

**Understanding Resistance to Comprehensive Sex Education:
The Role of Psychological and Sociopolitical Individual Factors**



**Utrecht
University**

Antonia Krasteva

4476676

Supervisor: Flavio Azevedo

Youth Development and Social Change

June 23, 2025

Word count: 5984

This thesis has been written as a study assignment under the supervision of a Utrecht University teacher. Ethical permission has been granted for this thesis project by the ethics board of the Faculty of Social and Behavioural Sciences, Utrecht University, and the thesis has been assessed by two university teachers. However, the thesis has not undergone a thorough peer-review process so conclusions and findings should be read as such.

Abstract

Despite substantial evidence of the benefits of Comprehensive Sex Education (CSE), resistance towards the approach persists. Following the ongoing political debates, this study explored the understudied individual differences in CSE attitudes and their possible precursors to indirectly promote the discussion and adoption of more holistic approaches towards sex education in schools. Using a nationally representative US adult sample ($N=1003$) from the 2024 Pre-Election iteration of *The Psychology Political Behavior Studies*, a series of multiple regression analyses – both confirmatory and exploratory – were conducted. A number of psychological and sociopolitical factors – namely, political ideology, general system justification (GSJ), right-wing authoritarianism (RWA), social dominance orientation (SDO), anti-scientific attitudes, and conspiracy beliefs – were investigated for their predictive power in explaining CSE attitudes (general and policy-specific support and anti-scientific attitudes). Results revealed that higher RWA and political conservatism consistently predicted lower general and specific support, and higher anti-scientific attitudes towards CSE. The effect of SDO was limited and GSJ was positively associated with higher general support towards CSE, after controlling for socio demographics and other psychological variables. Exploratory analysis suggested a unique contribution of anti-scientific attitudes, but not of conspiracy beliefs, as a predictor of support for CSE in the combined models. The findings offer new insights into the ideological and psychological drivers of resistance to CSE laying the foundation for future research while also providing practical guidance to policymakers aiming to foster an inclusive public dialogue and develop effective, evidence-based solutions.

Keywords: comprehensive sex education (CSE), political ideology, right-wing authoritarianism (RWA), social dominance orientation (SDO), anti-scientific attitudes

Understanding Resistance to Comprehensive Sex Education

The International Conference on Population and Development (ICPD) in 1994 gave rise to a shared international commitment towards the sexual and reproductive health and rights (SRHR) of the world population, including adolescents (Kabiru, 2019), highlighting their rights to be provided with accurate information on sexuality to promote their health and well-being (United Nations Population Fund, 1994). While a lot has changed and improved since then (Liang et al., 2019), a significant amount of resistance remains towards providing youth with the information and services they need, leading to the slowdown of comprehensive sex education (CSE) programs (Chandra-Mouli et al., 2019).

According to the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2018, p. 16; see Appendix A), CSE should be an evidence- and curriculum-based approach to sex education for youth, provided by trained educators in a medically accurate and structured way adapted to the age and cognitive development of learners. Its comprehensiveness lies in the wide range of topics covered – from anatomy and health to gender rights and interpersonal relationships, empowering young people to make informed decisions about their well-being. Providing them with the right tools, CSE offers a number of benefits in regard to health but also the socio-emotional development of adolescents (Goldfarb & Lieberman, 2020).

Despite that, resistance towards its implementation persists. A systematic review by Chavula et al. (2022) suggests that in developing countries the process of adoption has been delayed due to unfavourable policies and lack of political commitment. Even in developed countries such as the US, preference for abstinence-only sex education (AOE) is observed in the allocation of federal funding towards programs based on abstinence rather than a comprehensive approach (Santelli et al., 2017; *Social Security Act §510*, 2017). AOE teaches students that abstinence is the only way to protect against STIs and pregnancy and that sexual

behaviour is to be practised within the frame of a monogamous, marital, adult relationship (Berne & Huberman, 1995; Ott & Santelli, 2007). However, this approach has been associated with problematic outcomes such as negative attitudes towards condom use and increased likelihood of engaging in unsafe sex (Shepherd et al., 2017), raising the question why resistance to the holistic approach persists among the key decision-makers – the initiators of the top-down approach needed for sex education, and how it can be navigated.

Given that public health has been increasingly politicized (Van Bavel et al., 2024), literature exploring attitudes towards CSE focuses mainly on ideological differences showing higher support from liberals as compared to conservatives (Canan & Jozkowski, 2016; Eisenberg et al., 2009). Yet, some studies show high support among both populations (Bleakley et al., 2006; Constantine et al., 2007; Kantor & Levitz, 2017). For example, Bleakley et al. (2006) found approval of abstinence-plus programs – that also discuss methods of contraception – among both liberal (91.6%), moderate (86.4%) and conservative parents (70%), as well as various levels of religious attendance groups, ranging from 87.4% among non-attending to 60.3% among frequently attending. Research shows that preference for abstinence-only education is usually rooted in absolutist reasons such as religious beliefs or moral principles (Constantine et al., 2007). These findings highlight the role of ideology and religion but also show the need for a more nuanced approach to understanding the resistance towards CSE.

Most studies, limiting themselves to political or religious affiliations, do not account for other psychological and sociopolitical factors that may influence one's worldview. For instance, considering the evidence-based approach of CSE, opposition to it may suggest a broader distrust in scientific findings. Chen et al. (2020) found that exposure to conspiracy theories predicts less favourable attitudes towards human papillomavirus (HPV) vaccines, showing how misinformation may shape one's opinion on public health issues. Furthermore,

research consistently shows that conservatives tend to hold scepticism towards scientific findings such as climate change (Azevedo & Jost, 2021; Rutjens et al., 2021). Still, factors such as right-wing authoritarianism (RWA), social dominance orientation (SDO), and general system justification (GSJ), which are strongly related to conservatism and have been previously connected to anti-scientific attitudes (Azevedo & Jost, 2021; Remsö & Renström, 2023), are underrepresented in the literature concerning CSE, offering an opportunity for further investigation.

Therefore, this study aims to build on existing literature and examine previously unexplored constructs that may shape attitudes towards pressing societal problems such as CSE by answering the question: “Which psychological and sociopolitical individual factors predict attitudes towards CSE in a nationally representative US adults’ sample?”, exploring several individual factors described below.

Theory

Political Ideology, RWA, SDO and GSJ

Researchers increasingly examine the issue of CSE through the lens of political ideology, identifying conservatism as a major reason for opposition (Canan & Jozkowski, 2016; Eisenberg et al., 2009). Conservatism, however, is a complex concept based not only on personality differences but also on an interplay between social and cognitive processes (Jost et al., 2003). Originating from the psychological need to manage uncertainty and fear, conservatism is characterized by resistance to change and acceptance of inequality.

One way that CSE disrupts existing norms is through the promotion of gender equality (Goldfarb & Lieberman, 2020; UNESCO, 2018), positioning it as a threat to established power structures (e.g., gender hierarchies). According to the Social Dominance Theory (SDT), there is one factor, SDO, that explains the desire for one’s group to dominate over others (Pratto et al., 1994). Accordingly, people higher on SDO prefer hierarchies, while

those lower on SDO favour equality. Similarly, the System Justification Theory (SJT), initially proposed by Jost & Banaji (1994), suggests that people defend existing social, political or economic structures as they perceive them as justified and fair, even if they themselves are disadvantaged because of the said structures. In line with these theories, it is possible that in an attempt to rationalize the status quo, people might perceive the modern and holistic approach of CSE as a “social change” that challenges the values and structures in place as we know them now.

Another construct that is based on the support of the status quo is RWA. Originating from the authoritarian personality (Adorno et al., 1950), it is an individual trait that measures the extent to which people endorse traditional values held by authorities (Altemeyer, 1981). Thus, people high in RWA tend to conform to traditional religious, moral and social norms and, consequently, to the authorities that preserve them. According to Jost et al. (2003), RWA is strongly related to the resistance to change and support for inequality which directly connects to the SJT, SDT, and conservatism. CSE, which in itself is a societal change aimed at promoting equality, challenges these views, making these traits highly relevant for investigation. Additionally, the Dual-Process Motivational Model that explores ideological attitudes suggests that both RWA and SDO, while through different mechanisms, predict political conservatism (Duckitt & Sibley, 2009), further highlighting the need to explore these constructs together in the context of CSE to understand the mechanisms behind the ideological resistance.

Anti-scientific Attitudes and Conspiracy Beliefs

In the political discourse, attitudes towards CSE have also been based on the idea that CSE is an “ideological” agenda of the scientific “elite” that seeks to undermine the traditional values of the majority (Bialystok et al., 2020). That notion positions scholars as a threat to society and can be linked to a broader distrust in science. A study by Kossowska et al. (2021),

shows that, particularly among right-wing supporters, perceiving scientists as an elite mediates the effect of political ideology and trust in science. These findings, while studied in the context of vaccines, are also relevant to CSE. While not imposing an immediate threat, the evidence-based method of CSE is still a controversial public health topic that is highly dependent on society's trust in scientific authority.

Furthermore, anti-scientific attitudes have been related to conservatism, GSJ, SDO, and RWA (Azevedo & Jost, 2021; Kerr & Wilson, 2021; Remsö & Renström, 2023). These constructs, while originating from different motivations, may collectively shape individuals' attitudes towards CSE by perceiving it as a threat to the existing world order. Their association with anti-scientific beliefs may also indicate scepticism towards scientific findings and, in turn, evidence-based approaches such as CSE. Exploring these together allows a more nuanced view on CSE attitudes beyond political or religious affiliations.

Research Program

The current study sought to examine the possible motivations for negative attitudes towards CSE in a US adult sample by analysing a number of factors – namely, political ideology, GSJ, RWA, and SDO. As shown in Figure 1, 2, and 3 below, we hypothesized that (1) higher RWA score will predict lower general support for CSE, (2) higher SDO score will predict lower general support for CSE, (3) higher GSJ score will predict lower general support for CSE, (4) higher score on political ideology (conservatism) will predict lower general support for CSE, (5) higher RWA score will predict lower specific support for CSE, (6) higher SDO score will predict lower specific support for CSE, (7) higher GSJ score will predict lower specific support for CSE, (8) higher score on political ideology (conservatism) will predict lower specific support for CSE, (9) higher RWA score will predict higher anti-scientific attitudes towards CSE, (10) higher SDO score will predict higher anti-scientific attitudes towards CSE, (11) higher GSJ score will predict higher anti-scientific attitudes

towards CSE, (12) higher score on political ideology (conservatism) will predict higher anti-scientific attitudes towards CSE.

Figure 1

Conceptual Model CSE General Support

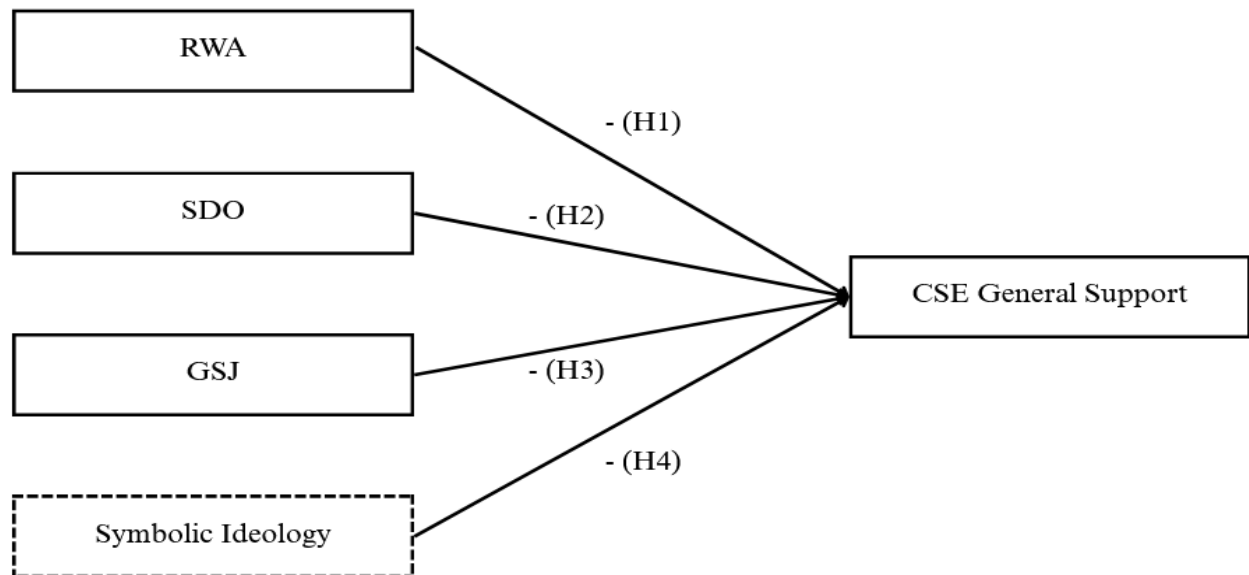


Figure 2

Conceptual Model CSE Specific Support

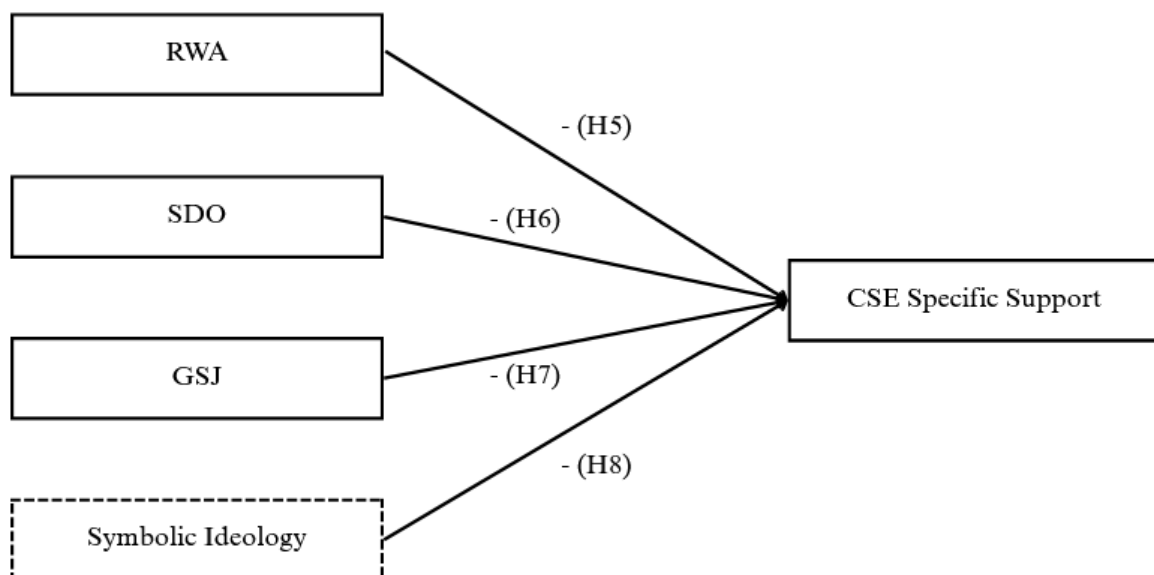
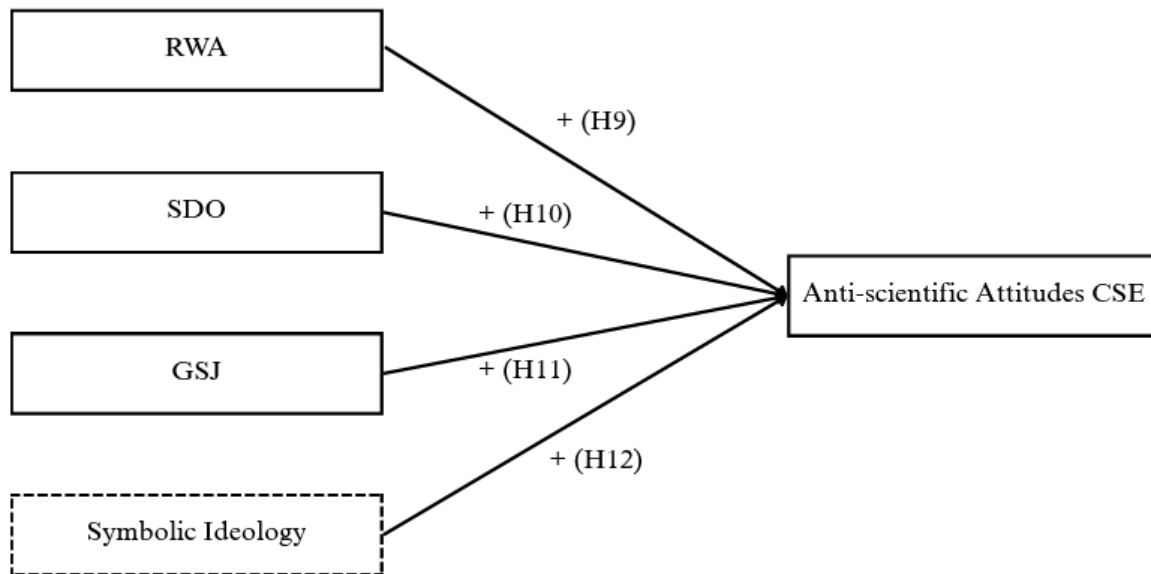


Figure 3

Conceptual Model Anti-scientific Attitudes CSE



Method

Research Design and Sample

The dataset used for the study is part of the 2024 Pre-Election iteration of *The Psychology Political Behavior Studies* (PPBS; <https://ppbs.flavioazevedo.com>), a large online survey on political attitudes and opinions and their associated psychology conducted in the US. A cross-sectional research design was used to explore the correlations between the main predictors - symbolic political ideology, GSJ, RWA, SDO, anti-scientific attitudes, conspiracy beliefs, and general and specific support and anti-scientific attitudes towards CSE, using secondary data from the larger study.

For PPBS, participants were approached and recruited by ResearchCloud (www.cloudresearch.com), a survey research organisation that has access to a pool of over 10 million US citizens. Quotas were implemented to match the 2024 US Census Current Population Survey (CPS) on age, education, income, and gender, ensuring a nationally representative sample. After the exclusion of missing variables, the demographic data of 937 participants (51.5% female) was analyzed (Table 1). Notably, the largest age group was 65

years or more (20.1%), and a very high percentage of the participants (40.1%) had only a high school diploma or no education.

Table 1

Demographics

Variable	Category	<i>n</i> (%)
Age	18 to 24 years	115 (12.3%)
	25 to 34 years	168 (17.9%)
	35 to 44 years	151 (16.1%)
	45 to 54 years	162 (17.3%)
	55 to 64 years	153 (16.3%)
	65+ years	188 (20.1%)
Educational level	less than high school or high school diploma	376 (40.1%)
	some college, no degree	262 (28%)
	Bachelor's degree or higher	299 (31.9%)
Income	less than \$15,000	109 (11.6%)
	\$15,000 to 24,999	89 (9.5%)
	\$25,000 to 34,999	90 (9.6%)
	\$35,000 to 49,999	118 (12.6%)
	\$50,000 to 74,999	168 (17.9%)
	\$75,000 to 99,999	124 (13.2%)
	\$100,000 to 149,999	140 (14.9%)
	\$150,000 or more	99 (10.6%)

Procedure

The data was collected entirely online between October 26 and November 4, 2024. Proceeding recruitment, participants received access to the online survey, where they were presented with an information letter and consent form (see Appendix B). Participation was entirely voluntary and anonymous, with the opportunity to opt out of the survey at any point.

The survey was to be completed in one sitting for an approximate time of 40 minutes.

Participants received an incentive for their participation from ResearchCloud.

The survey began with several demographic questions, followed by multiple questionnaires on different political and psychological constructs. To ensure accuracy of responses, five attention questions were incorporated, and measurements for page time, total survey duration and click patterns. Respondents who failed more than two attention checks or showed unusual page or total time durations or click patterns were excluded from the sample.

Ethical permission, filled under number 25-1896, has been granted for this thesis project by the Ethics Reviews Board of the Faculty of Social and Behavioural Sciences of Utrecht University.

Variables and Instruments

Symbolic Political Ideology

To determine political ideology, we measured symbolic political ideology - participants' ideological self-identification (Ellis & Stimson, 2009). The construct was measured by three separate questions (see Table C1). An example item is: "In terms of the two major ideologies in the U.S., where would you place yourself? ". A total score was calculated as a mean score of the three questions, with higher scores indicating conservative political ideology. The items showed good internal reliability ($\alpha = .92$).

Social Dominance Orientation (SDO)

SDO was measured by the SDO-7 scale (Ho et al., 2015), which determines an individual's preference for hierarchy over equality within social systems. The scale includes 16 questions, which participants had to answer via a 9-point Likert scale, ranging from (1) "Extremely Oppose" to (9) "Extremely Favor". An example item is: "Some groups of people are simply inferior to other groups." The final score was calculated as a mean of all responses. Higher scores are associated with beliefs that support group-based hierarchies. To

ensure that, some items were reverse coded (see Table C2). The questionnaire showed good internal reliability ($\alpha = .79$).

Right-Wing Authoritarianism (RWA)

RWA is measured by the short 12-item RWA scale (Funke, 2005; see Table C3). Participants had to answer the questions on a scale from (1) “Very Strongly Disagree” to (9) “Very Agree”. An example item is: “The withdrawal from tradition will turn out to be a fatal fault one day.” The final score was calculated as a mean of all responses. Higher scores show greater submission to authority and traditional norms and higher aggression towards deviants. To ensure that, some items were reverse coded (see Table C3). The scale showed good internal reliability ($\alpha = .83$).

General System Justification (GSJ)

GSJ was measured with the GSJ scale, developed by Kay and Jost (2003), evaluating the extent to which individuals perceive existing societal structures as fair and legitimate. Participants had to answer eight items on a scale from (1) “Strongly Agree” to (9) “Strongly Disagree”. An example item is: “Most policies serve the greater good.” The final score was calculated as a mean of all responses. Higher scores indicate a stronger belief in the fairness of existing systems. To confirm that some items were reverse coded (see Table C4). The scale showed good internal reliability ($\alpha = .80$).

Anti-scientific Attitudes

Anti-scientific attitudes, referring to people’s tendency to distrust scientific claims, were measured using original items. Participants had to answer eight questions on a scale from (1) “Strongly Disagree” to (9) “Strongly Agree” (see Table C5). An example item is: “We believe too often in science, and not enough in faith and feelings.” The final score was calculated as a mean of all responses. Higher scores indicate a higher distrust in science. To

ensure that, some of the items were reverse coded. The scale showed good internal reliability ($\alpha = .88$).

Conspiracy Beliefs

To measure conspiracy beliefs, items were adapted from Lantian et al. (2016; see Table C6). Participants had to answer four questions on a scale from (1) “Definitely False” to (9) “Definitely True”. An example item is: “I think the 2024 US elections will be rigged”. The final score was calculated as a mean of all responses. Higher scores indicate more conspiracy beliefs. The scale showed good internal reliability ($\alpha = .88$).

CSE General Support

General support for CSE was measured with a single question: “To what extent do you support the implementation of Comprehensive Sexuality Education (CSE) in schools?”. Participants were presented with a short explanation of what CSE entails and then had to answer with the use of a bar slider ranging from (0) “Strongly Oppose” to (100) “Strongly Support”.

CSE specific support

Specific support for CSE was measured by the question: “To what extent do you support the discussion of the following topics during age-appropriate sex education...”. Participants were presented with nine CSE topics (e.g. “sexual pleasure for men and women”) and had to indicate their support on a scale from (1) “Strongly Oppose” to (9) “Strongly Support” (see Table C7). The final score was calculated as a mean of all responses. Higher scores imply that participants endorse a greater number of topics and therefore, show higher specific support for CSE. The scale showed good internal reliability ($\alpha = .89$).

Anti-scientific Attitudes CSE

To measure anti-scientific attitudes towards CSE, original items were constructed. Participants had to answer four statements on a scale from (1) “Strongly Disagree” to (9)

“Strongly Agree” (see Table C8). An example statement is: “Teaching about the use of condoms is NOT effective in preventing STIs.” The final score was calculated as a mean of all responses, with higher scores indicating more anti-scientific beliefs towards CSE. The scale showed good internal reliability ($\alpha = .83$).

Analysis

Data analysis was performed in JASP software. Data from 1003 participants was obtained. As missing values were identified for two of the key variables - general support for CSE and symbolic ideology, these cases were excluded, leaving a final sample of 937 participants. Following that, items identified as not pro-trait (see Appendix C) were reverse coded. Items on a scale of 0 to 100 were transformed to a 1 to 9 scale for consistency (see Appendix D). Total scores were obtained for all multi-item scales through mean calculation. Consequently, descriptive statistics (M , SD , and distributions) were obtained for all variables, followed by a correlation analysis via Spearman’s rho, and reliability analysis of all multi-item measurements via Cronbach’s alpha.

Assumptions of multiple linear regression analysis - linearity, homoscedasticity, normality, multicollinearity, and outliers, were checked for all models (see Appendix D). Multiple linear regression analyses were conducted, all controlling for demographics. First, the primary predictors (RWA, SDO and GSJ) were tested in separate models for CSE general support, CSE specific support and anti-scientific attitudes CSE, respectively. After that, symbolic ideology was added to each of the models.

An exploratory analysis was performed for anti-scientific attitudes and conspiracy beliefs and CSE general support, CSE specific support and anti-scientific attitudes CSE, via three multiple linear regression models, controlling for demographics. Finally, three combined models were tested with all predictors.

Results

Descriptive Statistics

Descriptive statistics were obtained (Table 2). Most variables – symbolic ideology, RWA, SDO, GSJ, anti-scientific attitudes, conspiracy beliefs, and CSE anti-scientific attitudes, showed average mean scores, indicating balanced responses within the sample. Other variables – CSE general and specific support, had slightly higher mean scores, suggesting a larger part of the sample reported support for CSE. The standard deviation for all variables was considerably low (between 0.04 and 0.08) showing little variance in the data. All measures showed good reliability (Table 2).

Table 2

Descriptive Statistics

Variable	<i>N</i>	Min	Max	<i>M</i>	<i>SD</i>	Cronbach's α
Symbolic Ideology	937	1.00	9.00	5.10	0.07	.92
RWA	937	1.00	8.67	5.01	0.05	.83
SDO	937	1.50	8.00	3.90	0.04	.79
GSJ	937	1.00	9.00	4.90	0.05	.80
Anti-scientific Attitudes	937	1.00	9.00	4.04	0.06	.88
Conspiracy Beliefs	937	1.00	9.00	5.00	0.08	.88
CSE General Support	937	1.00	9.00	6.11	0.08	-
CSE Specific Support	937	1.00	9.00	6.44	0.06	.89
CSE Anti-scientific Attitudes	937	1.00	9.00	3.94	0.07	.83

Note. RWA = Right-wing Authoritarianism. SDO = Social Dominance Orientation. GSJ = General System Justification. CSE = Comprehensive Sex Education. Cronbach's alpha is not reported for CSE General Support as it was measured via a single item.

According to the correlation analysis via Spearman's rho (Table 3), all primary predictors were positively and significantly intercorrelated, implying a conceptual overlap.

All main constructs were significantly correlated, except GSJ and CSE general support ($p =$

.07). CSE general support was significantly and negatively correlated with symbolic ideology ($r_s = -.42; p < .01$), RWA ($r_s = -.41; p < .001$), SDO ($r_s = -.31; p < .001$), anti-scientific attitudes ($r_s = -.37; p < .001$) and conspiracy beliefs ($r_s = -.26; p < .001$), suggesting that these traits are associated with lower reported general support. Similar pattern was observed among older participants ($r_s = -.10; p < .01$) and men ($r_s = -.08; p < .05$). General and specific support showed high, significant, positive association ($r_s = .69; p < .001$), expected considering their interconnectedness. Furthermore, CSE specific support was significantly and negatively correlated with symbolic ideology ($r_s = -.49; p < .01$), RWA ($r_s = -.52; p < .001$), SDO ($r_s = -.38; p < .001$), GSJ ($r_s = -.08; p < .05$), anti-scientific attitudes ($r_s = -.39; p < .001$) and conspiracy beliefs ($r_s = -.31; p < .001$), suggesting that people scoring higher on these traits reported lower specific support. Significant correlations with age ($r_s = -.10; p < .01$), sex ($r_s = -.07; p < .05$) and educational level ($r_s = .11; p < .01$) also imply lower specific support in older, less educated participants and men. Contrastly, CSE anti-scientific attitudes was significantly and positively correlated to symbolic ideology ($r_s = .50; p < .01$), RWA ($r_s = .55; p < .001$), SDO ($r_s = .47; p < .001$), anti-scientific attitudes ($r_s = .64; p < .001$) and conspiracy beliefs ($r_s = .39; p < .001$), meaning that these traits are associated with higher anti-scientific attitudes towards CSE. Being male ($r_s = .12; p < .001$) or less educated ($r_s = -.20; p < .001$) was also associated with higher anti-scientific attitudes towards CSE.

Table 3*Correlation Matrix*

	Variable	1	2	3	4	5	6	7	8	9	10	11	12
1	Symbolic Ideology	-											
2	RWA	.64**	-										
3	SDO	.46**	.48***	-									
4	GSJ	.15**	.11***	.20***	-								
5	Anti-scientific Attitudes	.49**	.55***	.53***	.12***	-							
6	Conspiracy Beliefs	.38**	.42***	.29***	-.23***	.48***	-						
7	CSE General Support	-.42**	-.41***	-.31***	-.06	-.37***	-.26***	-					
8	CSE Specific Support	-.49**	-.52***	-.38***	-.08*	-.39***	-.31***	.69***	-				
9	CSE Anti-scientific Attitudes	.50**	.55***	.47***	.11**	.64***	.39***	-.51***	-.56***	-			
10	Age	.08*	.10**	-.07*	.22**	-.01	-.10**	-.10**	-.10**	.00	-		
11	Sex	.07*	.05	.18***	.10**	.03	.03	-.08*	-.07*	.12***	-.30***	-	
12	Educational level	-.12**	-.13***	-.14***	.08*	-.15***	-.14***	.05	.11**	-.20***	.30***	-.10**	-
13	Income	-.05	-.06	-.03	.09**	-.11***	-.08*	.01	.04	-.13***	.10**	.07*	.50***

Note. Age and Income are categorical variables. Sex is a category variable (1=female; 2=male). Educational level is a category variable (1=less than high school or high school graduate; 2=some college, no degree; 3=Bachelor's degree or higher). RWA = Right-wing Authoritarianism. SDO = Social Dominance Orientation. GSJ = General System Justification. CSE = Comprehensive Sex Education. * $p < .05$ ** $p < .01$ *** $p < .001$.

Main Analyses

To explore the effect of RWA, SDO, and GSJ on general and specific support, and anti-scientific attitudes CSE, two regression models, with and without Symbolic Ideology, were tested for each CSE attitude. Assumptions of multiple linear regression were checked. The data showed normal distribution as per visual inspection of the Q-Q plot. Linearity and homoscedasticity were assumed after a visual inspection of the Residual plot (see Appendix D). No multicollinearity was observed ($VIF < 2$). No outliers were identified through Cook's Distance. Independence of the residuals is assumed considering the nature of the study.

General Support for CSE

As displayed in Table 4, the first model, M0, significantly predicted general support CSE, $F(7, 929) = 33.818, p < .001$, explaining 20.3% of the variance ($R^2 = .203$). RWA was the strongest negative predictor ($\beta = -0.38; p < .001$), followed by SDO ($\beta = -0.09; p = .012$). Meaning that higher levels of RWA, and SDO - to a milder degree, predicted lower general support. GSJ appeared as a significant positive predictor ($\beta = 0.07; p = .029$), linking higher GSJ to higher general support. Age ($\beta = -0.10; p = .004$) and sex ($\beta = -0.07; p = .041$) were significant negative predictors, suggesting higher general support in younger participants and women.

Adding symbolic ideology to M1 increased the explained variance, $F(8, 928) = 36.644, p < .001, R^2 = .240$, therefore, improving the model. RWA ($\beta = -0.25; p < .001$) and GSJ ($\beta = 0.08; p = .011$) continued to significantly predict general support. Symbolic ideology was a significant negative predictor ($\beta = -0.26; p < .001$), indicating that conservatism predict lower general support. After including symbolic ideology, SDO did not remain significant. This implies that symbolic ideology explains the variance previously ascribed to SDO and some additional variance. Sex was no longer significant, while age

remained ($\beta = -0.09$; $p = .008$). Thus, the difference between sexes could be better explained by symbolic ideology.

These findings confirm H1 and H4, that RWA and symbolic ideology would negatively predict general support. H3 was disproved by GSJ appearing as a positive predictor, and no significant evidence was found for H2 concerning SDO after including symbolic ideology.

Table 4

Multiple Linear Regression Models CSE General Support

Predictors	M0 ($R^2 = .20$)			M1 ($R^2 = .24$)		
	β	<i>SE</i>	<i>p</i>	β	<i>SE</i>	<i>p</i>
Study variable						
RWA	-0.38	0.07	<.001	-0.25	0.07	<.001
SDO	-0.09	0.08	.012	-0.04	0.08	.267
GSJ	0.07	0.06	.029	0.08	0.06	.011
Symbolic Ideology				-0.26	0.04	<.001
Control variable						
Age	-0.10	0.05	.004	-0.09	0.05	.008
Sex	-0.07	0.16	.041	-0.06	0.15	.054
Educational level	0.00	0.10	.995	-0.01	0.10	.827
Income	-0.03	0.04	.351	-0.03	0.04	.397

Note. Age and Income are categorical variables. Sex is a category variable (1=female; 2=male). Educational level is a category variable (1=less than high school or high school graduate; 2=some college, no degree; 3=Bachelor's degree or higher). RWA = Right-wing Authoritarianism. SDO = Social Dominance Orientation. GSJ = General System Justification. CSE = Comprehensive Sex Education. Significant coefficients are in bold.

Specific Support for CSE

To predict specific support, we followed the same method (Table 5). M2 was significant, $F(7, 929) = 58.837$, $p < .001$, $R^2 = .307$, with predictors explaining 30.7% of the variance. RWA ($\beta = -0.48$; $p < .001$) and SDO ($\beta = -0.10$; $p = .002$) were significant negative predictors, suggesting that higher levels of these factors predict lower specific support. Age was the only significant demographic predictor ($\beta = -0.09$; $p = .004$), showing higher specific support in younger participants.

Adding symbolic ideology to M3 improved it slightly, $F(8, 928) = 59.928, p < .001$, $R^2 = .341$, by increasing the proportion of explained variance. Symbolic ideology was a significant negative predictor ($\beta = -0.25; p < .001$), indicating that conservatism predicted lower specific support. SDO did not remain significant, implying shared variance with symbolic ideology. Age and RWA remained significant negative predictors, even though the effect of RWA weakened ($\beta = -0.48; p < .001$). Therefore, symbolic ideology accounted for some of the variance explained by RWA in M2.

These findings support H5 and H8 that RWA and Symbolic Ideology would negatively predict specific support. No significant findings were found for H6 and H7, concerning the effect of SDO and GSJ.

Table 5

Multiple Linear Regression Models CSE Specific Support

Predictors	M2 ($R^2 = .31$)			M3 ($R^2 = .34$)		
	β	<i>SE</i>	<i>p</i>	β	<i>SE</i>	<i>p</i>
Study variable						
RWA	-0.48	0.04	<.001	-0.35	0.05	<.001
SDO	-0.10	0.05	.002	-0.05	0.05	.107
GSJ	0.03	0.04	.326	0.04	0.04	.191
Symbolic Ideology				-0.25	0.03	<.001
Control variable						
Age	-0.09	0.03	.004	-0.08	0.03	.007
Sex	-0.04	0.10	.151	-0.04	0.10	.193
Educational level	0.05	0.07	.131	0.04	0.07	.188
Income	-0.05	0.03	.160	-0.04	0.03	.183

Note. Age and Income are categorical variables. Sex is a category variable (1=female; 2=male). Educational level is a category variable (1=less than high school or high school graduate; 2=some college, no degree; 3=Bachelor's degree or higher). RWA = Right-wing Authoritarianism. SDO = Social Dominance Orientation. GSJ = General System Justification. CSE = Comprehensive Sex Education. Significant coefficients are in bold.

Anti-scientific Attitudes CSE

M4, predicting anti-scientific attitudes CSE, was significant, $F(7, 929) = 78.044, p < .001, R^2 = .370$, indicating 37% explained variance in the model (Table 6). RWA ($\beta = 0.46; p < .001$) and SDO ($\beta = 0.18; p < .001$) were significant positive predictors. Therefore, people

scoring higher on these were more likely to hold anti-scientific attitudes towards CSE.

Educational level ($\beta = -0.08$; $p = .012$) was a significant negative predictor, suggesting that less educated participants are more prone to holding anti-scientific attitudes towards CSE.

Symbolic ideology improved M5 slightly, $F(8, 928) = 73.883$, $p < .001$, $R^2 = .389$, increasing the explained variance to 38.9%. Symbolic ideology emerged as a significant positive predictor ($\beta = 0.19$; $p < .001$), indicating that conservatism predicted higher anti-scientific attitudes towards CSE. Educational level remained, indicating a unique contribution to the model. RWA ($\beta = 0.36$; $p < .001$) and SDO ($\beta = 0.14$; $p < .001$) decreased slightly, implying shared variance with symbolic ideology.

These findings support H9, H10 and H12, that RWA, SDO and symbolic ideology positively predict anti-scientific attitudes towards CSE. No significant findings were found concerning the effect of GSJ.

Table 6

Multiple Linear Regression Models CSE Anti-scientific Attitudes

Predictors	M4 ($R^2 = .37$)			M5 ($R^2 = .39$)		
	β	<i>SE</i>	<i>p</i>	β	<i>SE</i>	<i>p</i>
Study variable						
RWA	0.46	0.05	<.001	0.36	0.05	<.001
SDO	0.18	0.06	<.001	0.14	0.06	<.001
GSJ	0.00	0.04	.984	-0.01	0.04	.831
Symbolic Ideology				0.19	0.03	<.001
Control variable						
Age	0.02	0.04	.610	0.01	0.04	.775
Sex	0.05	0.12	.056	0.05	0.11	.071
Educational level	-0.08	0.08	.012	-0.08	0.08	.017
Income	-0.04	0.03	.154	-0.05	0.03	.125

Note. Age and Income are categorical variables. Sex is a category variable (1=female; 2=male). Educational level is a category variable (1=less than high school or high school graduate; 2=some college, no degree; 3=Bachelor's degree or higher). RWA = Right-wing Authoritarianism. SDO = Social Dominance Orientation. GSJ = General System Justification. CSE = Comprehensive Sex Education. Significant coefficients are in bold.

Exploratory Analyses

To explore the effect of anti-scientific attitudes and conspiracy beliefs three multiple regression analyses were performed, one for each CSE attitude. Finally, all predictors were combined into three final models to allow for comparison. All models were preceded by a check of assumptions for multiple regression (see Appendix D) and controlled for demographics.

General Support CSE

Model M6 (Table 7) was significant, $F(6, 930) = 32.479, p < .001$, explaining 17.3% of the variance ($R^2 = .173$). Anti-scientific attitudes ($\beta = -0.30; p < .001$) and conspiracy beliefs ($\beta = -0.15; p < .001$), significantly and negatively predicted general support. Therefore, higher levels of these predicted lower general support, observing a larger effect of anti-scientific attitudes. Similarly to M0 and M1 (Table 4), age ($\beta = -0.14; p < .001$) and sex ($\beta = -0.09; p = .003$) were significant negative predictors, suggesting greater support among younger participants and women.

The combined model, M7 (Table 10), showed an increased explanatory power of 25.5%, $F(10, 926) = 31.620, p < .001, R^2 = .255$. RWA ($\beta = -0.18; p < .001$), symbolic ideology ($\beta = -0.23; p < .001$) and anti-scientific attitudes ($\beta = -0.14; p < .001$) were significant negative predictors. Therefore, higher reported levels of these factors predicted lower general support. Conspiracy beliefs did not remain significant, suggesting that its variance could be better explained by other predictors. As in M0, GSJ positively predicted general support, even though the result is marginally significant ($\beta = 0.06; p = .045$). Age ($\beta = -0.09; p = .004$) and sex ($\beta = -0.07; p = .026$) remained significant.

Table 7

Exploratory Analysis General Support CSE

Predictors	M6 ($R^2=.17$)			M7 ($R^2=.26$)		
	β	SE	p	β	SE	p

Study variable						
Anti-scientific Attitudes	-0.30	0.05	<.001	-0.14	0.06	<.001
Conspiracy Beliefs	-0.15	0.04	<.001	-0.04	0.04	.224
RWA				-0.18	0.08	<.001
SDO				0.00	0.08	.967
GSJ				0.06	0.06	.045
Symbolic Ideology				-0.23	0.04	<.001
Control variable						
Age	-0.14	0.05	<.001	-0.09	0.05	.004
Sex	-0.09	0.15	.003	-0.07	0.15	.026
Educational level	0.02	0.11	.545	-0.02	0.10	.738
Income	0.04	0.04	.243	-0.04	0.04	.284

Note. Age and Income are categorical variables. Sex is a category variable (1=female; 2=male). Educational level is a category variable (1=less than high school or high school graduate; 2=some college, no degree; 3=Bachelor's degree or higher). Significant coefficients are in bold.

Specific Support CSE

Model M8 (Table 8) was significant, $F(6, 930) = 40.209, p < .001$, explaining 20.6% of the variance ($R^2 = .206$). Both anti-scientific attitudes ($\beta = -0.31; p < .001$) and conspiracy beliefs ($\beta = -0.16; p < .001$), significantly and negatively predicted specific support.

Therefore, participants scoring higher on these showed lower specific support, with anti-scientific attitudes having a larger effect. Age ($\beta = -0.17; p < .001$) and sex ($\beta = -0.09; p = .005$) were significant negative predictors, suggesting greater support among younger participants and women. Educational level ($\beta = 0.09; p = .015$) was a significant positive predictor, implying that more educated participants showed higher specific support.

Expanding on this, M9 (Table 8) increased the explained variance to 34.6%, $F(10, 926) = 49.045, p < .001, R^2 = .346$. RWA ($\beta = -0.31; p < .001$) and symbolic ideology ($\beta = -0.23; p < .001$) were significant negative predictors. Thus, participants with higher levels of these traits reported lower specific support. Age ($\beta = -0.09; p = .004$) remained significant, suggesting lower support among older participants. All other predictors from M8 lost significant predicting power, suggesting that variability in anti-scientific attitudes, conspiracy beliefs, sex and education, could be better captured by RWA and symbolic ideology.

Table 8*Exploratory Analysis Specific Support CSE*

Predictors	M8 ($R^2=.21$)			M9 ($R^2=.35$)		
	β	<i>SE</i>	<i>p</i>	β	<i>SE</i>	<i>p</i>
Study variable						
Anti-scientific Attitudes	-0.31	0.03	<.001	-0.07	0.04	.060
Conspiracy Beliefs	-0.16	0.03	<.001	-0.05	0.03	.173
RWA				-0.31	0.05	<.001
SDO				-0.30	0.06	.387
GSJ				0.02	0.04	.442
Symbolic Ideology				-0.23	0.03	<.001
Control variable						
Age	-0.17	0.03	<.001	-0.09	0.03	.004
Sex	-0.09	0.11	.005	-0.04	0.10	.141
Educational level	0.09	0.07	.015	0.04	0.07	.215
Income	-0.06	0.03	.107	-0.05	0.03	.147

Note. Age and Income are categorical variables. Sex is a category variable (1=female; 2=male). Educational level is a category variable (1=less than high school or high school graduate; 2=some college, no degree; 3=Bachelor's degree or higher). Significant coefficients are in bold.

Anti-scientific attitudes CSE

Model M10 (Table 9) was significant, $F(6, 930) = 125.190$, $p < .001$, explaining 44.7% of the variance ($R^2 = .447$). Anti-scientific attitudes ($\beta = 0.59$; $p < .001$) and conspiracy beliefs ($\beta = 0.09$; $p < .001$) positively predicted CSE anti-scientific attitudes. Therefore, participants with higher levels of these reported higher anti-scientific attitudes towards CSE. Age ($\beta = 0.07$; $p = .006$) and sex ($\beta = 0.11$; $p < .001$) were significant positive predictors, suggesting higher anti-scientific attitudes towards CSE among older participants and men. Educational level ($\beta = 0.07$; $p = .006$) was a significant negative predictor, implying that more educated participants hold weaker anti-scientific attitudes towards CSE.

The combined model, M11, was significant, $F(10, 926) = 92.304$, $p < .001$, showing increased explained variance ($R^2 = .499$; Table 9). RWA ($\beta = 0.20$; $p < .001$), symbolic ideology ($\beta = 0.12$; $p < .001$) and anti-scientific attitudes ($\beta = 0.43$; $p < .001$) were significant positive predictors. Therefore, participants with higher reported levels of these factors

showed higher anti-scientific attitudes towards CSE. Sex ($\beta = 0.08$; $p = .003$) and educational level ($\beta = -0.07$; $p = .023$) remained significant, indicating that men and less educated participants reported higher anti-scientific attitudes towards CSE.

Table 9*Exploratory Analysis Anti-scientific Attitudes CSE*

Predictors	M10 ($R^2=.45$)			M11 ($R^2=.50$)		
	β	<i>SE</i>	<i>p</i>	β	<i>SE</i>	<i>p</i>
Study variable						
Anti-scientific Attitudes	.59	.03	<.001	.43	.04	<.001
Conspiracy Beliefs	.09	.03	<.001	.03	.03	.303
RWA				.20	.05	<.001
SDO				.03	.06	.351
GSJ				-.00	.04	.964
Symbolic Ideology				.12	.03	<.001
Control variable						
Age	.07	.03	.006	.03	.03	.341
Sex	.11	.11	<.001	.08	.10	.003
Educational level	-.09	.07	.002	-.07	.07	.023
Income	-.02	.03	.570	-.02	.03	.401

Note. Age and Income are categorical variables. Sex is a category variable (1=female; 2=male). Educational level is a category variable (1=less than high school or high school graduate; 2=some college, no degree; 3=Bachelor's degree or higher). Significant coefficients are in bold.

Summary of Findings

As shown in Table 10, the results partially confirmed the study's hypotheses.

Additionally, the combined exploratory analyses showed a unique contribution of anti-scientific attitudes, but not of conspiracy beliefs, as predictors of general and specific support.

Table 10*Hypothesis Evaluation*

Hypothesis	Predictor	Direction	Dependant Variable	Reject H0
1	RWA	-	CSE General Support	Yes
2	SDO	-	CSE General Support	No
3	GSJ	-	CSE General Support	No

4	Symbolic Ideology	-	CSE General Support	Yes
5	RWA	-	CSE Specific Support	Yes
6	SDO	-	CSE Specific Support	No
7	GSJ	-	CSE Specific Support	No
8	Symbolic Ideology	-	CSE Specific Support	Yes
9	RWA	+	Anti-scientific Attitudes CSE	Yes
10	SDO	+	Anti-scientific Attitudes CSE	Yes
11	GSJ	+	Anti-scientific Attitudes CSE	No
12	Symbolic Ideology	+	Anti-scientific Attitudes CSE	Yes

Discussion

The current study explored psychological and sociopolitical predictors of general and policy-specific support and anti-scientific attitudes towards CSE. By investigating previously understudied constructs it provides a more nuanced perspective on the formation of resistance. The hypotheses established in the beginning were partially confirmed (see Table 10), with RWA and symbolic conservatism emerging as consistent predictors.

Consistent with prior research, support for CSE in the sample was above average, with conservatism being the strongest predictor of opposition (Eisenberg et al., 2009; Canan & Jozkowski, 2016). RWA and symbolic conservatism predicted negative attitudes towards CSE, showing that resistance may originate from identification with political discourses emphasizing traditional values, aligning with previous studies suggesting moral reasons as a precursor to opposition (Constantine et al., 2007). These findings support the notion that resistance to CSE may reflect broader resistance to change and deference to authority (Jost et al., 2003). The results also align with prior research linking RWA, conservatism and anti-scientific attitudes (Azevedo & Jost, 2021; Remsö & Renström, 2023; Rutjens et al., 2021), reinforcing these associations to the context of CSE. Future research could investigate the

distinct roles of the RWA dimensions – authoritarian submission, authoritarian aggression, and conventionalism, to provide more nuanced theoretical insights.

Surprisingly, SDO did not predict support for CSE once symbolic ideology was considered. According to the Dual-Process Motivational Model (Duckitt & Sibley, 2009), RWA focuses on preserving social order, while SDO reflects a preference for hierarchical structures. Since CSE challenges traditional values, but not intergroup dominance directly, RWA remained a strong predictor, while the effect of SDO was absorbed by symbolic ideology that may better capture variance in support. Future studies could explore whether symbolic conservatism mediates the relationship between SDO and CSE support.

Still, SDO significantly predicted anti-scientific attitudes towards CSE, suggesting distrust in the scientific community as an inferior group by people with higher SDO, and specifically intergroup dominance dimension (Ho et al., 2012). Contrastly, some items used to measure anti-scientific attitudes referenced “morality” (Table C8), rejection of which may indicate a conflict of values. This aligns with research suggesting that individuals high in SDO, particularly anti-egalitarianism, oppose equity-promoting policies (Ho et al., 2012). Future research should explore the distinctive roles of SDO’s intergroup dominance and anti-egalitarianism dimensions in predicting CSE attitudes and trust in science.

Contrary to expectations, GSJ positively predicted general support for CSE, despite showing a negative direct correlation (Table 3). This suggests that after other predictors were considered, GSJ had a unique contribution. Liaquat et al. (2023) explain that GSJ fosters opposition to progressive policies if they are perceived as threatening social order or bringing uncertainty. The single-question measure used for general support may fail to translate the progressive nature of CSE and therefore, capture support for existing sex education practices, aligning with the system-justification tendencies (Jost & Benaji, 1994). This could also explain the lack of significant effect on specific support and anti-scientific attitudes, where

more comprehensive measures are used. Further research could incorporate multi-item measures to capture nuances in general support or study perceptions of normativity in sex education to clarify the role of GSJ.

The exploratory analysis revealed the central role of anti-scientific attitudes in shaping CSE attitudes, specifically in general support and anti-scientific CSE attitudes, highlighting the importance of exploring trust in science in theoretical models of ideological resistance to CSE. This can be expected considering the CSE approach rooted in scientific evidence, and also aligns with previous findings showing how anti-scientific attitudes may shape public's opinion on evidence-informed policies such as vaccines (Kossowska et al., 2021). Future research should test these relationships via a confirmatory analysis, with the possibility to investigate a mediating or moderating role of anti-scientific beliefs in the relation between ideology and CSE attitudes.

Among the socio demographics, age and education emerged as consistent predictors of CSE attitudes. Older participants showed lower support for CSE implementation, consistent with prior research showing an association between age and conservative attitudes (Cornelis et al., 2008). Notably, higher educational attainment was associated with less anti-scientific attitudes, aligning with previous studies showing low education as a predictor of scientific scepticism (Azevedo & Jost, 2021). As such, education can serve as a protective factor against distrust in science. Therefore, fostering scientific literacy early in life may be crucial to navigating anti-scientific views later and promoting public acceptance of evidence-based policies.

Limitations

The study used a large nationally representative US sample ensuring contextual relevance and high statistical power but limiting its generalizability for different political or societal contexts. Future research should broaden its scope by focusing on other countries

where debates over CSE hinder its adoption. The cross-sectional design also limits causal inferences. While it is unlikely for attitudes towards CSE to precede the dispositions studied, from a design standpoint this could not be disproven. A longitudinal approach could investigate how attitudes evolve over time and associate them with the relevant political context at different time points. Alternatively, experimental studies could be designed to expose participants to political or scientific information and to measure its effect on CSE attitudes, allowing for the identification of causal relationships. Finally, although the main predictors were significantly intercorrelated, no multicollinearity was detected ($VIF < 2$). This supports the unique contributions of the predictors to each model and urges future research to explore potential mediating or moderating models to reveal their distinctive role in shaping CSE attitudes.

Implications

In addition to those already mentioned, these results offer further implications for research and policy development. Firstly, RWA and symbolic conservatism significantly predicted all three CSE attitudes, revealing the need to explore their different dimensions separately for a more insightful view of the mechanisms shaping CSE opposition. Secondly, anti-scientific attitudes appeared as a stable predictor of general support and anti-scientific CSE attitudes, suggesting a possible mediator or moderator role between ideology and CSE attitudes that could be further investigated. Finally, the unexpected positive relationship between GSJ and general support should be tested to determine its replicability and contextual relevance.

Considering the legislative nature of CSE, the results are also highly relevant for policymakers. Targeted campaigns could frame CSE accordingly, highlighting the associated health benefits, personal responsibility and expected family stability, to reach groups with more conservative values. Moreover, the role of anti-scientific attitudes, while requiring

further investigation, should not be discarded. Educational campaigns should directly address common misconceptions and prioritize early efforts to foster scientific literacy, serving as a long-term strategy for strengthening public support for evidence-informed policies such as CSE.

Conclusion

The current study explored a significant gap in psychological, sociological and political research - specifically, by examining which psychological and socio-political factors predict attitudes towards CSE. The study aimed to contribute to a more nuanced understanding of the underpinnings of attitudes towards CSE in the US context where the issue has been heavily politicized. The results have both practical and theoretical implications that can help shed light over the pressing issue of CSE and foster a dialogue towards its incorporation into the educational curricula.

References

- Adorno, T. W., Frenkel-Brunswik, E., Levinson, D. J., & Sanford, R. N. (1950). *The Authoritarian Personality*. New York: Harper and Row.
- Altemeyer, B. (1981). *Right-wing authoritarianism*. Winnipeg, Canada: University of Manitoba Press.
- Azevedo, F., & Jost, J. T. (2021). The ideological basis of antiscientific attitudes: Effects of authoritarianism, conservatism, religiosity, social dominance, and system justification. *Group Processes & Intergroup Relations*, 24(4), 518–549.
<https://doi.org/10.1177/1368430221990104>
- Berne, L. A., & Huberman, B. K. (1995). Sexuality education. *Phi Delta Kappan*, 77(3), 229.
- Bialystok, L., Wright, J., Berzins, T., Guy, C., & Osborne, E. (2020). The appropriation of sex education by conservative populism. *Curriculum Inquiry*, 50(4), 330–351.
<https://doi.org/10.1080/03626784.2020.1809967>
- Bleakley, A., Hennessy, M., & Fishbein, M. (2006). Public opinion on sex education in US schools. *Archives of Pediatrics and Adolescent Medicine*, 160(11), 1151.
<https://doi.org/10.1001/archpedi.160.11.1151>
- Canan, S. N., & Jozkowski, K. N. (2016). Sexual Health Education Topics in Schools: Inclusion and timing preferences of a sample of Southern U.S. college students. *Sexuality Research and Social Policy*, 14(2), 143–156.
<https://doi.org/10.1007/s13178-016-0251-z>
- Chandra-Mouli, V., Ferguson, B. J., Plesons, M., Paul, M., Chalasani, S., Amin, A., Pallitto, C., Sommers, M., Avila, R., Biaukula, K. V. E., Husain, S., Janušonytė, E., Mukherji, A., Nergiz, A. I., Phaladi, G., Porter, C., Sauvarin, J., Camacho-Huber, A. V., Mehra, S., . . . Engel, D. M. C. (2019). The political, research, programmatic, and social responses to adolescent sexual and reproductive health and rights in the 25 years since

- the International Conference on Population and Development. *Journal of Adolescent Health*, 65(6), S16–S40. <https://doi.org/10.1016/j.jadohealth.2019.09.011>
- Chavula, M. P., Zulu, J. M., & Hurtig, A. (2022). Factors influencing the integration of comprehensive sexuality education into educational systems in low- and middle-income countries: a systematic review. *Reproductive Health*, 19(1).
<https://doi.org/10.1186/s12978-022-01504-9>
- Chen, L., Zhang, Y., Young, R., Wu, X., & Zhu, G. (2020). Effects of Vaccine-Related conspiracy theories on Chinese young adults' perceptions of the HPV vaccine: an experimental study. *Health Communication*, 36(11), 1343–1353.
<https://doi.org/10.1080/10410236.2020.1751384>
- Constantine, N. A., Jerman, P., & Huang, A. X. (2007). California Parents' Preferences and Beliefs Regarding School-Based Sex Education Policy. *Perspectives on Sexual and Reproductive Health*, 39(3), 167–175. <https://doi.org/10.1363/3916707>
- Cornelis, I., Van Hiel, A., Roets, A., & Kossowska, M. (2008). Age Differences in Conservatism: Evidence on the mediating effects of personality and cognitive style. *Journal of Personality*, 77(1), 51–88. <https://doi.org/10.1111/j.1467-6494.2008.00538.x>
- Duckitt, J., & Sibley, C. G. (2009). A Dual-Process motivational model of ideology, politics, and prejudice. *Psychological Inquiry*, 20(2–3), 98–109.
<https://doi.org/10.1080/10478400903028540>
- Eisenberg, M. E., Bernat, D. H., Bearinger, L. H., & Resnick, M. D. (2009). Condom provision and education in Minnesota public schools: a telephone survey of parents*. *Journal of School Health*, 79(9), 416–424. <https://doi.org/10.1111/j.1746-1561.2009.00429.x>

- Ellis, C., & Stimson, J. A. (2009). Symbolic ideology in the American electorate. *Electoral Studies*, 28(3), 388–402. <https://doi.org/10.1016/j.electstud.2009.05.010>
- Funke, F. (2005). The Dimensionality of Right-Wing Authoritarianism: Lessons from the Dilemma between Theory and Measurement. *Political Psychology*, 26(2), 195–218. <https://doi.org/10.1111/j.1467-9221.2005.00415.x>
- Goldfarb, E. S., & Lieberman, L. D. (2020). Three Decades of Research: The case for Comprehensive Sex Education. *Journal of Adolescent Health*, 68(1), 13–27. <https://doi.org/10.1016/j.jadohealth.2020.07.036>
- Ho, A. K., Sidanius, J., Kteily, N., Sheehy-Skeffington, J., Pratto, F., Henkel, K. E., Foels, R., & Stewart, A. L. (2015). Social Dominance Orientation-7 scale [Dataset]. In *PsycTESTS Dataset*. <https://doi.org/10.1037/t46233-000>
- Ho, A. K., Sidanius, J., Pratto, F., Levin, S., Thomsen, L., Kteily, N., & Sheehy-Skeffington, J. (2012). Social dominance orientation. *Personality and Social Psychology Bulletin*, 38(5), 583–606. <https://doi.org/10.1177/0146167211432765>
- Jost, J. T., & Banaji, M. R. (1994). The role of stereotyping in system-justification and the production of false consciousness. *British Journal of Social Psychology*, 33(1), 1–27. <https://doi.org/10.1111/j.2044-8309.1994.tb01008.x>
- Jost, J. T., Glaser, J., Kruglanski, A. W., & Sulloway, F. J. (2003). Political conservatism as motivated social cognition. *Psychological Bulletin*, 129(3), 339–375. <https://doi.org/10.1037/0033-2909.129.3.339>
- Kabiru, C. W. (2019). Adolescents' sexual and reproductive health and rights: What has been achieved in the 25 years since the 1994 International Conference on Population and Development and what remains to be done? *Journal of Adolescent Health*, 65(6), S1–S2. <https://doi.org/10.1016/j.jadohealth.2019.09.010>

- Kantor, L., & Levitz, N. (2017). Parents' views on sex education in schools: How much do Democrats and Republicans agree? *PLoS ONE*, 12(7), e0180250.
<https://doi.org/10.1371/journal.pone.0180250>
- Kay, A. C., & Jost, J. T. (2003). Complementary justice: effects of “Poor but happy” and “Poor but honest” stereotype exemplars on system justification and implicit activation of the justice motive. *Journal of Personality and Social Psychology*, 85(5), 823–837.
<https://doi.org/10.1037/0022-3514.85.5.823>
- Kerr, J. R., & Wilson, M. S. (2021). Right-wing authoritarianism and social dominance orientation predict rejection of science and scientists. *Group Processes & Intergroup Relations*, 24(4), 550–567. <https://doi.org/10.1177/1368430221992126>
- Kossowska, M., Szwed, P., & Czarnek, G. (2021). Ideology shapes trust in scientists and attitudes towards vaccines during the COVID-19 pandemic. *Group Processes & Intergroup Relations*, 24(5), 720–737. <https://doi.org/10.1177/13684302211001946>
- Lantian, A., Muller, D., Nurra, C., & Douglas, K. M. (2016). Measuring Belief in Conspiracy Theories: Validation of a French and English Single-Item Scale. *International Review of Social Psychology*, 29(1), 1. <https://doi.org/10.5334/irsp.8>
- Liang, M., Simelane, S., Fillo, G. F., Chalasani, S., Wen, K., Canelos, P. S., Jenkins, L., Moller, A., Chandra-Mouli, V., Say, L., Michielsen, K., Engel, D. M. C., & Snow, R. (2019). The state of adolescent sexual and reproductive health. *Journal of Adolescent Health*, 65(6), S3–S15. <https://doi.org/10.1016/j.jadohealth.2019.09.015>
- Liaquat, U., Jost, J. T., & Balcetis, E. (2023). System justification motivation as a source of backlash against equality-promoting policies—and what to do about it. *Social Issues and Policy Review*, 17(1), 131–154. <https://doi.org/10.1111/sipr.12093>

- Ott, M. A., & Santelli, J. S. (2007). Abstinence and abstinence-only education. *Current Opinion in Obstetrics & Gynecology*, 19(5), 446–452.
<https://doi.org/10.1097/gco.0b013e3282efdc0b>
- Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, 67(4), 741–763. <https://doi.org/10.1037/0022-3514.67.4.741>
- Remsö, A., & Renström, E. A. (2023). Ideological predictors of anti-science attitudes: exploring the impact of group-based dominance and populism in North America and Western Europe. *Frontiers in Social Psychology*, 1.
<https://doi.org/10.3389/frsps.2023.1303157>
- Rutjens, B. T., Sengupta, N., Van Der Lee, R., Van Koningsbruggen, G. M., Martens, J. P., Rabelo, A., & Sutton, R. M. (2021). Science skepticism across 24 countries. *Social Psychological and Personality Science*, 13(1), 102–117.
<https://doi.org/10.1177/19485506211001329>
- Santelli, J. S., Kantor, L. M., Grilo, S. A., Speizer, I. S., Lindberg, L. D., Heitel, J., Schalet, A. T., Lyon, M. E., Mason-Jones, A. J., McGovern, T., Heck, C. J., Rogers, J., & Ott, M. A. (2017). Abstinence-Only-Until-Marriage: An Updated review of U.S. policies and programs and their impact. *Journal of Adolescent Health*, 61(3), 273–280.
<https://doi.org/10.1016/j.jadohealth.2017.05.031>
- Shepherd, L. M., Sly, K. F., & Girard, J. M. (2017). Comparison of comprehensive and abstinence-only sexuality education in young African American adolescents. *Journal of Adolescence*, 61(1), 50–63. <https://doi.org/10.1016/j.adolescence.2017.09.006>
- Social Security Act §510*. (2017). Retrieved March 12, 2025, from
https://www.ssa.gov/OP_Home/ssact/title05/0510.htm#ft28

UNESCO. (2018). International technical guidance on sexuality education: an evidence-informed approach. In *UNESCO eBooks*. <https://doi.org/10.54675/uqrm6395>

United Nations Population Fund. (1994). *Programme of action of the International Conference on Population and Development*. Retrieved March 2, 2025, from https://www.unfpa.org/sites/default/files/event-pdf/PoA_en.pdf#

Van Bavel, J. J., Gadarian, S. K., Knowles, E., & Ruggeri, K. (2024). Political polarization and health. *Nature Medicine*, 30(11), 3085–3093. <https://doi.org/10.1038/s41591-024-03307-w>

Appendix A

Description of CSE - Quote from UNESCO (2018)

CSE is education delivered in formal and non-formal settings that is:

Scientifically accurate: the content of CSE is based on facts and evidence related to SRH, sexuality and behaviours.

Incremental: CSE is a continuing educational process that starts at an early age, and where new information builds upon previous learning, using a spiral-curriculum approach.

Age- and developmentally-appropriate: the content of CSE is responsive to the changing needs and capabilities of the child and the young person as they grow. Based on the age and development of learners, CSE addresses developmentally-relevant topics when it is most timely for their health and well-being. It accommodates developmental diversity; adapts content when cognitive and emotional development is delayed; and is presented when the internalization of SRH and relationship-related messages is most likely.

Curriculum based: CSE is included within a written curriculum that guides educators' efforts to support students' learning. The curriculum includes key teaching objectives, the development of learning objectives, the presentation of concepts, and the delivery of clear key messages in a structured way. It can be delivered in either in-school or out-of-school settings.

Comprehensive: CSE provides opportunities to acquire comprehensive, accurate, evidence-informed and age-appropriate information on sexuality. It addresses sexual and reproductive health issues, including, but not limited to: sexual and reproductive anatomy and physiology; puberty and menstruation; reproduction, modern contraception, pregnancy and childbirth; and STIs, including HIV and AIDS. CSE covers the full range of topics that are important for all learners to know, including those that may be challenging in some social and cultural contexts. It supports learners' empowerment by improving their analytical, communication

and other life skills for health and well-being in relation to: sexuality, human rights, a healthy and respectful family life and interpersonal relationships, personal and shared values, cultural and social norms, gender equality, non-discrimination, sexual behaviour, violence and gender-based violence (GBV), consent and bodily integrity, sexual abuse and harmful practices such as child, early and forced marriage (CEFM) and female genital mutilation/cutting (FGM/C). ‘Comprehensive’ also refers to the breadth and depth of topics and to content that is consistently delivered to learners over time, throughout their education, rather than a one-off lesson or intervention.

Appendix B

Informed Consent Form

Dear Participant,

We are a team of international researchers who invite you to participate in a study on the current political situation in the United States.

Purpose of this research

The purpose of this research is to gain insights into people's political attitudes and opinions and its associated psychology. The study asks you to answer questions about your views on politics, the political parties, ideology, political leadership, and the like. This research can help us better understand why and how people are attracted to political topics. Since politics is a hotly debated subject, we would like to say we do not have a 'political agenda'. We are **not** interested in **which** specific political issues you support but rather in the **complexity** with which political issues tend to **arise**.

Anonymity

No personally identifying information will be collected. Any research data published in scientific journals or elsewhere will be anonymous and cannot be traced back to you. This completely anonymized data will be made publicly available.

About this study

Participation will take about 40 minutes on average. Please take the survey in one sitting.

You participate voluntarily and can choose not to take part. You can agree to take part and later change your mind. Your decision will not be held against you.

1. Consent We're inviting you to take a survey for research. This survey is completely voluntary. There are no negative consequences if you don't want to take it. If you start the survey, you can always change your mind and stop at any time. After reading the instructions

above, please indicate whether you would like to participate in this survey. By selecting "Yes, I consent to participate", you consent to the terms and conditions described above.

- Yes, I consent to participate
- No

2. Data quality We have **implemented several attention questions** and controls throughout this survey. This is done so that our research can be **reproduced** by other researchers in other labs/countries - i.e., good scientific practices. Will you answer the questions openly and truthfully?

- **Yes, I will** answer the questions openly and truthfully
- I will **not** answer the questions openly and truthfully

3. Pledge I pledge to take this survey in one sitting.

- Yes, I pledge to take this survey in **one** sitting.

Appendix C

Measurements

Table C1*Items used for measuring Symbolic Ideology*

Variable Code	Item	Possible Values	Pro-trait
Sym_Ideo_Gen	In terms of the two major ideologies in the U.S., where would you place yourself?	Strongly liberal (1) (left) - Strongly conservative (9) (right)	Yes
Sym_Ideo_Soc	How about in terms of social and cultural issues? (e.g., abortion, separation of church and state, affirmative action)	Strongly liberal (1) (left) - Strongly conservative (9) (right)	Yes
Sym_Ideo_Eco	How about in terms of economical issues? (e.g., taxation, welfare, privatization of social security)	Strongly liberal (1) (left) - Strongly conservative (9) (right)	Yes

Note. Sym_Ideo_Soc and Sym_Ideo_Eco were transformed from scale one to 100 to a scale of 1 to 9.

Table C2*RWA Scale*

Variable Code	Item	Possible Values	Pro-trait
RWA_1	What our country needs instead of more "civil rights" is a good stiff dose of law and order.	Very strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Very strongly agree (9)	Yes
RWA_2	What our country really needs is a strong, determined	Very strongly disagree (1) - Disagree (3) -	Yes

	President which will crush the evil and set us on our right way again.	Neither agree nor disagree (5) - Agree (7) - Very strongly agree (9)	
RWA_3	There is no such crime to justify capital punishment.	Very strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Very strongly agree (9)	No
RWA_4	It is important to protect the rights of radicals and deviants in all ways.	Very strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Very strongly agree (9)	No
RWA_5	Obedience and respect for authority are the most important values children should learn.	Very strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Very strongly agree (9)	Yes
RWA_6	The real keys to the "good life" are obedience, discipline, and virtue.	Very strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Very strongly agree (9)	Yes
RWA_7	The days when women are submissive should belong strictly in the past. A "woman's place" in society should be wherever she wants to be.	Very strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Very strongly agree (9)	No
RWA_8	It is good that nowadays young people have greater freedom "to make their own rules" and	Very strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree	No

	to protest against things they don't like.	(7) - Very strongly agree (9)	
RWA_9	The withdrawal from tradition will turn out to be a fatal fault one day.	Very strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Very strongly agree (9)	Yes
RWA_10	Being virtuous and law-abiding is in the long run better for us than permanently challenging the foundation of our society.	Very strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Very strongly agree (9)	Yes
RWA_11	People should develop their own personal standards about good and evil and pay less attention to the Bible and other old, traditional forms of religious guidance.	Very strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Very strongly agree (9)	No
RWA_12	Homosexual long-term relationships should be treated as equivalent to marriage.	Very strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Very strongly agree (9)	No

Table C3*SDO Scale*

Variable Code	Item	Possible Values	Pro-trait
SDO7_1	Some groups of people must be kept in their place.	Extremely opposed (1) - Strongly oppose - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat	Yes

		favor - Strongly favor – Extremely favor (9)	
SDO7_2	It's probably a good thing that certain groups are at the top and other groups are at the bottom.	Extremely opposed (1) - Strongly oppose - - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	Yes
SDO7_3	An ideal society requires some groups to be on top and others to be on the bottom.	Extremely opposed (1) - Strongly oppose - - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	Yes
SDO7_4	Some groups of people are simply inferior to other groups.	Extremely opposed (1) - Strongly oppose - - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	Yes
SDO7_5	Groups at the bottom are just as deserving as groups at the top.	Extremely opposed (1) - Strongly oppose - - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	No
SDO7_6	No one group should dominate in society.	Extremely opposed (1) - Strongly oppose - - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly	No

		favor – Extremely favor (9)	
SDO7_7	Groups at the bottom should not have to stay in their place.	Extremely opposed (1) - Strongly oppose - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	Yes
SDO7_8	Group dominance is a poor principle.	Extremely opposed (1) - Strongly oppose - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	No
SDO7_9	We should not push for group equality.	Extremely opposed (1) - Strongly oppose - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	No
SDO7_10	We shouldn't try to guarantee that every group has the same quality of life.	Extremely opposed (1) - Strongly oppose - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	Yes
SDO7_11	It is unjust to try to make groups equal.	Extremely opposed (1) - Strongly oppose - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely	Yes

		favor (9)	
SDO7_12	Group equality should not be our primary goal.	Extremely opposed (1) - Strongly oppose - - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	Yes
SDO7_13	We should work to give all groups an equal chance to succeed.	Extremely opposed (1) - Strongly oppose - - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	No
SDO7_14	We should do what we can to equalize conditions for different groups.	Extremely opposed (1) - Strongly oppose - - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	No
SDO7_15	No matter how much effort it takes, we ought to strive to ensure that all groups have the same chance in life.	Extremely opposed (1) - Strongly oppose - - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	No
SDO7_16	Group equality should be our ideal.	Extremely opposed (1) - Strongly oppose - - Somewhat oppose - Slightly oppose - Neutral - Slightly favor - Somewhat favor - Strongly favor – Extremely favor (9)	No

Table C4*GSJ Scale*

Variable Code	Item	Possible Values	Pro-trait
SJ_Gen_1	In general, you find society to be fair.	Strongly agree (1) - Agree - Neither agree nor disagree (5) - Disagree - Strongly disagree (9)	Yes
SJ_Gen_2	In general, the American system operates as it should.	Strongly agree (1) - Agree - Neither agree nor disagree (5) - Disagree - Strongly disagree (9)	Yes
SJ_Gen_3	American society needs to be radically restructured.	Strongly agree (1) - Agree - Neither agree nor disagree (5) - Disagree - Strongly disagree (9)	No
SJ_Gen_4	The United States is the best country in the world to live in.	Strongly agree (1) - Agree - Neither agree nor disagree (5) - Disagree - Strongly disagree (9)	Yes
SJ_Gen_5	Most policies serve the greater good.	Strongly agree (1) - Agree - Neither agree nor disagree (5) - Disagree - Strongly disagree (9)	Yes
SJ_Gen_6	Everyone has a fair shot at wealth and happiness.	Strongly agree (1) - Agree - Neither agree nor disagree (5) - Disagree - Strongly disagree (9)	Yes
SJ_Gen_7	Our society is getting worse every year.	Strongly agree (1) - Agree - Neither agree nor disagree (5) - Disagree - Strongly disagree (9)	No
SJ_Gen_8	Society is set up so that people usually	Strongly agree (1) - Agree - Neither	Yes

get what they
deserve.

agree nor disagree
(5) - Disagree -
Strongly disagree (9)

Table C5*Items used to measure Anti-scientific Attitudes*

Variable Code	Item	Possible Values	Pro-trait
AntiSci_TrustOrd_1	I'd rather put my trust in the wisdom of ordinary people than the opinions of experts and intellectuals.	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes
AntiSci_Skept_trust_2	When it comes to really important questions, scientific facts don't help very much.	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes
AntiSci_Skept_trust_3	We believe too often in science, and not enough in faith and feelings.	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes
AntiSci_TrustOrd_2	Ordinary people can really use the help of experts to understand complicated things like science and health	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	No
AntiSci_Explicit_1	In general, faith is an equally good (or better) source of wisdom & knowledge as is science.	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes
AntiSci_Explicit_2	I trust the ordinary people more than I trust scientific experts and intellectuals	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes

AntiSci_Explicit_3	Climate change, and 'climate science' more generally, cannot be trusted.	(9) Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes
--------------------	--	---	-----

Table C6*Items used to measure Conspiracy Beliefs*

Variable Code	Item	Possible Values	Pro-trait
Consp_dim_1	Much of our lives are being controlled by plots hatched in secret places.	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes
Consp_dim_3	The people who really 'run' the country are not known to the voters.	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes
CMQ_6	I think that there are secret organizations that greatly influence political decisions.	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes

Table C7*Items used to measure CSE Specific Support*

Variable Code	Item	Possible Values	Pro-trait
CSE_support_1	methods of contraception and how to prevent unintended pregnancies?	Strongly Oppose (1) - Oppose - Neither oppose nor support (5) - Support - Strongly Support (9)	Yes

CSE_support_4	sexually transmitted infections (STIs) and their prevention?	Strongly Oppose (1) - Oppose - Neither oppose nor support (5) - Support - Strongly Support (9)	Yes
CSE_support_5	consent and the prevention of sexual abuse?	Strongly Oppose (1) - Oppose - Neither oppose nor support (5) - Support - Strongly Support (9)	Yes
CSE_support_6	sexual anatomy for men and women?	Strongly Oppose (1) - Oppose - Neither oppose nor support (5) - Support - Strongly Support (9)	Yes
CSE_support_7	sexual orientation (i.e., heterosexual, homosexual, bisexual)?	Strongly Oppose (1) - Oppose - Neither oppose nor support (5) - Support - Strongly Support (9)	Yes
CSE_support_8	gender identity (i.e., transgenders)?	Strongly Oppose (1) - Oppose - Neither oppose nor support (5) - Support - Strongly Support (9)	Yes
CSE_support_9	gender equality (including challenging gender stereotypes)?	Strongly Oppose (1) - Oppose - Neither oppose nor support (5) - Support - Strongly Support (9)	Yes
CSE_support_10	sexual pleasure for men and women?	Strongly Oppose (1) - Oppose - Neither oppose nor support (5) - Support - Strongly Support (9)	Yes
CSE_support_11	discrimination based on gender and sexual minorities (i.e., LGBTQIA+)?	Strongly Oppose (1) - Oppose - Neither oppose nor support (5) - Support - Strongly Support (9)	Yes

Table C8

Items used to measure Anti-scientific Attitudes CSE

Variable Code	Item	Possible Values	Pro-trait
CSE_Antisci_1	I don't care what the research says; teaching CSE to children and adolescents is immoral.	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes
CSE_Antisci_2	Abstinence-only education is just as effective as CSE in preventing unwanted pregnancies and STIs.	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes
CSE_Antisci_3	Teaching about the use of condoms is NOT effective in preventing STIs.	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes
CSE_Antisci_23	Scientific evidence is irrelevant when it comes to the morality of teaching children about CSE.	Strongly disagree (1) - Disagree (3) - Neither agree nor disagree (5) - Agree (7) - Strongly agree (9)	Yes

Appendix D

Supplementary Analysis

Data Preparation

Cases with missing values were identified for CSE general support (N=47) and general symbolic ideology (N=20) via a descriptive analysis. As these were key variables of the study, cases were deleted to perform analysis on complete cases only. A new variable was computed in JASP: “NA = is.na(Sym_Ideo_Gen) + is.na(CSE_support_gen_1)”. Then, the data was filtered out based on “NA=0”, therefore retaining the cases with no missing values, leaving a sample of 937 participants. Some items, CSE general support (CSE_support_gen_1), economic symbolic ideology (Sym_Ideo_Eco) and social symbolic ideology (Sym_Ideo_Soc), were originally measured on a scale of 1 to 100. For consistency, these were transformed to a scale of 1 to 9 using the formula:

$$\text{adjusted} = \text{round}(((\text{score}-1)/99)*8+1)$$

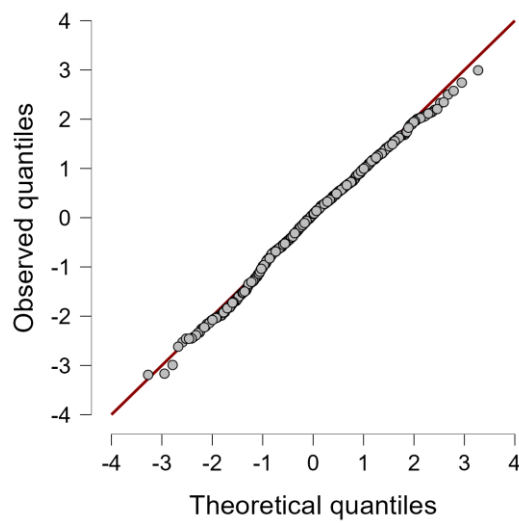
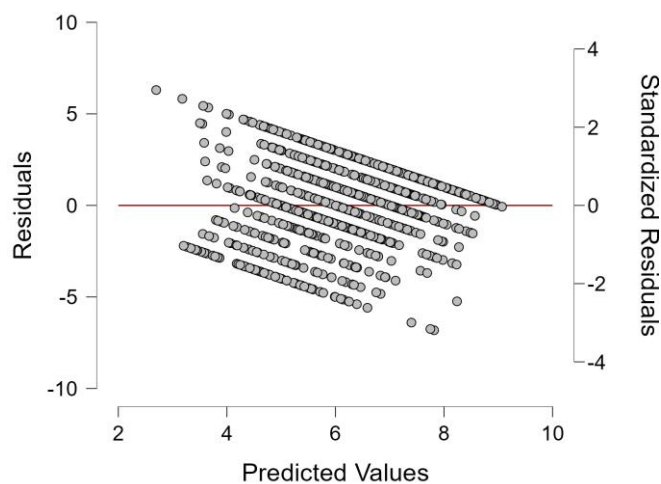
Finally, items identified as not pro-trait (see Appendix C) were reverse coded by creating a new variable for each item “10 - (score)”, considering a scale of one to nine.

Assumptions of Multiple Regression Analysis

Main Analysis CSE General Support

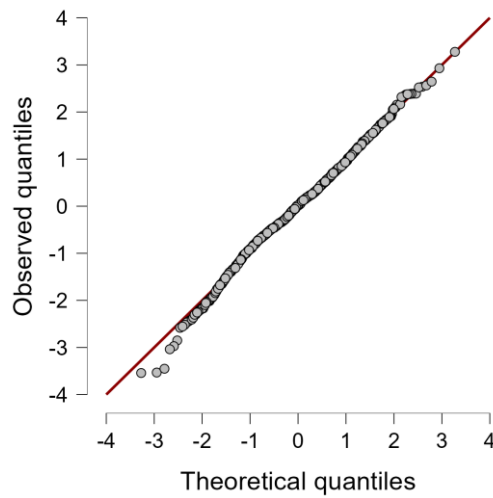
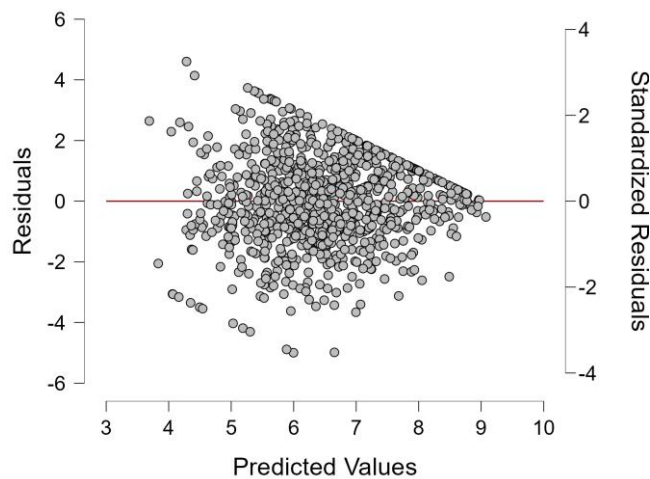
Assumptions of multiple linear regression were checked. The data showed normal distribution as per visual inspection of the Q-Q plot (Figure D1). Linearity and homoscedasticity were assumed upon a visual inspection of the Residual plot (Figure D2). The unusual pattern observed is supposedly caused by the measure used and the transformation of scores of the dependent variable CSE General Support to a scale of 1 to 9. No multicollinearity was observed ($VIF < 2$). No outliers were identified through Cook’s Distance. Independence of the residuals is assumed considering the nature of the study.

Figure D1

Q-Q Plot CSE General Support Main Analysis**Figure D2***Residuals vs Predicted Plot CSE General Support Main Analysis***Main Analysis CSE Specific Support**

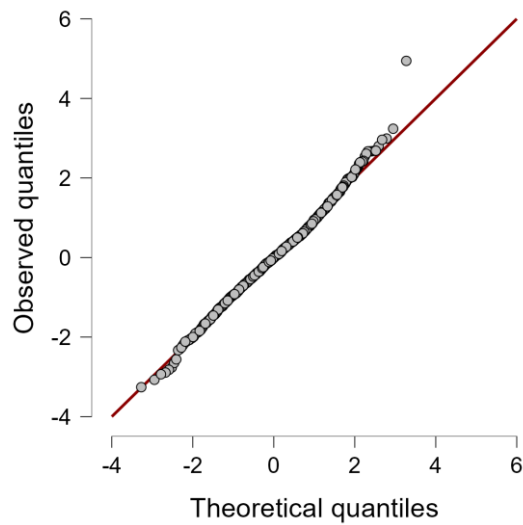
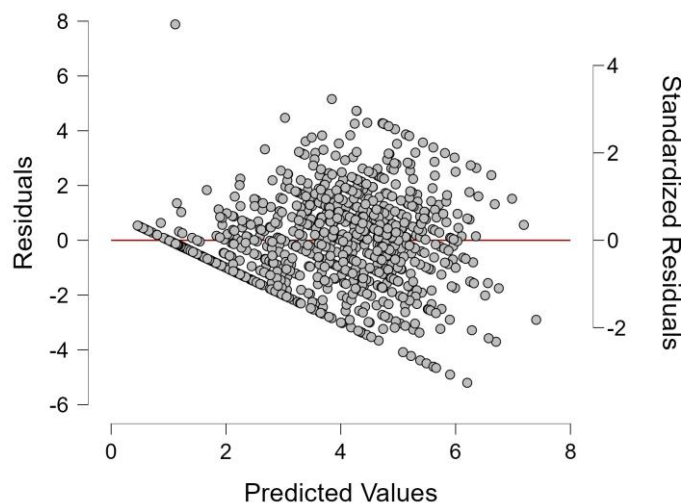
Assumptions of multiple linear regression were checked. The data showed normal distribution as per visual inspection of the Q-Q plot (Figure D3). Linearity and homoscedasticity were established upon a visual inspection of the Residual plot (Figure D4). No multicollinearity was observed ($VIF < 2$). No outliers were identified through Cook's Distance. Independence of the residuals is assumed considering the nature of the study.

Figure D3

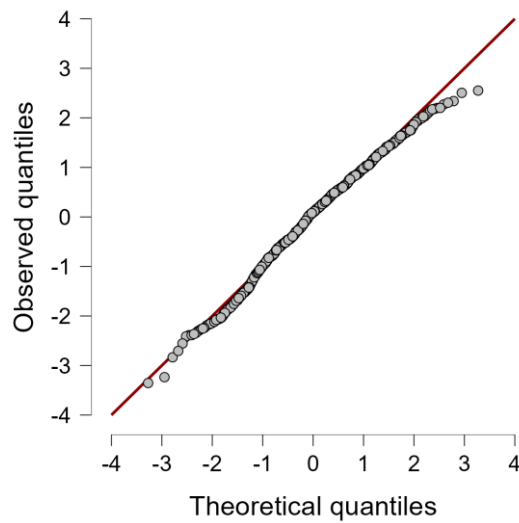
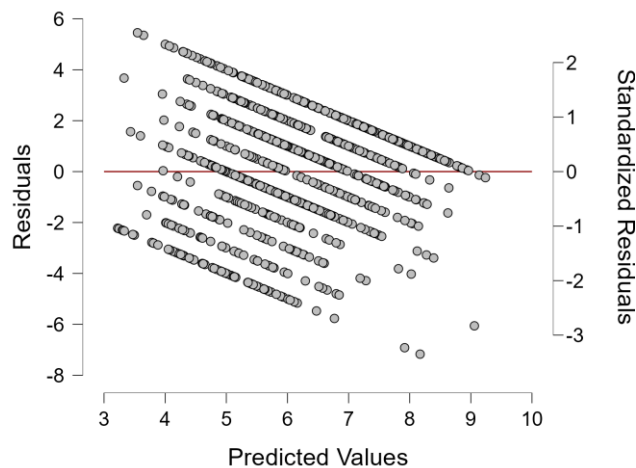
Q-Q plot CSE Specific Support Main Analysis**Figure D4***Residuals vs Predicted Plot CSE Specific Support Main Analysis****Main Analysis Anti-scientific Attitudes CSE***

Assumptions of multiple linear regression were checked. The data showed normal distribution as per visual inspection of the Q-Q plot (Figure D5). Linearity and homoscedasticity were established upon a visual inspection of the Residual plot (Figure D6). No multicollinearity was observed ($VIF < 2$). No outliers were identified through Cook's Distance (Cook's Distance < 1). Independence of the residuals is assumed considering the nature of the study.

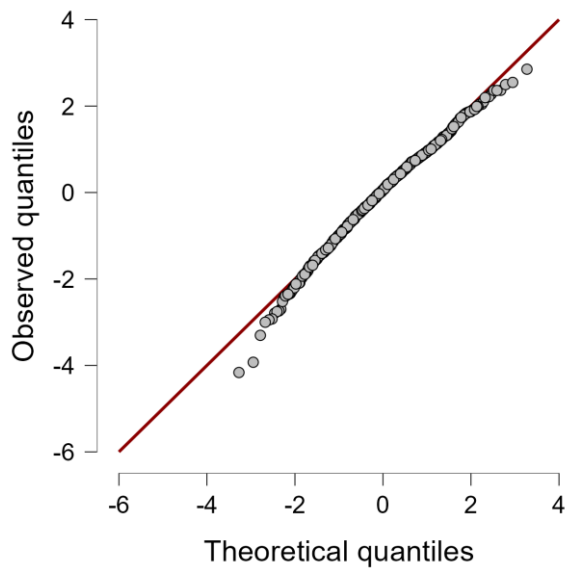
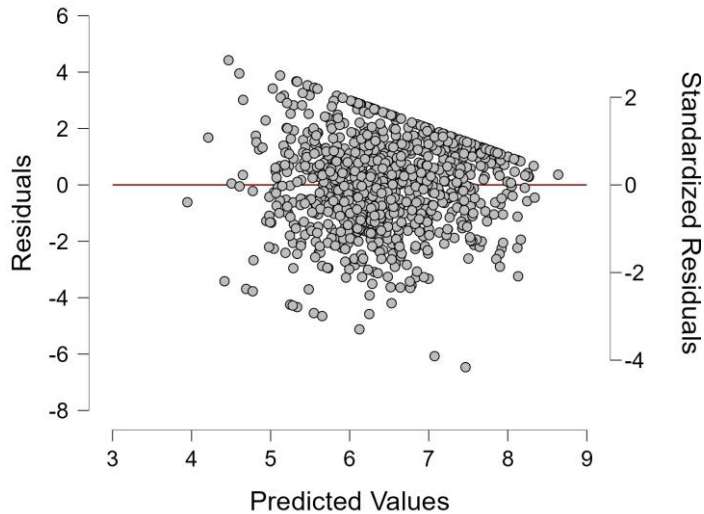
Figure D5

Q-Q Plot Anti-scientific Attitudes CSE Main Analysis**Figure D6***Residuals vs Predicted Plot Anti-scientific Attitudes CSE Main Analysis****Exploratory Analysis CSE General Support***

Assumptions of multiple linear regression were checked. The data showed normal distribution as per visual inspection of the Q-Q plot (Figure D7). Linearity and homoscedasticity were assumed upon a visual inspection of the Residual plot (Figure D8). The unusual pattern observed is supposedly caused by the measure used and the transformation of scores of the dependent variable CSE General Support to a scale of 1 to 9. No multicollinearity was observed ($VIF < 2$). No outliers were identified through Cook's Distance. Independence of the residuals is assumed considering the nature of the study.

Figure D7*Q-Q Plot CSE General Support Exploratory Analysis***Figure D8***Residuals vs Predicted Plot CSE General Support Exploratory Analysis****Exploratory Analysis CSE Specific Support***

Assumptions of multiple linear regression were checked. The data showed normal distribution as per visual inspection of the Q-Q plot (Figure D9). Linearity and homoscedasticity were established upon a visual inspection of the Residual plot (Figure D10). No multicollinearity was observed ($VIF < 2$). No outliers were identified through Cook's Distance. Independence of the residuals is assumed considering the nature of the study.

Figure D9*Q-Q Plot CSE Specific Support Exploratory Analysis***Figure D10***Residuals vs Predicted Plot CSE Specific Support Exploratory Analysis****Exploratory Analysis Anti-scientific Attitudes CSE***

Assumptions of multiple linear regression were checked. The data showed normal distribution as per visual inspection of the Q-Q plot (Figure D11). Linearity and homoscedasticity were established upon a visual inspection of the Residual plot (Figure D12). No multicollinearity was observed ($VIF < 2$). No outliers were identified through

Cook's Distance. Independence of the residuals is assumed considering the nature of the study.

Figure D11

Q-Q Plot Anti-scientific Attitudes CSE Exploratory Analysis

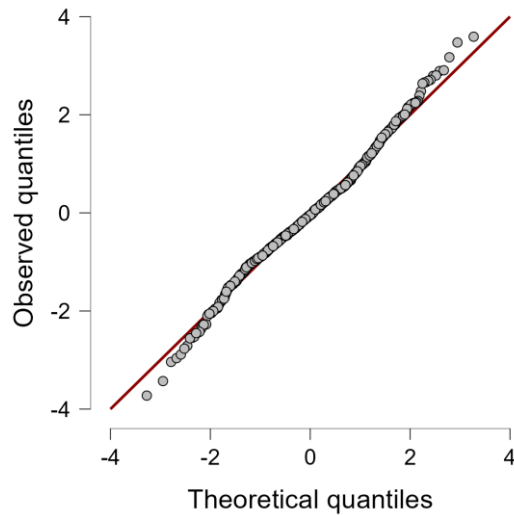
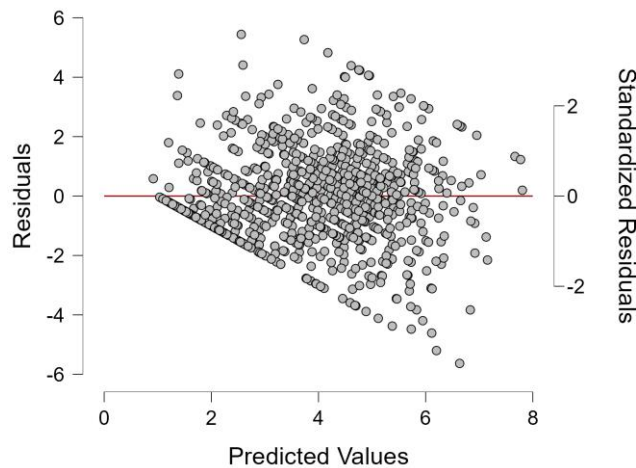


Figure D12

Residuals vs Predicted Plot Anti-scientific Attitudes CSE Exploratory Analysis



Combined Analysis CSE General Support

Assumptions of multiple linear regression were checked. The data showed normal distribution as per visual inspection of the Q-Q plot (Figure D13). Linearity and homoscedasticity were assumed upon a visual inspection of the Residual plot (Figure D14).

The unusual pattern observed is supposedly caused by the measure used and the

transformation of scores of the dependent variable CSE General Support to a scale of 1 to 9.

No multicollinearity was observed ($VIF < 2.3$). No outliers were identified through Cook's

Distance. Independence of the residuals is assumed considering the nature of the study.

Figure D13

Q-Q Plot CSE General Support Combined Analysis

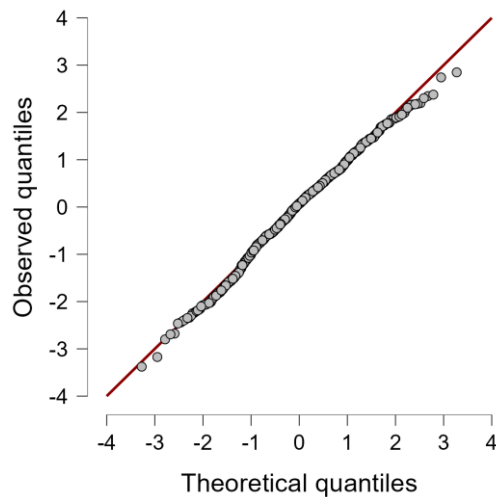
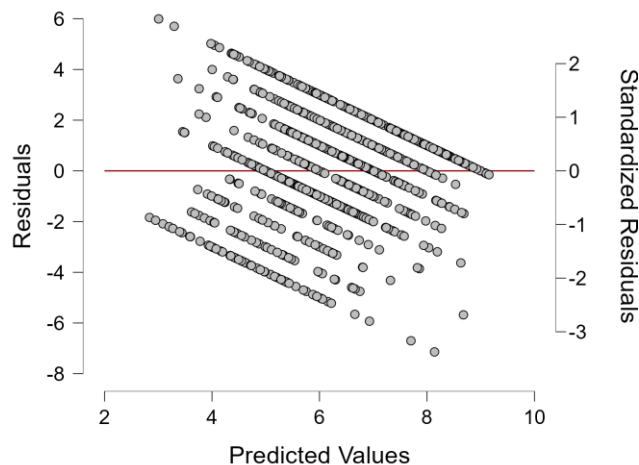


Figure D14

Residuals vs Predicted Plot CSE General Support Combined Analysis



Combined Analysis CSE Specific Support

Assumptions of multiple linear regression were checked. The data showed normal distribution as per visual inspection of the Q-Q plot (Figure D15). Linearity and homoscedasticity were established upon a visual inspection of the Residual plot (Figure

D16). No multicollinearity was observed ($VIF < 2.3$). No outliers were identified through Cook's Distance. Independence of the residuals is assumed considering the nature of the study.

Figure D15

Q-Q Plot CSE Specific Support Combined Analysis

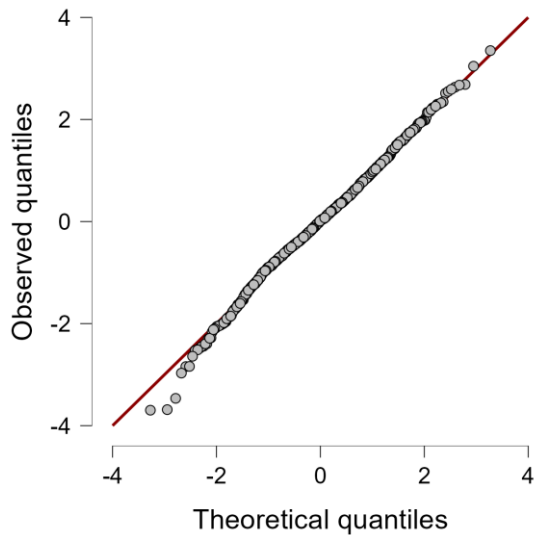
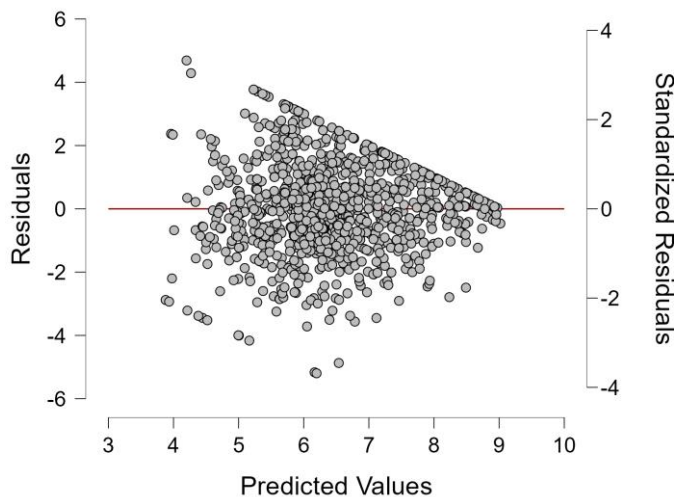


Figure D16

Residuals vs Predicted Plot CSE Specific Support Combined Analysis



Combined Analysis Anti-scientific Attitudes CSE

Assumptions of multiple linear regression were checked. The data showed normal distribution as per visual inspection of the Q-Q plot (Figure D17). Linearity and homoscedasticity were established upon a visual inspection of the Residual plot (Figure

D18). No multicollinearity was observed ($VIF < 2.3$). No outliers were identified through Cook's Distance. Independence of the residuals is assumed considering the nature of the study.

Figure D17

Q-Q Plot Anti-scientific Attitudes CSE Combined Analysis

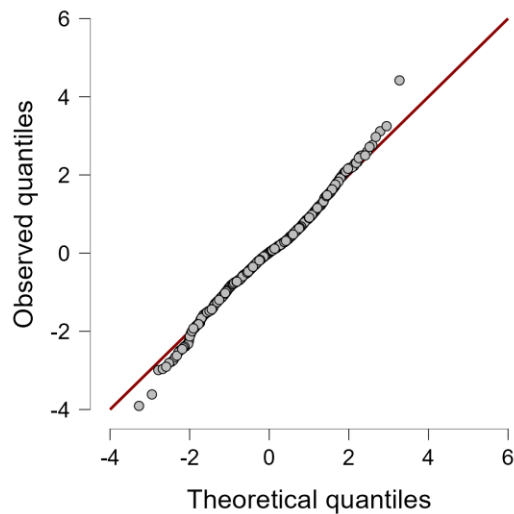
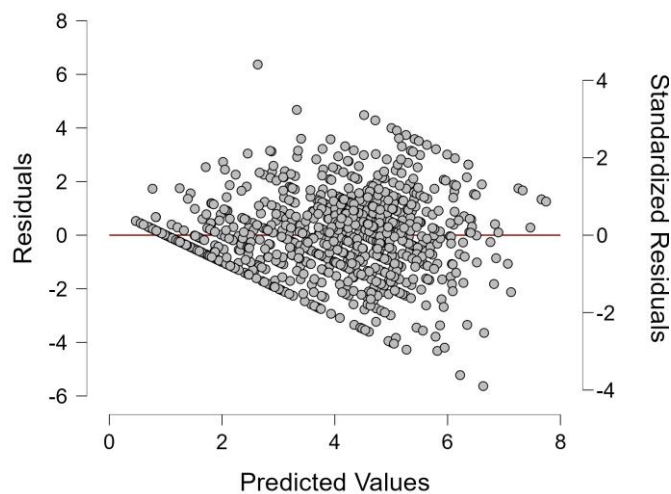


Figure D18

Residuals vs Predicted Plot Anti-scientific Attitudes CSE Combined Analysis



Appendix E

Interdisciplinary Reflection

Led by the interdisciplinary focus of the Youth Development and Social Change Master's Program, this thesis aimed to incorporate insights from multiple scientific disciplines to present a more nuanced view of the possible precursors of individuals' attitudes towards CSE. In particular, political psychology allowed the study to capture the ideological roots of the opposition towards the comprehensive approach, exploring not only symbolic political ideology, but also diverse constructs such as right-wing authoritarianism (RWA), and social dominance orientation (SDO). These show how self-identification with ideologies connected to preferences for inequalities and preservations of current traditional norms and hierarchies may lead to resistance towards progressive policies. Social and cognitive psychology, on the other hand, could help explain the broader individual thought processes behind CSE attitudes via the constructs of general system justification (GSJ), anti-scientific attitudes and conspiracy beliefs, revealing how believing in and defending current systems, as well as a lack of trust in the scientific institutions and findings, fuels the opposition to evidence-based education. These are not separate processes but parallel ones that play a significant role in the formation of individual attitudes in any given moment, and as such highly influence public opinion on social and educational policies. Because of that, these interdisciplinary lenses allow to position the issue of youth sex education in the larger sociological and pedagogical context. As a result, individual differences in attitudes towards CSE could be linked to current political debates, legislation and educational curricula reform.

Considering that the current work is purely theoretical, stakeholders' perspectives would be crucial for the implementation of the findings in practice. While research can investigate and inform, the final say about the adoption of the approach depends on multiple societal levels and their perception of the issue around CSE. Starting from above, policy

advisors and legislators have the power and responsibility to draft educational policies suited for diverse populations, including people with extreme political views. Their opinion on the adoption of a holistic approach towards sex education should be objectively guided by similar research that provides insights into public opinions and attitudes. Further, educators and administrators, who in a large number of cases can decide on the methods they use and the level of comprehensiveness of the materials, should rely on similar research for guidance on how to best perform their role as mediators between evidence and practice and how to navigate extreme public opinions. Finally, these two groups should adequately inform and engage in discussions with parents and students to promote the adoption of CSE, considering the unique obstacles that extreme political, moral and scientific perspectives can present. In that sense, this study examined individual differences in CSE attitudes, but it should be further explored how institutions and society as a whole can make use of the findings and respond to the pressure of the opposition by promoting an evidence-based discussion that accounts for differences in personal belief systems. This strategy would allow for the translation of evidence into practice, transforming the knowledge about individual attitudes into meaningful societal campaigns.

From a methodological standpoint, while this study was based on a cross-sectional design, other methods can further enrich the current perspective and strengthen or, on the other hand, disprove the findings. Firstly, a longitudinal approach could allow for the tracking of how attitudes across different societal levels evolve over time, and specifically whether they are influenced by the larger political context. Second, qualitative methods could engage multiple stakeholders in discussion to explore in depth the underpinnings of opposing views. Even experimental studies could be designed to explore whether exposure to (morally charged) political or scientific information influences reported support for diverse CSE topics.

In conclusion, this thesis drew upon different scientific disciplines, among which political, social, cognitive psychology, sociology and pedagogy, to portray one more nuanced view on the individual differences in public attitudes towards the highly politicized and pressing societal issue of CSE. While this study successfully made use of an interdisciplinary framework providing meaningful theoretical insights, its scope is limited. Future work that focuses on other methodological approaches and the participation of multiple stakeholders among different societal levels is needed to fully capture the complex nature of youth sex education.

Word Count: 694