

STATE-OWNED MEDIA IN HASHTAG DISCUSSION: EXPLORING STATE OWNED
MEDIA'S AGENDA BUILDING STRATEGY ON TWITTER

By

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To my grandmother.

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Abstract of Dissertation Presented to the Graduate School
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The current study examined how state-owned media uses Twitter to build their agenda about controversial international relations issues. Three questions are examined: are state-owned media important nodes of the discussion network, who are interacting with state-owned media, how then interaction influences the narrative and how it influences the overall quality of discussion. The dissertation examined three issues: the humanitarian crisis in Aleppo in 2016, South China Sea territory dispute and Trans-Pacific Partnership. Study 1 used social network analysis to study the discussion networks of all three issues and found that state-owned media being successful information disseminator but not very successful in generating engagement. Study 2 used content analysis to study how interaction with state-owned media influences the content and quality of discussion. Result indicates that state-owned media has strong agenda-building effect on a small group of users on Twitter. The information reach is limited and the discussion involved state-owned media is more homogeneous. Implications were discussed in Chapter 5.

CHAPTER 1

INTRODUCTION

The development of social media has enabled organizations to circumvent traditional gatekeepers, such as the mass media and government, to directly interact with the public. This phenomenon has greatly changed the practice of mediated public diplomacy, which Entman (2008) defined as “using mass communication to increase support of a country’s specific foreign policies among audiences beyond that country’s borders” (p.88). Owing to the objective of communicating to and potentially influencing foreign publics, mediated public diplomacy has traditionally relied heavily on the operation of state-sponsored international media since its emergence during the First World War (WWI) (Nye, 2010; Samuel-Azran, 2013). However, the effects of the state-sponsored international news media were restricted by the license of the foreign nation, limited subscription numbers, and the misinterpretation of foreign mass media. In recent years, social media has emerged as a virtual platform of interaction and information exchange (Perlmutter, 2008), thus providing a channel for government and government-sponsored media to interact directly with foreign elites and foreign publics. Indeed, social media is a new frontier of mediated public diplomacy.

Such countries as China, Russia, and the United States have all been heavily investing in building the social media branch of their respective state-owned international media. To date, the main Twitter account of the Russian flagship state-owned media outlet, Russia Today (@RT_Com), has over 2.52 million subscribers, whereas its American account, @RT_America, has over 364,000 subscribers. Xinhua News, a Chinese state-owned firm, has over 6.86 million subscribers for its main English Twitter account. As a point of comparison, the Associated Press has 9.23

million subscribers. Beyond state-owned media, diplomats and embassies also actively use social media in their efforts to reach out to a younger generation of foreign publics. For instance, a US embassy social media account has been conducting social media campaigns for the past few years (e.g. Zhong & Lu, 2013).

The use of social media, such as Twitter also, provides an opportunity to conduct two-way communication in mediated public diplomacy. For example, social media provides instant feedback from readers, thereby allowing state-owned media to produce contents that are truly tailored to the taste of its audience, whereas real-time interaction allows it to monitor and respond to public concerns or questions about a country or an issue. In addition, building and maintaining networks with key opinion leaders also help build the credibility of public diplomacy messages (Zhong & Lu, 2013).

However, while social media has potential uses in public diplomacy, effective measurements of its influence are somewhat lacking. The then-Under Secretary for Public Diplomacy and Public Affairs of the United States, Tara Sonenshine, mentioned in a 2012 address that the primary measures currently implemented are the number of retweets and number of followers. Although measuring the retweet number is crucial, this method is unable to identify who is reacting to the message and whether they are among the target audiences (Wallin, 2012). Many think tanks, grant projects, and public opinion research centers in China and in the US have been monitoring and studying the US government's strategic use of social media campaigns in China and in the Middle East. However, these analyses often focus on the communication strategy of one country without the context of all other stakeholders. In a pluralistic media ecology, in which multiple stakeholders compete for users' attention, studying the strategic move of

one actor alone does not capture the interacting nature of social media. At least in the English scholarly literature, relatively little attention has been given to the social media public diplomacy strategy and practice of effort in other countries. A few exceptions have been made; for instance, in a recent study, scholars analyzed all those connected with state-owned media from China, Russia, the US and Qatar Twitter accounts and how the networks help state-owned media leverage their influence (Golan & Himelboim, 2016). Another facet of the measurement issue is that the number of retweets and followers does not directly link to tangible outcomes of mediated public diplomacy. What is the purpose of mediated public diplomacy? As a form of political public relations (Golan, 2014), public diplomacy has both short- and long-term goals. Entman (2008) contended that mediated public diplomacy differs from public diplomacy in being “shorter term and more targeted” (p.88). Mediated public diplomacy uses various communication activities to deliver a clearly established purpose: managing international media coverage and public opinion about a country’s policy and leadership (Hallahan, Holtzhausen, van Ruler, Verčić, & Sriramesh, 2007). Research often treats a mediated public diplomacy effort as comprising various actors that compete for control of the international agenda and framing of specific issues or politicians (Cheng, Golan, & Kiousis, 2015; Golan, 2013; e.g. Sheaffer & Gabay, 2009). Arguably, the emerging trend of operating on social media should not change the strategic function of mediated public diplomacy. Instead, its issue management function should be strengthened as social media provides platforms for issues to be monitored, discussed, and defined (Park & Reber, 2008).

Beyond the measurement issue, a more critical issue exists on how the proliferation of state-owned media on Twitter influences the overall discussion quality on the Twittersphere, which can change from a public sphere to an echo chamber depending on who participates in the discussion (Colleoni, Rozza, & Arvidsson, 2014). For example, during the 2016 US presidential election, Twitter suspended tens of thousands of Twitter accounts for being potentially manipulated by Russia to intervene with the election (Twitter Public Policy, January 2018). When promoting their agenda, do state-owned media's social media accounts act as a new manifestation of propaganda or do they act as one of many discussants that seek to participate in the negotiation of a representation of their country via logical, coherent arguments to reach an agreement? This is an empirical question to be examined in this dissertation.

I conducted two studies to examine how the Twitter accounts of state-owned media influence the discussion of critical issues from three perspectives: state-owned media as a publicity seeker, state-owned media as a node in a discussion network and state-owned media as an actor in a public sphere. These three perspectives respectively addressed state-owned media's communication effect, power in the overall discussion and ethical concerns of state-owned media's involvement in issue discussion. I chose Twitter because, compared with other social media platforms, it is especially suitable for studying interactions among users due to its built-in means of analysis, including retweets as an indicator of information sharing, hashtags for subject matter categorization, an @reply function for active relationship ties among users, and URLs to track information sources (Rogers, 2014). On Twitter, the subject matter network is organized with a hashtag. When a Twitter user clicks on a hashtag, they will

be transported to a global discussion of this specific subject matter and see posts even from other users to whom they did not subscribe. Hence, the hashtag creates a space for public discussion beyond the follower–followee network. In this public space, strenuous posting from less connected individuals can sometimes override the dominance of highly connected users. A Bastos, Raimundo, and Travitzki (2013) study found that, in grassroots political movements, persistent posting of individuals could overshadow the ability of highly connected hubs to generate publicity for a specific hashtag.

In Study 1, I conduct a network analysis of the interactions among Twitter users who participate in the discussion of a hashtag issue. Such interactions include retweet, @reply, and sharing URLs. Combined with the human content analysis of the account information, this network analysis could reveal the nuances behind who are the key actors attempting to define this critical issue, who are interacting with state-owned media, and whether the state-owned media's social media accounts are in the central place of this discussion. Such analysis could also reveal the orchestration and conflict among various information sources—both institutional actors and non-institutional actors—in promoting issues.

In Study 2, I conduct a content analysis of Twitter discussions of the three issues to 1) determine the potential impact of state-owned media's agenda-building influence, and 2) to assess state-owned media's influence on the quality of Twitter discussion of international relations issues. For the first set of analyses, I compared the Twitter discussion that involves state-owned media and Twitter discussion that does not involve state-owned media. For the second goal, I use normative variables, including argument

repertoire and the democratic quality of discussion. Ultimately, the effectiveness of strategic communication must be judged against the intended communication outcomes. In the context of mediated public diplomacy, the outcomes refer to the degree to which the government can effectively influence the narrative of the issues. Presumably, if social media engagement and interaction is effective, I should observe that the ones who have direct interaction with state-owned media should have a different agenda from those who do not interact with state-owned media. Alternatively, counter publics can use an organization's own words to act against it. As Curtin and Gaither (2007) noted in the "circuit of culture," the audience's "consumption" dictates whether a communicator could influence the narrative in an unintended way. In the social media environment, the discussion of topics can move completely out of the control of the person who proposed them. A term "hashtag hijacking" has been denoted to describe this phenomenon, in which a hashtag is used by counterpublics to promote a counternarrative (for example: Hadgu, Garimella, & Weber, 2013; Jackson & Foucault Welles, 2015). For the second set of questions, I compare the argument repertoire and democratic quality between discussion involved state-owned media and the discussion that does not involve state-owned to determine whether state-owned media are constructive/destructive actors in the online discussion. In terms of the state-owned media's influence on the overall quality of discussion, if state-owned media demonstrate a high level of argument repertoire, which means having a well-articulated argument of its own perspective and a full acknowledgment of the reasons given by the opponent's point of view, then I deem the state-owned media to be a contributor to the democratic

discussion of issues. As an organizer of discussion, the democratic quality of discussion between state-owned media and other Twitter users has been analyzed.

Many theoretical perspectives can be used to examine the relationships among information sources, media content, and public opinion/discourse (e.g., information subsidies, agenda-building, framing, and gatekeeping). Among them, the agenda-building perspective is the most appropriate because it is highly comprehensive. In mirroring the three levels of agenda setting, the agenda-building perspective allows researchers to explore the transfer of salience at the object, attribute, and network levels. Arguably, this approach provides the most comprehensive structure with which to examine content: in this case, the content on social media.

To sum up, in this dissertation, I will examine three research questions.

RQ1: Does interacting with state-owned media's social media accounts lead to a difference in issue agenda?

RQ2: What is the role of state-owned media's social media account(s) in the Twitter discussion network on an issue considered critical to the country's interests?

RQ3: How much do the state-owned media's social media discussions align with the normative standards of constructive discussion in the public sphere?

These questions are examined using three issues, namely, #SouthChinaSea, #Aleppo, and #TPP, all of which involve a variety of government and non-government actors who attempt to influence the narrative of the issue.

CHAPTER 2 LITERATURE REVIEW

“State-owned media” is often discussed as part of mediated public diplomacy.

Despite the increasing attention given to public diplomacy in recent years, the concept is highly inconsistently defined in the literature. Scholars, politicians, and popular press have casually used the term on a wide range of concepts that lie in the overlapping area between publicity and diplomacy. Some definitions are all about mass media, whereas others only recognize a limited role of the media. Furthermore, mediated public diplomacy has been entangled with terms like “media diplomacy,” “cultural diplomacy,” “open diplomacy,” “soft power programs,” or even “propaganda” (Gilboa, 2000; Nye, 2010; Signitzer & Wamser, 2006). In this chapter, I will review the literature with the emphasis on first, mediated public diplomacy in the digital age; second, public relations and public diplomacy and third, the role of state-owned media in social media context.

Mediated Public Diplomacy in the Digital Age

Mediated public diplomacy is a concept in the field of public diplomacy that has been developed during the past two decades. It is defined as the organized attempt by a government to exert as much control as possible over the framing of the country’s foreign policy in foreign media. Mediated public diplomacy focuses on competing frames of critical issues, actors, and nations (Entman, 2008; Golan, 2014). This concept was built upon studies in the 1990s and early 2000s regarding the proliferation of global satellite news and its widely debated impact on international relations and the shaping of culture (“Al Jazeera Effect”: Esposito, el-Nawawy, & Iskandar, 2003; Seib, 2008; Zayani, 2005; the “CNN Effect”: Livingston, 1997; Jakobsen, 2000; Robinson, 1999) and some polls that connected exposure to global cable news and the perception of

global affairs (Lord, 2005). The goal of mediated public diplomacy is to succeed in influencing the narrative of an issue in a foreign country.

Mediated public diplomacy is differentiated from public diplomacy and media diplomacy because the former “involves shorter term and more targeted efforts using mass communication (including the internet)” in achieving its goals (Entman, 2008). The word “public” in public diplomacy first means being open and visible. As Woodrow Wilson said, diplomacy should be “open covenants of peace, openly arrived at, after which there shall be no private international understandings of any kind but diplomacy shall proceed always frankly and in the public view” (Wilson, 1918). In modern society, the main medium through which the diplomatic activities are exposed to public is through the mass media. The word “public” could also mean a group of people who share common causes, and this is a definition that is commonly used in the public relations literature. As such, public diplomacy is considered to be a substitute for the role of the government in a traditional diplomacy relationship with foreign citizens, thereby transforming the government-to-government relationship into a government-to-public relationship or a public-to-public relationship (Gregory, 2008; Sharp, 2005; Signitzer & Wamser, 2006).

From early studies (e.g., Lee, 1934) to recent studies from Golan and Himelboim (2016), the evolving global media ecology and communication technology have been central to the structure of public diplomacy. Gregory (2008) argues that “technologies are transforming diplomatic communication. Transparency, speed, volume, and sharply declining transport costs generate greater diversity and competition from third parties including the media. Paper and written messages matter less; electronically mediated

images and sounds, body language, and backdrops matter more” (p.285). Indeed, the proliferation of digital social media greatly lowered the cost of participating in mediated public diplomacy. Nowadays, individuals, NGOs, active groups and even terrorists are increasingly becoming active in the public diplomacy process (Zateplina, 2009; Payne, 2009; Melki, & Jabado, 2016). In light of machine learning and artificial intelligence, non-traditional actors can easily generate and share information in great volumes using automated programs at minimum cost. According to the Pew Research Center’s estimates, suspected automated accounts share more than 40% of links to popular political sites (Wojcik et al. 2018). In addition, the anonymity of users of digital social media makes it an ideal platform for malicious foreign interventions and terrorist propaganda (Klausen, 2015).

Technological advancements not only bring in new players into mediated public diplomacy, but also alter the power structure among actors in mediated public diplomacy. As a result, the flow of influence can also change. The classic arsenal of mediated public diplomacy featuring newspapers, radio, satellite, and cable news are mostly broadcast based, one-way communication approaches. As noted in Entman’s (2007; 2008; 2010) cascade model, traditional mediated public diplomacy implies a top-down hieratical structure of influence: political administrations at the top, elites and media in the middle as mediators and the public at the bottom. New communication technologies, however, have enabled all participants to equally participate in the discussion of foreign affair issues. With the aid of Internet-delivered content, elites and international media can directly interact with foreign publics, publics can directly reach out to media and politicians, and third parties can monitor in real time the reactions to

certain foreign policies. Empirical studies have found that the mediator role traditionally played by elite media can now be played by bloggers (Golan & Himelboim, 2016). Melki and Jabado (2016) argued that in the case of virtual states participating in mediated public diplomacy, the influence is an upward cascade, such as in the context of terrorist organizations.

Given the aforementioned structural change in mediated public diplomacy brought about by digital social media, the theory used to conceptualize and measure mediated public diplomacy needs to be revisited. Scholars still rely on the Entman (2007; 2008; 2010) cascading network activation model to conceptualize and measure mediated public diplomacy influence (e.g. Sheaffer & Gabay, 2009; Sheaffer, Shenhav , Takens & Atteveldt, 2014; Cheng, Golan, Kiousis, 2016; Zhang et al. 2017). As previously mentioned, this model was built on the premise that a target country's media is the gatekeeper if any mediated public diplomacy actor wanted to reach that country's public. Such an influence was executed in the form of news framing. Thus, in empirical studies, mediated public diplomacy would be considered effective if it influences the news framing in the target country. While influencing the media can be important in establishing one's narrative, Hallahan (2010b) argued that, in today's media ecology, media's agenda-setting function remains strong while its gatekeeping function continues to decline. Golan and Himelboim's (2016) social network analysis has found empirical evidence that indicated the declining gatekeeping power of elite media and the emergence of new influencers. Extending from Golan and Himelboim's (2016) view, I argue that when mediated public diplomacy is executed through social media, the power structure of narrative formation should be tested instead of assumed, and the

occupation of an important position in the discussion should also be an important indicator of mediated public diplomacy success. As such, in the current study, the role state-owned media plays in controversial issue discussion is considered as important as the narrative formed through this discussion.

Public Diplomacy and Public Relations

Scholars have explicitly argued for a conceptual convergence between public diplomacy and public relations (Golan, 2014; Grunig, 1993; Molleda, 2011; Signitzer & Coombs, 1992; Signitzer & Wamser, 2006). Specifically, at the practice level, public relations and public diplomacy seek to achieve similar goals and use similar tools to reach them (Kiehl, 1989). They both seek to manage a beneficial reputation and relationship, which can help support their missions and goals (for public diplomacy: Signitzer & Wamser, 2006; for political public relations: Stromback & Kiousis, 2011). In the literature, “public diplomacy” has been conceptualized as a special form of international public relations (Signitzer & Coombs, 1992), a specific government public relations function (Signitzer & Wamser, 2006), and a sub-construct of political public relations (Golan, 2014).

Regarding theory development, Signitzer and Coombs (1992) and Grunig (1993) demonstrated that the four models of public relations can be applied to understanding the communication process in different models of public diplomacy. Instead of “exporting public relations theory to public diplomacy to expand the territory of public relations” (Yun, 2009), effort has been devoted to test the applicability and transferability of theoretical frameworks (Signitzer and Coombs, 1992; Fitzpatrick, 2007). Based on of a previous conceptual work and excellence study in public relations (Grunig & Dozier, 2003), Yun (2009) empirically tested the model fit of applying the excellence theory to

the public diplomacy context, specifically by a survey of 113 embassies in Washington, D.C. The author's finding indicated an acceptable model fit of applying excellence principles to the analysis of public diplomacy. Meanwhile, Zhang, Qiu, and Cameron (2004) applied the contingency theory (Cancel, Mitrook, & Cameron, 1999) to understand conflict resolution in the context of the 2001 collision of a US Navy plane and a Chinese jet fighter. The findings suggested that the postulates of contingency theory are applicable to the 2010 US–Sino conflict case. The results further supported the argument that “symmetry communication through a dialogue may not be inherently ethical, and in a morally intractable conflict, accommodation may be impossible” (Zhang et al., 2004). Golan's (2014) integrated model of public relations provides a framework on how components of public diplomacy links to the theoretical perspectives of public relations. Specifically, Golan identified three separate levels of engagement in public diplomacy that together impact a nation's long term relationship building effort with foreign publics: mediated public diplomacy, nation brand and reputation management, and relationship level, with mediated public diplomacy being the prerequisite condition of the latter two.

In addition, theories related to media relations and media effects, such as agenda-setting and building and framing theory, are also applied to mediated public diplomacy to understand how actors in international relations could influence both the media agenda and public agenda of a foreign nation. Kiousis and Wu (2008) demonstrated that investments in an international public relations consul could influence the US public's perception of a foreign nation. Sheaffer and Gabay (2009) studied the international agenda-building and frame-building contention in the Palestinian–Israeli

conflict in 2005–2006. They also examined the strength of association between the two countries' respective authority messages and media coverage in the US and UK media in terms of agenda and framing. With greater political and cultural congruence, they found that Israel is more effective in promoting its agenda and framing to the US media, unlike the Palestinians. They also found that frame-building is more complicated than adoption or non-adoption (Sheafer & Gabay, 2009). In another study about international frame-building, Sheafer et al. (2014) found that relative political proximity between the country that promotes its frame and the country that is targeted could influence the possibility of framing adoption. Cheng, Golan, and Kiousis (2015) examined the Chinese state-owned international newswire Xinhua News Agency and found that it has a very limited agenda-setting influence on the US media's coverage of President Xi Jinping. Zhang and Golan (2018) contend that mediated public diplomacy is a government strategic issue management function. As such, the outcome of mediated public diplomacy should be judged based on its control over the narrative of critical issues.

Apart from using well-established theories in public relations, many public diplomacy studies have applied public relations concepts, such as “image,” “reputation,” and “branding” in the examination of a country’s strategies and assets of building beneficial relationships. For instance, in the past decade, research areas like national reputation (Wang, 2006), country reputation (Passow, Fehlmann, & Grahlow, 2005) and country image (Buhmann & Ingenuhoff, 2015; Elliot, Papadopoulos, & Kim, 2011) have gained increased research attention. The reputation of a country is considered part of its soft power (Ikenberry & Nye, 2004), which it can strategically use. Studies in this area

have focused on developing models for the measurement of country image and reputation as well as the implementation of strategies to represent, package, and promote a country's cultural assets.

In the current study, I am analyzing state-owned media's agenda building strategy regarding three international controversial political issues. My study contributes to the theoretical convergence between public relations and public diplomacy by testing the applicability of agenda building theory, especially the third level agenda building in mediated public diplomacy. My study further examined the relationship among actors in the issue discussion which would help judge the transferability of public relations perspectives in the context of mediated public diplomacy.

State-Owned Media in Social Media

"State-owned international media," sometimes used interchangeably as "international broadcasting," is one of the tools used by governments in mediated public diplomacy. It is defined as "the use of electronic media by one society to shape the opinion of the people and leaders of another" (Price, Haas, & Margolin, 2008). By this definition, electronically delivered newswire services and newspapers could all be considered state-owned media. State-owned media has attracted more research attention in recent years because many governments chose to invest in the expansion of state-owned international media as a platform of mediated public diplomacy. In fact, countries like China and Russia have become increasingly aggressive in expanding their local newsrooms in different countries and taking the initiative of new media. Golan and Himelboim (2016) used social network analysis to examine the state-owned media's social media network structure. They found that the networks of state-sponsored media follow a hierarchical core-periphery structure, in accordance with

world systems theory (Wallerstein, 1974). According to this theory, social actors located in core countries are more well connected than actors from peripheral countries. In the meantime, state-owned media from peripheral countries could use different strategies, such as connecting to social actors in core countries or using an affiliated account to, leverage its network.

Based on previous literature and current practice, state-owned media has three roles to play on social media: publicity seeker, participant of networked discussion, and organizer of communication.

State-Owned Media as Publicity Seeker

The most classical view of state-owned media is as an information agency that develops and disseminates information to foreign publics on the government's behalf. To date, state-owned media are often governed by an established mission statement of presenting its country, government or policy to win the support of foreign audiences (e.g., Voice of America, Russia Today). Mediated public diplomacy focuses on managing competing frames of critical issues, actors, and nations (Gilboa, 2000; Golan, 2014; Signitzer & Coombs, 1992). Therefore, in this context, the goal of mediated public diplomacy is winning the contention of framing and successfully defining the narrative of an issue in a foreign country. State-owned media is often discussed in mediated public diplomacy as a means of public information, massive persuasion, and even propaganda (Deutsch, 1966). Although it is criticized as an oversimplified summary of state-owned media's work (Youmans & Powers, 2012), this conception still partly reflects the ambit of state-owned media. Furthermore, new media tool development and media engagement are advised by Fitzpatrick's (2011) Strategic Framework of Public Diplomacy. Fitzpatrick (2011) suggested that governments should focus on "developing

proactive outreach strategies to inform, inspire, and persuade” (p.30). Specifically, they should focus “primarily on ‘media engagement’, or strengthening the U.S. [the country’s] ability to frame media messages, develop research-based public diplomacy programming and employing new media tools” (p.31).

This conceptualization echoes with the extant literature on publicity-seeking in public relations (Cutlip, 2013a; Grunig & Hunt, 1984; Hallahan, 2010a; Lee, 1917). The emergence of highly interactive digital social communication platforms, such as websites and social media, has filled the gap between publicity seeking and two-way communication. This phenomenon is most evident in how current public relations practitioners handle media relations. According to the Seventh Annual Middleburg/Ross Survey of Media in the Wired World, an increasing percentage of journalists are using the Internet to conduct research for their stories (Callison, 2003); instead of pushing a press release to journalists in the hope that it can become a news story, many public relations practitioners use online media in searching for journalists, calling for help, and responding with specific information (Waters, Tindall, & Morton, 2010). In addition, digital social media has allowed organizations and entities to circumvent mass media to achieve publicity. Campaigns such as #Icebucketchallenge first generated publicity on social media platforms and were later fueled by mass media coverage. Finally, even for a press release that made its way to mass media, audiences can still contribute to increasing the story’s visibility by sharing, clicking, and commenting—a process Singer (2014) described as a “two-step gatekeeping process, in which initial editorial decisions to make an item part of the news product are followed by user decisions to upgrade or downgrade the visibility of that item for a secondary audience” (p.55). As such, the

traditional simple mediated relationships among public relations, mass media, and the public has been complicated by the exploding opportunities for communicants.

For state-owned media, this situation means that it now has more opportunity to engage with the public and build relationships while promoting its narrative and agenda. In 2016, RT won 12 awards in the US International Film and Video Festival, and their Twitter account has more than 2.31 million followers (Oct. 2016). Considering RT as merely a type of government propaganda is naïve. Instead, its publicity-seeking influence should be examined empirically.

Measuring the effect: agenda building

The agenda-building theorem provides relevant framework for examining how state-owned media intentionally generates publicity on Twitter (e.g., Ceron, Curini, & Iacus, 2016). The term of agenda-building was developed by Cobb and Elder's (1971). It is often related to the agenda-setting effect of mass media (McCombs & Shaw, 1972). Although these two studies are independently conducted in two different fields, they reflect a similar logic that explains how some issues become more important than others. Cobb and Elder's (1971) core argument is that agenda-building is a framework of political participation. They argued that in the democratic political system, those whose interests have been suppressed by the existing social system, seek to advocate for issues concerned with their interest. To do so, the suppressed groups need to make their issues more salient to the rest of the society and the mass media has an important role to play in this process. The idea behind Cobb and Elder's (1971) agenda-building theory is inspired by Schattschneider's (1960) work on the fundamental flaw of political participation, which posits that the pressure system that determines whose interests are

of legitimate concern is heavily biased toward the status quo. This approach is a rather broad conceptual framework that consists of multiple social actors, arenas, and different types of political resources. In this context, the media is one of many available political resources within this complex system.

By contrast, the “Chapel Hill Study” of McCombs and Shaw used agenda setting to describe the function of mass media on public opinion. In the study, McCombs and Shaw (1972) focused on the dyadic influence between the two. The idea of agenda-setting in that work originated from Lippmann’s (1922) “The World Outside and the Picture in Our Heads.” In this chapter, he articulated that the media’s influence lies in its ability to connect events around the world and people’s cognitive maps of that world by providing them with indirect experiences of the vast world beyond their direct experience. Bernard Cohen’s (1966) famous observation that the press “may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers what to think about” (p.13) provides a well-cited articulation of this idea, which became known as “agenda setting.”

The theoretical and methodological relevance of the two perspectives naturally led scholars to merge them together to form an expanded theoretical framework. This line of inquiry started with Lang and Lang’s (1980) work, which conceptualized the critical role of the media in the agenda-building process. This role is a four-step process consisting of the following steps: 1) the media focuses public attention on certain issues that make them stand-out in public perception; 2) the media emphasizes certain aspects of the object being focused on (second-level agenda-setting consequence); 3) the media builds up linkages between objects or events to secondary symbols, such that

the proposed issues could fit into the existing political landscape; and 4) the media provides a platform in which the articulated demands (issue) can be shared. They also adopted the idea of reciprocal influence in agenda-building theory, such that the source-media relationship can be reciprocal as political figures monitor the media representation of themselves. By contrast, Oscar Gandy (1982) argued that, in such a broad framework, the influence of the news media, which rests on its ability to provide mediated experience, could not be distinguished from direct experience. To direct the focus back to information and communication, he argued that research on this subject should focus on who sets the media agenda. He adopted the term “information subsidies” from Bartlett (1973) to describe the controlled access of information given to reporters to underwrite the cost of news production. Since its introduction, the information subsidies approach has become the theoretical foundation of contemporary agenda-building research. The use of information subsidies links agenda-building theory with public relations in terms of media relations. At the operational level, information subsidies consist of all activities carried out by public relations or the public information officer to manage media relations, such as press releases, agency reports, oral subsidies through telephone, or face-to-face communication (Turk, 1985). The previous agenda-building literature has extensively focused on what type of information subsidies are preferred and depended on by reporters. For instance, a press release delivered by a wire service or presented with news-worthiness, including being accurate, timely, and possessing relevant information, would increase the chance of adoption (Zoch & Molleda, 2006). The agenda building research related to social media focuses on testing internet channels’ agenda-building effects and whether the advancement of

social media diminished the agenda-setting effect two focuses of agenda-setting research (McCombs, 2014). However, current social media and traditional media are no longer considered parallel concepts. Social media consists of various platforms upon which traditional media can flourish. As such, by extending the aforementioned focuses on agenda-building research, the present study aims to examine whether the state-owned media's agenda-building effect exists in the social media context.

The intertwined history of agenda setting and agenda building and shared research methodology lead to the terms agenda setting and agenda building being used interchangeably. Yet agenda setting is more used by mass communication scholars while agenda building is more used by public relations studies. In the current study, I treated agenda setting and agenda building as similar but different concept, agenda setting is the spontaneous transfer of salience among media, public and politician while agenda building is the deliberation that facilitates the transfer of salience among public relations, media, public and policy. State-owned media and mediated public diplomacy are clearly political deliberations. In the current study, I am studying state-owned media using agenda building perspective.

Agenda setting and agenda building concepts and research methods. The agenda-setting and agenda-building theorem is based on the metaphorical concept *agenda*, which is derived from Lippmann's (1922) proposed definition. An agenda consists of various items, each with a unique attribute of *salience*. *Salience* refers to the relevant importance of one item on an agenda compared with others. In empirical research, this is usually operationalized as the rank order of agenda items. Just as a picture can be deconstructed and examined in infinite ways, scholars have been

constantly expanding the manifestations of agenda. Three levels of agenda building and agenda setting are used: object salience, attribute salience, and network salience. In agenda-building studies, depending on the specific purpose of communication, the transfer of salience can be studied among public relations, mass media, public opinion and public policy.

The classical approach to test agenda-setting influence is the correlation-based research established in the Chapel Hill Study (McCombs & Shaw, 1972). Here, researchers would calculate the correlations among media agenda, public relations agenda, public agenda, and policy agenda. The significant correlation result is the preliminary evidence of the association between agendas. However, critics are concerned that this method could lead to a spurious relationships fallacy (Sevenans, 2018) because of two reasons: 1) correlation does not guarantee the direction of influence, and 2) the correlation-based approach does not consider source. Although the causal relationship should not be inferred using this method, it is still used today in exploratory studies (e.g., Kiousis, Popescu & Mitrook, 2007; Zhang et al. 2017). Given that the existence of correlation is a necessary condition of causality, the absence of correlation can sufficiently reject the proposed relationship although supporting evidence does not prove a causal relationship (Kiousis, Popescu & Mitrook, 2007).

Built upon the correlation approach is the time-lag and time series analysis, which collect data from panels, in order to determine the sequence of agenda (e.g., Ader, 1995; Conway, Kenski & Wang, 2015; Neil et al. 2016). In addition, alternative information source has been tested against the proposed agenda-setting influence (e.g. Wanta & Foote, 2009). In all correlation-based analyses, measurements of media,

public, and policy agenda could vary substantially (Dearing & Rogers, 1996); data and methodology triangulation has also been used to validate the result (e.g. Kiousis, Popescu & Mitrook, 2011; Ragas & Kiousis, 2010; Kiousis et al., 2015). Extended from correlation-based research, regression-based modeling is used to test the agenda-setting and agenda-building effect in order to statistically control some real-world information (e.g., McLeod, Becker, & Byrnes, 1974; Liu, Lindquist, & Vedlitz, 2011). One of the drawbacks is that the control variables can never be nearly sufficient for making causality inferences (Sevenans, 2018).

Many examples of agenda-building research follow the same methodology of agenda-setting studies. Instead of examining the transfer of salience from media agenda to public agenda, agenda-building studies examine the transfer of salience from public relations agenda to media agenda, or from public relations agenda to policy agenda. Others use surveys (e.g. Tanner, 2004; Len-Rios et al. 2009) and in-depth interviews (e.g. Turk, 1986; Curtin, 1999) of journalists to examine the agenda-building process from the journalists' and politicians' perspectives. Recent studies use experiments to test the agenda-setting and agenda-building effect at individual levels (e.g. Althaus & Tewksbury, 2002; Kim & Kiousis, 2012).

In many examples of agenda-setting and agenda-building research, audience exposure to media content is often assumed, rather than measured (McCombs, 2014). Even when they are measured, the measurement seems to rely on self-report data. However, digital social media brings new solution to this problem. Online information seeking, sharing, and consumption made the process of information consumption previously more trackable. Websites and search engines track users using cookies,

people publicly share information on social media, and website traffic analysis could indicate precisely to researchers the origin of the traffic. These behavioral-level data, which range from social media account geo-tags to social media posting and search trends, have recently been incorporated to agenda-setting and agenda-building research (e.g., Twitter geo-tag: Himmelboim et al. 2013; Twitter trending topics: Groshek, & Clough Groshek, 2013; Google Search Trends: Mellon, 2014; Weeks & Southwell, 2010). Data such as geo-tag and social media posting are non-aggregated data, whereas trending is aggregated data. When non-aggregated data are used in the studies, the data tend to be large in quantity, and the collection and analysis is often automated. Russell Neuman et al. (2014) demonstrated that this big data approach is useful in examining the dynamics between media agenda and public agenda. However, the challenge lies in developing computer algorithms or a way of training computers to analyze complex agenda items such as attributes and frames (Russell Neuman et al., 2014). The present study aims to explore both the overall pattern of agenda influence and the nuances of content. Instead of attempting to develop new big data processing tools, here I seek to combine the big data approach and traditional content analysis approach. I propose a big data guided content analysis. First, I propose agenda-building effect hypotheses based on agenda-setting and agenda-building theory. Then, I conduct social network analysis to study the relationship patterns among different stakeholders. This pattern, combined with my hypothesis, will provide a roadmap for collecting content for the agenda building analysis and guarantee that noise would be far removed from my hypotheses testing. The sampled tweets will then undergo human content analysis to test agenda-building studies. Thus, the content analysis will be kept at a manageable

scale so that in-depth analysis of the content can happen. Given that I am interested in the agenda-building effect of the social media accounts of state-owned media, I will first use network analysis to identify state-owned media and those who interact with state-owned media; their conversations will be collected and labeled as the discussion involves state-owned media. Then, I will collect a sample from the rest of the tweets as discussion that does not involve state-owned media. By comparing the agendas of the two groups, I could tell whether interacting with state-owned media is associated with a different agenda.

As previously noted, agenda setting and agenda building occur at three levels.

First-level agenda setting and agenda building. The transmission of object salience is also known as first-level agenda setting (McCombs, 2014). Here, objects need not be a physical entity; rather, they are the topics on which people's attention would be drawn. Thus, they compete for people's attention. The original "Chapel Hill Study" investigated the transfer of issue salience from mass media to public opinion, which is a form of first-level agenda setting. Although issues remain a popular type of object to be examined, other objects such as political candidates, celebrities, parties, organizations, nations, and stakeholder groups are eliciting increasing attention as agenda-setting research expands to different domains. In addition, when studying issues in an advocacy context, scholars have examined sub-issues related to the main issue (e.g. Neil et al. 2016) and the change of the salience of the main issue over time (e.g. Rogers, Dearing, & Chang, 1991).

Second-level agenda setting and agenda building. When some objects appear in the media agenda, some aspects of the object will be emphasized in media

coverage. To agenda setting scholars, these highlighted aspects are *attributes*. Second-level agenda setting and agenda building examined the transfer of attributes from one agenda to another, often from media to the public opinion. In other words, media not only tells us “what to think about” but “how to think about it.” This approach constitutes an attribute that media are assigned to the object. Numerous attributes exist, in which media could be assigned to this object and which attributes are emphasized in media coverage, thereby gaining strategic importance. The most commonly used ones are substantive and affective attributes. Substantive attributes refer to the informational characteristics assigned to an object, whereas affective attributes refer to the tone/emotional aspects of the coverage. In addition, second-level agenda setting and agenda building are linked to first-level agenda setting by the compelling argument theorem (McCombs, 2014). The compelling argument theorem argues that certain attributes could serve as the compelling argument that results in the object becoming more salient (Ghanem, 1997). Empirical studies have produced mixed results. Some found evidence that support the hypothesis. For example, Kim and Kiousis (2012) found significant association between corporate reputation and the overall salience of the corporate; Ragas and Kiousis (2010) and Kiousis, Bantimaroudis, and Ban (1999) found that political candidates’ attributes are not associated with the perceived candidate salience. Cheng, Huang, and Chan (2016) found that in a crisis situation in contemporary China, second-level agenda building effort indicates limited influence on media agenda, let alone public agenda.

As previously mentioned, debate is ongoing as to whether second-level agenda setting and framing are identical. While McCombs argues that there is no difference

between framing and second-level agenda setting because the two research traditions follow a similar protocol (McCombs, 2008), some criticized equate framing with second level agenda setting is harmful. (e.g. Kosicki, 1993; For a review, see Maher, 2001). Scheufele (2000) argues that the two theories have different theoretical premises and roots and, therefore, should be treated as distinct theories because agenda setting is based on attitude accessibility and memory in which the individual's interpretation does not participate in the construct of agenda. Kosicki's (1993) framing presumes that individual judgments and perceptions contribute to the formation of frames.

The current study takes Maher's (2001) view that second-level agenda building and framing are different: agenda setting and building focuses more on salience, whereas framing focuses more on audience effects. Coming from the agenda-setting and agenda-building tradition, the present study focuses on the transfer of the salience of attributes and connects it to the first- and third-level agenda building, which also focus on salience. At second-level agenda building, the present study examined the overall substantive issue attributes and substantive stakeholder attributes.

Third-level agenda setting and agenda building. The third level of agenda setting is also known as network agenda setting (Guo, Vu, & McCombs, 2012). Although in the first and second levels of agenda setting, our imagined pictures are deconstructed and examined by certain characteristics of the pictures, the third level of agenda setting examines the picture as a whole (McCombs, 2014). This idea is rooted in cognitive psychology studies, which argue that people's memory is a network. The original idea could be traced back to Carroll (2004). When new information arrives, it must fit into the existing map. Moreover, when items, including objects and attributes, or

the combination of the two, are bundled together in information sources, a high probability occurs that this bundle will be transferred to people's memory.

Third-level agenda-building studies have indicated widespread support of the existence of third-level agenda association between public relations and news media (e.g. Kiousis et al. 2015, 2016; Neil et al. 2016; Zhang et al., 2017). The direction of influence is, as many other agenda-building studies, either reciprocal (e.g., Neil et al. 2016) or from news media to public relations (e.g. Schweickart et al., 2016) at the network level.

To answer RQ1: Does interacting with state-owned media's Twitter accounts lead to differences in the agenda of the Tweeter? I developed three sets of hypotheses according to three levels of agenda building.

H1: A significant difference of issue (a) and stakeholder (b) salience occurs between discussions involving state-owned media and discussions not involving state-owned media.

H2: A significant difference of substantive (a) issue and (b) stakeholder attributes occur between discussions involving state-owned media and discussions not involving state-owned media.

H3: A significant difference occurs in the co-occurrence of (a) issues and co-occurrence (b) of stakeholders between discussions involving state-owned media and discussions not involving state-owned media.

State-owned Media as a Node in Discussion Network

Social media platforms enable state-owned media to connect and interact with other social media users to form a network of discussion. Golan and Himelboim's (2016) study has demonstrated that studying the structure of network state-owned media could

have important implications for measuring its power. Presumably, the connectivity of the account in the network defines state-owned media's power of influencing an ongoing narrative. However, this presumption is only true if interactions on social media itself are a valuable connection that produce positive influences.

Measuring the strategy and effect: social network analysis

Social network analysis is the ideal method for the current study because it can be used to measure both organizational strategy (Mizruchi, & Galaskiewicz, 1993) and the effect of information exchange (Haythornthwaite, 1996). States normally do not explicitly discuss their mediated public diplomacy strategy, especially when they advocate for controversial issues. If a scholar projects the strategy applied by state-owned media and then measures the effect based on the speculation, the observation would inevitably be biased. By presenting the relationships and interactions among actors, social network analysis could accurately reflect the organizational strategy (e.g., Ratcliff & Bogdan, 1988, Baysinger, Kosnik & Turk 1991, Stearns & Mizruchi, 1993), thereby providing a relatively objective baseline for analyzing the effects of mediated public diplomacy.

One of the primary uses of social network analysis is to identify important actors in a social network (Wasserman & Faust, 1994). The importance of an actor is often measured with centrality measures combined with examining its position in the network graph. In relation to information sharing and communication, researchers have employed social network analysis to study information flow in organization knowledge flow (Leon et al. 2017), the role of different actors in online social network after a

disaster (Kim, & Hastak, 2018) and social media information propagation (Cha, Mislove, & Gummadi, 2009, April).

The application of social network analysis in the agenda building literature is still at the preliminary stage. Although the third-level agenda setting is also called network agenda setting (Guo et al., 2012), it is concerned with the semantics networks, not social networks. The present study uses an entirely different approach to use social network analysis on actors participating in the agenda-building process. In other words, network agenda setting defined the type kind of agenda being studied, whereas the current study explores why the agenda building influence exists. Kent, Sommerfeldt and Saffer (2016) raised the concern that the social network approach to public relations, especially when focus on power over others would inherently be unethical as organization may prone to preventing publics to form ties to keep their power in the network. This criticism derived mainly from Burt's (1992) structural hole. This concern is not applicable to Twitter discussion context, because hashtag discussion provides gateway to allow all Twitter users to equally access to all the discussions surrounding a topic. The ties between nodes are transparent and participants can only increase the connectivity of the network, not restrict others from connect. Moreover, the more connected the discussion is, the more Twitter will consider it a trending topic which would encourage other users to participate and further enhance the popularity of the topic. As such, the Granovetterte (1977)'s view of networks where more ties are inherently better is more appropriate. I will use social network analysis to examine state-owned media's strategy in promoting its agenda on the Twittersphere.

RQ2: What is the role of the state-owned media's social media account(s) in the Twitter discussion network concerning an issue that is critical to the country's interest?

RQ2 can be elaborated by three questions.

RQ2a: Who is interacting with state-owned media on special issues?

RQ2b: What kind of interactions do they have?

RQ2c: Viewed from a network perspective, how important is state-owned media?

State-Owned Media as an Actor in a Public Sphere

When state-owned media enters the Twittersphere to promote its agenda, one concern would be whether they disrupt the free, democratic discourse that occurs there. Although many would assume they do because they have clearly established a political agenda, this dissertation will scrutinize conventional wisdom by empirically examining how they participate in the Twitter discussion. The reason why this conventional wisdom should be tested is that the Twitter has designed features to prevent users from exploiting the conversation and to encourage users to participate in discussions. Given that the purpose of mediated public diplomacy is winning people's hearts and minds, it cannot be achieved without the other participants' authentic and organic approval of their viewpoints.

Democracy theory generally assumes that well-informed collective participation is beneficial to democracy (Christiano, 2003). When citizens are actively engaged in the rational discussion of public affairs, they become more informed about the issues and thus make better decisions (Habermas, 1962, 1989; Carpin & Keeter, 1993). By contrast, when such active engagement in the rational discussion is disrupted, democracy will deteriorate.

The normative standard by which the public should engage in a democratic society is outlined by Habermas (1962, 1989) as a public sphere: the existence of a virtual or imaginary space where citizens (mostly elites) of a democratic society engage in an articulate discussion and debate over issues of public life. The public sphere consists of networked discourses that are morally conducted with the aim of resolving political problems (Habermas, 1984). The existence and expansion of the public sphere depend on the quality of these discourses. By quality of discourse, Dahlberg (2001) summarized six standards based on the previous work of Habermas (1984), Cooke (1994), and Chambers (1996): “Autonomy from state and economic power, exchange and critique of reasoned moral-practical validity claims, reflexivity, ideal role-taking, sincerity and discursive inclusion and equality”(p.623). The standards set out for being a public sphere is undoubtedly high; thus, the corresponding scholarship always faces the major criticism of being too idealistic and so can never exist (e.g. Fraser, 1992; Schudson,1997). Another commonly raised criticism is that, because the public sphere is so demanding to the participants, it is always associated with an upper-class tone, thereby making it essentially undemocratic. For instance, in his early writings on the public sphere, Habermas (1989) himself even made the argument that many people such as women, black people, and people with low socioeconomic status, were excluded in the public sphere. Some amendments of the theory have removed explicit standards of excluding certain population groups. However, many still criticize that an implicit bias exists towards the upper class due to its high demand on the public's political knowledge and the skillful articulation of their opinions.

Despite the criticisms, many contemporary scholars found the public sphere perspective useful when evaluating the Internet's influence on democracy (for example Malone, 1985; Signitzer & Coombs, 1992). For instance, Papacharissi (2002) argued that, despite the criticism, the public sphere still provides scholarly expectations by which the characteristics of communications channels can be compared to determine whether they are beneficial to a democratic society. Similarly, Dahlberg (2001) used the standards of the public sphere to evaluate how the characteristics of computer-mediated communication help expand the public sphere. Both scholars concluded that, although the Internet enhances the public sphere in terms of simplifying the systems by which individual citizens' opinions can be heard and by which information can be accessed, the Internet does not live up to the full standards of the public sphere. For instance, the Internet still offers no guarantee of rational discourse, nor can it grant every participant equal power, which does not exist in the offline world in the first place. The Twitter sphere is a public space wherein people can freely discuss their thoughts and observations. However, similar to other online communication channels, it does not guarantee the public sphere. Who participates in the conversation and how they participate could change the nature of the Twitter network (e.g., Page & Shapiro, 1983). As such, in the current study, I examine the traits of state-owned media's social media accounts in the issue discussion and compare those with the standard that has been established in previous empirical studies. The goal is to determine whether state-owned media is a "good citizen" in the online discussion of critical issues.

Empirical studies have found that, when the discussion network is high in heterogeneity, it provides diverse viewpoints and, as a result, encourages rational

participants to seek information on a wide range of perspectives (Brundidge, 2010; Scheufele et al. 2006). The premise of participants being rational is important here. After all, if the participants are unwilling to consider any other viewpoints except for their own, the heterogeneity of discussion would not help in the constructive conversation. Combining a wide range of perspectives and a willingness to consider others, scholars have found argument repertoire to be a reliable and valid measurement of opinion quality, which is the foundation of the public sphere (Cappella, Price, & Nir, 2002)

H4: Tweets involving state-owned media demonstrated a higher level of argument repertoire than those not involving state-owned media.

Beyond being a participant in the public sphere, state-owned media also forms a network of discussion that could potentially be one of many overlapping public spheres that constitute a larger public sphere. If the discussion has high democratic quality, it contributes to the democratic quality of the entire Twittersphere. Ruiz et al. (2011) used the democratic quality of discussion to measure how newspaper websites perform. That author found that the democratic quality of discussion consists of three dimensions: logic and coherent opinions and attempts to collectively search for truth and agreement based on the best argument.

H5: Tweets involving state-owned media presented a higher level of democratic quality of discussion compared with those not involving state-owned media.

CHAPTER 3 METHODS

The present paper consists of two studies, each addressing the research questions I proposed in the introduction. Study 1 is designed to answer RQ2: What is the role of the state-owned media's social media account(s) in the Twitter discussion of an issue that is critical to the country's interest? I use social network analysis (SNA) to answer this question. Study 2 examines how effective have the state-owned media's social media account(s) are in influencing the overall narrative on Twitter about the issue at hand. To approach this question, I applied content analysis based on the protocol of agenda-building research. Results of Study 1 serve as the foundation of Study 2 because they unveil the clustering of stakeholders that will be used as the basis for identifying different agendas for comparison in Study 2. In this chapter, I will present the research context and the design of the study and the analysis strategy.

Research Contexts

As previously mentioned in the literature review, the hashtag is a unique function of Twitter that facilitates issue discussion. Many previous empirical studies on the development of issues are based on the study of how hashtags are used and transmitted among Twitter users. For the current study, I aim to study the role of state-owned media's Twitter accounts in the discussion of issues that are critical to the country's government, and I use hashtags as the boundary condition of sampling. An ideal hashtag to study should have three criteria. First, it should be exclusively linked to a specific issue. Some hashtags, such as "#Panda," "#Russia," "#China," or "#Saudi," are inappropriate to study because the hashtags are too general and do not represent a singular issue. Second, the issue should receive ample popularity among other social

media users in such a way that it is not a monologue of a few users. For example, a hashtag like “#PeopleInAmerica” is not appropriate for study because it is not popular despite the consistent promotion of Voice of America (VOA). Third, the issue should be closely related to the government’s political interest and complex enough so that one actor’s agenda can be distinguishable from another. To identify a proper issue, I read through the posts of several state-owned media’s Twitter posts that have been studied in the previous literature (Golan & Himelboim, 2016). These sources include Russia Today (@RT_COM), Voice of America (@VOANews), Xinhua News (@XHNews), People’s Daily (PDChina), Al Jazeera (@AJEnglish) and Al Arabiya (@AlArabiya_Eng). Others include China Central Television (@CCTV), China Global Television Network (@CGTNOfficial), Global Times (@globaltimesnews), VOA Learning English (@VOALearnEnglish), DW Deutsche Welle (@DeutscheWelle), BBC World (@BBCWorld), and BBC News (@BBCNews) from November 6, 2016 to February 19, 2017. I identified three hashtags that meet all the aforementioned criteria at the beginning of my first data-collection: “#SouthChinaSea,” “#Aleppo,” and “#TPP.” My search for hashtags is non-exhaustive; these three hashtags are examined respectively in both Studies 1 and 2. All three issues associated with the hashtags involve conflicting political interests among nation-state governments and non-government political actors. As mentioned earlier, competing for agendas is necessary for strategic purposes. For example, due to the intertwined political interest of the US., Russia and their allies in the warfare of Aleppo, I can project that the posting of #Aleppo would cast different responsibility attributions in US and Russian state-owned media.

“#SouthChinaSea” is a hashtag that has been used by different stakeholders, including state-owned media, media, NGOs, government agencies, and individuals, to discuss the territorial dispute in the South China Sea region. Chinese state-owned media (e.g., @XHNews, Global Times, and @CCTV) has been consistent in posting content using this hashtag. Similarly, #Aleppo is used by multiple stakeholders, including state-owned media, such as @RT_Com, as a venue for sharing information, interpretation, and comments about the warfare and humanitarian crisis in the Syrian city of Aleppo. #TPP is used by multiple stakeholders for the discussion of the Trans-Pacific Partnership, which is a multinational trade deal involving 12 countries, including the United States, Australia, Canada, and Japan and is critical to the interests of China because the deal was designed to put constraints on China’s international trade (BBC, 2016).

Study 1

Network analysis can help explain important social phenomena, such as group formation, group cohesion, social roles, personal influence, and overall community health (Hansen, Ben Shneiderman, & Smith, 2010). Network analysis can answer questions, such as how important is the role of an individual in a network, whether subgroups exist, and whether they are connected (Hansen et al., 2010). Thus, network analysis is an ideal method to answer our research question: What is the role of state-owned media’s Twitter accounts in the online discussion of critical issues?

Operationalization

When using an SNA approach to analyze data on social media, the first step is to identify operational metrics that address the research question. Here, I will briefly review

key concepts of networks and explain the metrics I am going to use and how they will be used.

Social networks consist of various social actors, which are often referred to as *nodes*, *vertices*, or *players*. The ties that connect them are often referred to as *links*, *ties*, or *edges*. The terms are interchangeable, and no difference exists between nodes and vertices. A social actor in the analysis can be an individual, an organization, a family, and so on. In the present study, a social actor is a Twitter user. A link represents a certain type of relationship among entities that are of interest to the researcher. The node can have attributes, which are usually represented as different colors or shapes of the node on the network visualization. For instance, using different colors to represent people's race, gender, and religious beliefs could reveal how these factors affect the likelihood of relationship formation. The measurement of *links* is often determined by researchers. For example, in the high school friendship network study (Currarini, Jackson, & Pin, 2010), researchers asked people to name their friends. In other cases, links could be defined as marriages, borrowing relationships, and business connections. Links can be directed or undirected; a directed network is made of links being directed vectors. For example, a network of loans, on the one hand, is considered a directed network because it tells people who is borrowing money from whom. An undirected network, on the one hand, is a network of friendships. Networks on Twitter are directed networks. In the follower/followee network, a user with many followers has the potential of disseminating information to a large population, whereas a user who follows many people receives much information but might not necessarily be an influencer of others. In the @reply network, which covers mentioning, replies, and retweets, a user who often

receives such replies from others are believed to have more involvement of the issues from the public perception, whereas a user who uses @reply to others many times may be actively seeking attention from other users. In addition, a network can be weighted or non-weighted. In an un-weighted network, the value of an edge is 0 or 1, whereas in a weighted network, values can be assigned to the edge. For example, in a network of Twitter @replies, if User A Mentions User B three times in an un-weighted network, the edge from A to B equals 1, thereby indicating that the edge from A to B exists. In a weighted network, the edge from A to B equals 3, indicating that the edge from A to B appeared three times. Given that the post that made User A mention User B is unique, I must treat Twitter's @reply network as a weighted network. Finally, although a network consists of nodes and links connecting them, not all nodes are connected. A maximal connected subset of nodes comprises a *component*, which is akin to a piece of the puzzle, given that the structure of components in a network is an important feature.

As Hansen et al. (2010) pointed out, #hashtag is not technically a single network; it is a combination of two types of networks, namely, @reply network and follower/followed networks. One can study how a hashtag was used in either of the networks, respectively. Studying the follower/followee network reveals how a hashtag propagates through an existing social network. When studying the @reply network, the dialogue of the hashtag topic is shown. In the present study, I am interested in studying the discussion network; thus, I focus on the @reply network that captures the narrative and dialogue of different social actors on the issue of #SouthChinaSea, #Aleppo, and #TPP. Categorizing the type of network helps decide the type of indices that must be used. In the current study, if node A is connected with node B, it means A either is

mentioned by B in a tweet, A's content is retweeted by B, or vice versa. The direction of connection is noted, so the network can reflect if it's A approaching to B or B approaching to A.

The key metrics of a node's role in a network are the centralities. All the centrality measures describe a node's importance, but the definition of importance varies. Several types of centrality measures are commonly used: degree centrality, betweenness centrality, closeness centrality, eigenvector centrality, and PageRank centrality. The degree centrality measures the number of links a node has with other nodes. A high degree centrality means a node with as many links to others, inbound and outbound. Here, all nodes are assumed to be equal: a link with the president of the US and a link with an everyday friend carries the same value in degree centrality. The closeness centrality measures the average distance from a node to all other nodes. It is a good measure of how central a node is in a network. However, it only works well in a connected network. If the network is unconnected, closeness centrality is calculated based on the nodes that it can reach, not the entire network. Meanwhile, the betweenness centrality is calculated based on the number of the nodes that appear on the shortest path between two other nodes. It measures the bridging power of a node. Similar to closeness centrality, it works well in highly connected networks. In eigenvector centrality takes that not all nodes alike and connecting to powerful nodes could generate more value. By assigning a relative score to all nodes, the eigenvector centrality measures the importance of a node compared with all other nodes of the network. PageRank is similar to the eigenvector centrality, except that the scaling factor is different, and it is only considered in degree. PageRank is often used to measure

information sources, such as academic citations. According to Hansen et al., (2010), in a Twitter @reply network, the eigenvector centrality and PageRank centrality are most useful indices to measure an actor's importance. In the present study, I report the eigenvector centrality of state-owned media and compare it with the eigenvector centrality of the rest of the nodes. In addition, the graph of the networks is also discussed.

Another facet of the state-owned media's role on Twitter is the type of users who are important in the #hashtag discussion and the type of users with whom state-owned media are interacting. As previously mentioned, nodes can have assigned social characteristics that will help reveal latent factors influence the patterns of interaction. This question can be answered by incorporating content analysis of the Twitter account information about the geographic location and the type of the account and adding it to the visualization of the network. The codebooks of both variables are adopted from a Golan and Himelboim (2016) study, using world system theory to predict news flow with some change based on the current research context. Geographic location can be coded as 1) a country, 2) an international organization that operates across different countries, and 3) users with no geographic location or fictitious location. Owing to the nature of the topic #Aleppo, many Kurdish groups are active in Turkey, Iraq, Iran, and Syria; Kurdistan is coded separately. Although some organizations, like military groups, usually have an area of action, to avoid ambiguity in coding, they are coded as having no geographic location if there is no explicit mention of one such group. A Twitter account type codebook will be discussed in the variable section.

Data Collection

This study collects and analyzes Twitter data using NodeXL, an Excel add-on that can be used to extract, analyze, and visualize social media data (Hansen et al., 2010). The data include Twitter usernames, user information, and relevant tweets of those who used the three hashtags of #SouthChinaSea, #TPP, and #Aleppo. Using NodeXL's import data from the Twitter search function, the data are collected from nine draws from November 10, 2016 to February 6, 2017. The amount of data is determined by the application program interface (API). For each draw, the data range from two to four days. Previous studies have warned that, because data collection has a time gap, merging data can lead to a false sense of continuous data (Golan & Himelboim, 2016). As such, all datasets have been analyzed separately.

Study 2

To examine the impact of interacting with state-owned media's message, Study 2 is a content analysis of the agenda-building influence of state-owned media. The relationship between state-owned media and Twitter users are determined by the network analysis of users using the three hashtags. In this study, direct interaction is operationalized as the user has @reply/mention, or RT. As previously mentioned, the transmission of the hashtag message is not restricted to the follower/followee network. Thus, the only indicator of the user actively consuming the message is their interaction with the message. Presumably, if state-owned media is successful in agenda-building, discussion involving state-owned media should have a different agenda from discussions not involving state-owned media.

Sample

To limit human content analysis to a manageable scale, I did an unequal stratified sample of 700 tweets for each issue, therefore resulting the sample size N=2100. The 700 tweets have been collected as a mixture of tweets directly interacting with state-owned media and a random selection of other tweets. To achieve this goal, I first collected all the tweets involved state-owned media. Then, I drew a random sample from the rest of the posts to fill the rest of 700. For the issue #Aleppo, for instance, 16619 tweets are collected; among them, 169 involve direct interactions with state-owned media. Thus, I first collected these 169 tweets from the population, then randomly selected 531 tweets from the rest of the population to create a sub-sample representing tweets without interactions with state-owned media. The breakdowns of samples are listed in Table 3-1.

Table 3-1. Summary of sample distribution

Issues	Direct interacting with state-owned media	No direct interaction with state-owned media
South China Sea	Total:334 @Globaltimes 33 @XHNews: 69 @PDChina:133 @CCTV: 8 @rt_com:58 @voanews:24 @DWnews:9	366
Aleppo	Total: 169 @rt_com: 25 @AJEnglish: 3 @VOAnews: 1 @XHnews: 61 @AlArabiya_Eng: 25 @BBCNews: 39 @BBCWorld: 15	531

Table 3-1. Continued

Issues	Direct interacting with state-owned media	No direct interaction with state-owned media
TPP	Total:95 @DWnews:10 @Globaltimes:8 @rt_com:3 @xhnews74	605

Variables

Account type and geographic locations of the poster

Account types include 1) government officials/military officials accounts, 2) traditional media/media-affiliated accounts, 3) other organizations' accounts, 4) individuals, 5) accounts that no longer exist (suspended by Twitter), and 6) Twitterbot. The current study included a manual check of each account using Botometer (<https://botometer.iuni.iu.edu/#/>), which was developed by the Indiana University Network Science Institute (IUNI) and the Center for Complex Networks and Systems Research (CNetS). I used a threshold of 80 out of 100 (depending on versions, it can comes in as 0 to 1 or 0 to 5 scale; the latter scale was used after May 2017) at the bot-detecting index. Since the score indicates the likelihood of an account being a bot arbitrarily assigning cut-off value is not the best way to interpret the data (Botometer FAQ, 2018). Researchers have been using different cut-off points for Botometer. A Pew Research Center study (Wojcik et al., 2018) compared the Botometer score and human coding results and assigned 0.43 at the 0–1 scale as the cut-off point. Varol et al. (2017) tested the method with 3000 accounts and found that when the Botometer score ranges from 0.8 to 1, it has a stable accuracy of 70%; when the score ranges from 0.4–0.8, the accuracy fluctuates. My personal Twitter account received a Botometer score of 69. To be more conservative, I set the threshold at 80 on a 100-point scale (the equivalent of 4

out of 5 or 0.8 out of 1). Besides accounts that score high in botometer, categories 5) “accounts that no longer exist (suspended by Twitter)” should be seen as a red flag for bots because “most accounts suspended by Twitter are spammy or plain fake.” (Twitter Help Center, 2018). Geographic location is coded as follows 1) country (specific country name), 2) international organizations, and 3) no location information or fictitious location.

Object salience: sub-issues

Issues related to each hashtag are used for analysis. For #SouthChinaSea, six issues were used: 1) military, 2) territory dispute, 3) civic actions, 4) economy, 5) diplomacy and international relations, and 6) other. For #Aleppo, five issues were used: 1) civilian life, 2) military issues, 3) international intervention; 4) culture and religion, and 5) others. For #TPP, nine issues were identified: 1) domestic politics, 2) safety and security, 3) civic movement and protests, 4) economic issues, and 5) others. The issues were coded as 1 for present and 0 for absent.

Object salience: stakeholders

Stakeholder lists are based on one generic list and adapted for each hashtag. For #SouthChinaSea, stakeholders include 1) Chinese government and military, 2) Philippine government and military, 3) Japanese government and military, 4) Vietnam government and military, 5) US government and military, 6) Taiwan government and military, 7) industry and business, 8) experts and think tanks, 9) media, and 10) inter-government organizations, NGOs, and civic groups. For #Aleppo, stakeholders include 1) US government and officials, 2) Russian government and officials, 3) Assad government, 4) regional military groups, 5) inter-government organizations such as the UN, 6) civilians, and 7) media. For #TPP, stakeholders include: 1) the U.S. government,

2) Donald Trump, 3) the Chinese government, 4) the Japanese government, 5) the Canadian government, 6) individuals, 7) industry and business, 8) experts and think tanks, 9) media, 10) civic groups, 11) inter-government organizations such as the U.N., and 12) Internet-based groups such as WikiLeaks.

In some cases, when users post in first-person pronouns, with themselves being the only stakeholder mentioned, account information is used to determine the stakeholder group.

Attribute salience: overall substantive issue attributes

Following previous agenda building research (Kim et al., 2016; Neil et al., 2016; Zhang et al. 2017), I used a generic attributes coding book for all tweets. For substantive attributes of issues, coding items include the following: 1) conflict, 2) cooperation (harmony), 3) problem/issue definition, 4) proposed solution to the problem, 5) responsibility attribution, 6) human interest, 7) consequences and outcomes, 8) morality and motivation to take action.

Stakeholder attributes

For #SouthChinaSea, the stakeholder attributes include the following: 1) proponent of China's stance, 2) opponent of China, 3) beneficiary, 4) victim, 5) objective observers, and 6) villain.

For #Aleppo, the stakeholder attributes include the following: 1) proponent of Syrian/Russian/Iranian government, 2) proponent of opposition/U.S./Saudi Arabia, 3) proponent of IS, 4) beneficiary, 5) victim, 6) sympathizer of civilians, 7) objective observers, and 8) villain.

Finally, for #TPP, stakeholder attributes include the following: 1) proponent of the deal, 2) opponent of the deal, 3) facilitator of the deal, 4) obstructor of the deal, 5) beneficiary, 6) victim, 7) objective observers, and 8) villain.

Argument repertoire

Argument repertoire is measured as the number of reasons for their own opinion, and the number of reasons why others might disagree, according to Cappella, Price, and Nir (2010). For each of the Tweets, coders must identify the number of reasons given to support the poster's argument and the number of reasons given about why someone may not agree with the poster's argument. The two numbers will be recorded. If no argument is being made in the tweet, it will be coded as 0 on both measures.

Democratic quality of discussion

The measurement of democratic quality of a discussion follows Ruiz et al. (2011). The measurement consists of six yes/no coding items that cover three dimensions of democratic quality of discussion: Logic and coherence question: 1) Do participants focus on the topic? Cooperative search for truth question: 2) Are insults and derogatory references present? 3) Do participants try to argue their points? 4) Do participants offer different points of view or ask each other for clarifications? 5) Do participants show interest in other contributions, and do they adhere to them? Attempt to reach an agreement based on the best argument question: 6) Is there any agreement reached?

Intercoder Reliability

In the training and codebook refinement stage, two trained graduate students completed three rounds of training about the codebook, followed by practice coding. After each practice coding, they discuss discrepancies in coding and some additional explanations; changes are then made to the codebook based on their notes. According

to Lombard, Snyder–Duch, and Bracken (2010), intercoder reliability should be assessed based on a representative sample that is greater than 50 or 10%, and it is preferred to be reported with two or more indices. For each of the three issues, 70 tweets were randomly selected from the 700 sample to assess intercoder reliability. Percentage agreement and Cohen's kappa were selected as indices. When selecting the acceptable level of reliability, Lombard, Snyder–Duch, and Bracken (2010) noted that higher criteria should be applied to more liberal measurements such as percentage agreement, whereas lower criteria can be acceptable for more conservative measures such as Cohen's kappa. In the present study, the Cohen's kappa of all items is above .70. By contrast, percentage agreement is all above 80%. Detailed intercoder reliability result is listed in Table 3-2.

Table 3-2. Intercoder reliability

	South China Sea Percentage agreement	Chen's Kappa	Aleppo Percentage agreement	Chen's Kappa	TPP Percentage agreement	Cohen's Kappa
Account Type	88.57%	0.82	80.00%	0.73	84.4%	.73
Account Location	90.00%	0.83	87.10%	0.80	87.5%	.751
Overall Sustentative Sub-Issues	81.40%	0.77	85.70%	0.79	81.4%	.736
Stakeholders	97.14%	0.95	91.43%	0.87	97.50%	.91
Stakeholder Attributes	96.52%	0.90	96.10%	0.86	96.1%	0.846
Argument Repertory	94.76%	0.85	94.07%	0.79	94.54%	.816
Democratic Quality of Discussion	94.25%	0.82	93.55%	0.79	99.3%	0.983
	94.77%	0.82	94.05%	0.83	93.57%	.88

CHAPTER 4 ANALYSES AND RESULTS

Study 1

State-Owned Media's Role in Hashtag Discussion

RQ2a requires an examination of the local pattern of state-owned media account, whereas RQ2b and RQ2c are answered with the examination of the entire network. Follow the sequence of analysis, RQ2b and RQ2c will be first answered issue by issue. Then, RQ2a will be answered. The sample network output can be found in Appendix A.

#SouthChinaSea. In the twitter discussion centered around the issue of the South China Sea, the Chinese state-owned media has been constantly posting about the issue, along with those of the US, Russia, and Germany. The analysis is solely based on the datasets collected, which is restricted by the Twitter API capacity. The network result is summarized in Table 4-1. Notably, multiple Chinese state-owned media accounts are followed in this study is not an indication of sampling bias. Instead, it reflected the unique approach Chinese government has taken in public diplomacy: diversifying media outlets.

Table 4-1. Network analysis results summary #SouthChinaSea

state-owned media country	state-owned media account	# of times appeared	# of times ranked 10% eigenvector centrality	# of times of top 10% PageRank	# of times of top 10 domain
China	XHnews	6	1	4	2
	PDChina	7	1	5	2
	CCTV/CGT				
	N Globaltime	4	0	4	1
	snews	6	0	3	1
USA	VOAnews	2	1	1	1
Russia	RT_com	2	0	1	1
Germany	Dnews	1	0	1	0

Total number of data sets =10

For all state-owned media, I observed a high PageRank centrality but low eigenvector centrality. While both centrality measures accounted for the relative importance of a node by considering the power of its neighbors, as previously noted in the Method section, the eigenvector centrality considers both in and out degrees. In comparison, PageRank exclusively considers the in degree. As a result, the eigenvector centrality is an indicator of the power of a node in two-way communication, whereas the PageRank is an indicator of effective information dissemination. For instance, PageRank is often used in calculating the importance of a website or academic citation.

As presented in the chart, when a state-owned media posts content on the issue of the South China Sea, it has a high likelihood of being among the top 10% of PageRank centrality. This means that the state-owned media's information reach is good compared with the other nodes of the network, which is most likely obtained by being retweeted and mentioned many times. However, they do not have significant proactive interactions with other nodes; hence, they are not really engaged in conversations of the issue. The high PageRank but low eigenvector centrality also indicates that state-owned media accounts are generally not connected to highly active participants of the conversation. In other words, the users linked with state-owned media in the twitter conversations are not high-power users.

Twitter users that are high in both PageRank and eigenvector centrality are often issue-dedicated accounts, such as @asiamti and @9DashLine. They not only constantly post relevant contents, but also actively retweet contents from active participants of the conversation, who are often experts, non-government organizations, or individuals that are very involved in the issue. The link established via selective

engagement boosted their eigenvector centrality. RQ2b asked: What kind of interactions do state-owned media have with other social media users? As indicated in the results, state-owned media's interaction with other social media users is primarily for the purpose of information dissemination. The interactions of state-owned media with other twitter users are passive, that is, they do not actively engage in conversations about controversial issues.

Certainly, information dissemination is still a valuable form of influence. When a tweet has a high number of shares, some of the retweeters can be influential. This gives the source a higher eigenvector centrality, as in the cases of @XHnews, @PDnews, and @VOAnews, in the issue #SouthChinaSea. However, the high eigenvector centrality is random, making it difficult to replicate in other issues.

RQ2C asked whether state-owned media can be considered important nodes in the networked discussion. Although state-owned media is an important information source, generally, state-owned media is not a high-power node. Another index that is relevant to RQ2C is the traffic driven from twitter to external URLs. Powerful tweets could generate tremendous web traffic. The top domains measure the traffic directed by state-owned media to their own websites. In the current datasets, state-owned media are occasionally ranked as both high PageRank and eigenvector centrality provide opportunities for state-owned media to drive traffic to their own websites (although this does not always happen). It could mean that either the social media did not provide an outside link (of an article, for instance), or sometimes, the retweeter did not keep the link.

In the current datasets, Chinese state-owned media did not even interact among themselves. They could have increased the eigenvector centrality by doing so. For instance, if @PDChina retweets content with @XHNews, it could potentially help @XHNews reach another group of publics that are involved in the issue of the South China Sea. Such a move could have brought the advantage of having multiple state-owned media accounts. However, it was not fully utilized.

#Aleppo. In the tweets collected using the hashtag #Aleppo, the following state-owned media have posted contents to attract interactions: RT.com(@rt_com), Al Jazerra English(@AJEnglish), VOA News (@VOAnews), Xinhua News Agency (@XHnews), Al Arabiya English (@AlArabiya_Eng), and BBC (@BBCNews and @BBCWorld). Among the state-owned media, RT.com appeared in five out of the nine datasets, indicating that the posting is persistent, Al Arabiya English appeared in two of the nine datasets, and all other state-owned media were mentioned in one of the nine datasets. Notably, the tweets collected are restricted by API capacity; in fact, the actual number of tweets can be much larger than the collected amount.

Table 4-2. Network analysis results summary #Aleppo

state-owned media country	state-owned media account	# of times appeared	# of times ranked 10% eigenvector centrality	# of times of top 10% PageRank	# of times of top 10% domain
Russia	RT_com	5	0	5	1
USA	VOAnews	1	0	0	0
Saudi Arabiya	AlArabiyaEng	2	0	2	0
Qatar	AJEnglish	1	0	0	0
UK	BBCNews	1	0	1	1
	BBCWorld	1	0	1	1
China	XHNews	1	0	1	0

Total number of data sets = 9

The network analysis result is summarized in Table 4-2, which indicates a consistent pattern: in the related discussions surrounding the South China Sea, state-owned media are high in PageRank centrality but low in eigenvector centrality.

RQ2b asked: What kinds of interactions does state-owned media have with other social media users? Consistent with the issue of #SouthChinaSea, the interactions obtained by state-owned media in the issue of Aleppo are in the form of retweets. This means that the interaction between state-owned media and other Twitter users have been primarily one-way communication instead of two-way communication, that is, the state-owned media only used Twitter as a broadcasting platform and not as a listening platform. For example, when one poster retweeted @RT_com's post or mentioned @RT_com in their posts, the state-owned media did not publicly respond or address these posts. The lack of interaction also explained the low eigenvector centrality. Due to the lack of proactive interaction with other users, state-owned media accounts are generally not connected to the power center of the discussion, resulting in a self-enclosed local pattern with low-power individuals.

RQ2C asked whether state-owned media accounts are important nodes in the networked discussion. Similar to the issue of the South China Sea, state-owned media accounts are efficient in distributing information to scattered users. However, they are generally not considered high-power nodes in the network.

Aside from the local patterns discussed for the state-owned media accounts, the SNA also revealed that globally, the #Aleppo discussion is highly fragmented. The largest eigenvector centrality observed (.117) in all the datasets indicating a lack of high power user for the discussion.

#TPP. Compared with the two other issues, state-owned media presence is limited in tweets collected using the hashtag #TPP. Only two datasets contain state-owned media tweets. Four state-owned media accounts have posted contents and attract interactions: @DWnews, @Globaltimesnews, @rt_com, and @xhnews. Given that the issues are pre-determined and the data collection is in real-time, it would be impossible to fully anticipate whether state-owned media accounts will be continuously involved in advocating for an issue.

The results of RQ2b and RQ2c are consistent with previous issues with one exception: @xhnews @mentioned the US president Donald Trump (@realdonaldtrump) in some of its tweets. By doing so, @xhnews boosted its eigenvector centrality to the top 10% in one of the datasets. The detailed results are summarized in Table 4-3.

Table 4-3. Network analysis results summary #TPP

state-owned media country	state-owned media account	# of times appeared	# of times ranked 10% eigenvector centrality	# of times of top 10% PageRank	# of times of top 10 domain
China	XHNews	2	1	2	1
	Globaltime news	1	0	1	0
	DWNews	1	0	1	0
Russia	RT_com	1	0	1	0

Total number of data sets = 9

Overall, a consistent pattern can be found in terms of the state-owned media's role in the discussion of all three issues. Various state-owned media are information disseminators. However, even though they are actively tweeting about the issues, they do not actively interact with other participants of the discussion, resulting in them being away from the power center of the discussion.

Who Is Interacting with State-Owned Media?

RQ2a asks: Who is interacting with state-owned media on special issues? The results vary from one issue to another and from one state-owned media account to another, thereby indicating different engagement strategies. Z test has been used to compare across different state-owned media accounts. Type I error of the Z-test has been strictly controlled with the Bonferroni method.

#Aleppo. The results (shown in Table 4-4) of content analysis confirmed the network analysis results in terms of who is interacting with state-owned media. State-owned media accounts obtain most of their interactions from individuals. @RT_com has shown a higher proportion of interaction from an account that has been suspended by Twitter, and the Z-test confirmed the result. This indicates that Russian state-owned media accounts may either be targeted by spammy accounts or used fake accounts to generate bogus interactions. Meanwhile, in terms of geographic location, the interactions generated by state-owned media accounts are not influenced by geographic proximity, with the only exception being @BBCnews.

Table 4-4. Crosstab of account type and state-owned media #Aleppo

	AI-								
	Ajenglis h	Arabiya a	bbcnew s	bbcworl d	rt_co m	voanew s	xhnew s	Tot al	
Media/Affiliated with Media	0	1	0	0	0	1	1	3	
Other Org	0	0	2	0	0	0	4	6	
All other individuals	2	23	35	15	17	0	50	142	
Account no longer exist	1	1	1	0	7	0	4	14	
TwitterBot	0	0	0	0	0	0	2	2	
Total	3	25	38	15	24	1	61	167	

#SouthChinaSea. The result of #SouthChinaSea have indicated some alarming results. @PDChina, @XHNews, and @RT_com have more interactions from accounts that no longer exist and from Twitterbots. The Z-test confirmed that @XHNews has a significantly larger proportion of interaction from accounts that have been suspended by Twitter. A closer examination of the accounts that interact with @XHnews and @PDChina revealed that the suspended accounts interacting with them overlap. This might be an indicator that either some spammy accounts have systematically targeted Chinese state-owned media accounts, or those accounts have purchased some bogus ones to boost their share of voice.

Notably, although @dwnews and @globaltimesnews seem to have significantly more interactions from traditional media, all the interactions come from self-retweets, indicating that they do not have any inter-media agenda setting power. The crosstab results can be found in Table 4-5.

Table 4-5. Crosstab state-owned media and account type #SouthChinaSea

Account Type	cct v	dwnew s	globaltimesne ws	pdchin a	rt_co m	voane ws	xhnew s	Total
Government/ Officials/	0	0	0	0	1	1	0	2
Military								
Media/Affiliated with Media	1	3	7	6	1	0	5	23
Other Org.	0	2	3	4	0	5	0	14
Individuals	5	2	22	91	35	15	27	197
Account no longer exist	2	1	0	22	10	1	30	66
Twitterbot	0	1	2	9	11	2	7	32
Total	8	9	34	132	58	24	69	334

In terms of geographic locations, crosstabs between state-owned media accounts and the audience locations indicates that geographic proximity does not influence the interactions generated by state-owned media accounts. The crosstabs between the interaction source countries and state-owned media accounts can be found in Appendix B.

#TPP. In the issue of #TPP, individuals produce the interactions obtained by state-owned media accounts. As shown in Table 4-6, there exists an alarming level of interaction from suspended accounts for @XHNews. In fact, the Z-test confirmed that XHNews has more interactions from accounts that no longer exist.

Table 4-6. Crosstab state-owned media and account type #TPP

Account Type	DWnews	globaltimesnews	RT_com	XH news	Total
Media/Affiliated with Media	1	3	0	2	6
Other Org.	0	0	0	1	1
All other individuals	7	4	1	30	42
Account no longer exist	1	0	1	33	35
TwitterBot	1	1	1	8	11
Total	10	8	3	74	95

While most interactions come from accounts that do not specify their geographic locations, for those that do specify such information, geographic proximity seems to explain who interacts with state-owned media accounts. State-owned media accounts in China garnered the more interactions from Asian countries, whereas @DWnews generated most of its interactions from users in European countries. Geographic crosstabs can be found in Appendix B

Study 2

Study 2 uses content analysis to answer H1, H2, and H3 as well as H4 and H5 regarding discussion quality. H1, H2, and H3 are tested using the Z-test. The type I error of the Z-test is controlled using the Bonferroni method.

Testing State-Owned Media's Agenda Building Power

H1a hypothesized that there exists a significant difference of issue salience between discussions involving state-owned media and discussions not involving state-owned media. This is supported with the Z-test across all three issues.

In the #Aleppo discussion, as shown in Table 4-7, the tweets involving state-owned media accounts are more likely to talk about military issues than the rest of users.

Table 4-7. Issue salience Z-test #Aleppo

Issues	State-owned media N=169	Not State-owned media N=531
Civilian life and Economy	47(27.8%)	106(20%)
Military***	100(59.2%)	179(33.7%)
Culture and religion	9 (5.3%)	45 (8.5%)
Other*	4(2.4%)	49(9.2%)

***z test significant at the .05 level with type 1 error controlled using Bonferroni correction (p<.008). unadjusted p<.001.

*z test significant at the .05 level after Bonferroni correction, unadjusted p<.008

In the issue of the #SouthChinaSea, as shown in Table 4-8, twitter discussions involving state-owned media are more focused on discussing issues and are more likely to feature territorial development and dispute, civic action and protest, and diplomatic relations.

In the issue of the #TPP, as shown in Table 4-9, discussions involving state-owned media are more likely to focus on economy and international politics and are less likely to focus on domestic politics and activism.

Table 4-8. Issue salience Z-test #SouthChinaSea

Issues	State-owned media N=334	Not State-owned media N=336
Military and safety	105(31.4%)	148 (40.4%)
Territory development and dispute***	92(27.5%)	36(9.8%)
Civic action and protest***	36(10.8%)	5(1.4%)
Economy	2(0.6%)	8(2.2%)
Diplomatic Relations***	223 (66.8%)	138 (37.7%)
Other***	22 (6.6%)	6(1.6%)

***z test significant at the .05 level with type 1 error controlled using Bonferroni correction (p<.008). unadjusted p<.001.

Table 4-9. Issue salience Z-test #TPP

Issues	State-owned media N=95	Not State-owned media N=605
Economy***	35 (36.8%)	95(15.7%)
Domestic Politics***	0 (0%)	119 (19.7)
International Politics***	54 (56.8%)	78 (12.9%)
Activism***	2(2.1%)	330(54.5%)
Other	2 (2.1%)	14 (2.3%)

***z test significant at the .05 level with type 1 error controlled using Bonferroni correction (p<.01). unadjusted p<.001.

H1b hypothesized that there exists a significant difference of stakeholder salience between discussions involving state-owned media and discussions not involving state-owned media. This hypothesis is supported by the Z-test across all three issues, with the type 1 error controlled using the Bonferroni correction.

#Aleppo. After the Bonferroni correction, the unadjusted p<.006 rejects the null hypothesis. Tweets involving state-owned media are significantly more likely to mention the Russian government, regional militant groups, and the media. Tweets that do not involve state-owned media accounts are more likely to mention the Assad Government and others (of which 58.74% mention the Turkey and Turkish government, and 13.29% mention Saudi Arabia and its government). Results of the Z-test are summarized in Table 4-10.

Table 4-10. Stakeholder salience Z-test #Aleppo

Stakeholders	State-owned media N=169	Not State-owned media N=531
US Gov., officials & Military	4(2.4%)	43(8.1%)
Russian Gov., officials & Military***	81(47.9%)	102(19.2%)
Assad Gov., officials & Military***	2(1.2%)	69(13%)
Regional Militant groups***	87(51.5%)	86(16.2%)
Inter-government organizations	13(7.7%)	61(11.5%)
Civilian	72(42.6%)	178(33.5%)
Media***	63(37.3%)	82(15.4%)
Other***	66(39.1%)	119 (22.4%)

***z test significant at the .05 level with Bonferroni correction (unadjusted p<.006 to reject the null hypothesis), unadjusted p<.001.

#SouthChinaSea. After the Bonferroni correction, the unadjusted p<.005 was identified to reject the null hypothesis. Tweets involving state-owned media are more likely to mention the governments as stakeholders but are less likely to mention NGOs or Taiwan as the stakeholder. Given that most of the tweets involving state-owned media are simply retweets from what their accounts have posted, they often mentioned the media as the source of information. Results are summarized in Table 4-11.

Table 4-11. Stakeholder salience Z-test #SouthChinaSea

Stakeholders	State-owned media N=334	Not State-owned media N=366
Chinese Gov., officials & Military***	197 (59%)	164(45.1%)
Philippine Gov., officials & Military***	53(15.9%)	25(6.8%)
Japanese Gov., officials & Military***	72 (21.5%)	17 (4.6%)
Vietnam Gov. officials & Military***	53(15.9)	12 (3.3%)

***z test significant at the .05 level with Bonferroni correction (unadjusted p<.005 to reject the null hypothesis), unadjusted p<.001.

*unadjusted p<.005

Table 4-11. Continued

Stakeholders	State-owned media N=334	Not State-owned media N=366
US Gov., officials and Military	86(25.7%)	108 (29.5%)
Taiwan*	0 (0%)	9 (25%)
Experts and Think tanks***	24 (7.2%)	83(22.7%)
Media***	257(76.9%)	68(18.6%)
Non-Government Organizations***	1 (0.3%)	12(3.3%)
Other***	75 (22.5%)	44(12%)

***z test significant at the .05 level with Bonferroni correction (unadjusted p<.005 to reject the null hypothesis), unadjusted p<.001.

*unadjusted p<.005

#TPP. Given that there are 11 pairwise comparisons, after the Bonferroni correction the unadjusted p<.0045 rejects the null hypothesis. Tweets involving state-owned media are more likely to feature Donald Trump, the Japanese government, and others (of which 57.75% are about other countries' governments) but are less likely to mention individuals and NGOs. Given that most of the tweets involving state-owned media are simply retweets from what their accounts have posted, they often mentioned the media as the source of information. Results are summarized in Table 4-12.

Table 4-12. Stakeholder salience Z-test #TPP

Stakeholders	State-owned media N=95	Not State-owned media N=605
US Gov.	7(7.4%)	54(8.9%)
Donald Trump***	45 (47.4%)	151(25%)
Chinese Gov.	2 (2.1%)	10 (1.7%)
Japanese Gov.***	43(45.3%)	8 (1.3%)
Canadian Gov.	0 (0%)	1(0.2%)
Individuals/Civilian***	1(1.1%)	353(58.3%)
Industry and business	0 (0%)	21(3.5%)
Experts and think tanks	1 (1.1%)	25(4.1%)
Media***	81(85.3%)	47(7.8%)
Non-Government Organizations***	0(0%)	305 (50.4%)
Other***	36 (37.9%)	35 (5.8%)

***z test significant at the .05 level, unadjusted p<.0045 to reject the null hypothesis, unadjusted p<.001.

H2a hypothesized that there exists a significant difference of issue-substantive attributes between discussions involving state-owned media and those not involving state-owned media. The analysis procedure is the same as that for H1. Results indicated that H2a is supported across all three issues.

In the issue of #Aleppo, the discussions involving state-owned media focus overwhelmingly on consequences and outcomes (84.8%). In comparison, discussions that do not involve state-owned media focus more on cooperative frame, problem definition, proposing solutions to the problem, and responsibility attribution (Chi-square=195.05, df=7, p<.001).

In the issue of #SouthChinaSea, discussions involving state-owned media focus more on corporation frame, whereas discussions not involving state-owned media focus more on consequences and outcomes as well as morality and motivation to take actions (Chi-square= 113.392977, df=7, p<.05).

In the issue of #TPP, the discussions involving state-owned media revealed problem definition and responsibility attribution as being more salient, whereas for discussions not involving state-owned media, responsibility attribution is more salient (Chi-square= 125.40, df=7, p<.001).

H2b hypothesized that there exists a significant difference of stakeholder attributes between discussions involving state-owned media and discussions not involving state-owned media. The analysis procedure is the same as that for H1. The results indicate that H2b is supported across all three issues.

#Aleppo. In the issue of Aleppo, as indicated in Table 4-13, tweets involving state-owned media and those not involving state-owned media gave different

stakeholder attributes to the Russian government, regional militant groups, NGOs, civilian, media, and others. The Russian government, officials, and military are more likely to be described as proponents of Assad by state-owned media. Meanwhile, opinions on the Russian government are polarized for tweets not involving state-owned media: it is characterized either as sympathizer of the civilians or a villain who has brought harm to civilians. Regional militant groups are described more as proponents of the opposition army, proponents of ISIS, beneficiaries, or victims, whereas they are generally described as villains or information sources in tweets involving state-owned media. This simply means that the attributes of regional militant groups are more diversified and concrete in tweets not involving state-owned media. In tweets involving state-owned media, the descriptions are rather vague and abstract. The attributes of NGOs are also polarized. In tweets not involving state-owned media, these are divided into information source, sympathizer and villain, whereas for tweets involving state-owned media, these are overwhelmingly characterized as information sources. The same pattern can be found in the attributes of civilian and media: tweets involving state-owned media have a consistent attribute for civilians being victims and the media being objective observers compared with tweets not involving state-owned media.

Table 4-13. Stakeholder attributes salience Z-test #Aleppo

Stakeholder Attributes	Chi-Square	Unadjusted p
Russian Gov., officials & Military as proponent of Syrian Government Army, Assad***	54.76	.000000
Russian Gov., officials & Military as sympathizer/saver of civilian***	18.49	.000017
Russian Gov., officials & Military as villain***	28.09	.000000
Regional Militant Groups as proponent of opposition army***	12.25	.000465
Regional Militant Groups as proponent of ISIS	6.76	.009322
Regional Militant Groups as beneficiary***	10.89	.000967

***z test significant at the .05 level, unadjusted p<.0063 to reject the null hypothesis.

Table 4-13 Continued.

Stakeholder Attributes	Chi-Square	Unadjusted p
Regional Militant Groups as victim***	9.61	.001935
Regional Militant Groups as Objective observer/information source	4.00	.045500
Regional Militant Groups as Villain***	28.09	.000000
NGOs, intergovernmental organizations as Sympathizer of civilian	5.29	.021448
NGOs, intergovernmental organizations as Objective observer/information source***	9.00	.002700
civilian as proponent of Syrian Government Army, Assad	7.29	.006934
civilian as beneficiary***	7.84	.005110
civilian as victim***	23.04	.000002
Media as Objective observer/information source***	9.00	.002700
Media as Villain***	10.24	.001374
Other as proponent of Syrian Government Army, Assad***	8.41	.003732
Other as Sympathizer of civilian	4.41	.035729
Other as Objective observer***	15.21	.000096
Other as Villain***	26.01	.000000

***z test significant at the .05 level, unadjusted p<.0063 to reject the null hypothesis.

#SouthChinaSea. As shown in Table 4-14, for each contingency table, there are six pairs of comparisons. After the Bonferroni correction, the unadjusted p should be less than .0083 to reject the null hypothesis. Compared with twitter discussions not involving state-owned media, tweets involving state-owned media are more likely to point out the Chinese government's push to achieve its own agenda or even characterize the Chinese government as villain. In contrast, tweets involving state-owned media often describe the Chinese government as neutral and objective. As to the Philippine government's attributes, tweets involving state-owned media overwhelmingly (96.2%) mentioned it as beneficiary, but it is described more as an opponent of China's stance in tweets not involving state-owned media. The attributes for the Japanese government are described exclusively as opponents of China's stance

in the state-owned media group. In contrast, in the non-state-owned media group, opinions are more diversified and some even described the Japanese government as a beneficiary. Vietnam is more likely to be described as a beneficiary among the state-owned media group contrary to the non-state-owned media group. The US government is more likely to be described as an opponent of China's stance by tweets involving state-owned media, whereas it is more likely to be described as objective observer/information source by tweets not involving state-owned media. NGOs are mentioned more as an objective observer/information source by the non-state-owned media group.

Table 4-14. Stakeholder attributes salience Z-test #SouthChinaSea

Stakeholder attributes	Chi-square	Unadjusted p
Chinese Gov.& Military as proponent of China***	68.89	0.000000
Chinese Gov.& Military as beneficiary***	62.41	0.000000
Chinese Gov.& Military as objective observer/information source***	16.00	0.000063
Chinese Gov.& Military as villain***	11.56	0.000674
Philippine Gov.& Military as proponent of China	5.29	0.021448
Philippine Gov.& Military as opponent of China***	25.00	0.000001
Philippine Gov.& Military as beneficiary***	54.76	0.000000
Philippine Gov.& Military as objective observer/information source***	17.64	0.000027
Japanese Gov.& Military as opponent of China***	37.21	0.000000
Japanese Gov.& Military as beneficiary***	22.09	0.000003
Japanese Gov.& Military as objective observer/information source***	12.96	0.000318
Vietnam Gov. & Military as proponent of China***	13.69	0.000216
Vietnam Gov. & Military as beneficiary	4.41	0.035729
Vietnam Gov. & Military as objective observer/information source	4.41	0.035729
US Gov.& Military as opponent of China***	18.49	0.000017
US Gov.& Military as beneficiary	4.84	0.027807
US Gov.& Military as victim	4.84	0.027807
US Gov. & Military as objective observer/information source***	7.84	0.005110
NGOs as opponent of China***	12.96	0.000318

***Significant after Bonferroni correction (p<.0083)

#TPP. Given that there are eight pairwise comparisons in each contingency table, after the Bonferroni correction, the unadjusted p<.0063 is identified to reject the null hypothesis. Results are summarized in Table 4-15. Discussions involving state-owned media are more likely to portray the US government as a victim, the Japanese government as a proponent or beneficiary of the deal, and individuals as the opponents of the deal. Meanwhile, discussions not involving state-owned media have a much higher portion of tweets that described individuals as obstructions to the deal (75.6% to 0%) but received insignificant Z-test result due to an extremely imbalanced n value.

Table 4-15. Stakeholder attributes salience Z-test #TPP

Stakeholder Attributes	Chi-Square	Unadjusted p
US Gov. as victim***	11.56	.00067
Trump as obstructor of the deal	4.41	.03573
Japanese gov. as proponent of the deal**	16.81	.00004
Japanese gov. as the facilitator of the deal	5.29	.02145
Japanese gov. as beneficiary***	23.04	.00000
Individuals as opponent of the deal***	11.56	.00067
Media as objective observers/information source	5.29	.02145
Other as opponent of the deal	5.76	.01640
Other as objective observer***	7.84	.00511

***Significant after Bonferroni correction (p<.0063)

H3 hypothesized that there exists a significant difference in co-occurrence(a) of issues and co-occurrence(b) of stakeholders between discussions involving state-owned media and discussions not involving state-owned media. A non-parametric test using Independent Sample Mann-Whitney U is used to test the hypotheses.

#Aleppo. For the issue of #Aleppo, no significant difference exists on the co-occurrence of issues between twitter discussions involving state-owned media and those not involving state-owned media ($U=60.500$, $p>.05$). For both groups, the issues that occurred together the most are international intervention and the military. However, in terms of the stakeholders, there exists a significant difference between twitter

discussion involving state-owned media and those not involving state-owned media ($U=142.500$, $p<.001$). Specifically, for Twitter discussions not involving state-owned media, the stakeholders that are most frequently mentioned together are Assad government and regional military groups, Assad government and civilian, and civilian and non-government or inter-government organizations. For tweets involved state-owned media, the stakeholders that are most frequently mentioned together are Russian government and regional military groups, civilian and media, and civilian and regional military groups.

#SouthChinaSea. No difference is observed on the co-occurrence of issues between the two tested groups ($U=112.00$, $p>.05$). Further, no significant difference exists between groups in terms of co-occurrence either ($U=848.00$, $p>.05$).

#TPP. No difference exists in the co-occurrence of issues between the discussions involving state-owned media and discussions not involving state-owned media ($U=28.00$, $p>.05$). The co-occurrence of stakeholders' networks is different between discussions involving state-owned media and those not involving state-owned media ($U=830.00$, $p<.001$). Discussions involving state-owned media rarely mention individuals, so there is no co-occurrence between individuals with other stakeholders. Meanwhile, discussions not involving state-owned media are heavily focused on individuals, and the most salient co-occurring stakeholders are individuals with non-government organizations.

Testing State-Owned Media's Influence on Issue Discussion Quality

H4 hypothesized that tweets involving state-owned media demonstrated a higher level of argument repertoire than those not involving state-owned media. A non-parametric test using Independent Sample Mann-Whitney U is used to assess whether

the distributions of the numbers of reasons given to support one's own argument and the numbers of reasons given to explain why someone else may oppose one's argument are the same cross the two groups (state-owned media involved vs. non-involved state-owned media).

#Aleppo. Results demonstrated that state-owned media accounts are less likely to give reasons for their own argument ($U=34,284.00$; $p<.001$). However, no significant difference can be found in terms of the numbers of reasons given as to why someone may be against one's argument ($U=39.462.00$; $p>.05$).

#SouthChinaSea. In the issue of #SouthChinaSea, no significant differences exist between state-owned and non-state-owned media in terms of the number of reasons given to support one's own arguments ($U=50.837.50$; $p>.05$) and the number of reasons given about the reason why someone may be against one's argument ($U=51305.00$; $p>.05$)

#TPP. Results demonstrated that state-owned media accounts are less likely to give reasons for their own arguments ($U=22483.00$; $p=.002$). However, no significant difference can be found in terms of the numbers of reasons given about the reason why someone may be against one's argument ($U=25252.50$; $p>.05$).

H5 hypothesized that tweets involving state-owned media present a higher level of democratic quality of discussion compared with tweets not involving state-owned media. Chi-square is used to test H5, and the type I error is controlled using the Bonferroni method.

#Aleppo. As shown in Table 4-16, tweets involving state-owned media are more focused on the topic and have less insults and derogatory references; however, they

are less likely to argue for their points, ask others for clarification, or show interest on others' contributions. No differences exist across groups in terms of whether the agreement is reached based on the best argument. Agreement is rarely seen in both groups. Most users do not address others' points, let alone reach an agreement. The current results, when combined with those of H4, demonstrate that state-owned media accounts are at least trying to appear less opinioned than other users. This finding agrees with the SNA result suggesting a lack of two-way interaction between state-owned media and other users. Taking a closer look at the contents of the tweets: those involving state-owned media are mostly descriptive in nature.

Table 4-16. Democratic quality of discussion #Aleppo

	Chi-Square	df	p
Do Participants Focus on the Topic?	4.764045	1	0.029
Any insults and Derogatory References?	11.302361	1	0.001
Do participants try to argue Their Points?	62.29711	1	<0.001
Do participants ask for clarification	8.566194	1	0.003
Do participants Show Interest on other's Contributions	14.860605	1	<0.001
Is agreement reached based on best argument?	2.174359	1	0.14

#SouthChinaSea. As summarized in Table 4-17, in the issue of the South China Sea, discussions involving state-owned media are more focused on the topic and are less likely to argue for their points compared with discussions not involving state-owned media. Insults and derogatory references and agreements based on the best argument are rare in either of the categories.

Table 4-17. Democratic quality of discussion #SouthChinaSea

	Chi-Square	df	p
Do Participants Focus on the Topic?	58.55	1	<.001***
Any insults and Derogatory References?	3.17	1	.126
Do participants try to argue Their Points?	28.052	1	<0.001***
Do participants ask for clarification	2.104	1	.198
Do participants Show Interest on other's Contributions	.123	1	.778
Is agreement reached based on best argument?	2.749	1	.250

#TPP. In discussions related to the TPP, there is no difference between tweets involving state-owned media and tweets not involving state-owned media regarding the democratic quality of discussion.

CHAPTER 5 DISCUSSION

Summary of Conclusions

The current study used social network analysis and content analysis to examine state-owned media's role and engagement strategy and their effects on Twitter discussions. The result of hypotheses testing and research questions are summarized in Table 5-1 and Table 5-2. Results indicate that state-owned media's social media accounts are high in PageRank but low in eigenvector centrality, suggesting that state-owned media accounts can be successful information disseminators but not necessarily good at engaging other Twitter users. Although social media has enabled state-owned media to practice two-way communication to achieve mediated public diplomacy, this two-way communication function is not fully utilized by state-owned media accounts. Due to the lack of proactive engagement with other users, state-owned media has only served a peripheral in discussions pertaining to controversial issues.

Table 5-1. Summary of hypotheses

Hypotheses	Content	Findings
H1a	1 st Level Agenda building-Issue	Supported in all three issues
H1b	1 st Level Agenda building-Stakeholder	Supported in all three issues
H2a	2 nd Level Agenda building-Issue Attributes	Supported in all three issues
H2b	2 nd Level Agenda building-Stakeholder Attributes	Supported in all three issues
H3a	3 rd Level Agenda building-Issue Co-occurrence	Not supported in any issues
H3b	3 rd Level Agenda building-Stakeholder Attributes	Supported in #Aleppo and #TPP
H4	Argument Repertoire	Null hypothesis rejected but the finding is the opposite of what is proposed in hypothesis in all three issues
H5	Democratic quality of discussion	Partially supported in #Aleppo and #SouthChinaSea

Table 5-2. Summary of Research Questions

Research Questions	Content	Findings
RQ1a	Whether interacting with state-owned media's social media accounts leads to a difference in issue agenda?	Yes, in object and attribute level.
RQ2a	Who is interacting with state-owned media on special issues?	Primarily individuals, in some issues, with suspended accounts and bots.
RQ2b	What kind of interactions do they have?	Primarily retweets
RQ2c	Viewed from a network perspective, how important is state-owned media?	Important information disseminator, not important dialogue participants
RQ3	How much do the state-owned media's social media discussions align with the normative standards of constructive discussion in the public sphere?	Not showing high argument repertoire. Partially aligns with the democratic quality of discussion

State-owned media gained most of its interactions from individuals who are not so well connected to other participants of the issue. Aside from being inactive in reaching out to other powerful actors of the topic, some state-owned media accounts, such as those of @XHNews and @RT_com, have more interactions coming from suspended accounts or suspected Twitter. Hence, one must be cautious in making projections about someone's strategy of using bots for issue advocacy because Twitter does not disclose its algorithm to identify which accounts are suspended. Social media platforms like Twitter and Facebook are open about their efforts to contribute to the democratic society (Facebook Newsroom, January 22, 2018); however, as the phenomenon is so new, no platform can even pretend to have the correct answer. As such, it would be dangerous for scholars and policy makers to just assume they would be unbiased under political pressure. During and after the 2016 US presidential

campaign, there had been mounting pressure across the US political spectrum to further scrutinize foreign social media meddling. Many Russian- and China-affiliated accounts have been suspended. Thus, when interpret the results of Russia and China having more interactions from accounts that have been suspended, one should always resist the temptation to draw a conclusion too soon. For state-owned media that does not interact with suspended accounts or suspected bots, the engagement primarily comes from individuals who are often isolated.

Comparing the results of the current study with that of Golan and Himelboim (2016), who also explored the flow of information of state-owned media but used state-owned media account name as boundary condition for data sampling, some common findings and noticeable differences can be observed with the regards the role played by state-owned media in the Twitter network. The current study confirmed Golan and Himlboim's (2016) finding, and both studies found that state-owned media's information mediators are influenced by geographic location and account characters. In addition, whereas Golan and Himlboim (2016) found that institutional actors are more powerful than non-institutional actors, the current study found that the most important actors in issue advocacy are non-institutional actors (bloggers) and not institutional actors like state-owned media. This may be because Golan and Himlboim (2016) studied the information flow in general, whereas the current study studied the information flow in the context of controversial issues. In the current research context, dedicated bloggers who tweet exclusively about an issue and deliberately reach important stakeholders are far more influential than institutional actors who primarily execute one-way communication.

In terms of the content, the hypothesis at all three levels of agenda building have been either fully supported or partially supported. State-owned media accounts have imposed significant influence on those who interact with them. On the one hand, the primary interaction generated by state-owned media comes from retweets without comment; thus, the agenda seems to be homogenous. On the other hand, a discussion that does not involve state-owned media appears to be more polarized. This indicates that, in the political controversies being studied, while there are often multiple countries promoting their agenda, one is often more successful than others.

In terms of the normative standard of discussion, I found that tweets posted by state-owned media accounts often contain substance but are sometimes bland. That is, they are very reluctant to make arguments and only try their best to portray themselves as objective observers. Furthermore, they are more focused on the topic and less likely to insult other discussion participants. The Twitter discussion posts of such accounts certainly align with the character of effective information subsidies described in Parmelee (2014). However, it seems that their postings are not as attractive as those of bloggers who also provide substantial information but combine them with personal judgement and commentaries. Journalists and the general public may have different tastes for information subsidies. State-owned media has traditionally targeted elites and journalists. When engaging with the general public via the Twitter platform, state-owned media should focus on building an image that is more “human” as opposed to being institutional.

Theoretical Implications

The current study is one of the first comparative analyses of social media strategies employed by state-owned media. Results indicate that overall, state-owned

media are important information sources and provide highly relevant objective information, but also that state-owned media do not appear to be a powerful node in the discussion. Practitioners and mediated public diplomacy researchers have long viewed objectivity as the gateway of perceived credibility. This view can be best summarized by Voice of America's mission statement:

To be effective, the Voice of America must win the attention and respect of listeners. These principles will therefore govern Voice of America (VOA) broadcasts: VOA will serve as a consistently reliable and authoritative source of news. VOA news will be accurate, objective, and comprehensive. (VOA, 2018)

However, in the age of social media, audiences are increasingly exposed to fragmented information and their attention span is limited. Dry facts seem to be insufficient in maintaining audience attention, and research has found that social media users favor opinion pieces (Skovsgaard & Van Dalen, 2013) over factual data. When quoting Twitter content, media themselves also favor opinionated tweets and tweets with personal character such as humor (Broersma & Graham, 2012). In this context, the conventional wisdom about being objective and accurate may not be able to result in influence. State-owned media has the duo character of being a journalistic institution and a government communication agency. The function of representing the country is state-owned media's organizational bottom line, while the journalistic character is a means to achieve this bottom line. This duo character model of state-owned media is established at a time when mass media and formal institutions were at their height of influence. Over time, given declining trust of institutional actors as sources of reliable information (Kavanagh & Rich, 2018) and dilution of traditional media's influence by various actors in the social media sphere (Meraz, 2009), the duo characters of state-owned media may no longer

be completely congruent. Given these factors, how journalistic state-owned media should evolve becomes a topic worth analyzing.

The current study also responds to the measurement challenges mediated public diplomacy scholarship is facing in the era of digital social media. The elite control structure which was known by scholars and mediated public diplomacy practitioners is fading away while emerging actors that we know little about are taking place. The current study illustrated that an actor's position in the network of discussion should always be empirically examined and used as the reference point when measuring communication effect.

In relation to the agenda building research, the current study found that those who interacted with state-owned media adopted the latter's first, second, and third agenda levels. Specifically, discussions involving state-owned media and those not involving state-owned media demonstrated significant differences in their agenda. The agenda of discussions involving state-owned media is congruent with the state-owned media's postings and aligned with the interests of countries that have attempted to promote their agenda with state-owned media. This finding indicates that interacting with others is a useful way of agenda building in the Twitter sphere. In the case of state-owned media, they have limited success in interacting with users. Further, network analysis indicates that users who interacted with state-owned media accounts are those who are not so well connected.

Results of the current study also have implications on broadening the scope of agenda building research to fit today's information age. Although the postings of the state-owned media accounts align with the quality of good information subsidy, they

only effectively built their agenda within the circle of users that already directly interact with them. This may indicate that, as state-owned media does have an agenda building power to foreign media in controversial issues, the mediators it has targeted did not disseminate its agenda to the rest of the public.

Since the 1980s, scholars have moved beyond testing agenda setting effect and exploring the mechanism of why agenda setting occurs. Various theories that include the need for orientation and compelling arguments have been raised to explain the agenda setting effect. Meanwhile, agenda building research does not seem to move beyond testing the media relations effect. Scholars seldom question the appropriateness of using information subsidy to explain the agenda-building process, which assumes that information is valuable to journalists and news media, who are considered as mediators between public relations and news. Even more problematic, there is a tendency to equate agenda building with the use of information subsidies to influence media, which has constrained the scope of agenda building theory. An exception does exist. For instance, Zoch and Molleda (2006) contended that framing and information subsidies are just tools of agenda building. They noted that the dynamics of agenda building vary depending on who initiates such agenda.

Extending from this idea, I argue that the information subsidy theorem should expand the scope of mediators based on the context. Specifically, instead of taking the media as the default mediator, scholars should scrutinize who are the mediators and what does the information network look like before jumping into an analysis of the agenda building effect. Concepts like “information intermediary” could be used to expand the theoretical scope of agenda building (Rose, 1999). Moreover, studies like

those of Golan and Himlboim (2016) set a good example of how to identify information intermediaries using social network analysis. The current study demonstrated how I can empirically link the information distributing network with agenda building results.

The current study is also extending the use of normative theories to state-owned media and agenda building research. Applying normative standards derived from public sphere theory, results indicate that state-owned media are rational discussants that focus on the topic but do not contribute clear and well-reasoned arguments. When combined with results of the agenda building analysis, the current study indicates some potential linkage between discussion quality and agenda building outcome. The lack of opinion and reluctance to make an argument may contribute to the state-owned media's limited influence on the overall discussion agenda. Future studies should thus use experiment methods to test the relationship between discussion quality and the agenda-building result.

The result of current study has affirmed the importance of dialogic communication (Kent & Taylor, 1998). When the communication is one-way and monologic, its ability of generating large scale discussion is limited. In the social media environment where engagement could translate to popularity, dialogic communication is not only more ethical but more engaging and effective. The current study indicates that there is no "safe zone" on social media. Although engage in dialogue always involves the risk and vulnerability (Kent & Taylor, 2002), isolating oneself as neutral observer is not a good strategic choice the message will only run into a brick wall.

Methodological Implications

One of the contributions of the current study is that it introduces a new way of studying influence in mass communication: big data-guided content analysis. Parks

(2014) noted that big data could offer insights that could never been obtained in other ways. In the current study, it is impossible to manually study hundreds of thousands of tweets to examine a discussion network. In the meantime, as Boyd and Crawford (2012) mentioned, in the era of big data, recognizing the value of small data is important. Indeed, big data have the advantage of unveiling relationships and patterns, but are heavily dependent upon predetermined word lists and algorithms. In comparison, small data could provide more in-depth insights but are always questioned for generalizability and the selection procedure. The current study is an attempt to combine the two.

The hypotheses of the current study are derived from theories, network analysis is used to select the subset of data that is going to be content analyzed, and then the in-depth analysis of content follows. This approach brings new light to the measurement problem of agenda setting and agenda-building research: the spurious relationship problem. Traditionally, agenda-building and agenda-setting studies have used correlation as the measurement of influence. However, as Golan and Wanta (2001) pointed out, media content exposure is essential to the agenda-building process, but media exposure cannot be guaranteed. As such, agenda-building analyses always suffer the criticism of “assuming” the influence. With the aid of network analysis, exposure has become something that can be guaranteed. As such, it became possible for scholars to precisely identify those audiences that have direct media exposure so that agenda setting and agenda-building research can make better influence inferences.

The aforementioned big data and content analysis combined approach can also be used to study dialogic communication on internet. Dialogic approach is considered more ethical than monologic approach in relationship management (Kent & Taylor,

1998). Although dialogue is considered communication product instead of the communication process (Kent & Taylor, 2002). The principles of dialogic communication, which emphasized on process has been widely used as measurements. As demonstrated in the current study, even with fully fledged interface design to engage dialogues, discussion can still be monologic. Social network analysis can be used to test whether the communication product: the discussion, is monologic. It is worth noting though, while low eigenvector centrality and high PageRank in the current study indicates the actor taking a monologic approach of communication, high in both eigenvector centrality and PageRank does not guarantee dialogue. Social network analysis alone is not sufficient to identify dialogue communication. Content analysis should be used to analyze the intent of the actor following the principles proposed Kent and Taylor (1998, 2002).

Big data can also be combined with other research methodologies following the same approach. For instance, social network analysis could help public relations scholars identify the most appropriate organizations to or the public to conduct their surveys and interviews.

In the process of this study, several methodological insights have been raised regarding the analysis of Twitter content in the agenda-building frame. First of all, Twitter content is filled with internal and external links; hence, it is practically impossible for researchers to follow all the links to code for the content analysis. A decision must be made beforehand as to the extent to which the links should be considered in conducting the content analysis. In the current study, I followed the @username link in the tweets but no other url links. Second, image contents should have been considered

as the context for the text of the twitter content. A tweet is limited to 144 characters, so it is unlikely for a poster to repeat the content that has appeared in the graphic part of the tweets. Both Boyd and Crawford (2012) and Parks (2014) have noted that the reason why so many big data communication research used Twitter data is because it is easy to scrape. I would argue, though, that one must be cautious when using the scraped content because it often includes the text part of the content only and not necessarily the graphic part. Sometimes, the text would not even make sense if taken out of the context of the graphic. In the current study, I traced back each article to its source cite and look at the graphic as the context of the tweets but not the coding item itself. I found that this is the easiest way to obtain reliable and meaningful content analysis results. Finally, due to the word count constraint, Twitter has developed many jargons and abbreviations. Coder training should consist familiarization with the code book but also training on the abbreviations and jargons related to the issue being studied.

Practical Implications

The findings of the current study have practical value to mediated public diplomacy practitioners. First, these could help public diplomacy practitioners to better understand the role of state-owned media in the context of government issue management and how to maximize its agenda-building power. Specifically, state-owned media today are still using social media to deliver information to the foreign public. They are trying to appear as objective as possible on social media. In the context of controversial issues, it would be extremely difficult to outperform issue-dedicated bloggers. However, state-owned media should actively approach influential actors in the network to improve their importance in the network. This requires more human resources to be spent on identifying issues, monitoring the emergence of influencers,

and adjusting communication strategies based on the identified important actors to approach.

For public relations practitioners, in general, the method used in the current study to analyze the information flow of state-owned media can also be used to troubleshoot agenda-building efforts. In the current study, the main problem faced by state-owned media accounts is that those who interact with them are not well connected, thus making it unlikely for them to serve as effective mediators. If they are well connected and the agenda builder's agenda is different from the public agenda, then a second-level analysis can be done to compare the second-level mediator's agenda and the first-level mediator's agenda. The analysis can be done multiple times until I find at which level the tone and frame of the issue slip out of the influence of the agenda builder. That mediator is the bottle neck of the agenda-building process.

Studies about bot engagement in mediated public diplomacy have indicated that suspected bots have been active in controversial issue discussions. However, engagement with bots, intentionally or not, will not lead to the more effective propagation of one's agenda.

Limitations

Study 1 and Study 2 have several limitations in terms of design, sample, and statistical analysis, which should be taken into consideration when interpreting their results.

First, to keep the project at a manageable scale, the study has limited the scope to examine the activities of state-owned media's social media accounts in relation to three issues. Although the issues have been carefully chosen to cover a variety of issue types and state-owned media, and a consistent pattern has been found across all three

issues, it is still possible that all these issues are outliers of many of today's current affairs. Thus, future researchers should carefully consider the context before generalizing the conclusion to any other issues or any other type of social media users.

Furthermore, due to the limited scope, the study excluded other media and non-media actors who serve similar functions as state-owned media in the realm of mediated public diplomacy. For instance, for-profit news providers like CNN and the New York Times can also serve the purpose of mediated public diplomacy without additional costs for the government. Studies have indicated that regardless of the level of press freedom, the media is always orchestrated around the government's ideological band regarding controversial issues (Lieber, & Golan, 2011; Zhang et al. 2017). In addition, political leaders like Donald Trump have more influence on Twitter than most of the media accounts. The benefit of focusing solely on state-owned media is that it results in a clear-cut line for all countries as to what should be included in the analysis. However, a more comprehensive approach should also include the twitter accounts of non-state-owned media and government agency officials who can serve the government's public diplomacy goal.

Second, the current study's data are collected real-time with NodeXL API service. This data collection process has two disadvantages. First, because data are collected in real time, there is no way for the researcher to know for sure at the time of data collection whether an issue discussion will have sustained state-owned media participation. As a result, one of the issues studied, #TPP, only garnered very limited state-owned media participation. Second, the amount of data collected for each draw may have also been limited by the API capacity of NodeXL; moreover, the data

collection is non-continuous. This process could have introduced some confounding factors to the results of this study, including times and dates of data collection. The benefit of the current data collection method suits the exploratory nature of the current study because collecting data using API is relatively low-cost, thus allowing the researcher to study multiple issues for a longer period. However, future studies should consider targeting one issue in a more intensive period so that historical data from Twitter could be effectively used to render a comprehensive sample that is continuous.

Finally, the analysis primarily compared all the variables between tweets involving state-owned media and tweets not involving state owned media. This approach is acceptable but not ideal as it does not list state-owned media's postings into a separate group as in previous agenda-building studies. The previous approach to test agenda-building effect is often based on correlations, that is, correlations should be calculated between state-owned media and users interacting with state-owned media, and between state-owned media and the users who do not interact with state-owned media; this should then be followed by a Fisher r-to-z transformation to compare the strength of the two correlations (e.g., Zhang et al., 2017). The three-group comparison was not performed due to the limited number of state-owned media postings collected using API. If state-owned media postings were set as a separate group, it would introduce 1) an extremely imbalanced sample size across groups, which may jeopardize the statistical power, and 2) a lack of variance in the state-owned media group. Future studies should thus consider collecting a more comprehensive dataset to determine which comparison is more optimal in studying state-owned media social media engagement.

Future Studies

The current study paves the way for future research in agenda building, mediated public diplomacy, and social media research. Future agenda-building and agenda-setting research should move beyond the question of what factors make an information subsidy more effective in influencing the media agenda and expand its scope to examining different types of information intermediaries and how they could contribute to the agenda-building process. Of course, it does not mean to exclude mass media and information subsidies from agenda building study. When new forms of information intermediaries were identified, it is always being compared with traditional media as a reference point. Correspondingly, agenda building instruments other than information subsidies should be explored and tested as information subsidies may not be sufficient to explain the agenda building mechanism of some information intermediaries. Besides, research attention should be given to test the association between normative standard of discussion and the agenda building power. Furthermore, the same type of research should be applied to other agenda builders who takes the initiative to influence political controversies. Such as corporate in the context of consumer affairs. Lastly, the role of automated information sharing agencies like twitter bots should be explored in future studies.

Like agenda-building research, future studies on mediated public diplomacy research should examine potential mediators to reach out to foreign publics. In addition, given that state-owned media's agenda building efforts are effective but with limited range, other government and non-government organizations' agenda building influence should be studied. Network analysis can also be used to explore the interplay between different types of government agenda building agencies on the one hand and foreign

publics on the other hand. To apply the methodological innovation of the current study, future research should examine the difference between a big data-guided sampling strategy and a random sampling strategy as well as identify an appropriate context for each sampling method employed. Future studies should also consider time series modeling of Twitter network analysis.

At theory level, public relations in general is facing the trend that institutional power of influence is diluted by non-institutional actors who are more tightly connected. As such, future study should also examine how to incorporate network theory into public relations research in general. Kent, Sommerfeldtb and Safferc (2016) had previously explored this subject matter with the focus of relationship networks. They contended that the social network analysis in public relations research which primarily derived from the management literature is inherently unethical as it is manipulative. However, management perspective of relationship network is only one of many approaches to network analysis that could be used in the field of public relations. The information discussion network involved in the current network is very different from a relationship network described by Kent et al. (2016). It is constantly growing and dynamic. The semantic networks analyzed in the third-level agenda building is yet another type of network. As such, future studies should distinguish the different types of networks relevant to public relations research and explore how network theories could work with the relationship, reputation and information management roles of public relations. On that regard, network modeling informed by game theory (e.g. Jackson, 2008) should be adopted to study the formation and growth of networks.

Finally, the current study contributes to the enduring discussion of how public relations practice influence democracy. As shown in the current study, Twitter as a platform can overwrite users' agenda building effort by suspending accounts, promote trending topics, and create features that could moderate the discussion. To some extent, technology companies today have gatekeeping power comparable to or even stronger than what mass media once possessed. Future studies should explore the public affairs of social media platforms.

APPENDIX A
NETWORK ANALYSIS OUTPUT SAMPLES (From #Aleppo)

Data Set 11.11

Table A-1. Data Set 11.11 @RT_Com

In-Degree	Out-Degree	Betweenness Centrality	Closeness Centrality	Eigenvalue Centrality	Page Rank	Clustering Coefficient	Reciprocated Vertex Pair Ratio
11	0	6690.48	0.001	0.000	4.339	0.000	0.000

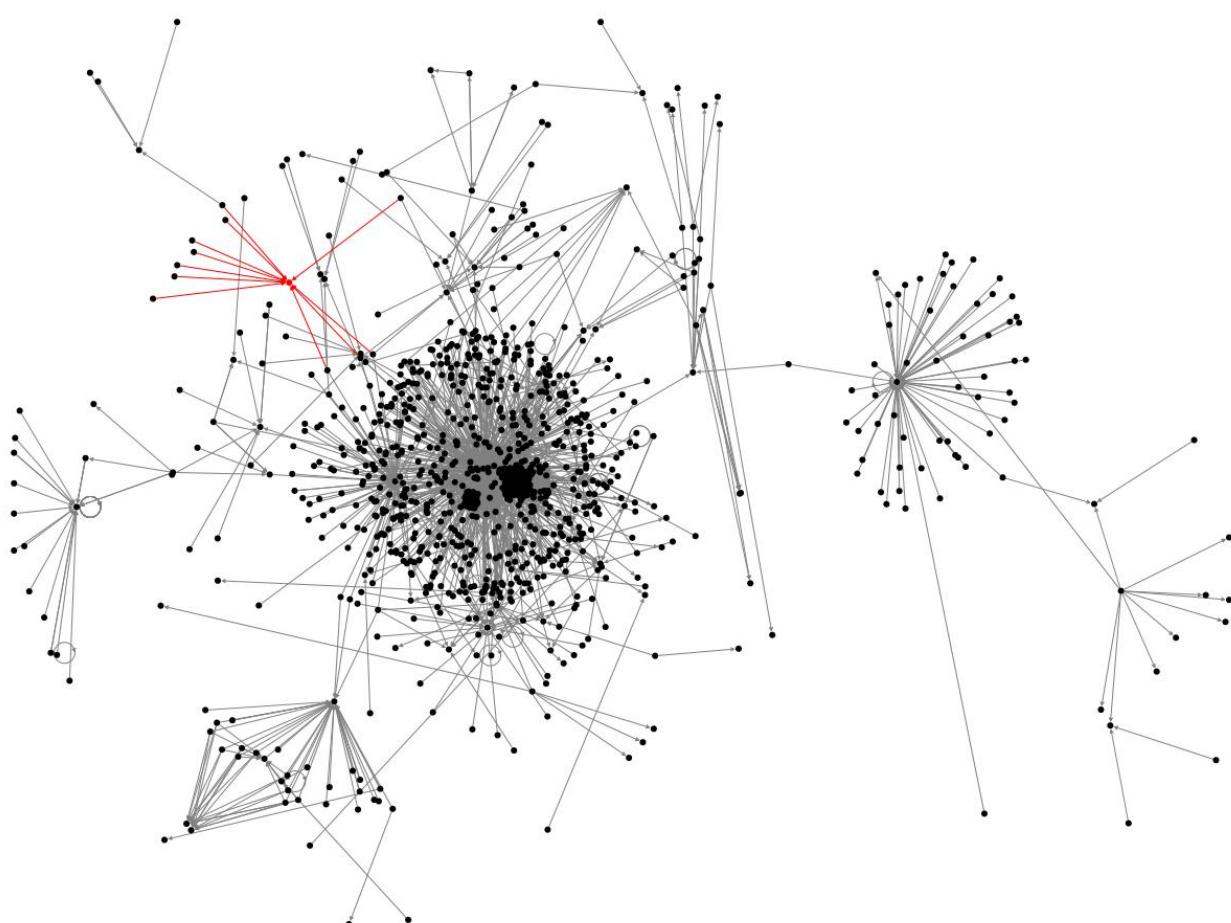


Figure A-1. Network Graphic Data Set 11.11 Highlighting @RT_Com

Data Set 11.12

There is no state-owned media presented in this dataset

Data Set 11.29 There is no state-owned media presented in this dataset

Data Set 12.27

Table A-2. Data Set 12.27 @RT_Com

In-Degree	Out-Degree	Betweenness Centrality	Closeness Centrality	Eigenvector Centrality	PageRank	Clustering Coefficient	Reciprocated Vertex Pair Ratio
2	0	2.000	0.500	0.000	1.459	0.000	0.000

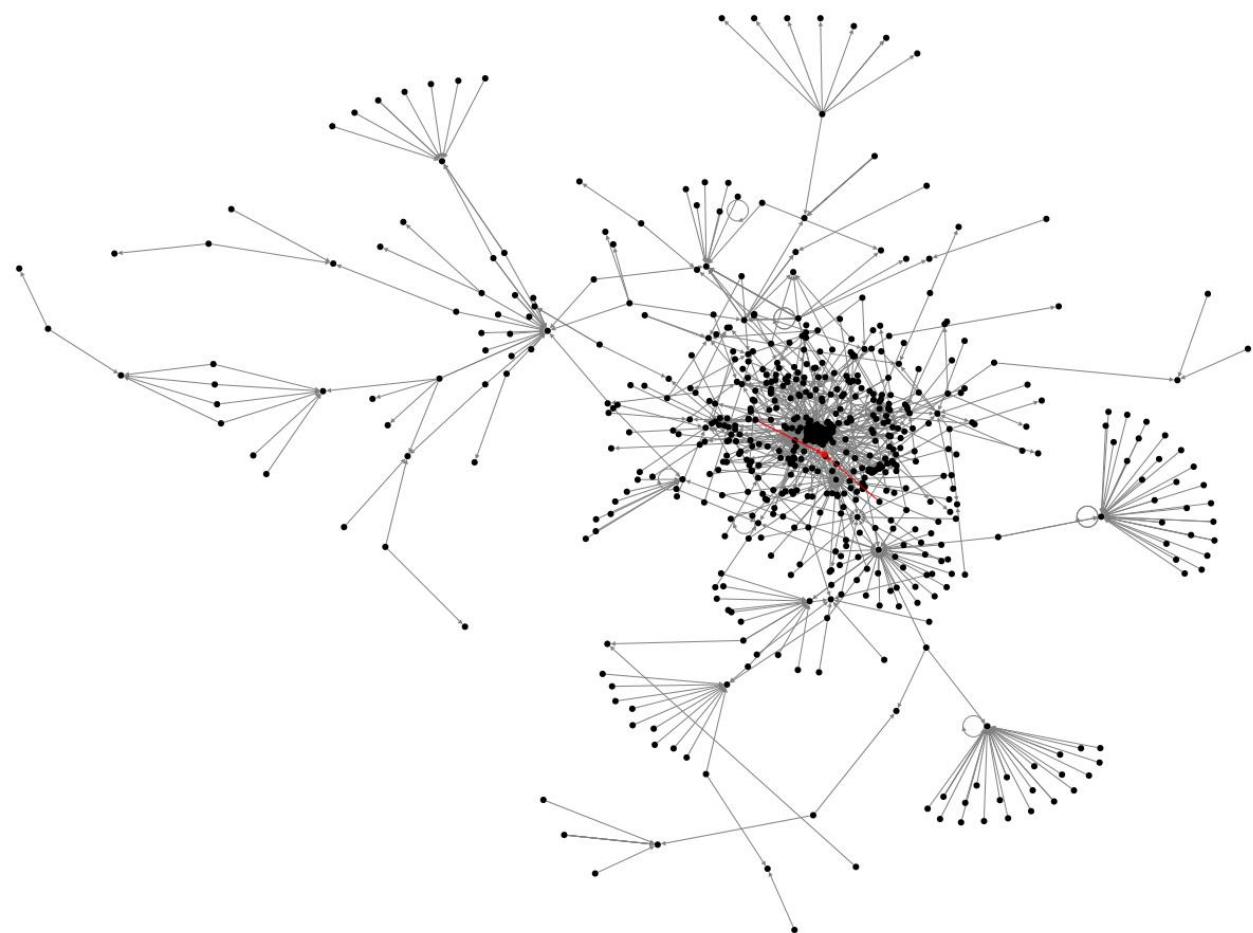


Figure A-2. Network Graphic Data Set 12.27 Highlighting @RT_Com

Table A-3. Data Set 12.27 @Ajenglish

In-Degree	Out-Degree	Betweenness Centrality	Closeness Centrality	Eigenvector Centrality	PageRank	Clustering Coefficient	Reciprocated Vertex Pair Ratio
3	0	3.000	0.200	0.000	1.230	0.000	0.000

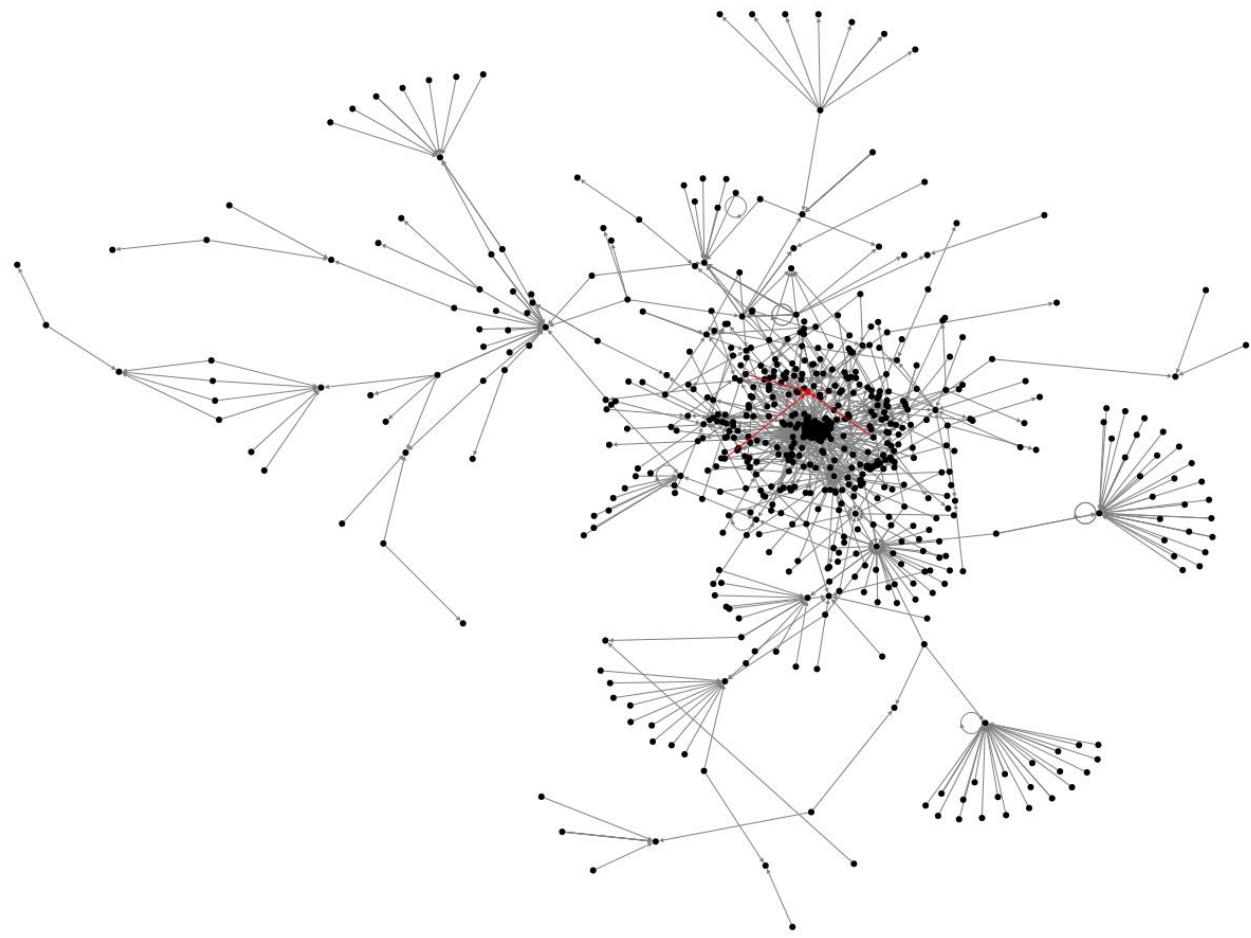


Figure A-3. Network Graphic Data Set 12.27 Highlighting @ajenglish

Data Set 1.2

Table A-4. Data set 1.2 @RT_com

In-Degree	Out-Degree	Betweenness Centrality	Closeness Centrality	Eigenvector Centrality	PageRank	Clustering Coefficient	Reciprocated Vertex Pair Ratio
3	0	7.000	0.200	0.000	1.471	0.000	0.000

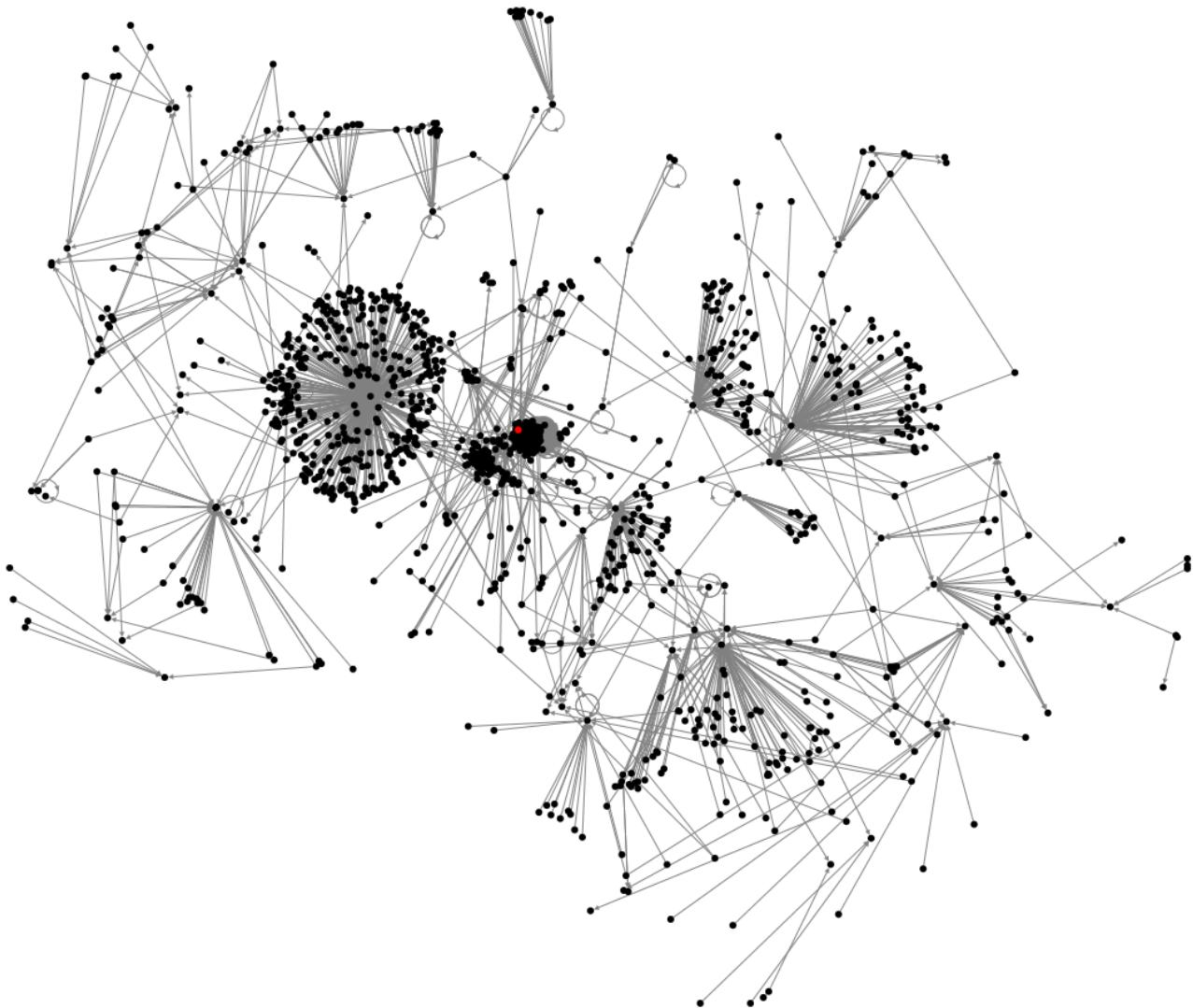


Figure A-4. Network Graphic Data Set 1.2 Highlighting @RT_com

Data Set 1.7

Table A-5. Data set 1.7 @Alarabiya_Eng

In-Degree	Out-Degree	Betweenness Centrality	Closeness Centrality	Eigenvector Centrality	PageRank	Clustering Coefficient	Reciprocated Vertex Pair Ratio
8	0	5568.956	0.000	0.000	2.752	0.000	0.000

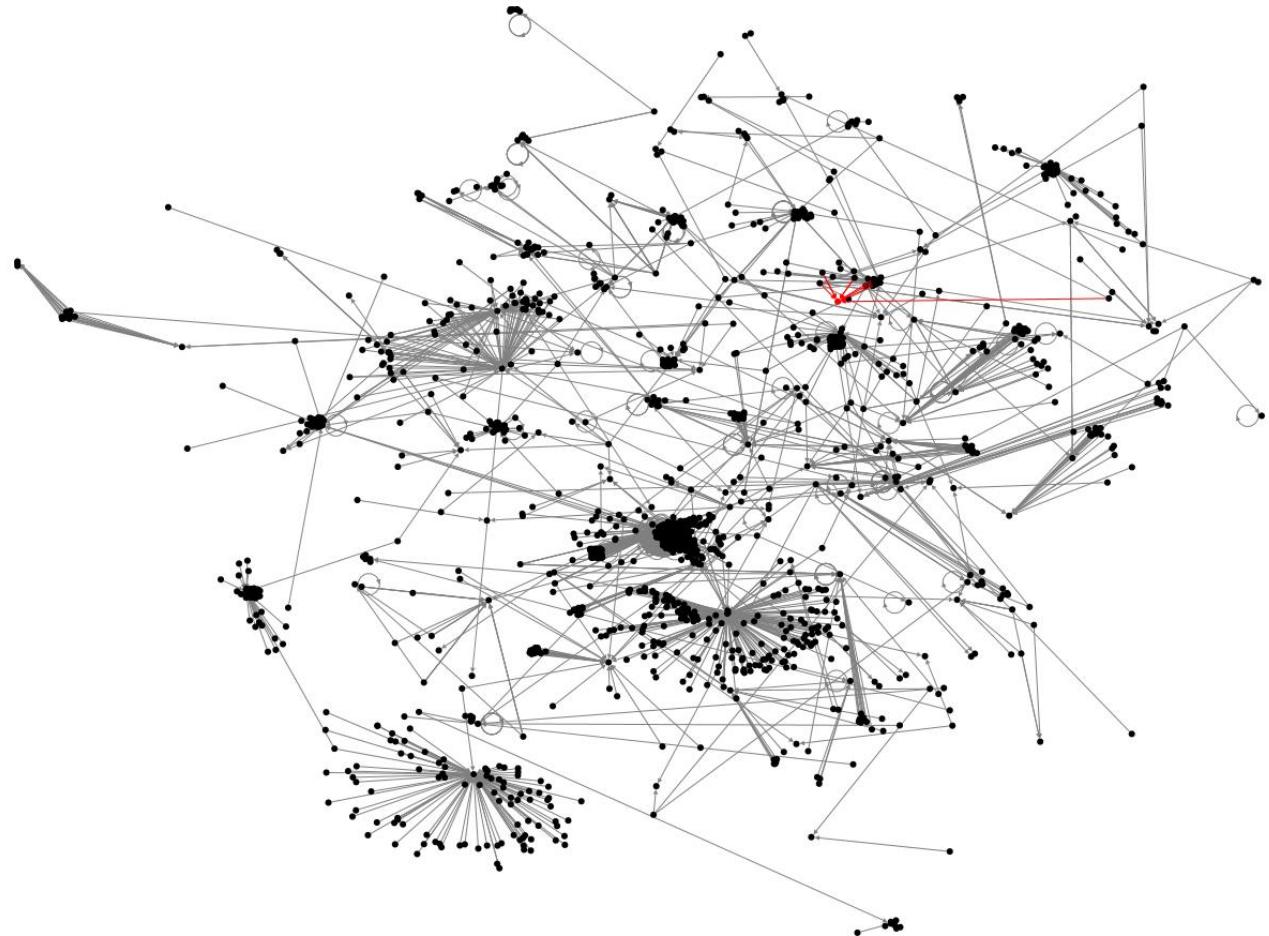


Figure A-5. Network Graphic Data Set 1.7 Highlighting @Alarabiya_Eng

Data Set 1.13

Table A-6. Data Set 1.13 @RT_com

In-Degre	Out-Degr	Betweenness	Closeness	Eigenvalue	PageRank	Clustering	Reciprocated
ee	ee	Centrality	Centrality	Centrality	ank	Coefficient	Vertex Pair Ratio
4	0	12.000	0.250	0.000	2.378	0.000	0.000



Figure A-6. Network Graphic Data Set 1.13 Highlighting @RT_Com

Data Set 1.19

Table A-7. Data Set 1.19 @RT_Com

In-Degree	Out-Degree	Betweenness Centrality	Closeness Centrality	Eigenvector Centrality	PageRank	Clustering Coefficient	Reciprocated Vertex Pair Ratio
5	0	54202.000	0.000	0.000	1.989	0.050	0.000

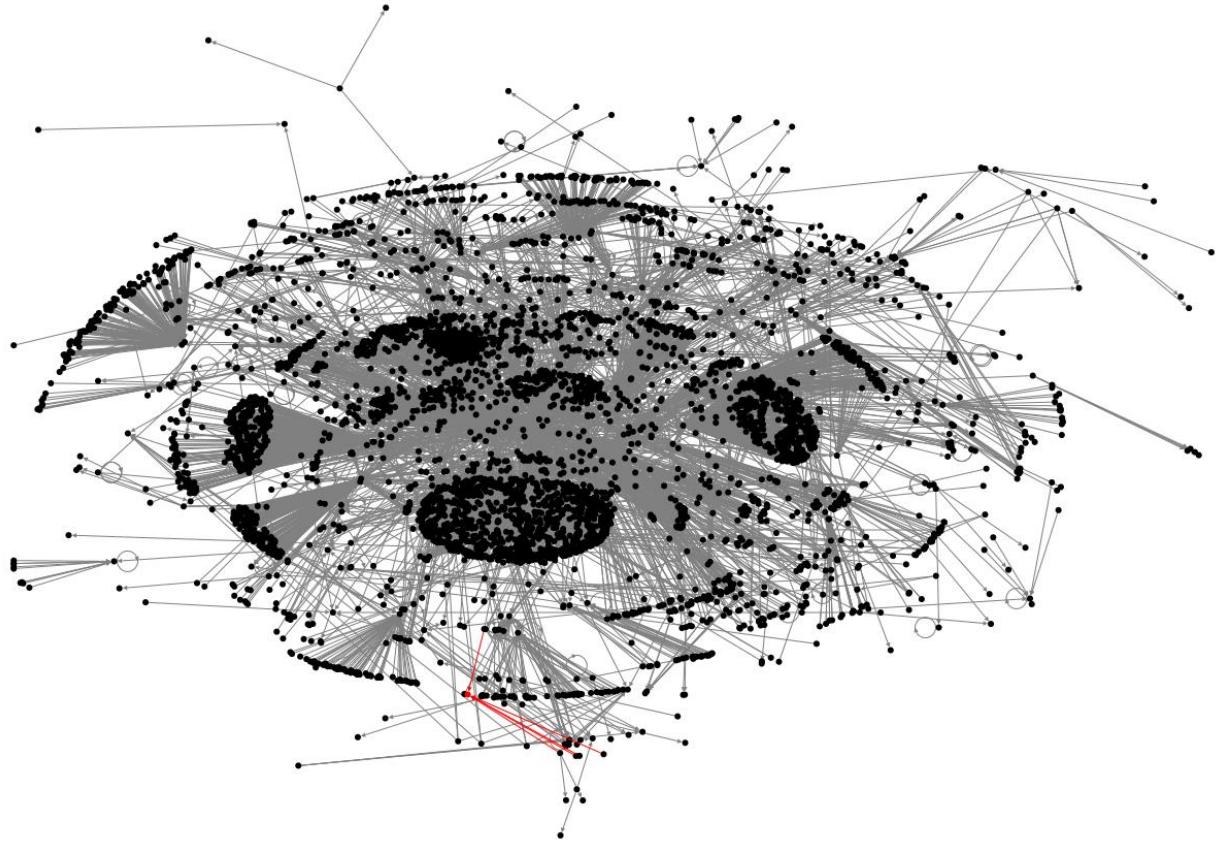


Figure A-7. Network Graphic Data Set 1.19 Highlighting @RT_Com

Table A-8. Data Set 1.19 @VOANews

In-Degr ee	Out-Degr ee	Betweenness Centrality	Closeness Centrality	Eigenvector Centrality	PageRank	Clustering Coefficient	Reciprocated Vertex Pair Ratio
0	1	0.000	0.000	0.000	0.540	0.000	0.000

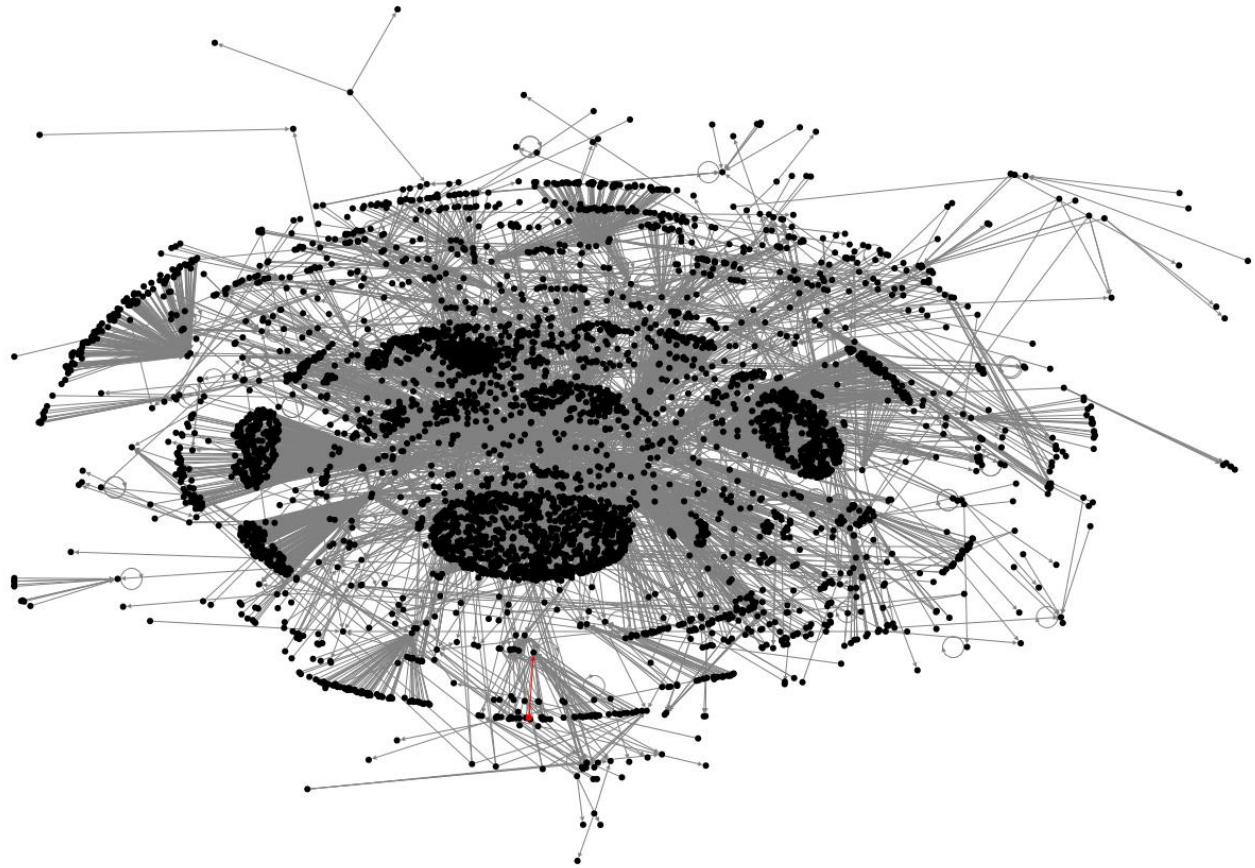


Figure A-8. Network Graphic Data Set 1.19 Highlighting @VOANEWS

Table A-9. Data Set 1.19 @XHnews

In-Degre	Out-Degr	Betweenness	Closeness	Eigenvalue	PageRank	Clustering	Reciprocated
ee	ee	Centrality	Centralit	Centralit	ank	Coefficie	ed Vertex
63	1	530293.	0.000	0.000	28.239	0.000	0.000
		823					

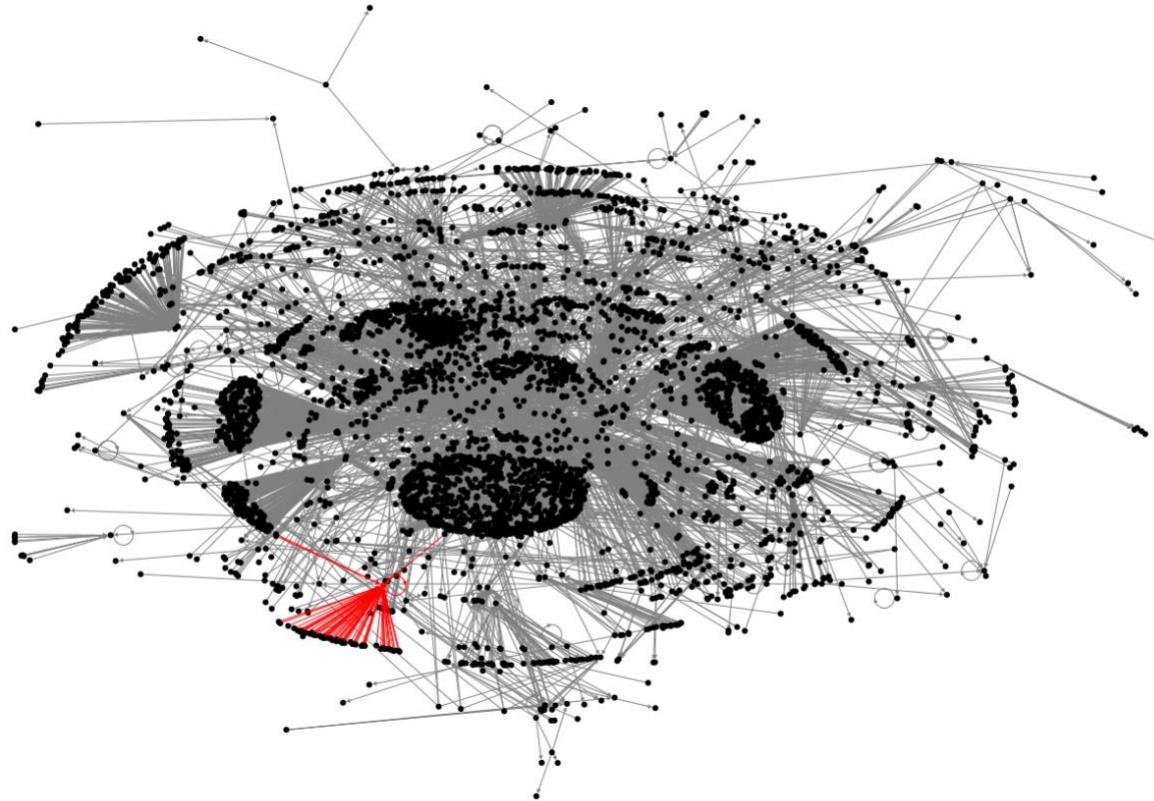


Figure A-9. Network Graphic Data Set 1.19 Highlighting @XHNews

Table A-10. Data Set 1.19 @Alarabiya_Eng

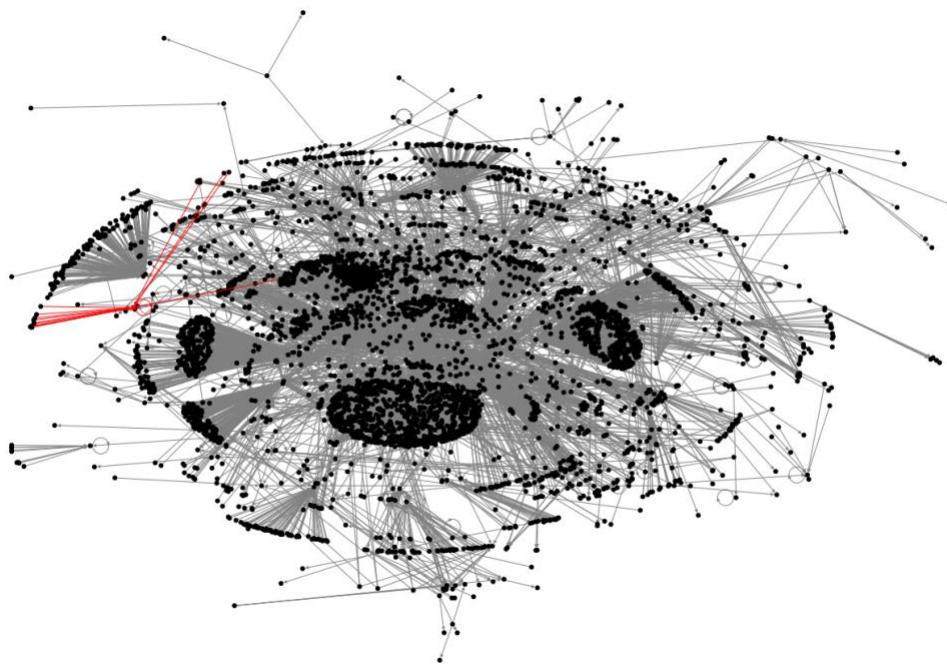


Figure A-10. Network Graphic Data Set 1.19 Highlighting @Alarabiya_Eng

Table A-11. Data Set 1.19 @BBCNews

In-Degr ee	Out-Degr ee	Betweenness Centrality	Closeness Centrality	Eigenvec tor Centrality	PageR ank	Clusterin g Coefficie nt	Reciprocate d Vertex Pair Ratio
56	0	157230.24	0.000	0.000	15.224	0.018	0.000

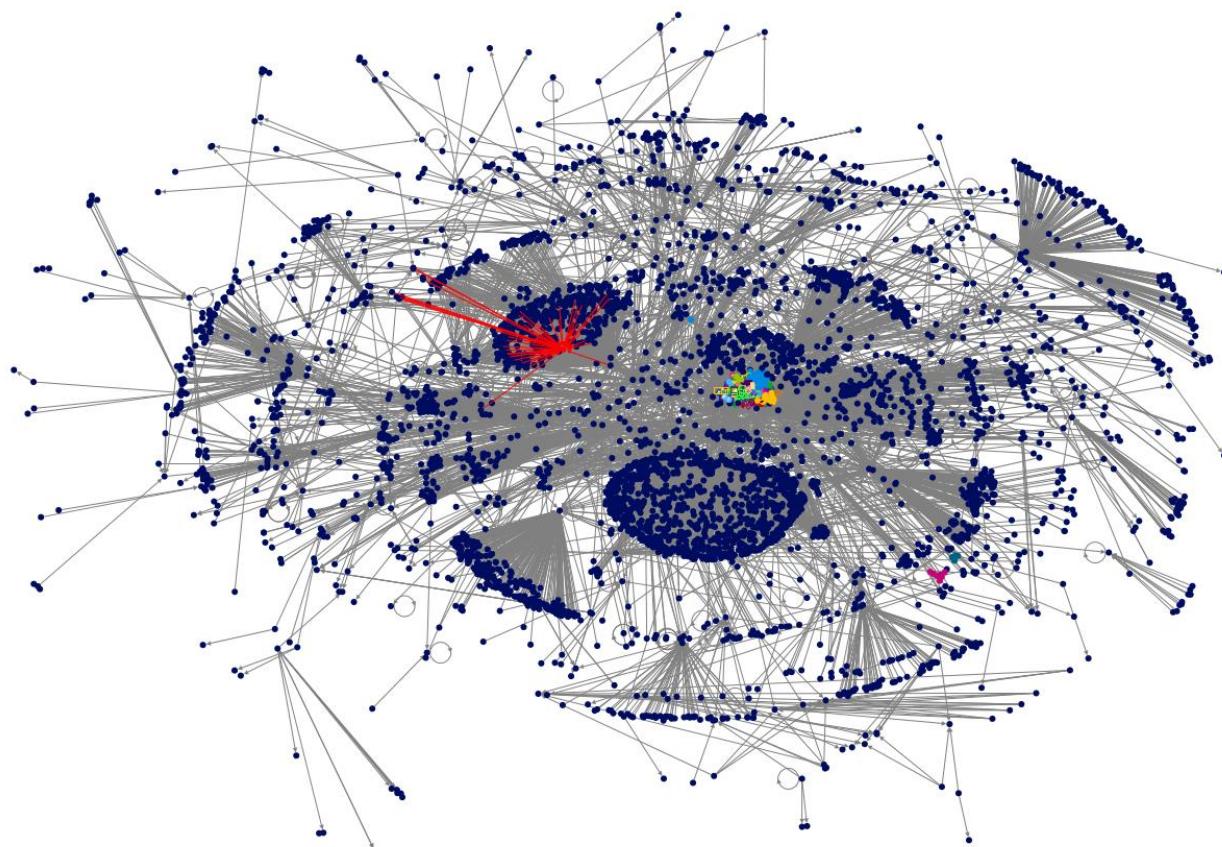


Figure A-11. Network Graphic Data Set 1.19 Highlighting @BBCNews

Table A-12. Data Set 1.19 @BBCWorld

In-Degr ee	Out-Degr ee	Betweenness Centrality	Closeness Centrality	Eigenvec tor Centrality	PageR ank	Clusterin g Coefficie nt	Reciprocate d Vertex Pair Ratio
14	0	66285.949	0.000	0.000	4.035	0.005	0.000

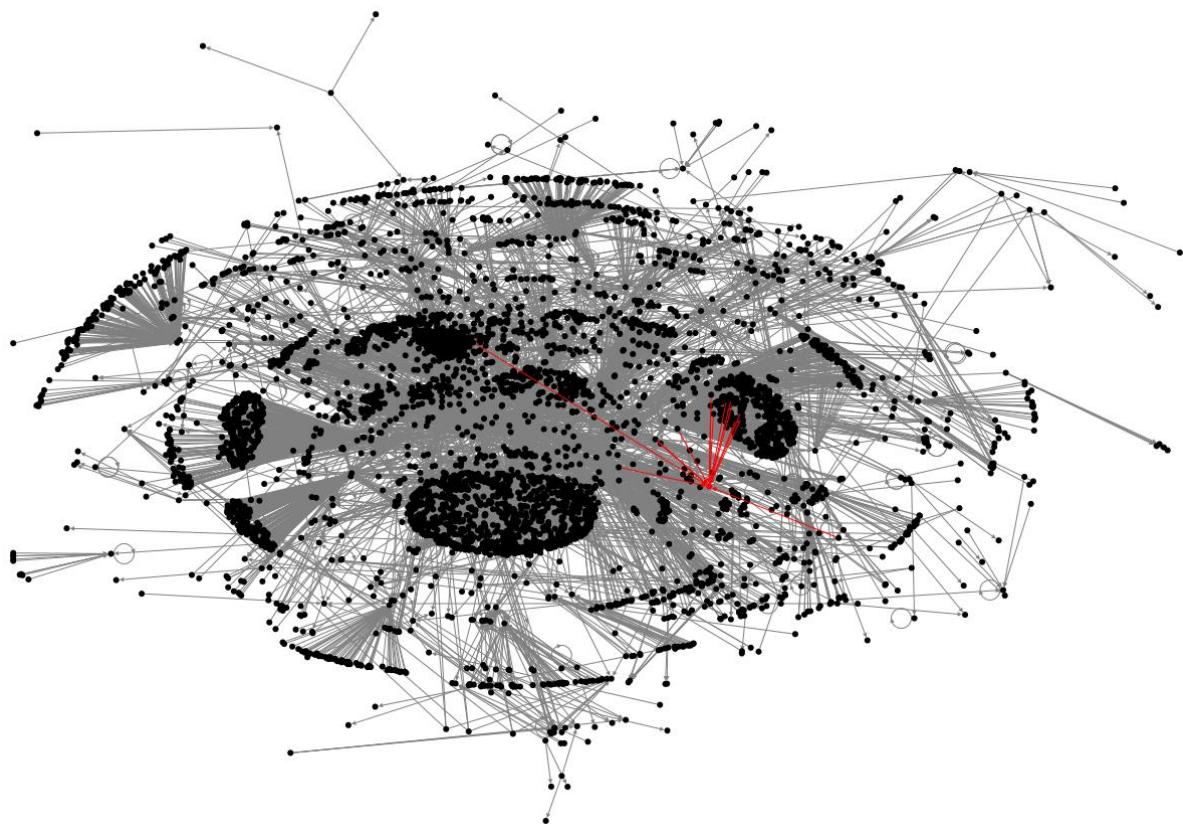


Figure A-12. Network Graphic Data Set 1.19 Highlighting @BBCWorld

Data Set 2.6

There is no state-owned media presented in this dataset.

APPENDIX B
CROSSTABS BETWEEN INTERACTION SOURCE COUNTRY AND STATE-OWNED MEDIA ACCOUNT

Table B-1. Crosstab between interaction source country and state-owned media account #Aleppo

	ajenglish	alarabiya	bbcnews	bbcworld	rt_com	voanews	xhnews	Total
Missing	1	8	14	6	14	0	30	73
Africa	0	0	0	0	0	0	1	1
Australia	0	0	0	1	1	0	1	3
Belgium	0	0	0	1	0	0	0	1
Brazil	0	1	0	0	0	0	0	1
Canada	0	0	0	0	2	0	1	3
China	0	0	0	0	0	0	1	1
Czech Republic	0	0	0	0	1	0	0	1
Dutch	0	0	0	0	0	0	1	1
Ecuador	0	1	0	0	0	0	0	1
Fiji	0	0	0	0	0	0	1	1
France	0	0	2	0	0	0	0	2
Germany	0	0	1	0	0	0	0	1
Ghana	0	0	0	0	0	0	1	1
Greece	0	0	0	0	0	0	1	1
India	0	0	1	1	1	0	2	5
Italy	0	0	0	0	0	0	1	1
Japan	0	0	0	0	1	0	0	1
Kenya	0	0	1	0	0	0	0	1
Kuwait	0	0	0	0	0	0	1	1

Table B-1. Continued.

	0	0	0	0	0	0	1	1
Mexico	0	0	0	0	0	0	0	2
Netherlands	0	2	0	0	0	0	0	2
Nigeria	0	1	0	0	0	0	2	3
Pakistan	0	1	0	0	0	0	1	2
Russia	0	0	0	0	1	0	2	3
South Africa	0	0	0	1	0	0	0	1
Sri Lanka	0	0	1	0	0	0	0	1
Thailand	0	0	0	0	0	0	1	1
Turkey	0	1	0	0	0	0	2	3
UAE	0	1	0	0	0	0	0	1
UK	1	0	14	1	1	0	0	17
Uruguay	0	0	0	1	0	0	0	1
USA	1	9	5	3	3	1	10	32
Total	3	25	39	15	25	1	61	169

Table B-2. Crosstab between interaction source country and state-owned media account #SouthChinaSea

	cctv	dnews	globaltimesnews	pdchina	rt_com	voanews	xhnews	Total
Missing	5	4	5	74	39	7	45	179
Argentina	0	0	0	0	1	0	0	1
australia	0	0	0	1	0	0	0	1
Australia	0	0	0	1	0	0	1	2
Bangladesh	0	0	1	1	0	0	1	3

Table B-2. Continued

	cctv	dwnews	globaltimesnews	pdchina	rt_com	voanews	xhnews	Total
Belgium	0	0	0	0	0	0	0	0
Brazil	0	0	0	2	0	0	0	2
Canada	0	0	0	2	1	2	0	5
China	2	0	8	10	1	0	6	27
Colombia	0	0	0	0	0	0	0	0
Costa Rica	0	0	0	0	0	0	0	0
Cuba	0	0	0	1	0	0	0	1
Cyprus	0	0	0	0	0	0	0	0
Denmark	0	0	0	0	0	0	2	2
Egypt	0	1	0	0	0	0	0	1
France	0	0	0	0	1	0	0	1
Germany	0	2	0	0	0	0	0	2
Greece	0	0	0	1	0	0	0	1
India	0	0	16	4	1	1	4	26
Indonesia	0	0	0	0	0	0	0	0
Ireland	0	0	0	0	0	0	1	1
Italy	0	0	0	1	0	1	0	2
Japan	0	0	0	0	4	1	0	5
Kenya	0	0	0	0	0	0	0	0
Luxembourg	0	0	0	0	0	0	0	0
Malaysia	0	0	0	0	0	0	0	0
Mexico	0	0	0	0	0	0	1	1
Monaco	0	0	0	0	0	0	0	0

Table B-2. Continued

	cctv	dnews	globaltimesnews	pdchina	rt_com	voanews	xhnews	Total
Myanmar	0	0	0	1	0	0	0	1
Nepal	0	0	0	3	0	0	0	3
New Zealand	0	0	0	0	0	2	0	2
Nigeria	0	0	0	1	0	0	0	1
Pakistan	0	0	0	4	0	0	1	5
Philippines	0	0	0	1	0	0	0	1
Portugal	0	0	0	0	0	0	0	0
Russia	0	0	0	2	3	0	0	5
Singapore	0	0	0	0	0	0	0	0
Sri Lanka	0	0	0	0	0	0	0	0
Sweden	0	0	0	0	0	0	0	0
Taiwan	0	0	0	0	0	1	0	1
Thailand	0	0	0	1	0	0	0	1
Netherlands	0	0	1	0	0	0	0	1
Turkey	0	0	0	0	0	0	0	0
UK	0	0	0	4	0	0	0	4
USA	1	2	2	17	7	9	6	44
Venezuela	0	0	1	0	0	0	0	1
Vietnam	0	0	0	0	0	0	1	1
Total	8	9	34	132	58	24	69	334

Table B-3. Crosstab between interaction source country and state-owned media account #TPP

	dwnews	globaltimesnews	rt_com	xhnews	Total
Missing	2	1	2	62	67
Argentina	0	0	0	1	1
Australia	1	0	0	1	2
Brasil	0	1	0	1	2
Brussels	0	0	0	1	1
China	0	4	0	2	6
Germany	1	0	0	0	1
Greece	1	0	0	0	1
India	0	0	0	2	2
Japan	0	1	0	0	1
Malaysia	0	0	0	1	1
Romania	1	0	0	0	1
South Korea	0	1	0	0	1
Switzerland	1	0	0	0	1
Thailand	0	0	0	2	2
USA	3	0	1	1	5
Total	10	8	3	74	95

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