Social Science Research xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Social Science Research

journal homepage: www.elsevier.com/locate/ssresearch

# Acceptance of homosexuality through education? Investigating the role of education, family background and individual characteristics in the United Kingdom

Chaïm la Roi[a,*], Jornt J. Mandemakers[b]

[a] University of Groningen/Interuniversity Centre for Social Science Theory and Methodology, The Netherlands
[b] Utrecht University, The Netherlands

ARTICLE INFO

*Keywords:*
Homosexuality
Attitudes
Education
Fixed effects
United Kingdom

ABSTRACT

Higher educated people tend to be more accepting of homosexuality than lower educated people. This has inspired claims that education leads to a higher acceptance of homosexuality. Alternatively, the association between education and acceptance of homosexuality could be confounded by (un)observed family background and stable individual characteristics. This study investigated the association between education and acceptance of homosexuality and the role of potential confounders in a unique longitudinal sample of British siblings. Multilevel and fixed effects analyses show that both perspectives apply. A large part of the association between education and acceptance of homosexuality could be attributed to family background and observed individual characteristics (one third), as well as unobserved individual characteristics (an additional third), but the positive association remains. Findings are discussed in light of existing explanations regarding the effect of education on the acceptance of homosexuality.

## 1. Introduction

Recent studies show that on average, levels of acceptance of homosexuality are rising (Andersen and Fetner, 2008; Keleher and Smith, 2012; Slootmaeckers and Lievens, 2014). In a parallel development, many Western countries have adopted egalitarian legislation with regard to same-sex orientations since the late 1990's. It remains unclear however, what mechanisms underlie this relatively swift change in public climate. Some studies attribute an important role to education. There is abundant evidence that lower educated people think more negatively about homosexuality than higher educated people (Andersen and Fetner, 2008; Keleher and Smith, 2012; Van den Akker et al., 2013). Higher education is argued to lead to more acceptance of homosexuality, for instance through its stimulation of greater cognitive sophistication and complex reasoning, enabling individuals to better evaluate new ideas (Ohlander et al., 2005), or through interaction with progressive fellow students at (higher) education institutions (Campbell and Horowitz, 2016). Explanations of this kind, which claim that education has a causal effect on acceptance of homosexuality, are labelled *educational effects explanations* (Campbell and Horowitz, 2016). Most proponents of educational effects explanations assume the effect of education to be long-lasting, since the large majority of people are in education in their youth and early adulthood. This is believed to be the "formative phase" of life, during which people shape their attitudes, which are believed to change only little thereafter (Inglehart, 2008).

Family background and individual characteristics could confound the proposed effect of education on the acceptance of

* Corresponding author. Department of Sociology and Interuniversity Center for Social Science Theory and Methodology (ICS), University of Groningen, Grote Rozenstraat 31, 9712 TG, Groningen, The Netherlands.
*E-mail address:* c.la.roi@rug.nl (C. la Roi).

https://doi.org/10.1016/j.ssresearch.2017.12.006
Received 22 December 2016; Received in revised form 7 December 2017; Accepted 9 December 2017

homosexuality. Parents are generally thought to be of substantial importance for the development of the attitudes of their children (e.g. Jennings, 1984; Lubbers et al., 2009; Min et al., 2012; Sabatier and Lannegrand-Willems, 2005). Also, stratification research has for long established the important role of parents for the educational outcomes of children (Blau and Duncan, 1967; Breen and Goldthorpe, 1997; Erikson and Jonsson, 1996; Kallio et al., 2016). Furthermore, individual characteristics such as aspirations or cognitive ability could influence both educational outcomes (Heckman et al., 2006; Homel and Ryan, 2014) and acceptance of homosexuality (Ohlander et al., 2005). Previous research may therefore have overestimated the importance of educational attainment for the acceptance of homosexuality. Such types of explanations, which claim that the association between education and the acceptance of homosexuality is confounded by family background or individual level factors, are labelled *spurious effects explanations* (Campbell and Horowitz, 2016).

In this paper, we put the proclaimed causal effect of education on the acceptance of homosexuality to the test. Educational effects explanations and spurious effects explanations will be used as frameworks for developing opposing hypotheses. Hypotheses are tested by consecutively estimating a series of multi-level, family fixed effects, and individual fixed effects regression models in a large panel sample of siblings. The family fixed effects model compares siblings within a family and thereby controls for all time-constant family background factors that could potentially influence both level of education and acceptance of homosexuality. Similarly, individual fixed effects models examine the effect of within-person changes in education on within-person changes in acceptance of homosexuality. This makes it possible to separate out all (measured and unmeasured) time-constant differences between individuals that could potentially influence both level of education and acceptance of homosexuality (see Allison, 2009). The individual fixed effects model thus forms a stricter test of the educational effects explanation than the family fixed effects model. To our knowledge, no studies have been conducted that tried to separate the effect of education on the acceptance of homosexuality from potential confounding by family background or individual characteristics in such a way. Two studies have tried to isolate the effect of education from family background for other dimensions of socio-political attitudes, by estimating family fixed effects models (Campbell and Horowitz, 2016; Sieben and Graaf, 2004). Findings were mixed. Education was significantly related to post-materialism, civil liberties & gender role attitudes. Yet, family background completely confounded the association between education and religiosity, political party preference, political ideology, and both economic and cultural conservatism. These studies thus provide no clear clue as to whether or not family background confounds the association between education and acceptance of homosexuality.

We used data from the British Household Panel Survey (BHPS), a representative household sample that followed over 10,000 respondents in more than 5000 households in the United Kingdom from 1991 until 2008 (Taylor et al., 2010). Acceptance of homosexuality was measured biennially in the BHPS between 1998 and 2008. For the aims of our study we used a subsample of 5421 siblings from 3155 families with information on both educational attainment and acceptance of homosexuality.

The design of this study enabled us to put the association between education and acceptance of homosexuality to a number of novel and strong tests. First, information on family background characteristics and parental levels of acceptance of homosexuality were provided by parents themselves. We did not need to rely on proxy reports of parental measures by children, as earlier studies on the effect of family background on acceptance of homosexuality had to (Jaspers et al., 2008; Lubbers et al., 2009). This enabled us to control for the influence of (measured) family background characteristics in an unbiased manner. Second, we employed a family fixed effects model, which enabled us to isolate the influence of education on acceptance of homosexuality from family background. Third, the longitudinal nature of this study gave us the opportunity to analyze whether within-person changes in educational attainment were related to within-person changes in acceptance of homosexuality. In sum, this study is novel in being able to consecutively examine multilevel, family fixed effects, and individual fixed effects estimates of the effect of education on acceptance of homosexuality. A comparison of these estimates could help in gaining deeper knowledge in the mechanisms underlying this association.

## 2. Theory and hypotheses

Research on the acceptance of homosexuality has frequently shown that lower educated people think more negatively about homosexuality than higher educated people (Costa et al., 2013; Herek, 1988). The evidence comes from a multitude of sources. Studies using large scale nationally representative samples provide consistent evidence of an association between education and acceptance of homosexuality (Andersen and Fetner, 2008; Gerhards, 2010; Keleher and Smith, 2012; Patrick et al., 2013; Van den Akker et al., 2013). Furthermore, assessing multiple waves of General Social Survey data, Loftus (2001) concluded that rising levels of education were for a large part responsible for increasing acceptance of homosexuality in the US over time. Additional support for the claim that education leads to more acceptance of homosexuality comes from studies employing college samples. Lambert et al. (2006) compared higher and lower year students and found that students from higher years were more accepting of homosexuality than lower year students. What is more, Lottes and Kuriloff (1994) found that students became more accepting of homosexuality as they progressed through college. This finding refutes the possibility of differences in acceptance between lower and higher year students being a selection effect (i.e., that more liberal and accepting students have a higher chance of progressing through to the final stages of college than less accepting students).

### 2.1. Educational effects models

Research has offered several explanations for the association between education and acceptance of homosexuality. Some of these explanatory models, sometimes labelled “educational effects models”, ascribe a causal role to education (Campbell and Horowitz, 2016). A first set of explanations argues that the acceptance of homosexuality comes about via increased levels of ‘cognitive sophistication’ or ‘mobilization’, which is stimulated in education. That is, the cognitive development that is stimulated in education is