Can a Small Community Change Public Opinion?

Modelling Attitudes towards LGBT People in Estonia

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Abstract

Over the past fifteen years, attitudes towards homosexuality in Estonia have changed considerably. In this short article, based on a much larger dissertation study of the role of LGBT people in processes of Westernisation, we are interested not only in when this change occurred, but also in how: could the activities of a relatively small organised LGBT movement have contributed to a shift in public attitudes? We compared survey results, articles from a nationwide news portal, and publications produced by the community itself. We then constructed a mathematical model and conducted computational experiments in which different sources of influence were removed in turn. The results suggest that the answer may be yes.

From Personal Acquaintance to Social Norms

Imagine someone who previously regarded homosexuality as unacceptable. They might hear an acquaintance's opinion, learn about the personal experiences of a gay man or lesbian, read an LGBT-related news story, or attend a public event. Any one of these experiences is unlikely to change their views immediately. Yet repeated encounters and messages may gradually make their previous position less stable. In turn, as more people openly express acceptance, it may become easier for others to reconsider their own views. Such cumulative influences are discussed in research on social contagion and intergroup contact (Dodds and Watts, 2004; Pettigrew and Tropp, 2006; Castellano et al., 2009).

Our central hypothesis is that the existence and, above all, the public activities of an organised LGBT movement can influence the dynamics of attitudes across society, even though the community itself represents only a small share of the population, approximately 2–5% (Kasianczuk, 2026).

We do not say that activists communicate directly with most residents of the country—that would simply be impossible. Rather, their activities may increase the visibility of LGBT issues, encourage LGBT people to be open about themselves, and indirectly change everyday social life (Fig. 1).

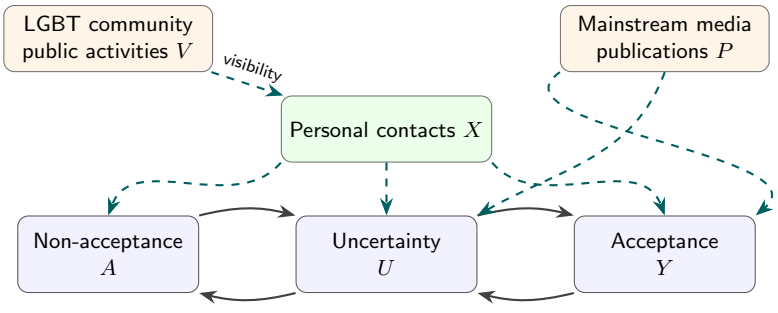


Figure 1: Simplified diagram of the influences examined. Public activities of the community may affect attitudes through personal contacts; mainstream media are represented as a separate information channel. A possible direct effect of community activities was examined in an alternative version of the model

To see is it consistent with observed trends, we followed the *Estonian Human Rights Centre* in provisionally dividing the population into three groups: those who do not accept homosexuality (A), those who are unsure of their position (U), and those who accept it (Y). People can move between these states in either direction, while transition rates depend on the existing level of acceptance, personal contacts, and the information environment.

The model also includes X—the proportion of people reporting contact with homosexual or bisexual people. This is not a fourth category: someone may personally know a gay man or lesbian and still have a negative attitude towards homosexuality.

It does not distinguish between generations, counties, ethnic groups, the nature of individual contacts, or possible political events. The model's purpose is to assess whether the proposed mechanism is consistent with the data.

Where Do the Data Come From?

Surveys by the Estonian Human Rights Centre (EIK). Seven survey waves conducted between 2012 and 2026 make it possible to track the proportion of respondents who accept homosexuality, those who are undecided, and those who report contact with homosexual people (Grünberg, 2012, 2014; Grünberg & Kaldaru, 2017; Grünberg, 2019, 2021; Rünne et al., 2023, 2026). These three series formed the basis of the quantitative analysis. Specifically, the responses "fully accept" and "rather accept" were combined into Y, while "cannot say" was classified as U.

Delfi articles. We collected a corpus of 16,977 articles identified through searches for thematic keywords (different terms referring to homosexuality, gay men, lesbians, and LGBT people) in Estonian- and Russian-language materials published between 1995 and 2026. The retrieved materials were subsequently screened to exclude those that were not relevant to the topic. For the model itself, we used annual counts of selected articles in both languages for 2011–2025. The annual values of this series (P) fluctuated: for example, 681 articles in 2012, 482 in 2016, and 465 in 2025. This indicator measures how frequently the topic appeared, not the tone of coverage: articles could portray LGBT issues positively, negatively, or neutrally.

Publications by the community itself. A separate corpus of community publications was compiled from the archives of *LGBT.ee, Vikervaade, Festheart*, and *Q-Space*. We distinguished between the total number of publications (C) and reports on activities potentially aimed at audiences beyond the community (V): public events, cultural projects, discussions, and other forms of engagement with society. Between 2011 and 2025, annual publication counts (C) rose from 2 to 111, while the number of externally oriented reports (V) increased from 0 to 69. Particularly noticeable growth began in 2019, when 136 community publications were recorded, including 56 concerning externally oriented activities.

Both publication trends do not follow the same pattern. Between 2011 and 2025, annual counts of *Delfi* articles and externally oriented publications by LGBT organisations were not synchronised. In other words, an increase in the community's public activities was not accompanied by a proportional increase in *Delfi* coverage during the same year.

How Did We Test the Hypothesis?

Step one: describe the observed trend. The seven *EIK* observations for the proportion accepting homosexuality were approximated by an S-shaped curve. It captures an initially slow change, a phase of acceleration, and a subsequent slowdown. The highest rate of change occurs around the end of 2019. At this stage, the curve is simply a convenient description of the data.

Step two: estimate the parameters of the mechanism. We then constructed a separate system of equations describing transitions $A \rightleftarrows U \rightleftarrows Y$ and changes in contact exposure X. The series V and P were included as inputs. Model parameters were estimated jointly against observations of Y, U, and X, with an additional check of the model's proximity to the fitted curve. In condensed form [†] , the key equation is:

$$\frac{dY}{dt} = \big(k_2 e^{\beta_2 p(t)} U - k_{-2} Y\big) Y^{3/2} + \big(k_4 U - k_{-4} Y\big) X(t), \qquad X(t) = 1 - e^{-\eta L(t)^m}$$

Hear Y is a share of accepting homosexuality; U is the undecided proportion; $p(t)$ is the normalised intensity of *Delfi* publications; and $L(t)$ is latent contact exposure, which in the main version of the model is influenced by the community's public activities $V(t)$. The coefficients k_i, β_2, η, and m are estimated from the data. This expression illustrates why even a relatively small external influence can produce a nonlinear outcome: the rate of attitude change depends on the existing level of acceptance and on personal contacts.

[†] given the pop-science nature of this article, we omit the full mathematical derivations

Step three: remove individual influences in hypothetical scenarios. After estimating the coefficients, we kept them unchanged and recalculated the trajectories after setting the community's externally oriented activities (V), the intensity of *Delfi* publications (P), or both indicators to zero. Keeping the coefficients fixed reveals what this particular model predicts under the hypothetical absence of the corresponding mechanism. This is a counterfactual calculation: what would have happened if...

What Did We Find?

According to the full model, approximately 55% of the population accepted homosexuality in 2025 (the 2026 *EIK* survey reported 51%). When externally oriented community activities are removed while the other mechanisms are retained, the predicted share falls to approximately 37%. Removing only *Delfi* publications barely changes the result: it remains around 55%. Removing both information-related factors produces a predicted acceptance level of approximately 37% (Fig. 2).

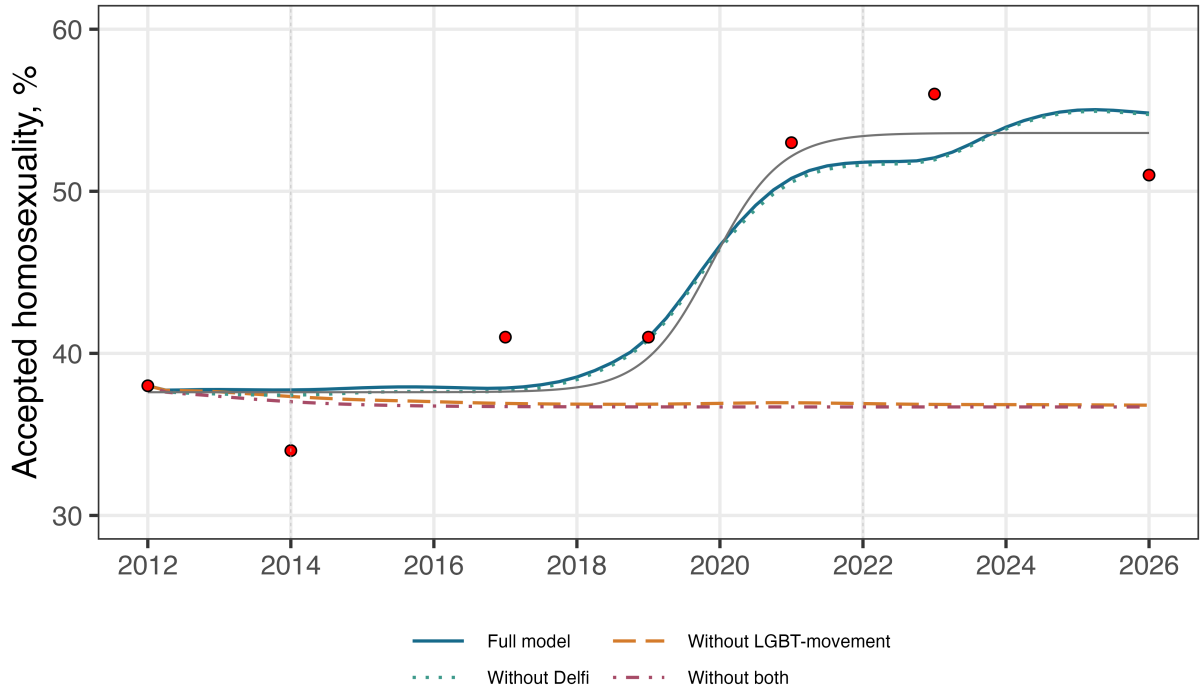


Figure 2: Observed trends and model-based alternatives. Circles show the proportion accepting homosexuality in seven *EIK* surveys; the grey line is an S-shaped approximation of those observations. The other lines are trajectories calculated from the same mathematical model, either with all factors included or with selected influences hypothetically removed

First look is striking. However, it means only that within the chosen mechanism (Fig. 1), the activities of the organised LGBT movement had a larger effect than the direct effect attributed to the number of news articles.

We controlled alternative mechanism too: community activities might affect attitudes directly rather than through personal contacts, or through both pathways at once. The combined version produced only a small improvement in the overall fitting criterion; the available data did not allow us to distinguish the two mechanisms confidently. Nor could we demonstrate that personal contacts necessarily precede changes in attitudes: the peak rate of growth in reported contacts in the *EIK* data occurs somewhat later than the peak rate of growth in acceptance.

The last, the seven waves provide limited information for a model involving several interrelated processes. Publication counts are only an indirect indicator of their influence on society, while politics, legislation, and broader cultural change are not represented by separate numerical series. The "18 percentage points" difference therefore must not be interpreted as evidence that the LGBT movement itself created that much acceptance.

Conclusion

The findings support the plausibility of the proposed mechanism rather than establish a causal relationship. A small organised community may contribute to changing the attitudes of a much larger society, not necessarily

through direct contact between activists and the majority of the population, but through public visibility, social connections, and gradual changes in what is perceived as normal and acceptable.

Estonian case reveals the limits of such an explanation. Growing acceptance cannot be reduced to a single cause—whether the number of publications, the number of events, or personal acquaintances. The model is useful because it makes these assumptions explicit and allows us to ask: how would the trend have developed if one of the mechanisms had been absent? The answer remains conditional, but it turns a general hypothesis about the community's role into something that can be examined quantitatively.

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