can further be illustrated by plotting the effects of different shares of Muslims and Conservative Protestants for the different religious denominations at the individual level. This is what figure 5.10 and 5.11 show. Figure 5.10 shows that in a society with a large share of Conservative Protestants, people of all religions – and actually also non-believers – are more likely to dislike homosexuals. Figure 5.11 shows the same, but with share of Muslims. Again, there is an effect for people of any of the denominations, but it is not as strong for Mainline Protestants as for the other groups.

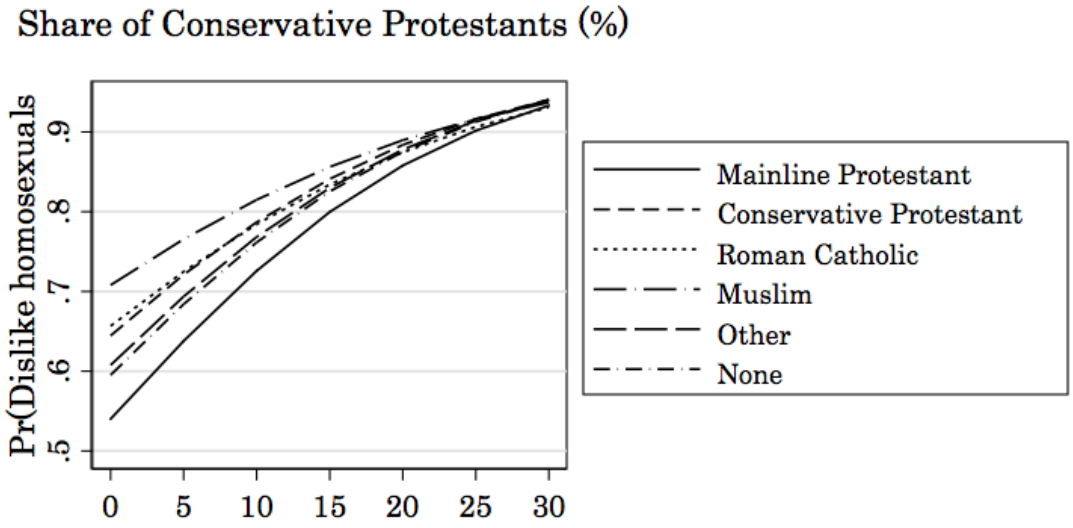

Fig. 5.10 Predicted probabilities of disliking homosexuals at different shares of Conservative Protestants.

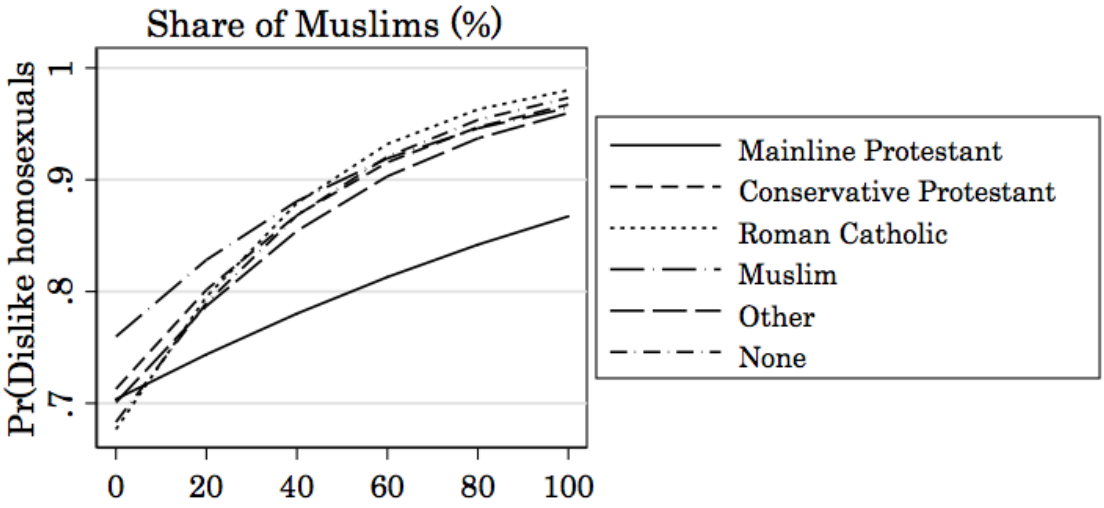

Fig. 5.11 Predicted probabilities of disliking homosexuals at different shares of Muslims.

The plots also show that the size of the Conservative Protestant population is more strongly associated with homophobia than the size of the Muslims population. This, despite the fact that the individual level results showed Muslims being more likely to express homophobia than Conservative Protestants. Overall, going from an initial 65 percent probability of disliking homosexuals at 0 percent present of one of those groups it takes 50 percent Muslims to increase the probability of disliking homosexuals to 90 percent while it only takes a 20 percent share of Conservative Protestant to do the same.

From Model 1 (Table 5.1) to Model 4 (Table 5.3) ICC goes from 0,247 to 0,130. This means that the shares of Muslims and Conservative Protestants accounts for 47,4 percent of country level variation in homophobia. Dropping these variables from Model 7 raises the AIC by 6,6, the biggest reduction in explained variance we have seen so far, but only marginally larger than the loss when dropping the economic variables.[34]

These results serve to support H8: *The higher a country's share of Muslims and Conservative Protestants are, the more likely its inhabitants are to dislike homosexuals*.

[34] The AIC estimate can be found in Appendix D

5.4.4 Summary of Country Level Results

The country level results have so far given support to the Postmaterialist explanation, as well as the two alternative explanations. The results have demonstrated that for countries that are not natural resource dependent there is a strong correlation between the affluence of the country and tolerance towards homosexuals for a respondent in that country. Furthermore it has been shown that this relationship is not merely due to the fact that richer African countries are more democratic, have different religious compositions and are less likely to criminalize same-sex intimacy than the poorer states. It does however seem to be accounted for by the fact that in richer states (that are not natural resource dependent) living standards are higher, educational levels are higher and the share of people working in the service sector is higher. These are all believed to be consequences of economic development and were hence modeled as such with the mediation analysis.

With regards to the alternative explanations, the results indicate firstly that living in a country that criminalizes same-sex intimacy does increase the probability of disliking homosexuals, but perhaps not as much as one would think. In the countries that have decriminalized it, the probability is still about 70 percent. Secondly, with respect to the size of the Conservative Protestant and Muslim populations, the results showed strong effects on homophobia, but with the former variable considerably stronger than the latter.

In terms of explained variation at the country level, the ICC estimates indicated that the criminalization/colonizer explanation accounts for as much as 51 percent of the variation, the religion explanation accounts for 47 percent, while the Postmaterialist explanation accounts for 30 percent on its own. However, the AIC estimates tell us that the full model suffers the biggest reduction in total explained variation when removing the religion explanation or the Postmaterialist explanation.

5.5 Robustness Check: Two Alternative Operationalizations of the Dependent Variables

To check the robustness of the results I run the full model with two different operationalizations of the dependent variable. This is shown in Table 5.4. Model 8 shows the

model where the dependent variable is a different – but still reasonable – dichotomization. The dependent variable has "strongly dislike" homosexuals = 1, all else = 0. This gives us an impression of how the explanations perform when only trying to predict the most homophobic people. Model 9 is run with the full five point Likert scale treated as continuous, keeping in mind that the variable is not technically continuous, as discussed in the chapter 3. The method used for this model is linear multilevel regression. Hence, the coefficients are regular regression coefficients and not odds ratios.

Let's first look at the robustness of the individual level results. Across Models 8 and 9, all the individual level variables retain their significant effects in the direction they had in the previous models. One interesting change, however, is that with both of these alternative operationalizations, Conservative Protestants become significantly more homophobic than Mainline Protestants. The results clearly point to Muslims and Conservative Protestants as having particularly negative attitudes compared to the other religions, as expressed in H7: *Among religious denominations, Conservative Protestants and Muslims are the most likely to dislike homosexuals.*

At the country level, the modified Postmaterialist explanation fares very well. GDP per capita and the interaction between GDP per capita and natural resource dependent are both significant across all three operationalizations of the dependent variable. The alternative explanations are less stable. With the criminalization variable in Models 8 and 9, only people living in countries that punish same-sex intimacy with 14 years to life are significantly more homophobic than people in the countries that have decriminalized same-sex intimacy. Hence, the effect of criminalization is less certain. Similarly, in Model 8, neither the share of Conservative Protestants nor the share of Muslims is significantly related to homophobia. On the other hand, the effect comes back in Model 9, which has the full Likert scale as dependent variable.

In sum, the modified Postmaterialist explanation seems to be the most robust of the three explanations. The two alternative explanations are more unstable when changing the operationalization of the dependent variable.

5.6 Comparison with World Value Survey Data over Time for Available Countries

To further test the validity and reliability of the results, I will do a brief analysis of some survey data from the WVS. The WVS has not surveyed many African countries over time. Still, it is worth taking a look at the data that are available. Seven African countries have been surveyed about homosexuals by the WVS at more than one point in time. An advantage for this analysis is that the WVS – like the Afrobarometer – asks about homosexuals as neighbors. However, unlike the Afrobarometer, the WVS gives the respondent a list of groups and asks the respondent to pick out for themselves which ones they would not like to have as neighbors. Some will mention homosexuals, some will not. This way of asking the question has the attractive property that if a respondent mentions homosexuals, it indicates a certain level of "care" about the issue.

We can calculate the share of the population in each county that mentions homosexuals as one of the groups they would not have as neighbors. Furthermore, for the seven countries that have been surveyed two times or more we can calculate the change in this share from the first time the country was survey – *t1* – to the last time the country was surveyed – *t2*. An expectation of the Postmaterialist thesis would be that if this share has *decreased* (i.e. less homophobia) from t1 to t2 in a country, it is probably because the country has experienced economic development over the same period. On the other hand, if the share has *increased* (i.e. more homophobia), the economy has probably not been doing well in this period. We can do a simple investigation of this expectation by plotting the change in the share that mentions homosexuals negatively from t1 to t2 vs. relative change in GDP per capita in the same period. This is what is shown in Figure 5.12.

Now, the first thing to keep in mind is that we only have data for seven countries. This means that statistical inference does not make much sense. Still, a linear OLS regression line has been added to the plot, just to see the general trend. The trend is that higher growth from the first to the last time the country was surveyed is associated with a decrease in the share that mentions homosexuals negatively. We can also look at it in terms of which squares the countries occupy. In the lower rights-hand square are Nigeria, Morocco, South Africa and Algeria. Being in this square tells us that they have all had positive economic growth from t1 to t2 *and* have seen a decrease in the share of the population that mentions homosexuals

negatively. But there are differences of degree. While Algeria has become much less homophobic from 2002 to 2014 at 25 percent growth, Nigeria has not seen much difference in homophobia from 1990 to 2012 despite 75 percent growth in this period. However, Nigeria is one of the most famous examples of a resource cursed economy (Sala-i-Martin and Subramanian 2008), so this could explain the relatively small change in attitudes towards homosexuals. This would then be in line with the modified version of the Postmaterialist thesis argued in this thesis.

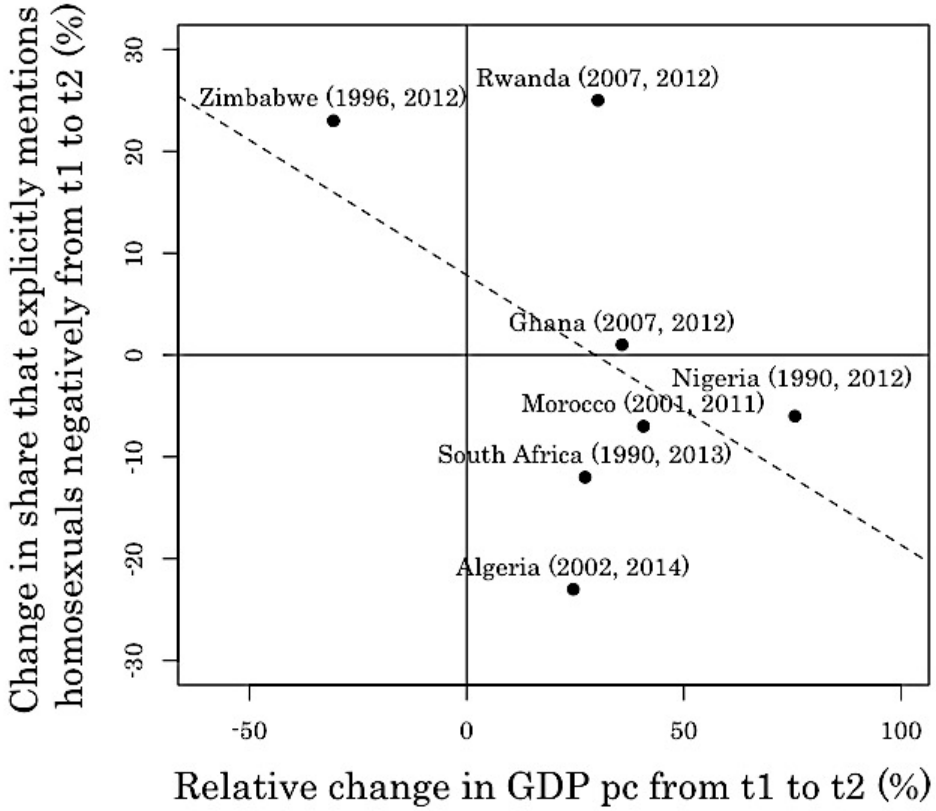

Fig. 5.12 Mentioning homosexuals negatively in World Value Survey vs. relative change in GDP pc over time.

In the upper left-hand corner is Zimbabwe, which has seen a great increase in the share of the population that mention homosexuals negatively from 1996 to 2012. In addition, the country is the only one that has had substantial *negative* economic growth form the first survey round to the last. Rwanda has had a similar increase in homophobia, and only in a 6-year period. However, Rwanda has seen quite a lot of economic growth in such a small period, and therefore does not fit the expectation of the Postmaterialist thesis.

All in all, the WVS data do seem to give some additional support to the Postmaterialist argument that economic development over time is associated with less homophobia over time.

6 Discussion and Conclusion

6.1 Can the Postmaterialist Thesis Explain Homophobia in Africa?

Chapter 2 presented a version of the Postmaterialist thesis, modified for the effects of the resource curse, as an explanation for homophobia in Africa. The argument goes as follows: Economic development promotes Postmaterialist values – part of which is tolerance towards homosexuals – when triggering three mechanisms: a) Increasing general living standard, b) spreading public education and c) moving demand for labor away from agriculture and industry towards the service sector. Therefore, in circumstances of low levels of economic development, or alternatively if the economic development doesn't trigger these mechanisms, materialist attitudes – part of which is homophobia – will thrive. Of particular relevance for Africa, in countries subject to the resource curse, economic development will likely not trigger these mechanisms.

The results from the empirical analysis fulfill the expectations of this argument on several accounts. I will discuss them one by one.

First, at the individual level we saw that people at higher living standards and who have attained more education are overall less likely to express homophobia. However, it was demonstrated that while the effect of education is relatively homogenous across different societies, the effect of higher living standards is more fluctuating. In fact, in the outlier cases of Mozambique and Tanzania the people at lower living standards are *more tolerant* towards homosexuals than people at higher living standards. It is difficult to speculate why this is so in these particular cases. More generally, one can imagine reasons for why people at higher living standard could in some cases be more homophobic: If homophobia in a country is strongly related to perceptions of *Westernization* for instance (McNamara 2014), people who have a more conscious relationship to this idea might be more homophobic. This would include urban residents at higher standards of living, since they would perhaps have a higher capacity to follow public discourse and politics. This would be in line with Van Klinken and Chitando's (2016, 4) argument that in many African societies "socio-political homophobia" is not only seen among the "losers of economic development" but in the middle class and the political elite. Furthermore they argue that the religious groups that have been vocal against homosexuality are often composed of urban, educated professionals rather than economically

disadvantaged people. To the degree to which such a mechanism exists (i.e. that in some contexts the higher educated and well-off are more homophobic), it would serve as counterweight to the well-known tolerance-promoting effects of higher living standards and education.

Although Van Klinken and Chitando's (2016) argument is supported by the outlier cases of Mozambique and Tanzania, the overall tendency is in the opposite direction. Overall, and in most African countries, the "losers of economic development" *are* more likely to express homophobia than the well-off. Similarly, the more educated are more tolerant than the less educated in practically every one of the 33 countries in the data sample for this thesis. The effects are not huge, but they are robust: Three alternative operationalizations of the dependent variable did not alter the direction or significance of the effects.

The second, and perhaps most compelling evidence for the theoretical argument, is that at the country level there is a strong correlation between higher economic affluence and less homophobia, but only for countries that are not natural resource dependent. This result is also robust to all three operationalizations of the dependent variable. Moreover, the mediation analysis revealed that the relationship between affluence and tolerance is indirect. It is significantly mediated through the general standards of living in the country educational levels and size of service sector. All of these characteristics are strongly correlated with economic development in regular economies, but not in natural resource dependent, which could explain why we don't see any tolerance promoting effect of economic development for the latter group. All of this is precisely as expected from the modified Postmaterialist explanation of homophobia.

That being said, an important drawback of these results is still the low number of countries in the analysis. Particularly, there are only ten countries in the sample that are natural resource dependent as defined by the World Bank (2018a). And these are not picked at random to be part of the Afrobarometer Survey, as discussed in chapter 3. Hence, for future studies, including more resource dependent countries could increase the reliability of the analysis.

The fact that the effects of economic affluence and educational level *as context variables* are much larger than when specified as individual characteristics lends support to the focus in the Postmaterialism literature on attitudinal effects of *societal* differences (Inglehart and Baker

2000). People are influenced by the dominant values of society whether they are poor or rich. In countries at high levels of education and living standards, an average citizen is more tolerant not just because they themselves are better off, but because the general population is better off. This affects the dominant values of society, which informs the values of the individual whether he/she is rich or poor, educated or uneducated. We can see this in the empirical analysis when using multilevel modeling. This revealed that there is a substantial effect of living in an affluent country irrespective of an individual's personal economic and educational level.

Lastly, the brief analysis of the WVS data showed changes in attitudes towards homosexuals in 7 African countries over different timespans. The general tendency was that the higher economic development a country had seen from the first to the last survey round, the more homophobia had decreased. It is of course a reliability problem that we only have such data for 7 African countries. However, five of these countries do fit the theoretical expectation that positive economic growth should be associated with less homophobia, while negative economic growth (in the case of Zimbabwe) should correlate with more homophobia over time.

6.2 The Postmaterialist Explanation vs. Alternative Explanations

Both of the alternative explanations are supported by the empirical analysis. With regards to the first, namely criminalization of same-sex intimacy, it is the case that living in a country that harshly criminalizes same-sex intimacy increases the likelihood of expressing homophobia in relation to the countries that have decriminalized. However, it is particularly interesting that the homophobia is about as strong in countries that have never criminalized same-sex intimacy as the ones that have done so. If same-sex intimacy was never criminalized then, according to the theory (McAdams 2000), the signal to condemn homosexuals was not sent through criminal law. But still people in these countries are as homophobic as in the countries that strictly forbid it. Hence, homophobia has other explanations in these contexts than criminalization. Part of this is likely to be the Postmaterialist explanation, but also the other alternative explanation, namely that of religion.

At the individual level people who are Muslim or Conservative Protestant stand out as more homophobic than people of other religions. Generally however, differences between people of

different religion are quite small at the individual level. At the country level however, religious composition matters much more. Living in a country with a high share of Muslims or, even more so Conservative Protestants, increases the likelihood of expressing homophobia substantially. The notion that these groups influence the overall culture of society is supported by the fact that people of all religions, and even non-religious people, are more homophobic in countries where the presence of Muslims and/or Conservative Protestants is large. This is quite interesting and supports the prominent focus in the literature on how these groups shape public discourse and institutions (Kaoma 2009, 2012; Grossman 2013; Van Klinken).

The general conclusion from the data analysis is that all the three explanations contribute substantially to the full model of homophobia in terms of explained variation. On their own however, the two alternative explanations account for noticeably more of the country level variation in homophobia than the modified Postmaterialist thesis. But, on the other hand, the latter was found to be the most robust explanation when changing up the operationalization of the dependent variable.

6.3 Implications for Hypotheses

Based on the empirical evidence and the discussion above, Table 6.1 shows the implications for the hypotheses. The hypotheses are evaluated on a 7-point scale ranging from “strongly weakened” via “inconclusive” to “strongly supported”.

		Hypothesis	Assessment after analysis
Individual level	H1	*The higher a person's living standard the less likely they are to dislike homosexuals*	• Supported
	H2	*The more education a person has attained the less likely they are to dislike homosexuals*	• Supported
	H6	*People who are more religious more likely to dislike homosexuals than less religious people.*	• Supported
	H7	*Among religious denominations, Conservative Protestants and Muslims are the most likely to dislike homosexuals.*	• Supported
Country level	H3	*Inhabitants of more affluent countries are less likely to dislike homosexuals, as long as the country is not dependent upon natural resources.*	• Strongly supported
	H4	*The effect of country affluence is mediated through the general standard of living, educational level and size of the service sector.*	• Supported
	H5	*People living in countries that criminalize same-sex intimacy more harshly are more likely to dislike homosexuals.*	• Somewhat supported
	H8	*The higher a country's share of Muslims and Conservative Protestants are, the more likely its inhabitants are to dislike homosexuals*	• Supported

Table 6.1 Implications for hypotheses. In light of the empirical evidence the hypotheses are evaluated on a 7-point scale ranging from "strongly weakened" via "inconclusive" to "strongly supported".

6.4 Economic Affluence and Tolerance for Homosexuals: A Causal Relationship?

I previously discussed three minimum criteria for arguing a causal relationship between X and Y: 1) There must be co-variation between X and Y, 2) X must come before Y in time and 3) alternative explanations must be ruled out. The analysis has so far shown that economic affluence and attitude towards homosexuals do correlate (satisfying nr. 1) and that it does so while controlling for a number of known alternative explanations (partly satisfying nr. 3). Moreover, the WVS data gave us an indication that affluence and tolerance correlate over time. However, the WVS data for Africa are too sparse to introduce a time lag-structure. This

means that we cannot estimate the extent to which changes in affluence *precede* changes in tolerance. Hence, the temporal precedence of economic development is still not quite clear. While the theory section has sketched out some probable causal mechanisms based on Inglehart's work, the question that should now be addressed is the following: How plausible is it that causality runs in the opposite direction, namely that tolerance is causing economic affluence?

From a theoretical perspective, the idea that some values are more favorable for economic development than others goes back at least to Max Weber's protestant ethics thesis. More recently, we have seen theories of economic growth that emphasize how economic development can be enhanced by cultures that value such ideas as competition and education (Haller 2002). On the specific issue of the economic effects of attitudes towards homosexuals, there has not been much research. Some of the closest examples one finds is Badgett et al. (2014, 13-19) who argue that when states deny LGBT-people basic rights, they suppress this group's economic potential. They investigate this claim with quantitative data for 39 countries for the period 1990-2011, showing a correlation between an LGBT-rights index they constructed and GDP per capita. However, they do not use a lag structure in their statistical analysis to actually test whether LGBT rights precede development. To back up the claim that causality runs from LGBT-rights to economic development they show that LGBT-people have been pushed out of predictive employment because of harassment at the workplace, unjust arrests by the police or due to psychological trauma. This, they claim, could have consequences for national output given that the LGBT population may constitute 1-5 percent of total population.

However, while the authors clearly outline the mechanisms through which LGBT people can become economically unproductive due to what we might call institutional homophobia, it is not at all clear *to what extent* this occurs and affects national output. As the authors also show using survey evidence from Turkey, a substantial share of LGBT-people in that country hide their sexual identity from their employer in order to keep their job, thus not becoming economically unproductive (Badgett et al. 2014). To really investigate to what extent LGBT-people are economically unproductive in homophobic contexts, one would need reliable employment rate figures for LGBT people, do a controlled comparison with the general employment rate and try to calculate how the discrepancy affects the national output.

However, even if LGBT-people are employed, the authors argue, there are others ways that their discrimination could affect national output. Firstly, they may be less productive because of the harassment they encounter. Secondly, they may be reluctant to attain education because of harassment in educational institutions and hence not develop their "human capital". And thirdly, they might not be employed to their full potential because of discrimination in employment processes and hence could end up with low-paying jobs (Badgett et al. 2014, 30). But again, although it is easy to demonstrate qualitatively that these injustices do occur, there is no data to tell us the extent to which they actually make a substantial difference to national output.

In the absence of data analysis showing that LGBT-people in homophobic contexts are so unproductive as to significantly hurt the overall economic performance of the country, there does not seem to be strong evidence supporting this causal path. Hence, it is possible that the correlation between economic affluence and LGBT-rights that Badgett (2014) demonstrates is mainly explained by economic development creating a tolerant public opinion, which increases the propensity for states to concede rights to LGBT-people. The evidence for this causal path is quite strong – at least if we are talking about a tolerant culture in general. Inglehart and Baker (2000) used time series data 38 for countries from the 1981 to 1998 and showed convincingly that the general level of self-expression attitudes – part of which is tolerance for homosexuals – in these countries changed in response to economic upturns and downturns.

I conclude from this, that while reversed causality certainly cannot be ruled out, there does not seem to be strong evidence supporting it. Based on both theory and previous empirical studies, it seems that the more likely causal path is economic development causing a tolerant public opinion.

6.5 Implications for policy

I will discuss two implications for policy that emerge from the findings of this thesis.

The first regards how external actors, such as international organization and governments, try to influence public opinion and policy in African countries in a more tolerant direction. It was discussed at the beginning of chapter 2 that direct external pressure has in previous studies

been found to have little positive effect and could potentially create backlash. If level of economic development in regular economies is strongly associated with a tolerant public opinion – as is supported by the findings of this thesis – this suggests that homophobia is maintained by deep-seated material conditions. In the absence of changes to these conditions it seems unlikely that external pressure could bring about long-term changes in public opinion. At the very least, international and foreign actors should show care towards the socio-economic situation of a country when considering instruments such as aid conditionality, so as not to create conditions that facilitate more homophobia.

The second implication is that tolerance towards homosexuals in Africa is likely to emerge as the countries develop economically. However this should not be expected to happen through economic growth per se. The thesis has shown that economic development is mainly related to tolerance because of its effect on living standards, education and post-industrialization. If growth does not have these consequences – as seems to be the case with the natural resource dependent countries – economic development is not associated with tolerance. For international organizations and foreign governments this would mean that economic aid could have a substantial effect on tolerance towards homosexuals in the long run when used in the rights ways. However, this should not be seen as a replacement for more "active" strategies that have been proposed, such as getting homosexuals recognized as a key population in the fight against HIV/AIDS (Epprecht 2012).

6.6 Suggestions for further research

Both the results of this thesis and the drawbacks of its analysis point toward to future studies that should be undertaken to get a better understanding of attitudes towards homosexuals.

The first and foremost drawback is the absence of survey data on attitudes towards homosexuals gathered consistently over some time. When such data is available for a substantial number of African countries, it would be very interesting to check in a more systematic way than was done in this thesis whether economic growth actually *causes* reductions in homophobia. Also it should be investigate to what extent short-term economic downturns can lead to religious actors or politicians taking advantage of the situation by mobilizing on such issues as homosexuality.

Furthermore, this thesis only had data for 33 African countries, and even though this is an unprecedented number, it is not obvious that the results would be the same if more countries were added. In other words, it is far from certain that the country level results have external validity to the whole of Africa. This could be investigated in the future by collecting survey data for more countries.

More generally, the reliability and validity of the specific results of this thesis rests exclusively on quantitative methods. Qualitative work could be done to explore the causal mechanisms that have been proposed and to investigate the puzzling result that in a few outlier cases people at higher living standards are more homophobic than people at lower living standards.

Lastly, the aspect of external pressure on African states is important. Future studies could gather data about when and how pressure has been exerted on African states in relation to LGBT-politics and test what effects this might have on public opinion in the short term and long term.

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Appendix

Appendix A: Model Diagnostics

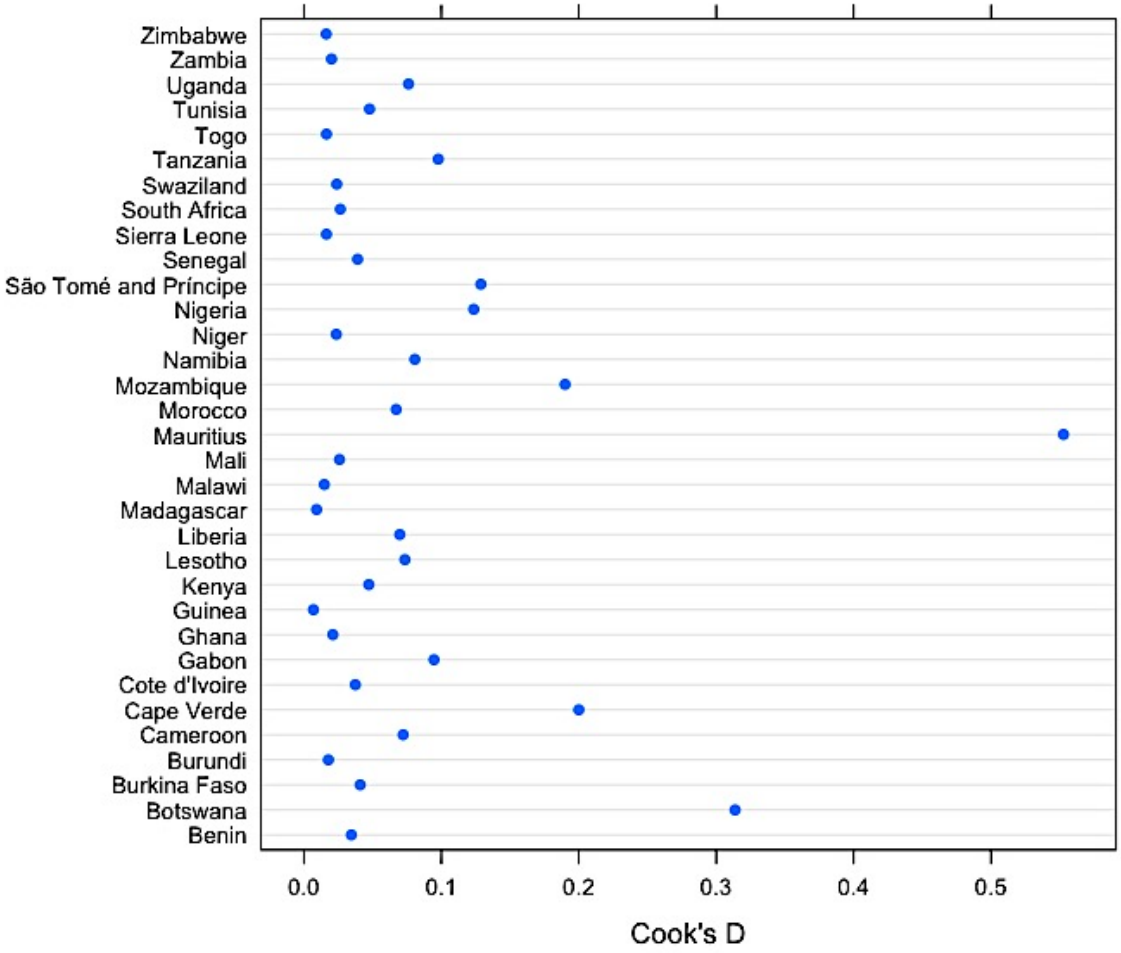

Fig. A1 Cook's Distance for Model 6 (Table 5.3). There is no agreement as to how high Cook's D should be in order to justify deleting a case. I follow the recommendation of Fox 1991 (29-34), which is to evaluate if there are clear outliers and possible remove them if they seem to affect the results. As seen in the plot, Mauritius' value is almost double that of the country with the second highest.

Variable	VIF	1/VIF
Age	1,13	0,882009
Gender (Male=1)	1,04	0,960233
Rural (0/1)	1,29	0,774997
Education (0/10)	1,54	0,649489
Standard of living (0/7)	1,44	0,694036
Religion		
(baseline = *Mainline protestant*)		
Conservative protestant	2,28	0,438129
Roman Catholic	2,82	0,354073
Muslim	4,84	0,206435
Other	2,74	0,36455
None	1,56	0,640672
Religiosity (0/6)	1,45	0,688811
Polity IV	1,54	0,648613
GINI index score	3,24	0,308473
Colonizer		
Other	5,22	0,19162
Britain	7,39	0,13538
Level of criminalization		
Never criminalized	5,93	0,168679
1 month – 2 years	3,2	0,312739
3 – 7 years	5,51	0,181586
8 – 13	3,53	0,282934
14 – Life	2,44	0,409741
Death penalty	2,49	0,402005
Share of Conservative Protestants	6,19	0,161454
Share of Muslims	9,62	0,103949
GDP per capita (in $1.000)	2,17	0,461604
Natural resource dependent	1,89	0,528645
Mean VIF	3,3	

Table A2: VIF scores

Appendix B: Country Slope Tables and Regression Tables corresponding to the maps in Fig. 5.4, 5.5 and 5.7

Odds ratios for Fig 5.4:

Country	*Odds ratio (country slope)*
Lesotho	0,862
Malawi	0,881
Tunisia	0,885
Sierra Leone	0,885
Cameroon	0,901
Cape Verde	0,913
Togo	0,918
Zimbabwe	0,918
Guinea	0,919
Gabon	0,920
Kenya	0,924
Burkina Faso	0,932
Niger	0,933
Morocco	0,946
Burundi	0,954
Botswana	0,958
Namibia	0,958
Sao T. and P.	0,958
South Africa	0,958
Senegal	0,960
Swaziland	0,962
Madagascar	0,970
Nigeria	0,974
Uganda	0,988
Benin	1,003
Liberia	1,005
Côte d'Ivoire	1,005
Ghana	1,025
Zambia	1,025
Mali	1,063
Mozambique	1,109
Tanzania	1,116

Model for Fig 5.4:

	Odds ratio	SE
INDIVIDUAL VARIABLES		
Age	1.009***	0.001
Gender (Male=1)	1.157***	0.050
Rural (0/1)	1.201**	0.072
Education (0/10)	0.924***	0.014
Standard of living (0/7)	0.958**	0.019
Religion (baseline = *Mainline protestant*)		
Conservative protestant	1.144	0.092
Roman Catholic	1.065	0.070
Muslim	1.238*	0.118
Other	1.028	0.086
None	1.083	0.138
Religiosity (0/6)	1.048***	0.014
Random slope		
var(Stnd. of living)	.0062	.0020
var(_cons)	1.180	.3170
cov(_cons, Stnd. of living)	-.0340	.0192
MODEL STATS		
AIC	29230	
BIC	29361	
N (respondents)	46,640	
N (countries)	32	

Fig. A3 Random intercepts and slopes for standard of living.

Odds ratios for Fig 5.5:

Country	*Odds ratio (country slope)*
Lesotho	0,768
Senegal	0,831
Tunisia	0,854
Sierra Leone	0,867
Swaziland	0,877
Malawi	0,880
Zimbabwe	0,885
Kenya	0,886
Cape Verde	0,897
Gabon	0,899
Morocco	0,915
Botswana	0,927
Namibia	0,927
Sao T. and P.	0,927
South Africa	0,927
Guinea	0,930
Nigeria	0,941
Togo	0,945
Madagascar	0,949
Uganda	0,950
Burkina Faso	0,953
Ghana	0,960
Liberia	0,969
Cameroon	0,970
Burundi	0,975
Mali	0,984
Cote d'Ivoire	1,009
Zambia	1,009
Mozambique	1,011
Niger	1,013
Benin	1,017
Tanzania	1,045

Model for Fig 5.5:

	Odds ratio	SE
INDIVIDUAL VARIABLES		
Age	1.008***	0.001
Gender (Male=1)	1.145**	0.052
Rural (0/1)	1.202**	0.070
Education (0/10)	0.927***	0.014
Standard of living (0/7)	0.966*	0.013
Religion		
(baseline = *Mainline protestant*)		
Conservative protestant	1.139	0.090
Roman Catholic	1.049	0.066
Muslim	1.233*	0.124
Other	1.022	0.083
None	1.076	0.136
Religiosity (0/6)	1.048***	0.015
Random slope		
var(Education)	.0072	.0023
var(_cons)	1.141	.3337
cov(_cons,Education)	-.0236	.0176
MODEL STATS		
AIC	29204	
BIC	29335	
N (respondents)	46,640	
N (countries)	32	

Fig. A4 Random intercepts and slopes for education.

Odds ratios for Fig 5.7:

Country	*Odds ratio (country slope)*
Guinea	1,205
Ghana	1,190
Madagascar	1,157
Burkina Faso	1,127
Malawi	1,127
Burundi	1,124
Uganda	1,109
Senegal	1,108
Tanzania	1,089
Kenya	1,089
Zimbabwe	1,085
Lesotho	1,082
Sierra Leone	1,080
Morocco	1,078
Gabon	1,070
Botswana	1,064
Namibia	1,064
Sao T. and P.	1,064
South Africa	1,064
Togo	1,062
Cape Verde	1,052
Cameroon	1,049
Liberia	1,046
Mozambique	1,041
Benin	1,040
Tunisia	1,031
Zambia	1,029
Nigeria	1,029
Cote d'Ivoire	1,023
Swaziland	1,006
Mali	0,991
Niger	0,970

Model for Fig 5.7:

	Odds ratio	SE
INDIVIDUAL VARIABLES		
Age	1.009***	0.001
Gender (Male=1)	1.155***	0.050
Rural (0/1)	1.196**	0.070
Education (0/10)	0.922***	0.014
Standard of living (0/7)	0.965*	0.014
Religion		
(baseline = *Mainline protestant*)		
Conservative protestant	1.153	0.090
Roman Catholic	1.071	0.068
Muslim	1.213	0.123
Other	1.037	0.083
None	1.053	0.129
Religiosity (0/6)	1.064***	0.020
Random slope		
var(relprac)	.0047	.0027
var(_cons)	.9468	.2925
cov(_cons,relprac)	.0087	.0149
MODEL STATS		
AIC		29264
BIC		29395
N (respondents)		46,640
N (countries)		32

Fig. A5 Random intercepts and slopes for religiosity.

Appendix C:

	Model A	
	Odds ratio	SE
INDIVIDUAL VARIABLES		
Age	1.010***	0,001
Gender (Male=1)	1.129**	0,052
Rural (0/1)	1.232***	0,077
Education (0/10)	0.931***	0,016
Standard of living (0/7)	0.968*	0,015
Religion		
(baseline = *Mainline protestant*)		
Conservative protestant	1.145	0,089
Roman Catholic	1.014	0,080
Muslim	1.360*	0,177
Other	1.063	0,088
None	1.078	0,143
Religiosity (0/6)	1.044***	0,014
COUNTRY VARIABLES	0.964	0,024
Natural res. dependent (1/0)	1.147	0,405
GDP per capita	0.871***	0,032
Natural res. dependent*GDP pc	1.084	0,055
MODEL STATS		
ICC	.174	
AIC	30910	
BIC	31059	
N (respondents)	47,821	
N (countries)	33	

Fig. A6 Model with individual variables and Nat.res.dependent*GDP pc intereaction only.

Appendix D: AIC and ICC Estimates

	AIC	ICC
Model 7	29253.26	0,0536
Model 7, without *GDP per capita*, *natural resource dependent* and their interaction	29259.32 (+6,06)	0.0768 (+0,0232)
Model 7, without *level of criminalization* and *colonizer*	29256.51 (+3,25)	0.0899 (+0,0364)
Model 7, without *share of Conservative Protestants share of Muslims*	29259.86 (+6,6)	0.0741 (+0,0205)

Fig. A7 Changes in AIC and ICC when removing the country level explanation.