

# Political Partisanship, Trust, and Attitudes toward COVID-19 Vaccines in Indonesia

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## Abstract

**Context:** This study examines the extent to which political partisanship—measured as support for either the incumbent candidate for Indonesia's presidency, Joko Widodo (popularly known as Jokowi), or for Jokowi's challenger, Prabowo—affects individuals' risk perception of COVID-19 and COVID-19 vaccine hesitancy and refusal as well as beliefs about the safety and efficacy of the COVID-19 vaccine.

**Methods:** The authors performed multinomial logistic and ordinary least squares regression analyses on a nationally representative sample of a national survey on public trust in COVID-19 vaccines and vaccinations that was conducted in December 2020.

**Findings:** Individuals who voted for Prabowo in the 2019 presidential election were more likely to have a lower level of willingness and a higher level of hesitancy to get the COVID-19 vaccine than those who cast their ballot for Jokowi as the Indonesian president.

**Conclusions:** Political partisanship does matter in shaping individuals' hesitancy or refusal to receive the COVID-19 vaccine in Indonesia. The effect of partisanship is also significant in shaping individuals' trust in the efficacy and safety of the COVID-19 vaccine, but it is not significantly associated with individuals' risk perceptions.

**Keywords** politics, partisanship, COVID-19, vaccines, Indonesia

The novel SARS-CoV-2 coronavirus has spread quickly across the globe and has become a major threat to human health since its first outbreak in Wuhan, China, in December 2019. As the total number of COVID-19 infections and deaths has significantly increased worldwide, governments in many countries are mobilizing to vaccinate their populations to prevent the spread of the virus. However, as with other types of vaccination, vaccine

hesitancy—the middle of the continuum between total acceptance and total refusal of the vaccine (Dubé et al. 2013)—is a growing public health issue in some countries. Vaccine hesitancy and refusal represent significant threats to the effort to end the COVID-19 pandemic because they make it more challenging to stop virus transmission. Therefore, the World Health Organization considers vaccine hesitancy as one of the ten major threats to global health (WHO 2019).

Extensive studies have identified various structural and individual-level factors that contribute to individuals' attitudes and behaviors toward vaccination. The structural factors range from the role of public health and vaccine policy to moral and religious values (Dubé et al. 2013). Among the various individual-level factors, some studies have indicated that political factors such as political partisanship or ideology shape individuals' decisions to take up vaccination (Baumgaertner, Carlisle, and Justwan 2018).

While many studies consider risk perception and trust in vaccine safety and efficacy as the prominent factors determining whether individuals accept or refuse vaccination (Justwan et al. 2019; Li and Baker 2021), little is known about the effect of political partisanship, especially in a multi-party system, on vaccination attitudes and behaviors. Additionally, most of the available studies on the effect of political partisanship on vaccination attitudes and behaviors focus on rich Western countries, especially those with a well-established democracy. Studies on non-Western democracies such as Indonesia are still lacking. Indonesia provides fertile ground for research on political partisanship and vaccination decisions. First, as part of the ongoing worldwide COVID-19 pandemic, Indonesia recorded the highest number of cases in Southeast Asia on June 24, 2020 (Nurbaiti 2020), and the highest mortality rate in Asia on April 27, 2020 (Wahyuni 2020). Second, like the global trend, vaccine hesitancy is on the rise in Indonesia, contributing to low levels of rubella, measles, and diphtheria vaccination coverage in Indonesia (Halimatus'adiyah 2020; Pronyk et al. 2019). Third, Indonesia is the third-most-populous democracy and the largest Muslim-majority country in the world.

This study contributes to the discussion on the relationship between political partisanship and health attitudes and behaviors. It is one of the first to connect the literature on political factors and vaccination hesitancy in the Muslim world. Using multinomial logistic and ordinary least squares (OLS) regression analysis on nationally representative Indonesian respondents, this study finds that political partisanship contributes to shaping individuals' trust in and attitudes toward COVID-19 vaccines. Indonesians who supported the incumbent presidential candidate, Jokowi, were more likely

to get COVID-19 vaccinations than those supporting the contending candidate, Prabowo. However, this study finds that risk perception—measured as the fear of getting infected with COVID-19—is not significantly associated with partisanship.

The next section of this article reviews the literature on factors contributing to trust in vaccines and vaccination attitudes, with particular attention to political factors. It also provides the study's theoretical framework and hypotheses. The next section covers the study context in terms of vaccination coverage in Indonesia and political polarization in the 2014 and 2019 Indonesian presidential elections. We will discuss the research method in the following section. The last two sections explain and discuss the findings and draw conclusions.

### **Political Partisanship, Perceived Risk, Trust, and Attitudes toward Vaccines: Theoretical Framework**

A voluminous literature on vaccination decision-making has shown various sociocultural factors influencing individuals' vaccine hesitancy (Dubé et al. 2013; Yaqub et al. 2014). Among these complex sociocultural factors, some suggest that vaccine attitudes and behaviors can be analyzed using the *epidemiologic triad*, a model of three main factors contributing to the outbreak and spread of epidemics: the environment, the agent, and the host (Li and Baker 2012). The environmental factors cover all aspects related to the context and conditions that may directly or indirectly affect an individual's decision to get vaccinated (Li and Baker 2012). The environmental factors include various social, political, and cultural factors; public health policies; and the information distributed by the media (Li and Baker 2012; Sallam 2021). The agent factors concern the perception of risk, vaccine safety, and vaccine efficacy (Sallam 2021). The host factors (personal or intrinsic factors) consider an individual's characteristics that may influence the decision to get vaccinated, such as age, sex, race, marital status, education, occupation, and income (Li and Baker 2012).

The three factors in the epidemiologic triad can be closely interrelated. The agent factors, for example, are interrelated with host factors. Risk perceptions might vary among individuals of different ages, genders, ethnic backgrounds, and education levels (Larson et al. 2018; Viswanath et al. 2021; Yaqub et al. 2014). Similarly, the agent factors are closely related to environmental factors. Trust in the safety and effectiveness of a vaccine, for instance, is influenced by the types of information that people access from the media (Betsch et al. 2010). Individuals who seek vaccine information

from unreliable media sources are more likely to have greater fear because of the perception that vaccination may lead to adverse effects (Rzymiski et al. 2021).

Additionally, religious beliefs as a part of environmental factors also shape the perception of risk and vaccination attitudes. Some studies suggest that those with conservative religious or cultural views are less likely to accept vaccination (Wong et al. 2020; Whitehead and Perry 2020). In religious communities, vaccination refusal is often motivated by religious considerations, such as the “origin of illness, the need for preventive action and the search for a cure” among orthodox Protestants (Dubé et al. 2013; Streefland 2001) as well as the use of *haram* (impermissible) and *mashbooh* (doubtful) ingredients among Muslims (Zulkarnain et al. 2021). Previous studies have revealed that religious fundamentalism is often considered the main threat to vaccine acceptance in Afghanistan, Nigeria, and Pakistan (Ahmed, Nishtar, and Memish 2013; Larson et al. 2016). However, other studies also show that rather than theological beliefs alone, perceptions of the safety and risks of the vaccines circulated within religious communities are often associated with vaccine refusal (Grabenstein 2013).

Nevertheless, some studies suggest that individuals’ political partisanship is significantly associated with risk perceptions (Baumgaertner, Carlisle, and Justwan 2018; Fridman, Gershon, and Gneezy 2021). Baumgaertner, Carlisle, and Justwan (2018) further suggest that the understanding of risk is not a result of an individual’s perception but is shaped by the sociocultural and political contexts in which risk is constructed and understood. Some studies have indicated that liberals are more likely to be receptive to risk and change (Baumgaertner, Carlisle, and Justwan 2018; de Bruin, Saw, and Goldman 2020). Concerning vaccination attitudes, liberals perceive lower risks from vaccination than conservatives (Baumgaertner, Carlisle, and Justwan 2018; Lin and Wang 2020).

In the context of COVID-19, some studies find that new forms of hesitancy, fear, and distrust have emerged as a result of the social, political, and media atmosphere surrounding the COVID-19 vaccine (Burki 2020; Chou and Budenz 2020; Lazarus et al. 2020). Political partisanship and beliefs have been identified as essential factors in shaping individuals’ perceptions of COVID-19 vaccines’ safety and efficacy as well as acceptance of vaccines (Lazarus et al. 2020; Krupenkin 2021).

Recent studies also show that political partisanship is associated with compliance with COVID-19 restrictions and prosocial behaviors (Gadarian, Goodman, and Pepinsky 2021; Wong and Yang 2021). Besides affecting the behavior of individuals, partisanship also affects government policies in a

pandemic. A study in the United States has revealed that Republican governors were more likely to delay the implementation of social distancing during a critical period of the COVID-19 response (Adolph et al. 2021). Partisanship also affects Canadian voters' political evaluations of a government's policy, even though that policy is not explicitly politicized (Pickup, Stecula, and Van Der Linden 2020).

Concerning vaccination, a study by Fridman, Gershon, and Gneezy (2021) documented that political partisanship is the best predictor of attitudes and behaviors related to COVID-19 vaccines, and that vaccine hesitancy is more prevalent among conservatives than among liberals. The study suggests that the response to COVID-19 and vaccine attitudes and behaviors in the United States are highly partisan. Compared to Republicans, Democrats have shown a greater perceived threat of contracting COVID-19 and have a more positive attitude toward the COVID-19 vaccine. These divergent trends between Republicans and Democrats have remained relatively stable over time, indicating increased political polarization (Fridman, Gershon, and Gneezy 2021). Similar findings in the United States also reveal that Republicans who trust conservative news channels and have a low level of trust in science are less likely to get vaccinated (Viswanath et al. 2021).

A study by Schernhammer et al. (2021) in Austria also shows that politics matters. Vaccine hesitancy is greater among those who voted for opposition parties or those who did not vote than among those who voted for governing parties. Political polarization is mainly responsible for weakening public trust in the government and increasing hesitancy toward the COVID-19 vaccine (Schernhammer et al. 2021). Similarly, a study in Australia also reveals that COVID-19 vaccination is higher among those who support established political parties (Smith, Attwell, and Evers 2021). Political partisanship is more likely to increase individuals' refusal of vaccines, especially when the opposition parties receive a high vote share or are dominant in the ruling government (Estep 2017). As trust in the government is considered an important mechanism to explain why political partisanship affects individuals' attitudes and behaviors toward vaccination (Baumgaertner, Carlisle, and Justwan 2018), it would be difficult for individuals to support the government's policy on the COVID-19 vaccine when they do not trust key political actors. In short, political partisanship is likely to intensify disapproval of vaccines when individuals do not feel politically represented (Debus and Tosun 2021).

Studies examining the effect of political partisanship on public attitudes toward the COVID-19 vaccine in developing countries are still lacking.

While the relationship between political partisanship and attitudes toward the COVID-19 vaccine is well studied, most of these studies were conducted in industrialized countries in which the ideological divide between political parties has been quite clear. Unlike in developed countries, political differences between parties in developing countries are often shaped not by political ideologies but by the political views of politicians or party leaders. Political parties and party identification in these countries are often weak, and voters are often aligned more with leaders rather than with parties. In such a political condition, elite cues play an important role in helping researchers understand the development of political polarization among voters (Druckman et al. 2013). Therefore, it is reasonable to expect that political leaders will have significant impact on voters' attitudes and behaviors.

Given these concerns, we propose the following hypotheses:

**Hypothesis 1:** In a politically polarized society in which the government promotes COVID-19 vaccination, those who do not support the president are less likely to get vaccinated against the COVID-19 virus and to trust the COVID-19 vaccine's safety and efficacy than those who support the president.

**Hypothesis 2:** Compared to the supporters of the president, those who do not support the president are more likely to show a low perceived risk of coronavirus.

## **Political Polarization and Vaccination Coverage in Indonesia**

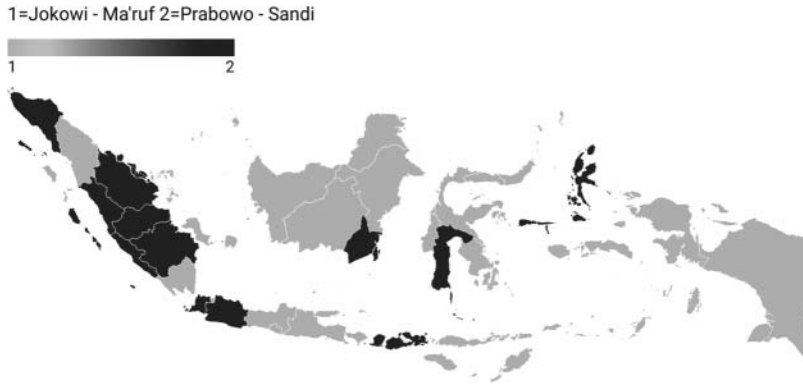
Disparities in vaccination coverage prevail across and within countries, including Indonesia (Yufika et al. 2020). Coverage for the diphtheria-pertussis-tetanus vaccine in Indonesia has been below 80% since 2014 (WHO 2017). In 2018, full vaccination coverage for children younger than 2 years old was also relatively low at 57.9%. This proportion is considerably below the global vaccination coverage of 85% (Yufika et al. 2020).

Religion is often associated with low vaccination coverage in Indonesia (Harapan et al. 2021). Individuals who hold religious principles also hold antivaccination attitudes because of their beliefs that the origin of illness is from God and cannot be prevented by humans (Dubé et al. 2013; Streefland 2001) as well as the concern about nonhalal substances among Muslim communities (Elkalmi, Jamshed, and Suhaimi 2021). Aceh and West Sumatra, the provinces with the highest percentages of Muslims, have the lowest vaccination coverage, with only 20% and 40% of children fully vaccinated, respectively (Yufika et al. 2020). Furthermore, the

widespread fake news on social media among religious communities about halal status, conspiracy theories, harmful effects, adjuvants, and vaccine substitution may have also contributed to shaping attitudes toward vaccines in Indonesia (Arief and Karlinah 2019). Additionally, interactions between religion, politics, personal beliefs, and economics might affect individual and community decisions on vaccination in Indonesia (Pronyk et al. 2019).

Yet the interplay of religion and politics is central to Indonesia. The prolonged political and ideological divide between Islamists and non-Islamists has recently widened, making Indonesia more politically polarized, particularly since the 2014 presidential election. The competition between the current president, Joko Widodo (Jokowi), and his opponent, Prabowo Subianto, has reactivated a formerly underlying political cleavage between Islamists and non-Islamists. While Jokowi, as the incumbent, is supported by pluralist political parties, Muslims with more liberal political orientations, and secular nationalist non-Muslims, Prabowo, as the challenger, is aligned with conservative Islamic parties, Islamist figures, and hard-liner Muslim groups (Warburton 2020). This ideological divide was reflected in the 2014 and particularly the 2019 presidential election results. Jokowi garnered votes in the ethnic Javanese-majority heartland provinces of Central Java, Yogyakarta, and East Java, and in “majority-minority” provinces such as majority-Hindu Bali and majority-Christian North Sulawesi. Meanwhile, Prabowo won in the Muslim-majority districts beyond Java, from Sumatra in the west to Sulawesi in the east (Aspinall 2019). Figure 1 shows the regions in which Jokowi and Prabowo won the most votes in the most recent 2019 presidential election.

The political polarization that emerged after the 2014 presidential election and became heightened during the 2019 presidential election has continued to affect social and political life even though the presidential elections are over. The political polarization and tensions between Jokowi and Prabowo supporters persist, which has harmed democratic institutions and liberal policies, as political polarization might encourage individuals to abandon democratic standards even though they do not have strong partisan identities (Fossati, Muhtadi, and Warburton 2021). Various government policies promulgated by Jokowi as the elected president have faced opposition, mainly from Prabowo supporters. Jokowi and Prabowo supporters are likely to have different opinions on various public issues, including COVID-19-related issues. In the case of large-scale social restrictions aimed at reducing the spread of COVID-19, such as abstaining from congregational prayers, non-Muslims and Jokowi supporters were likely to waive communal prayer during the COVID-19 pandemic (Kuipers,



**Figure 1** The results of the 2019 Indonesian presidential election.

Mujani, and Pepinsky 2020). On pandemic response policy, Prabowo supporters tended to be overly critical of every level of government than supporters of Jokowi as head of the incumbent government (Soderborg and Muhtadi 2020b). However, the extent to which this political polarization also affects the public's trust and attitudes toward the COVID-19 vaccine and risk perception of COVID-19 is underexplored. This study, therefore, aims to examine the extent to which political partisanship affects the beliefs, attitudes, and behaviors of Indonesians toward the COVID-19 vaccine.

## Methods

### Data

Data for this study were derived from the 2020 Indonesian national survey on public trust in COVID-19 vaccines and vaccinations, which was conducted by Saiful Mujani Research and Consulting. The phone-administered survey used stratified random sampling to capture the sociodemographic conditions of each province in Indonesia. The survey covered 1,202 respondents; however, only 1,171 respondents were included in this analysis because of missing data.

### Variables and Measures

This analysis covers four dependent variables. The first dependent variable is attitudes toward the COVID-19 vaccine, coded as 0=acceptance, 1=refusal, and 2=hesitance to get vaccinated. The second and third



variables measure trust in COVID-19 vaccine efficacy and safety, coded 0 = trust, 1 = do not know, and 2 = do not trust. The last variable is risk perception of the COVID-19 virus and consists of statements on a 4-point Likert scale: 1 = not afraid at all, 2 = not afraid, 3 = afraid, and 4 = very afraid.

The primary independent variable of this study is political partisanship. The national survey's question on which candidate the respondents voted for in the 2019 presidential election was used to capture this concept. The variable is coded 0 = voted for Jokowi, 1 = voted for Prabowo, and 2 = did not disclose vote. The 2014 and 2019 Indonesian presidential election results indicated that conservative Islamists were more likely to vote for Prabowo, while non-Islamists are more likely to vote for Jokowi (Arifianto 2019; Pepinsky 2019). These findings imply that the politicization of religion during the country's 2014 and 2019 presidential elections has deepened the influence of religious identity in defining an individual's political attitudes.

This study also incorporates several established covariates. The first is age. Previous research findings show that older people are more likely to refuse and be hesitant about vaccination than younger people (Lazarus et al. 2020). The age variable is coded as 1 = late-middle-aged adult (50 years and older), 2 = early-middle-aged adult (35–49 years), and 3 = young adult (18–34 years).

The second covariate is socioeconomic variables, such as income, education, and occupation, otherwise known as socioeconomic status (SES). Extensive studies have shown a positive correlation between SES and vaccine hesitancy (Fridman, Gershon, and Gneezy 2021). However, country-level studies in the context of COVID-19 have shown mixed findings. In Ecuador, France, Germany, India, and the United States, individuals with a high level of education were less likely to say they would reject a vaccine. On the other hand, higher education was associated with higher vaccine hesitancy in Canada, Spain, and the UK (Lazarus et al. 2020). This study, however, focuses only on two measures of SES. The first is education, coded 0 = elementary school, 1 = junior high school, 2 = senior high school, and 3 = diploma or university. The second SES measure is monthly income, coded in four levels, from the lowest income level of less than 1 million Indonesian rupiah = 1 to the highest income level of 8–20 million Indonesian rupiah = 4.

Another control variable in this study is sex, coded as 0 = male and 1 = female. Country-level analysis in several countries, such as France, Germany, Russia, and Sweden, revealed that females were more willing to accept the COVID-19 vaccine (Lazarus et al. 2020). Ethnicity is also a

control variable in this study. The findings of some studies have indicated that perceptions of vaccine risk vary among individuals of different ethnic backgrounds (Timmermans et al. 2005; Niño et al. 2021).

The last control variable in this study is whether respondents lived in rural or urban areas. A study in the United States showed that COVID-19 vaccination was lower in rural areas and that vaccine hesitancy was highest among rural communities (Murthy et al. 2021). In this study, the rural–urban variable is coded as rural = 0 and urban = 1. For more details on these variables, see table 1.

As for the dependent variable, vaccine hesitancy (44.37%) was slightly higher than vaccine willingness (37.63%) among the respondents. Most respondents trusted vaccine safety and efficacy at 58.28% and 56.40%, respectively. In terms of perceived risk, most respondents (60.24%) were somewhat worried about getting infected with COVID-19. Regarding political partisanship, 56.14% voted for Jokowi, while 28.67% voted for Prabowo, and the rest (15.19%) did not disclose political preferences.

In terms of demographics, the proportion of male respondents was slightly greater than females at 50.60% and 49.40%, respectively; most of the respondents were middle-aged adults (40.44%); Javanese was the most dominant ethnicity in the survey (43.52%); and a large proportion of the respondents were Muslim (88.81%). In terms of SES, most of the respondents had completed elementary or middle school (52.05%), the overwhelming majority were from the two lowest income levels (88.56%), and the proportion of respondents who lived in an urban setting was slightly greater (51.96%) than the proportion of those who lived in a rural setting (48.04%).

### Statistical Method

This study uses multinomial logistic and OLS regressions. Equation 1 provides the multinomial logistic model to be estimated:

$$L_{ijr} = \ln \left( \frac{P_{ij} = E(y_{ij} = 1 | Z_{ij})}{P_{ir} = E(y_{ir} = 1 | Z_{ir})} \right) = \beta_{0j} + \beta_{1j}X_{1i} + \dots + \beta_{kj}X_{ki}, \quad (\text{Equation 1})$$

in which  $L$  is the log odds for a given individual ( $i$ ).  $P$  is the probability of being in the analysis category ( $j$ ) of the dependent variable ( $y$ ): COVID-19 vaccine attitudes, trust in vaccine safety, and efficacy over the reference category ( $r$ ); and  $Z$  is the predicted model. Every analysis category of the

**Table 1** Descriptive Statistics

Variable	Statistic
Vaccine attitudes	37.63% willing to get vaccinated 18% refuse
Vaccine safety	44.37% hesitant to get COVID-19 vaccine 58.28% trust 20.73% do not know
Vaccine efficacy	20.99% do not trust vaccine safety 56.40% trust 24.23% do not know
Fear of getting infected with the COVID-19 virus	19.37% do not trust vaccine efficacy 11.77% not at all 16.72% not very 60.24% somewhat worried 11.26% very worried
Presidential election vote	56.14% voted for Jokowi 28.67% voted for Prabowo 15.19% did not disclose
Gender	50.60% male 49.40% female
Age	25.09% aged 18–34 40.44% aged 35–49 34.47% aged 50 and older (mean = 44.34)
Ethnicity	43.52% Javanese 14.76% Sundanese 41.72% others
Religion	88.81% Islam 11.19% others
Education	52.05% elementary/middle school 36.18% high school 11.77% diploma/university
Annual income	26.96% less than 1 million IDR 61.60% 1 million IDR–less than 4 million IDR 9.30% 4 million IDR–less than 8 million IDR 2.13% 8 million IDR–more than 20 million IDR
Rural–urban	48.04% rural 51.96% urban

*Note:* IDR = Indonesian rupiah.

dependent variable produces a set of logit estimates ( $\beta$ ) for each independent variable ( $X$ ) in the models.

Equation 2 estimates the OLS regression model:

$$\mathbf{N} = \beta_0 + \beta_1 \mathbf{f} + \beta_2 \mathbf{x} + \beta_3 \mathbf{h} + \varepsilon, \quad (\text{Equation 2})$$

where  $\mathbf{N}$  is a vector of the perceived risk measured by the level of fear of contracting the COVID-19 virus;  $\beta_i$  is a set of the coefficient estimates;  $\mathbf{f}$  is a vector of presidential support;  $\mathbf{x}$  is a vector of sociodemographic variables, such as sex, age, religion, ethnicity, and rural–urban;  $\mathbf{h}$  is a vector of socioeconomic variables such as education and income; and  $\varepsilon$  is the error term.

To address the issue of unobserved regional heterogeneities across regions in Indonesia, especially in terms of socioeconomic and demographic factors that are associated with both vaccine attitudes and presidential support, we used fixed-effect models by including dummy variables for each of Indonesia's 34 provinces.

## Results

Table 2 presents the multinomial logistic regression results for COVID-19 vaccine attitudes in Indonesia. Concerning hypothesis 1, the results indicate that political partisanship does affect individuals' attitudes toward the COVID-19 vaccine. Compared to those who supported President Jokowi, individuals who supported the opposition candidate Prabowo were more likely to refuse to get vaccinated, with Prabowo support increasing the likelihood of vaccine refusal by 2.14 times, given the other variables in the model held constant. Similarly, the probability of being vaccine-hesitant increased by 73% and was 2.61 times higher for those who supported Prabowo and for those who did not disclose their political preference, respectively.

As shown in figure 2, Jokowi supporters were the most willing individuals to get the COVID-19 vaccine, while Prabowo supporters were most likely to refuse the coronavirus vaccine. Meanwhile, those who did not disclose political preferences were the most likely to be vaccine-hesitant.

Similarly, both Prabowo supporters and those who did not disclose their political preference were more likely to distrust and not comprehend COVID-19 vaccine efficacy than were Jokowi supporters, who trusted vaccine efficacy (figure 3).

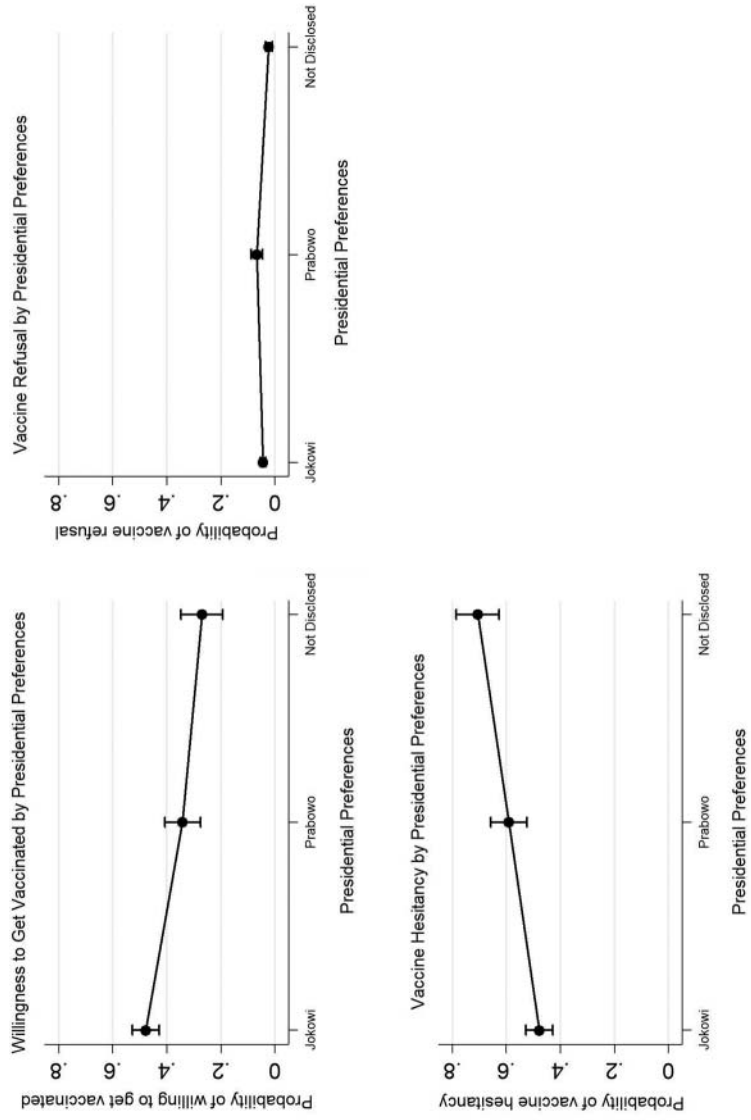
**Table 2** Multinomial Logistic Regression on COVID-19 Vaccine Attitudes

Variables	1 Vaccination Refusal Odds	2 Vaccination Hesitancy Odds
Presidential election vote (ref = vote for incumbent/Jokowi)		
Vote for opposition/Prabowo	2.14***	1.73**
Did not disclose vote	0.91	2.61***
Gender (ref = male)		
Female	0.97	1.90***
Age (ref = late-middle-aged adults/ 50 years and older)		
Young adults (18–34 years)	1.27	1.27
Early-middle-aged adults (35–49 years)	1.43	1.49**
Ethnicity (ref = Javanese)		
Sundanese	1.38	1.30
Others	1.81*	1.17
Religion (ref = others)		
Islam	2.61	1.52
Education level (ref = elementary/middle school)		
High school	1.60*	1.08
Diploma/university	1.89	1.79*
Annual income (ref = less than 1,000,000 IDR)		
1,000,000–3,999,999 IDR	0.51**	0.80
4,000,000–7,999,999 IDR	0.16***	0.32***
8,000,000–more than 20,000,000 IDR	0.15*	0.27**
Rural–urban (ref = rural)		
Urban	1.34	1.33
Constant	0.02***	0.12**
Province fixed effect	Yes	Yes
Pseudo R-squared	0.17	
Observations	1,171	1,171

Notes: IDR = Indonesian rupiah. Standard errors in parentheses.

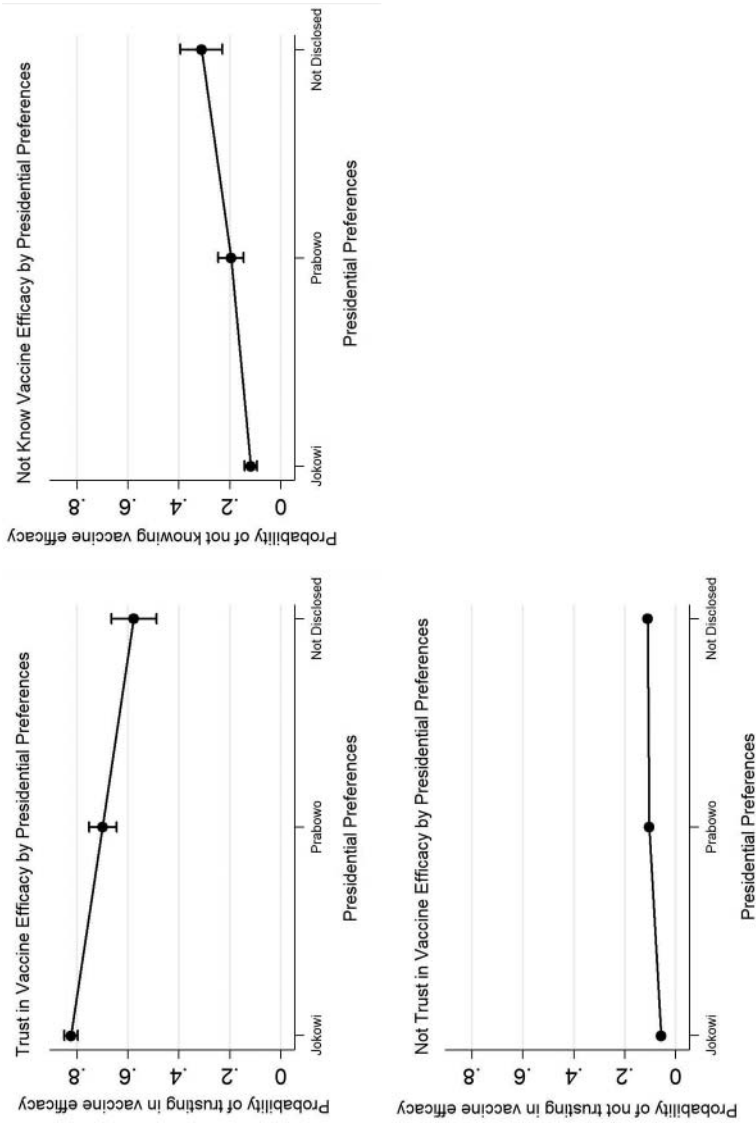
\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Furthermore, individuals who disclosed their political support had higher odds of not knowing about COVID-19 vaccine safety (OR = 3.13), holding other variables constant. Meanwhile, support for Prabowo and disclosure of political preferences increased the odds of distrusting vaccine safety by 2.28 and 2.55 times, respectively, compared to those who trusted in COVID-19 vaccine safety (see table 3 and fig. 4).



Note: Adjusted Predictions with 90% Confidence Interval

**Figure 2** The predicted probability of COVID-19 vaccine attitudes for different political preferences.



Note: Adjusted Predictions with 90% Confidence Interval

**Figure 3** The predicted probability of trust in the efficacy of the COVID-19 vaccine for different political preferences.

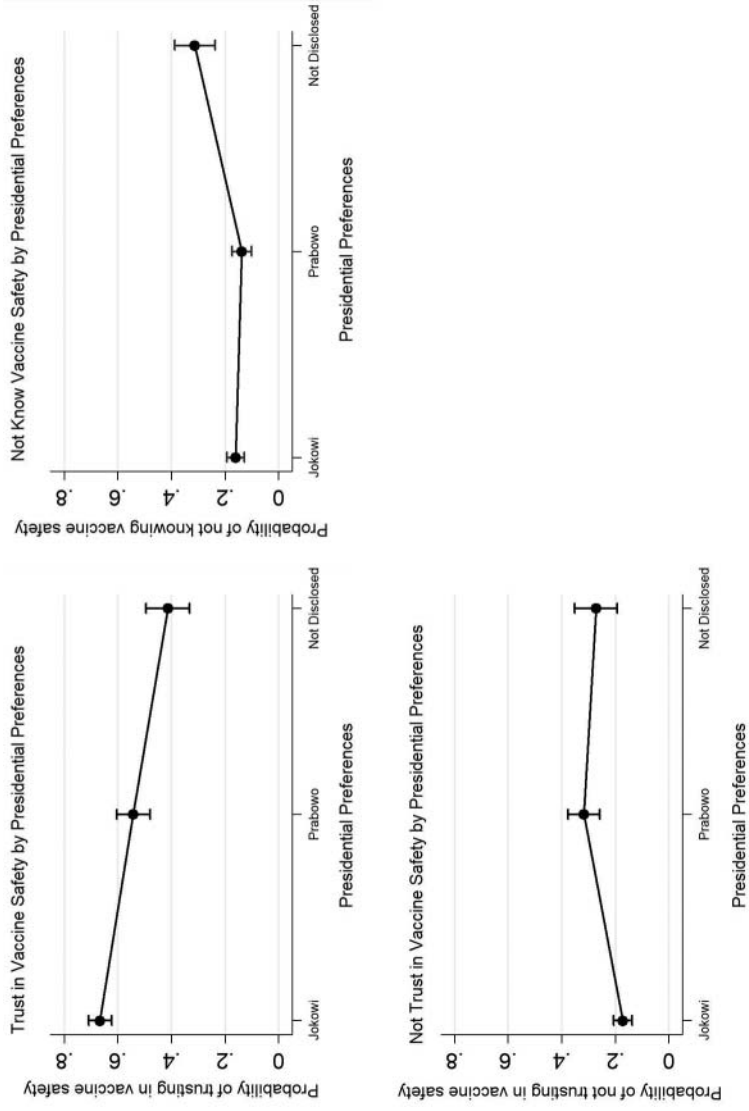
**Table 3** Multinomial Logistic Regression on Trust in the COVID-19 Vaccine Efficacy and Safety

Variables	Vaccine Efficacy		Vaccine Safety	
	3 Do Not Know Odds	4 Do Not Trust Odds	5 Do Not Know Odds	6 Do Not Trust Odds
Presidential election vote (ref = vote for Jokowi)				
Vote for Prabowo	1.95***	2.12***	1.06	2.28***
Did not disclose vote	3.76***	2.72***	3.13***	2.55***
Gender (ref = male)				
Female	2.36***	1.48*	2.88***	1.35
Age (ref = late-middle-aged adults/ 50 years and older)				
Young adults (18–34 years)	0.97	1.51	0.74	1.52*
Early-middle-aged adults (35–49 years)	1.37	1.73**	1.20	1.64**
Ethnicity (ref = Javanese)				
Sundanese	1.66	0.98	0.62*	0.54*
Others	1.14	0.48**	1.69**	0.58**
Religion (ref = others)				
Islam	1.29	1.94	1.91*	1.55
Education level (ref = elementary/ middle school)				
High school	0.90	1.22	1.02	1.35
Diploma/university	0.60	2.00*	0.82	1.94*
Annual income (ref = less than 1,000,000 IDR)				
1,000,000–3,999,999 IDR	0.37***	0.95	0.64**	0.80
4,000,000–7,999,999 IDR	0.25***	0.68	0.63	0.72
8,000,000–more than 20,000,000 IDR	0.17*	1.94	0.29	0.78
Rural–urban (ref = rural)				
Urban	1.54**	1.39	1.07	1.31
Constant	0.21	0.00***	0.03***	0.07***
Province fixed effect	Yes	Yes	Yes	Yes
R-squared	0.21		0.22	
Observations	1,171	1,171	1,171	1,171

Notes: IDR = Indonesian rupiah. Standard errors in parentheses.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$





Note: Adjusted Predictions with 90% Confidence Interval

**Figure 4** The predicted probability of trust in the safety of the COVID-19 vaccine for different political preferences.  
*Note:* Adjusted predictions with 90% confidence intervals.

**Table 4** OLS Regression on Fear of Getting Infected with COVID-19

Variables	7 Odds
Presidential election vote (ref = vote for Jokowi)	
Vote for Prabowo	1.08
Did not disclose vote	0.99
Gender (ref = male)	
Female	1.15**
Age (ref = late-middle-aged adults/50 years and older)	
Young adults (18–34 years)	1.00
Early-middle-aged adults (35–49 years)	0.98
Ethnicity (ref = Javanese)	
Sundanese	1.09
Others	1.00
Religion (ref = others)	
Islam	0.87
Education level (ref = elementary/middle school)	
High school	1.13*
Diploma/university	1.03
Annual income (ref = less than 1,000,000 IDR)	
1,000,000–3,999,999 IDR	1.02
4,000,000–7,999,999 IDR	1.17
8,000,000–more than 20,000,000 IDR	0.85
Rural–urban (ref = rural)	
Urban	1.03
Constant	13.59***
Province fixed effect	Yes
Observations	1,171
R-squared	0.11

Notes: OLS = ordinary least squares. IDR = Indonesian rupiah. Standard errors in parentheses.  
 \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Concerning hypothesis 2, the results revealed that the perception of risk as measured by the level of fear of getting infected with coronavirus was not significantly associated with political partisanship/support for the president of Indonesia (see table 4).

In relation to control variables, the results also indicated that vaccine refusal was more common among other ethnic groups (1.81 times higher) than among Javanese and among high school graduates (1.52 times higher) than among those with an elementary or middle school education. In contrast, vaccine refusal was less common among those with higher income. The higher the income levels were, the lower the probability of refusing the

vaccine. Vaccine hesitancy was higher among females (1.90 times higher) than males; among early-middle-aged individuals (1.49 times higher) than among late-middle-aged adults; and among diploma/university graduates (1.79 times higher) than among elementary or middle school graduates. Meanwhile, vaccine hesitancy was less frequent in those with higher income (see table 2). The results also showed that compared to males, females were more likely not to know about vaccine efficacy and safety—2.36 and 2.88 times higher, respectively. Additionally, while lacking knowledge about vaccine efficacy was more common among those living in urban areas (54% higher) than among those living in rural areas, lacking knowledge about vaccine safety was more common among Muslims (91% higher) than among adherents of other religions. On the other hand, lacking knowledge about vaccine efficacy and safety was less frequent among those with higher income.

The study's findings also reveal that distrust in vaccine efficacy was more common among females than males (48% higher) and more common among diploma/university graduates (2 times higher) than among individuals with an elementary or middle school education. Distrust in vaccine efficacy was higher among Javanese than among other ethnic groups. Distrust in vaccine safety was also higher among young and early-middle-aged adults than among late-middle-aged adults, and higher among those with diplomas or a university education than among those who were elementary/middle school graduates.

## Discussion

This research examines the relationship between political partisanship, perceived risk, trust, and attitudes toward the COVID-19 vaccine in Indonesia. The findings produced consistent support for the research hypotheses. The results suggest that political preferences do matter when it comes to accepting the coronavirus vaccine. Those who support Prabowo, the political opposition leader, are more likely to refuse the COVID-19 vaccine than those who voted for Jokowi, the incumbent presidential candidate. Similarly, those who did not disclose political preferences are more likely to be vaccine-hesitant. The findings also indicate that trust in COVID-19 vaccine efficacy and safety is partisan. These findings are consistent with other studies, suggesting that political partisanship is an essential predictor of an individual's trust, attitudes, and behaviors toward vaccination (Baumgaertner, Carlisle, and Justwan 2018; Fridman, Gershon, and Gneezy 2021; Schernhammer et al. 2021). However, while most studies

focus on political partisanship with strong party identification, this study highlights the role of partisanship without strong party identities in shaping public health attitudes and behaviors.

Trust in the government is one of the mechanisms to explain why political partisanship strongly influences an individual's decision whether to get vaccinated (Baumgaertner, Carlisle, and Justwan 2018). The higher the level of trust in the government, the higher the propensity of individuals to support the government's policies (Pitlik and Kouba 2015), including vaccination programs to curb the spread of COVID-19. In addition, it is not uncommon for supporters of the political opposition to have lower trust in the appointed government to deal with the pandemic (Kerr, Panagopoulos, and van der Linden 2021).

Several factors can influence the level of trust in government. First, political polarization plays a vital role in weakening public trust in the government (Schernhammer et al. 2021). The public tends to be polarized when subjected to party and elite political cues (Fossati, Muhtadi, and Warburton 2021), as elite polarization can affect public opinion about policy issues (Druckman, Peterson, and Slothuus 2013). The COVID-19 pandemic is highly politicized, affecting government and public responses to the pandemic as well as trust in government measures. Several recent studies in the United States, for example, indicate that more affectively polarized partisans tend to politicize assessments of the country's response and are unable to distinguish the country's response to COVID-19 from that of the Trump administration (Druckman et al. 2021). Compared to Democrats, Republicans are less likely to practice social distancing (Wu and Huber 2021), change health behaviors, and support policies that socialize the costs of testing and treatment (Gadarian, Goodman, and Pepinsky 2021).

In the Indonesian context, a study by Soderborg and Muhtadi (2020b) reveals similar trends, in that partisanship has shaped both public evaluation of government policies on the COVID-19 crisis and public health behaviors. Partisanship is particularly salient when public responses to the pandemic policy are polarized (Soderborg and Muhtadi 2020a). Their findings also show lower trust in the government's pandemic response and lower adherence to protective health measures such as wearing masks and practicing social distancing among opposition supporters, who predominantly voted for Prabowo. In line with Soderborg and Muhtadi's study, this article's findings have confirmed the role of politics and the partisanship of polarizing elites in shaping the attitudes and behaviors of individuals toward vaccination.

Second, the media also plays a role in shaping public opinion and trust in the government. For instance, a study of European countries found that the interaction between pro- and antigovernment news and information shared by the media with certain political stances created echo chambers that strengthened the public's preexisting attitudes (Ceron and Memoli 2015).

The study's results also highlight that there is no evidence in the context of Indonesia that risk perception, as indicated by fear of contracting the COVID-19 virus, is partisan. Instead of political factors, religious factors are often associated with individuals' perception of having a low risk of contracting the virus. As a result of multiple interpretations of Islamic teachings, for example, some conservative Muslims are more likely to continue with congregational prayers in mosques even though they live in high-risk areas with high COVID-19 case numbers (Halimatusa'diyah et al. 2021). Using their interpretation of Islam, some even consider that performing congregational prayers is necessary to prevent harm from COVID-19 (Nurrahmi et al. 2021).

## Conclusion

The study's findings have shown the importance of the epidemiologic triad perspective in understanding the interrelated environment, agent, and host factors that contribute to vaccine hesitancy. Concerning environmental factors, this study's analysis has revealed consistent evidence that the success of public health policies in the face of a pandemic, such as large-scale COVID-19 vaccination, depends on political factors. Not only do partisanship and political polarization hurt democratic institutions; they also can be a major threat to the government's efforts to curb the spread of the COVID-19 virus. The findings support the conclusion that in a polarized society, attitudes and behaviors toward COVID-19 vary significantly between opposition and government supporters.

The study has extended the literature on the importance of political partisanship in shaping the attitudes and behaviors of individuals toward vaccination by looking beyond well-established democracies and non-Muslim contexts. This study contributes to the literature by showing how the partisanship of polarizing figures can shape public health behaviors. The findings also corroborate other studies by showing that trust and attitudes toward vaccination might vary across individuals' intrinsic or host factors, such as sex, ethnicity, education, and income.

While trust in the government and the dissemination of information through social media can explain why politics matters, this study was unable

to examine the effects of both variables because of the lack of available data. Previous studies on vaccination attitudes have indicated that trust and information are linked to COVID-19 vaccine hesitancy (Jennings et al. 2021; Saied et al. 2021). However, the extent to which both mediate the effect of political partisanship in Indonesia is still unclear. Therefore, this topic deserves attention in future research.

Moreover, this study is based only on cross-sectional data collected in the early stages of promoting the COVID-19 vaccine. Therefore, it cannot capture the consistent effect of political partisanship on vaccine-related behaviors over time, nor can it capture changes in this dynamic. For this reason, there is a need for longitudinal studies to analyze further the impact of politics on public trust and attitudes toward COVID-19 vaccination programs.

To effectively handle the COVID-19 pandemic, it is necessary to address the entrenched political polarization in Indonesia. Therefore, an effective COVID-19 public health communication strategy should deliver a common message from both the opposition and the elected government. Future research should address how Indonesia's COVID-19 pandemic response can effectively bridge the nation's political divide.

Furthermore, since social media and the internet have become critical sources of health information and have bred misinformation, the government should actively engage in social media communication strategies. Because misinformation flourishes when trust in government and political elites is lacking, the government needs to communicate transparently and consistently, particularly to those who are less receptive to public health campaigns, such as conservative Islamists who support the political opposition in Indonesia.

■ ■ ■

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