



ARTICLE

# Perceived threat and demographic misperception

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## Abstract

What causes demographic misperceptions of minority populations? We anticipate that the extent to which members of the majority group perceive the minority group as a threat shapes their estimation of minority group size. While existing research argues that demographic misperceptions of minority groups can lead to a sense of threat, we argue that the opposite relationship may exist—that threat also causes demographic misperception. We test our argument using an experiment embedded in a survey of Muslims in Indonesia. We manipulate perceived threat of Christians in Indonesia and then ask respondents to estimate the size of the Christian population. While Muslims generally overestimated the size of the Christian population, we find that Muslims who felt a greater sense of threat estimated the Christian population to be significantly larger at both the national and provincial levels. This finding provides new insights on the directionality of the relationship between the widely acknowledged connection between threat and demographic misperceptions.

**Keywords:** demography; majority groups; misperception; religion; threat

## Introduction

Countries are commonly characterized by majority and minority groups, whose boundaries are rooted in social cleavages such as religion, race, or ethnicity. Ask a member of a majority group to estimate the size of minority groups in their country or even locality, and they will likely overestimate (Wong, 2007; Kardosh *et al.*, 2022). This phenomenon is important to understand due to the fact that demographic misperception has been linked to anger, fear, biases, and hostility toward minorities (Alba *et al.*, 2005; Outten *et al.*, 2012; Craig and Richeson, 2014b; Gorodzeisky and Semyonov, 2020), decreased support for diversity supporting measures (Kardosh *et al.*, 2022), and even support for extremist groups in the United States, such as the Ku Klux Klan and neo-Nazi organizations (Bai and Federico, 2021). Demographic misperception is all the more worrisome because once people have

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The experiment from this article was pre-registered.

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demographic misperceptions, providing them with accurate information about the size of minority groups does not seem to affect their hostile attitudes toward those minorities (Sides and Citrin, 2007; Hopkins *et al.*, 2019).

The implications of demographic misperceptions can be seen across the globe. In Sri Lanka, rumors abound of Muslim population growth and misperceptions of the Muslim population size are commonly described as a motivation for Sinhalese violence (DeVotta, 2016; Fisher and Taub, 2019). Observers have attributed the extreme violence—including sexual violence—against the Rohingya population in Myanmar to majority Buddhist misperceptions of the Muslim minority demographic size (Aung, 2019) and claims of uncontrollable Muslim birth rates (Bauchner, 2020).

But what causes demographic misperceptions in the first place? Observational studies have highlighted the importance of a number of factors, including education (Sides and Citrin, 2007; Herda, 2013a, 2013b), interactions with minority members (Kunovich, 2017), and political orientation (i.e., Semyonov *et al.*, 2008). We investigate another factor—perceptions of threat<sup>1</sup>—which we argue shape demographic misperceptions. More specifically, we expect that as perceived threat from a minority group increases, members of the majority group will increase their estimates of the minority group's demographic size.

We are not the first to investigate the relationship between threat perception and demographic misperceptions. However, existing research is observational, meaning the direction of causality cannot be determined (Nadeau *et al.*, 1993). This is concerning because the reverse relationship has also been a focus of research—that is, how demographic misperceptions shape perceptions of threat (Craig and Richeson, 2014a, 2014b). Existing studies are thus unable to determine what causes what: Do demographic misperceptions cause perceptions of threat or do existing perceptions of threat cause demographic misperceptions? Ponce de Leon *et al.* (2022) represent an important exception to the observational research on the topic, using experiments to find that in the United States, individuals perceive symbolically threatening groups to be more pervasive than comparable nonthreatening groups.

Identifying the direction of this relationship is worthwhile because of the range of consequences associated with demographic misperceptions outlined above (Alba *et al.*, 2005; Gorodzeisky and Semyonov, 2020; Kardosh *et al.*, 2022). More broadly, a great deal of social science research is dedicated to identifying causal relationships. If researchers misidentify the direction of the relationship, the field is falling short of its goal of illuminating the factors that drive the social phenomena it studies.

In contrast to existing studies that use observational data and are unable to establish a causal relationship, this article tests the effect of perceived threat on demographic perceptions with an experiment embedded in a survey of Muslims in Indonesia ( $n = 444$ ). In the experiment, we manipulate perceived threat and examine its impact on perceptions of national and provincial religious demographics. The *t*-test estimates demonstrate that increasing the threat Muslims perceive inflates Muslims' estimates of the size of the Christian population in Indonesia by 19% at both the national and provincial levels.

The article makes three main contributions. First, our findings provide greater insight into the nature of the relationship between perceived threat and demographic misperception, suggesting that the relationship may also work in the reverse of what

has been focused on the literature (e.g., Craig and Richeson, 2014a). Much of the research investigating this relationship has relied on observational work, whether through the use of interviews and focus groups (Gallagher, 2003) or surveys (Sigelman and Niemi, 2001; Alba *et al.*, 2005; Wong, 2007; Kunovich, 2017). The simultaneous presence of negative hostile attitudes toward minorities and demographic misperceptions (e.g., Kinder *et al.*, 1996) has hindered our ability to disentangle the causal arrow—if any—between demographic misperception and perceived threat (e.g., Nadeau *et al.*, 1993, 341). More recently, experimental research has highlighted a causal relationship between perceptions of demographic size and negative sentiments toward minority groups (Semyonov *et al.*, 2004; Craig and Richeson, 2014a, 2014b). While previous experimental research provides causal evidence that perceptions of minority size shape majority members' perceptions of threat, our findings suggest caution when interpreting insights drawn from observational data or concluding that the relationship only goes in one direction. Our experimental evidence suggests the relationship may work in reverse, with threat perception shaping the perceived size of minority groups.

Second, in contrast to the existing literature on demographic misperceptions, which has focused on Europe and the United States (Craig and Richeson, 2014a, 2014b; Myers and Levy, 2018), we investigate the relationship in a distinct context—Indonesia. The lack of studies in regions other than the Global North merits attention because the majority and minority in question appear to impact the quality and quantity of demographic misperceptions (e.g., Gallagher, 2003; Wong, 2007). By conducting a study in Indonesia, the study builds on previous research in the United States and Europe to broaden our understanding of how existing theories translate—or do not—across different contexts.

Third and finally, the findings provide new insights into how members of different religions interact socially and politically with one another. Studies have examined the factors influencing interreligious hostility (e.g., Basedau and Koos, 2015; Setiawan *et al.*, 2020a, 2020b; Kanol, 2021), interreligious discrimination (Fox, 2013), and interreligious conflict (e.g., Fox, 2000, 2004; Basedau *et al.*, 2011, 2013, 2016, 2017). However, few have examined demographic misperceptions of religious groups. Both our article and other studies provide reason to believe that demographic misperceptions of religious groups are an important piece of the puzzle when it comes to understanding these phenomena.

## Religion in Indonesia

To test our hypothesis that perceptions of threat from minority groups increase estimates of minority size, we focus on the Muslim majority and Christian minority in Indonesia. Indonesia has a population of over 273 million people spread across thousands of islands. Both linguistically and religiously, Indonesia is diverse; however the division between Muslims and Christians is particularly salient. Approximately 86.7% of Indonesians are Muslims. Christians constitute approximately 10% of the country's population, making Christianity the second largest religion in Indonesia. While Muslims are the majority population, local demographic configurations result in significant variation in Christian and Muslim size at local levels. For instance, Christians

are the majority population in Papua, West Papua, East Nusa Tenggara, and North Sulawesi. It should be noted that religious distinction overlaps somewhat with the Chinese minority, as Indonesians of Chinese descent are Christians at higher percentages than other Indonesians.

The Muslim–Christian dyad is particularly salient for two main reasons. First, significant violence has occurred between Muslims and Christians, with especially severe outbreaks occurring in Sulawesi, Maluku, and other areas. For instance, over 1,000 people died in the Poso communal conflict that lasted from 1998 to 2001. In the most populous province, Java, significant protests and rioting against the Christian minority have occurred. Organizations such as the Islamic Defenders Front have protested and rioted outside of churches and Christian areas. Church burnings are a significant societal problem (e.g., Facal, 2020), as some Muslims perceive Christian expansion to be a threat to Islam’s dominant religious status in Indonesia (Kapoor, 2015).

Second, while there are many religious minorities (e.g., Hindus, Ahmadiyyas) in Indonesia, Christians represent the largest religious minority. We anticipate that a threat from Christians may be more realistic and of greater concern to Muslims than a threat from other religious minorities, such as Ahmadiyya.

### Experimental design

We recruited online survey respondents using Facebook advertisements. Facebook users in Indonesia who were 18 years or older saw an ad<sup>2</sup> inviting them to participate in an academic survey. After clicking on the link, participants were asked questions to determine eligibility so that our resulting sample contained only Muslims.<sup>3</sup>

While our sample is a convenience sample rather than a representative sample, we can compare key attributes of our sample to a nationally representative one to understand how our sample differs. Comparing our sample ( $n = 444$ ) to the nationally representative Asian barometer survey in 2016 (the most recent available representative survey), we find that our sample is older and slightly more urban than the overall adult population in Indonesia. However, the distribution of men and women that participated in our survey matches that of the overall population.<sup>4</sup> We did not ask respondents about their income or level of education; however, we assume that respondents are more educated and wealthier than the general Indonesian population based on other studies that used the same recruitment method (Rosenzweig and Zhou, 2021). We expect that if our sample is more highly educated, we are less likely to overestimate the size of minority groups, rendering it more difficult to find support for our theory (Sides and Citrin, 2007; Herda, 2013a, 2013b). Indeed, robustness checks indicate that respondents in urban areas tended to estimate the Christian population to be smaller than respondents in rural areas, confirming that the makeup of our sample would likely make it more difficult to find support for our hypothesis, since it was more urban than the overall adult population in Indonesia.

To manipulate perceived threat, we randomly assigned participants to a treatment and control group, resulting in no statistically significant differences in the mean value of age, education, or sex between treatment and control groups (Table 1).

Threats can take a number of distinct forms, including those rooted in economic, cultural, political, or status concerns—and at the individual or group level. We focus

**Table 1.** Differences across demographic characteristics

	Age	Male	Urban
Mean in treatment group	36.7	0.51	0.49
Mean in control group	36.1	0.48	0.53
Difference in means p value	0.6	0.41	0.37

specifically on dominant group status perceptions of threat (Obaidi *et al.*, 2018)—that is, when members of the dominant group feel their group’s status, broadly conceived, is threatened. According to intergroup threat theory, group threats can be either material<sup>5</sup> or symbolic (Stephan and Stephan, 2000). Material threats are a result of threats to a group’s power, resources, and general welfare. Symbolic threats occur when there exists a threat to a group’s values, belief system, religion, ideology, philosophy, morality, or worldview (Stephan and Stephan, 2000). While distinct, at least in many contexts, the two types of threat overlap (Riek *et al.*, 2006).

Material or symbolic threat may constitute objective challenges to one’s group’s resources. Yet, material and symbolic group threats may also result from a perception not based on an objective challenge or potential objective challenge to one’s group’s resources. Indeed, people may perceive threats even where none exist—perhaps a strategy developed to avoid costly errors (Haselton and Buss, 2003). It is important to note that intergroup threat theories focus primarily on perceptions of threat. Whether or not these perceptions are accurate, perceived threats may have real consequences, such as causing the dominant group members to take defensive actions (Mutz, 2018) and support for group-based violence (Basedau *et al.*, 2021).

Our experimental design drew upon real events that would likely to be perceived as a dominant group status threat by Muslims in order to maximize the ecological validity of the experiment. Participants in both the treatment and control groups were asked to read a paragraph discussing Indonesia’s religious harmony law, which allows local majority religious members to block construction of houses of worship of local minority religions (for more information, see Harsono, 2020). Participants assigned to the treatment group then read a second paragraph about an instance in which Christians used this law in a predominantly Christian area to dismantle a mosque. The religious harmony law is an actual law in Indonesia, passed in 2006, and the happenings that those in the treatment group read about occurred in 2018 (see Harsono, 2018). In total, 250 respondents received the control prompt and 248 the threat treatment condition. The control and treatment prompts can be found in the Appendix (Table A).

Our treatment exposes participants to both a material and symbolic group status threat related to religion, which we contend reflects the nature of how Muslims perceive the threat from Christians in Indonesia. The instance of their group’s house of worship being torn down represents a status threat both to Muslim power in the form of religious physical structures (material) as well as a threat to the Muslim faith itself (symbolic).<sup>6</sup>

After receiving the treatment/control prompt, respondents were asked to estimate the percentage of Christians in (i) their province and (ii) in the country. The

questions were phrased as: What percentage of people in your province/special region do you think are Christians? What percentage of Indonesians do you think are Christians? This results in two dependent variables that range from 0 to 100.

We outline two shortcomings of our experiment, which should be kept in mind while interpreting the results. First, our treatment, in addition to priming group threat, mentions local Christian group majorities in a specific locality—Papua. This renders it impossible to determine which part of the treatment is driving perceptions of demographic levels—perceived threat or mention of a Christian majority in a specific locality—Papua. However, we anticipate that most, if not all, Muslims in our study are aware that Christians represent a majority in Papua due to the province's decades long struggle for independence—a conflict motivated by a number of issues, among them religious differences.<sup>7</sup> Thus, we do not expect that mention of the Christian majority in Papua is responsible for any observed difference between the treatment and control groups, because it is not new information.

Moreover, the treatment that we chose to deliver—the use of the majority law—is dependent on providing information on Christian majorities in Papua. That is, it is not possible to provide information on this specific group threat variable (which we chose because of real-world relevance) without mentioning local Christian majorities. If someone heard this story in the news or from a friend, they would be exposed to both pieces of information—the use of the majority law and the fact that Christians were a local majority. While we recognize that these decisions led to certain shortcomings, we feel that that this treatment type represents the most realistic reflection of how people receive information compared to not receiving information on the topic.

Second, we note that the control condition also exposes respondents to a certain level of information regarding relations between different religions, which may prime some individuals to perceive group threat. However, we expect that control exposure to this information provides a more conservative test and makes any different outcome between control and treatment groups harder to generate—while also isolating the effect of threat.

In regards to generalizability, because threats can come in so many different forms, it is difficult to know how our results can be extrapolated to other types of threats. Researchers have found distinct consequences of different types of threats (Rios *et al.*, 2018). We perceive our study to be a first step in understanding the impact of a specific type of threat on demographic misperceptions, and believe the area is ripe for further studies examining the effect of other types of threats, including realistic threats such as resource competition (for instance, competition over jobs) or physical safety (for instance, violence) as well as symbolic threats such as laws that deviate from cultural norms.

## Results

We use *t*-tests to estimate the difference between the treatment and control groups.<sup>8</sup> Across both treatment and control groups, sample participants vastly overestimate the percentage of the national population that is Christian compared to the actual population. Christians make up 10% of Indonesia's population, however the mean

estimate from our sample is 25.3%, an approximately 150% overestimate. This finding is in line with previous work that demonstrates that majority members tend to overestimate the size of some minority populations (e.g., Wong, 2007).

Yet, while participants on average overestimate the Christian population, we find that those in the treatment group, who are made to perceive a greater sense of group threat, estimate the Christian population to be significantly higher than those in the control group. Figure 1 shows the mean estimate and standard deviation of the Christian population for the control and treatment groups at the national and provincial levels. Density plots can be found in the Appendix.

For the national-level estimation of the Christian population, the mean estimate of the control group is 23.1. In contrast, the mean estimate of the treatment group increases to 27.5 ( $p = 0.01$ ,  $t = 2.40$ , degrees of freedom = 422.76). The Cohen's  $D$ , which represents the standardized difference between the two means, is 0.23.

Similarly, for the provincial-level estimates, the mean estimate of the control group is 21. Yet, the mean estimate of the treatment group against increases to 25 ( $p = 0.04$ ,  $t = 1.98$ , degrees of freedom = 394.12). The Cohen's  $D$  is 0.19.

An approximately four percentage-point difference is found between the control and treatment groups for both outcomes. Inducing a sense of threat is associated with a 19% increase in sample participants' estimates of the size of the Christian population at the national level as well as at the provincial level.

Described differently, the control group overestimates the Christian population at the national and provincial levels by 131%. In contrast, the treatment group on average overestimates the Christian population by 175%. The treatment group's increased level of misperception is especially relevant considering the high level of misperception found in the control group. This evidence demonstrates that perceived threats of minority groups caused members of majority groups to overestimate the size of minority populations in our experimental setting.

As described above, our sample differs slightly from the population parameters namely along age and urban location. To investigate the robustness of our results, we run regression models that control for age, urban location, and gender.

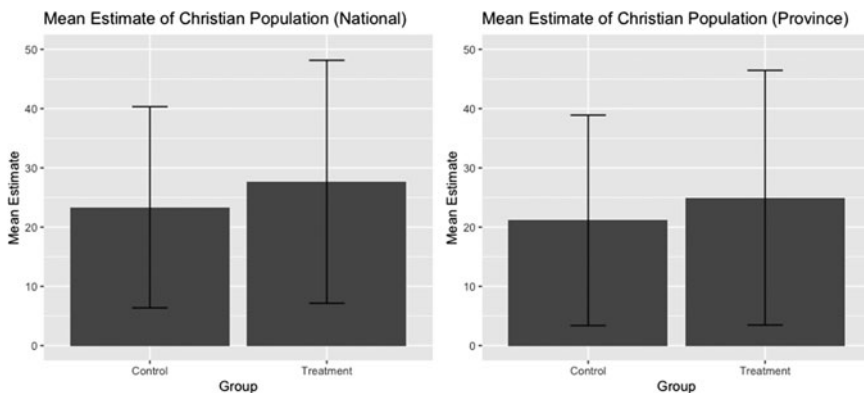


Figure 1. Mean estimates of Christian population.

Additionally, because local population sizes vary with regard to their Christian populations, it is possible that our effect size may maintain heterogeneous effects or may be limited in application to the broader population because of a biased sample. We identify participants' provincial locations (based on a question asked at the end of the survey experiment) and include provincial fixed effects.<sup>9</sup> Results for the models with the covariates as well as the province fixed effects remain consistent with the primary analysis. The results can be found in the Appendix (Tables B and C).

## Discussion

Our experimental design and results provide evidence that perceived threat causes increased overestimations of Christians by Muslims in Indonesia at both the national and provincial levels. However, one limitation of our experimental approach is limited capacity to test the mechanisms underpinning this relationship. We outline three possible mechanisms here as a basis for future research: fear, feasibility, and visibility.

First, when a perceived threat is present, majority members are likely to be more fearful, which may in turn cause majority members to overestimate the size of minority groups. A large literature related to fear and its effect on misperceptions and overestimates of phenomena more generally can be found in disciplines such as criminology (i.e., Henig and Maxfield, 2017), medical patient views (Gillan *et al.*, 2014), public health (Yamanis *et al.*, 2016), sociology (Quillian and Pager, 2001), and social psychology (Sampson and Raudenbush, 2004). Following this line of research, fear of the outgroup may mediate the relationship between group threat and demographic misperceptions found in our research. However, recent findings would refute this line of thinking, with Velez *et al.*'s (2018) finding that anxiety is not responsible for demographic misperceptions of minorities.

It is not exactly clear how fear might affect misperceptions of phenomena, and the process may vary depending on the specific outcome. Regarding outgroup demographic misperceptions, it is possible that outgroup threat generates fear, which may then result in overestimates of the strength of the outgroup as people ascribe attributes of strength to the outgroup. That is, a certain degree of outgroup strength may be assumed to exist in order for the threat to be plausible. Overestimation of outgroup strength may then affect demographic misperceptions, as respondents may speculate how strength is formed. Since demography is likely an important feature of group strength, majority group members may then overestimate minority group size.

We consider a second, closely related, feasibility mechanism. This mechanism is similar to fear-based mechanisms in that it relates to group-based strength. However, it does not require fear as an initial mediator. Competing for resources is challenging and likely requires certain attributes. Weaker minority groups are unlikely to compete or have high capacity for competition. Specifically, when a minority group is more threatening and active politically, majority group members are likely to reconsider the strength of the minority group. A key feature of strength is numbers, that is, the size of the population. Larger numbers may indicate more voting and mobilization potential. That is, mounting a political threat is challenging, requiring a certain level of strength, specifically, size. For instance, Americans who



thought the civil rights movement was moving too quickly overestimate the Black population size at higher frequencies (Nadeau *et al.*, 1993). Black political activity which threatened the status quo is likely to be perceived as not feasible unless Blacks maintained certain attributes—such as size—that facilitated the activity (Blalock, 1967). As a result, majority group members may associate threat with size, overestimating size as a cognitive shortcut to explain minority group capacity for threat.

The third potential mechanism is visibility. Qualitative evidence from the United States suggests that minority (Black) political activity, possible as designed by the people participating, increases majority attention on the minority population and thus increases minority visibility. Observational research finds that more interactions between members of different groups may increase demographic misperceptions (Alba *et al.*, 2005), likely through a visibility and attention mechanism. That is, majority members can more easily recall salient examples of interactions with minority members.<sup>10</sup> When assessing local and national level demographic attributes, people aggregate personal information from salient issues, which in contexts of increased minority visibility, will include a higher ratio of salient minority interactions. Increased attention may thus increase perceptions of size of the minority through a process of increased visibility.

The analysis presented here is unable to determine which mechanism or combination of mechanisms is present in mediating the relationship between group threat and misperceptions of minority populations. One of the common challenges of identifying mediating effects is nonrandom distribution of mediating factors. Future research should look to quantify the relationship between exogenously distributed threat perception and measures on group fear, feasibility, and visibility. Provided a relationship is found, future research would then benefit from exogenously distributing group fear, feasibility, and visibility to examine their relationships with demographic misperceptions.

Examining fear, feasibility, and visibility may provide additional avenues for broader assessments of the relationship between threat types and demographic misperceptions. While our study examines a group-based status threat, with both material and symbolic components, other threats may have distinct effects on fear, feasibility, and/or visibility, which may then influence demographic misperceptions. For instance, economic group-based threats may generate greater fear compared to political threats, which could then affect differently demographic misperceptions.

The effect of group-based threats may moreover be conditioned by existing resource levels. For instance, during economic downturns, economic threats may have a larger effect on fear. Future research should consider theoretically and empirically how and when group-based threat types may influence demographic misperceptions through fear, feasibility, and visibility.

## Conclusion

Researchers have long been interested in the relationship between perceptions of group demographic size and perceptions of threat. However, the relationship has been primarily studied in one direction—the effect of perceived demographic size

on perceptions of threat—or with observational studies that cannot determine the causal direction of the relationship. In this article, we contend that there is reason to believe that the relationship between perceptions of group demographic size and perceptions of threat could work in the reverse direction—that is, perceptions of threat cause people to overestimate the size of minority groups they perceive as posing a threat.

We focus on dominant group status threat in particular, examining how majority members' demographic estimates of minority groups is shaped by the extent to which they perceive a threat toward their group's status. We use the case of Muslims in Indonesia, embedding an experiment in a convenience sample of 444 Muslims, who were randomly assigned to feel threatened by the Christian minority or not, and then asked to estimate the size of the Christian population both at the national and provincial levels.

While the sample participants tended to overestimate the size of the Christian population in general, those presented with the treatment condition—made to perceive group threat—estimated the Christian population to be significantly larger than those in the control condition. More specifically, the control group generated a misperception effect that was 131% larger than the actual Christian population. Yet, the treatment group's misperception was 175% larger, a significant increase.

Our results provide evidence that perceptions of group threat shape majority members' perceptions of some minority demographics. Of course, our study has some drawbacks as well. While testing our argument experimentally is beneficial in some ways, it cannot completely capture real-world dynamics. On the one hand, we could find an exaggerated effect than what would be found in the real world by virtue of focusing participants' attention on only a few pieces of information. On the other hand, real-world dynamics (e.g., threats that majority group members come across naturally) may actually lead to larger substantive effects.

Future research could build on our findings in a number of ways. First, as outlined above, our understanding of threat and demographic misperceptions would benefit from evaluating possible mechanisms mediating the relationship between group threat and misperceptions of minority demographics.

Second, future research should investigate whether the type of threat matters—our experiment used the instance of minority members legally dismantling a house of worship of the majority group. However, threats can come in myriad forms.

Third, future research should examine how the effect of threat on demographic misperceptions differs based on certain characteristics of minority groups or the political context in which majority and minority groups operate. A large body of observational research from the United States highlights that White perceptions of minority size depends on the minority group (Wong, 2007), with significant research focusing on Black population size estimates. Our research offers an initial foray into demographic misperceptions in a non-Western country. The characteristics of the particular dyad we examine offer some insights into how our findings may generalize to other contexts. The Muslim–Christian dyad in Indonesia maintains a number of characteristics, including relative size (with Christians making up approximately 10% of the population), higher average minority wealth, and a violent history. Notably, Indonesia has a history of violence directed toward the Christian population.

Thus, while it is possible that our results may generalize to dyads that are similar along these measures, it is also unclear if the results are generalizable to contexts that differ along these characteristics, particularly those without a violent history, which may affect the salience or perceived quality of group threats and influence demographic misperceptions. More data and studies across contexts are required to determine the minority and majority–minority dyad factors that shape the existence and extent of majority misperceptions.

**Supplementary material.** The supplementary material for this article can be found at <https://doi.org/10.1017/S1755048324000336>

## Notes

1. Our study focuses on dominant group-based status threat. Other group-based threats, such as economic or political threats to one's ingroup are not examined.
2. See the Appendix (Figure A) for the Facebook advertisement.
3. We sought to avoid making participants uncomfortable by asking them directly about their religion, so potential respondents were first asked an indirect question to determine religious identity. Respondents were asked to choose their favorite holiday from a list of holidays that represented most of the religious spectrum in Indonesia. Respondents who responded that their favorite holiday was a Muslim holiday were counted as Muslims. Respondents who indicated that they did not have a favorite holiday or "other," were then asked directly which religion they identify with, if any, so as not to lose any Muslims from our sample. This strategy was recommended to us by an experienced Indonesian survey research organization.
4. The mean age in our sample is 39 versus 27 in the nationally representative sample. Fifty-one percent of our sample described themselves as living in an urban area, while 48% did so in the nationally representative survey.
5. Instead of the term "material threat," Stephan and Stephan (2000) use the term "realistic" threat. We do not use the term "realistic" because it suggests an objective level of group-based threat. Rather, threats to material goods may be objective as well as perceived.
6. It is important to note that our threat treatment is limited to religious material and symbolic threat. It is possible that other group-based threats, such as economic threats such as competition for jobs or political threats related to Muslim and Christian political positions or voting levels, may affect differently Muslim perceptions of Christian demographic size. While we expect that other group-based threats may also increase perceptions of Christian demographic size because of a similar mechanism, this study does not empirically assess how distinctions in threat types may relate to demographic size perceptions nor does it claim that our conceptualization of group threat is representative of all types of group threats.
7. This is especially true since our sample consists of Facebook users, who have access to information from the internet.
8. All analysis was conducted in R (v4.1.2).
9. This results in dropping 120 observations from our sample, 110 of which did not answer the question regarding which province they lived in and 10 of which only had one observation.
10. A number of observational studies have provided evidence that is suggestive of the visibility mechanism (e.g., Sides and Citrin, 2007), such as specific minority ethnic groups overestimating size (Sigelman and Niemi, 2001) and local demographics dynamics affecting national level estimates (Nadeau *et al.*, 1993; Nadeau and Niemi, 1995). Yet, such studies may also indicate the fear and feasibility mechanisms and are unable to demonstrate causal relationships.

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