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Publication Date

2018-09-01

DOI

10.1016/j.chb.2018.04.051

Peer reviewed



Full Length Article

Do birds of different feather flock together? Analyzing the political use of social media through a language-based approach in a multilingual context

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ARTICLE INFO

Article history:

Received 16 September 2017

Received in revised form

26 April 2018

Accepted 28 April 2018

Available online 2 May 2018

Keywords:

Twitter

Election campaign

Language

Homophily

Cross-cutting

Malaysia

ABSTRACT

This study analyzes the political use of Twitter in the run-up to the 2013 Malaysian General Election. It follows a content and social network analysis approach to investigate the interplay of language and political partisanship in social media use, among Twitter users in Malaysia. In the period leading up to the 2013 elections, Twitter posts collected under the hashtag #GE13 reveal that communities that post in English versus the Malay language, differ in how they use Twitter and with whom they interact. As compared to English users, Malay users are more likely to seek political information and express their political opinion. In online discussions, we observe language-based homophily within the English and Malay language communities, but there are some cross-cutting interactions between opposing political communities. We discuss the implications of our findings for the political use of new communication technologies in multi-ethnic and multilingual societies.

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1. Introduction

The rise of social media platforms has enabled new political communication dynamics, changing the nature of electoral campaigns and way citizens interact with politicians and other voters. Several studies have recognized the central role of social media in political information seeking and dissemination, in both mainstream (Himmelboim, Hansen, & Bowser, 2013; Kim, 2011) and contentious politics (Lotan, Graeff, Ananny, Gaffney, & Pearce, 2011; Starbird & Palen, 2012). Individuals and groups belonging to

various segments of society may actively seek political information, share their opinion, and engage in online discussions (Shirky, 2011) owing to the ease of access and wide outreach of platforms such as Facebook, Twitter, Instagram, and YouTube. Features that allow interaction and information-sharing, such as the “sharing” feature on Facebook or the “retweet” feature on Twitter, enable individuals to easily share political news and information with a network of other users, making them promising tools for democracy and participatory politics.

Facebook and Twitter, the two social media platforms with a wide user base, have not only become important political information sources but they have also provided newer avenues for political discourse. While Facebook allows maintenance of existing social ties connecting with family and friends, Twitter while offering the same affordances also allows unidirectional and asymmetrical connections, where users can connect with other users without their approval. Thus, a user network on Twitter can include family and friends, but it also facilitates connections with political leaders, journalists, opinion leaders and other users (Valenzuela, Correa, & Zuniga, 2017). This affordance is unique to the flow, exchange, or discussion of political messages, because a Twitter user

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is not bound by their tie networks and can engage in a political discussion even with strangers. Moreover, political leaders, journalists, and opinion leaders mostly appear as “friends” on Twitter rather than “likes” on Facebook (Valenzuela, Correa, & Gil de Zúñiga, 2017).

A growing body of literature has focused on the use of social media for political engagement. Several studies have examined the characteristics and effects of political discussions on social media sites on online as well as offline political behavior (Gil de Zúñiga, Molyneux, & Zheng, 2014; Vaccari et al., 2013). Some scholars believe that these discussions strengthen democracies (Cho & Keum, 2016; Halpern & Gibbs, 2013) while others are more skeptical of their impact (Colleoni, Rozza, & Arvidsson, 2014; Conover et al., 2011). More specifically, social networking sites are under criticism for facilitating political polarization (Adamic & Glance, 2005; Conover et al., 2011; Hong & Kim, 2016; Shah et al., 2017). However, there is no denying that political discussions on social media sites are a regular fact of life (Duggan & Smith, 2016) as most often the users relay the online political content in their offline political conversations (Vaccari et al., 2013).

Although the literature on the political use of social media continues to expand, most research has primarily focused on highly networked and primarily mono-lingual Western societies (Bruns & Highfield, 2013; Gil de Zúñiga et al., 2014; Small, 2011). A few comparative studies have analyzed online behavior of users across multiple countries (Broersma & Graham, 2012; Kim, Sohn, & Choi, 2011) but an understanding of the intersection of social media and politics in multilingual communities within the same society are limited. Studies have shown that social media use varies based on the user's language of expression (Hong, Convertino, & Chi, 2011); however, few studies have considered the political implications of these differences. This study addresses this gap by investigating how the language of online expression on social media plays a role in its use.

For a more comprehensive understanding of political communication on social media and its role in politics internationally, there is a need to go beyond relatively settled liberal-democratic settings and explore other globally important multi-lingual democracies (see Soon & Soh, 2014). With this goal, the present study aims to expand the extant research by investigating the use of Twitter during the 2013 Malaysian General Election.

Malaysia is indeed a worthy study setting as the dominant working national language is Bahasa Malaysia (Malay; 47%) – although, with 20.5% English speakers (Crystal, 2003), the country ranks as most proficient in English use in Asia (Liang, 2013). English speakers are bilingual, and they are not limited to an ethnic group. However, in Malaysia where anti-colonial and anti-Western sentiments persist (Zahid, 2013), English speakers belong to higher socioeconomic statuses compared to Malay speakers and are considered elitist (Huat, 2013). In such a society, our study aims to understand how new communication technologies were used in the run-up to a major national election by examining the functions of Twitter use and the political discussion patterns within and between groups differing in both their choice of language of (online) expression and political partisanship.

This study will draw on content and social network analyses of election-related Twitter messages, collected under the hashtag #GE13, to identify the functions of Twitter use and online interaction patterns amongst the Malay and English language groups while paying attention to their political partisanship. Other than directly contributing to the literature of the political use of social media, the findings will also add towards the literature for online political activity in Asia, a region which has received limited attention in political communication research.

2. Social media and the 2013 Malaysian General Election

2.1. Background

In 2013, there were two main coalitions which contested the national elections – Barisan Nasional (BN), the incumbent ruler, and Pakatan Rakyat (PR), the main contender. Najib Razak, a member of the United Malays National Organization (UMNO) party and the leader of BN, led the coalition to its 13th victory, winning 133 out of 222 seats in the Parliament, against 89 for the opposition, a three-party coalition of PR led by Anwar Ibrahim. Although BN won, they witnessed a loss of seven seats to PR as compared to the previous election. In terms of popular vote share, BN (47.38%) were second to PR (50.87%) and fared worse than the 2009 elections where they had won 51.39% of the overall votes. Critics of BN's conservatism right-wing political position opined that a decrease in core voter base was the sign of a true democratic transition (Rosli, 2014).

2.2. Role of social media

Cyber-campaigning was first introduced in Malaysia in 2008 by the opposition, PR, as a cheap and effective way to mobilize voters, and it acted as a leveler for the opposition, to subvert their lack of access to mainstream media and lack of financial resources of the intensive marketing campaign planned by BN. The rise of the Internet enabled a disruption of Malaysian government's control of media content. Between 2008 and 2012, the Internet penetration in Malaysia increased from 55.8% to 67%. This period also saw a significant increase in the number of Twitter users. Today, Twitter plays an integral part of the daily life of an internet user in Malaysia (Sakawee, 2014). On average, Malaysians generate a total of 162.4 million tweets or roughly 5.4 million tweets per day, which is third-highest in Asia, just behind Indonesia and India (Sakawee, 2014). Furthermore, by 2013, most of Malaysia's top politicians were on Twitter – Najib Razak's Twitter account was most popular, with 1,460,000 followers as in 2013. Anwar Ibrahim had 267,000, Nik Aziz had 94,000, and Lim Kit Siang had 89,000 Twitter followers (Gomez, 2014). BN's Facebook page had 55,000 likes, and PR's Facebook page had 92,000 likes. Evidently, an increasing number of Malaysians were looking to social media to connect with their political representatives and to obtain and share political information. Not surprisingly, the year 2013 General Elections was declared as the nation's first-ever ‘social media election’ by the ruling Prime Minister Najib Razak (Gomez, 2014). Social media also played a key role in mobilizing Malaysia's record turnout of 85% voters and was actively used by both the ruling coalition and the opposition for campaigning and citizen outreach (Gomez, 2014). Based on these indicators, political commentators portended that social media's role in the 2013 election would be even more important than the internet's role 2008 when it was used by the opposition to mobilize voters to disrupt BN's two-thirds majority control of the government.

3. Political uses of social media

The exponential increase in social media use has drawn scholarly attention to its usage as a communication medium, owing to its unique affordances for information dissemination and interaction. Studies have found social networking sites to be important political news consumption and distribution platforms (Hermida, Fletcher, Korell, & Logan, 2012; Pentina & Tarafdar, 2014). Social networking sites can disperse conversations and information through a network of interconnected actors, rather than limiting it to few individuals or groups as is observed in the offline world (boyd, Golder, & Lotan, 2010). Social networking sites such as

Facebook and Twitter also serve as platforms to express political opinion and share it through personal and public networks (Ahmed, Jaidka, & Cho, 2016; Gil de Zúñiga et al., 2014). By mentioning other users and including hashtags in their posts, users can leverage the networked structure of platforms like Twitter, to distribute their opinion among a wide network of users and communities. These characteristics facilitate a plurality of opinion expression (Papacharissi & de Fatima Oliveira, 2012) and encourage exchanges between like-minded individuals, strengthening group identities (Yardi & Boyd, 2010).

Despite the wealth of research on the political uses of social media, most of this research has examined English language tweets; only a few studies have conducted cross-language analyses. To our knowledge, no study has explored language differences in the context of political use. Hong and colleagues (2011), for example, examined the general use of Twitter based on language differences and found that users of various languages varied considerably in how they used different affordances (like retweets and @ replies). The authors attribute some of these variations to inherent cultural differences; but they may also be due to the variance between language communities and their frequency of activity (Hong et al., 2011). Gil-Lopez, Ahmed, and Taylor (2017) analyzed El Clásico (the soccer competition between Real Madrid and Barcelona FC) fan behavior on YouTube in terms of the differences in the English and Spanish language threads discussing the game. They found that the Spanish language threads included more instances of political references as compared to the English language threads. The authors suggest that these language differences may be related to the deep-rooted sociopolitical identity of Spanish language fans. The findings of both studies motivate our claim that patterns of social media use can differ between language groups. However, both these studies do not eliminate the confounding factor of cross-national culture that could also potentially drive the differences in social media usage.

The present study will highlight whether different political partisanships in Malaysian society translates into differences in how the Malay and bi-lingual speakers (who prefer to express themselves in English) use social media for political purposes. We aim to rule out the cross-national cultural difference between users and find the variance in political use of social media solely based on language identities within the same country. Our investigation is relevant because it also draws attention to the socio-political differences between groups using the Malay and English languages within the Malaysian society. Malay, the mother tongue of the majority ethnic group, is officially recognized as the national language; however, the nation was a British colony, and thus has a complicated relationship with the English language. The British introduced English during the colonial period to serve institutionalized functions. Even after Malaysia's independence, English continues to be the nation's second language. English speakers, who are usually bi-lingual, typically belong to the more educated segment of the society and have better jobs with higher living standards (Omar, 1992). Society elites and well-educated citizens predominantly use English (Huat, 2013; Roslan, 2001; Slater, 2004); accordingly, it is likely that their social media use for political purposes might differ from the Malay groups.

Previous research has confirmed that the media use and political behavior of groups differs with varying socioeconomic status (Roberts & Foehr, 2008; Verba & Nie, 1972; Verba, Scholzman & Brady, 1995). More recent literature also emphasizes the role of socioeconomic status in Internet and social media use (Bolton et al., 2013). Individuals belonging to the higher socioeconomic strata tend to use the Internet more than the lower socioeconomic users (Khan, ur Rahman, & Qazi, 2016) who have been found to use the Internet more for entertainment rather than information purposes,

possibly due to low skills levels (Hargittai & Hinnant, 2008). This differential Internet use also translates into a greater political knowledge gap between the high and low socioeconomic groups (Wei & Hindman, 2011). These findings can be explained through the knowledge gap hypotheses, which argues that with the introduction of new information in a social system, the growth of knowledge is relatively greater among the higher-SES population segments (Tichenor, Donohue, & Olien, 1970). However, other scholars have found an absence of socioeconomic stratification in either the adoption or use of social media (Ahn, 2011; Lenhart, Purcell, Smith, & Zickuhr, 2010).

Given the lack of an understanding of how different socioeconomic groups use social media and with no prior knowledge of how groups using different languages of expression use social media for political purposes, we pose the following research questions:

- RQ1 What functions did the tweets about the Malaysia General election posted by users serve?
- RQ2 Is there a difference in these functions between the Malay and English language groups?

4. Political discussion on social media

Social networking sites have increasingly become a popular space for political discussions. Communication affordances enabled by social media technologies allow users to share information and opinions with ease. Online discussion facilitated by social media have been found to positively influence citizens' social capital, civic, and political participatory behaviors (Vissers & Stolle, 2014; Yamamoto, Kushin, & Dalisay, 2015). Furthermore, experimental approaches suggest that online social influence has increasing influence over political behavior (Bond et al., 2012). At the same time, social networking sites are also under criticism for facilitating political polarization (Conover et al., 2011; Hong & Kim, 2016; Shah et al., 2017). Studies on Twitter, for example, have revealed that users tend to construct virtual networks based on their partisan positions, which leads to ideological (Conover et al., 2011) and partisan polarization (Colleoni et al., 2014). These findings suggest that social networking sites are reinforcing echo chambers, and dampening opportunities for cross-cutting discussions, which are necessary for a healthy democracy.

The creation of echo chambers is explained through two mechanisms. The first explanation centers on homophily, where individuals preferentially connect with like-minded friends to form homogenous networks (McPherson, Smith-Lovin, & Cook, 2001). The second reasoning suggests that friends in a network may be similar due to social influence or diffusion: the propensity for characteristics and behaviors to spread through social ties such that individuals in a network progressively resemble one another over time (Centola, 2010; Rogers, 2003).

Ongoing research in this area has typically focused on investigating homophily based on the ideological or political partisanship of social network users. In the present work, we aim to include the language of expression as another layer in investigating online political discussions of social media users. In the context of multi-ethnic societies, this is a relevant question to ask. Specifically, in Malaysia, citizens using the English language often belong to a higher socioeconomic stratum and are considered undesirable, arrogant, 'boastful,' 'too westernized' and not a part of the traditional community (Lee, Lee, Wong, & Azizah, 2010, p. 89). In the offline setting, an exchange between the Malay and English language speakers is perceived as endangering the local language along with threatening the identity and culture of the Malay race (Rajadurai, 2011).

Recent findings suggest social media play host to a 'civility divide,' where high socioeconomic strata users gain value from online deliberation but those with diminished resources interact in hostile and less rewarding social media environments (Vargo & Hopp, 2017, p. 24). Therefore, it is an important question to ask whether the social media platforms help reduce the barriers to communication between the communities in a multilingual context or it merely replicates the offline relationships. We thus pose the following research question:

RQ3 How frequently do political conversations flow a) within the same language and partisan political groups (homophily) and b) between dissimilar language and partisan political groups (cross-cutting)?

5. Method

5.1. Data collection

Our dataset comprises tweets posted from midnight on 20 April 2013, the date when the candidates for the 2013 General Election were nominated and the start of the election campaigning period, until 6 May 2013, a day after the general election. Over 800,000 tweets were collected using the Tweet Archivist application by tracking the hashtag #GE13, which remained the top trending political hashtag throughout the observed period. Python's natural language toolkit was used to segregate the tweet dataset into English and Malay sub-sets. In total, we identify 185,079 English tweets and 623,380 Malay tweets for analyses.

5.2. Manual content analysis

To identify the function of tweets, we conducted a four-level manual content analysis on a random sample of 5000 tweets ($N=2500$ each for English and Malay). The complete coding scheme is provided in Table 1. The first stage of coding focused on identifying the ethnicity of the users based on the categories defined in the Census of Malaysia (Stage 1, Table 1). The coders identified the ethnicity of the user by checking the user's profile photograph (and other profile photos, if available), screen name, and other user details. The three dominant ethnic groups in Malaysia (Malays, Chinese, and Indians) have characteristic ethnic names. If required, the coders also searched for the user's profile details online to find more information. A comparison of the sample race composition against the Census trend is provided in the appendix. As compared to the census data, the Twitter sample used in this study is not strictly representative of the general population. This unrepresentativeness of the Twittersphere is not specific to the Malaysian society – others have also found similar results in Western democracies (see Blank, 2017). Therefore, the results of this study may not generalize to the overall Malaysian population. The aim of this study is only to explore the use and interaction characteristics of the *Twitter population* incorporating both the Malay and the English language groups.

At the second stage of coding, user profiles were classified into one of the user group categories (e.g., common citizens, media, politicians, etc.) as listed at stage 2 in Table 1. At the third stage of coding, the high-level function of Twitter use (e.g., information, opinion expression, reporting, etc.) were coded based on the criteria listed in the table. At the final stage of coding, each tweet was coded per the sub-functions of the overall functions (e.g., information dissemination, information seeking, etc.) identified at the previous stage.

5.3. Coders and reliability

Two bilingual students proficient in English and Malay were recruited for the coding assignment. The coding description is provided in Table 1. A training session was conducted before the final coding process. The pilot test of inter-coding reliability involved 25% of tweets ($N=1250$). Inter-coder reliability was calculated by Cohen's kappa and were found to be satisfactory (Contributors = 0.98 for both English and Malay; Functions = 0.76 for English and 0.81 for Malay, Sub-function = 0.88 for English and 0.86 for Malay). Once we achieved acceptable inter-coder reliability at the pilot stage, the coders advanced to independently code the entire sample.

5.4. Social network analysis

In the next step, we aim to investigate the interaction within and between communities of different languages and political partisanship. Social network analysis is conducted to identify the different partisan groups and to examine the flow of political discussions between these groups. The open source graph visualization software Gephi was used to plot the graphs. We discuss the analytical approach in the following paragraphs.

5.4.1. Community detection

Using a list of keywords comprising party names, candidate names, and Twitter account handles of parties and politicians, we identified users and filtered 'communities' which mentioned either the BN or the PR coalition in either the Malay or English language. Through this approach, we identified four groups –

- a) PR supporters posting in Malay (PR Malay)
- b) PR supporters posting in English (PR English)
- c) BN supporters posting in Malay (BN Malay) and
- d) BN supporters posting in English (BN English)

Every user posting a tweet, or being mentioned in a tweet, is represented as a node in the community's graph. Because this method aims to investigate differences based on political partisanship, tweets mentioning both parties were discarded.

5.4.2. Edge list conversion

Twitter users highlight a tweet to the attention of another user by mentioning their username preceded by a @ symbol. Individuals who do not exist in one's follower-followee network can still be mentioned in a tweet, and this is viewed as an attempt to engage in a conversation (Bruns & Moe, 2014). To focus on the conversations happening between Twitter users, we excluded those edges which fulfill information dissemination (retweet) rather than conversation functions (@-mention), to obtain a total of 112,650 edges. Each edge was labeled English or Malay according to the language of the original tweet. Now, we have a list of nodes and an edge list, which we categorize according to the political partisanship of the original tweet. In this manner, we identified 59,654 edges (interactions) within the BN and PR communities respectively (homogenous interactions), and 52,996 edges comprising BN-to-PR interactions (cross-cutting interactions).

5.4.3. A measure of weighted interaction

To compare the interaction within and between communities, we calculated the weighted interaction for the four groups by comparing the interactions in relation to the total interaction (total edges) in the overall network. The calculations were based on the formula:

Table 1
Coding scheme.

Category	Category Description
Stage 1	Identifying the ethnicity of the contributor
Stage 2	Identifying the contributors of #GE13
Level 1: Users	
Common citizens	Twitter account of common citizens
Media	Twitter account of journalists or a news source within or outside Malaysia
Politicians	Twitter account of any political party or politician from Malaysia
NGOs/Organizations	Twitter account representing a non-political and non-government organization
Bloggers	Twitter account of individuals who write political blogs or create journalistic content but are not professional journalists
Others	Any Twitter account which did not fall under the above categories
Unrecognizable	Any Twitter account which could be identified or did not have enough information to code.
Stage 3	Identifying the function of tweets posted by individuals
Level 2: Function categories	
Information	Tweets seeking or sharing information by asking questions or clarifications about emerging situations, or providing information by sharing external links or retweeting some information about the elections
Opinion Expression	Tweets conveying a self-reference and a personal reflection about the elections or related entities, such as political parties or politicians
Conversation	Tweets representing a part of a conversation by mentioning (@) other accounts
Reporting	Tweets which contain photos, videos and eyewitness accounts of happenings at ground level, for example, self-shot videos at campaign rallies or polling booths.
Not Relevant	Any tweet which doesn't serve a direct function
Others	Any tweet which was unrelated to the hashtag
Stage 4	Identifying the underlying themes in functions of usage
Level 2	Level 3: Sub-functions
Information	Information dissemination Tweets sharing external links or retweeting some information about the elections from three types of sources – a) mainstream media b) online media or c) social media. Information seeking Tweets seeking or sharing information about different themes – a) party or politician-related information b) voting-related information, or c) any other
Opinion Expression	Political opinion Tweets conveying a personal reflection about the elections, political parties or politicians Opinion on media Tweets conveying the opinion towards a news item in the a) mainstream or b) online media or c) others – includes social media
Reporting	Theme The actual themes of reporting eye-witness accounts or incidents – including political campaigns or election events related to GE13.

$$\text{Weighted Interaction } G(a, b) = \frac{\text{Weighted Interaction } G_a \cap G_b}{\text{Total Interaction}}$$

where $(G_a \cap G_b)$ refers to the number of weighted edges between group_a and group_b, counted as a mention in a tweet by a user in group_a mentioning a user in group_b, or vice-versa.

While the weighted interaction provides us with some insight into the interactions within and between communities in a network, it does not control for the group size. It is important to control for group size since larger clusters are more likely to have more edges (links) sent across clusters. Therefore, to control the size of the group, we also standardized the cross-cutting group metrics by using the inter-group edge ratio. The calculations were based on the formula:

$$\text{Inter – Group Edge Ratio } (a, b) = \frac{\text{Number of Edges}_{(G_a - G_b)}}{\text{Number of Edges}_{(G_a - G_a)} + \text{Number of Edges}_{(G_b - G_b)} + \text{Number of Edges}_{(G_a - G_b)}}$$

6. Results

Before we delve into the research question findings, discussed below are the descriptive analyses.

6.1. Overall trend

6.1.1. Language

Fig. 1a shows the trend for Malay and English tweets posted using the #GE13. Malay was the preferred language on Twitter (77.11%) while English was used by a smaller proportion (22.89%). The trends for both languages are characterized by several small spikes, leading up to the highest spike on 4th May 2013 the day before the election.

6.1.2. Overall mention of political parties

A total of 379,650 tweets (46.96%) of the #GE13 set included terms related to exactly one of the political parties. Fig. 1b shows that through the campaign period PR (52.01%) was the most popular party followed by BN (42.13%) and others (5.86%). However, BN

was the more discussed party on the day of the election owing to their electoral victory. These findings are consistent with previous research where Twitter usage during an election witnesses the most traffic on or immediately before the Election Day (Burgess & Bruns, 2012).

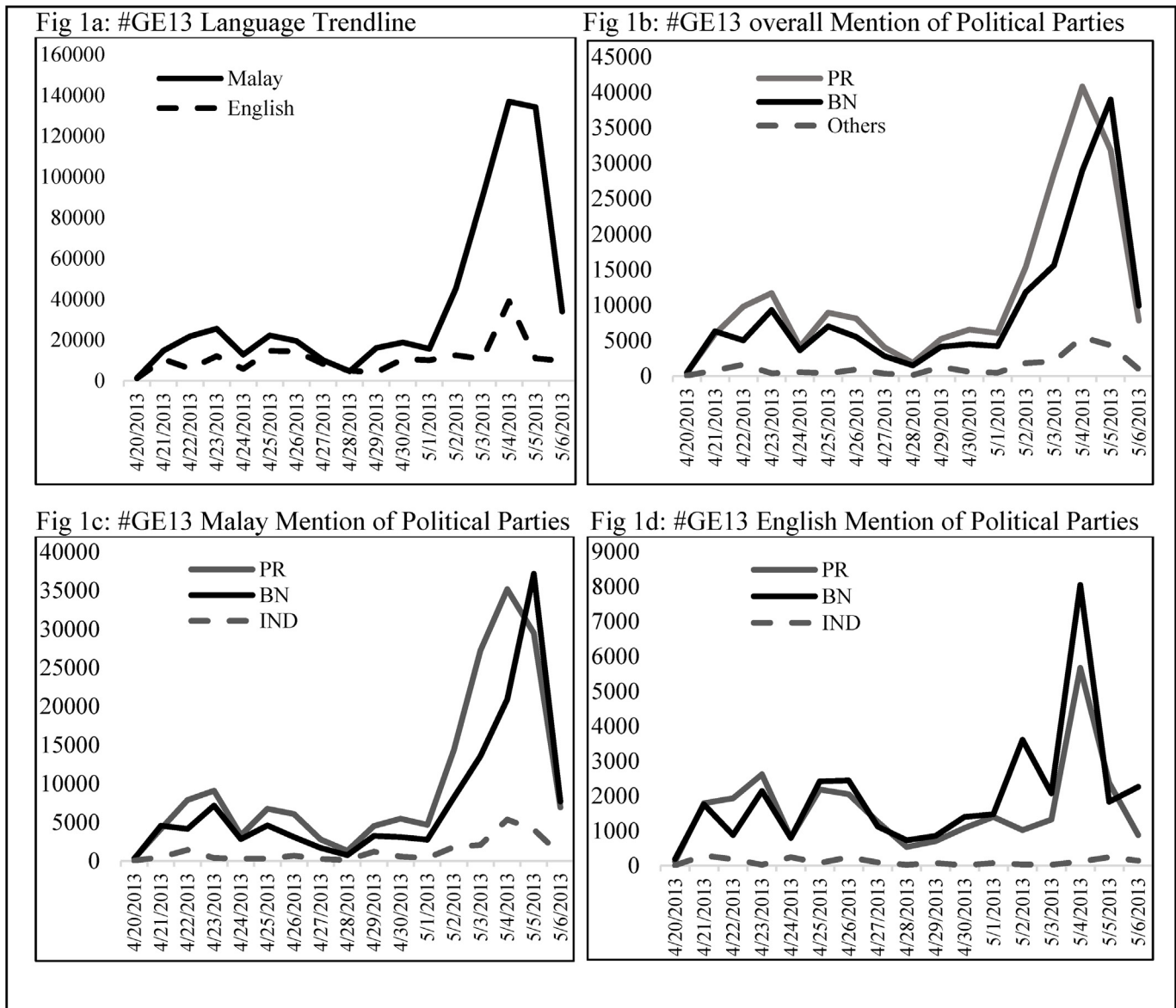


Fig. 1. Tweet trendlines.

6.1.3. Mention of political parties by language

The discussions about political parties in Malay (Fig. 1c) follows the similar overall trend where PR (53.69%) is more frequently discussed than BN (39.84%). However, a reverse pattern is visible

amongst the users posting in English (Fig. 1d) as BN (53.44%) was discussed more frequently than PR (43.59%).

6.2. The #GE13 contributors

The #GE13 contributors comprised Malaysians from different professional arenas including politicians, media personnel, bloggers, NGOs, and common citizens. Chi-square tests were employed to examine the differences between these contributors across English and Malay tweets. Table 2 summarizes the results. The mainstream contributors comprised of three categories: common citizens, media, and politicians. For both English and Malay tweets, most tweets were generated by common citizens, but they were more active in the Malay group, $\chi^2(1) = 42.81, p < .001$. Overall, the contribution of common citizens is consistent with previous research where individuals have been found to be most the frequent users of Twitter during political events (Small, 2011).

Media and politicians formed the second and third largest category of users across both languages. However, a between-

Table 2
The #GE13 contributors.

Contributor	Overall N = 5000 Percentage	English n = 2500 Percentage	Malay n = 2500 Percentage	Chi-Sq Sig
Common citizens	42.9	38.32	47.48	$p < .001$
Media	24.17	23.44	25.96	$p < .05$
Politicians	20.52	22.32	18.72	$p < .01$
NGOs/Organizations	4.12	4.32	3.92	$p = .477$
Bloggers	3.6	6.56	0.64	$p < .001$
Others	2.96	3.68	2.24	$p < .01$
Unrecognizable	1.2	1.36	1.04	$p = .246$
Total	100	100	100	

language comparison revealed significant statistical differences: media were more likely to tweet in Malay ($\chi^2(1) = 4.27, p < .05$) while politicians preferred to tweet in English ($\chi^2(1) = 9.93, p < .01$). The ‘other’ category comprised of users who did not fall under any classified group while the unrecognizable users remained anonymous or their profile was not accessible.

6.3. Functions of using #GE13

Twitter has largely been considered as an information dissemination medium (Lotan et al., 2011) and our RQ1 findings of common citizens' Twitter use indicate the same. The overall results presented in Table 3 suggests that the medium was dominantly used as an information tool (47.79%). Users posting in the English language were more likely to use the medium for informational purposes as compared to Malay users, $\chi^2(1) = 18.31, p < .001$. Overall, one-fourth (25.27%) of common citizens tweeted their opinion using #GE13. Malay users were more likely to engage in opinion expression than the English language users, $\chi^2(1) = 29.20, p < .001$. A substantial number of users also engaged in conversations (via @-mentions) but there was no significant difference between English and Malay language users, $\chi^2(1) = 0.71, p = .40$.

Although previous research has revealed that Twitter is often used as a citizen journalism tool (Lotan et al., 2011), our findings suggest the minimal use of the medium as a news reporting platform. Only a small proportion of users (7.41%) were reporting about the election. An explanation could be that the use of Twitter as a citizen journalism tool is context-oriented, as more visible during protests (Ahmed & Jaidka, 2013) and emergency situations (Hughes & Palen, 2009) but under #GE13 there were relatively fewer events that could motivate users to report. No statistical difference was found in reporting between English and Malay language users, $\chi^2(1) = 0.03, p = .87$. These tweet functions by language groups are discussed in detail the following sub-sections.

6.3.1. Information dissemination

The information sub-function use based on language are presented in Table 4. Overall, English language users were more active in information dissemination behavior than the Malay language users, $\chi^2(1) = 9.67, p < .001$.

Users who tweeted in English were more active in disseminating news originating at traditional media outlets than Malay users, $\chi^2(1) = 21.85, p < .001$. This finding confirms the wide reach and dominance of traditional media outlets even in the online sphere, and provides insights about the modern-day relationship between the media and Twitter. However, when we compare dissemination of news originating at online media platforms, we come across contrasting results. Users posting in Malay were more likely to disseminate online media information as compared to users posting in English, $\chi^2(1) = 12.61, p < .001$. There was no

statistical difference between the two groups in disseminating social media information, $\chi^2(1) = 0.09, p = .76$.

6.3.2. Information seeking

Social media consists of user-generated content where users may be able to encounter ideas and opinions not well represented in traditional news media (Gillmor, 2006) which can increase the likelihood of information seeking behavior (Kushin & Yamamoto, 2010). Hence such information seeking behavior is commonly observable across traditionally under-represented communities (Jansen, Zhang, Sobel, & Chowdhury, 2009). Our findings indicate a moderate information-seeking behavior amongst the users but this was more common amongst users posting in Malay than English, $\chi^2(1) = 10.40, p < .001$.

Based on previous research and in combination with our previous findings, these results suggest that overall, users predominantly used Twitter as an information dissemination tool but users posting in Malay were more likely to seek information than users posting in the English language.

6.3.3. Opinion expression

Expression of political opinion was found to be the overall dominant category, but it was more common in the Malay group as compared to the English group, $\chi^2(1) = 9.78, p < .01$. English language users were more likely to express an opinion about the mainstream media information, $\chi^2(1) = 37.32, p < .001$ but Malay users were more expressive about online media information, $\chi^2(1) = 7.81, p < .01$.

These findings suggest that the while English users were less likely to express their opinion on online media information, they were open to expressing their opinion about mainstream media information. On the other hand, Malay users freely opine about politics more than media information.

6.3.4. Reporting

An almost equal number of English and Malay users were reporting about events related to the election, $\chi^2(1) = 0.03, p = .87$. Amongst the category of events being reported about, news related to election campaigns was the most dominant in both English (91.4%) and Malay (93.2%) groups.

6.3.5. Conversation

As presented in Table 3, approximately one out of five tweets were conversational. Both groups were equally likely to engage in conversations, $\chi^2(1) = 0.71, p = .40$. Though representative of the entire dataset, our manually content analyzed sample had a limited number of users engaging in a conversation (17.57%, $N = 377$). To better understand the potential of the medium as an interaction tool, we revisited the complete dataset to extract conversation indicators (@). It is here that the answer to RQ3 is explored. Social network analysis on this sample was conducted to examine the exchange of political conversation across the previously mentioned four groups.

6.4. Conversation networks on twitter

Fig. 2 provides the visual representation of the interaction patterns between the Malay and English language groups. The inter-group edge ratio suggests 0.66 of the overall edges were concentrated within the Malay community while 0.21 was within the English community. Further, 0.13 of the overall edges were cross-cutting, and connected the two communities. We can observe that the resultant graph reflects a denser structure of strong connections among the Malay group than the English group, although the English network does have a few strong connections.

Table 3
Function details.

Functions of usage of common citizens' tweets				
Functions	Overall (%) N = 2145	English (%) n = 958	Malay (%) n = 1187	Chi-Sq Sig
Information	47.79	52.92	43.64	$p < .001$
Opinion Expression	25.27	19.64	29.82	$p < .001$
Conversation	17.58	16.81	18.19	$p = .40$
Reporting	7.41	7.31	7.49	$p = .87$
Not Relevant	.74	1.36	.25	$p < .01$
Others	1.21	1.98	.59	$p < .01$
Total	100	100	100	

Table 4
Information and opinion sub-function details.

Information Function	Overall (%) N = 1025	English (%) n = 507	Malay (%) n = 518	Chi-Sq Sig
<i>Disseminating Information</i>	89.30	92.31	86.29	$p < .001$
Mainstream media information	52.08	59.37	44.78	$p < .001$
Online media information	29.31	24.26	34.36	$p < .001$
Social media information	6.14	5.92	6.37	$p = .76$
Other	1.77	2.76	.77	$p < .05$
<i>Seeking Information</i>	10.69	7.49	13.71	$p < .001$
Party/Leader Information	6.41	4.14	8.69	$p < .01$
Voting Information	3.69	2.56	4.82	$p = .055$
Other	.49	.79	.19	$p = .17$
Total	100	100	100	
<i>Sub-functions: Opinion expression based on language</i>				
Political Opinion	59.52	52.66	66.38	$p < .01$
Opinion on mainstream media information	24.86	36.17	13.56	$p < .001$
Opinion on online media information	9.16	5.32	12.99	$p < .01$
Other	6.46	5.85	7.06	$p = .59$
Total	100	100	100	

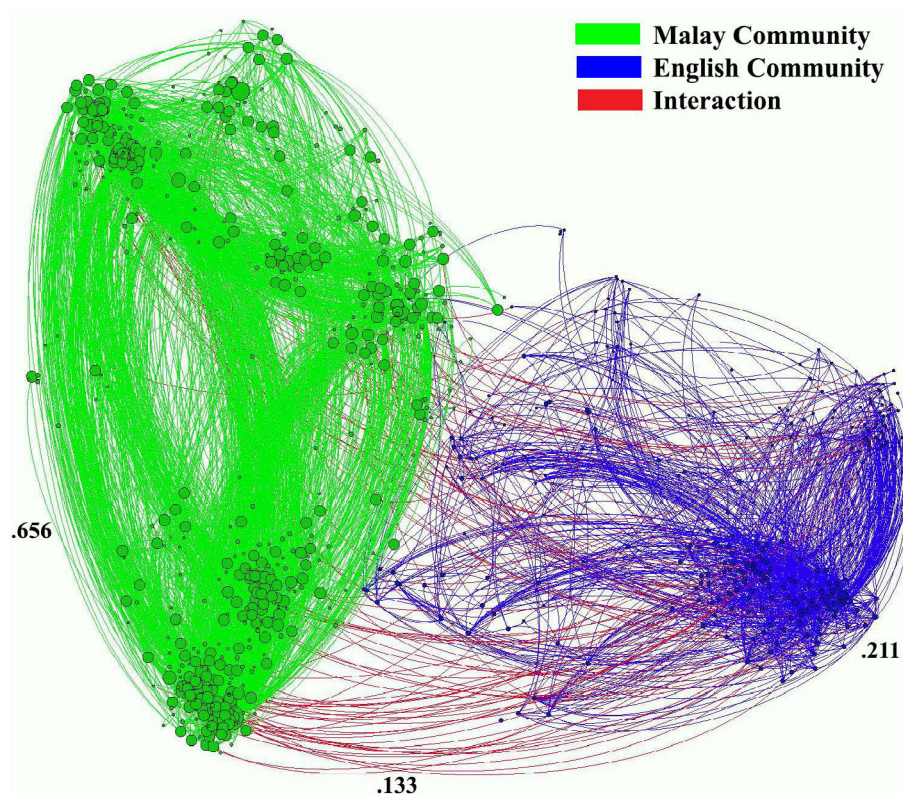


Fig. 2. Interaction between Malay and English language communities. Note: the coefficients mentioned are inter-group edge ratio.

A deeper insight into interactions within and between the groups is provided through the calculation of weighted interaction and inter-group edge ratio in Table 5 and represented in Fig. 3. Clockwise from top right, the four corners represent the social networks of the BN English, BN Malay, PR English and PR Malay communities. The black edges connecting these networks reflect the pairwise interaction between them.

We found the highest weighted interaction for PR Malay-BN Malay (.264) closely followed by the weighted within-interactions of PR Malay (0.245) and BN Malay (0.197) groups. Examining the interaction between same languages but opposite partisan groups,

we find that there is relatively higher interaction among PR Malay-BN-Malay communities (0.264), in fact, close in intensity to within the PR Malay (0.245) community alone. We infer that the Malay community on Twitter is quite tightly knit, even beyond their political affiliations.

While these numbers provide us with some interaction pattern information between the groups, they do not control for the group size. On calculating the inter-group edge ratio, a standardized coefficient, we observe that language homophily (PR Malay – BN Malay = .37, PR English – BN English = 0.43) is greater than political partisanship homophily (PR Malay – PR English = .14, BN Malay –

Table 5
Measure of weighted and standardized interaction.

Comparison	Groups	Weighted Interaction	
Truly Homogenous - (Same Language, Same Partisanship)	PR Malay-PR Malay	.245	
	BN Malay-BN Malay	.197	
	PR English-PR English	.046	
	BN English-BN English	.041	
			<i>Standardized Interaction</i>
Language Homophily - (Same Language, Different Partisanship)	PR Malay – BN Malay	.264	.374
	PR English – BN English	.065	.426
Partisanship Homophily - (Same Partisanship, Different Language)	PR Malay – PR English	.048	.141
	BN Malay – BN English	.042	.152
Truly Cross-cutting Interactions - (Different Language, Different Partisanship)	PR Malay – BN English	.011	.037
	BN Malay – PR English	.040	.141
Total		1.00	

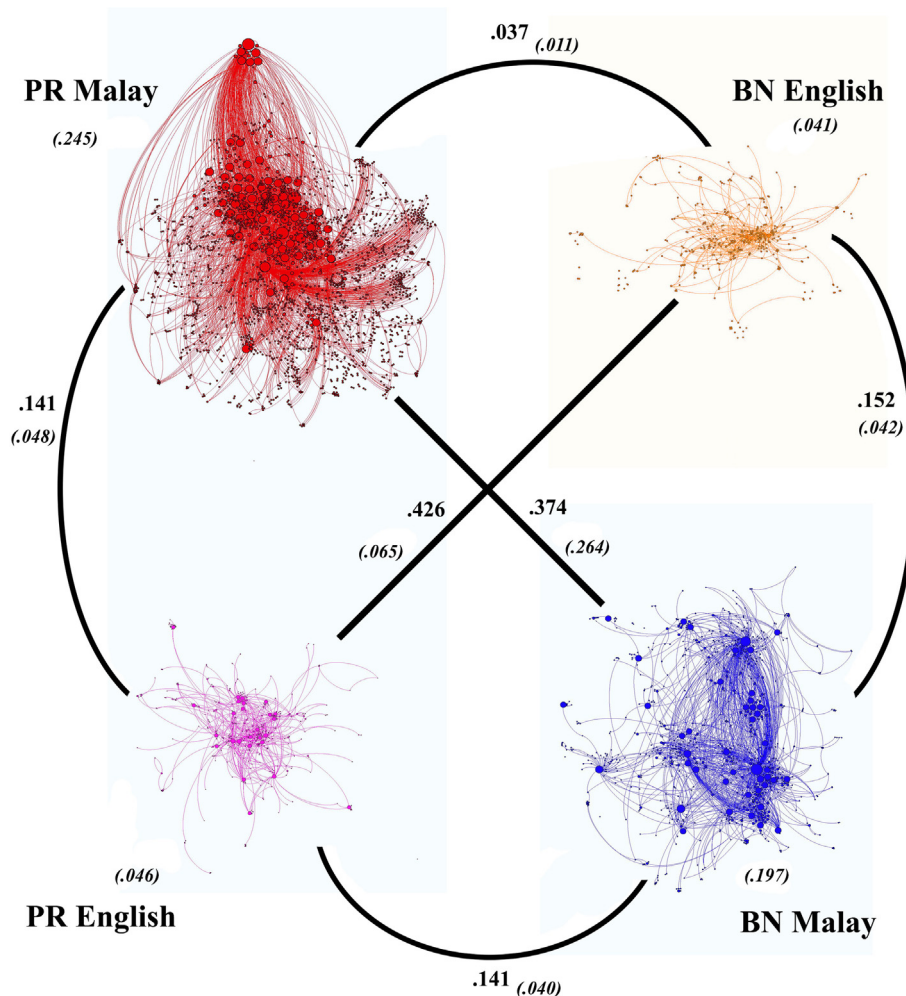


Fig. 3. Interaction between four sub-communities. Note: the coefficients mentioned are inter-group edge ratio with the weighted interaction coefficient in parenthesis.

BN English = 0.15). However, we also observe instances of truly cross-cutting interactions, where communities that differ in both their language of expression and political partisanship interact with each other (PR Malay – BN English = .04, BN Malay – PR English = .14).

7. Discussion

This study focused on analyzing the similarities and differences

in social media use and conversational pattern of English and Malay language users in the run-up to the Malaysian General Election 2013. Our analysis provides insights on the accessibility of the medium for these two language groups. However, with the expansion of a digitally connected global network where more and more people have gone online, it is imperative to pay attention to disparities in the use of the Internet and digital tools. This argument is closely linked with the shift of attention from ‘access’ to ‘use’ in digital divide research.

We observed a distinct pattern of difference between the English and Malay language users in how they used Twitter and with whom they interacted. Information dissemination was the primary purpose of tweets in both language groups. Malay language users prominently used the medium to seek information and express their political opinion as compared to the English language users. Given that English use in Malaysia is considered an indicator of higher socioeconomic status, our findings shed light on the debate over the role of the Internet, especially social media, and political inequality. Research on the knowledge gap and online political (in)equality has observed that the higher socioeconomic strata of the population is more productive in their Internet usage; on the other hand the lower socioeconomic strata uses the Internet in a more general and superficial way (Zillien & Hargittai, 2009). The higher information dissemination, especially originating through mainstream media, by the English language users follows the traditional knowledge gap hypothesis framework. In contrast, we found that the Malay language users seek information and express their political opinions more frequently as compared to the English language users. We infer that the rise of social media is allowing new dynamics of politics, where online discussions can play a key role in providing the traditionally ignored sections of the societies a suitable platform to voice their political opinion.

Our findings bring a fresh perspective to the literature on opinion polarization in social media. Previous research has established that language is strategic to political enlightenment, mobilization, and participation (McFarland & Thomas, 2006), and scholars have found differences in civic and political participation based on language skills (Brady, Verba, & Schlozman, 1995). Most differences encountered in previous findings have been attributed to the differences of ethnicity between minorities and majority populations. The findings presented here provide insights into the complex interplay of language and political partisanship, which go beyond the majority versus minority ethnic community debates. What we observed here is perhaps language-based homophily, as both the weighted interaction and the standardized inter-group edge ratio suggests that the interaction within same language groups (for both English and Malay) was higher than across language groups, even when the groups shared common partisanship. Thus, above and beyond the language difference, there was little evidence of only political homophily, as there were significant cross-cutting interactions between the Malay and English language communities. This finding is also in line with contemporary research findings where scholars have found evidence for both political homophily (Baek, Jeong, & Rhee, 2015; Colleoni et al., 2014) and cross-cutting interactions (Gruzd & Roy, 2014; Kim, 2011). While cross-cutting interactions are considered advantageous for democratic stability, it is also observed that such instances often discourage political engagement (Huckfeldt, Johnson, & Sprague, 2004; Mutz, 2002). The present study highlights the need to include other measures of group identities that can alienate or bring together groups with similar or dissimilar partisanship. However, further exploration is needed to understand the effect of such interactions.

Our findings suggest that the language differences on Twitter may reflect the differences in the social structure and social classes. The integration of the English language in Malaysia has complicated precedents. Under the influence of religious agendas within the nation, the status and attitude towards the English language is still ambivalent (Ali, Hamid, & Moni, 2011; Le Ha, Kho, & Chng, 2013). The ethnic identity in the Malay society is still conceptualized as Malay monolingualism (Nagata, 1974) where an 'authentic

Malay' speaks the Malay language and conforms to the Malay custom (Romaine, 2009). On the other hand, English is predominantly used by the elite of the society (Roslan, 2001; Slater, 2004). Scholars have found an *othering* process, where proficient ethnic language speakers consider English speakers to be a threat to the identity and culture of the Malay race (Lee et al., 2010). Thus, an exchange between Malay and English language speakers might be perceived as undesirable (Rajadurai, 2011).

Our study has important implications for understanding the use of new communication technologies and its potential to lower (or reinforce) the barriers between social classes. In the case of the 13th General Elections in Malaysia, our analysis suggests that social media use reinforced these class divisions. However, we know little about how the ongoing transformation of social media ecologies, in which users abandon relatively open social media platforms such as Facebook and Twitter in favor of more closed instant messaging apps, will impact the relationships with political polarization and public engagement. Research shows that citizens are moving away from the more open, but heavily monitored social media platforms to more private, end-to-end encrypted instant messaging tools like WhatsApp (Kelion, 2017; Parker, 2014). This change is important since unlike the popular social media platforms which facilitate the establishment and maintenance of weak, cross-cutting social ties, messaging apps like WhatsApp are primarily used for dyadic or small group communication within close tie networks. We recommend that future work, given the availability of such data, should conduct further analysis to conclusively establish or reject the claims put forward by this study, and possibly also consider other factors beyond the scope of this work.

There are some limitations of this study. First, this study has focused on the frequency of interactions between communities, but we acknowledge that considering frequency as a proxy to meaningful political conversations may not be the ideal way to model the dynamism of political conversations. Exploring the nature of such conversations could add further value to the claims. Secondly, we focused solely on the hashtag #GE13, but there were other hashtags used for political discourse during the 2013 election. Our choice of #GE13 was based on it being the top trending hashtag and to avoid biases by including hashtags mentioning a single party or politicians. In future work, analyses focusing selectively on hashtags could be fruitful to understand the themes and conversations around each hashtag community. Thirdly, we discarded tweets mentioning both parties to infer political preferences, but paying closer attention to such tweets (at a scale of large Twitter samples) could refine our understanding of partisanship in Twitter use. Fourthly, our analyses only focused on Malay and English language tweets. Nonetheless, for a complete representation of communication on Twitter or other forms of social media, it would be ideal to collect data without any language restrictions. Finally, our sample is not representativeness of the Malaysian census data, and thus the findings of this study should be evaluated within the realm of Twitter users.

To conclude, our results shed light on a novel and less-understood aspect of Malaysia's 2013 General Election, providing some important new directions for research on the political use of social media with an attention to language discrepancies. We recommend that future scholars should aim to make more inroads into examining the role of social media in less investigated democracies as they would have direct implications for better understanding the complex dynamics of the social media conversations in the multicultural and multilingual societies of advanced democracies.

Appendix

Ethnic Composition	Census 2010 (%)	Census 2016 (%)	English Twitter Data (%)	t-test ^a vs 2010 Census	t-test ^a vs 2016 Census	Malay Twitter Data	t-test ^a vs 2010 Census	t-test ^a vs 2016 Census	Overall Twitter Data (%)	t-test ^a vs 2010 Census	t-test ^a vs 2016 Census
Malay	67.4	68.6	61.5	$p < .001$	$p < .001$	71.9	$p < .001$	$p < .001$	66.7	$p < .001$	$p < .001$
Chinese	24.6	23.4	17.9	$p < .001$	$p < .001$	9.8	$p < .001$	$p < .001$	13.9	$p < .001$	$p < .001$
Indians	7.3	7	13.9	$p < .001$	$p < .001$	12.9	$p < .001$	$p < .001$	13.4	$p < .001$	$p < .001$
Others	0.7	1	3.8	$p < .001$	$p < .001$	1.6	$p < .001$	$p < .001$	2.7	$p < .001$	$p < .001$
Don't Know			2.8			3.7			3.3		

^a One-sample t-test.

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