# Comparative study of attitudes to religious groups in New Zealand reveals Muslim-specific prejudice

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**ABSTRACT**

The March 15th terrorist attack started a national dialogue about prejudice in New Zealand. Previous research has investigated attitudes towards Muslims in comparison to ethnic minorities. However, presently, there are no nationally representative studies in New Zealand systematically comparing attitudes to Muslims with attitudes to other religious groups. Here, we present evidence from the New Zealand edition of the International Social Survey Programme module on religion, a national postal survey (N = 1335) collected between September 2018 and February 2019. We assess perceived threat and negativity towards Christians, Muslims, Hindus, Buddhists, Jews, and Atheists. We find substantially greater perceived threat and negativity towards Muslims compared with other groups. In particular, older people, New Zealand Europeans, men, and those with more right-wing attitudes report greater threat and negativity towards Muslims. In line with previous studies, higher religious identification and higher education predict greater acceptance. Taken collectively, these results reveal that the Muslim Acceptance Gap in this country is substantial, and greater challenges for acceptance are evident among lower-educated, right-wing, older, secular, and male populations. The magnitude of this gap reveals a substantial challenge to the future of New Zealand where religious and secular people can live without evoking prejudice.

## Introduction

On 15th March 2019, a white supremacist attacked two mosques in Christchurch New Zealand, killing 51 Muslims engaged in worship. Many, including New Zealand's Prime Minister, expressed their solidarity with the victims by adopting phrases such as 'this is not us' and 'they are us, we are them'. Some left flowers at memorials, donated money,

wore headscarves, or joined in the Muslim call to prayer (One News 2019). Though the attacks caught many New Zealanders by surprise, evidence had long been mounting for a substantial Muslim Acceptance Gap in New Zealand, that is, for a substantial difference in discrimination against Muslims compared with discrimination against other groups (Shaver et al. 2016). The Islamic Women's Council had repeatedly lobbied government for support against discrimination and hate crimes (Rahman 2019). After the attack, critics pointed to wider issues of colonisation and European domination, pointing out that the name of Christchurch's local rugby team: the Crusaders, belies widespread acceptance of prejudice in this country (One News 2019; Radio New Zealand 2019; Waitoki 2019). Quantitative studies of anti-Muslim prejudice in New Zealand had been published in high profile peer-reviewed science journals (Shaver et al. 2016, 2017). Put simply, the Muslim Acceptance Gap was clearly evident prior to the attacks. To identify meaningful pathways for reducing anti-Muslim prejudice requires a clear diagnosis of the problem. However, previous studies have yet to disentangle religion-specific prejudice from generic anti-religious prejudice. Understanding the basis of anti-Muslim prejudice, as well as of the sources of Muslim acceptance, thus remain key challenges for New Zealand.

Previous attempts to systematically quantify Muslim acceptance and prejudice in New Zealand were obtained against the backdrop of *ethnic*-specific prejudice. In line with this conjecture, previous research shows a conflation of anti-Muslim prejudice and anti-Arab prejudice, and that both forms are predicted by media exposure (Shaver et al. 2017). This suggests that prejudice against Muslims arises from tendencies to conflate Muslims with Arabs. In reality, however, though Muslims share a common faith, Muslims in New Zealand are ethnically and culturally diverse (Shaver et al. 2016; Nisa and Saenong 2019). If the ethnic-religion confusion conjecture is on the right track, the practical task would be to educate people about the diversity of New Zealand's Muslim community.

A second, and compatible conjecture is that anti-Muslim sentiments are amplified by anti-religious sentiments: specifically anti-Muslim prejudice in New Zealand is a manifestation of general anti-religious prejudice. Notably, New Zealand has become increasingly secular (Hoverd et al. 2015). Recent research shows reduced prejudice against Muslims from highly identified religious non-Muslims (Shaver et al. 2016). Muslims tend to be outwardly religious in their practice and piety. Thus, it possible that anti-Muslim prejudice in New Zealand is not merely the result of a conflation of Islam with Arab ethnicity and a prejudicial confusion about the threats radical Islam, but also, in part, a manifestation of general anti-religious prejudice. In line with this prospect, recent research shows reduced prejudice against Muslims from highly identified religious non-Muslims (Shaver et al. 2016); though such reduced prejudice might arise from many sources, such as religious injunctions for toleration, it is possible that people of the faith exhibit greater acceptance of Muslims because religious affiliation, in general, is increasingly marginalised in New Zealand.

Here, we seek to better identify the demographic and political indicators of the Muslim Acceptance Gap by systematically comparing anti-Muslim prejudice with other types of anti-religious prejudice. In the months before the 15th March 2019 attack (September 2018–February 2019), we collected data on attitudes towards religion as part of the International Social Survey Programme (ISSP) module on religion. The ISSP is a 42-country national probability-sampled survey of different topics, which rotate over time. The religion module includes positivity and threat felt towards five religious groups: Muslims,

Christians, Hindus, Buddhists, Jews, and 'Atheists or non-believers'. This dataset enables inference about religion-specific qualities of Muslim prejudice, in the form of negativity towards Muslims and perceived threat from Muslims.

## Background: previous studies on anti-Muslim prejudice in New Zealand

After the March 15th attack, several media commentators looked to find data on prejudice towards Muslims using NZ samples (Chapple 2019; Hall 2019; Morton 2019). In particular, Chapple (2019) warned that we should not rely on anecdotes of discrimination and intolerance. To remedy this, Chapple provided analyses of the 2016–17 General Social Survey by Statistics NZ and pointed to the fact that a minority of people reported experiencing discrimination in the past year (16.9%), with slightly more than a quarter of migrants (25.7%) reporting discrimination over the same period. The piece also generally emphasised the smallness of any effects. Additionally, Chapple made the specific point that there was no data available from any study comparing attitudes towards religious groups in a national sample, so it was not clear the extent to which any effects were Muslim-specific. In response, Hall (2019) pointed out that the majority of the migrants surveyed (by Statistics NZ) were likely to be from Australia, Europe, and the US, and discussed the limitations of taking group averages on such measures.

Furthermore, prior to the Christchurch attack, drawing on nationally diverse samples from the longitudinal New Zealand Attitudes and Values Study (henceforth 'NZAVS', $N = 31,463$). Shaver and colleagues (Shaver et al. 2016, 2017) published two articles demonstrating widespread prejudice against Muslims in NZ, what the authors described as a 'Muslim Acceptance Gap'. The NZAVS includes the levels of warmth and anger towards different groups, where a higher level of warmth, and a lower level of anger indicates less prejudice towards a group (Sibley et al. 2019). In the first study, Shaver et al. (2016) showed that compared to the non-religious, non-Muslim religious people (those who identified with a religion and/or spiritual group, those who found religion as more important to how they saw themselves, and those who attended church or a place of worship more) expressed greater warmth towards Muslims. In the second study, Shaver et al. (2017) showed that greater overall news media exposure (measured as the total hours of self-reported news media consumed per week) predicted prejudice towards Muslims. Both studies identified large shortfalls in the acceptance of Muslims relative to ethnic minorities, and a relatively high correlation of anti-Muslim prejudice with anti-Arab prejudice when compared with prejudice to other ethnic minorities.

Research from the NZAVS uses a classic 'feeling thermometer' scale (Kinder and Drake 2009) including measures of warmth and anger towards Muslims among several ethnic groups including Arabs, Asians, Māori, Pacific, and 'immigrants in general'. The averages for anger and warmth towards Muslims and Arabs were substantially lower than for other groups. As reported by Shaver et al. (2017), on a 1 (no anger or least warm) to 7 (anger or most warm) scale, the average level of anger towards Muslims was 2.89 (compared to 2.82 for Arabs and 2.51 for Asians) and warmth was 3.79 (compared to 3.84 for Arabs and 4.54 for Asians). Furthermore, when observing the frequency of responses above the neutral mid-point of the scale 17.3% showed high levels of anger towards Muslims compared to 9.1% for anger towards Asians. Shaver et al. (2016) showed that older people, those with lower levels of education, the unemployed, men, the non-religious, those who did

not attend church, and those with higher political conservatism had lower warmth towards Muslims *and* Arabs. In addition, participants of European descent had lower warmth towards Muslims.

A month after the attack, the New Zealand Journal of Psychology published a rapid-response issue to provide more research on this problem. The issue included many review-style articles written in response to the attack (Khawaja and Khawaja 2019; Mirnajafi and Barlow 2019; Waitoki 2019; Wetherell 2019), alongside several further analyses of NZAVS data exploring the predictors of anti-Muslim prejudice (Hawi et al. 2019; Highland et al. 2019; Yogeeswaran et al., 2019), and data from a community sample exploring prejudice towards different religions (Wilson 2019). Of particular relevance was subsequent work by Sibley et al. (2019) which reported rates of reported warmth and anger to the different groups the NZAVS measured, the predictors of anti-Muslim prejudice, and change in attitudes over time. The findings broadly reinforced Shaver et al. (2016; 2017) by showing the Muslim Acceptance Gap and predictors. What was notable were the differences in the distribution of scores by group. Relatively more participants had scores in the less warm/more angry part of the distribution when evaluating Muslims (and Arabs), something obscured by simply taking average scores.

Looking at these NZAVS results, the following groups tend to exhibit greater prejudice toward Muslims: men, participants who rate themselves as more politically conservative, non-religious people, those with lower formal education, rural dwellers, and older people (Shaver et al. 2016, 2017; Sibley et al. 2019). What factors might explain these differences? The greater prejudice of men towards many different outgroups has been attributed to a variety of factors, both biological and social, including the desire to maintain the current social hierarchy (which benefits men as group) and express dominance tendencies (Sidanius et al. 1994). Political conservatism (measured in the current study as whether someone rated themselves as more politically right-wing) is another variable generally related to increased prejudice toward outgroups, a finding which links back to the personalities of conservatives, the level of threat in their environment, and the general definition of political conservatism (and in the NZ context, to a lesser extent, being right-wing) as opposition to social change (Sibley and Duckitt 2008; Duckitt and Sibley 2010; Sibley et al. 2012). Rural people, on average, may be more prejudiced as rural geographic areas are less diverse, thus people lack exposure to, or contact with, people from different religious groups, ethnic backgrounds, and lifestyles (Pettigrew 1998). In terms of religion, Shaver et al. (2016) explained their results by positing that religious people may be unified by their religious commitment, and that this transcends any affiliation or denomination-based differences. In addition, Highland et al. (2019) found that greater acceptance of religion was associated with greater acceptance of Muslims, and that including this variable explained the variance previously explained by high religious identification and church attendance in the acceptance of Muslims.

Though previous studies on anti-Muslim prejudice in New Zealand points to a distinction between religious and ethnic prejudice/acceptance, the NZAVS does not have variables capable of assessing the relative strength of prejudice against different religious groups, as the study largely only contains measures of prejudice towards different *ethnic* groups. Thus, put simply, very little is known about prejudice (or acceptance) towards different *religious groups* in New Zealand. As such, a context is lacking in which to evaluate whether higher levels of prejudice toward Muslims in New Zealand is

unique to Muslims or whether past findings have been an expression of general anti-religious sentiment.

Here, we contribute to previous studies by measuring negativity/positivity toward different religious groups, and also perceived threat toward different religious groups. It is particularly important to investigate threat in the context of religious prejudice, and prejudice toward Muslims in particular, because Muslims are portrayed in the media as threatening (Kabir and Bourk 2012). More specifically, portrayals of Muslims show them as more likely to commit terror attacks or to have far different cultural values to the majority of the population (Saeed 2007; Kabir and Bourk 2012; Rahman and Emadi 2018). Therefore, probing both anti-religious sentiments and perceived threat affords a greater clarity about the mechanisms that underpin anti-religious prejudice than can be obtained from affective thermometer measures such as those found in the NZAVS. We emphasise that, as the authors of the Chapple analysis state, their group had no data prior to the Christchurch Mosque attacks comparing attitudes towards religious groups, which confounds their post-attack analysis about the psychological and cultural mechanisms anti-Muslim prejudice in New Zealand. By contrast, our ISSP survey was administered prior to the Christchurch attacks.

## Aims and hypotheses

We first investigate the prevalence of anti-Muslim prejudice in NZ by focusing on (1) negative perceptions towards Muslims other religious groups, and (2) the perceived threat from Muslims and other religious groups. We compare responses to Muslims in these domains with responses to Christians, Hindus, Buddhists, Jews, and Atheists or non-believers as reference groups in order to explore the specific predictors of anti-Muslim sentiment, rather than a general dislike of diverse religious groups. We utilise data from the 2008 and 2018 ISSP surveys on religion, which also assessed negativity toward the different religious groups. Generally, following work from the NZAVS (Shaver et al. 2016, 2017; Highland et al. 2019; Sibley et al. 2019), we expect to find higher rates of both negativity and threat towards Muslims, relative to the other *religious* groups. We compare 2008 results to 2018, to explore whether attitudes towards different religious groups are becoming more positive over time. We expect that attitudes toward religious minorities would have become more favourable over the past decade, as Sibley et al. (2019) have shown that warmth towards Muslims has increased between 2012 and 2018. We also expect to find more negativity towards Muslims and perceived threat from Muslims among men, those who rated themselves as more right-wing, New Zealand Europeans, non-religious people, those with lower levels of education, rural dwellers, and older people.

## Method

### Sample and procedure

Data were drawn from the New Zealand edition of the 2018 and 2008 International Social Survey Programme (ISSP) religion surveys. A more detailed overview of the ISSP, how data can be accessed, survey sampling, methods, and weighting can be found in the Appendix. In short, in 2008, the survey was mailed to a random sample of 2040 people from the NZ

Electoral Roll. This produced 1027 responses, a reported response rate of 52% (Gendall and Healey 2009). For the 2018 edition of the survey, between 10 September 2018 and 17 February 2019, 1335 participants responded out of the total 5700, giving a standardised response rate of 27.9%. Before analyses, to ensure representativeness, both waves were weighted for nonresponse based on characteristics available on the electoral roll (D'Souza et al. 2019).

## Participants and measures

There were two sets of questions on prejudice towards different religious groups. The first asked in 2008 and 2018, was: 'What is your personal attitude towards members of the following religious groups?' The question presented the following groups for participants to rate on a scale: Christians, Muslims, Hindus, Buddhists, Jews, and Atheists or Non-believers. The options where: 1'very positive', 2 'somewhat positive', 3 'neither positive not negative', 4 'somewhat negative', and 5 'very negative', with an option for 'can't choose' (responses to the 'can't choose' option were coded as missing responses). The next question, only asked in 2018, was: 'Do you consider people belonging to the following religious groups to be threatening?' It asked participants to rate the same six groups on a four point scale including: 1 'very threatening', 2 'somewhat threatening', 3 'not very threatening', and 4 'not threatening at all'. The question also included a 'can't choose' option, which we coded as a missing response.

Table 1 presents summary statistics for the 2018 participants. Age was measured by asking for year of birth. The average age of the sample was 49.1 ($SD = 16.7$, Min = 18, Max = 83, missing $n = 37$; 2.8%). In the regression models, we centered age at the sample mean of 49 years old and divided this indicator by 10 to recover a decade of age unit for assessing expected associations of age and attitudes. We did this to recover a predictor that was both interpretable and on the scale of other predictors. Gender was asked with an open-ended question and 46.3% ($n = 618$) of the sample identified as male, whereas 53.7% ($n = 717$) of the sample identified as female, another gender, or did not answer. In our regression models, a factor variable was created where male was coded as 1, and the default condition of not-male was coded as 0. Education was assessed by asking for the participant's highest qualification. The sample mean was 3.91 ($SD = 2.38$, missing $n = 34$, 3.2%; a 4 is equivalent to the trade or professional certificate level), the sample median was 4, ranging from 0 (no qualification) to 7 (postgraduate or higher). For the regression analysis, we centered this variable at the sample mean, to recover an interpretable estimate. Thus, the regression coefficients for this indicator represent the changed in expected response for a one unit change in education level from the baseline score of 3.91.

Religious affiliation was assessed with the question 'Which one of these categories describes your current religion or religious denomination?' and options were provided for no religion ($n = 572$ or 42.8% of participants), Christian (with a range of denominations to select from in a second question; $n = 578$, 43.3%), Buddhist ($n = 38$, 2.8%), Hindu ($n = 52$, 3.9%), Muslim ($n = 30$, 2.2%), Jewish ($n = 2$, 0.1%), or an open-ended option for 'Other Religion' ($n = 33$, 2.5%; in addition, there were 30 missing responses; 4.6%). Participants were asked to rate their level of religious identification on a scale 1 ('extremely religious') to 7 ('extremely non-religious'). To enable inference across both secular and religious people, following the method of Shaver et al. (2016) we created a religiosity variable by assigning all those who did not identify as religious a 0 on this scale. The sample mean was 1.75 ($SD = 1.81$, missing $n = 62$, 4.6%), the sample median was 2

**Table 1.** Summary statistics for the sample.

| Variable | N (%) Unless otherwise stated |
|---|---|
| Age | |
|   Mean (SD) | 49.1 (16.7) |
|   Median [Min, Max] | 51.0 [18.0, 83.0] |
|   Missing | 37 (2.8%) |
| Man | |
|   Not Male | 717 (53.7%) |
|   Male | 618 (46.3%) |
| Highest educational qualification | |
|   Mean (SD) | 3.91 (2.38) |
|   Median [Min, Max] | 4.00 [0.00, 7.00] |
|   Missing | 43 (3.2%) |
| NZ European | |
|   Not NZ European | 527 (39.5%) |
|   NZ European | 808 (60.5%) |
| Religious | |
|   Not Religious | 571 (42.8%) |
|   Religious | 734 (55.0%) |
|   Missing | 30 (2.2%) |
| Religiosity | |
|   Mean (SD) | 1.75 (1.81) |
|   Median [Min, Max] | 2.00 [0.00, 7.00] |
|   Missing | 62 (4.6%) |
| Right-wing | |
|   Mean (SD) | 5.04 (1.97) |
|   Median [Min, Max] | 5.00 [0.00, 10.0] |
|   Missing | 87 (6.5%) |
| Rural | |
|   Not Rural | 855 (64.1%) |
|   Rural | 441 (33.0%) |
|   Missing | 39 (2.9%) |

(ranging from 0 to 7). We centered and scaled this variable, so that the baseline expectation for response represents the sample mean of 1.75 on the religiosity scale. Thus, the regression coefficients for this indicator represent the changed in expected response for a standard deviation difference in religiosity at the population level.

Participants were asked: 'In politics, people sometimes talk of left and right. Where would you place yourself on the following scale, where 0 means left and 10 means right?'. The sample mean was 5.04 ($SD = 1.97$, missing $n = 87$, 6.5%), and the sample median was 5. Thus, the regression coefficients for this indicator represent the change in expected response for a standard deviation difference in right-wing orientation at the population level. In addition, $n = 885$ (64.0%) of the sample identified as living outside a rural area, whereas $n = 441$ (33.0%) of the sample indicated they lived in a rural area. In our regression models, a factor variable was for rural, which was coded as 1, and the default condition of not-rural was coded as 0.

## Analysis procedure

We first analysed descriptive statistics (frequencies of different responses) across the 2008 and 2018 data. Next, we conducted multiple regression models. These allowed us to see which variables correlate with prejudice towards the different religious groups, while controlling for the effects of other variables. For example, it is necessary to adjust for the effects of age or education level when exploring whether rural people are more or less prejudiced,

as younger people, and those with more education tend to live in cities. A multiple regression allowed us to isolate the specific effects of each variable. These regressions also allowed us to model the independent effects of prejudice towards Muslims over-and-above the prejudice towards other religious groups by adjusting for the residual correlations of prejudice towards other religious groups in each model.

To handle missingness, we employed a multiple imputation strategy using the Amelia package in R (Honaker et al. 2011). Five datasets were imputed using Amelia's EM algorithm, and the imputed datasets were passed to the BRMS (Bürkner 2016) package in R version 3.61 (R Core Team 2019); plots were generated using the sjPlot package (Lüdecke 2015). The BRMS package has several features suited to our inquiry. First, we were able to employ Bayesian estimation (BRMS is a wrapper over Rstan). Bayesian estimation efficiently pools uncertainty created by the multiply imputed datasets, leading to probabilistic inferences for the coefficients of theoretical interest. Second, we were able to simultaneously estimate all five outcome variables for each of the two domains of interest – negative attitudes to religious groups and perceived threat of religious groups – following the method described in Shaver et al. (2017). Thus, instead of requiring 10 models we only needed two multivariate outcome models, one for each of the attitudes (negativity, threat) and by modelling correlations in the residual components of the model, we were able to estimate the correlation between the different prejudice types conditional on the predictor variables in the model. We modelled responses using both informative and non-informative priors, however, the size of our dataset and the consistency of responses rendered results robust to either strategy, and we report results with non-informative priors.

## Results

### Descriptive analysis and time comparison within New Zealand

Table 2 presents the percentage of participants who gave each response to the religious prejudice questions. For comparability, we removed the scores for those over 76 in the 2008 sample ($n = 77$).[1] We also conducted a series of independent samples $t$-tests, and generally, religious prejudice decreased significantly between 2008 and 2018. Muslims had the highest rate of both 'somewhat' and 'very' negative ratings in both 2008 (22.5%) and 2018 (19.5%; $t(1788) = -3.01$, $p = .003$; $M_{2008} = 2.91$, $M_{2018} = 2.75$), followed by Hindus (2008 = 10.9%, 2018 = 8.4%; $t(1769) = -3.55$, $p < .001$; $M_{2008} = 2.68$, $M_{2018} = 2.52$), and Atheists or non-believers (2008 = 8.1%, 2018 = 5.9%; $t(1735) = -2.30$, $p = .022$; $M_{2008} = 2.62$, $M_{2018} = 2.52$). The lowest rate of negativity was towards Buddhists in 2018 (4.9%, 2008 = 7.1%; $t(1777) = -3.38$, $p = .001$; $M_{2008} = 2.52$, $M_{2018} = 2.37$). The exceptions being that negativity against Jews did not decrease across the decade (7.7%; $p = .072$), and more people were negative towards Christians in 2018 (8.5%) than in 2008 (7.3%) although this difference was not significant ($p = .136$).

The results for threat (collected only in 2018) showed clear differences between Muslims and other groups. Over a third of the sample (35.4%) found Muslims to be 'somewhat' or 'very' threatening, compared to 10% for Christians, 9.8% for Jews, and a sample low of 4.4% for Buddhists. Overall, 36.9% of participants found Muslims to be 'not threatening at all', compared to the next lowest frequencies of 51.8% for Hindus and 53.7% for Jews.

**Table 2.** Percentage of participants who selected the various options for negativity (2008 and 2018) and threat (with sample weighting applied). Note that this is restricted to a maximum age of 76 in 2008 to aid comparability between samples.

| | | Very positive % (n) | Somewhat positive % (n) | Neither % (n) | Somewhat negative % (n) | Very negative % (n) | Not threatening at all % (n) | Not very threatening % (n) | Somewhat threatening % (n) | Very threatening % (n) |
|---|---|---|---|---|---|---|---|---|---|---|
| Christians | 2008 | 25.0% (231) | 30.5% (282) | 37.1% (343) | 6.2% (57) | 1.1% (11) | | | | |
| | 2018 | 24.0% (303) | 29.3% (369) | 38.1% (480) | 5.3% (67) | 3.2% (40) | 55.1% (664) | 34.9% (420) | 8.5% (102) | 1.5% (19) |
| Muslims | 2008 | 11.5% (103) | 17.4% (156) | 48.6% (436) | 14.1% (127) | 8.4% (76) | | | | |
| | 2018 | 13.5% (163) | 20.9% (253) | 46.0% (557) | 13.2% (160) | 6.3% (76) | 36.9% (428) | 27.7% (322) | 28.0% (325) | 7.4% (86) |
| Hindus | 2008 | 12.9% (113) | 21.1% (186) | 55.1% (485) | 6.9% (61) | 4.0% (36) | | | | |
| | 2018 | 16.1% (193) | 24.7% (296) | 50.8% (609) | 5.6% (67) | 2.8% (33) | 51.8% (592) | 39.8% (455) | 7.4% (84) | 1.1% (12) |
| Buddhists | 2008 | 15.7% (139) | 27.3% (242) | 49.8% (441) | 4.1% (37) | 3.0% (27) | | | | |
| | 2018 | 20.3% (243) | 27.4% (329) | 47.4% (568) | 2.4% (29) | 2.5% (30) | 62.0% (713) | 33.7% (387) | 3.6% (41) | 0.8% (9) |
| Jews | 2008 | 13.9% (122) | 24.3% (214) | 54.0% (475) | 5.3% (46) | 2.4% (21) | | | | |
| | 2018 | 15.8% (187) | 25.1% (296) | 51.5% (609) | 4.4% (52) | 3.3% (39) | 53.7% (609) | 36.6% (415) | 8.1% (92) | 1.7% (19) |
| Atheists or non-believers | 2008 | 13.6% (122) | 22.2% (198) | 56.1% (501) | 4.9% (44) | 3.2% (28) | | | | |
| | 2018 | 18.4% (216) | 26.3% (310) | 49.4% (581) | 3.5% (41) | 2.4% (29) | 58.1% (646) | 33.4% (371) | 7.3% (82) | 1.3% (14) |

## *Patterns of missingness*

The left ('Overall') column in Table 3 presents summary statistics for negative attitudes to religious groups. Notably, missing or 'can't choose' responses were twice as frequent for non-Christian groups as compared with the Christian group. To investigate religion-specific bias we assessed whether missingness was related to participant religious affiliation. Table 3 also presents summary statistics for negative attitudes to religion comparing participants who reported a religious affiliation with those who did not. Religiously affiliated participants presented a much higher missing response rate for all but the Christian groups, where missingness was lower. There are several possible explanations for this. Christian participants might not have responded to this question because they do not have contact outside their religious groups, and as such, have no basis for offering a response. Alternatively, Christian participants might tend to avoid reporting to conceal a negative bias towards other religious groups.

Additionally, Table 4 presents summary statistics for perceived threat of religious groups and breaks missingness down by religious affiliation. There was substantially greater missingness for perceived threat ratings as compared with general negative attitude ratings, and missingness was substantially higher among religious as compared with non-religious participants. Indeed, for the atheist group, almost a quarter of religious participants did not state a response. Rather than speculating, we adopted a multiple imputation strategy in which missing responses were predicted as random conditional on other information in the dataset.

**Table 3.** Negative attitudes to religious groups both overall, and broken down by religious affiliation (no/yes).

| | Overall (n = 1335) | Not religious (n = 571) | Religious (n = 734) |
|---|---|---|---|
| **Negative to Christians** | | | |
| Mean (SD) | 2.25 (0.963) | 2.76 (0.854) | 1.86 (0.857) |
| Median [Min, Max] | 2.00 [1.00, 5.00] | 3.00 [1.00, 5.00] | 2.00 [1.00, 5.00] |
| Missing | 86 (6.4%) | 35 (6.1%) | 38 (5.2%) |
| **Negative to Muslims** | | | |
| Mean (SD) | 2.79 (1.05) | 3.02 (0.938) | 2.61 (1.10) |
| Median [Min, Max] | 3.00 [1.00, 5.00] | 3.00 [1.00, 5.00] | 3.00 [1.00, 5.00] |
| Missing | 160 (12.0%) | 44 (7.7%) | 103 (14.0%) |
| **Negative to Hindus** | | | |
| Mean (SD) | 2.56 (0.912) | 2.79 (0.808) | 2.37 (0.953) |
| Median [Min, Max] | 3.00 [1.00, 5.00] | 3.00 [1.00, 5.00] | 2.00 [1.00, 5.00] |
| Missing | 169 (12.7%) | 49 (8.6%) | 107 (14.6%) |
| **Negative to Buddhists** | | | |
| Mean (SD) | 2.41 (0.909) | 2.58 (0.833) | 2.27 (0.948) |
| Median [Min, Max] | 3.00 [1.00, 5.00] | 3.00 [1.00, 5.00] | 2.00 [1.00, 5.00] |
| Missing | 165 (12.4%) | 44 (7.7%) | 109 (14.9%) |
| **Negative to Jews** | | | |
| Mean (SD) | 2.53 (0.911) | 2.79 (0.803) | 2.32 (0.938) |
| Median [Min, Max] | 3.00 [1.00, 5.00] | 3.00 [1.00, 5.00] | 2.00 [1.00, 5.00] |
| Missing | 186 (13.9%) | 54 (9.5%) | 117 (15.9%) |
| **Negative to Atheists** | | | |
| Mean (SD) | 2.52 (0.948) | 2.43 (0.814) | 2.61 (1.05) |
| Median [Min, Max] | 3.00 [1.00, 5.00] | 3.00 [1.00, 5.00] | 3.00 [1.00, 5.00] |
| Missing | 193 (14.5%) | 51 (8.9%) | 128 (17.4%) |

**Table 4.** Perceived threat at religious groups broken down by religious affiliation (no/yes).

| | Overall (n = 1335) | Not religious (n = 571) | Religious (n = 734) |
|---|---|---|---|
| **Threatened by Christians** | | | |
| Mean (SD) | 1.52 (0.715) | 1.68 (0.760) | 1.40 (0.655) |
| Median [Min, Max] | 1.00 [1.00, 4.00] | 2.00 [1.00, 4.00] | 1.00 [1.00, 4.00] |
| Missing | 148 (11.1%) | 58 (10.2%) | 73 (9.9%) |
| **Threatened by Muslims** | | | |
| Mean (SD) | 2.06 (0.993) | 2.08 (0.969) | 2.05 (1.01) |
| Median [Min, Max] | 2.00 [1.00, 4.00] | 2.00 [1.00, 4.00] | 2.00 [1.00, 4.00] |
| Missing | 213 (16.0%) | 66 (11.6%) | 130 (17.7%) |
| **Threatened by Hindus** | | | |
| Mean (SD) | 1.57 (0.693) | 1.59 (0.682) | 1.55 (0.703) |
| Median [Min, Max] | 1.00 [1.00, 4.00] | 1.00 [1.00, 4.00] | 1.00 [1.00, 4.00] |
| Missing | 228 (17.1%) | 70 (12.3%) | 141 (19.2%) |
| **Threatened by Buddhists** | | | |
| Mean (SD) | 1.42 (0.614) | 1.42 (0.593) | 1.42 (0.635) |
| Median [Min, Max] | 1.00 [1.00, 4.00] | 1.00 [1.00, 4.00] | 1.00 [1.00, 4.00] |
| Missing | 219 (16.4%) | 64 (11.2%) | 138 (18.8%) |
| **Threatened by Jews** | | | |
| Mean (SD) | 1.55 (0.713) | 1.62 (0.728) | 1.50 (0.698) |
| Median [Min, Max] | 1.00 [1.00, 4.00] | 1.00 [1.00, 4.00] | 1.00 [1.00, 4.00] |
| Missing | 237 (17.8%) | 77 (13.5%) | 143 (19.5%) |
| **Threatened by Atheists** | | | |
| Mean (SD) | 1.52 (0.699) | 1.42 (0.577) | 1.61 (0.782) |
| Median [Min, Max] | 1.00 [1.00, 4.00] | 1.00 [1.00, 4.00] | 1.00 [1.00, 4.00] |
| Missing | 264 (19.8%) | 76 (13.3%) | 170 (23.2%) |

## Statistical models

### Negative attitudes to religious groups

The results for the regressions for negativity towards the different religious groups are presented in Table 5, residual correlations between groups are presented in the Appendix. Consistent with previous research, we found that males tended to be more prejudiced towards Muslims, a pattern that generalises to all other religious groups except atheists. NZ Europeans tended to be more negative to Muslims than non-Europeans, a pattern that also held for Christians, but was reversed for atheists. Also consistent with previous studies, younger people and more educated people were more positive toward Muslims. This finding generalised to other religious groups, including atheists.

Consistent with previous research, a key predictor of Muslims acceptance was level of religious identification. However, this association held for all religious groups except atheists, where there were no reliable differences between religiously identified people and others. This suggests that the greater acceptance of Muslims among highly identified religious people in New Zealand is part of a general inclination among the highly religious in this country to be more accepting of traditional religions. A more right-wing political self-rating was associated with lower acceptance of Muslims. This association extended to all religious groups except Christians, the dominant religious tradition in New Zealand, in which case political orientation was not a reliable predictor of negativity.

### Perceived threat of religious groups

Table 6 presents the regressions for threat, the residual correlations across groups are presented in the Appendix. Older people expressed greater perceived threat. Consistent with previous research (e.g. Sibley et al. 2019 and other NZAVS work), educated people and

**Table 5.** Estimates for coefficients predicting negative attitudes to religious groups (Bayesian Highest Posterior Density intervals are set to 90%).

| Predictors | Christians | | Muslims | | Hindus | | Buddhists | | Jews | | Atheists | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Estimates | HPD (90%) | Estimates | HPD (90%) | Estimates | HPD (90%) | Estimates | HPD (90%) | Estimates | HPD (90%) | Estimates | HPD (90%) |
| Intercept | 1.95 | 1.86–2.03 | 2.59 | 2.50–2.69 | 2.45 | 2.36–2.53 | 2.28 | 2.19–2.37 | 2.39 | 2.30–2.47 | 2.61 | 2.52–2.70 |
| Right-wing | −0.01 | −0.05–0.03 | 0.16 | 0.11–0.21 | 0.09 | 0.05–0.14 | 0.10 | 0.06–0.14 | 0.05 | 0.01–0.09 | 0.09 | 0.05–0.13 |
| Religiosity | −0.22 | −0.27 − −0.18 | −0.14 | −0.19 − −0.09 | −0.15 | −0.19 − −0.10 | −0.11 | −0.15 − −0.07 | −0.17 | −0.21 − −0.12 | 0.01 | −0.03–0.06 |
| Age | −0.01 | −0.04–0.01 | 0.09 | 0.06–0.12 | 0.05 | 0.02–0.08 | 0.06 | 0.03–0.09 | 0.05 | 0.02–0.07 | 0.08 | 0.06–0.11 |
| NZ European | 0.28 | 0.19–0.37 | 0.15 | 0.05–0.25 | 0.07 | −0.02–0.16 | 0.07 | −0.02–0.16 | 0.05 | −0.04–0.14 | −0.20 | −0.30 − −0.11 |
| Education | −0.02 | −0.04 − −0.00 | −0.03 | −0.05 − −0.01 | −0.04 | −0.06 − −0.03 | −0.06 | −0.07 − −0.04 | −0.04 | −0.06 − −0.02 | −0.03 | −0.05 − −0.01 |
| Man | 0.11 | 0.02–0.19 | 0.16 | 0.07–0.26 | 0.08 | −0.00–0.17 | 0.09 | 0.00–0.17 | 0.12 | 0.03–0.20 | 0.02 | −0.07–0.11 |
| Rural | 0.22 | 0.13–0.32 | 0.09 | −0.02–0.19 | 0.11 | 0.02–0.20 | 0.17 | 0.08–0.26 | 0.14 | 0.05–0.24 | 0.10 | 0.01–0.20 |

**Table 6.** Coefficients for estimates for perceived threat of different religious groups.

| Predictors | Christians | | Muslims | | Hindus | | Buddhists | | Jews | | Atheists | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Estimates | HPD (90%) | Estimates | HPD (90%) | Estimates | HPD (90%) | Estimates | HPD (90%) | Estimates | HPD (90%) | Estimates | HPD (90%) |
| Intercept | 1.47 | 1.40–1.54 | 2.05 | 1.96–2.15 | 1.60 | 1.53–1.67 | 1.44 | 1.37–1.50 | 1.54 | 1.47–1.62 | 1.61 | 1.54–1.68 |
| Right-wing | −0.04 | −0.08 − −0.01 | 0.15 | 0.10–0.20 | 0.03 | −0.00–0.07 | 0.00 | −0.03–0.03 | −0.01 | −0.04–0.03 | 0.05 | 0.01–0.08 |
| Religiosity | −0.10 | −0.13 − −0.06 | −0.05 | −0.10 − −0.01 | −0.03 | −0.07–0.00 | −0.01 | −0.04–0.02 | −0.05 | −0.09 − −0.02 | 0.05 | 0.02–0.09 |
| Age | −0.01 | −0.04–0.01 | 0.09 | 0.07–0.12 | 0.03 | 0.01–0.05 | 0.03 | 0.01–0.05 | 0.03 | 0.00–0.05 | −0.01 | −0.03–0.02 |
| NZ European | 0.03 | −0.04–0.10 | −0.02 | −0.11–0.08 | −0.03 | −0.10–0.04 | −0.03 | −0.10–0.03 | −0.04 | −0.11–0.03 | −0.11 | −0.18 − −0.04 |
| Education | 0.00 | −0.01–0.02 | −0.01 | −0.03–0.01 | −0.01 | −0.03–0.01 | −0.02 | −0.03 − −0.01 | 0.00 | −0.01–0.02 | −0.00 | −0.02–0.01 |
| Man | 0.03 | −0.04–0.10 | 0.09 | −0.00–0.18 | −0.01 | −0.08–0.06 | 0.03 | −0.03–0.09 | 0.06 | −0.02–0.13 | −0.02 | −0.09–0.05 |
| Rural | 0.07 | −0.00–0.14 | −0.00 | −0.11–0.10 | 0.06 | −0.01–0.14 | 0.07 | 0.01–0.14 | 0.12 | 0.04–0.19 | 0.04 | −0.03–0.12 |

**Table 7.** Residual correlations of perceived threat from the different religious groups ('rescor').

|  | Estimate | Est. error | l-95% CI | u-95% CI |
|---|---|---|---|---|
| rescor(ThreatenedMuslims,ThreatenedHindus) | 0.64 | 0.02 | 0.61 | 0.67 |
| rescor(ThreatenedMuslims,ThreatenedBuddhists) | 0.48 | 0.02 | 0.44 | 0.53 |
| rescor(ThreatenedHindus,ThreatenedBuddhists) | 0.78 | 0.01 | 0.76 | 0.80 |
| rescor(ThreatenedMuslims,ThreatenedJews) | 0.60 | 0.02 | 0.56 | 0.64 |
| rescor(ThreatenedHindus,ThreatenedJews) | 0.70 | 0.02 | 0.66 | 0.73 |
| rescor(ThreatenedBuddhists,ThreatenedJews) | 0.67 | 0.02 | 0.64 | 0.70 |
| rescor(ThreatenedMuslims,ThreatenedAtheists) | 0.46 | 0.02 | 0.41 | 0.51 |
| rescor(ThreatenedHindus,ThreatenedAtheists) | 0.56 | 0.02 | 0.52 | 0.60 |
| rescor(ThreatenedBuddhists,ThreatenedAtheists) | 0.61 | 0.02 | 0.57 | 0.65 |
| rescor(ThreatenedJews,ThreatenedAtheists) | 0.55 | 0.02 | 0.51 | 0.59 |
| rescor(ThreatenedMuslims,ThreatenedChristians) | 0.48 | 0.02 | 0.43 | 0.52 |
| rescor(ThreatenedHindus,ThreatenedChristians) | 0.54 | 0.02 | 0.50 | 0.59 |
| rescor(ThreatenedBuddhists,ThreatenedChristians) | 0.51 | 0.02 | 0.46 | 0.55 |
| rescor(ThreatenedJews,ThreatenedChristians) | 0.62 | 0.02 | 0.59 | 0.66 |
| rescor(ThreatenedAtheists,ThreatenedChristians) | 0.48 | 0.02 | 0.43 | 0.52 |

younger people tended to express lower prejudice in this domain in New Zealand, though education's effects here were notably much less pronounced than observed in the negative-attitudes analysis. Notably, rural people tended to perceive all religious groups, except Muslims, as more threatening. This suggests that prior to the March 15th attack on Muslims, the perceived threat of Muslims in NZ was a general phenomenon among rural and urban people. In terms of religiosity, highly identified religious people tended to perceive Muslims as less threatening than weakly religious or non-religious people. This effect held even after multiply imputing 20 datasets for missing response – which would have attenuated this signal in the data were it not evident. Politically right-wing people tended to perceive Muslims as more threatening, and this pattern extended to all other religious groups except Christians.

Table 7 presents the correlation of prejudice/acceptance ratings for the different target groups, as modelled by in the residuals of our multivariate regression model (the results for negativity are presented in the Appendix). As expected, perceived threat tends to be correlated, across the groups, Perceived threat against Muslims is less strongly correlated with the perceived threat of Christians, Buddhists than it is with the perceived threat of Hindus and Jews. This pattern is indicative of minority group prejudice rather than a general anti-religious prejudice. As expected, anti-Atheist prejudice was generally weakly correlated with other religious group prejudices. The relatively higher correlation of atheist acceptance/prejudice with Buddhist acceptance/prejudice is consistent with media portrayals of Buddhism as a religion compatible with secular ideologies. We return to this observation in the discussion below.

## Discussion

This paper had two aims. First, we aimed to establish the extent to which a representative New Zealand sample views Muslims, and other religious groups, as threatening and in a negative light. We also compared negative views of religious groups to data from the equivalent sample in 2008. It is encouraging that negativity has generally decreased over time and is present in a smaller proportion of the sample than perceived threat. However, just over a third of the New Zealanders sampled perceived no threat from Muslims in the months leading up to the terrorist attack. While there was a lower rate

of 'somewhat' or 'very' threatening responses (around a third again), these results were particularly startling when comparing rates of perceived threat and negativity to other religious groups. The results show that before the attack there was a relatively high level of perceived threat from Muslims, keeping in mind that these are attitudes that participants are: (a) conscious of, and (b) willing to write on a (de-identified) questionnaire.

Our inference that people in New Zealand express greater perceived threat towards Muslims, and that threat-attitudes are uniquely higher for Muslims in this country merits consideration. In the first instance, these results suggest that general psychological measures of positivity/negativity might underestimate the higher perceived risk that people attribute to Muslims as a group. The past research on anti-Muslim prejudice in New Zealand has focussed on anger and warmth toward Muslims, which are likely to miss the qualities of perceived threat in Muslim group stereotypes. We think it is important to measure these more specific views of Muslim threat, and other groups in New Zealand going forward. Such work could also include the specific types of threat, for instance, whether it is for economic or cultural reasons, or both (e.g. Duckitt and Sibley 2007). We think that it is especially important to monitor attitudes towards minority religions in depth, as many nations around the world are struggling with the presence of far-right political parties, and associated upswings in exclusionary populism and negative rhetoric targeted at Muslim and immigrant populations (Norris and Inglehart 2019). Thus far, New Zealand has seemingly missed this 'populist wave', at least comparatively, but this does not mean that we will be immune to it in the future.

Encouragingly, negativity towards Muslims and other groups (except Christians and Jews) has decreased over the decade between measurements. This finding is consistent with longitudinal results from Sibley et al. (2019) which tracked attitudes within the same New Zealand participants over time. Although this question needs further testing, it is possible that both negativity towards Muslims, and perceptions that Muslims are threatening, might have decreased further in 2019, especially following the increased exposure to Islam after the attack. That is, whereas past research has found that media coverage of Muslims in New Zealand is generally negative (Kabir and Bourk 2012; Rahman and Emadi 2018), positive press in the wake of the attack might have moderated anti-Muslim prejudice. Additionally, an analysis of the differences between those who have become more or less prejudiced after the attack, and in response to the trial, would be a worthy avenue for future work. Another research question could be whether any decreases (or increases) are uniform across the different characteristics tested here (e.g. education, gender, age, and so on).

One plausible explanation for the patterns revealed in our results is media effect: prejudice arises from the perceived threat of Muslim radicals. Indeed, Shaver et al. (2017) found that greater media exposure predicted greater anti-Muslim prejudice. To illustrate the problem, it is useful to focus on the different portrayals of Muslims and Buddhists in Western nations (Eisenlohr 2012). While both religious groups have been portrayed narrowly, Muslims are generally presented as physically threatening (terrorists) and symbolically threatening (they hold different values from the majority). By contrast, Buddhists – the group that participants rated most positively/had the lowest perceptions of threat from – are generally portrayed in Western media as peaceful and symbolically supportive of secular ideals such as inclusivity and tolerance of disbelief (Moore 2008). As indicated in our statistical models, and consistent with the relatively positive portrayals of Buddhism

in secular New Zealand, we find that the acceptance/prejudice of Buddhism and Atheism is strongly correlated. The importance of the media's role in strengthening or weakening prejudice is likely exacerbated by a general lack of knowledge and education on different religions, and a lack of contact between most New Zealanders and diverse religious groups: Muslims comprise only 1.3% of the population and Buddhists 1.1% (Statistics New Zealand 2019). This means that for many New Zealanders the media provides their only exposure to religious diversity.

Our second objective was to systematically assess the relative strength of anti-Muslim prejudice compared to the other types of religious prejudice in New Zealand, and the predictors of this prejudice. Our findings replicate previous studies from the NZAVS (Shaver et al. 2016, 2017; Hawi et al. 2019; Highland et al. 2019; Sibley et al. 2019; Yogeeswaran et al. 2019), as well as a community sample study (Wilson 2019), revealing a substantial Muslim Acceptance Gap in New Zealand. This past work has shown that politically right-wing attitudes positively correlate with anti-Muslim prejudice, and that education, and religious identification are negatively associated with anti-Muslim prejudice. In the current study, we further find that younger people are less prejudiced against Muslims than older people. Notably, religious identification was associated with lower prejudice towards all religious groups except non-believers, where there is no relationship. This finding holds even after adjusting for a greater frequency of missing responses among religiously identified people by using a conservative multiple-imputation strategy. The diminished effect of education on perceived threat in the regression analyses suggests a possible entrenchment of this attitude: that is, education only weakly reduces perceptions of threat from Muslims. The mismatch between reality and perceptions reveals substantial headroom for improving the acceptance of Muslims in New Zealand. Thus, fear of Muslims appears to be pervasive in the NZ population, and unique to views of the Muslim population.

These analyses raise a number of future research directions and limitations. One limitation was the age restriction on our sample. We found that older people are more prejudiced, and the 2018 survey did not sample those over 76. Arguably, a limitation of our study is its reliance on *self-reported* prejudice towards religious groups. Though the self-report measures are imperfect, it is important to note that we simultaneously assessed prejudice against five religious groups, while also adjusting for within-participant correlations of responses across the five domains, yet we still found a Muslim Acceptance Gap present in the data. However, with these limitations in mind, we are likely underestimating the actual level of prejudice present in New Zealand. One way to get around self-report biases is to monitor more concrete outcome data. It is important to monitor hate crimes against Muslims in New Zealand. Many organisations, including the Human Rights Commission, have campaigned for better hate crime statistics, both before and after the attack (Mok 2019). Future research could also explore the costs of this prejudice to Muslim New Zealanders, for example, how their health, well-being, and employment outcomes compare to other groups. However, from our results, we have no doubt that the relative magnitudes of perceived threat and greater negativity toward Muslims poses a challenge to New Zealand's ambition to provide equal opportunities for all New Zealanders regardless of their creed and faith.

Looking ahead, our findings point to younger people, religious people, politically moderate/liberal, and educated people as potential sources for Muslim acceptance. On the

other hand, the greatest challenges to improving prejudice arise for those with lower education, those who are more right-wing, and NZ European, male, and secular parts of the population. Despite evidence of improving attitudes to NZ Muslims over time, the magnitude of the Muslim Acceptance Gap suggests that anti-Muslim prejudice in New Zealand will not abate on its own. Indeed, the Muslim Acceptance Gap presents a serious challenge to the future health of New Zealand as a rights-based democracy where all people can worship freely, or not, after their traditions and conscience, without fear or prejudice.

## Note

1. As an aside, we conducted independent samples $t$-tests to see if those over age 76 were more negative towards different groups. They were significantly more positive towards Christians ($t(85.8) = 2.22$, $p = .029$; $M > 76 = 2.25$, $M \leq 76$ younger $= 2.01$), and significantly more negative towards Muslims ($t(939) = -4.26$, $p < .001$; $M > 76 = 3.49$, $M \leq 76$ younger $= 2.91$), Hindus ($t(927) = -4.70$, $p < .001$; $M > 76 = 3.25$, $M \leq 76$ younger $= 2.69$), Buddhists ($t(929) = -4.47$, $p < .001$; $M > 76 = 3.07$, $M \leq 76$ younger $= 2.52$), and Atheists or non-believers ($t(66.38) = -5.11$, $p < .001$; $M > 76 = 3.40$, $M \leq 76$ younger $= 2.64$). The difference for negativity towards Jews was not significant ($p = .429$).

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## Disclosure statement

## Funding

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# Appendix

## *Survey methodology*

Data were drawn from the New Zealand edition of the 2018 and 2008 International Social Survey Programme (ISSP) religion surveys. The ISSP is an organisation of 42 nations who run national surveys on different social science topics annually. The topics of these surveys rotate across years, for instance, the religion module also ran in 1991, 1998, and 2008 (note that the 1991 and 1998 surveys do not include attitudes towards different religious groups). Data from the New Zealand surveys is available open-access through the FigShare data repository (Gendall and von Randow 2018) and international data is accessible through the GESIS archive (GESIS 2019).

In 2008, the survey was mailed to a random sample of 2040 people from the NZ Electoral Roll, which is available to scientific and health research on a case-by-case basis. This produced 1027 responses, a reported response rate of 52% (Gendall and Healey 2009). Participants in the 2018 edition were also sampled from the NZ Electoral Roll, but different strategies were adopted to

help remediate differential response rates across groups. Sampling followed a strategy devised across multiple mailings of the ISSP in order to maximise responses in strata with low response rates and bring them more in line with population estimates to allow for more reliable estimates (e.g. Māori, ethnic minorities, and young people are less likely to respond; see D'Souza et al. 2019). As a result, there were 32 strata derived from electoral roll characteristics: 4 based on ethnicity (Māori descent, meshblocks with a relatively high [>15%] Pacific population, meshblocks with a relatively high [>25%] Asian population, and the remainder) × 2 gender (male, female) × 4 age (18–30, 31–45, 46–60, 61–75). Note that we cut off age at 75 in order to provide a pilot test for another longitudinal panel project (Greaves 2017), although in practice, some participants had turned 76 by the time they completed the survey and one participant was aged 83. An initial mail out went to 4800 participants in September, with a later booster mail out of 900 sent in November in order to achieve the minimum 1200 participants required by the ISSP secretariat (these participants only received a survey and no reminders).

The initial mailing consisted of a cover letter, survey, a return envelope, and a pen. The materials gave the participants the option of completing the survey online via Qualtrics (13.9% completed the survey online). Approximately one month after the initial mailing those who had not responded were sent a reminder postcard, and six weeks later they received another cover letter, survey, and return envelope. As an incentive, participants were entered into a draw to win one of four NZ$100 gift vouchers. Between 10 September 2018 and 17 February 2019, 1335 participants responded out of the total 5700, giving a raw response rate of 23.4%, and a standardised response rate of 27.9% (i.e. the response rate that would have been achieved had each stratum been mailed surveys proportional to their share of the population).

Before analyses, to ensure representativeness, both waves were weighted for nonresponse based on characteristics available on the electoral roll. For 2008 this included gender and age. For 2018 this included: age group, Māori descent, region, NZ Deprivation Index quintiles, urbanicity and occupation, (D'Souza et al. 2019). Thus, the sample can be considered broadly nationally representative, at least for those aged 18–75, though assessment of voting patterns revealed a slight overrepresentation of Labour party voters, relative to National, Green, and NZ First voters.

**Table A1.** Residual correlations of negative attitudes across religious groups.

|  | Estimate | Est. error | l-95% CI | u-95% CI |
| --- | --- | --- | --- | --- |
| rescor(NegativeMuslims,NegativeHindus) | 0.72 | 0.01 | 0.70 | 0.75 |
| rescor(NegativeMuslims,NegativeBuddhists) | 0.62 | 0.02 | 0.59 | 0.66 |
| rescor(NegativeHindus,NegativeBuddhists) | 0.85 | 0.01 | 0.83 | 0.87 |
| rescor(NegativeMuslims,NegativeJews) | 0.69 | 0.02 | 0.65 | 0.72 |
| rescor(NegativeHindus,NegativeJews) | 0.76 | 0.01 | 0.74 | 0.79 |
| rescor(NegativeBuddhists,NegativeJews) | 0.72 | 0.01 | 0.69 | 0.75 |
| rescor(NegativeMuslims,NegativeAtheists) | 0.43 | 0.02 | 0.39 | 0.48 |
| rescor(NegativeHindus,NegativeAtheists) | 0.54 | 0.02 | 0.50 | 0.58 |
| rescor(NegativeBuddhists,NegativeAtheists) | 0.57 | 0.02 | 0.52 | 0.61 |
| rescor(NegativeJews,NegativeAtheists) | 0.51 | 0.02 | 0.46 | 0.55 |
| rescor(NegativeMuslims,NegativeChristians) | 0.51 | 0.02 | 0.46 | 0.55 |
| rescor(NegativeHindus,NegativeChristians) | 0.52 | 0.02 | 0.48 | 0.57 |
| rescor(NegativeBuddhists,NegativeChristians) | 0.48 | 0.02 | 0.43 | 0.53 |
| rescor(NegativeJews,NegativeChristians) | 0.61 | 0.02 | 0.58 | 0.65 |
| rescor(NegativeAtheists,NegativeChristians) | 0.28 | 0.03 | 0.23 | 0.33 |