

# PERSPECTIVE

RESEARCHERS AT ISEAS – YUSOF ISHAK INSTITUTE ANALYSE CURRENT EVENTS

Singapore | 26 July 2024

## Deepfakes and Selective Belief: How Partisanship Affects Voters' Exposure and Susceptibility to Deepfake Content

*Burhanuddin Muhtadi and Maria Monica Wihardja\**



*An election official tallies ballots at a polling station during Indonesia's presidential and legislative elections in Timika, Central Papua on 14 February 2024. Voting drew to a close February 14 after Indonesia held one of the world's biggest one-day elections. (Photo by ADEK BERRY/AFP).*

*\* Burhanuddin Muhtadi is Visiting Senior Fellow in the Indonesia Studies Programme at ISEAS – Yusof Ishak Institute, and a Senior Lecturer at Islamic State University (UIN) Syarif Hidayatullah. Maria Monica Wihardja is Visiting Fellow at ISEAS – Yusof Ishak Institute and Adjunct Assistant Professor at the National University of Singapore.*

**EXECUTIVE SUMMARY**

- During Indonesia's 2024 election campaigns, many AI-generated deepfake images, videos and audio recordings went viral, among which were a video featuring an audio recording of the National Democratic Party's General Chairman, Surya Paloh, reprimanding presidential candidate Anies Baswedan, and another portraying President-elect Prabowo delivering a speech in Arabic.
- Preliminary evidence shows the prevalence of selective exposure and selective belief among Indonesian voters in relation to deepfake content. Selective exposure and selective belief refer to the phenomena of how voters' likelihood to hear/read/watch and to believe certain disinformation and election propaganda narratives depend on their partisan beliefs and alignments.
- The selective belief phenomenon is even more evident when we assess respondents' exposures to and beliefs regarding other disinformation or election propaganda narratives which were not AI-generated. Our paper suggests that AI-generated deepfakes could be as polarising as non-AI-generated disinformation and election propaganda narratives.
- The partisanship biases shown in this paper can be explained by the fact that inherent biases prompt voters to select political circles, friendships and information sources that share the same alignment, thereby intensifying polarisation along various political cleavages. Moreover, our data also supports the confirmation bias theory that suggests that voters tend to exercise greater critical discernment in consuming and accepting information originating from outside their trusted political network and circles while being more trusting of any information originating from their own circles regardless of its accuracy.
- Even in the context of Indonesia's weak party system (low levels of party identification and loyalty), it is personality-based partisan sentiments that exert the stronger influence on numerous aspects, including voters' susceptibility to and acceptance of certain disinformation and election propaganda.

## MOTIVATION

This paper studies the prevalence of selective exposure and selective belief among Indonesian voters in relation to the circulation of deepfake content during Indonesia's 2024 election campaigns. During this period, a video featuring an audio recording of the National Democratic Party's General Chairman, Surya Paloh, reprimanding presidential candidate Anies Baswedan went viral.<sup>1</sup> This deepfake was supposedly intended to undermine Anies' candidacy by portraying him as a puppet of Paloh. Another deepfake video that went viral during the election campaigns portrayed President-elect Prabowo delivering a speech in Arabic. In contrast to the first video, this deepfake, which appealed to Muslim voters, was supposedly intended to boost Prabowo's popularity.<sup>2</sup>

For the purposes of our study, selective exposure refers to the phenomenon where loyal supporters of a presidential candidate actively seek out information that aligns with their preconceived notions about their candidate, while consciously avoiding or filtering out contradictory information. Selective belief refers to the phenomenon where individuals who encounter disinformation about various presidential candidates either accept or reject it depending on their beliefs and loyalties towards a presidential candidate (Neyazi and Muhtadi, 2021).<sup>3</sup>

By employing a two-wave, nationwide representative panel survey carried out in 34 provinces in Indonesia before and after the 2024 legislative and presidential election campaigns, we show preliminary evidence of selective exposure and selective belief. This paper contributes to literature in selective exposure and selective belief in two areas: the use of AI-generated deepfake videos/audios to test for selective exposure and selective belief instead of using the fake news/propaganda narratives that have been created and circulated via more conventional means, and the use of a two-wave, panel survey to better address the endogeneity bias issue that is often associated with a cross-sectional survey.

### *Empirical Context and Method*

In a world where social media and chat messaging apps are omnipresent, avoiding disinformation and election propaganda is extremely difficult. Mere exposure to disinformation or election propaganda, however, does not automatically imply that individuals will agree with its veracity. Despite the fact that social media and chat messaging apps can expose users to political propaganda and numerous falsehoods, the acceptance of such information may not be solely the result of exposure. Belief is a more complex phenomenon than exposure. Why people believe a particular piece of information is influenced by a number of factors including cognitive biases and the intensity of exposure to media and messages.

Indonesia, the world's third-largest democracy, is an interesting case study for examining the extent to which disinformation and election propaganda (including those generated with deepfake technology) spread via social media and chat messaging apps influence electoral politics. Around 67 percent of Indonesians had Internet access in 2022, 74 percent of whom used the internet for social media purposes.<sup>4</sup> Indonesians spent an average of 7 hours 42 minutes per day online in 2023,<sup>5</sup> with 3 hours 18 minutes spent on social media. At the same time, Indonesia ranks fifth in the world for spreading hoaxes and disinformation.<sup>6</sup>

To understand the impact of disinformation and election propaganda in Indonesia's 2024 presidential elections, ISEAS – Yusof Ishak Institute in collaboration with *Lembaga Survei Indonesia* conducted a two-wave, nationally representative panel survey. The first wave (Wave 1) was carried out before the start of the official election campaign period (28 November 2023 - 10 February 2024) from 17 to 27 November 2023, and the second wave (Wave 2) was carried out towards the end of the election campaigns from 2 to 9 February 2024. Both waves were conducted through face-to-face interviews with 2,020 respondents, 1,919 of whom were interviewed in both waves. Respondents, spread across 34 provinces, were eligible Indonesian voters, who were 17 years old of age or older, or married, when the surveys were conducted. They were selected through multistage proportional and random-sampling methodology with “village” as the primary sampling unit. Both stages preserved the composition of the true population in terms of gender, rural-urban, age group, religion, ethnicity, and provincial location.

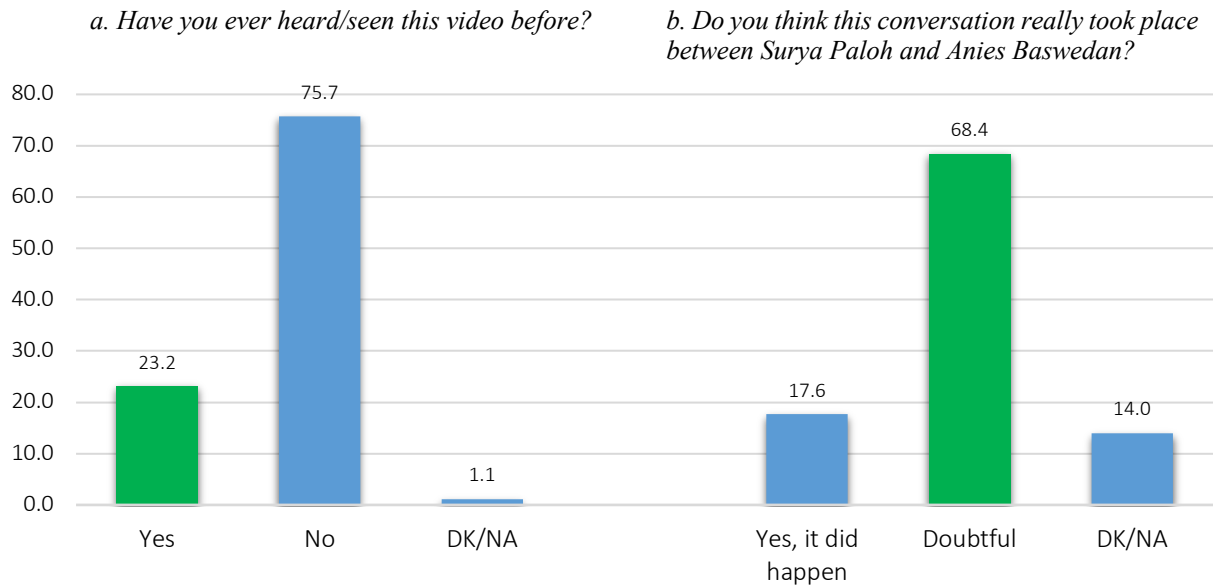
The questionnaire in each wave was about 45 minutes long and consisted of questions on the main variables of interest including voting behaviours, access to social media and chat messaging apps, access to mediums for election-related information, perceptions on presidential candidates, exposures to and beliefs about general and specific disinformation and election propaganda narratives. These main variables of interest were asked in both stages.

#### *Low Exposure, Low Impact*

In both Wave 1 and Wave 2, we asked respondents about their likelihood – indexed from 0 to 10 – to vote for each presidential candidate (see Annex 1) and used the data from Wave 1 as our independent variable in our analysis. To determine the extent to which voters were exposed to the various deepfake videos that emerged during the election campaign, our questionnaire in Wave 2 included an additional section in which respondents were shown two deepfake videos and all respondents were asked the questions about their exposures and their beliefs, regardless of whether they had prior exposure to the fake content (see Annex 2).

A mere 23.2 percent of respondents reported having seen or heard the video containing an audio recording in which Surya Paloh purportedly reprimanded Anies Baswedan (Figure 1a). Only 17.6 percent of survey participants believed that the conversation truly occurred regardless of whether they had seen or heard the video before (Figure 1b).

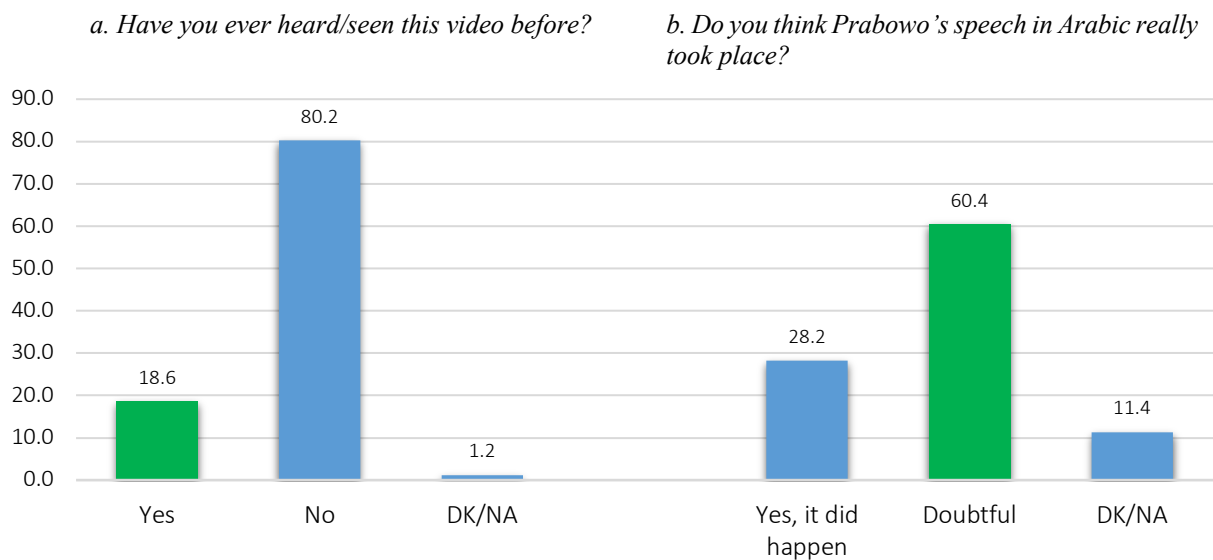
**Figure 1: Surya Reprimands Anies (% of all respondents)**



Source: ISEAS-LSI Indonesia’s Disinformation and Election Propaganda Survey 2023-2024, authors’ calculation.

The percentage of respondents who were exposed to the video of Prabowo purportedly speaking in Arabic was slightly lower (18.6 percent) (Figure 2a). Nevertheless, a significantly higher percentage of participants (28.2 percent) believed that Prabowo genuinely delivered his speech in Arabic, regardless of whether they had seen or heard the video before (Figure 2b).

**Figure 2: Prabowo’s Speech in Arabic (% of all respondents)**



Source: ISEAS-LSI Indonesia’s Disinformation and Election Propaganda Survey 2023-2024, authors’ calculation

**SELECTIVE EXPOSURE, SELECTIVE BELIEF**

We are interested to know whether respondents’ exposure to and beliefs about the veracity of these deepfake videos are associated with certain biases such as their likelihood to vote for a certain candidate. By using the likelihood to vote for each of the presidential candidates in Wave 1 as a determinant to deepfake exposures and beliefs in Wave 2, controlling for respondents’ profiles, we are able to rule out the reverse causality of exposures to/beliefs in deepfakes that were measured *after* the election campaign causing voting behaviour that was measured *before* the election campaign.

Our hypothesis is that those who were more inclined to vote for Anies were less likely to have been exposed to and to believe deepfake video 1 which portrayed Anies in an unflattering manner; and conversely, those inclined to oppose Anies (i.e., those supported Prabowo and Ganjar) were more likely to have been exposed to and believe the same video. Similarly, for deepfake video 2 which portrayed Prabowo positively with his purported ability to speak in Arabic, those who were more inclined to vote for Prabowo were more likely to have been exposed to and believe deepfake video 2; while those inclined to support other candidates were less likely to be exposed to and believe the video. We follow a similar empirical methodology used in Neyazi and Muhtadi (2021) and use an odd-ratio, logistic regression on the panel respondents (1,919 respondents), controlling for respondents’ age, gender, income level, education, and religion, to analyse whether respondents are more likely to have been exposed to and to believe the deepfake videos that favour their choice of presidential candidate or disfavour the opponents of their choice of presidential candidate, compared to the control group (see Annex 3). An odds ratio on exposure or believability of greater than 1 means respondents are more likely to have been exposed to or to believe deepfakes compared to the control group. An odds ratio on exposure or believability of lower than 1 means that respondents are less likely to have been exposed to or to believe deepfakes compared to the control group.

*Evidence of Selective Exposure and Selective Belief*

Before we investigate the regression results, Annex Table 1 shows the descriptive statistics of the control variables namely gender, age, income level, education, and religion of our panel respondents. Table 1 shows respondents’ likelihood to vote for each candidate in Wave 1:

**Table 1: Likelihood to Vote in Wave 1**

Likelihood to vote (0-10)	Number of obs.= 1,876			
	Mean	Std. Err.	[95% Interval]	Conf.
Anies-Muhaimin	5.39	0.07	5.26	5.52
Prabowo-Gibran	6.79	0.06	6.67	6.91
Ganjar-Mahfud	5.61	0.06	5.48	5.73

Source: ISEAS-LSI Indonesia’s Disinformation and Election Propaganda Survey 2023-2024, authors’ calculation  
Note: Excluding those who answered “Don’t Know” or “Not Applicable”

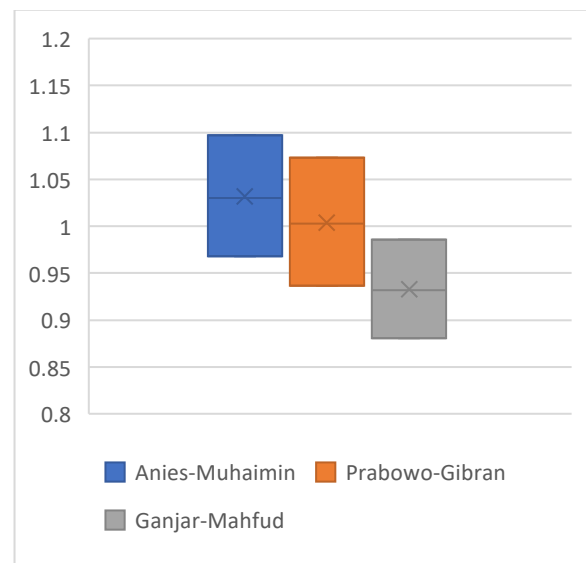
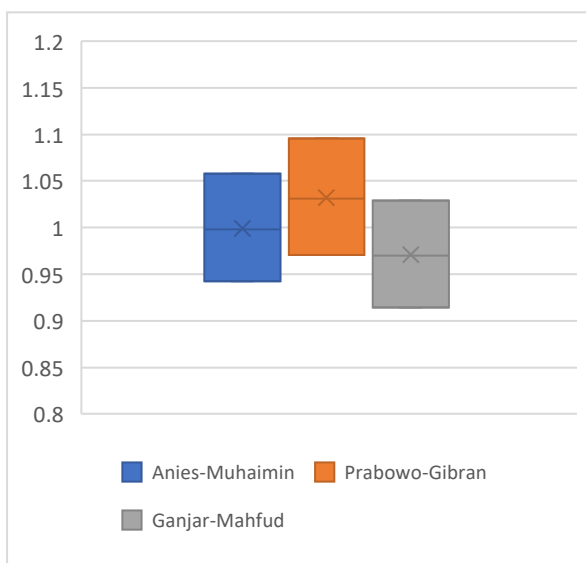


Our analysis shows evidence of selective exposure and belief. Figures 1a and 1b show the odds ratios of having been exposed to deepfake video 1 (Surya Paloh reprimanding Anies) and deepfake video 2 (Prabowo speaking in Arabic). Although Figure 1a shows that none of these results are statistically significant within a 95 percent confidence interval,<sup>7</sup> Figure 1b shows that those who were more inclined to vote for Ganjar-Mahfud pair were the less likely to have been exposed to deepfake video 2 and the finding is statistically significant within a 95 percent confidence interval.<sup>8</sup>

We could make an argument here that since Ganjar-Mahfud’s voters, whose profiles are more aligned with PDI-P nationalist voters and lean more towards the pluralist camp instead of the Islamist camp in the ideological spectrum of Indonesian voters, have a lower probability of having been exposed to deepfake video 2 due to the “echo chamber” theory. In this environment, the theory argues, an individual is exposed only to beliefs or opinions that are similar to their own, so that their existing views are reinforced and views that contradict prior beliefs are rejected. We argue that more pluralist Ganjar-Mahfud’s voters may be engaging in a somewhat exclusively separate information system than Anies-Muhaimin’s and Prabowo’s voters, and hence were less likely to have been exposed to videos that primarily appealed and were targeted to Muslim voters.

**Figure 1a: Biases in Exposure to Deepfake Video 1**

**Figure 1b: Biases in Exposure to Deepfake Video 2**

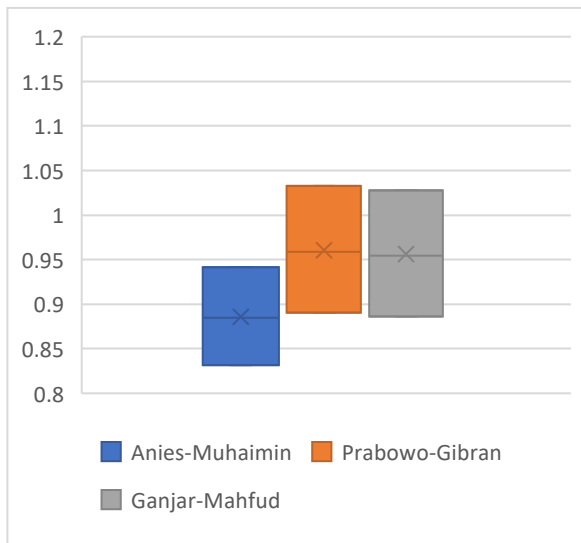


Source: ISEAS-LSI Indonesia’s Disinformation and Election Propaganda Survey 2023-2024, authors’ calculation  
Note: The middle line marks the coefficient of interest (the odd ratio) and the lower and upper lines mark the 95% confidence interval.

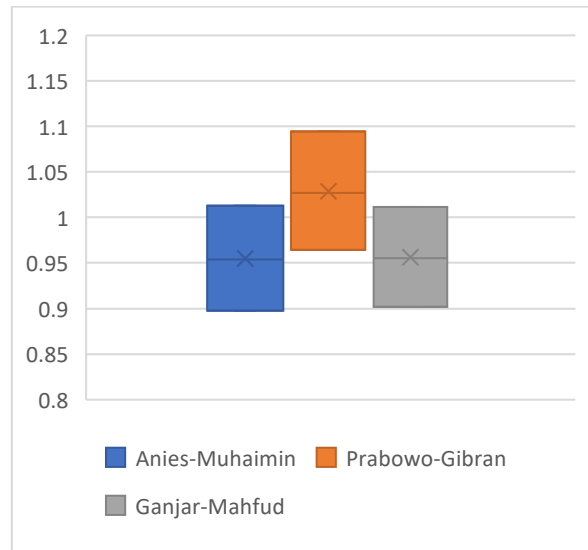
The evidence for selective belief is more compelling. Figure 2a and 2b show the odds ratios of believing deepfake video 1 and 2. Figure 2a shows that those who were more inclined to vote for Anies-Muhaimin were less likely to believe the deepfake video of Surya Paloh reprimanding Anies and this finding is statistically significant within a 95 percent confidence interval. Figure 2b shows that those who were more inclined to vote for Anies-Muhaimin and Ganjar-Mahfud pairs were less likely to believe the deepfake video of Prabowo speaking in Arabic, albeit within slightly less than 95 percent confidence interval (weaker statistical power;

significant at 85 percent confidence interval). Those who were more inclined to vote for Prabowo-Gibran were neither more likely nor less likely to believe deepfake video 2.

**Figure 2a: Biases in Belief in Deepfake Video 1**



**Figure 2b: Biases in Belief in Deepfake Video 2**



Source: ISEAS-LSI Indonesia’s Disinformation and Election Propaganda Survey 2023-2024, authors’ calculation  
Note: The middle line marks the coefficient of interest (the odd ratio) and the lower and upper lines mark the 95% confidence interval.

These findings show some evidence of partisanship and selective belief on voters’ susceptibility in believing the veracity of the deepfake videos being consumed during the campaign period. When our respondents displayed higher propensity to vote for a certain candidate, their likelihood of believing in the veracity of the deepfake videos denigrating their preferred candidate decreased, as in the case of the deepfake video of Anies being reprimanded by Surya Paloh. The same dynamic in reverse also occurred. When the deepfake video appeared to boost an opposing candidate’s appeal, such as the deepfake video of Prabowo delivering a speech in Arabic, the propensity to believe in the veracity of the content among Anies’ and Ganjar’s staunch supporters decreased.

There are also biases in both exposures and beliefs associated with respondents’ education background profiles. For example, for both deepfake video 1 and 2, those with upper secondary and college/university education were less likely to believe, compared to those respondents with no education (defined as less than primary school education).

## EXTENSION

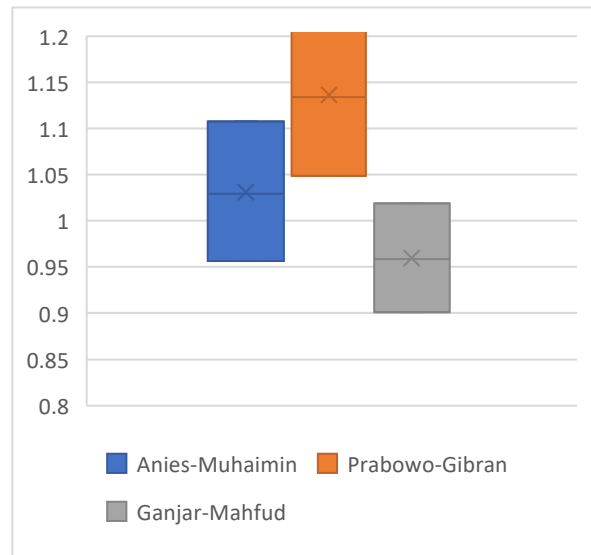
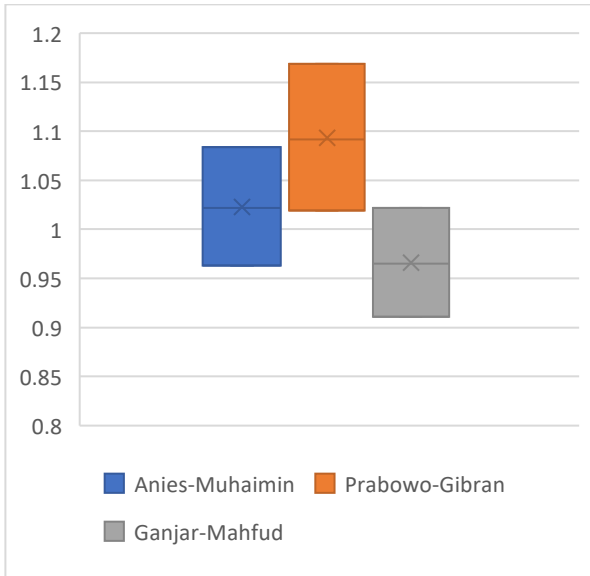
We checked the robustness of our analysis by using Wave 2 instead of Wave 1 data on the likelihood of voting for a candidate. By using this model specification for robustness check, the evidence for selective exposure and belief is even stronger with more significant statistical power. First, those who were more inclined to vote for Prabowo-Gibran were more likely to have been exposed to deepfake video 1 (Anies being reprimanded) and deepfake video 2 (Prabowo speaking in Arabic) within a 95 percent confidence interval (Figure 3a and Figure



3b). Second, those who were more inclined to vote for Anies were less likely to believe deepfake video 1 (Figure 4a). As for deepfake video 2 which portrayed Prabowo speaking in Arabic, those who were more inclined to vote for Anies had a lower likelihood of believing the video while those who had a higher inclination to vote for Prabowo-Gibran were more likely to believe the video (Figure 4b). All findings are significant at a 95 percent confidence interval.

**Figure 3a: Biases in Exposure to Deepfake Video 1**

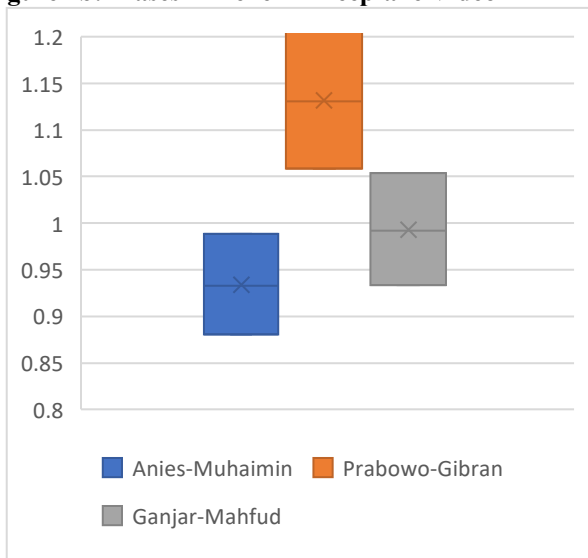
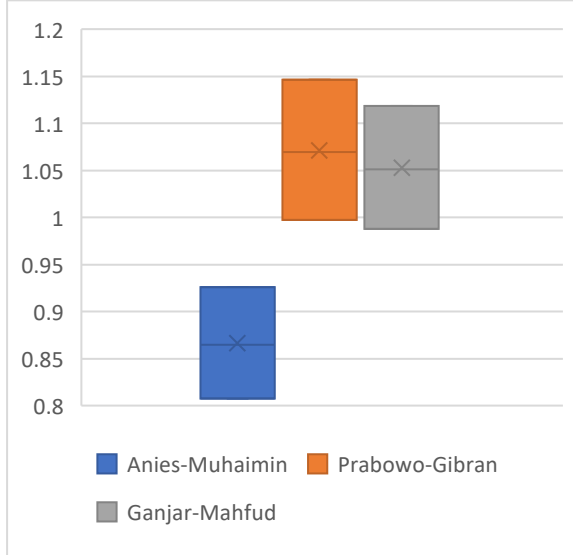
**Figure 3b: Biases in Exposure to Deepfake Video 2**



Source: ISEAS-LSI Indonesia’s Disinformation and Election Propaganda Survey 2023-2024, authors’ calculation  
 Note: The middle line marks the coefficient of interest (the odd ratio) and the lower and upper lines mark the 95% confidence interval.

**Figure 4a: Biases in Belief in Deepfake Video 1**

**Figure 4b: Biases in Belief in Deepfake Video 2**



Source: ISEAS-LSI Indonesia’s Disinformation and Election Propaganda Survey 2023-2024, authors’ calculation  
 Note: The middle line marks the coefficient of interest (the odd ratio) and the lower and upper lines mark the 95% confidence interval.

We also extend the analysis by including access to the internet as a control variable to the original model specification. This did not change the original results. Those who access the internet have a higher likelihood to get exposed to deepfake video 1 and 2 but access to the internet does not affect the likelihood of believing deepfake video 1 and 2.

Lastly, we include in the original model specification the respondents' behaviour in using social media as a source for election-related information. We take TikTok as an example. This has not changed the result except in the believability of deepfake video 2. Although more staunch supporters of Anies and Ganjar were still less likely to believe deepfake video 2, the coefficients are no longer significant when we add TikTok. The correlation between engagement in various social media/chat messaging apps and exposures and believability in certain deepfakes could be explored further in future research.

## **FURTHER EVIDENCE OF SELECTIVE BELIEF**

This phenomenon of selective belief is even more evident when we assess respondents' exposures to and beliefs regarding other disinformation or election propaganda narratives that were not AI-generated. In the ISEAS-LSI survey, we also tested respondents' exposures and beliefs to various common political disinformation and election propaganda narratives.<sup>9</sup> A political disinformation narrative refers to a false narrative intentionally created to discredit opponents and has been confirmed to be fake by a fact-checking website, whereas an election propaganda narrative is not necessarily false but is used to discredit the opponents.

Although the overall level of awareness and belief in the disinformation or propaganda narratives varied, the pattern is consistent: partisanship is strongly associated with belief in disinformation and election propaganda aimed at candidates (see Annex Table 2). People's beliefs in disinformation and election propaganda varied depending on whether it was targeted against their own candidate or the opposing candidates.

For example, we asked respondents if they had ever heard or seen news that the Constitutional Court's ruling that paved the way for President Jokowi's son, Gibran Rakabuming Raka, was influenced by nepotism due to Gibran's familial relationship with the Chief Justice of the Constitutional Court, who is also his uncle. Although 48 percent of those polled were exposed to such news, only 31 percent believed it. When we run the same regression specification for deepfakes on these disinformation/election propaganda narratives, we find that those who were more inclined to vote for Anies were more likely to believe that the Constitutional Court decision was influenced by nepotism. Those who were more likely to vote for Prabowo-Gibran were less likely to believe it.

Another example is that those who were more inclined to vote for Anies were less likely to believe a disinformation narrative where Anies had been implicated in a corruption case involving the 4G base transceiver station (BTS) infrastructure procurement. Anies supporters were also less likely to believe an election propaganda narrative that Anies is the father of identity politics and is close to radical Islamic groups that threaten the state ideology Pancasila and *Bhinneka Tunggal Ika* (Unity in Diversity). Those who were more likely to vote for Anies on the other hand, were more likely to believe a disinformation narrative that Gibran spent 500 million Rupiah from the state budget on a fake university degree in Australia. Those Anies supporters were also more inclined to believe the narrative that there was massive and

organised electoral fraud that helped Prabowo-Gibran's victory in one round, compared to Prabowo supporters who tended to disbelieve the narrative. Similarly, strong supporters of Ganjar were less likely to believe the fake news stating that Indonesian Communist Party (PKI) had been preparing Ganjar to be a president, and less likely to believe in election propaganda that Ganjar was not an independent presidential candidate and would only be Megawati's (PDIP) puppet if elected. On the other hand, Anies' supporters were more likely to believe the latter narrative. The full results of selective exposures and belief on disinformation and election propaganda narratives are given in Annex Table 2.

## CONCLUSION

We show preliminary evidence of selective exposure and selective belief phenomena in the case of two AI-generated deepfake videos during Indonesia's 2024 presidential elections. Individuals' susceptibility to and acceptance of these deepfake videos is contingent upon whether the disinformation favours their preferred candidate or undermines the opposing candidate. Although the findings on selective belief to AI-generated deepfakes may not be as overwhelming as the findings on selective belief regarding other sources of disinformation and election propaganda narratives, presumably due to the rudimentary nature of AI-generated deepfake technology so far,<sup>10</sup> it does not mean they are any less threatening or polarising, especially since this deepfake technology will only become more sophisticated. On the contrary, our paper suggests that AI-generated deepfakes could be as polarising as other sources of disinformation and election propaganda narratives.

Our finding supports the selective belief theory found in Neyazi and Muhtadi (2021),<sup>11</sup> which is based on research on selective exposure, selective sharing, and partisan-motivated reasoning to demonstrate that people's actions in consuming and believing in disinformation are influenced by their ideological alignment in Indonesia's 2019 national elections. Our paper advances Neyazi and Muhtadi (2021) in two ways. First, this paper exploits a two-wave panel survey to show stronger evidence of causality of partisanship on susceptibility to and acceptance of disinformation. Second, this paper uses AI-generated deepfake videos instead of other more conventional sources of disinformation and election propaganda narratives.

The biases shown in this paper can be explained by the fact that intense polarisation prompts voters to select political circles or friendships that share the same alignment. When they express opinions, their circle promptly agrees without any form of critical examination. An echo chamber can be perilous as it stifles objectivity due to the conformity of ideas resulting from the homogeneous group of like-minded people. Consequently, they exercise critical discernment in consuming and accepting information originating from outside the political network while trusting any information originating from their own group regardless of its accuracy.

Our findings also confirm the greater salience of personality-centric partisanship versus party-centric partisanship. Indeed, with low levels of party identification and loyalty, it is personality-based partisan sentiments that exert the stronger influence on numerous aspects, including voters' susceptibility to and acceptance of certain disinformation and election propaganda.

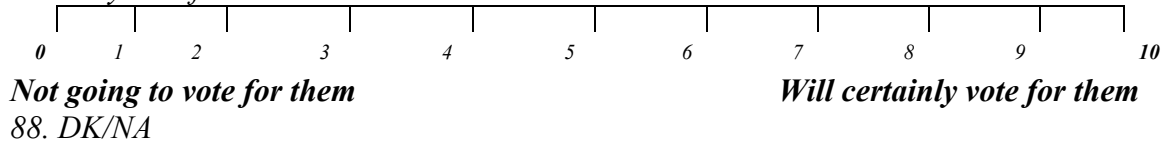
**REFERENCES**

- Detik.com. 2024. "Viral Video Percakapan Surya Paloh Marahi Anies, NasDem Buka Suara," 23 January, available at <https://www.detik.com/bali/berita/d-7156114/viral-video-percakapan-surya-paloh-marahi-anies-nasdem-buka-suara>
- Hicken A, Aspinall E, Weiss ML, Muhtadi B. 2022. "Buying Brokers: Electoral Handouts beyond Clientelism in a Weak-Party State. *World Politics*, Vol.74(1):77-120.
- KOMINFO. 2023. "[Hoaks] Menhan Prabowo Subianto Berpidato dalam Bahasa Arab," 9 November, available at [https://www.kominfo.go.id/content/detail/52826/hoaks-menhan-prabowo-subianto-berpidato-dalam-bahasa-arab/0/laporan\\_isu\\_hoaks](https://www.kominfo.go.id/content/detail/52826/hoaks-menhan-prabowo-subianto-berpidato-dalam-bahasa-arab/0/laporan_isu_hoaks)
- Kompas TV. 2020. "Indonesia Peringkat 5 Produsen Hoax di Dunia," 22 August, available at <https://www.kompas.tv/talkshow/103346/indonesia-peringkat-5-produsen-hoax-di-dunia-rosi>
- Muhtadi, B. 2019. *Vote Buying in Indonesia: The Mechanics of Electoral Bribery*. Singapore: Springer Nature
- Neyazi, T. A. & Muhtadi, B. 2021. "Selective Belief: How Partisanship Drives Belief in Misinformation." *International Journal of Communication*, 15, 23
- Shidiq, A. R., Muhtadi, B., & Yusuf, A. A. 2024. "Social Media and Religious Intolerance in Indonesia." Unpublished manuscript.
- Statista. 2024. Average Daily Time Spent Using Various Media and Devices in Indonesia in 3<sup>rd</sup> Quarter, 2023, by activity. Available one: <https://www.statista.com/statistics/803524/daily-time-spent-using-online-media-by-activity-indonesia/>
- Thornhill, J. 2024. "The danger of deepfakes is not what you think," *Financial Times*, 20 June 2024, available at <https://www.ft.com/content/bcbbe8af-90c3-48bc-8b16-c9ec57c3abf3>

**ANNEX**

**Annex 1: Survey Questions in Stage 1 and 2 on Propensity to Vote**

*How likely will you vote for each of the following presidential and vice-presidential candidates today? Zero means that you will not vote for them and 10 means that you will certainly vote for them.*



	<b>PRESIDENTIAL PAIR</b>	<b>SCORE</b>
<b>1</b>	<i>Anies Baswedan and Muhaimin Iskandar</i>	.....
<b>2</b>	<i>Prabowo Subianto and Gibran Rakabuming Raka</i>	.....
<b>3</b>	<i>Ganjar Pranowo and Mahfud MD</i>	.....

**Annex 2: Survey Questions in Stage 2 on Exposure and Belief**

*(Play video of Surya Paloh reprimanding Anies Baswedan)*

*Have you ever seen this video before? (1) Yes, (2) No*

*Do you think this conversation really took place between Surya Paloh and Anies Baswedan?*

*(1) Yes, it did happen, (2) Doubtful, (8) Don't know/Not Applicable*

*(Play video of Prabowo speech in Arabic)*

*Have you even seen this video before? (1) Yes, (2) No*

*Do you think Prabowo's speech in Arabic really took place? (1) Yes, it did happen, (2)*

*Doubtful, (8) Don't know/Not Applicable*

**Annex 3: Methodology**

We use the following logistic regression specification:

$$deepfake_{i,2} = \beta_0 + \beta_1 X1_{i,2} + \beta_2 X2_{i,2} + \beta_3 X3_{i,2} + \beta_4 X4_{i,2} + \beta_5 X5_{i,2} + \beta_6 C1_{i,1} + \beta_7 C2_{i,1} + \beta_8 C3_{i,1} + \varepsilon_{i,t}$$

(Eq.1)

where:

*deepfake<sub>i,2</sub>* is a binary variable of individual *i* at time Wave 2: 1=exposed or believe and 0=not exposed or not believe.

*X1<sub>i,2</sub>* are gender dummies at time Wave 2: 1=male and 2=female (male as the control group)

*X2<sub>i,2</sub>* are age group dummies at time Wave 2: 1=Gen-Z, 2=Millennial, 3=Gen-X, 4=Baby Boomer, 5=Silent Generation and older (Gen-Z as the control group)

*X3<sub>i,2</sub>* are income group dummies at time Wave 2: 1=poor (<Rp.400,000/month), 2=vulnerable and aspiring (between Rp.400,000/month and Rp.4 million/month), 3=middle and upper class (>Rp.4 million/month) (poor as the control group)

$X4_{i,2}$  are education group dummies at time Wave 2: 1=not completed primary school, 2=completed primary school, 3=completed lower secondary school, 4=completed upper secondary school, 5=completed university/college or higher (not completed primary school as the control group)

$X5_{i,2}$  are religion dummies at time Wave 2: 1=Islam, 2=Protestant, 3=Catholic, 4=Hindu, 5=Buddha, 6=Confucianism, 7=Others (Islam as the control group)

$C1_{i,1}$  is the likelihood to vote for Anies-Muhaimin at time Wave 1, indexed from 1 to 10

$C2_{i,1}$  is the likelihood to vote for Prabowo-Gibran at time Wave 1, indexed from 1 to 10

$C3_{i,1}$  is the likelihood to vote for Ganjar-Mahfud at time Wave 1, indexed from 1 to 10

We weigh the regression using the weights for our panel respondents and we cluster the standard errors at the village level as our primary sampling unit to control for the fact that people in the same village tend to be homogenous. Our variables of interest are  $\beta_6, \beta_7,$  and  $\beta_8$ , which show the odd ratios of being exposed to or believing in certain deepfake videos. A coefficient of greater than 1 indicates a positive effect, which means that higher inclination to vote for a certain candidate increases the odd or likelihood to get exposed to or to believe certain deepfake videos. A coefficient of lower than 1 indicates a negative effect, which means that higher inclination to vote for a certain candidate decreases the odd or likelihood to get exposed to or to believe certain deepfake videos. In the case of other control variables ( $\beta_1 - \beta_5$ ), the odds ratios are measured against the control group. Full regression results are available upon request.



Annex Table 1: Descriptive Statistics of Panel Respondents' Profiles

Respondents' Profiles		Number	of obs =	1,919
	Mean	Std. Err.	[95% Conf.	Interval]
<b>Gender</b>				
Male	0.50	0.01	0.48	0.52
Female	0.50	0.01	0.48	0.52
<b>Age Group</b>				
Gen-Z	0.28	0.01	0.26	0.30
Millennial	0.38	0.01	0.36	0.40
Gen-X	0.23	0.01	0.21	0.25
Baby Boomers	0.11	0.01	0.09	0.12
Silent Generation and older	0.01	0.00	0.00	0.01
<b>Income Group</b>				
Poor	0.10	0.01	0.09	0.12
Vulnerable and Aspiring	0.73	0.01	0.71	0.75
Middle and Upper Class	0.16	0.01	0.15	0.18
<b>Education Level</b>				
Not Completed Primary School	0.12	0.01	0.11	0.14
Primary School	0.27	0.01	0.25	0.29
Lower Secondary	0.18	0.01	0.16	0.20
Upper Secondary	0.32	0.01	0.30	0.34
College/University	0.11	0.01	0.09	0.12
<b>Religion</b>				
Islam	0.87	0.01	0.85	0.88
Protestant	0.08	0.01	0.06	0.09
Catholic	0.02	0.00	0.02	0.03
Hindu	0.02	0.00	0.02	0.03
Buddha	0.00	0.00	0.00	0.01
Confucius	0.00	0.00	0.00	0.00
Others	0.00	0.00	0.00	0.00

Annex Table 2: Exposures and beliefs in disinformation and election propaganda narratives

<b>NEWS OR ISSUES</b>	<b>Exposure</b> (Significant results only)	<b>Belief</b> (Significant results only)
Anies Baswedan is among those who received money from BTS corruption case of Kominfo.		Those who were more inclined to vote for Anies-Muhaimin were less likely to believe
Indonesian Election Commission (KPU) has confirmed that Gibran has purchased fake University degree in Australia to the amount of 500 million Rupiah with state budget.	Those who were more inclined to vote for Ganjar-Mahfud were less likely to have been exposed	Those who were more inclined to vote for Anies-Muhaimin were more likely to believe
Ganjar Pranowo has been prepared to be president by Partai Komunis Indonesia (PKI)		Those who were more inclined to vote for Ganjar-Mahfud were less likely to believe
Anies Baswedan is the father of identity politics who is close to radical Islamic groups that threaten Bhinneka Tunggal Ika and Pancasila.		Those who were more inclined to vote for Anies-Muhaimin were less likely to believe
The Constitutional Court's ruling which paved the way for Gibran Rakabuming Raka, President Jokowi's son, was influenced by nepotism due to the familial relationship between Gibran and the Chief Justice of the Constitutional Court, who is his own uncle.		Those who were more inclined to vote for Anies-Muhaimin were more likely to believe  Those who were more inclined to vote for Prabowo-Gibran were less likely to believe
Ganjar Pranowo is not an independent presidential candidate and will only be Megawati's (PDIP) puppet if he is later elected as President		Those who were more inclined to vote for Anies-Muhaimin were more likely to believe  Those who were more inclined to vote for Ganjar-Mahfud were less likely to believe
There is massive and organised electoral fraud and mobilisation of state apparatus happening to help Prabowo-Gibran win the Presidential election in one round.	Those who were more inclined to vote for Anies-Muhaimin were more likely to have been exposed	Those who were more inclined to vote for Anies-Muhaimin were more likely to believe

Note: Shaded narratives are political disinformation while the non-shaded narratives are mere election propaganda, which are not necessarily false.

**ENDNOTES**

<sup>1</sup> Detik.com (2024)

<sup>2</sup> The video was generated by AI using a segment of a prior speech by Prabowo at the Ministry of Defense in November 2023 where he had actually delivered the speech in Indonesian. See KOMINFO (2023).

<sup>3</sup> Although partisanship often refers to political party-based loyalty, theoretically, it could also refer to loyalty or inclination towards a particular presidential candidate. In the context of Indonesia, the latter is more evident than the former and this is partly shaped by Indonesia's weak-party system (the small number of party loyalists) (Hicken et al, 2022) and personality-centric clientelism due to the open-list proportional system where voters have the freedom to choose their individual representatives, instead of political parties, directly in the legislative branch that has resulted in election money largely going to individual political candidates rather than political parties (Muhtadi 2019).

<sup>4</sup> Shidiq et al (2024)

<sup>5</sup> Statista (2024)

<sup>6</sup> Kompas TV (2020)

<sup>7</sup> In other words, there is more than a 5 percent chance that the true odd ratios fall either below or above 1.

<sup>8</sup> There is less than a 5 percent chance that the true odd ratio is above 1, i.e., those who were more inclined to vote for Ganjar-Mahfud pair were the *more* likely to have been exposed to deepfake video 2.

<sup>9</sup> In testing respondents with these disinformation and election propaganda narratives, respondents have been warned that some of the news are fake news, in order to avoid misleading respondents with false news.

<sup>10</sup> Thornhill (2024).

<sup>11</sup> Neyazi and Muhtadi (2021)

<p><i>ISEAS Perspective</i> is published electronically by: ISEAS - Yusof Ishak Institute</p> <p>30 Heng Mui Keng Terrace Singapore 119614 Main Tel: (65) 6778 0955 Main Fax: (65) 6778 1735</p> <p>Get Involved with ISEAS.</p> <p>Please click here: <a href="https://www.iseas.edu.sg/support/get-involved-with-iseas/">https://www.iseas.edu.sg/support/get-involved-with-iseas/</a></p>	<p>ISEAS - Yusof Ishak Institute accepts no responsibility for facts presented and views expressed.</p> <p>Responsibility rests exclusively with the individual author or authors. No part of this publication may be reproduced in any form without permission.</p> <p>© Copyright is held by the author or authors of each article.</p>	<p>Editorial Chairman: Choi Shing Kwok</p> <p>Editorial Advisor: Tan Chin Tiong</p> <p>Editorial Committee: Terence Chong, Cassey Lee, Norshahril Saat, and Hoang Thi Ha</p> <p>Managing Editor: Ooi Kee Beng</p> <p>Editors: William Choong, Lee Poh Onn, Lee Sue-Ann, and Ng Kah Meng</p> <p>Comments are welcome and may be sent to the author(s).</p>
--	---	---