Who Gets Exposed to Political Misinformation in a Hybrid Media Environment? The Case of the 2019 Indonesian Election

Taberez Ahmed Neyazi\textsuperscript{1,}\textsuperscript{c}, Aaron Yi Kai Ng\textsuperscript{2}, Ozan Kuru\textsuperscript{1}, and Burhanuddin Muhtadi\textsuperscript{3}

Abstract
In the wake of the US 2016 Presidential Election, concerns about misinformation traversing on social media have heightened. Since then, much of the public discourse has been on developing effective strategies to combat the spread of misinformation online. While several studies have focused on the effects of a mixed/hybrid regime of information channels on political participation and campaigns, we know little about how the existence of a hybrid media system exposes people to misinformation during an election cycle. Using a nationally representative survey administered during the 2019 Indonesian election (\(N = 1,820\)), we find evidence for the prominence of traditional media as well as face-to-face discussions: political use of traditional media such as newspapers and TV as well as sharing of political information through face-to-face discussions are found to be positively associated with at least one measure of misinformation exposure. As for the social media communicative pathways, only political use of WhatsApp and Instagram are found to be positively associated with misinformation exposure; that no similar effects are observed for Facebook and Twitter attests, to some extent, to the efficacy of strategies aimed at combating misinformation implemented on such platforms. By considering social media, traditional media, and face-to-face communication in a context of a less digitalized hybrid media environment, this article provides a more comprehensive framework and novel empirical data to study misinformation exposure beyond the context of Western democracies.

Keywords
misinformation, social media, political engagement, hybrid media environment, Indonesia

In the wake of the US 2016 Presidential Election, concerns about misinformation traversing on social media have heightened. Since then, much of the public discourse has been on developing effective strategies to combat the spread of misinformation online. Nevertheless, despite growing concerns about misinformation on social media, there exists a lack of consensus in academic debates over the severity of the online misinformation problem. Multiple studies show that the reach of fake news online is limited to only a small number of people (Fletcher & Nielsen, 2018; Grinberg et al., 2019; Guess et al., 2019; Jungherr & Schroeder, 2021). However, in a recent study, Tsfati et al. (2020) argue that traditional news media may amplify the reach of online misinformation merely by covering such misinformation in their news reports, thus potentially exposing a wider audience to misinformation. Furthermore, exposure to misinformation can also occur through interpersonal communication, especially during the political engagement (Banaji et al., 2019).

Despite the proliferation of digital channels of communications, both traditional media and interpersonal interactions continue to be important platforms for information-seeking and information-sharing in political contexts (Newman et al., 2021; Neyazi et al., 2019). The co-existence of traditional and new digital channels of communication in advanced Western democracies is what Chadwick (2017) termed the hybrid media system. While several studies have focused on the effects of a mixed/hybrid regime of information channels on political participation and campaigns (Langer & Gruber, 2021; Neyazi et al., 2019).

\textsuperscript{1}National University of Singapore, Singapore

\textsuperscript{2}Singapore Institute of Technology, Singapore

\textsuperscript{3}State Islamic University Syarif Hidayatullah Jakarta, Indonesia

Corresponding Author:
Taberez Ahmed Neyazi, National University of Singapore, Singapore 119260.
Email: taberez@nus.edu.sg
Neyazi, 2018; Neyazi et al., 2016; Zhang et al., 2018), we know little of how the existence of a hybrid media system exposes people to misinformation during an election cycle. In addition, most research is dominated by highly digitalized Western contexts, and there is little understanding of how broader misinformation ecosystems operate in less digitalized campaigns/news markets, where face-to-face and traditional communication channels tend to dominate campaigns. While in developed countries, the arrival of digital media resulted in the decline of traditional media audiences such as newspaper and television, this trend is not pronounced in developing markets, which have been witnessing a simultaneous growth of digital media as well as an increase in traditional media audiences (Newman et al., 2021). Therefore, in this paper, we examine the differences in the extent of misinformation exposure through social media, traditional news media, and interpersonal communication by analyzing the political use of these communication channels, within the context of the 2019 Indonesian Presidential Election.

Two measures of exposure to misinformation are considered in our study: self-reported exposure to campaign-related conspiratorial and general misinformation. The former constitutes a more traditional measure of exposure to misinformation in the sense that a respondent’s exposure is determined by self-reported encounters with snippets of campaign conspiratorial misinformation already in circulation and is relatively more commonly adopted in practice (Allcott & Gentzkow, 2017). The latter, on the other hand, constitutes a measure of exposure to misinformation based on individuals’ self-reported exposure to general categories of misinformation, as identified by Rodriguez-Virgili et al. (2021). These measures of misinformation differ in two notable aspects: specificity and contextuality. The former is more specific in that actual snippets of misinformation in circulation are presented to respondents, whereas the latter merely lists general categories of misinformation without actually sharing the text underlying each category. With regard to contextuality, campaign conspiratorial misinformation pertains to misinformation operating within the context of election campaigns, and given the relatively brief nature of elections, its relevance is naturally temporary. On the other hand, general misinformation is not constrained by such temporal concerns and can be found to be in circulation in both election and nonelection contexts. Hence, the focus on these both types of misinformation in our study allows for a more comprehensive analysis of misinformation exposure that is not limited to either temporal or contextual constraints.

The empirical evidence for this research comes from the 2019 Indonesian presidential elections, in which the incumbent President Joko Widodo, popularly known as Jokowi, contested against Prabowo Subianto. Both candidates had earlier contested the 2014 presidential election against each other. While President Jokowi eventually won the 2019 election, securing 55.5% of the vote against 44.5% for Prabowo, the election campaigns were bitterly fought, with widespread misinformation targeting both candidates circulating online and offline (see Mujani & Kuipers, 2020; Neyazi & Muhtadi, 2021). The circulation of misinformation was not only restricted within the domain of social media but was also found to be covered extensively in the mainstream media as well as circulated fervently offline through face-to-face discussions. It is therefore important to examine how misinformation spread in a hybrid media environment of Indonesia where both traditional and digital sources of information are prominent sources of information-seeking and exchange.

Indonesia offers an important case of a non-Western democracy in the Global South, which has been witnessing the growth of print, television, and digital media simultaneously (see Katadata Insight Center & Ministry of Information and Communication [KOMINFO], 2020). Drawing upon our cross-sectional prepoll nationally representative survey (N=1,820), we examine the role of face-to-face communications, distinct traditional media platforms, and distinct social media platforms in explaining political misinformation exposure, while controlling for a number of demographic and theoretically relevant control variables. Our study finds evidence for the prominence of the traditional media communication pathways: political use of traditional media such as newspapers and TV are found to be positively associated with exposure to campaign conspiratorial misinformation, with the former also being positively associated with exposure to general misinformation. The findings also provide evidence of a positive association between sharing of political information through face-to-face discussions and exposure to general misinformation. As for the social media communicative pathways, only political use of WhatsApp and Instagram is found to be positively associated with exposure to general misinformation, with no similar effects observed for exposure to campaign conspiratorial misinformation. We discuss the implications of these findings for the nature as well as perceptions of political misinformation in the context of the hybrid media environment during electoral campaigns.

Hybrid Media Environment and Misinformation

To what extent the use of various social media platforms as well as traditional media concurrently is associated with exposure to misinformation? This is particularly important to examine in contexts where reliance on face-to-face communication and traditional media platforms is higher than in Western contexts, given the emergence of hybrid media systems where digital media complements traditional media and face-to-face interactions (Chadwick, 2013, 2017). The political information cycle in the new age is a departure from the traditional forms of communication via broadcast media like newspapers. The current hybrid media system consists of interactions between older and newer media in a nondichotomous relationship, with complex layers of agency involving
multiple actors, all of whom can act as sources (Chadwick, 2017). These actors include legacy media that existed before the internet transformed the information space, alternative media that are digital natives, and social media users. As a result, the fragmented media space benefits from inclusivity—multiple actors can participate in news-making and news sharing (Giglietto et al., 2019). As part of inclusivity, alternative voices now have the opportunity to challenge news coverage by legacy media (Chadwick, 2017). However, the multiple actors—and hence, multiple flows of information—can also worsen the spread of misinformation.

Hybrid media systems involve many-to-many communication among multiple actors who all have their own judgment process and intentions for creating or sharing a piece of information. Significantly, the hybrid media environment of the Global South differs from the advanced western democracies in one important parameter: while advanced western democracies have an overwhelming presence of digital media, developing democracies such as Indonesia are still less digitalized (Katadata Insight Center & KOMINFO, 2020). The lack of research done in the context of the Global South is important to address because of the potential insights it may provide into the robustness of the relationship between social media use and exposure to misinformation across societies with different levels of digitalization.

Moreover, the issue of misinformation in the hybrid media environment is important for the growing phenomena of expressive responding whereby “individuals intentionally provide misinformation to survey researchers as a way of showing support for their political viewpoint” (Schaffner & Luks, 2018, p. 136; see also Bullock et al., 2015). Expressive responding is also used by participants to express their opposition to politicians and disagreement with policies rather than a genuine belief in misinformation (Berinsky, 2018). Expressive responding has been found to exist among partisans (Berinsky, 2018; Schaffner & Luks, 2018). It is therefore important to consider this when analyzing exposure to misinformation in political context of Indonesia, which is increasingly becoming more polarized (Neyazi & Muhtadi, 2021).

Social Media and Exposure to Misinformation

The widespread circulation of political misinformation in the run up to modern-day elections has unfortunately become a common phenomenon in most democratic societies (Tsafati et al., 2020). While the spread of misinformation is not new, the increasing popularity of social networking sites such as Facebook and Twitter for news consumption has raised concerns about social media use, particularly after extensive online misinformation was found to be propagated on such platforms during the 2016 US election (Allcott & Gentzkow, 2017; Bovet & Makse, 2019; Kušen & Strembeck, 2018). Silverman (2016) showed that during the final 3 months of the 2016 US presidential campaign, engagement with fake content on Facebook surpassed that of content from major news outlets. Nevertheless, other studies contradict the findings, showing that online misinformation consumption is limited to only a small audience (Allen et al., 2020; Grinberg et al., 2019). By comparing audience traffic data of 30 fake news sites and 24 real news sites based in the United States in 2016, Nelson and Taneja (2018) showed that the number of monthly visitors to “an average real news site was more than 40 times larger than the number of monthly visitors to an average fake news site” (p. 3,727). In addition, Vargo et al. (2017) showed that although fake news websites have increased the quantity of their content, they have been unsuccessful in influencing the agenda of mainstream media. The same cannot be said for partisan media, however, with partisan media being more likely to be influenced by the agenda of fake news websites (Vargo et al., 2017).

Due to rising concerns about misinformation, governments all over the world have begun regulating online misinformation, with several countries having either passed laws or being in the process of passing them (Funke & Flamini, 2020). The private sector has begun taking action as well: in response to public pressure, Facebook and Twitter have started to remove or suspend suspicious accounts, purge misinformation from their platforms, provide external fact-checking, and algorithmically limit the reach of questionable content (Dellinger, 2018; Lee, 2019). However, despite major social media platforms such as Facebook and Twitter taking steps to limit the reach of misinformation, it is unclear if the amount of misinformation exposure experienced by individuals on social media has changed significantly as a result.

Owing in part to their reach and popularity, Facebook and Twitter have received more attention than other social media platforms on the issue of misinformation. Nevertheless, other social media platforms, such as Instagram, a Facebook subsidiary, have also been facing similar problems (Constine, 2018). Some studies suggest that Instagram has also been used to run disinformation campaigns (Mena et al., 2020). The US congressional investigations have revealed that fake accounts created by Russian sources on Instagram reached close to 20 million users in the United States during the 2016 US presidential elections (Mak, 2017). However, the extent to which misinformation is prevalent on Instagram remains unclear.

The reach of misinformation also extends to popular messaging platforms such as WhatsApp. Unlike social media platforms, communication on WhatsApp is protected with end-to-end encryption for privacy protection purposes, making it especially difficult to measure the amount of misinformation shared on it. However, recent studies from Brazil and India suggest a widespread prevalence of misinformation on this platform (BBC, 2019; Burgos, 2019; Reis et al., 2020). A study by BBC in India showed that WhatsApp was extensively used to circulate misinformation (BBC, 2019), but left
the extent to which the average individual is exposed to misinformation on WhatsApp unclear. Recent survey findings show that informational use of WhatsApp is associated with greater misinformation risk perceptions by users (Kuru et al., 2022). Hence, the literature suggests that misinformation has a wide reach because of the prevalent use of various social media platforms and messaging applications, but it is unclear if the wide reach of misinformation results in heavy exposure to misinformation at the individual level. Hence, we ask the following question:

**RQ1:** How does exposure to misinformation differ with the frequency of use of different social media platforms (i.e., Facebook, Twitter, WhatsApp, and Instagram)?

### Exposure to Misinformation on Traditional Media

Despite the rising popularity of social media, legacy media remains the most important source of information for most people (Langer & Gruber, 2021; Nelson, 2020). Research also suggests that the rise of social media has not necessarily resulted in the displacement of traditional media; in fact, it was found that they could co-exist in complementary ways (Dutta-Bergman, 2004; Lai, 2014; Neyazi et al., 2019; Ruppel & Rains, 2012). With regards to the prevalence (or lack thereof) of misinformation in legacy media, in the course of producing and delivering news and information, legacy media is customarily known for engaging in the following content quality control measures: employment of professional journalists, provision of reliable sourcing, and engagement in fact-checking and rigorous control mechanisms. The adoption of such measures might lead one to expect fewer concerns regarding misinformation exposure when using traditional media.

However, traditional media can fuel political misinformation too. First, misinformation can creep into traditional media news reports because of real-world constraints resulting in compromised fact-checking standards (Balod & Hameleers, 2021; Nieves-Pizarro et al., 2019). Tsfati et al., (2020) argue that “mainstream media are thus probably a significant amplifier and disseminator of false stories—even if they, for the most part, cover fake news with an intent to set the record straight and correct the fabricated information” (p. 160). In the process of debunking fake news stories, traditional media could become an unwitting accomplice of malicious agents who seek to spread misinformation widely, even though the original intention of traditional media is very much benevolent. Although some recent research suggests that correcting misinformation is less likely to have negative effects, research in the context of Russian disinformation indicates that it is often picked up by traditional media or public authorities (Mejias & Vokuev, 2017).

Second, political misinformation is a more contested phenomenon, and this might become a particular misinformation vulnerability when it comes to propaganda and biased coverage in traditional media. As such, the boundary between what constitutes real or fake news is not clearly delineated. Political preferences may shape what is regarded as fake or accurate (Lodge & Taber, 2013) such that many people find that information they disagree with could be fake (Taber & Lodge, 2006), thus reflecting how people’s worldview could affect their cognition and belief in information (Lewandowsky et al., 2012). For example, conservatives continued to believe that Barack Obama was a Muslim simply because of their disagreement with Democrats (Lewandowsky et al., 2012). Highly partisan news organizations may take advantage of such ambiguities by deliberately covering these stories in the course of fulfilling their own political agenda (such as undermining the ambitions of rival political parties or politicians).

Finally, although traditional media try to comply with the basic rules and standards of journalism, some media that are affiliated with certain presidential candidates in Indonesia seemed to ignore and bypass the basic journalism standard of verifying the verity of the issues purely to smear opposing presidential candidates (Tapsell, 2017). For example, Metro TV, which is considered close to Jokowi, brought up the background of Prabowo who was accused of being involved in the kidnapping of activists in 1997–1998. On the other hand, TVOne, which is regarded pro-Prabowo, tends to raise anti-Jokowi issues. As for other traditional media outlets, they generally took a more balanced and neutral stance in their news editorial reports during the campaign period. Based on the discussion, we propose the following hypothesis:

**H1.** Getting political information from traditional media (newspapers and television) will be positively associated with exposure to misinformation.

### Interpersonal Communication and Exposure to Misinformation

Much of the current research on misinformation focuses on online information sources. However, other than online information sources and traditional media, interpersonal communication is another important source of information for individuals, especially for learning about political information (Huckfeldt & Sprague, 1995; MacKuen & Brown, 1987). Studies have shown that interpersonal communication can increase factual political knowledge (Scheufele, 1999, 2000). However, the underlying assumption here is that factual information is communicated through interpersonal communication; if misinformation is communicated instead, then it is much less likely that interpersonal communication leads to an increase in factual political knowledge. Despite the slowness of the spread of messages through interpersonal communication, such communications are informed by trust, warmth and attentiveness (Jarvenpaa & Leidner, 1999). Importantly, face-to-face communication often takes place among people known
to each other, which may increase the level of trust in such conversations.

Moreover, interpersonal communication is more crucial in countries that are less digitalized and more collectivist, such as Indonesia. Our survey (of respondents based in Indonesia) showed that only 51.8% of respondents were using the internet. Indonesia is also commonly characterized as a collectivist society and values for unity and group norms are strong among Indonesian individuals (Hofstede, 1991). Given this peculiar nature of the Indonesian society, interpersonal communication is very likely to play a crucial role in individuals’ daily lives. Notwithstanding the rise of digital media, door-to-door campaigns and rallies remain an integral part of political campaigns in Indonesia (Yuliatingtyas, 2014), thus emphasizing the importance of interpersonal communication in sharing political information in such a context. Most, if not all, political parties and candidates continue to invest heavily in reaching out directly to potential voters through offline campaigns, while also maintaining a strong presence on digital platforms.

Understanding the reach of political misinformation via interpersonal communications is important because, for individuals who have little or no exposure to social or traditional media, interpersonal communication remains the only viable channel through which misinformation can propagate. It is also very important to examine social and traditional media misinformation effects while simultaneously accounting for face-to-face communications, which, surprisingly, is not frequently done. Therefore, we propose the following research question:

RQ2: How does the exchange of political news through face-to-face discussions affect individuals’ exposure to political misinformation?

The Case of the 2019 Indonesian Election

The empirical evidence for this study comes from the 2019 Indonesian presidential election, which was held on 17 April 2019. Indonesia is the third largest democracy in the world and, hence, serves as an important context from which to analyze the dynamics of misinformation propagation. The 2019 election campaign was notable for being more polarized than the 2014 presidential elections, and there were attempts from supporters of both the incumbent President Joko Widodo, popularly known as Jokowi, and the opposition candidate Prabowo Subianto to spread misinformation and hoaxes (Tapsell, 2019; Warburton, 2020). Despite both candidates claiming to focus on economic and development issues, there was rampant use of religion, racial, and divisive issues by their followers to win over voters. Jokowi’s ideology was primarily centered on the theme of Indonesia Maju (Indonesia moving forward) and economic development, whereas Prabowo contested Jokowi’s claim of economic growth and proclaimed he would be “making Indonesia great again.” It was the incumbent Jokowi who was the target of most of these misinformation campaigns, which were drawn from local cultural and historical contexts and ranged from projecting Jokowi as sympathetic to China as well as to the Communist Party of Indonesia (PKI) to being born of a Christian parent and hence anti-Islamic. Nevertheless, this is not surprising as previous research on political campaigns demonstrates that the opposition often uses negative campaigns and runs attack ads to target the incumbent’s winning prospects (Iyengar & Ansolabehere, 1995). On the other hand, the incumbent has been found to run more positive campaigns focusing on their achievements (Esser & Strömback, 2013).

One of the most widely circulated pieces of misinformation against Prabowo was one that portrayed him as having links with the forces that were involved in the kidnapping of democracy activists in the late 1990s. Given Prabowo’s military background, he was more likely to be accepted among conservative groups, who tend to exhibit higher trust in the military and prefer leaders with a more established and traditional background such as Prabowo (Mietzner, 2013). To undermine the advantage of Prabowo’s military background in the public eye, his military background was used against him to circulate misinformation (Neyazi & Muhtadi, 2021).

Method

Survey Data

We use a cross-sectional nationally representative probability-based survey fielded before the election on 17 April 2019 (N=1,820).3 A multistage random sampling method was used to select our respondents leading to proportionally distributed samples from 34 provinces across Indonesia. In our total sample, there were 1,583 (87%) original respondents and 237 (13%) substitute respondents. These substitute respondents generally had similar profiles to the original cases. The survey was conducted face-to-face by trained interviewers from 22 to 29 March 2019, just before the election. This ensured that we reached the population segments who had no internet.

Measures

Dependent Variables: Exposure to Misinformation

We used two main dependent variables to measure exposure to political misinformation—exposure to campaign conspiratorial misinformation and exposure to general misinformation. To measure the exposure to campaign conspiratorial misinformation, we use self-reported measure of exposure to various types of campaign conspiratorial misinformation. The dependent variable is a composite index of five items of misinformation that were circulated during the campaign period and was coded (1 = Yes; 0 = No).4 These
included (1) “Joko Widodo (Jokowi) was born of a Christian parent,” (2) “Joko Widodo (Jokowi) is of Indonesian Communist Party (PKI) descent,” (3) “Joko Widodo (Jokowi) is of Chinese descent,” (4) “Hundreds of thousands of illegal foreign workers from China have entered Indonesia,” and (5) “Prabowo Subianto was involved in the kidnapping case of democracy activists during the 1997–1998 period.” Figure 1 shows the variable details. The reliability of the measure was high with an observed Cronbach’s $\alpha$ of .805. A confirmatory factor analysis also revealed a satisfactory model fit for this variable (see Supplemental Appendix 1, Figure 3a).

Our second dependent variable measure exposure to general misinformation, which consisted of five items. We asked our respondents, “In the last week, which of the following have you personally come across?,” which was coded (1 = Yes; 0 = No). These items include (1) poor journalism (factual mistakes, dumbed-down stories, and misleading headlines/clickbait), (2) stories where facts are spun or twisted to push a particular agenda, (3) stories that are completely made up for political or commercial reasons, (4) headlines that look like news stories but turn out to be advertisements, and (5) the use of the term fake news (e.g., by politicians and/or others) to discredit news. Despite the above items capturing different dimensions of fake news stories, we created a composite index of these items because our aim is to measure the level of exposure among the respondents to general misinformation instead of distinguishing and ranking which of the above dimensions are considered more problematic by the respondents (for a discussion on this, see Rodríguez-Virgili et al., 2021). Figure 2 shows the variable details. The reliability of the measure is high with an observed Cronbach’s $\alpha$ of .975. A confirmatory factor analysis also revealed a satisfactory model fit for this variable (see Supplemental Appendix 1, Figure 3b).

**Independent Variables**

To measure the relationship between exposure to misinformation and online and offline news consumption, several independent variables were used. Interpersonal communication or face-to-face political discussion was used as an independent variable. Respondents were asked, “Regarding the presidential election in 2019, how often do you spread news or information about elections to family and friends through the face-to-face conversation?” This was measured on a 5-point scale (1 = never and 5 = daily or several times a day, $M=1.303; SD=.776$). We used the same 5-point scale for traditional and social media usage.

We also included traditional media usage as independent variable. Respondents were asked, “In the past month, how often did you follow news relating to social, political, and government issues at the regional or national level through the following medium?”; newspapers ($M=1.151; SD=.561$) and television ($M=2.863; SD=1.594$). An analogous question was used to measure the usage of social media. Respondents were asked, “In the past month, how often did you follow news relating to social, political, and government issues at the regional or national level through the following medium?” We used four types of social
media that are most popular in Indonesia; Facebook ($M=2.164; SD=1.460$), Twitter ($M=1.161; SD=.622$), WhatsApp ($M=2.205; SD=1.420$), and Instagram ($M=1.478; SD=1.078$).

Examining Internet Access With and Without Imputation

Nearly 48.2% of our sample either had no internet access or social media accounts. To be able to apply our conceptual model to the entire sample, we needed to impute $1=never$ for those respondents who did not have social media accounts ($N=1,047$) in the political usage of social media variables. We provide results based on imputed data; an analogous set of results for nonimputed data is provided in Supplemental Appendix 6. This is a common approach to deal with missing data due to having no internet access or social media accounts and is crucial to compare and integrate empirical findings in populations where penetration rates are low.

Control Variables—Political Interest and Demographics

People with a high degree of political interest are more likely to expose themselves to political (mis)information. Hence, political interest was included as a control variable and was measured on a 4-point scale ($1=not at all interested$ and $4=very interested; M=2.118, SD=.846$). We included a number of important demographics as control variables: education (coded low to high on a 10-point scale with $1=never went to school$ and $10=finished college or above; M=4.744, SD=2.372$); income (coded low to high on a 15-point scale with $1=less than 200,000 rupiah and 15=10 to 15 million rupiah; $M=8.077, SD=3.583$); age (17–85, coded young to old on a 6-point scale with $1=young$ and $6=old; M=39.0, SD=14.52$); gender (50% female); and geography (45.6% rural).

Analytical Strategy

To determine the role of distinct communication channels in the propagation of misinformation, we fit a multiple linear regression model to the data. Before fitting the model, all quantitative variables were normalized to lie within the new range of 0 and 1. Poststratification weights are used to adjust our sample so as to be more nationally representative. To check for any multicollinearity issues, the variance inflation factor (VIF) was calculated for each independent variable and presented in Supplemental Appendix 2; the low VIF values observed in Table 4 indicate low levels of correlation among our variables of interest. Furthermore, as RQ1 and H1 each involve testing for the statistical significance of multiple variables simultaneously (4 and 2 variables, respectively), adjustment of the individual $p$-values for multiple comparisons based on Holm’s method is also made to avoid the potential pitfall of inflated type I error rates when making multiple comparisons. Hence, the results should be interpreted by taking into account Tables 2 and 3 together.

Results

Table 1 provides descriptive statistics for the independent variables in the study. Descriptive statistics show that among
the social media platforms, WhatsApp is the most popular ($M=2.205$), followed by Facebook ($M=2.164$), Instagram ($M=1.478$), and finally, Twitter ($M=1.161$). However, when traditional media platforms are also taken into consideration, it is telling that television news remains the most important source of information regarding election campaigns ($M=2.863$).

Table 2 shows the effect of political use of different communication channels on two measures of exposure to misinformation: campaign conspiratorial and general misinformation. Standard goodness-of-fit statistics such as adjusted $R^2$ and $F$-test of overall significance indicates a good fit to the data, Campaign Conspiratorial Misinformation: $R^2 (adj)=.316, F=63.706$ with $p<.001$; General Misinformation: $R^2 (adj)=.157, F=23.436$ with $p<.001$. The Holm adjusted $p$-values are presented in Table 3 below.

RQ1 seeks to answer how exposure to misinformation differs with the frequency of use of different social media platforms such as Facebook, Twitter, WhatsApp, and Instagram. Tables 2 and 3 indicate that for exposure to campaign conspiratorial misinformation, there is insufficient statistical evidence to conclude that any of the political use of social media variables are associated with exposure to campaign conspiratorial misinformation. On the other hand, only WhatsApp and Instagram political use is found to have a statistically significant positive association with exposure to general misinformation: an increase in the political use of WhatsApp and Instagram of 1 unit is associated with a corresponding increase of .174 and .159 units, respectively, on the average, holding all other regressors in the model constant.

H1 examines the role of traditional media as a source of political information in exposing individuals to political misinformation. Tables 2 and 3 show that political usage of newspapers and TV are positively associated with exposure to campaign conspiratorial misinformation where an increase of 1 unit in each of these variables is associated with an increase in exposure to campaign conspiratorial misinformation of .111 and .166 units respectively on average. For exposure to general misinformation, only political use of newspapers has a statistically significant positive effect: a 1-unit increase in this variable is associated with an increase of .259 units in the exposure to general misinformation, on the average.

Finally, RQ2 considers the relationship between engaging in the exchange of election related information through face-to-face discussions and an individual’s exposure to political misinformation. Table 2 shows that only in the case where exposure to general misinformation is the dependent variable we observe a statistically significant positive effect for those sharing election-related information through face-to-face conversations: an increase of 1 unit in this variable is associated with a corresponding increase of .173 units in the exposure to general misinformation on the average. However, it should be noted that in the case where exposure to campaign conspiratorial misinformation is the dependent variable, the observed $p$ value for sharing political information through
face-to-face conversations variable is .057, which is close to our adopted cut-off value of $p < .05$. Instead of reporting our result as marginally significant, a common practice in the field of psychology (Pritschet et al., 2016) but nevertheless controversial (Olsson-Collentine et al., 2019), we elect to report the corresponding 95% interval estimate ($-.002, .157$) and leave it to the reader to determine its practical significance (Amrhein & Greenland, 2018). As for the demographic variables, Table 2 shows that being female and living in rural areas are negatively associated with exposure to campaign conspiratorial misinformation.

**Discussion**

In this article, we sought to add some clarity to the discussion of the extent to which individuals are exposed to misinformation in a hybrid media environment through social media, traditional media, and face-to-face discussion in the context of the 2019 Indonesian election campaign. We use two different types of outcome variables: exposure to campaign conspiratorial and general misinformation. While the first outcome variable, exposure to campaign conspiratorial misinformation, measures respondents’ exposure to specific types of misinformation and is context-dependent, the second outcome variable is relatively more subjective and measures respondents’ exposure to general categories of misinformation. By considering both distinct measures of misinformation exposure, we are using theoretical triangulation as an attempt to offset the challenges of measuring perceptions, which may be susceptible to motivated responding driven by external factors such as social desirability or expressive responding. Existing research suggests that people are more likely to characterize news stories as fake not because they are actually false or based on imprecise facts, but because of mere disagreement (Lewandowsky et al., 2012; Schaffner & Luks, 2018). Thus, it is entirely possible that anti-Jokowi respondents were more likely to state that they saw an anti-Jokowi snippet of misinformation just because they dislike him, even though they did not actually see it (Neyazi & Muhtadi, 2021). Hence, it is important to compare the results for exposure to campaign conspiratorial misinformation to general misinformation as well, since the latter might be considered as being more robust in such respect. On the whole, we find that the results are mostly similar across the two measures of misinformation, except for the political use of WhatsApp, Instagram, TV, and face-to-face discussions—all of them were significantly positively associated with exposure to general misinformation, but no corresponding significant association could be found with exposure to campaign conspiratorial misinformation.

After controlling for political interest and important demographics such as gender, age, education, income, and urban-rural dichotomy, we found that none of the social media use variables have a statistically significant effect on exposure to campaign conspiratorial misinformation and in the case of exposure to general misinformation; only Instagram and WhatsApp use are found to be positively associated. Our findings corroborate recent research findings that misinformation exposure on social media is relatively limited (Allen et al., 2020; Grinberg et al., 2019; Guess et al., 2019), even in a less-digitized Asian context. More exposure may be happening in messaging applications like WhatsApp which needs further research that examines the predictors of exposure to and sharing of misinformation (Kuru et al., 2022; Reis et al., 2020). The lack of a significant association found between both measures of misinformation exposure and the political use of Facebook and Twitter may also suggest that their respective policies aimed at combating misinformation are broadly effective. However, the findings in our paper could not be regarded as providing adequate evidence in support of this claim, given that nearly half (48.2%) of our sample either had no internet access or social media accounts; at most, our paper presents this possibility as an avenue for future research.

The significant positive association observed between general misinformation exposure and Instagram usage is in
line with other recent findings that Instagram has been used to spread misinformation (Mena et al., 2020). This result, when considered in conjunction with the lack of a significant association observed between misinformation exposure and political use of other forms of social media such as Facebook and Twitter, suggests that misinformation on social media may be following the path of least resistance to reach users. Facebook and Twitter have been relatively more active in taking steps to crack down on misinformation spreading on their respective platforms as compared to Instagram (Allcott et al., 2019). Given the self-reported nature of misinformation exposure in our study, it appears that the efforts of Facebook and Twitter to reduce misinformation may have had an effect on social media users. Thus, our findings lend support to the notion that misinformation reaches users more easily on platforms where oversight over misinformation is not as strong. Research also suggests that misinformation is in a steady decline on Facebook since 2016 (Allcott et al., 2019; see also Guess et al., 2019). These results may speak to the recently intensified efforts by Facebook to combat misinformation.

Our study also highlights an important but commonly neglected potential source of misinformation: traditional media. The act of obtaining political information through reading newspapers and watching television is found to be positively associated with exposure to campaign conspiratorial misinformation, with the former also being found to be positively associated with exposure to general misinformation. Prominent online misinformation about the candidates is newsworthy and often in the public’s interest within such a context, so traditional media is usually more inclined to report such news (Tsfati et al., 2020). News organizations debunk misinformation by necessarily covering it, which may inadvertently increase its circulation. This is likely to result in the unintended consequence of exposing even those with limited access to social media to the same kinds of misinformation as those who are heavy consumers of social media are exposed to.

While some might suggest that the credibility of legacy media has taken a tumble in a hybrid media environment (Giglietto et al., 2019), others argue that legacy media has not lost its standing in the information realm and are crucial to tackling misinformation. Legacy media “still have the symbolic capital, user reach and loyalty, and the necessary resources (financial, expertise, and access) to produce quality content” (Langer & Gruber, 2021, p. 316). Despite being under long-standing pressures of timeliness and immediacy, they are less likely to generate sensationalized news items for the view count. This also means that they can contribute resources to assess information veracity—as observed by how some older media have taken up the responsibility of fact-checking the work published by alternative media (Chadwick, 2017).

Also, among demographic predictors, gender is negatively associated with exposure to campaign conspiratorial misinformation. The finding for gender is in line with previous studies’ finding that women, in general, are less interested in politics (Verba et al., 1997). The prevalence of the gender gap in political participation has been observed across democracies (Kittilson, 2016). On the other hand, the observed negative association between exposure to campaign conspiratorial misinformation and living in rural areas suggests a possible rural-urban divide in how misinformation spreads; a finding considered especially relevant when considering that education and income are found to be positively associated with exposure to campaign conspiratorial misinformation. As urban areas generally are better developed with better infrastructure, education and income levels also tend to be higher than in rural areas.

In short, our article makes three important contributions to the existing literature on misinformation exposure. First, the empirical findings from this paper highlights the need to focus beyond social media and pay attention to the hybrid media environment by looking at legacy media such as newspapers and television while designing policies to combat misinformation. Second, while our findings cannot establish that exposure to misinformation through traditional media has negative consequences; nonetheless, the reporting of misinformation in traditional media can potentially mislead consumers of traditional media (Tsfati et al., 2020). For example, if misinformation is prominently featured in the headline, a reader who does not read further into the main text may think that the misinformation in the headline is true because of association with the credibility of the media. Our findings point to the need for media outlets to develop clear and comprehensive policies on the reporting of misinformation to ensure that exposure to such misinformation through traditional media does not necessarily result in its acceptance, especially for casual viewers who may not read news articles or watch a television broadcast in its entirety (Fazio, 2020).

Finally, our findings show that face-to-face discussions of political campaign information are also associated with exposure to general misinformation, highlighting the multifaceted nature of misinformation flows. Much attention has been paid to misinformation on social media platforms, but face-to-face communication of misinformation is arguably as pernicious and even more so in a collectivist society like Indonesia, where group norms are stronger and larger swathes of rural populations have less access to reliable internet and social media account ownership (Katadata Insight Center & KOMINFO, 2020). While the propagation of misinformation through face-to-face communication may be a lot less efficient in terms of reach as compared to the spread of misinformation on social media, face-to-face communication of misinformation is more likely to increase the credibility of misinformation because such interactions often occur among people known to each other. Social norms and interpersonal trust in face-to-face contexts may make it easier for misinformation to spread (cf. Duffy et al., 2020).

Overall, our findings suggest that the multifaceted nature of misinformation flows in contemporary media environments
may require further research to disentangle the temporal complexities among them, which our study is unable to answer. When individuals encounter similar misinformation in the mass media, on social media feeds, through face-to-face communication, and in interpersonal communication mediated by apps such as WhatsApp and Telegram, how do they respond? Would the order of exposure influence the extent of belief and acceptance of misinformation? To disentangle these complexities, future research may need to employ a research design that can account for the temporal influences of different channels of misinformation exposure to provide more nuanced insights into the belief and acceptance of misinformation in contemporary media environments.

There are certain limitations in the article to take note of. The first is that our dependent variable measures are self-reported measures of exposure to misinformation during the election campaign, which are subject to measurement error induced by self-report bias. To address this limitation, we employ the method of quantitative bias analysis to determine the robustness of our findings with respect to unmeasured confounders such as recall ability and present these findings in Supplemental Appendix 3. The result of the procedure indicates that for both measures of misinformation exposure, the findings for political usage of Facebook and Twitter are to be treated with caution; for exposure to campaign conspiratorial misinformation, this concern extends to also include political usage of WhatsApp. Conceptually, this limitation also raises validity concerns with the observed positive association between exposure to general misinformation and education, as the ability to accurately perceive exposure to items comprising the composite index of misinformation exposure (i.e., poor journalism, fake news, commercially motivated stories, deceptive advertisements, and politically motivated stories) is likely to depend, in large part, on the ability of a person to think critically, which has been shown to be positively associated with academic achievement (Akpur, 2020); hence, interpretation of this positive association should proceed with caution as well.

The second limitation is that we cannot ascertain to what extent those who are exposed to misinformation are also responsible for spreading misinformation. We conducted bias analysis for unmeasured confounders which suggests that we should treat these self-report measures with caution (Supplemental Appendix 3). Future studies should examine the relationship between self-reported and actual exposure to misinformation as well as the sharing of misinformation along different media and channels of communication to gain a better insight into the differences in how individuals react to misinformation.

Notwithstanding these limitations, this article contributes to ongoing debates about the influence of misinformation through various media and communication channels on electoral politics beyond advanced Western democracies by examining the Indonesian context. By considering social media, traditional media, and face-to-face communication in the context of the 2019 Indonesian election, this article provides a more comprehensive framework and novel empirical data for the study of misinformation exposure in a hybrid media environment, which is less digitalized. In particular, we emphasize that the role of traditional media and face-to-face communication remains highly salient in an evolving media landscape dominated by social media. Online misinformation can extend beyond the online space and flow into both traditional media (through news coverage) and face-to-face communication. An overemphasis on social media risks not seeing the forest for the trees in developing strategies to combat the scourge of misinformation.

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注

1. 存在一些争议认为，利用自我报告的统计技术来测量一个人的暴露程度与这种现象的影响有关。这种衡量问题在 Supplemental Appendix 3, 以及补充额外的可靠性检查中已经给出。

2. 衡量暴露的统计技术已经给出了。该比例是 .0567, 这是通过网络研究得到的。同时其相符合的建议，我们不需要对读者决定其实际意义。我们的结果涵盖了这一主题的更多细节。

3. 该文章的基线样本为 1,220 人。我们增加了 600 个额外样本在西爪哇。这是因为西爪哇是印度尼西亚最人口多的省份。此外，在西爪哇地区没有主导政党。

4. 该文章的基线样本为 1,220 个。我们增加了 600 个额外样本，在西爪哇地区没有主导政党。因此，样本总数为 1,820。该文章的基线样本为 1,220 个。我们增加了 600 个额外样本，这些样本与其他样本分开，并从现有国家和省级样本中抽取。该文章的基线样本为 1,220 个。我们增加了 600 个额外样本，在西爪哇地区没有主导政党。
5. Note that non-imputed data only captures internet respondents and does not capture the Indonesian population representatively.

6. The analysis was also replicated with the non-imputed dataset comprising only of respondents who have internet access. The results, presented in Tables 7 and 8 of Supplemental Appendix 5, are largely consistent with that as reported in Tables 2 and 3 for the main analysis.

7. To check the robustness of our findings, we also ran another model where we included party identification in terms of vote intention for either of the two presidential candidates as control variables. This is because our dependent variable for the first model of exposure to misinformation contains five specific items about exposure to political misinformation related to both presidential candidates. There was no significant change in the results even after controlling for party identification (See Supplemental Appendix 4).

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**Author Biographies**

**Taberez Ahmed Neyazi** (PhD, National University of Singapore) is an Assistant Professor of Political Communication and New Media and Principal Investigator at the Center for Trusted internet and Community at the National University of Singapore (NUS). His research interests include political communication and public opinion; computational social science; digital, mobile, and social media; and communication theory. He is the author of *Political communication and mobilization: The Hindi media in India*, Cambridge University Press, 2018 and has published several journal articles. Email. taberez@nus.edu.sg

**Aaron Yi Kai Ng** (PhD, National University of Singapore) is an Assistant Professor in the Business, Communication and Design Cluster at the Singapore Institute of Technology. His research interests include misinformation and privacy in digital media, artificial intelligence in social contexts, and health communication, especially in Asian regions. Email. aaron.ng@u.nus.edu

**Ozan Kuru** (Ph.D. University of Michigan) is an Assistant Professor of Digital Media at the Department of Communications and New Media and a Principal Investigator at the Centre for Trusted Internet and Community at the National University of Singapore. He is interested in communication of political and health information, individuals’ biases in Processing systematic information in these domains and ways to mitigate such biases. Email. okuru@nus.edu.sg

**Burhanuddin Muhtadi** (PhD, Australian National University) is a Senior Lecturer at the Faculty of Social and Political Sciences, Syarif Hidayatullah State Islamic University, Jakarta. He is also an Executive Director of the Indonesian Political Indicator (INDIKATOR) and a visiting research fellow at ISEAS—Yusof Ishak Institute, Singapore. His research interests include political misinformation and voting behavior, public opinion, and clientelism. Email. burhanuddin.muhtadi@uinjkt.ac.id