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What Aspects of Society Affect the Quality of Life of a Minority? Global Evidence from the New Gay Happiness Index

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What aspects of society affect the quality of life of a minority? Global evidence from the new Gay Happiness Index★

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A B S T R A C T

There is great variation in views on and treatment of minorities such as gay men across the world. We are the first to pinpoint what features of societies that are beneficial to gay men's quality of life by making use of a unique new cross-country dataset covering 110 countries, the Gay Happiness Index. It covers how gays perceive public opinion about them, how they experience behavior towards them and how satisfied they are with their lives. Our study is based on the premise that it is important to look at minority-specific effects of policies and institutions and not solely at the effects for the average citizen, as well as the transmission mechanisms through which policies and institutions affect life satisfaction. We find that legal rights for gay men, GDP per capita, democracy and economic globalization tend to benefit gays, primarily by shaping public opinion and behavior in a pro-gay direction, while religion and living in a post-communist country exert a negative effect. These factors have largely been shown to matter for the well-being of people in general as well, which interestingly implies that "special rights" are not necessarily needed for gays but the same policies that provide a good life for most people.

JEL classification: I31, Z13, Z18

Keywords: Gays, homosexuality, minorities, happiness, wellbeing, life satisfaction, institutions, democracy, globalization

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1. Introduction

Studies on the individual and national determinants of subjective well-being have generated substantial insights in the last two decades. However, these studies tend almost exclusively to focus on people *in general*. They thus implicitly – and occasionally explicitly – rest on Benthamite utilitarian foundations where researchers generalize their findings to entire populations without taking the distinction between individuals, or groups of individuals, seriously. Yet, any population consists of many groups, and it may very well be that what makes an *average* person in a population experience well-being does not have the same effect on a typical member of a particular group. This insight provides a rationale for research on what makes various minorities satisfied with life. Normatively, the identification of what affects specific groups in society may create stronger foundations for Rawlsian perspectives on subjective well-being, both by the idea that one, when devising policies and institutions, should take into account that one could have been part of a minority (which would be unknown behind Rawls's veil of ignorance)[1] and by the idea that policies and institutions should not necessarily aim at aggregate utility maximization, but perhaps at taking the interests of the worst off into proper account. Studies on the well-being of minorities are able to identify what matters for particularly disenfranchised parts of the population and in that way provide knowledge for policymakers.

While certain groups have been studied, such as men and women, different income groups and people of various ages, there are still lacunae in the literature when it comes to many other groups. This study provides new findings for one minority: gay men.[2] Throughout history, gays have been persecuted in

[1] Rawls's basic idea is that people will be able to choose principles of justice that are fair in an original position characterized in the following way: "Among the essential features of this situation is that no one knows his place in society, his class position or social status, nor does any one know his fortune in the distribution of natural assets and abilities, his intelligence, strength and the like. We shall even assume that the parties do not know their conceptions of the good or their special psychological propensities. The principles of justice are chosen behind a veil of ignorance." (Rawls, 1971, p. 12). The veil of ignorance can thus help us consider principles or institutions embodying such principles without knowing how they would affect us. As an example, when considering same-sex marriage, we would have to disregard whether we are gay, fundamentalist Christian or anything else.

[2] According to the American Psychological Association (2008), "[s]exual orientation refers to an enduring pattern of emotional, romantic, and/or sexual attractions to men, women, or both sexes", and by "gays" we mean those men with a sexual orientation that entails exclusive attraction to other men. The results of this study may well extend to other minority groups than gays. In fact, Inglehart and Abramson (1999) argue that inclusiveness toward gay men is a useful indicator of tolerant attitudes overall.

the vast majority of societies. Admittedly, there have been cultures where same-sex activity has been permissible and even lauded, but these are the exception. Rather, such activity has either been hidden from the general public or, whenever revealed, punished – socially, medically, legally.[3] In the post-World War II world, things have changed more broadly in a gay-friendly direction, both culturally and legally, as, e.g., documented by the International lesbian, gay, bisexual, trans and intersex association (ILGA, 2015). There are still many countries in which gays face persecution, but in the Western world, broadly conceived, it is increasingly common with legal inclusion in such areas as marriage law and anti-discrimination law, and public attitudes have changed towards more tolerance and acceptance. Even the current Pope Francis seems to use a more inclusive language than his predecessors (Donadio, 2013), although change is arguably slow and so far mostly rhetorical in the Catholic Church. The general global development is illustrated by some country trends in Fig. 1.[4]

[Fig. 1 about here]

In this first, exploratory study, we ask the question: In what type of society do gays fare well? We specifically try to identify society-level determinants – of a political, economic, legal and cultural kind – of the quality of life for gay men across the world. The quality of life measure, called *the Gay Happiness Index* (GHI), is based on a unique new dataset from an online survey in which more than 115,000 gay men from 130 countries participated and which indicates how they perceive public opinion towards them, how they have been treated in various contexts and how satisfied they are with life.[5]

These data enable us to undertake the first broad cross-country study to identify how important factors for the well-being of gays are mediated, which differentiates our study from two strands of previous research. The first strand was mentioned above: Cross-country studies on how societal-level factors of the kind we are interested in and use are related to life satisfaction – using data sampled *from the population as a whole*. It is probable that gays, as a distinct minority, experience life differently than people in general, and if

[3] On the history of attitudes towards homosexuality, see, e.g., Duberman et al. (1990) or Mondimore (1996).

[4] This does not mean that there is no *de facto* discrimination of gays also in Western countries – see, e.g., Ahmed et al. (2013), Boeri et al. (2015), Hammarstedt et al. (2015) and Patacchini et al. (2015).

[5] We use the term "quality of life" rather than "gay happiness" since the index is comprised of factors that are not, as such, all measures of happiness (even though they may affect happiness).

one is concerned with the welfare of all citizens, it is important to pinpoint to what extent various institutions and policies affect particular groups. As for the second strand, there are several studies on the *individual-level* determinants of the quality of life of gays, focusing on personal circumstances; and as a rule, these studies are undertaken with data from one or a few countries and derive their conclusions from small samples, which may limit the wider applicability of the findings. Results like ours, which are the first that identify country-level determinants for the quality of life of gay men in a large cross-country sample, will give more precise policy tools for those who wish to improve the situation also of minority groups, some of which, like gays, face particular social and legal problems in many places.[6]

We study determinants of six variables that each measures some aspect of the quality of life of gays. These are based on the components of the GHI, which are grouped together on the basis of principal component analysis (PCA). The first is an indicator of the degree to which *public opinion* is gay-friendly. The second, third and fourth indicators measure aspects of the *public's behavior* towards gays, with regard to discrimination, threats and bad behavior. The fifth and sixth indicators measure *life satisfaction* and the *incentive gays have to move* to another place because of sexual orientation concerns. Our main interest lies in the two last indicators, as we ultimately want to know what brings about more (and less) life satisfaction and to identify what affects a "revealed preference" for where to live (which we interpret as a more "objective" measure of life satisfaction). The other four measures are seen as inputs (transmission mechanisms) that determine these two complementary and "ultimate" welfare indicators.

The main findings are that legal rights for gay people, GDP per capita, democracy and economic globalization positively relate to the quality of life of gay men, while religion and living in a post-communist country exert a negative effect. Notably, our econometric framework suggests that the effects of these factors largely go through public opinion towards gay men, and also through the way gay men are treated. So, for example, the more economic globalization there is in a country, the more favorable are the attitudes towards gays and the better they are treated, which in turn increase their life satisfaction and make them less inclined to move. In summary, the best kind of society for gay men to live in seems to be a well-off,

[6] On the policy relevance of life-satisfaction findings, with a special argumentation for how they matter for the design of institutions, see Frey and Stutzer (2012).

economically and politically liberal country with legal protection for gays and without too strong religious groups.[7]

Given the finding that many of the factors that matter for the well-being of people in general also matter for the well-being of gays, the policy implication seems to be that policies and laws should, in the main, be designed and enforced neutrally: The policies, institutions and cultural features that are good for people in general are good for gays as well, and there seems to be limited need for "special rights". Even the measure of gay rights mostly captures a positive effect of legal generality, as it deals with instances of unequal treatment that, if removed, would increase the quality of life of gays.

The structure of the paper is as follows. Section 2 provides a theoretical outline of how we perceive different society-level factors to relate to our outcome variables, supported by examples from the previous empirical literature. We then proceed to present the data (Section 3) and the results (Section 4), after which we offer concluding remarks (Section 5).

2. A theoretical framework

Quality of life is a broad and vague concept, and on a general level we take it to refer to individuals' subjective assessment of how good their life is, where indicators can be either verbal or action-based. In the former case, someone may quantify, on a given scale, how satisfied they are with life or how happy they are; in the latter case, someone may choose to remain in a physical location or move, where the former is a revealed preference that life is considered more satisfactory in the present location than in conceivable alternatives and where the latter indicates that the quality of life is expected to be better elsewhere. But quality of life can also encompass other factors that are deemed desirable by the individual, either because they are valued in themselves or because they are intermediate factors that in turn affect life-satisfaction indicators.

For example, if a person lives in a society where he or she is liked and valued, this can be considered an indicator of a high-quality life; and likewise, how a person is treated by others can be such an indicator.

[7] Note that we use the term "liberal" in the European sense of the word. One advantage with studying the influence of society-level variables on the quality of life of a rather small minority – most estimates seem to be that around 2% of the male population is gay (Gates, 2011) – is that reverse causality is highly unlikely. While one can see how society-level factors affect the lives of a small group, it is hard to see how the latter can influence the former in any decisive way.

If one is discriminated against, threatened or treated badly in other ways, quality of life is reduced. Hence, we take the concept to be broad, subjective – and very important. The importance stems from the presupposition that most people strive for high-quality lives, which entail such things as favorable opinions from others, just and affirming treatment by others and, ultimately, satisfaction with life.

While the literature on life satisfaction includes a plethora of individual-level factors such as, e.g., income, health, employment and family situation, their analysis requires individual-level data that are not available for the kind of cross-country study that we undertake. We instead focus on societal-level factors – factors that may enter what might be called the production function of life satisfaction – that are arguably directly or indirectly relevant to minorities, and in particular to gay men.[8] Figure 2 provides an illustration of our overall framework, within which we focus on three types of societal characteristics: economic, institutional and cultural factors.

[Fig. 2 about here]

First, overall *economic development* provides a first potentially relevant factor. Conventional economics suggests that higher GDP per capita has positive effects on wellbeing and life-satisfaction as more income allows citizens to buy more goods and services and to save, which provides a feeling of safety in a risky world (Di Tella et al., 2003).[9] These positive aspects of higher income should be present in the lives of gay men. In addition, there may be an effect of economic development on overall tolerance towards minorities that affect them positively (Corneo and Jeanne, 2009). Wealthier societies tend to be less conflict-oriented, and the cultivation of virtues like tolerance as well as a general shifts from modern to postmodern values is easier the more resources people have (Inglehart, 2000; Friedman, 2005). This shift in opinions may also be observed in people's behavior towards minorities: A person who is accepting of gays is also, as a rule, unwilling to discriminate against gays, threaten them or treat them badly in other ways. In all, this leads us to expect GDP per capita to exert a positive effect on the quality of life of gay men.

[8] For more on individual-level factors of importance to the quality of life of gay people, see van den Akker et al. (2013) and Powdthavee and Wooden (2015). Nussbaum and Sen (1993) discuss what constitutes quality of life, while Bjørnskov et al. (2008), Dolan et al. (2008) and Frey and Stutzer (2002, 2012) provide overviews of the life-satisfaction literature.

[9] While Clark et al. (2008, p. 123) state that "greater economic prosperity at some point ceases to buy more happiness", recent studies, such as Deaton (2008) and Stevenson and Wolfers (2008), find that the wellbeing–income relationship is roughly a linear-log relationship and that there is no evidence of satiation.

Second, *globalization* can give rise to higher welfare by giving people effective access to a greater variety of goods and services, which in turn improves peoples' possibilities to make purchases close to their preferences (Dixit and Stiglitz, 1977; Rode, 2013). It is also reasonable that globalization improves peoples' quality of life as it entails opportunities to travel, move and take part of wider culture (Bjørnskov et al., 2008). With respect to the particular quality of life of minorities, Berggren and Nilsson (2015) demonstrate a clear positive association between globalization and the willingness of parents to teach tolerance. This could be because parents realize that in a globalized world, it pays to have an open-minded view of people who are different; and they may also be affected by physical and cultural meetings with new people and phenomena. We thus argue that the more economic globalization, the more favorable are public opinion of gay men, and, as a result, also behavior. This will tend to increase the quality of life of gay men through two main mechanisms: increased purchase possibilities, which are arguably more important in poorer societies, and travel and cosmopolitan culture, which is a phenomenon we expect to be more prevalent in rich societies.

A third economic society-level factor that may affect life satisfaction is the *size of government*. As elaborated in Bjørnskov et al. (2007), the prediction from neoclassical economic theory is that governments will improve individuals' quality of life as they aim at maximizing social welfare and can solve costly coordination problems. However, from a public-choice perspective, it is fully reasonable to expect governments to intervene and regulate "too much" – i.e., above an optimal level and in ways that are not generally welfare improving – as government officials and bureaucrats pursue their own interests in decision and implementation processes. In democracies in particular, policies and expenditures directed at the median voter can be harmful or at least not beneficial to citizens with non-median preferences. Minorities, and not least gay men, are unlikely to be represented by the median voter, and their quality of life may therefore be negatively affected by larger government expenditures, as larger government means a smaller share of resources available to private consumption in accordance with personal preferences and to interaction that may have tolerance-inducing effects (Berggren and Nilsson, 2013, 2014). In addition, government may use its resources in ways that directly worsen public attitudes towards gays, as indeed has been done in the West over centuries, when same-sex relations were criminalized and vilified. The effect on public opinion arguably spills over to public behavior – at least behavior is negative towards gays only if attitudes are negative, and in that way, government expenditures may have indirect effects as well. We further expect these effects to be clearer in rich, democratic societies, where governments face fewer revenue constraints and where problems associated with median voter politics tend to be more prevalent.

Urbanization is another factor of potential relevance, building on the idea that the higher the fraction living in cities, the more positive attitudes towards gay men. A reason is that as people in cities tend to come into contact with people different from themselves, including gays, they develop a local culture that is more tolerant. As for a direct effect on gay men, a high degree of urbanization can provide them with more opportunities to find others like themselves and to create a social arena that offers higher satisfaction (cf. Glaeser, 2011). Conversely, we expect *post-communist countries* to affect public opinion of gays negatively. These countries retain a cultural heritage from the communist era with clear social consequences – e.g., in the form of lower social trust and lower cooperation (see, e.g., Bjørnskov, 2007; Helliwell and Huang, 2008; Heineck and Süssmuth, 2013; Bjørnskov and Tsai, 2015). There was also a clear anti-gay message, in terms of legislation and culture, from communist parties, which was strongly enforced and which plausibly affected opinion – and in turn behavior towards gays.[10] It is also plausible to expect a direct, negative effect on the life satisfaction of gay men, as on others, of a communist heritage (Inglehart, 2000).

In addition to such economic factors, political and institutional factors may be important to quality of life. Here we focus on a factor, *democracy*, that can be argued to affect wellbeing positively by facilitating outcomes closer to citizen preferences and creating procedural utility (Frey and Stutzer 2002; Dorn et al. 2007; Stadelmann-Steffen and Vatter, 2012). When it comes to democracy and public opinion about minorities, a basic tenet of democratic thinking is equality: that all should have an equal say about collective affairs. Embracing this basic spirit of democracy does not *necessarily* entail equal treatment of all kinds of minorities (especially not minorities that are economically separate, such as those with high wealth or income), but we argue that there should be a spillover effect, both in general attitudes and in the character of policies (cf. Mukand and Rodrik, 2015). Where there is democracy, there is arguably greater openness to individualism and allowing, perhaps even encouraging, people to lead their lives as they please; and there is an idea of designing policies such that people – even non-typical groups – benefit from the joint political project. Yet, as already noted, policies and expenditures in particular implemented by democracies may be primarily directed towards the median voter and hence welfare-reducing for gay men and other minority groups. Hence, we expect democracy to positively relate to public attitudes toward gay men while it may

[10] As discussed by Whitam (1983), homosexuality was seen as a symptom of bourgeois decadence in the Soviet Union and was therefore seen as something to be eradicated. As a number of other cultural and ideological factors have tended to persist after the post-communist transition, a generally negative view of homosexuality may be part of a communist legacy (Heineck and Süssmuth, 2013; Necker and Voskort, 2014).

also mediate negative expenditure effects (cf. Bjørnskov et al., 2008). And again, even though positive attitudes do not automatically result in good behavior towards gays, we think it reasonable to expect democracy to improve behavior as well through the attitude channel.

Among non-political institutions, most of the literature has focused on the wellbeing value of legal institutions. In the following, we propose that two indicators are relevant: *the rule of law* and *laws protecting gay people* (we call the latter ILGA rights, based on the name of the organization that classifies these rights). The rule of law denotes a well-functioning legal system that upholds laws in an effective manner. If there is an effect from the character of law on public attitudes towards gay people (and there are indications that laws can, indeed, change attitudes – see, e.g., Bilz and Nadler, 2014), the sign could go either way *depending on the content of the laws*. If the laws are discriminatory, for example, then a well-functioning legal system may reinforce anti-minority social norms and discriminatory behavior, which would directly affect the life satisfaction of gay men. If the legal system is effective, but if the laws are perceived to be detrimental, this will tend to reduce satisfaction and to increase the incentives to move. There is therefore reason to focus on the particular legislation that is enforced and whether the legislation is discriminatory or emphasizes equal treatment and universal rights, which is what the ILGA rights index captures. Such rights should tend to promote positive attitudes, positive behavior (or at least reduce bad behavior) and also give gay men an immediate life-quality boost by becoming legally recognized.

It is furthermore reasonable to assume that there is a relationship between cultural variables and life satisfaction. *Social trust* fosters social cohesion, and countries with high levels of trust are generally characterized by honest behavior, which should affect life satisfaction directly and positively (Knack and Keefer, 1997; Gundelach and Kreiner, 2004; Helliwell and Wang, 2011). In addition, if people trust others they do not know (much about), they should be more open to accepting people who are different (as implied by Berggren and Nilsson, 2014, who find that the market economy stimulates tolerance towards gays to a greater degree when social trust is high) and thus less likely to discriminate against minorities. The effect of trust on the inclination to move is, however, ambiguous: trust can make gays feel less inclined to move if they feel part of a trusting community – but they could also be less disinclined to move if their trust extends to people in new places.

Lastly, one of the most studied cultural variables is *religion*, which is generally found to influence the quality of life. Theoretically, the effect of religion on life satisfaction is ambiguous, as being a member of a religion could yield a range of benefits, e.g., social contacts and emotional as well as material support. However, religious membership may also be costly, as it generally comes with rules and restrictions on

individual behavior, e.g., regarding proper clothing, sexuality, food, gender interaction and leisure activities (Blazer and Palmore, 1976; Bjørnskov et al, 2008; Fidrmuc and Börke Tunali, 2015). Recent findings suggest that religion and its salience – how religious people are – may affect life satisfaction differently across economic contexts, such that there are no evident gains in wellbeing from religiosity after passing a certain level of economic development (Lim and Putnam, 2010; Bjørnskov and Tsai, 2015). We in particular expect certain religions to be negatively associated with the quality of life of gay men, due to anti-gay teachings, resistance to legal and social acceptance and lower tolerance (Gutmann and Voigt, 2015). While almost all religions entail theological/moral positions on homosexuality, and almost without exception, are negative, religious traditions nevertheless vary considerably. The more liberal development, which would benefit minority satisfaction, can to a large degree be found among Protestants and in countries where church membership is largely nominal, e.g., due to state-church systems. Conversely, more customary religious traditions tend to characterize Orthodox Christianity and Islam.

In summary, while we note that a large number of society-level factors may affect quality of life in general, particular economic, institutional and cultural factors are a priori likely to be of particular importance for minorities, such as the one analyzed here. These factors can affect life satisfaction and quality directly or through public opinion and behavior, although some effects may differ between poor or rich societies. We therefore next move to the empirical analysis to see to what extent our theoretical predictions hold.

3. Data

3.1. Main data

Our main data derive from a new survey, the Gay Happiness Index (GHI), conducted across the world through the website www.planetromeo.com (a social forum for gay men) between December 2014 and February 2015. Approximately 115,000 gay men in 130 societies participated. Lemke et al. (2015) report having asked a long list of questions intended to capture the life satisfaction of gay men as well as their perceptions of how the surrounding society views and behaves towards them. The survey is thematically organized around three themes: public opinion (how the respondents think others perceive of

them), public behavior (how the respondents have been treated) and life satisfaction (how satisfied the respondents are with their lives).

Public opinion is captured by questions about laws, government and government decisions; people's attitudes; the gay-friendliness of one's work place or school; how gay men are perceived at public events; whether the respondent would hold hands with another man in public; whether he would kiss another man in public; whether he would approach a man for a date or sex; and a broader question of the degree to which homosexuality is accepted in society. *Public behavior* is captured by a set of questions about the occurrence of discrimination in the family, at work, in education and health care; about the likelihood of receiving verbal insults and violent threats and suffering minor or serious assaults; and of the likelihood of experiencing (derogatory) statements about homosexuality at work, school, among friends and in public. Finally, *life satisfaction* is captured by a standard question on overall satisfaction with life and by one about self-acceptance. As an alternative satisfaction measure, the survey also asked about respondents' intentions to move away from their current place of residence within the country or move out of their country, and their intentions to change jobs or schools. By providing information on these latter variables, the GHI survey thereby can be seen to address a common critique of the standard way of gauging overall life satisfaction and subjective well-being – that answers to survey questions do not always readily correspond to more "objective" measures of well-being. Case and Deaton (2015) for example discuss the surprisingly weak association between life satisfaction scores and suicide, and note that other types of observable behavior also seem less clearly associated with subjective satisfaction than one might think.[11] For more details about the GHI and its specific questions, see Appendix A1.

In our empirical analysis, we do not use the GHI in the way it is originally constructed, since some of the correlations between questions within each of the three themes are as low as 0.3. The aggregation of the overall GHI may thus hide that the full dataset is conceptually multidimensional, i.e., that it should ideally be statistically separated in more than three conceptual themes. In Appendix A2, we therefore document how the GHI variables can be aggregated in a statistically valid way by applying principal components analysis (PCA) to estimate the dimensionality of the data. These analyses point to a proper

[11] To some extent, the critique hides an important but never stated assumption. If dissatisfaction is to result in a desire for specific behavior, such as moving to another location, dissatisfied respondents must also perceive that it is *possible* to do so. If moving is not perceived to be a practical possibility – either because people are somehow barred from moving or if respondents believe that the situation is equally bad at alternative locations – it is entirely possible to be strongly dissatisfied without having incentives to change behavior.

separation into six indices, which we then rescale. We provide a full set of statistically separable indices for 110 countries in Table A1. PCA reported in Table A2 simply confirms that the questions that Lemke et al. (2015) pool in groups of *public opinion*, *life satisfaction* and *incentives to move away* in fact also load on to dimensions of their own. Conversely, the battery of questions relating to *public behavior* in Table A3 turns out to cover three dimensions: the absence of discrimination, the absence of threats or insults and the absence of derogatory statements in social fora. In the following, we therefore create a set of six indices that follow the factor solutions and that capture separate aspects of perceptions and satisfaction among gay men around the world. These indices are created by recoding all questions on a 0–10 scale and distributing the single questions to indices following the PCA and rescaling, in turn, these indices to an easily interpretable 0–10 scale. The higher the number, the more gay-friendly is the country.

Fig. 3 provides a first insight to the extent to which our two main outcome variables, life satisfaction and incentives to move, capture only partially similar phenomena – noting that the latter measure captures the intensity with which gay men do *not* want to move. The correlation between the two indices is 0.72, and as visualized in the figure, the correspondence between the measures is high. Yet, this association mainly seems to be driven by high-income countries. The correlation between the indices is 0.32 in less developed countries, where mobility is arguably more restricted. Since there is a certain discrepancy, this motivates looking at both types of outcome indicators of the quality of life.

[Fig. 3 about here]

Figs. 4a and 4b provide a first glimpse of the structure of the data. The former plots the life satisfaction in the two halves of the sample with low versus high levels of public opinion, absence of discrimination, absence of threats, and absence of bad behavior, while the latter plots the relocation incentives in the same sample halves. The plots suggest that life satisfaction is higher and incentives to move away weaker if gays live in countries where opinion about them is more positive and if they are treated better.

[Fig. 4a about here]
[Fig. 4b about here]

3.2. Control variables

With respect to our set of control variables, we follow the theoretical framework in section 2 and the general literature on subjective well-being (Bjørnskov et al., 2008; Dolan et al., 2008). We include three measures of formal institutions: electoral democracy, rule of law and a measure of rights pertaining to gay and lesbian citizens. We employ the dichotomous democracy indicator from Cheibub et al. (2010), the much-used rule of law indicator from the World Governance Indicators (Kaufman et al., 2009) and the index of the legal standing of gays from ILGA (2013, 2015). The latter index covers three areas: persecution – whether there is death penalty or imprisonment for gay sex; recognition – whether gays can marry and adopt children; and protection – whether there are anti-discrimination laws.

We supplement these indicators with three economic measures. We control for overall economic development by adding the logarithm to PPP adjusted GDP per capita, and government expenditures as a share of GDP; both measures are from Heston et al. (2012). In addition, we add the flows part of the economic globalization measure from the KOF dataset, which measures actual flows of trade, portfolio investments and foreign direct investments (Dreher, 2006; KOF, 2015). Related to economic development, we furthermore add the standard measure of urbanization – the share of the population that lives in urban areas – from the World Bank (2015), as well as a dummy for post-communist countries.

Finally, we add a standard set of informal institutions often found to be central to life satisfaction (Bjørnskov and Tsai, 2015). We first add social trust, measured as the share of respondents stating that most people can be trusted; these data are compiled from a set of surveys and derives from Bjørnskov and Méon (2013). Second, our specification includes the shares of populations that declare themselves Protestant, Catholic, Orthodox or Muslim; the comparison category is therefore Eastern religions, Jews and non-religious citizens, and the data derive from CIA (2015). Third, we control for the salience of religion by including the religiosity scores from Gallup (2014), measured as the share of respondents stating that religion is important in their everyday life.

3.3. Empirical strategy

In the following, we start in Section 4.1 by presenting OLS estimates using both the entire sample of 110 countries and weighting the observations. We chose to repeat all estimates using the logarithm to the number of observations relative to the total population as weights in order to solve a particular potential

problem. As noted in Table A1 in the Appendix, the survey covers relatively few respondents in some countries: 34 of the 110 countries in the present paper include fewer than 100 observations and 21 include fewer than 50. With such small samples, it is unlikely that the respondents that are either reached or chose to answer a survey are approximately random or representative for the gay community. Weighting observations to some extent alleviates this problem.

In Section 4.2 we add the additional measures from the GHI survey on opinion, discrimination, threats and bad behavior against gay men. We do so in a structural model estimated by seemingly unrelated regressions (Zellner, 1962). As long as our assumption that these measures capture phenomena that are conceptually prior to either life satisfaction or the desire to move is approximately true, this allows us to estimate the transmission mechanisms through which institutional and other forces operate.

Finally, in Section 4.3, we follow previous studies in the life satisfaction literature in allowing effects to differ between relatively rich and poor countries. We do so by adding a dummy capturing whether observations are above the median level of GDP per capita and interacting it with our measures of religiosity, social trust, government expenditures, democracy, globalization and the rule of law, all of which previous studies have suggested are more important to one of the two sample halves. When interpreting the estimates including an interaction with a median GDP dummy, the interaction terms do not have an independent interpretation. We therefore report the marginal effects in countries with a GDP above the median calculated as the main effect (which is also the marginal effect in countries below the GDP median) plus the interaction term. We evaluate these interacted effects including correct conditional standard errors through the delta method (Brambor et al., 2006).

4. Results

4.1. Overall results

We first estimate the effects on life satisfaction and the incentive to move directly and report these results in Table 2, columns 1 and 2. The results show that GDP per capita is a strongly significant and important determinant of quality of life on both measures. So is the ILGA measure on the legal situation of gays, as well as living in post-communist and predominantly Orthodox countries; the two latter estimates come with a negative sign. When looking at life satisfaction, globalization positively relates to it,

while having predominantly Muslim populations exerts a negative impact. When looking at the incentives-to-move measure, which is rescaled such that it measures the *absence* of incentives to move in order to make it comparable to life satisfaction, people are less likely to want to move in democratic countries and slightly more so in Protestant and Catholic countries. We find no evidence that urbanization, religiosity, social trust or the rule of law directly affect the quality of life of gay men. With the exception of the non-significance of Catholic populations, the weighted estimates in columns 3 and 4 confirm these findings.[12]

[Table 2 about here]

4.2. Transmission mechanisms

The simple estimates in Table 2 do not provide any information about the likely transmission mechanisms and may thus hide certain effects. Table 3 reports the results when estimating potential transmission mechanisms (public opinion, discrimination, threats and bad behavior) by seemingly unrelated regressions; the corresponding estimates using weighted estimates are reported in Table A4 in the Appendix. For reference, we also report estimates using the original parts of the GHI (rather than our preferred PCA-derived indices) in Table A5. Both the weighted estimates and the estimates using the original GHI corroborate our baseline findings. Note that all dependent variables are devised from a positive point of view for gays, such that discrimination, threats, bad behavior and incentives to move measure the *absence* of those negative phenomena. A positive sign of an estimate thus implies that it is good for the quality of life of gay men.

[Table 3 about here]

Starting with public opinion, we find that democracy, ILGA rights and globalization are associated with more favorable attitudes towards gays, as perceived by the GHI respondents. Conversely, post-communist countries and societies with large public expenditures tend to have worse opinions, while GDP per capita is

[12] In a sensitivity analysis, we have included other potentially significant explanatory variables: sound money, regulatory burden, corruption, education, income inequality, legal systems, business climate and other (economic, political and cultural) dimensions of globalization. They all turn out to be insignificant throughout. These results are available upon request.

not a robust determinant, as it turns insignificant in the weighted estimates. Orthodox and Muslim countries appear to have worse attitudes towards gays in the weighted estimates.

GDP per capita instead turns out to be a very strong determinant of perceived discrimination against gay men – the richer the country, the less discrimination – and globalization and ILGA rights also appear strongly significant and positive. We find evidence of more discrimination in predominantly Orthodox and Muslim societies, but do not find any difference for post-communist countries. While opinion may be worse in societies with a communist past, it does not translate into discrimination.

In column 3, we nevertheless find strong negative effects of post-communism when estimating the determinants of threats against gay men. We also note positive associations with GDP per capita and democracy, and some evidence for ILGA rights playing a role, although the latter loses significance in the weighted estimates. In addition, there are relatively more threats against gay men in predominantly Catholic, Protestant and Muslim countries, compared to countries with Jewish or Eastern religions.

When focusing on actual bad behavior – derogatory public statements and actual assaults – we instead find ILGA rights to be the strongest determinant. We also observe less bad behavior in societies with higher trust levels and smaller government expenditures, and more bad behavior in Catholic countries. We observe somewhat weaker evidence for the effects of rule of law and post-communist legacies.

We report the main findings in columns 5 and 6 of Table 3 and the corresponding Table A4, where we trace the effects of the four measures of opinion and behavior (as well as the control variables) on life satisfaction and the desire to move. We first note that public opinion strongly affects life satisfaction with a marginal effect that is approximately three times larger than the measure of discrimination. Conversely, neither threats nor bad behavior affects the evaluations of life satisfaction of gay men. In addition, the results provide some evidence of worse life satisfaction in poorer and predominantly Muslim countries. The determinants of the desire to move away are somewhat different: The threats measure is the strongest determinant of a desire to move, with discrimination equally significant but with a slightly smaller effect.

For the life satisfaction measure, we find an apparently slightly puzzling result. In Table 3 (and Table A4), the ILGA rights variable relates significantly and negatively to life satisfaction. However, what appears as a counterintuitive effect turns out to be evidence of overestimation of the indirect effects through transmission mechanisms, which is then "corrected" through the direct estimate having a negative sign. As we indicate in Fig. 5, the *full* effect of ILGA rights through all transmission mechanisms are clearly positive, and somewhat larger than the simple estimate reported in Table 2. We can only speculate if the overestimation, i.e., the apparently negative direct effect that corresponds to the difference between the

calculated full effects (Fig. 5) and the simple overall effects (Table 2), derives from some or all of these effects being non-linear or if the relatively small sample size (110 countries) merely implies that estimates are not ideally consistent.

Figs. 5 and 6 illustrate the total average effects of our central factors – globalization, democracy, GDP, government expenditures and ILGA rights; the former illustrates the effects on life satisfaction through opinion and discrimination, while the latter reports the effects on the desire to move through threats and discrimination (transmission mechanisms that were shown to matter in previously reported regressions for each respective outcome measure). Both figures are based on the more robust, weighted estimates reported in Table A4, and all numbers are effect sizes measured as the change in quality of life as a percent of a standard deviation resulting from a one-standard deviation shock to one of the five factors.

[Fig. 5 about here]
[Fig. 6 about here]

Fig. 5 illustrates how five (significant) factors affect life satisfaction through perceived public opinion and discrimination. The ILGA rights index is clearly the strongest determinant of gay life satisfaction; taking into account the slight overestimate, a one-standard deviation change (two points on a seven-point scale) results in an increase of satisfaction of about a third of a standard deviation through a more favorable public opinion and about 7% of a standard deviation through reduced discrimination. Democratization (since democracy is a dichotomous variable) exhibits a change of almost a fourth of a standard deviation, working through public opinion, with globalization changes yielding approximately a 12% change through public opinion and a 4% change through reduced discrimination. Of the remaining two variables, government expenditures in fact seem to reduce life satisfaction, while GDP per capita exerts a positive effect through reduced discrimination.

When instead evaluating quality of life by the desire to move, Fig. 6 shows GDP per capita and democracy to be the most important factors (by reducing threats and, in the case of GDP per capita, also discrimination). A one-standard deviation shock to GDP per capita yields a change of almost a third of a standard deviation, while democratization yields an improvement of about 20% of a standard deviation. ILGA rights yield slightly smaller put clearly positive effects (by reducing both threats and discrimination); the same holds for globalization (which reduces discrimination). Government expenditures are of no

relevance here. As such, some of the main effects appear to be rather large, given the relatively limited changes often found in life satisfaction studies.

4.3. Results conditional on GDP per capita

Do the effects identified in the previous section mainly occur in relatively rich or poor countries? We ask this additional question as recent cross-country studies on overall well-being find that the effects of key determinants, and in particular those of institutions and policies, vary significantly between rich and poor countries. Helliwell and Huang (2008) for example find that good governance in terms of the rule of law and bureaucratic accountability is relatively more important in low-income countries, whereas democracy is more important in high-income countries. Bjørnskov and Tsai (2015) confirm the larger effects of democracy in rich countries but also find differential effects of social trust and religiosity. We follow this literature by interacting seven main factors – sorted into cultural and institutional factors in Table 4a (religiosity, trust and democracy) and economic and judicial factors in Table 4b (globalization, government expenditures, ILGA rights and rule of law) – with a dummy capturing the median GDP. The tables report the estimates where the pure estimates of either of the seven factors refer to the estimate in the low-income half of the sample and the estimates denoted "Effect above median" at the bottom of each panel refer to the marginal effect in the high-income sample half. While we report the standard errors and significance of the interaction terms, they *cannot* be interpreted separately, but only reflect the *additional* effect of a factor in rich countries. The full marginal effect of a factor in rich countries therefore is the pure estimate *plus* the interaction, which we report as the italicized effects in the bottom of each panel, including their correct conditional standard errors. In each panel, it is therefore possible to directly compare the estimate and significance of an effect below and above median GDP per capita.

[Table 4a about here]
[Table 4b about here]

We first find evidence of direct positive effects of religiosity on life satisfaction that mainly occur in poorer countries. This particular result is consistent with the broader findings on life satisfaction and only relates to satisfaction, not the desire to move (cf. Bjørnskov and Tsai, 2015). Second, the positive trust effect on (the absence of) threats also only occurs in poorer countries, as does the slight overestimation of

the full effect of social trust on the desire to move. The effects of globalization on opinion turn out to be substantially larger in poorer countries although significant in both halves, whereas we find weakly significant democracy effects on opinion in rich countries, strongly significant and large effects on (the absence of) threats in poor countries, as well as a direct positive effect on the absence of motives to move. Turning to the economic and judicial factors in Table 4b, we first observe globalization effects on discrimination and bad behavior only occur in poor countries. Second, we see negative effects of government expenditures on opinion in rich countries, positive effects on the absence of bad behavior in poor countries and a positive effect on the incentive to move, also in poor countries. With respect to the legal effects, we observe that ILGA rights affect public opinion and discrimination approximately equally in rich and poor countries but only affect (absence of) threats and (absence of) bad behavior negatively in poor countries – where the negative effect may be taken to imply a backlash from people who dislike legal recognition of gay men. We also see that the overestimation problem on life satisfaction, which we noted in connection with Table 3, only occurs in relatively poor countries that tend to report substantially smaller respondent samples. Despite the general insignificance in Tables 2 and 3, we also test for potentially heterogeneous effects of the rule of law, as the life satisfaction literature finds de facto legal protection to be substantially important. Again, we find no evidence of robust associations with the quality of life of gay men. Finally, the results in the two right-hand columns suggest that except for the overestimation correction of ILGA rights (as in Table 3), the only *direct* effect on life satisfaction of these factors is the well-known effect of religiosity in poor countries. All other effects of these policy and institutional factors occur *indirectly* through opinion, discrimination, threat and bad behavior as in Table 3 and as illustrated in Figs. 5 and 6.

5. Discussion and conclusions

In what type of societies do people fare well? This significant question has been on the minds of scholars for decades. The economic research on happiness and well-being generally focuses on the average population, despite the well-known fact that averages may hide important variation, and that what matters for an average person's well-being may not necessarily matter in a similar way to a typical member of a minority. By combining two literatures – the one on the general country-level determinants of well-being

and the one on the well-being of gay men – this article is a first exploratory study on what determines a good society for a particular minority: gay men across the globe.

In several aspects, this study provides important insights and broadens the general well-being literature. First, it does so by explicitly examining the situation for a minority, which provides new knowledge about what affects the well-being of gays. In other words, we implicitly ask the question if it is sufficient to look at general life satisfaction when having a specific interest in the satisfaction of particular minority groups. In that way, it may be particularly useful for those who wish to base public policy on Rawlsian grounds – first, since anyone could have turned out to be gay behind a veil of ignorance, and second, since it may be advisable, rather than aiming at maximizing the well-being of an average person, to maximize access to primary social goods for the least advantaged citizens. Second, because we are able to take advantage of a novel and unique data set with information from very different contexts (110 countries on six continents), we can employ econometric modeling to identify results that are likely to be more generalizable than the findings of the existing but small literature on gays' well-being with selective, limited samples representing only one country or context. Third, the rich data allow for an analysis of the role of important transmission channels in the relationship between economic, institutional, legal and cultural factors and well-being. Thus, the study allows us to delve deeper into the main question and gives unique insights as to how the effects of societal factors on well-being and happiness are mediated.

The empirical analysis suggests that democracy, globalization, equal legal rights for gay citizens (the ILGA rights index) and GDP per capita play an important and positive role for the quality of life of gay men. In contrast, certain religions and living in a post-communist country stand in a negative relation to our outcome variables. The key transmission channels through which these factors affect the life satisfaction of and incentives to move for gay men are (perceived) public opinion and discrimination, in the case of life satisfaction, and (absence of) threats and discrimination, in the case of incentives to move. For example, ILGA rights appears to be the most important contributor to life satisfaction, mostly by affecting perceived public opinion about gays but also by reducing perceived discrimination.

These findings are in line with recent evidence that indicate that institutions and internationalization processes shape social attitudes and tolerance, which in turn affect, in an important way, the quality of life of minorities such as gays. If people accept gay men and their lives, including relationships, in the same way as straight ones, and treat everyone the same, this provides for a more satisfactory life.

Our findings turn out to be well in line with the existing literature using population averages, which finds that economic, legal, political and cultural factors are important determinants of life-satisfaction (cf.

Bjørnskov et al., 2010). Yet, it was not known beforehand that these factors were important for gay men's quality of life as well and, certainly not, that the effects seem to be larger in magnitude for this particular minority.[13] For example, a one standard deviation improvement in ILGA rights implies a third of a standard deviation increase in gay life satisfaction. The total effect of a similar change in the central factors GDP per capita and democracy on the desire to move (proxying a revealed preference) yields a change of 30% and 20% of a standard deviation, respectively. Consequently, societal features that make the general population fare well also make gay men fare well and might even be of greater importance for this minority, specifically in a less developed context.

However, some of these findings seem mainly to apply in rich countries and other mainly in poor countries. For example, we observe that democracy foremost affects gay life satisfaction through public opinion in rich countries, whereas ILGA rights affect rich and poor countries alike. Globalization also positively affects public opinion in both types of countries, while it primarily tends to reduce discrimination in poor countries. Conversely, we find that larger government expenditures are significantly negatively associated with public opinion in rich countries, which seems inconsistent with popular political claims that minority problems can be alleviated through additional spending. Focusing on incentives to move, we likewise find that democracy, social trust and ILGA rights mainly affect poor societies. Evidently, the menu of policy choices that may affect minority satisfaction in less developed societies is substantially longer.

Our finding that most factors that are important for the well-being of people in general are important for gay men as well may be taken to imply a "generality" approach to policy and institutional design (Buchanan and Congleton, 1998). Gays do not seem to need "special rights" to any great degree to experience well-being but general conditions of fairness, citizen participation and prosperity. Even the ILGA rights are mostly about securing equal treatment – to not be punished for being gay and to be allowed to marry and adopt on an equal footing with heterosexual individuals. As such, the results emphasize the case for what Mukand and Rodrik (2015) term "liberal democracy", i.e., a set of political institutions enforcing democratic rights, property protection and extensive self-determination rights equally for all individuals in society.

[13] Since the unique data only includes responses from gay men, we cannot, however, *directly* estimate the magnitude of the effects on life satisfaction in comparison to the average population. It should also be noted that the GHI is not measured in exactly the same way as traditional life-satisfaction indicators, which further complicates direct comparisons of magnitudes.

However, the empirical analysis is not without limitations. Even though reverse causality is unlikely – with the exception of ILGA rights it is difficult to see how the well-being of a rather small minority could influence society-level factors – the samples are not necessarily representative of the gay community in general. We try to carefully, albeit partially, handle this problem by using a weighting method to downplay countries with small samples. It would also be desirable to conduct panel-data analysis, but with only cross-sectional data available this will have to be a future undertaking.

In all, we believe that our study contributes to an area of research that so far has been difficult to explore due to a lack of cross-country data. We believe we are the first to analyze well-being among gays across the globe allowing for a great variation in societal factors, and in so doing we are, in addition, able to provide novel insights on the role of transmission mechanisms.

Appendix

A1. Construction of the index (source: Lemke et al., 2015)

The index consists of three parts: Public opinion (how the respondents think others perceive of them), Public behavior (how the respondents have been treated) and Life satisfaction (how satisfied the respondents are with their lives).

Public opinion was built by adding up the percentages of respondents per country who

1. rate their country's laws, its government and governmental decisions more gay-friendly than antigay,
2. rate the people in their country on average more gay-friendly than anti-gay,
3. rate their work/school/university more gay-friendly than anti-gay,
4. would show up at a public event with an obviously gay man,
5. would hold hands with another man in public,
6. would kiss another man in public,
7. would approach a man in public for a date or sex,
8. rate their environment more gay-friendly than anti-gay based on the "Perception of Stigma Scale"
9. estimate on how many people in their countries would agree to the sentence "Homosexuality should be accepted by society".

To rescale it to a 0 to 100 range, this sum was divided by 9, as it had a potential maximum of 900 (if the respective 9 options were each chosen by all 100 % in that country) and a minimum of 0 (if the underlying options were each chosen by 0 % of participants in that country).

Public behavior was built by adding up the percentages of respondents per country who

1. have no experience of discrimination whatsoever in family,
2. have no experience of discrimination whatsoever at work/education,
3. have no experience of discrimination whatsoever concerning healthcare,
4. have no experience of verbal insults,
5. have no experience of verbal threats,
6. have no experience of minor physical assaults,
7. have no experience of major physical assaults,
8. who never hear upsetting statements at work,
9. who never hear upsetting statements in school/university,
10. who never hear upsetting statements among friends,
11. who never hear upsetting statements in public spaces.

To rescale it to a 0 to 100 range, this sum was divided by 11, as it had a potential maximum of 1100 (if the respective 11 options were each chosen by all 100 % in that country) and a minimum of 0 (if the underlying options were each chosen by 0 % of participants in that country).

Life satisfaction was built by adding up the percentages of respondents per country who

1. have high life satisfaction based on the "Satisfaction with Life Scale",
2. have a high self-acceptance based on the "Internalized Homonegativity Scale",
3. have never actually moved to another place and do not consider moving because of sexual orientation,
4. have never emigrated to another country and do not consider emigrating because of sexual orientation,
5. have never changed job/school/university because of sexual orientation.

To rescale it to a 0 to 100 range, this sum was divided by 5, as it had a potential maximum of 500 (if the respective 5 options were each chosen by all 100 % in that country) and a minimum of 0 (if the underlying options were each chosen by 0 % of participants in that country).

A2. Tables

[Table A1 about here]

[Table A2 about here]

[Table A3 about here]

[Table A4 about here]

[Table A5 about here]

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Table 1
Descriptive statistics.

	Mean	Std. deviation	Minimum	Maximum	Observations
The three subindices of the Gay Happiness Index (Lemke et al., 2015)					
Public opinion (GHI)	29.136	22.464	4	87	110
Public behavior (GHI)	52.30	10.578	23	74	110
Life satisfaction (GHI)	56.273	12.826	27	80	110
The six PCA-derived indices					
Opinion (PCA-derived)	3.596	2.653	0	10	110
Discrimination (PCA-derived)	6.161	1.981	0	10	110
Threats (PCA-derived)	6.422	1.772	0	10	110
Bad behavior (PCA-derived)	3.773	1.810	0	10	110
Life satisfaction (PCA-derived)	6.130	2.122	0	10	110
Relocation motives (PCA-derived)	6.639	1.807	0	10	110
Log GDP per capita	8.792	1.263	5.974	11.084	110
Government exp.	8.929	4.088	3.679	26.358	110
Democracy	0.674	0.420	0	1	110
Rule of law	0.167	1.012	-1.75	1.96	110
ILGA rights	3.286	1.921	0	7	110
Urban population	60.185	21.719	12.26	100	110
Post-communist	0.236	0.427	0	1	110
Globalization flows	64.015	18.361	16.593	99.881	108
Social trust	25.931	13.005	5.774	68.076	110
Religiosity	0.684	0.253	0.16	1	110
Orthodox	11.836	29.796	0	98	110
Catholic	29.528	36.757	0	98	110
Protestant	13.784	23.185	0	95	110
Muslim	21.213	32.895	0	100	110

Table 2
Determinants of the quality of life of gay men, OLS.

Measure	(1) Satisfaction	(2) Move	(3) Satisfaction	(4) Move
	Unweighted observations		*Weighted observations*	
Log GDP per capita	0.602**	0.702***	0.569***	0.732***
	(0.235)	(0.241)	(0.202)	(0.211)
Government expenditures	-0.027	-0.008	-0.024	-0.027
	(0.028)	(0.032)	(0.028)	(0.029)
Democracy	0.270	1.055**	0.398	0.773**
	(0.444)	(0.411)	(0.341)	(0.356)
Rule of law	-0.349	-0.405	-0.345	-0.281
	(0.230)	(0.250)	(0.221)	(0.230)
ILGA rights	0.317***	0.388***	0.286***	0.335***
	(0.092)	(0.099)	(0.085)	(0.089)
Urban population	0.005	0.002	0.007	-0.000
	(0.009)	(0.008)	(0.008)	(0.009)
Post-communist	-1.516***	-1.219***	-1.401***	-1.037***
	(0.335)	(0.343)	(0.329)	(0.344)
Globalization flows	0.018**	0.013	0.017**	0.006
	(0.008)	(0.008)	(0.008)	(0.008)
Social trust	0.014	-0.019	0.019	-0.016
	(0.012)	(0.012)	(0.012)	(0.013)
Religiosity	-0.039	-0.449	0.038	-0.536
	(0.690)	(0.780)	(0.782)	(0.817)
Orthodox	-0.010**	-0.011**	-0.013***	-0.011**
	(0.005)	(0.005)	(0.005)	(0.005)
Catholic	-0.003	-0.009**	-0.004	-0.006
	(0.006)	(0.005)	(0.004)	(0.004)
Protestant	0.002	-0.014**	0.001	-0.013**
	(0.005)	(0.006)	(0.006)	(0.006)
Muslim	-0.020***	-0.006	-0.022***	-0.008
	(0.006)	(0.005)	(0.005)	(0.005)
Observations	108	108	107	107
R squared	0.789	0.663	0.789	0.633
Chi squared	84.27	11.93	29.36	14.05

Standard errors in parentheses. *** (**) [*] denote significance at p<.01 (p<.05) [p<.10]. The analytic weights applied in columns 3 and 4 are the logarithm to the number of respondents in each country sample as a ratio to overall population size.

Table 3
Determinants of the quality of life of gay men, seemingly unrelated regression.

Measure	(1) Opinion	(2) Discrimination	(3) Threats	(4) Bad behavior	(5) Satisfaction	(6) Move
Log GDP per capita	0.361*	0.546***	0.789***	-0.166	0.238*	0.264
	(0.189)	(0.199)	(0.241)	(0.174)	(0.135)	(0.178)
Government	-0.059**	-0.019	-0.008	0.048**	0.012	0.010
expenditures	(0.025)	(0.026)	(0.032)	(0.023)	(0.017)	(0.023)
Democracy	0.653**	0.352	1.198***	-0.395	-0.222	0.456
	(0.297)	(0.313)	(0.379)	(0.273)	(0.213)	(0.279)
Rule of law	-0.168	-0.388*	-0.186	-0.317*	-0.093	-0.297
	(0.194)	(0.204)	(0.247)	(0.178)	(0.139)	(0.183)
ILGA rights	0.628***	0.458***	0.216**	-0.425***	-0.167**	0.112
	(0.078)	(0.082)	(0.099)	(0.072)	(0.068)	(0.089)
Urban population	-0.004	0.001	-0.003	-0.006	0.008	0.003
	(0.008)	(0.009)	(0.010)	(0.008)	(0.006)	(0.007)
Post-communist	-2.413***	-0.293	-1.160***	0.582*	0.157	-0.487
	(0.341)	(0.359)	(0.434)	(0.313)	(0.293)	(0.385)
Globalization flows	0.023***	0.028***	0.006	-0.009	-0.003	0.002
	(0.007)	(0.007)	(0.009)	(0.006)	(0.005)	(0.007)
Social trust	0.015	0.015	0.003	-0.021*	0.003	-0.027**
	(0.012)	(0.013)	(0.015)	(0.011)	(0.008)	(0.011)
Religiosity	-1.204	0.191	0.898	0.075	0.731	-0.705
	(0.763)	(0.803)	(0.971)	(0.701)	(0.526)	(0.691)
Orthodox	-0.007	-0.009*	-0.009	0.008*	-0.004	-0.004
	(0.005)	(0.005)	(0.006)	(0.004)	(0.003)	(0.004)
Catholic	-0.002	-0.009**	-0.019***	0.014***	-0.001	0.001
	(0.004)	(0.004)	(0.005)	(0.004)	(0.003)	(0.004)
Protestant	0.006	-0.009*	-0.028***	0.010*	-0.001	-0.001
	(0.006)	(0.006)	(0.007)	(0.005)	(0.004)	(0.006)
Muslim	-0.008*	-0.017***	-0.014**	0.002	-0.011***	0.004
	(0.005)	(0.005)	(0.006)	(0.004)	(0.003)	(0.004)
Opinion					0.695***	0.074
					(0.079)	(0.105)
Discrimination					0.233***	0.198*
					(0.079)	(0.105)
Threats					0.013	0.353***
					(0.058)	(0.076)
Bad behavior					0.148*	-0.147
					(0.088)	(0.116)
Observations	108	108	108	108	108	108
R squared	0.873	0.751	0.529	0.773	0.909	0.789
Chi squared	741.27	325.48	121.65	368.00	1084.30	402.87

Standard errors in parentheses. *** (**) [*] denote significance at p<.01 (p<.05) [p<.10]. All measures are devised from a positive point of view for gays, such that discrimination, threats, bad behavior and incentives to move in fact measure the *absence* of those negative phenomena.

Table 4a
Effects of institutional factors, conditional on GDP per capita.

Measure	(1) Opinion	(2) Discrimination	(3) Threats	(4) Bad behavior	(5) Satisfaction	(6) Move
GDP median	-0.958	1.862	-1.649	0.067	1.572**	-0.165
	(1.121)	(1.163)	(1.417)	(1.033)	(0.782)	(1.047)
Religiosity	*-2.079*	*1.377*	*-1.028*	*-0.028*	*2.182***	*-0.985*
	(1.316)	*(1.365)*	*(1.665)*	*(1.213)*	*(0.909)*	*(1.216)*
Median * religiosity	1.092	-1.557	2.338	0.103	-1.786*	0.331
	(1.323)	(1.372)	(1.673)	(1.219)	(0.915)	(1.224)
Effect above median	*-0.988*	*0.180*	*1.309*	*0.075*	*0.396*	*-0.653*
	(0.801)	*(1.496)*	*(2.169)*	*(2.077)*	*(1.289)*	*(1.725)*
GDP median	-0.336	-0.015	1.892***	0.214	-0.109	-0.459
	(0.588)	(0.608)	(0.722)	(0.541)	(0.414)	(0.542)
Trust	*0.005*	*-0.005*	*0.066***	*-0.018*	*-0.005*	*-0.048***
	(0.021)	*(0.022)*	*(0.026)*	*(0.019)*	*(0.015)*	*(0.019)*
Median * Trust	0.012	0.030	-0.081***	-0.003	0.011	0.028
	(0.023)	(0.024)	(0.028)	(0.021)	(0.017)	(0.022)
Effect above median	*-0.018*	*0.026*	*-0.016*	*-0.021*	*0.007*	*-0.019*
	(0.013)	*(0.025)*	*(0.035)*	*(0.035)*	*(0.022)*	*(0.029)*
GDP median	-.148	.664	.481	.395	-.089	.835*
	(.489)	(.509)	(.621)	(.448)	(.337)	(.432)
Democracy	*.586*	*.417*	*1.447****	*-.151*	*-.423*	*1.168****
	(.444)	*(.462)*	*(.565)*	*(.407)*	*(.309)*	*(.398)*
Median *	.109	-.089	-.411	-.404	.336	-1.184**
Democracy	(.556)	(.579)	(.707)	(.509)	(.376)	(.483)
Effect above median	*.696**	*.328*	*1.036*	*-.556*	*-.087*	*-.016*
	(.373)	*(.598)*	*(.838)*	*(.774)*	*(.487)*	*(.626)*

Standard errors in parentheses. *** (**) [*] denote significance at p<.01 (p<.05) [p<.10]. Each regression uses the full set of control variables from Table 3, which are not reported to save space. Marginal effects in italics provide effects below (the main effects) and above the median, with conditional standard errors for the latter calculated by the Delta method (Brambor et al., 2006). All measures are devised from a positive point of view for gays, such that discrimination, threats, bad behavior and incentives to move in fact measure the *absence* of those negative phenomena.

Table 4b
Effects of economic and judicial factors, conditional on GDP per capita.

Measure	(1) Opinion	(2) Discrimination	(3) Threats	(4) Bad behavior	(5) Satisfaction	(6) Move
GDP median	1.131	2.211**	0.659	-1.272	-0.519	0.769
	(0.909)	(0.941)	(1.168)	(0.831)	(0.633)	(0.834)
Globalization flows	*0.037****	*0.046****	*0.011*	*-0.027***	*-0.010*	*0.010*
	(0.012)	*(0.013)*	*(0.016)*	*(0.011)*	*(0.009)*	*(0.012)*
Median * flows	-0.021	-0.028*	-0.007	0.025*	0.011	-0.011
	(0.015)	(0.015)	(0.019)	(0.013)	(0.010)	(0.013)
Effect above median	*0.016***	*0.018*	*0.004*	*-0.002*	*0.001*	*-0.001*
	(0.008)	*(0.015)*	*(0.022)*	*(0.021)*	*(0.013)*	*(0.018)*
GDP median	.233	.039	-.344	.494	-.397	1.006**
	(.566)	(.589)	(.719)	(.519)	(.383)	(.498)
Government expenditures	*-.041*	*-.036*	*-.040*	*.068***	*-.017*	*.061***
	(.035)	*(.036)*	*(.044)*	*(.032)*	*(.024)*	*(.031)*
Median * expenditures	-.039	.036	.069	-.042	.063*	-.110**
	(.054)	(.056)	(.068)	(.049)	(.036)	(.047)
Effect above median	*-.079***	*.001*	*.029*	*.026*	*.046*	*-.049*
	(.038)	*(.055)*	*(.076)*	*(.069)*	*(.043)*	*(.056)*
GDP median	-.351	1.105*	1.610**	.144	-.878**	.443
	(.599)	(.622)	(.746)	(.552)	(.406)	(.555)
ILGA rights	*.544****	*.599****	*.655****	*-.431****	*-.479****	*.214*
	(.175)	*(.182)*	*(.218)*	*(.161)*	*(.122)*	*(.166)*
Median * ILGA	.108	-.198	-.551**	.002	.390***	-.133
	(.194)	(.201)	(.241)	(.178)	(.129)	(.177)
Effect above median	*.652****	*.402***	*.104*	*-.429*	*-.089*	*.081*
	(.087)	*(.204)*	*(.292)*	*(.294)*	*(.178)*	*(.243)*
GDP median	0.028	0.998**	0.022	-0.053	0.042	0.284
	(0.457)	(0.472)	(0.581)	(0.419)	(0.318)	(0.418)
Rule of law	*-0.333*	*-0.924**	*0.135*	*-0.012*	*0.018*	*-0.552*
	(0.467)	*(0.482)*	*(0.594)*	*(0.428)*	*(0.324)*	*(0.425)*
Median * rule	0.186	0.661	-0.357	-0.345	-0.125	0.298
	(0.493)	(0.509)	(0.626)	(0.452)	(0.338)	(0.444)
Effect above median	*-0.147*	*-0.263*	*-0.222*	*-0.357*	*-0.107*	*-0.255*
	(0.206)	*(0.526)*	*(0.782)*	*(0.765)*	*(0.468)*	*(0.615)*

Standard errors in parentheses. *** (**) [*] denote significance at p<.01 (p<.05) [p<.10]. Each regression uses the full set of control variables from Table 3, which are not reported to save space. Marginal effects in italics provide effects below (the main effects) and above the median, with conditional standard errors for the latter calculated by the Delta method (Brambor et al., 2006). All measures are devised from a positive point of view for gays, such that discrimination, threats, bad behavior and incentives to move in fact measure the *absence* of those negative phenomena.

Table A1
The Gay Happiness Index, separable elements.

Country	Opinion	Discrimination	Threats	Bad behavior	Satisfaction	Move
Albania (66)	1.42	4.86	5.77	5.16	2.86	6.06
Algeria (33)	0.77	4.44	4.61	4.03	2.58	6.03
Argentina (293)	7.08	8.55	8.34	2.42	8.71	9.84
Armenia (44)	0.34	4.74	5.37	5.56	3.48	4.54
Australia (602)	7.28	7.79	6.03	1.45	8.61	7.78
Austria (2509)	7.03	7.72	7.76	2.02	8.55	8.66
Azerbaijan (41)	1.11	4.22	5.91	4.59	3.75	6.46
Bangladesh (48)	1.06	1.52	4.09	5.13	3.41	6.10
Belarus (117)	1.30	7.48	5.46	3.72	5.13	6.75
Belgium (2755)	7.15	8.05	7.24	1.44	8.43	9.47
Benin (52)	3.16	2.67	6.58	4.01	5.24	4.35
Bolivia (31)	3.68	7.26	7.21	5.16	7.38	8.30
Bosnia (419)	0.80	4.80	5.81	4.72	3.70	6.29
Brazil (673)	5.04	5.87	5.82	3.09	7.56	7.48
Bulgaria (675)	2.56	7.00	6.10	3.89	5.67	6.15
Burundi (22)	0.36	2.81	3.83	4.12	3.59	3.76
Cambodia (56)	5.35	7.08	7.35	2.49	8.15	6.98
Cameroon (186)	0.75	2.65	1.87	6.18	2.65	3.52
Canada (691)	8.72	7.89	7.16	0.48	9.36	7.92
Chile (142)	5.11	6.97	6.47	3.55	7.70	7.46
Colombia (407)	4.64	7.05	7.29	4.58	7.79	7.91
Costa Rica (70)	5.32	7.46	8.10	4.28	8.71	9.55
Côte d'Ivoire (116)	1.95	5.52	4.71	4.51	3.98	5.36
Croatia (560)	2.94	6.93	6.11	3.65	5.62	6.59
Cyprus (351)	2.75	5.89	7.04	4.22	5.03	6.50
Czech Republic (545)	6.86	10.00	8.08	1.30	8.73	7.44
Denmark (469)	8.79	9.50	7.58	0.45	10.00	8.29
Dominican Republic (61)	2.93	4.54	4.42	5.03	5.40	5.25
Ecuador (136)	4.57	6.85	7.52	4.75	6.96	7.11

Egypt (180)	0.52	3.40	5.05	6.46	3.38	5.41
El Salvador (23)	2.46	4.93	8.45	5.77	7.27	6.58
Estonia (286)	3.85	8.00	6.53	2.75	7.11	8.04
Ethiopia (31)	0.02	2.74	3.47	7.60	3.60	0.61
Finland (664)	7.47	8.54	6.60	0.82	9.52	7.87
France (7047)	6.57	7.41	7.24	1.53	7.77	9.14
Georgia (78)	1.38	5.02	6.22	5.48	4.30	6.21
Germany (29325)	7.68	8.18	7.69	1.71	8.66	9.21
Ghana (85)	1.23	3.06	2.76	5.62	4.22	2.36
Greece (2861)	3.20	6.60	7.28	3.53	5.95	7.69
Guatemala (27)	2.58	6.66	7.19	5.39	6.57	5.67
Honduras (23)	2.88	3.86	4.33	6.31	5.69	6.15
Hungary (2112)	3.16	7.45	8.58	3.79	5.39	7.89
Iceland (123)	10.00	9.17	7.45	0.00	9.70	8.17
India (7183)	2.18	4.85	6.64	5.24	4.55	7.02
Indonesia (867)	2.35	6.00	8.40	3.27	5.55	5.14
Ireland (415)	6.75	8.17	6.44	1.48	7.98	6.70
Israel (337)	7.86	8.64	8.64	0.80	8.81	8.54
Italy (9887)	3.98	8.73	8.27	3.40	6.44	8.55
Japan (194)	4.11	6.90	9.61	2.36	6.26	7.91
Jordan (45)	1.66	4.34	5.44	4.68	3.95	5.99
Kazakhstan (81)	0.55	4.66	3.32	6.43	5.42	4.63
Kenya (111)	1.44	3.82	4.89	6.29	4.20	5.23
Kuwait (46)	2.38	4.88	8.04	3.38	6.54	6.49
Kyrgyzstan (20)	0.45	2.88	0.00	6.31	2.85	0.74
Latvia (289)	2.03	7.00	5.93	3.69	5.65	7.52
Lebanon (132)	1.55	4.08	5.84	5.15	4.70	5.65
Lithuania (242)	2.45	6.23	5.75	3.96	5.76	7.81
Luxembourg (283)	7.72	8.28	9.09	1.54	9.16	9.88
Macedonia (246)	1.14	4.16	6.37	4.74	4.01	4.74
Madagascar (48)	2.91	5.91	7.78	3.44	6.18	7.27
Malaysia (1421)	2.05	5.39	7.70	4.32	5.43	6.41
Mali (21)	0.57	3.56	6.64	4.58	0.00	6.76

Malta (198)	6.23	8.31	7.88	2.11	7.98	7.94
Mauritius (187)	2.22	6.65	7.18	4.72	4.73	6.85
Mexico (575)	5.85	6.96	6.22	4.23	8.60	8.62
Moldova (101)	1.03	5.39	6.41	3.97	4.33	5.69
Montenegro (118)	1.13	6.29	6.72	4.02	4.04	4.20
Morocco (738)	0.90	4.10	4.79	4.23	3.72	5.02
Namibia (31)	3.49	6.77	4.65	5.01	7.02	4.71
Nepal (56)	2.98	6.54	8.62	4.39	4.87	6.16
Netherlands (3012)	7.66	9.29	7.23	0.88	9.62	9.22
New Zealand (168)	8.09	8.34	7.22	1.06	9.10	8.44
Nicaragua (51)	3.73	5.34	5.11	6.82	5.86	5.96
Nigeria (92)	0.30	3.75	2.55	6.84	3.63	4.12
Norway (520)	8.88	9.55	8.02	0.18	9.86	8.61
Pakistan (47)	1.72	2.86	5.97	6.80	3.75	5.10
Panama (34)	3.22	5.21	7.35	5.60	7.22	7.13
Peru (317)	3.65	6.31	6.63	5.54	6.38	7.51
Philippines (4947)	5.27	7.51	5.94	3.94	6.73	7.35
Poland (1988)	3.10	8.60	6.40	3.23	6.02	7.40
Portugal (504)	5.49	6.21	7.15	1.84	7.15	8.24
Qatar (47)	1.15	6.44	7.66	3.94	6.63	6.84
Romania (2482)	1.89	7.26	7.18	3.77	5.04	7.46
Russia (1312)	1.36	6.40	5.25	4.00	5.66	5.73
Saudi Arabia (201)	0.67	4.51	6.21	4.47	4.26	5.41
Senegal (112)	0.62	3.78	4.06	3.15	3.66	3.81
Serbia (1732)	1.49	6.03	5.67	3.55	4.17	5.90
Singapore (534)	2.86	5.39	7.81	3.75	5.89	6.30
Slovakia (400)	3.24	8.41	7.48	3.57	7.10	6.99
Slovenia (396)	4.45	7.99	7.46	2.25	6.89	7.55
South Africa (252)	6.89	8.02	6.86	2.26	8.32	8.61
South Korea (83)	2.50	6.32	9.34	3.60	6.48	7.05
Spain (3735)	7.53	8.78	7.61	2.11	8.52	8.87
Sri Lanka (180)	1.55	4.44	5.91	4.39	5.67	5.88
Sweden (619)	8.64	8.87	7.16	0.63	9.83	7.40

Switzerland (3158)	7.64	8.25	8.37	1.27	9.17	9.17
Taiwan (172)	5.64	6.93	10.00	2.51	7.10	6.21
Tanzania (41)	1.03	2.81	4.76	5.67	4.14	5.60
Thailand (1549)	7.55	9.17	8.70	1.77	8.86	8.14
Tunisia (269)	1.37	5.27	5.19	4.14	3.49	5.54
Turkey (1767)	2.10	2.65	6.29	3.93	4.49	7.19
Uganda (25)	0.00	1.34	1.29	10.00	3.91	0.77
Ukraine (359)	1.62	6.79	5.59	4.17	5.51	6.01
United Kingdom (1520)	7.32	7.47	6.24	1.71	8.21	6.45
Uruguay (53)	7.50	8.86	9.74	1.03	9.73	9.70
United States (1236)	7.00	6.71	6.00	1.70	8.46	7.03
Uzbekistan (20)	0.05	4.60	5.81	4.37	2.83	5.63
Venezuela (215)	4.09	6.65	6.65	4.77	7.75	7.97
Vietnam (218)	4.58	6.31	8.41	3.63	5.99	5.40
Zimbabwe (22)	0.44	5.59	2.46	5.73	4.70	5.60

The full index consists of the four listed subindices and the two outcome indices; regarding how to interpret the measures (on a 0–10 scale), see details about the construction of the index below. The countries in italics have fewer than 100 respondents; the number of respondents is reported in parentheses in the left-hand column. All measures are devised from a positive point of view for gays, such that discrimination, threats, bad behavior and incentives to move in fact measure the *absence* of those negative phenomena.

Table A2
Principal components analysis, public opinion (GHI) and satisfaction (GHI).

	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
Your country's laws, gov. and gov. decisions	0.902			0.919		
People in your country	0.985			0.986		
People at work / school	0.971			0.976		
Public event	0.981			0.986		
Holding hands with man	0.890			0.936		
Kissing man	0.975			0.981		
Approaching for date / sex	0.933			0.929		
Homosexuality is accepted	0.976			0.978		
Life satisfaction		0.854			0.881	
Acceptance		0.854			0.881	
Move within country			0.744			0.749
Move out of country			0.813			0.869
Change job / school			0.923			0.908
Observations	110	110	110	71	71	71
Eigenvalue	7.254	1.458	2.0651	7.401	1.553	2.140
Var. expl.	0.971	1.119	1.056	0.970	1.093	1.083

The eigenvalues and variance explained of the second factors in the three analyses are 0.228 / 0.031, -0.156 / -0.119, and 0.037 / 0.019 in the full sample and 0.215 / 0.028, -0.132 / -0.093, -0.043 / -0.022 in the reduced sample (without the countries with fewer respondents than 100). The gray areas indicate the block separation of variables that we use to build PCA-derived indices.

Table A3
Principal components analysis, public behavior (GHI).

	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
No discr. in family	-0.512	0.208	0.754	-0.535	0.312	0.702
No discr. at work	-0.471	0.448	0.714	-0.508	0.381	0.749
No discr. in educ. / health	-0.362	0.514	0.655	-0.385	0.386	0.732
No verbal insults	-0.356	0.559	-0.089	-0.272	0.544	-0.090
No violent threats	-0.296	0.857	0.209	-0.228	0.900	0.193
No minor assaults	-0.308	0.839	0.291	-0.255	0.871	0.309
No serious assaults	-0.229	0.834	0.355	-0.179	0.868	0.339
No statements at work	0.889	-0.213	-0.309	0.927	-0.107	-0.291
No statements at school	0.857	-0.315	-0.339	0.908	-0.224	-0.296
No statements among friends	0.800	-0.242	-0.475	0.839	-0.266	-0.404
No statements in public	0.876	-0.332	-0.164	0.886	-0.284	-0.145
Observations	110	110	110	71	71	71
Eigenvalue	3.909	3.269	2.233	4.088	3.223	2.204
Var. expl.	0.406	0.339	0.232	0.414	0.327	0.223

The eigenvalues and variance explained of the third and omitted fourth factor 4 are 0.348 and 0.036 in the full sample and 0.426 and 0.043 in the reduced sample (without the countries with fewer respondents than 100). The gray areas indicate the block separation of variables that we use to build PCA-derived indices.

Table A4

Determinants of the quality of life of gay men, weighted estimates.

Measure	(1) Opinion	(2) Discrimination	(3) Threats	(4) Bad behavior	(5) Satisfaction	(6) Move
Log GDP per	0.268	0.582***	0.809***	-0.230	0.275**	0.285*
capita	(0.193)	(0.198)	(0.224)	(0.159)	(0.127)	(0.168)
Government	-0.068**	-0.023	-0.010	0.065***	0.018	-0.011
expenditures	(0.027)	(0.027)	(0.031)	(0.022)	(0.017)	(0.023)
Democracy	.0708**	0.378	1.047***	-0.379	-0.139	0.249
	(0.327)	(0.335)	(0.379)	(0.270)	(0.211)	(0.279)
Rule of law	-0.109	-0.316	-0.130	-0.329*	-0.159	-0.157
	(0.211)	(0.217)	(0.245)	(0.175)	(0.138)	(0.182)
ILGA rights	0.588***	0.400***	0.153	-0.384***	-0.145**	0.134
	(0.082)	(0.084)	(0.095)	(0.068)	(0.062)	(0.082)
Urban	0.000	-0.001	-0.003	-0.003	0.008	0.001
population	(0.008)	(0.008)	(0.009)	(0.007)	(0.005)	(0.007)
Post-	-2.286***	-0.056	-0.699*	0.442*	0.116	-0.579
communist	(0.315)	(0.323)	(0.366)	(0.261)	(0.254)	(0.336)
Globalization	0.021***	0.023***	0.008	-0.007	-0.001	-0.004
flows	(0.008)	(0.008)	(0.009)	(0.006)	(0.005)	(0.007)
Social trust	0.018	0.020*	-0.002	-0.023**	0.007	-0.022**
	(0.012)	(0.012)	(0.014)	(0.009)	(0.007)	(0.009)
Religiosity	-1.042	0.444	0.968	0.005	0.620	-0.895
	(0.748)	(0.768)	(0.869)	(0.619)	(0.472)	(0.625)
Orthodox	-0.009**	-0.009**	-0.007	0.006	-0.005*	-0.005
	(0.004)	(0.005)	(0.005)	(0.004)	(0.003)	(0.004)
Catholic	-0.002	-0.006	-0.012***	0.011***	-0.003	0.000
	(0.004)	(0.004)	(0.005)	(0.003)	(0.003)	(0.004)
Protestant	0.007	-0.008	-0.017***	0.007	-0.002	-0.005
	(0.006)	(0.006)	(0.007)	(0.005)	(0.004)	(0.005)
Muslim	-0.010**	-0.017***	-.0010*	-0.000	-0.011***	0.001
	(0.005)	(0.005)	(0.006)	(0.004)	(0.003)	(0.004)
Opinion					0.675***	0.084
					(0.077)	(0.102)
Discrimination					0.201***	0.232**
					(0.075)	(0.099)
Threat					0.032	0.355***
					(0.057)	(0.075)
Bad behavior					0.132	-0.012
					(0.094)	(0.124)
Observations	107	107	107	107	107	107
R squared	0.886	0.737	0.503	0.806	0.926	0.794
Chi squared	833.78	300.41	108.16	444.85	1342.09	411.80

Standard errors in parentheses. *** (**) [*] denote significance at p<.01 (p<.05) [p<.10]. The analytic weights applied are the logarithm to the number of respondents in each country sample as a ratio to overall population size. All measures are devised from a positive point of view for gays, such that discrimination, threats, bad behavior and incentives to move in fact measure the *absence* of those negative phenomena.

Table A5

Determinants of the quality of life of gay men, seemingly unrelated regression, using the standard parts of the GHI.

Measure	(1) GHI opinion	(2) GHI behavior	(3) GHI satisfaction
Log GDP per capita	1.572	2.798***	2.136***
	(1.638)	(.969)	(.806)
Government expenditures	-.429**	-.183	.098
	(.216)	(.128)	(.104)
Democracy	3.573	3.909***	1.934
	(2.578)	(1.527)	(1.257)
Rule of law	.301	-.193	-2.441***
	(1.680)	(.995)	(.796)
ILGA rights	5.526***	2.572***	.044
	(.676)	(.400)	(.415)
Urban population	-.023	.004	.014
	(.071)	(.042)	(.034)
Post-communist	-19.358***	-4.966***	-2.856*
	(2.956)	(1.750)	(1.656)
Globalization flows	.181***	.087**	.031
	(.061)	(.036)	(.030)
Social trust	.184*	.070	-.088*
	(.103)	(.061)	(.049)
Religiosity	-10.567	.761	-2.938
	(6.612)	(3.915)	(3.186)
Orthodox	-.040	-.041*	-.027
	(.041)	(.024)	(.019)
Catholic	.007	-.079***	.026
	(.035)	(.021)	(.018)
Protestant	.102**	-.075**	.006
	(.049)	(.029)	(.026)
Muslim	-.010	-.052**	-.022
	(.039)	(.024)	(.019)
GHI opinion			.267***
			(.053)
GHI behavior			.448***
			(.089)
Observations	108	108	108
R squared	.867	.792	.909
Chi squared	706.78	410.25	1090.56

Standard errors in parentheses. *** (**) [*] denote significance at p<.01 (p<.05) [p<.10].

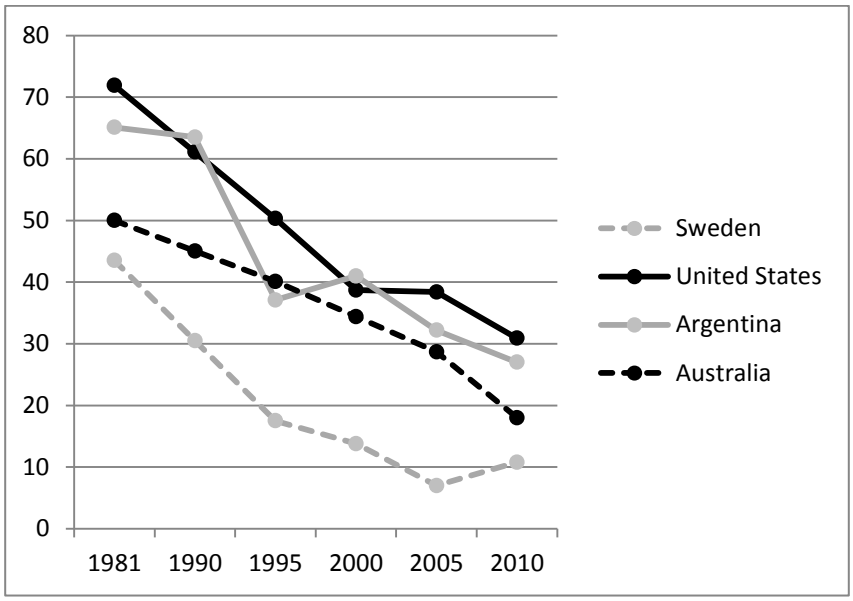

Fig. 1. Share of the population that states that homosexuality is never justifiable. Source: World Values Survey (2015).

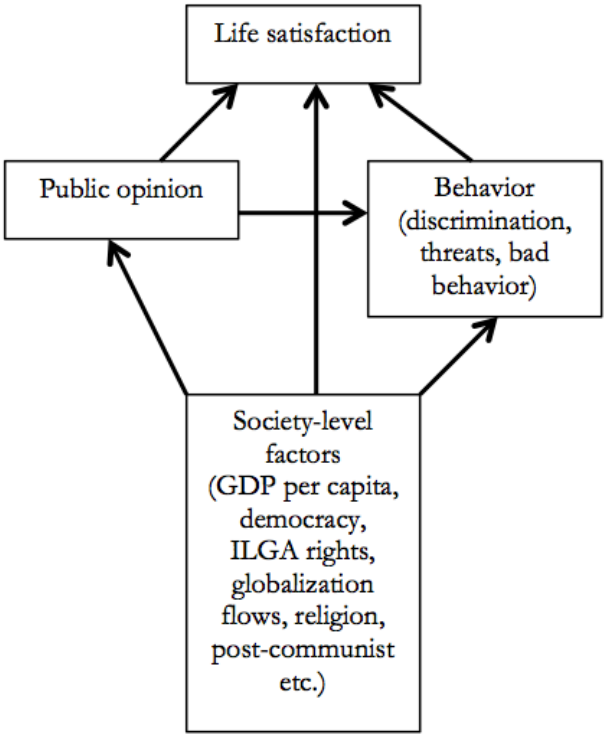

Fig. 2. Determinants of quality of life.

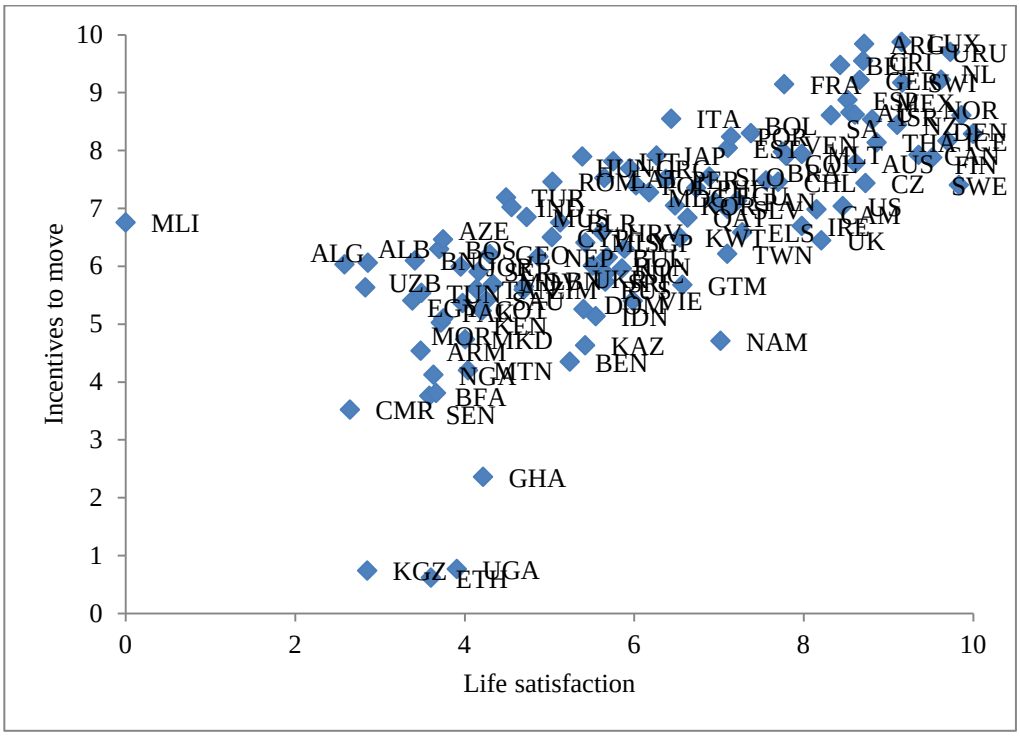

Fig. 3. Life satisfaction (PCA-derived) and incentives to move (PCA-derived).

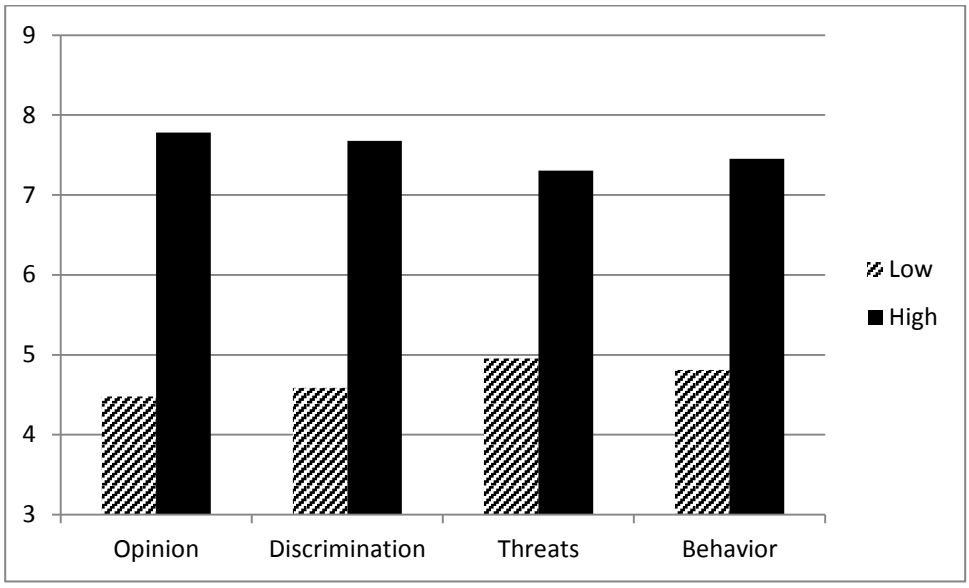

Fig. 4a. How life satisfaction (PCD-derived) varies with opinions and treatment (PCA-derived) of gay men.

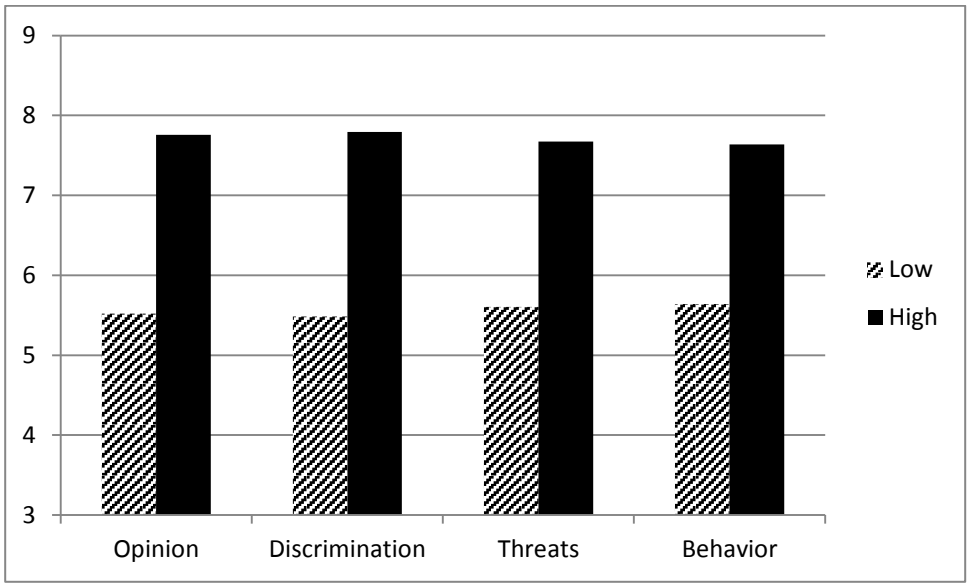

Fig. 4b. How an incentive to move (PCA-derived) varies with opinions and treatment (PCA-derived) of gay men.

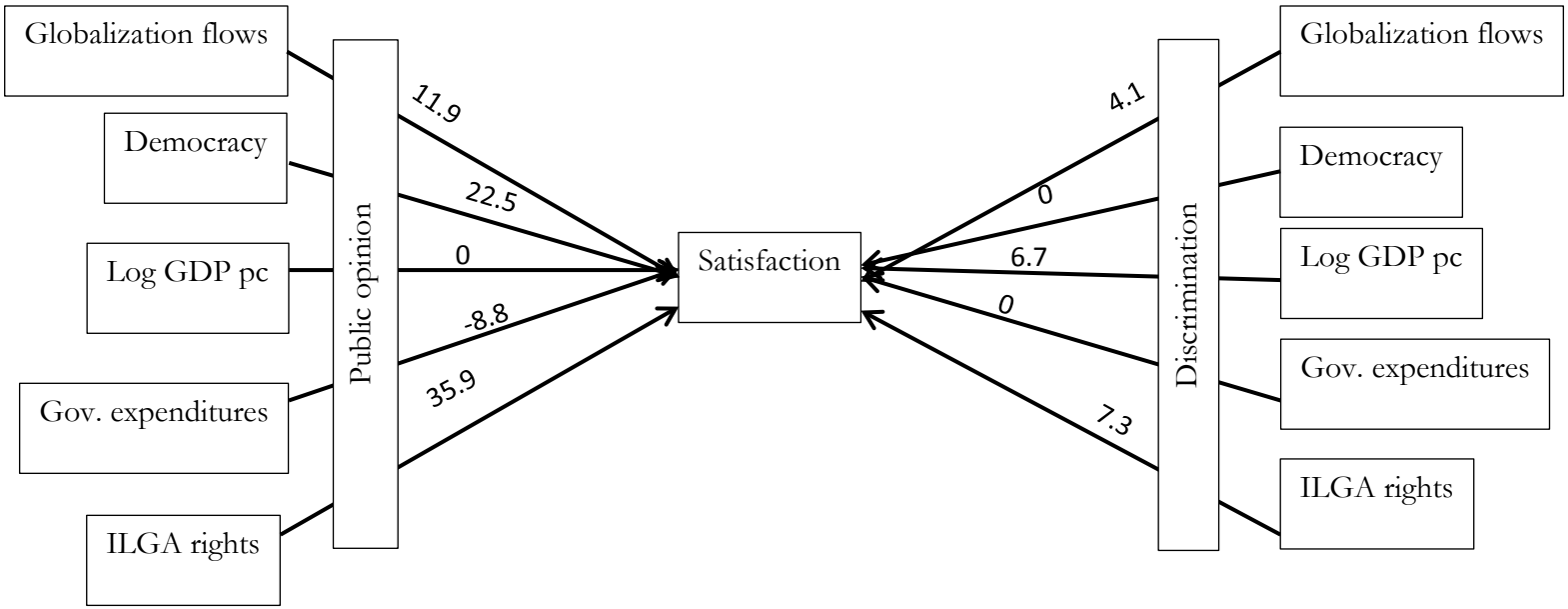

Fig. 5. Transmission mechanisms, life satisfaction, weighted estimates.

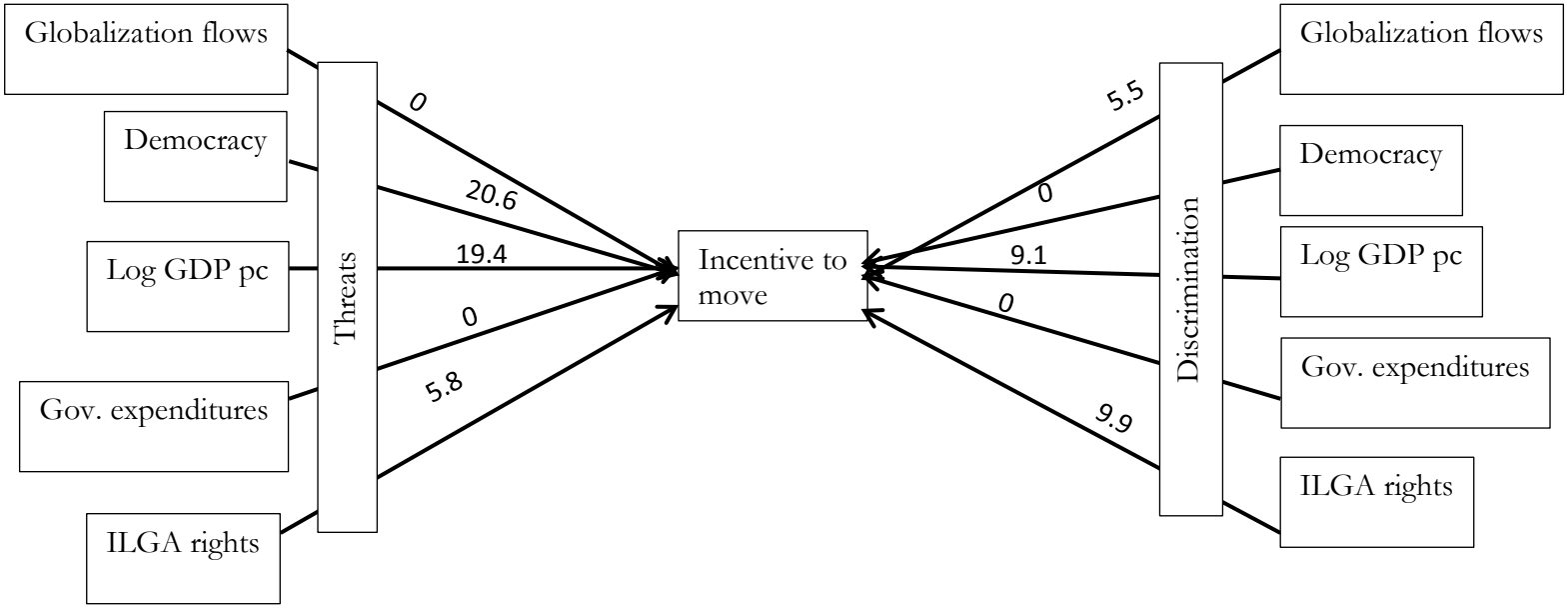

Fig. 6. Transmission mechanisms, incentive to move, weighted estimates.