SEEKING OPINION LEADERS ON TWITTER: THE #DELETEFACEBOOK CAMPAIGN

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Abstract - In the wake of the Cambridge Analytica scandal, some opinion leaders show their public and personal motive to call for action against Facebook on the Twitter network. This study analyzes the #deletefacebook campaign, seeking opinion leaders who initiate and popularize it on Twitter. By using NodeXL, this study visualizes and identifies the procedures of how a Twitter campaign goes viral by influential people on Twitter.

Index Terms - Cambridge Analytica, #deletefacebook, Opinion Leaders, Twitter

I. INTRODUCTION

Since its launch of 2006, Twitter has gone through some tough times against emerging new social media sites such as Snapchat and Instagram, while Facebook has gained steady and strong momentum to become the top social media site. Twitter's user base in the United States declined to 68 million from 70 million in 2016, due to Facebook's strategic decision and operation to strengthen the news feed (Fiegerman, 2017). However, Twitter showed strong performance as an online forum for news and political activity in the United States in 2017.

President Donald Trump centered on the rejuvenation of the social network with his controversial tweet storms. Facebook was dragged into a political storm since President Trump took office because of the evidence of ad spending related to fake Russian Facebook accounts that could have interfered the electoral process of U.S. presidential election of 2016 (Heath, 2017). The debate to hold Facebook responsible for mishandling of information and accounts spread through Twitter, but no actual action was taken despite the fact that the pressure on Facebook for securing private user information has built for years.

The scandal was exposed by a whistleblower who used to work for a company named Cambridge Analytica, which collected data over 50 million Facebook users and used the data to target messages to voters. The scandal led to a Twitter trending of #DeleteFacebook in March 2018. In the wake of the scandal, this study outlines who sparks the trending and what makes online advocates and advocacy groups through Twitter advance ideas that lead to a social campaign. From a public relations perspective, this study searches for explanations of the effects of a Twitter campaign in relation to online opinion leaders who act as advocates.

II. LITERATURE REVIEW

A. Cambridge Analytica

U.K.-based Strategic Communication Laboratories Group (SCL) founded Cambridge Analytica as its U.S. arm for political and public relations operations. Former White House Chief Strategist Steve Bannon and conservative mega-donors Rebekah and Robert Mercer were founding members of Cambridge Analytica (Chang, 2018). Cambridge Analytica was hired by Donald Trump's presidential campaign, and employees at the firm ran the gamut of campaign work, including "managing media relations as well as fundraising, planning events, and providing communications strategy and talking points, speeches, debate prep" (Timberg & Hamburger, 2018, para. 7). The campaign was named as Project Ripon, in which "Cambridge Analytica would advise American campaigns on how to use data to find 'hidden Republicans'" (para. 20). One alleged unethical issue of using the Facebook data for the campaign was that Facebook, with 68 percent of American adults using it, was used as a social media platform by the foreign company to spread political propaganda as a weapon of psychological warfare (Vaidhyanathan, 2018).

B. Social Network Analysis (SNA) and Twitter opinion leaders

The term social network is defined as "the articulation of a social relationship, ascribed or achieved, among individuals, families, households, villages, communities, regions, and so on" (Bandyopadhyay, Rao, & Sinha, 2011, p.1). In order for researchers to analyze social network, conceptual and practical elements of social network were introduced such as digraph diagrams (graphs if the relationship has no direction), a vertex or node (a unit for a digraph), arc (a tie with a direction), and edge (a tie without direction). Using such elements of social network, researchers have developed "various characteristics of the pattern of distribution of relational ties" and drawn

"inferences about the network as a whole or about those belonging to it considered individually or in groups" (p. 3-4). Based on the development, Horng, Liao, and Wang (2017) conceptualized social network analysis (SNA) as the process of investigating social structures through the use of networks and graphs. SNA has been widely utilized in various fields, including sociology, anthropology and political science to address different issues under a specific network circumstance (Zheng et al, 2016).

Previous studies from the social science perspective utilized SNA to investigate the informal relational links of social group identify of individuals in terms of group membership and social interactions (Yun, et al., 2015; Jones, 2015; Choi, Sang, & Park, 2014). More recently, researchers began to apply SNA to study patterns between relations of a variety of social structures, mainly including the data gathered from social media. For example, Kim and Hastak (2018) used SNA for Twitter and Facebook to explore a critical role in disaster management of propagating emergency information to a disaster-affected community, and argued that social networks consisted of the entities of individuals and organizations in the social media community. Twitter can be a useful barometer of the reach of an ongoing event or real-time issue, and it could be "the foremost social network for real-time reaching and for the monitoring other's reactions" (Miller & Behm- Morawitz, 2017, p. 142). In other words, Twitter is commonly known by experts as the leader in creating and spreading public opinions in the digital world.

An opinion leader refers to a person whose opinions about a product or an issue have a big influence on the opinions of others (Cambridge Dictionary). He or she tends to possess particular characteristics, "such as high social status, wide social networks, and they are highly engaged in civic affairs" (Park & Kaye, 2106, p. 174). As Twitter is a convenient and strategic tool for opinion leaders to spread their short messages with their own commentary posts in brevity, Twitter posts are publicly viewed and responded, providing a vibrant forum for public opinions. The concept of opinion leader in the Twitter or even social media community is still being developed and widely under-researched. Park and Kaye (2016) argued that it was not certain whether the original concept of opinion leaders would hold true in the Twitter community.

However, Twitter opinion leaders tend to play a role as a new type of agenda setter, without being constrained by social, economic, or political standings (Park & Kaye, 2106). In an effort to fill the conceptual gap between traditional opinion leaders and Twitter opinion leaders, Stamatiou et al. (2008) pointed out that opinion leaders on Twitter may well be based on existing offline status, such as reputation and established networks.

C. #DeleteFacebook movement and theoretical framework for information flow

When the Cambridge Analytica scandal was first exposed by the New York Times on March 17, 2018, Federal regulators and state prosecutors were opening investigations into Facebook. The main issue of the investigation was about the breach that allowed Cambridge Analytica to exploit the private social media activity of a huge swath of the American electorate for Trump's campaign in 2016 (Rosenberg, Confessore, & Cadwalladr, 2018). As a result, investors asking whether Facebook had mishandled users' data had cut the value of the social networking giant by about $50 billion in the past two days of the launch of the investigation. The lucrative business model for Facebook to make profits is to sell advertisements based on its users' ages, interests and other details. Amid the scandal, the debate for regulating social media companies to protect their users' personal information has gained public momentum at the time of this writing. In a similar vein, the hashtag #DeleteFacebook was trending on Twitter on March 21 (Gilbert, 2018). Although a popular method on Twitter for drawing public and media attention is the use of hashtags – keywords accompanied by the symbol of # (Thorson et al., 2016), most hashtags failed to get into a public sphere of popularity as very few were able to muster substantial public attention to their causes on Twitter.

The process of Twitter opinion leaders' involvement in a campaign can be explained by the theory of two-step flow (Katz & Lazarsfeld, 1955). This theory posits that information from the mass media moves in two distinct stages: First, opinion leaders pay close attention to social issues and national affairs which are reported by the mass media; and second, they pass their own interpretations of such issues and affairs to the public, in addition to the actual media content. The theory explains the process of how opinion leaders become influencers on particular issues, in which the mass media reported to the public. The theory also refines the ability to predict the influence of opinion leaders' messages on the behavior of message receivers, and it clarifies why certain campaigns may have failed or succeeded in terms of altering the public's behavior in response to the manufactured messages on the social issue. Although the theory received some criticism of an oversimplification of opinion leaders and their influence on the public (Robinson, 1976; Domingos & Richardson, 2001), it visualizes the flow of media messages from the mass media to opinion leaders who lead the messages to lesser active users in public sphere. For example, Pang

and Ng (2017) supported the theory after investigating online social influence and followers/following ratio. They found that information on Twitter flowed to the masses from opinion leaders. In a nut shell, opinion leaders are selective, and their messages are more likely to be consumed by a particular group of the followers who seek personally favored information, especially in the Twitter environment.

Departing from the campaign of #DeleteFacbook, Twitter opinion leaders, social network analysis (SNA), the following four research questions were posed:

RQ1. Who were the opinion leaders on Twitter about the campaign against Face book after the Cambridge Analytica scandal?
RQ 2. Who were the followers to support or oppose the opinion leaders?
RQ 3. How did the #DeleteFacebook campaign gain momentum to grab the media and public attention?

III. METHOD

Twitter mentions for #DeletFacebook culminated on March 22 with 126,000 tweets during the height of the Cambridge Analytica scandal, which sparked tremendous online outrage with the hashtag's trending on Twitter (Eule, 2018). It was the moment for the #DeleteFacebook hashtag to turn into a full-blown pressure campaign. This study used Twitter public data streams to collect data from 9:00 P.M. to 11:59 P.M. on March 23. The specific time frame was chosen because mainstream media such as CBS News, CNN, and the New York Times recognized the campaign as going viral in their online edition articles (see Gibson, 2018; Wattles, 2018; Bowles, 2018).

Using Twitter data streams in investigating communication phenomena is advantageous since the system supports the unlimited amount of users' information sharing about ongoing issues or campaigns at any moment (Yeo, Knox, & Jung, 2017). Another advantage of using data on Twitter is the clarification and confirmation of users' actions and opinions about immediate social issues. For this study, Twitter's application programming interface (API), embedded in NodeXL, was used to download data for #DeleteFacebook, and the maximum number of data was set for 2,000 users per the hashtag due to several technical limitations in collecting data from the API. After the data collection was completed, this study analyzed user data from Twitter, including the elements of "following," "mention," and "retweet" to identify the opinion leaders and followers of #DeleteFacebook. The # symbol was included since it not only coordinates public awareness on the news, but also represents a particular emerging social issue. In addition, the hashtag symbol is a favorite device for opinion leaders to spread their messages. The hashtag #MeToo after the Harvey Weinstein scandal of 2017 is a representative example of the power of the # symbol.

This study also used a cluster analysis, using the Clauset-Newman-Moore cluster algorithm to identify sub-group structures. The algorithm was designed to visualize more connections with one another than expected in a random model (Yeo, Knox & Jung, 2017). The pattern of cluster connections provides insightful information into understanding a structure for the #DeleteFacebook campaign. The algorithm also identified each sub-group opinion leaders who happened to be followers of the opinion leaders of the campaign. Hence, similarities and differences of opinion leaders were identified within and across clusters of sub-groups, in which this study aimed to examine the network structure of campaign discussions from the two-step information flow perspective. Opinion leaders and sub-group leaders with regard to the #DeleteFacebook campaign could be considered as a vehicle for disseminating personized opinions on use of Facebook. As a result, this study provided an empirical analysis of the effects of opinion leaders and network information flows on the #DeleteFacebook campaign.

IV. RESULTS

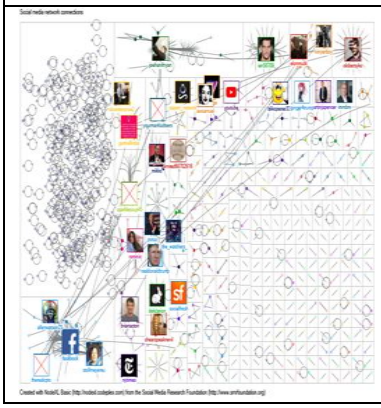
This study focused on the Twitter analysis over that of other social media sites such as Facebook, Instagram, and Snapchat. The reason was Twitter specializes in breaking news, and political and social issues, compared to other social media sites, which are used more for connecting with a variety of people in their lives such as close friends, colleagues, and acquaintances. To identify opinion leaders on the issue of deleting Facebook accounts, the in-degree centrality of all users in the network was measured out of 2,000 tweets. Among the tweets, a total of 1,632 Twitter nodes and 3,024 connections were identified from those individual accounts. It indicated that some of the users tweeted more than once about the hashtag. Table 1 shows the TOP 32 highest in-degree accounts with the incoming connections (follower scores over 5).

Table 1. Influencers Discussing #DeleteFacebook

No.	Twitter ID	The number of times the user had the highest in-degree score	Occupation
1	brianacton	86	Entrepreneur
2	facebook	85	Social Media
3	elonmusk	84	Entrepreneur
4	joehanifnyan	81	Blogger
5	ian56789	33	Blogger
6	olobersyko	32	Musician
7	sparklesoup45	30	Commentator
8	stollmeyereu	29	Business
9	gartrelllinda	18	Commentator
10	rominic	17	Advocate
11	nytimes	16	News Agency
12	yourmarklubbers	14	Commentator
13	dekdarion	13	Advocate
14	mikko	12	Commentator
15	allenwatson23	12	Advocate
16	sapien_network	9	News Agency
17	realdonaldtrump	9	President
18	potus	9	President
19	therealcpto	8	Advocate
20	_the_watchers_	8	Advocate
21	verge	8	Online Tech News
22	awsamuel	8	Advocate
23	chearspeaknevil	7	Advocate
24	martinjspencer	7	Blogger
25	blikopener333	7	Business
26	ginger4trump	7	Advocate
27	idicenterprise2	7	Soldier (ret.)
28	immbm	7	Business
29	limited66702616	7	Business
30	kinyanboy	6	Entrepreneur
31	socialfresh	6	Advocate
32	youtube	6	Social Media

As the in-degree score identifies the user who gets prominent attention by interacting with his, her, or its audience one-on-one, Whats app founder Brian Acton's node got interacted most about Twitter discussion of #DeleteFacebook, followed by Facebook itself, and Elon Musk who is the founder of SpaceX and Tesla. Fourth and fifth were taken by online bloggers outside the United States: Malaysia and United Kingdom respectively. Commentators such as sparklesoup45, gartrelllinda, and yourmarklubbers showed their conservative attitudes with a Twitter profile such as "Proud #Trump supporter." President Trump's two Twitter accounts ranked 17th and 18th. Advocates came from a wide range of fields such as religion, political affiliation, human rights, and social activism. Only the New York Times was ranked one of the opinion leaders on the hashtag #DeleteFacebook as a traditional media outlet. Based on the in-degree results, this study found that tech people, entrepreneurs, and political commentators functioned as opinion leaders about the campaign. Therefore, the RQ 1 is answered.

In order for this study to answer the RQ2, the Harel-Koren Fast Multiscale algorithm was performed, and it provided two layout options: (1) Each of the graph's groups in its own box and (2) The entire graph in the entire graph pane (see Figure 1).
[2] Figure 1. The visualization of Twitter networks by layouts

Layout by Twitter Groups	Layout by Entire Twitter Pane
	

The Top 32 opinion leaders on the #DeleteFacebook campaign were visualized with the two graph algorithms. Brain Acton and Elon Musk as powerful opinion leaders were identified as proponents for the campaign, and they ended up deleting their Facebook accounts. Layout by Twitter Groups demonstrated that some opinion leaders are only connected with inner groups. For example, President Trump had an affiliation with conservative Twitter opinion leaders in the Twitter group layout. Conservative political advocates "_the_watchers_" and "rominic" were in the group of Twitter nodes. Even though the president never tweeted about the campaign, his inner group Twitter accounts were in favor of deleting their Facebook accounts. They tweeted and liked an online news article, titled as "Dumb F–ks: Julian Assange Reminds Us What Mark Zuckerberg Thinks Of Facebook Users" to condemn the social media giant's mishandling of personal information.

The Facebook node were interacted with three major opinion leaders' Twitter accounts, including "stollmeyereu," "allenwatson23," and "therealcpto," who advocated the campaign. For example, "stollmeyereu" tweeted, "I am preparing to #DeleteFacebook -- and I'm not the only one." It is worth noting that the #DeleteFacebook campaign uniquely stands out against other previous Twitter campaigns in terms of having both sides of opponents and proponents. For instance, after the mass shooting in a Florida high school in February 2018, the #BoycottNRA campaign on Twitter received heavy attention for the media and public. The campaign had both supporters of boycotting NRA sponsored corporations and critics of the campaign who vowed to purchase more of the products and services of the corporations on Twitter. In contrast, the #DeleteFacebook campaign received little resistance in the Twitter community. Thus, RQ 2 was answered regarding both sides of proponents and opponents.

RQ 3 asked how the campaign received national attention. There were two important figures who shed light on #DeleteFacebook: Brian Acton and Elon Musk. Soon after revelations that Cambridge Analytica harvested personal details of over 50 million Facebook user accounts to sway public opinion, Brian Acton, WhatsApp Co-founder, Wednesday called for people to "#deletefacebook" on March 20 (see Figure 2). After Acton's tweet, the hashtag #DeleteFacebook was trending (Gilbert, 2018), and the media and public fully became to recognize it as a campaign because of Elon Musk's reaction to Acton's tweet. Musk replied to Acton, tweeting, "What's Facebook?" on Twitter on March 23. Musk also announced he would delete the SpaceX and Tesla Facebook pages after asked to delete the pages as well. Musk replied that he "didn't realize" the Space X had a Facebook page, and declared the Tesla Facebook page "lame anyway."

DISCUSSION

Opinion leaders have some characteristics in social media. Winter and Neubaum (2016) argued that political interest and personality strength served as significant predictors of perceived opinion leadership. Opinion leaders in the social media environment like to initiate political debates and raise special awareness of social issues in a form of self-motivation. Based on the results of this study, the characteristics for opinion leaders in social media are comparable with what political interest and personality strength Elon Musk and Brian Acton had when they were tweeting. They both are multi-millionaires and have strong interests in new technology and entrepreneurship. More important, they both deal with top-security information issues every day at work with their technology companies. When it comes to the #DeleteFacebook campaign, they had the characteristics of becoming the opinion leaders who acknowledged the seriousness of the Cambridge

Analytica scandal. In a similar way, political commentators and advocates were also actively involved in the loop of opinion leadership on Twitter. As noted in the results section, it is important to note that regardless of political affiliation, most opinion leaders expressed harsh disapproval of the mishandling of private information by Facebook.

Another characteristic of opinion leaders in social media is the pronounced role of self-presentational motives on a personal level (Winter & Neubaum 2016). In other words, personal motives can inspire powerful individuals to be opinion leaders. In the case of the #DeleteFacebook campaign, Brian Acton and Elon Musk turned out to have personal motives for getting involved in the campaign. For Acton, he applied for a job at Facebook in 2009 and got turned away. He tweeted about his rejection Twitter at the time (see Figure 3). After the rejection, Acton co-founded WhatsApp that allows users to send and receive free short message service (SMS) and multimedia messaging service (MMS) on smartphones without ads. The app became a huge success, and Facebook acquired it for US$19 billion in 2014. Acton left the company. For Musk, a more personal motive against Facebook CEO Mark Zuckerberg triggered his involvement in the #DeleteFacebook campaign as they sparred in the past. In 2016, a SpaceX rocket exploded on the launch pad, destroying an expensive satellite that Facebook wanted to use to spread internet connectivity in Africa. Zuckerberg wrote on Facebook that he was "deeply disappointed to hear that SpaceX's launch failure destroyed our satellite."

In 2017, they had another public feud over artificial intelligence (AI). Zuckerberg shared his optimism over the rise of AI technologies in a Facebook Live broadcast, and criticized naysayers who said AI would cause "doomsday scenarios," commented by Musk at a public event. Musk retorted by tweeting that Zuckerberg's understanding of AI was limited (see Figure 2).

[3] Figure 2. Motives of Acton and Musk to be part of the #DeleteFacebook campaign



In response to the campaign, Facebook got itself into a crisis management mode. Zuckerberg on March 25 took out full-page ads in several newspapers, apologizing for a breach of trust in the Cambridge Analytica scandal. The ads said, "This was a breach of trust, and I'm sorry we didn't do more at the time. We have a responsibility to protect your information. If we can't, we don't deserve it … I promise to do better for you." This study focused on seeking who and what were the main engine for the #DeleteFacebook campaign on Twitter. The results show the opinion leaders, who were strongly engaged with personal and political interests in Facebook's data breach, invigorated the campaign, backed by the mass media's heavy coverage of the scandal. The campaign raised awareness, popularity, and action within the specific period of time. However, it is not certain whether the campaign would become a movement or end up a temporary move. Even though most Twitter users in this study condemned Facebook and declared to delete their Facebook accounts, there is no accurate statistical data of how many people have acted on the message of the campaign. Moreover, people around the world hardly abandon their extensive archive of treasures moments as Facebook is "a digital lifeline to family and friends" (USA Today, 2018, para. 1). Guynn (2018) argued that instead of deleting Facebook, some people would toy with a social media sabbatical or social media detox.

CONCLUSION

It is important to acknowledge some limitations to this study. As with most Twitter campaign studies attempted to evaluate effectiveness and measure outcomes, it is difficult to produce final assessments of success or failure for the campaign: How has the DeleteFacebook campaign been successful in what measure?; and What kind of social and political impacts the campaign could generate for society? A stronger test of measurement would be to execute a comprehensive longitudinal research design. In the wake of the Cambridge Analytica scandal, the campaign received a series of attention and debates in the world, but this study used only little part of data sets on Twitter to investigate it. Although the findings would be instructive to future researchers who are interested in studying opinion leaders' influence and

their motivational differences in social media, a further investigation of empirical measures for opinion leaders' impacts on social media will help to advance our discovery of the dynamics of social media opinion leaders.

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