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A Structured Mechanism for Identifying Political Influencers on Social Media Platforms: Top 10 Saudi Political Twitter Users

Ahmad Alsolami, Darren Mundy, Manuel Hernandez-Perez

Abstract—Social media networks, such as Twitter, offer the perfect opportunity to either positively or negatively affect political attitudes on large audiences. The existence of influential users who have developed a reputation for their knowledge and experience of specific topics is a major factor contributing to this impact. Therefore, knowledge of the mechanisms to identify influential users on social media is vital for understanding their effect on their audience. The concept of the influential user is related to the concept of opinion leaders' to indicate that ideas first flow from mass media to opinion leaders and then to the rest of the population. Hence, the objective of this research was to provide reliable and accurate structural mechanisms to identify influential users, which could be applied to different platforms, places, and subjects. Twitter was selected as the platform of interest, and Saudi Arabia as the context for the investigation. These were selected because Saudi Arabia has a large number of Twitter users, some of whom are considerably active in setting agendas and disseminating ideas. The study considered the scientific methods that have been used to identify public opinion leaders before, utilizing metrics software on Twitter. The key findings propose multiple novel metrics to compare Twitter influencers, including the number of followers, social authority and the use of political hashtags, and four secondary filtering measures. Thus, using ratio and percentage calculations to classify the most influential users, Twitter accounts were filtered, analyzed and included. The structured approach is used as a mechanism to explore the top ten influencers on Twitter from the political domain in Saudi Arabia.

Keywords—Twitter, influencers, structured mechanism, Saudi Arabia.

I. INTRODUCTION

RESEARCH has shown that from the perspective of political institutions and government agencies, online social media can be used to collect, track, interpret, summarise and model politically relevant information [2]-[5]. Staying up-to-date with current discussions and maintaining one's credibility in virtual communities is becoming increasingly important, especially regarding emerging issues that may impact a particular politician or state in a conflict or crisis [2], [5].

Public debate has long been researched and theorised as a method for shaping public opinion and casts effects on addressing political unrest. By the 1990s, the mediated public sphere where traditional media played the role of hubs of information was highly unequal in terms of access to

opinion and listening to different views [6]. Social media has now changed how people engage in politics, providing them with low-cost routes into a broader political conversation [7]. It has lowered barriers to political participation and may help reduce some specific aspects such as political engagement disparity [8]. Furthermore, social media allows people to access, create, share and comment on news and political information [9], [10]. It creates new opportunities to try to influence people who are already interested in politics. Therefore, all these previous factors related to social media will change today's politicians and influencers' nature and effect.

The concept of influence is not new, and it continues to evolve. According to [11], the paradigm shift of using the media to influence people began in World War I. Specifically, propaganda was used during the war between Britain and Germany. In general, influence has traditionally been characterised primarily as attempts to influence 'upwards' (i.e. attempts to influence those in power). An influential person is one who can affect others, persuading people to change their attitudes and opinions. In general, influencers are loosely defined as individuals with a disproportionate impact on the spread of information with some interesting behaviour [12]. Also, influencers can be described as everyday people who are far more likely than the average person to search for information and share ideas, knowledge and suggestions with other people. They do this by volunteering their views on issues and occasions they are passionate about and expressing their knowledge, advice, and insights [13]. Influencers on social media represent a new type of independent third-party endorsement that shapes audience attitudes through blogs, tweets, and another social media usage. Reference [14] identified social media influencers as users who heavily invest their time in a specific area.

Several studies evaluate the role that various types of influencer can play in the public sphere in political conversations and on social media. Influencers may be not only those with high visibility, or those who have their message distributed across the network, but also those with high activity who could also form the discussion by giving subjects or opinions attention and relevance [15].

In recent years, researchers have shown an increased interest in identifying influencers, which has made some studies more specific and more in-depth. Reference [16] characterised the ability to influence as "convincing an individual to change their opinion, attitude, and behaviour".

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Two types of influencers are discussed in their work: leaders of opinion, who use content to influence; and influencers, who use their network position to spread messages. Social media influencers have built a reputation for their knowledge and expertise on a particular topic. They regularly post on their favourite social media channels about this subject and generate comprehensive follow-ups from enthusiastic, interested people who pay close attention to their views [17].

The profound economic, social and political influence of social media platforms on communities has led some to say "The profound impact of networked technologies on societies economically, socially and politically has led some to claim that we have entered a new era of the Information, Network or Knowledge Society" [18]. Nevertheless, even critics of social media's ability to fundamentally alter power relations in society acknowledge the opportunities that disadvantaged groups have gained to self-represent, communicate freely, and mobilise themselves transnationally. Influencers through social media play an increasingly constitutive role in social movement organising and global mobilisation [18].

Social media platforms have already become an appropriate political environment for some people, and there are many expectations that specific social networking platforms, such as Twitter, will bring about a radical transformation of deliberative democracy, allowing people to engage in their government and enabling influencers to communicate and mobilise the electorate and their supporters in ways that have never been thought possible before [19]. For example, digital technologies enable new players, average citizens, to participate in political decisions [20].

Generally, the purpose of this study is to determine some new criteria that might be of use to identify social media influencers in conservative societies, complex political environments and tribal and religious cultures. This may encourage researchers in the future to attempt to examine their roles and their impacts on others according to those factors.

The objectives of the present paper focus on:

- The determination of the most appropriate criteria that can be utilised to define the essential political influencers on Twitter.
- The use of these criteria in the identification of the essential political influencers on Twitter in Saudi Arabia.

The remainder of the paper is organised as follows. In the next section Twitter will be analysed as the platform of choice for this study. Also, crucial metrics and criteria in determining social media influencers will be explored. In the methodology section the paper will provide an overview of the procedures of data collection. Three stages have followed, based on reliable criteria, metrics, and software, before identifying significant Saudi political influencers on Twitter. The results will be presented and discussed and an overview provided of the results' nature.

II. TWITTER?

Twitter is exciting for those exploring future political communication changes and interaction because of Twitter's asymmetric paradigm of human relationships. User tweets are

public and available to both user subscribers, and non-user subscribers, which distinguishes Twitter from services such as Facebook, whose default position is to require special privileges and demands for privacy to follow a user's messages, links or status updates [19], [21].

Although many social network services are available, there are several reasons for using Twitter for research. First, its nature allows it to connect and communicate as a social medium and broadcast as a conventional mass media. Twitter allows social relations to be non-reciprocal, whereas Facebook and LinkedIn allow only reciprocal relationships [22]. Another feature is that Twitter has increasingly become a popular device application that allows users to use it wherever they are. 80% of active users are on mobile, according to [23]. In comparison, Twitter is an already familiar and common Short Message Service system. The open structure of Twitter's Application Programming Interface enables developers to use Twitter information in all types of web and mobile applications. Besides, modern politics is in a state of crisis recently [24]. Twitter has, therefore become one of the most popular platforms for politicians and citizens alike, a social network known as micro blogging [22]. This is reflected in Saudi Arabia, where 77% of Internet users have a Twitter account, and 41% of them are active users, which is more than 5 million people [25]. Twitter's success among Saudis suggests that it has great potential as a communication platform, indicating the positive effect of practical use [25]. Finally, it can be said that the Twitter environment is also appropriate for the study of the role of influencers [12].

Several studies have looked at the characteristics of influencers and their influence. Reference [1] suggested that there were four core facets to identify influencers in the political arena including having followers, being seen as an expert and knowledgeable person, being able to exert social pressure and social support, as well as being socially embedded within their local community. Identifying someone as an 'influencer' in social media, however, can be problematic because it is challenging to identify traceable practices, particular tools, or strategies or even social connection mechanisms that are necessarily unique to influencers [16]. Therefore, researchers use a variety of different metrics to classify influencers to address this issue. Whereas some of them advocate a certain metric combination [26], [27], there are multiple ways of operationalizing influence based on the inclusion or exclusion of different facets of influence. Considering the difficulty, those four core facets mentioned at the beginning of the paragraph have been developed by [16], who created some specific metrics (Table I) that help define who are social media influencers.

A more easily quantifiable concept of influencers has recently been proposed by research using access to large-scale social information. These scholars tend to measure power by the number of followers and how far a message is moving [28], [29]. Another way is to consider interaction in the network to identify the influencers. For example, this method also involves either counting the times a user is mentioned or applying metrics to a retweet or mentioning network in the

Twitter study context. The key element in identifying influencers is the criterion of experience that these studies mentioned [16].

TABLE I
 DESCRIPTION OF METRICS

Metric	Description
Indegree	A simple importance rank expressed by the number of nodes with a directed edge pointing toward the given node (i.e., followers within a sampled network).
Eigenvector	Centrality A measure that quantifies importance of a node. A score is higher when a node's connections are in turn highly connected.
Clustering coefficient	A metric conferring the degree to which a given node is embedded within a tightly bound set of other nodes.
Knowledge	The number of tweets that a user posts containing context-specific terms divided by the number of tweets in the sample terms derived from a random sample of tweets collected during the sampling period from both networks.
Interaction	The number of tweets that a user posts containing context-specific terms divided by the number of tweets in the sample terms derived from a random sample of tweets collected during the sampling period from both networks.

In Saudi Arabia, the study conducted by [25] to identify the top influencers in Twitter utilised the number of followers only as the primary measure of influence, before using some filtering stages to enhance the accuracy of measurement. These filtering systems use various algorithms and measurement methods to calculate influence, which means that parameters are more likely to overlap than if only one tool were used. This study named 'social authority' as a standard term to achieve the highest level of measurement accuracy. Therefore, it used some tools based on the retweet rate of users' last few hundred tweets and the recency of those tweets and applied a retweet-based model based on user profile data and the speed and quantity with which users discover, share (and thus endorse) content on any particular topic using a combination of criteria, including retweets, replies and mentions [25]. Notably, it is reported that these metrics (e.g. retweets, likes, and responses) may be influenced by other variables such as time, place, topic and culture, due to the complexity of new media. Based on the analysis of these metrics and indicators, it seems fair to suggest that while the number of followers can be used as a direct indicator of participation, other measures may provide indicators of the level of interaction and user engagement with potential influence on the followers [12].

It appears from the aforementioned studies that numerous researches have utilized some traditional metrics for identifying social media influencers, but no attempt was made to use a content analysis. Therefore, this current study combines digital criteria and content analysis in an attempt to achieve high accuracy in the results.

III. METHODOLOGY

As [30] noted, both qualitative and quantitative data provide different types of information, often qualitatively providing detailed views of participants, quantitatively rating instruments, and together producing results that should be the same. On the other hand, quantitative research involves

designs, methods and measures that produce discrete numerical and quantifiable data [31]. Numbers more explicitly make observations. The data for this research were obtained via specific software dealing with both the user accounts in twitter themselves and the streamed hashtags. Using content analysis and descriptive statistics, this information was collected, quantified and analysed. Therefore, this current study uses three primary criteria which have formal metrics. Moreover, to increase the level of accuracy in this study, four additional secondary criteria are used, as shown in Table II.

TABLE II
 PRIMARY AND SECONDARY CRITERIA

Criteria	Category	Metric
Number of followers	Primary	Indegree: A simple importance rank expressed by the number of nodes with a directed edge pointing toward the given node (i.e., followers within sampled network).
Social authority	Primary	Interaction: The total number of times that all other users mentioned, liked, and retweeted the given user within the dataset.
Political hashtags	Primary	Knowledge: The number of tweets that a user posts containing context-specific terms divided by the number of tweets in the sample terms derived from a random sample of tweets collected during the sampling period from both networks.
Account age		Secondary
Personal account		Secondary
Saudi account		Secondary
Active account		Secondary

A. First Stage: Gathering Data

The number of followers, social authority and account age were used automatically as the main criteria in the first stage to attempt to cover the variety of Saudi Arabian Twitter accounts.

- Number of followers: There is a debate about whether or not the number of followers indicates influence. Some studies find a clear connection between the number of followers and influencers [32]-[34]. In contrast, others have said it is popularity, rather than an influence variable [14], [35].
- Social authority: The social authority tracks and exposes truly effective content, and users who regularly build. The criterion of followers' number alone is not sufficient. Social authority looks beyond the number of well-known followers that people have, with the immediate concern being the retweet activity of a user and others' affinity to what they share [36].
- Account age: Account age is an essential criterion in this study. Due to the Arab Spring and its implications in the region, and regarding the political crisis Saudi Arabia has faced, this study determined the account's age, starting from 5 years and more. This criterion aims to reach the influential accounts that have sufficient duration in the political arena.

IV. INITIAL LIST

Depending on the number of followers, account age and

social authority, it is challenging to sort Twitter accounts manually. Consequently, this study used the *Followerwonk* program, which was found to be a suitable application to use, compared to others, due to its simplicity, clarity and useful options in setting times and locations. To deal with a large number of accounts, this study set the minimum number of followers at 50,000. Hence, the initial list had 1073 accounts, ranging from the highest number 19,219,227 followers, to the lowest number 50,211 followers. Using the second main criterion (account age) reduced the total number of accounts from 1073 to 877, which means that 196 accounts which had been created after 01/12/2015 were excluded. Social authority is the last main criterion which can provide a percentage for each account, based on factors such as the number of followers, likes, retweets, and mentions. This, in turn, reduced the number of accounts and enabled identification of the most influential of them at the same time. Therefore, the total number of accounts was reduced by the social authority criterion from 877 to 425, which means that 452 accounts were excluded.

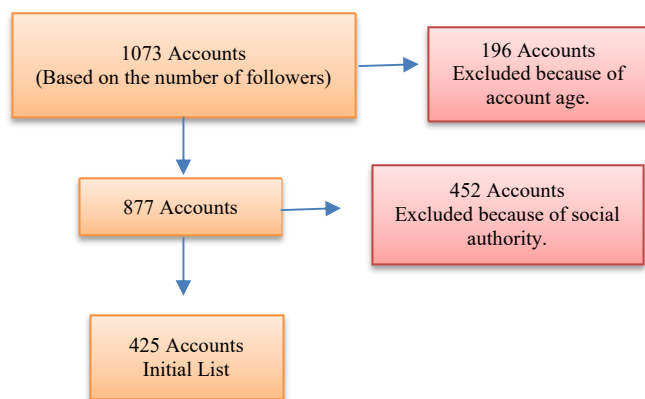


Fig. 1 Initial list

V. SECOND STAGE: FILTERING

The first stage utilized two primary and one secondary criterion (number of followers, account age and social authority) dealing with numbers and statistics only to identify the Saudi influencers on Twitter. However, the second stage (filtering process) used three secondary criteria:

- It should be a personal account (to avoid governmental, organisational, and unknown accounts).
- The account holder should be Saudi (to achieve this study's purpose via identifying the top Saudis influencers on Twitter).
- It has to be an active account (to exclude unofficial and inactive accounts).

Based on the criteria of the initial filtering stage, 206 accounts were excluded as shown in Table III.

VI. THIRD STAGE: SEMANTIC ANALYSIS

The final stage of the process was to analyse the accounts in order to identify the top Saudi influencers on Twitter in the political arena, identifying the top ten accounts. The criterion

used in this stage was political hashtags, which is a primary one. According to [37] the use of hashtags helps interpret tweets in the political domain.

TABLE III
FILTERING STAGE

Total of accounts (before)	The criteria	Total of accounts (after)	Number of excluded accounts	Nature of excluded accounts
425 accounts	It should be a personal account	228 accounts	197 accounts	governmental, organisational, and unknown accounts
228 accounts	He/she should be Saudi	226 accounts	3 accounts	A French football player, Two Yemeni youtubers
226 accounts	It has to be an active account	220 accounts	6 accounts	Three accounts were for religious people, one a journalist, one a social activist, and one a famous person.

The purpose of the final stage was to enhance measurement accuracy by excluding any user who showed the low ability of influence in the political Twitter arena, as compared to others. The evaluation method used various political keywords relevant to the region's general political crises to define accounts that used them more than others, ensuring that influencers would be more likely to be identified than if the study used general criteria only. The essential political hashtags related to the political crisis were used as search keywords, for example, country, capital city, president, calls for boycott, wars and Battles, political decisions, etc.

This study used the Tweetails application to calculate the number of participations in political hashtags for each account. The program targeted the last 3200 tweets for each account, which were sufficient to distinguish between political and non-political accounts before reaching the top political Saudi influencers. Accordingly, 210 accounts were excluded. The three stages of the research methodology are summarised in Table IV.

TABLE IV
SUMMARY OF METHOD STAGES

Stage	Sources	Indicators	Validating	Results
Initial list:	Followerwonk program	Number of followers Account age Social authority	Number of followers and account age were checked on Twitter official site	425 accounts
Filtering	Twitter official site	Personal account Saudi account Active account	Checked on their official accounts	220 accounts
Semantic analysis	Tweetails program	Political hashtags	Analysis of the last 3200 tweets.	10 accounts

VII. RESULTS

This study's main objective was to provide accurate and reliable structural mechanisms to identify influential users, which could be applied to various platforms, places, and subjects. Using these key metrics indicates a high ability to identify dynamic, influential accounts. For the period between 01/12/2020 and 01/02/2021, the study accessed the Twitter

network and measurement software and filtered its data. The first step was to classify accounts into male and female accounts. There were one female account and nine male accounts among the top 10 influential political Saudi Twitter users. Five of the accounts were journalists and media professionals; the rest of the accounts were held by a royal family member, a businessman, a social worker, a student, and a translator as shown in Table VI.

VIII.DISCUSSION

In this section, the study will discuss the importance of using some metrics that can accurately identify social media influencers, before discussing the results, their importance, and indicators.

Despite the many theories on influence in sociology, there are no concrete ways to evaluate such an influence and no concrete definition of, for instance, influences in the distribution of news. The Merriam-Webster dictionary describes influence as 'the capacity or power to cause an impact in an indirect or intangible fashion. Therefore, several previous studies have shown that calculating the effect requires more than digital metrics [14]. In this study, in identifying the influencers of social media, a new metric was used. Political hashtag is a criterion that can enhance digital measures such as number of followers, social authority and explore user interactions through subjects and periods. The research carried out by [14] yielded three significant insights. First, familiar users with a high degree of influence in recipes or references are not generally influential. Second, the most prominent users will affect a variety of subjects significantly. Third, control is achieved by concentrated efforts, such as restricting tweets to a single subject, not in a spontaneous or incidental way.

The present study's finding revealed a well-defined influential Saudi Twitter list, suggesting that the most

influential on the list are prototypical influential when judged according to the characteristics of influence listed in different studies [38]-[40]. The top 10 identified accounts are familiar names to Saudis, and their large numbers of followers give them the potential opportunity to communicate widely with the public. As shown by the results, the key players in the Twitter political arena are journalists and media professionals within the Saudi community. The result is in line with earlier literature [41] which found that in the United Kingdom, journalists are the most active social media users and have the most positive attitudes towards these platforms. This large percentage of journalists and media professionals among the top 10 Saudi political Twitter users reflects their high role in influence, which is compatible with the findings of a previous study that compared 76 journalists' role expectations with what they wrote about in their tweets. The results showed that in the journalists' tweets, both the expected "watchdog" and the "critical change agent" position (what some have called the "populist-mobiliser role") produced corresponding role outputs [42]. In turn, this result should push researchers to investigate the role of journalists' skills and the relationship of their media institutions to that role. The other five top accounts were from multiple classifications, including the royal family, business, social work, translation, and education, as shown in Table V. Women are underrepresented among the most influential individuals. The top ten Saudi political Twitter user accounts have one women's name, compared to nine men's accounts. This is consistent with studies that indicate men are more likely to express themselves politically on social media [43]-[45]. More precisely, some individuals are offended by politics in social media [46], which could lead to women being more likely to avoid the most noticeable and most offensive political activities than men, as the later are more likely to hurt relationships by causing offence.

TABLE V
POLITICAL HASHTAGS

Screen name	Full name	Gender	Occupation / social identity	Followers	Social Authority	Political Hashtags Used
Almatrafi	خالد المطرفي	Male	Journalist / media professional	938.100	79	97.43
Adhwan	عضوان الأحمرري	Male	Journalist / media professional	622.100	83	93.57
SalmanAldosary	سلمان الدوسري	Male	Journalist / media professional	478.300	84	84.07
monther72	منذر آل الشيخ مبارك	Male	Businessman	474.900	90	100
aalrashed	عبدالرحمن الراشد	Male	Journalist / media professional	265.200	81	75.89
AmaniAAJ	أماني العجلان	Female	Social worker	244.400	80	73.38
meshaluk	مشعل الخالدي	Male	Education	188.800	91	100
afalsaud	عبدالعزيز بن فهد	Male	Royal family	184.000	79.2	80.19
halgawi	حسين الغاوي	Male	Journalist / media professional	179.600	90	81.11
TS_Observer	تركي البقعاوي	Male	Translator	113.900	82	100

In terms of the third primary metric, political hashtags, this study sought greater accuracy by using this metric. The virality of a political hashtag will signify the extent of people's interest in the social crisis embodied in the hashtag, and perhaps the desire to participate more and have more influence in the crisis [47], [48]. Identifying the political hashtags used in the last 3200 tweets for each account is an important step to judge the account's tendencies significantly. There has been an

extended awareness of the significance of metrics. Nearly 30 years ago, manufacturing and management consultant Oliver Wight articulated the often-repeated theory, "You get what you inspect, not what you expect." Every organisation, every practice, every employee, requires metrics. The fundamental assessment tasks are fulfilled by metrics [49]. Therefore, in this study, some well-known accounts were excluded despite their reputation, followers' numbers, and social authority. As

shown in Table V, three of the top 10 Saudi influencers achieved 100% use of political hashtags in their last 3200 tweets. Interestingly, two accounts that achieved 100% use of political hashtags also had the highest scores on the social authority metric, compared to all other accounts. Simultaneously, the account with the highest number of followers (the first metric) recorded a low percentage of social authority compared to other accounts with fewer followers. This means that identifying social media influencers requires more metrics and measurements that directly deal with content.

TABLE VI
TOP 10 SAUDI POLITICAL USERS

Screen name	Full name	Number of political hashtags used in the last 3200 tweets	Percentage of political hashtags compared to general hashtags used
monther72	منذر آل الشيخ مبارك	927	100
meshaluk	مشعل الخالدي	907	100
TS_Observer	تركي البقعاوي	183	100
Almatrafi	خالد المطرفي	2581	97.43
Adhwan	عضوان الأحمرري	335	93.57
SalmanAldosary	سلمان الدوسري	216	84.7
halgawi	حسين الغاوي عبدالعزيز بن	116	81.11
afalsaud	فهد	81	80.19
aalrashed	عبدالرحمن الراشد	447	75.89
AmaniAAJ	أماني العجلان	182	73.38

IX. CONCLUSION

Twitter is a fruitful tool for understanding the views and power of people. Therefore, to understand the vast and complicated Twitter, it is necessary to recognise opinion leaders or those who look like them. In this study, the structured mechanism used for identifying political influencers suggests that the influential accounts in the political arena on Twitter can be identified via three primary metrics used in the study: number of followers, social authority and political hashtags. Using the primary metric, political hashtags in this study might be considered a proper step to identify accounts that are highly influential in the network.

Some limitations present in this analysis are acknowledged by the study, such as only analysing 3200 tweets, and a specific study population. Future research should use additional metrics such as full content analysis, and see if they yield the same account names as this specific sample. Also, the study used just three main metrics to identify political influencers. New types of influencers could be discovered by studying other non-political contexts employing the same metrics. Findings might also indicate that journalists and media professionals are more influential accounts in social media political contexts than other categories.

REFERENCES

[1] E. Katz and P. Lazarsfeld, "F.(1955) Personal influence. The part played

by people in the flow of mass communications".
[2] D. Zeng, H. Chen, R. Lusch and S. Li, "Social media analytics and intelligence," *IEEE Intelligent Systems*, vol. 25, (6), pp. 13-16, 2010.
[3] A. L. Kavanaugh, E. A. Fox, S. D. Sheetz, S. Yang, L. T. Li, D. J. Shoemaker, A. Natsev and L. Xie, "Social media use by government: From the routine to the critical," *Government Information Quarterly*, vol. 29, (4), pp. 480-491, 2012.
[4] C. Paris and S. Wan, "Listening to the community: Social media monitoring tasks for improving government services," in *CHI'11 Extended Abstracts on Human Factors in Computing Systems*, 2011, pp. 2095-2100.
[5] S. Stieglitz, T. Brockmann and L. Dang-Xuan, "Usage of social media for political communication." in *Pacis*, 2012, pp. 22.
[6] S. S. Bodrunova, A. A. Litvinenko and I. S. Blekanov, "Influencers on the Russian twitter: Institutions vs. people in the discussion on migrants," in *Proceedings of the International Conference on Electronic Governance and Open Society: Challenges in Eurasia*, 2016, pp. 212-222.
[7] H. Gil de Ziga, E. Puig-i-Abril and H. Rojas, "Weblogs, traditional sources online and political participation: An assessment of how the Internet is changing the political environment," *New Media & Society*, vol. 11, (4), pp. 553-574, 2009.
[8] M. A. Xenos, A. Vromen and B. D. Loader, "The great equalizer? patterns of social media use and youth political engagement in three advanced democracies," in *The Networked Young Citizen* Anonymous Routledge, 2014, pp. 33-54.
[9] H. Gil de Ziga, L. Molyneux and P. Zheng, "Social media, political expression, and political participation: Panel analysis of lagged and concurrent relationships," *J. Commun.*, vol. 64, (4), pp. 612-634, 2014.
[10] B. E. Weeks and R. L. Holbert, "Predicting dissemination of news content in social media: A focus on reception, friending, and partisanship," *Journalism & Mass Communication Quarterly*, vol. 90, (2), 2013.
[11] W. Brooker and D. Jermyn, *The Audience Studies Reader*. Psychology Press, 2003.
[12] E. Bakshy, J. M. Hofman, W. A. Mason and D. J. Watts, "Everyone's an influencer: Quantifying influence on twitter," in *Proceedings of the Fourth ACM International Conference on Web Search and Data Mining*, 2011, pp. 65-74.
[13] E. Keller and B. Fay, "How to use influencers to drive a word-of-mouth strategy," *Warc Best Practice*, pp. 1-8, 2016.
[14] M. Cha, H. Haddadi, F. Benevenuto and K. Gummadi, "Measuring user influence in twitter: The million follower fallacy," in *Proceedings of the International AAAI Conference on Web and Social Media*, 2010, .
[15] F. B. Soares, R. Recuero and G. Zago, "Influencers in polarized political networks on twitter," in *Proceedings of the 9th International Conference on Social Media and Society*, 2018, pp. 168-177.
[16] E. Dubois and D. Gaffney, "The multiple facets of influence: Identifying political influential and opinion leaders on Twitter," *Am. Behav. Sci.*, vol. 58, (10), pp. 1260-1277, 2014.
[17] Influencers Marketing Hub, "What is an Influencer?" 2019.
[18] B. Cammaerts, "Social media and activism," *The International Encyclopedia of Digital Communication and Society*, pp. 1-8, 2015.
[19] W. J. Grant, B. Moon and J. Busby Grant, "Digital dialogue? Australian politicians' use of the social network tool Twitter," *Australian Journal of Political Science*, vol. 45, (4), pp. 579-604, 2010.
[20] E. Dubois and W. H. Dutton, "The fifth estate in Internet governance: Collective accountability of a Canadian policy initiative," *Revue Francaise Detudes Americaines*, (4), pp. 81-97, 2012.
[21] J. Porter, "Relationship symmetry in social networks: Why Facebook will go fully asymmetric," *Bokardo: <Http://Bokardo.Com/Archives/Relationship-Symmetry-in-Social-Networks-Why-Facebookwill-Go-Fully-Asymmetric/>* (Consulted 1.02.11), 2009.
[22] M. Vergeer, "Twitter and political campaigning," *Sociology Compass*, vol. 9, (9), pp. 745-760, 2015.
[23] Twitter, "Twitter," 2015.
[24] S. Coleman and J. G. Blumler, *The Internet and Democratic Citizenship: Theory, Practice and Policy*. Cambridge University Press, 2009.
[25] Y. Albalawi and J. Sixsmith, "Identifying Twitter influencer profiles for health promotion in Saudi Arabia," *Health Promot. Internation.*, vol. 32, (3), pp. 456-463, 2015.
[26] S. González-Bailón, J. Borge-Holthoefer and Y. Moreno, "Broadcasters and hidden influencers in online protest diffusion," *Am. Behav. Sci.*, vol. 57, (7), pp. 943-965, 2013.

- [27] H. Kwak, C. Lee, H. Park and S. Moon, "What is twitter, a social network or a news media?" in *Proceedings of the 19th International Conference on World Wide Web*, 2010, pp. 591-600.
- [28] G. Rattananitmont, M. Toyoda and M. Kitsuregawa, "Characterizing topic-specific hashtag cascade in twitter based on distributions of user influence," in *Asia-Pacific Web Conference*, 2012, pp. 735-742.
- [29] S. Wu, J. M. Hofman, W. A. Mason and D. J. Watts, "Who says what to whom on twitter," in *Proceedings of the 20th International Conference on World Wide Web*, 2011, pp. 705-714.
- [30] J. W. Creswell, *A Concise Introduction to Mixed Methods Research*. SAGE publications, 2014.
- [31] O. M. Mugenda and A. G. Mugenda, "Quantitative and qualitative approaches," 2003.
- [32] H. Yoganasimhan, "Impact of social network structure on content propagation: A study using YouTube data," *Quantitative Marketing and Economics*, vol. 10, (1), pp. 111-150, 2012.
- [33] Y. Feng, "Are you connected? Evaluating information cascades in online discussion about the #RaceTogether campaign," *Comput. Hum. Behav.*, vol. 54, pp. 43-53, 2016.
- [34] Y. Hwang, "Does opinion leadership increase the followers on Twitter," *International Journal of Social Science and Humanity*, vol. 5, (3), pp. 258, 2015.
- [35] D. M. Romero, W. Galuba, S. Asur and B. A. Huberman, "Influence and passivity in social media," in *Joint European Conference on Machine Learning and Knowledge Discovery in Databases*, 2011, pp. 18-33.
- [36] Followerwonk, "Social authority," 2019.
- [37] I. Alfina, D. Sigmawaty, F. Nurhidayati and A. N. Hidayanto, "Utilizing hashtags for sentiment analysis of tweets in the political domain," in *Proceedings of the 9th International Conference on Machine Learning and Computing*, 2017, pp. 43-47.
- [38] E. M. Rogers, "Diffusion of innovations, 5th edn Tampa," *FL: Free Press. (Google Scholar)*, 2003.
- [39] J. W. Dearing, "Applying diffusion of innovation theory to intervention development," *Research on Social Work Practice*, vol. 19, (5), pp. 503-518, 2009.
- [40] J. M. Grimshaw, M. P. Eccles, J. N. Lavis, S. J. Hill and J. E. Squires, "Knowledge translation of research findings," *Implementation Science*, vol. 7, (1), pp. 1-17, 2012.
- [41] A. Gulyas, "The Influence of Professional Variables on Journalists' Uses and Views of Social Media: A comparative study of Finland, Germany, Sweden and the United Kingdom," *Digital Journalism*, vol. 1, (2), pp. 270-285, 2013.
- [42] L. Willnat and D. H. Weaver, "Social media and US journalists: Uses and perceived effects on perceived norms and values," *Digital Journalism*, vol. 6, (7), pp. 889-909, 2018.
- [43] C. Lutz, C. P. Hoffmann and M. Meckel, "Beyond just politics: A systematic literature review of online participation," *First Monday*, vol. 19, (7), pp. 1-36, 2014.
- [44] K. Strandberg, "A social media revolution or just a case of history repeating itself? The use of social media in the 2011 Finnish parliamentary elections," *New Media & Society*, vol. 15, (8), pp. 1329-1347, 2013.
- [45] L. Vochocová, V. Štětka and J. Mazák, "Good girls don't comment on politics? Gendered character of online political participation in the Czech Republic," *Information, Communication & Society*, vol. 19, (10), pp. 1321-1339, 2016.
- [46] E. K. Vraga, K. Thorson, N. Kligler-Vilenchik and E. Gee, "How individual sensitivities to disagreement shape youth political expression on Facebook," *Comput. Hum. Behav.*, vol. 45, pp. 281-289, 2015.
- [47] A. Friedman, "Hashtag journalism The pros and cons to covering Twitter's trending topics," *Columbia Journalism Review*, vol. 29, 2014.
- [48] T. Rosenstiel and A. Mitchell, "How mainstream media outlets use Twitter," *Pew Research Center Y School of Media and Public Affairs De La Universidad George Washington. Washington. Recuperado El*, vol. 2, 2011.
- [49] S. A. Melnyk, D. M. Stewart and M. Swink, "Metrics and performance measurement in operations management: dealing with the metrics maze," *J. Oper. Manage.*, vol. 22, (3), pp. 209-218, 2004.