Technology, Emotion and Democracy: Understanding The Dynamic Through Analyzing Conversation in *Twitter*

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ABSTRACT

Innovation in technology brings tremendous impact in various areas, including the issues of democracy, politics and government. In this study, authors observe twitter as a digital medium to gather people from diverse background to communicate each other. Conversation in twitter, known as tweet, could be a gate to represent various political issues. This study aims to analyze valence and arousal of Indonesia's top political topics in twitter started from November 2015 until May 2016. Top political topics are collected with one primary keyword, jokowi. Each topic is represented with various tweets from different users. The data is collected by specialized computer software namely tracker developed by Provetic Lab. As an attempt to analyze tweets, authors used Algoritma Kata (AK) as the primary instrument to analyze valence and arousal contained in each topic. Result shows when users talked about jokowi and kebanggaan (pride), the conversation contained positive valence and high excitement in arousal level. Whereas, when users discussed corruption and other scandal involving Government, the conversation turned into negative valence with different arousal level.
Keywords: Computational psychology, jokowi, valence, arousal, politics

ABSTRAK

Inovasi di bidang teknologi membawa dampak yang signifikan dalam berbagai area, termasuk isu demokrasi, politik dan pemerintahan. Dalam studi ini, penulis memperhatikan twitter sebagai media digital yang mampu mempertemukan individu dari berbagai latar belakang untuk menjalin komunikasi. Percakapan di twitter, atau yang lebih awam dikenal sebagai tweet, dapat menjadi pintu masuk untuk memahami berbagai isu politik. Studi ini bertujuan untuk menganalisis valensi dan arousal dari topik-topik politik yang muncul di percakapan twitter. Topik-topik politik dikumpulkan dengan satu kata kunci, yaitu jokowi. Setiap topik direpresentasikan oleh berbagai tweet dari berbagai user. Data dikumpulkan melalui software khusus yang bernama tracker, dikembangkan oleh Provetic Lab. Sebagai usaha untuk menganalisis valensi dan arousal dari tweet di setiap topik, penulis menggunakan instrumen Algoritma Kata (AK). Hasil menunjukkan ketika

user membicarakan jokowi dan topik kebanggaan (pride), percakapan memiliki muatan valensi positif dan tingkat arousal yang tinggi, sedangkan ketika user membicarakan mengenai korupsi (corruption) dan skandal lain yang melibatkan pemerintah, percakapan memiliki muatan valensi yang cenderung negatif dengan tingkat arousal yang berbeda-beda.
Kata kunci: Computational psychology, jokowi, valence, arousal, politics

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INTRODUCTION

In 1998, Indonesia was gifted with a historical moment when finally the new order regime fell. New order (*orde baru*) is a political condition which describes the cruelty of government under Soeharto's regime (Aspinal & Fealy, 2010). For many Indonesian citizens, this moment is known as "May 1998". May 1998 became a starting spot for Indonesia to gear up brighter social and political condition as democratic country. This moment brought numerous social consequences such as the rising of new political parties and various non-governmental organizations. Democracy in Indonesia is valued as the condition where all citizens are free to communicate, discuss and criticize government. May 1998 is not just affecting society; it also brings a change in state structure. Some of the changes are direct election; transparency and also the existence of numerous independent commission which responsible giving national recommendation. Accepting democracy as our constitutional ground means there is an attachment between government and people.

Although democracy in Indonesia has been successively for over 18 years, there is an occasion to enhance the quality of democracy using contemporary approach. In this study, we are focusing on digital approach as the solution for democratic country. We define digital approach as the application of internet that could help government forms psychological attachment with the people. Internet could be an alternative medium where government could communicate ideas, opinion and policies to grass roots and groups of specific people (Berman & Weitzner, 1997). In order to build this condition, government and people could use online platform namely social media. One of the well-known one is *twitter*. *Twitter* is a digital medium where people

are free to write their thought and feeling toward various objects or moments. If at the past, many social and behavioral scientists were collecting research data by directly contact the participants, today we could find numerous data in *twitter*. *Twitter* contains behavioral data in the form of people's conversation, called *tweet*. In this study, we used tweets as our primary analysis unit. This study is focusing on how *tweets* function as empirical data to explore public response towards political issues. We see emotion as an important element in democratic environment as a glue to affix between government and people (Marcus, 2002).

As an attempt to examine valence and arousal in the tweets, we use *circumplex model of affect* (CA) developed by Russell (1980; 2003) as our theoretical ground. CA is circular model that explains emotion from two primary poles, valence and arousal. Valence is a psychological condition ranging from negative into positive demarcation, whereas arousal refers to physical condition ranging from calm (low) to excited (high). Valence is marked with horizontal axis, whereas arousal is marked with vertical axis. Combination between these two poles will fabricate four quadrants represent different valence and arousal level. Emotion located in different quadrant will produce different behavioral consequences. Besides its function to categorize various emotional labels, CA also can be used to predict human behavior towards specific stimulus.

CA is fine-grained theoretical model that has been used for theoretical framework in various psychological instruments which measured emotion and mood, such as *Positive and Negative Affect Scale* (PANAS; Watson & Clark, 1988); *Four Dimensions Mood Scale* (FDMS; Huelsman, Nemanick & Munz, 1998); *Self Assessment Manikin* (SAM; Lang, 1980) and *Semantic Differential Scale* (SDS; Mehrabian & Russell, 1974). PANAS is a psychological instrument measuring emotional state using two emotional dimensions, *positive affect* (PA) and *negative affect* (NA). If PANAS is focusing on two dimensions, FDMS is using four emotional dimensions expanded from PANAS theory, namely valence and

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arousal. Specifically, FDMS is focusing on mood which refers to emotional state that could occur even without any emotional stimulus. If PANAS and FDMS are focusing on human emotional condition, SAM and SDS are the psychological instruments constructed to measure emotional response towards objects. Various objects have been measured by using SAM and SDS, for example, words (ANEW; Bradley & Lang, 1999); photo (IAPS; Lang, 1995) and also sounds (IADS; Bradley, 1994). All of these instruments show that CA is confirmed to clarify human emotion in numerous contexts.

In this study, we are focusing on words in twitter to reveal public emotion towards government. Study to reveal emotion through words in digital medium has been conducted for various purposes, such as blogs to identify pre and post 9/11 situation in America (Cohn, Mehl & Pennebaker, 2004) and *facebook* posts to construct building block on emotional expression in *facebook* (Preotiuc-Pietro et al., 2016). In the context of English language, text could be analyzed using *Affective Norms of English Words* (ANEW, Bradley & Lang, 1999) or *Linguistic Inquiry and Word Count* (LIWC; Pennebaker, Booth & Francis, 2007). ANEW is word bank contain more than 1000 words with valence and arousal load in each word, whereas LIWC is also a word bank, but it is contain more diverse variables, such as positive/negative emotion; social identity; and also time orientation. However, LIWC and ANEW could not be used in Indonesia due to contextual factors. As an attempt to overcome this situation, we use *Algoritma Kata* (AK; Wenas, Sjahputri Takwin, Primaldhi & Muhamad, 2016; Adinugroho, Muhamad & Susianto, 2016). AK is a word bank consists of 3000 Indonesian words and emoticons with valence and arousal score in each unit.

We use AK as our primary tool to analyze conversation in twitter related to the most popular political topics. In attempt to explore the main purpose of study, we collected the topics in twitter for six month period started from January until June 2016. We use computerized text analysis namely *tracker* for collecting

those popular topics. *Tracker* is developed under *Provetic Lab* license and it will be fully functioning with keywords. We use one primary keyword for *tracker* search in twitter. Then we combined the primary keyword with additional keywords derived from *tracker's* algorithm. The combination between primary and additional keywords is our top political topics which analyzed in this study.

CIRCUMPLEX MODEL OF AFFECT TO RECOGNIZE VALENCE AND AROUSAL IN TWEETS

We use *circumplex model of affect* (CA; Russel, 1980; 2003) as the core theory to explain human emotion using two primary aspects, namely *valence* and *arousal*. *Valence* is an empirical term to describe direction of emotion from psychological angle, whereas arousal refers to physical state related emotional state. By using CA, we also agree of human emotion that could be characterized by four quadrants produced by the interaction between *valence* and *arousal*. Each quadrant contains specific emotional labels which differ in the degree of valence and arousal. Through this argument, CA states that emotion in the same valence, but different in arousal level will produce different behavior and vice versa. Related to the study, CA is a gate to explore valence and arousal score in each tweet analyzed.

The interaction between valence and arousal is extremely important element in understanding emotion with CA. CA as theoretical model is different with discrete emotion (DE) model (Ekman, 1992). DE model explain human emotion by using basic emotions as its empirical term. Those basic emotions are sad, anger, fear, jealousy, disgust, contempt, embarrassment, guilt, stress, acute grief and envy. Each emotion has specific characteristic and only can be found in human species. Basically, CA only could describe these specific emotions by the interaction of valence and arousal. Although CA could not examine the specialty of each basic emotion, the applicability of this theory is well-known as a behavioral predictor. Emotion produced by the in-

teraction of valence and arousal is a marker to predict human behavior towards emotional object (Russell, 2003).

ALGORITMA KATA (AK) TO EXAMINE VALENCE AND AROUSAL IN TWEETS

As an attempt to applied CA in this study, we use *Algoritma Kata* (AK; Wenas et al., 2016) as the main measurement tool. AK is Indonesian words and emoticons collection that derived from twitter as the main corpus. Each word or emoticon has valence and arousal score produced from SDS scale (Mehrabian & Russell, 1974). AK is constructed by adopting ANEW, the English words collection with valence and arousal score in each word. Valence score is represented with the scale range from 1 (negative) until 5 (positive), whereas arousal score is represented with scale range from 1 (calm) to 4 (excited). We use median as a benchmark to categorize the degree of valence (3) and arousal (2,5).

This study relies on AK as the instrument to analyze selected tweets. In order to produce valence and arousal score in tweets in each top topic, we follow the formula derived from Dodds and Danforth (2010). The formula is focusing on examining valence and arousal score as the mean score from the quantity of unique words in the text. In this study, text refers to various
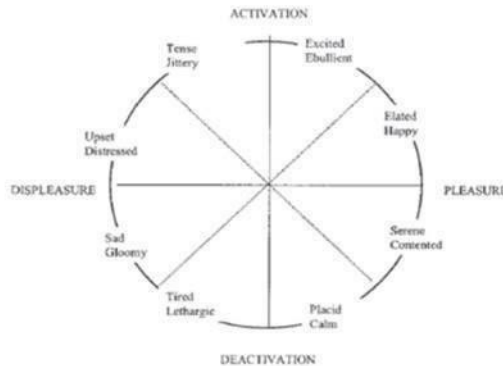

FIGURE 1. CIRCUMPLEX MODEL OF AFFECT AND 16 CORE AFFECT (RUSSELL, 2003, P.148)

tweets in each topic. Figure 3 describes the calculation formula used for analyzing the tweet from the unique words. The symbol of "a_{text}" refers to arousal score and "$\tilde{o}_{text}$" refers to valence score. The formula works with the total score of valence or arousal and the amount of unique words captured in the tweet.

$$a_{text} = \frac{\sum_{i=1}^{n} a_i f_i}{\sum_{i=1}^{n} f_i} \quad (1)$$

$$v_{text} = \frac{\sum_{i=1}^{n} v_i f_i}{\sum_{i=1}^{n} f_i} \quad (2)$$

FIGURE 2. FORMULA FOR CALCULATING VALENCE SCORE (1) AND AROUSAL SCORE (2) IN TEXT (DODDS & DANFORTH, 2010)

Example of identifying valence and arousal score in a tweet could be found from tweet example wrote by President Joko Widodo in his official account, *@jokowi: Selamat juga atas kelulusan adik2 SMK. Bagi yang belum berhasil jangan patah semangat. Kita songsong era kompetisi dengan kerja keras –Jkw*. Underline words are unique words that contain valence and arousal score according to AK words collection. Valence score for seven unique words are, 4,46 (*selamat*/congratulation); 4,07 (*adik*/brother); 4,78 (*berhasil*/success); 1,9 (*patah*/broken); 4,46 (*semangat*/spirit), whereas the arousal score for these words are, 3,14 (*selamat*/con-gratulation); 2,38 (*adik*/brother); 3,5 (*berhasil*/success); 2,36 (*patah*/broken); 3,71 (*semangat*/spirit). By identifying valence and arousal in each unique words, valence and arousal score for the tweet can be calculated using formula in Figure 3.

a_{text} = 1/7 (1x3,14 + 1x2,38 + 1x3,5 + 1x2,36 + 1x3,71) ≃ 2,16
v_{text} = 1/7 (1x4,46 + 1x4,07 + 1x4,78 + 1x1,9 + 1x4,46) ≃ 2,81

From the numerical calculation, we can conclude that the tweet from *@jokowi* has a score 2,16 for valence and 2,81 for

arousal score. Based on the median as the benchmark, this tweet has average valence and arousal. Our conclusion is constructed from Figure 2 which describes the range of valence (1 to 5) and arousal (1 to 4). If one tweet contains score near to 5, the tweet contains positive valence and vice versa. Similar with valence score, if one tweet has a score near to 4, the tweet contains high arousal level.

METHOD

As an attempt to describe how tweet reflects public response towards various political topics, we conducted three primary steps in this study. First step is related to tweets collection using specific keywords in *tracker*. The word *jokowi* (current President of Republic of Indonesia) is selected as the main keyword. The keyword *jokowi* is chosen due to represents Indonesia's political situation in national scale. By using this keyword, *tracker* will automatically search, select and gather all the tweets that mentioned the word *jokowi* from November 2015 until May 2016. Through its computer algorithm, tracker also searches for unique words that have the highest occurrence in the tweets. These unique words are the additional keywords that combined with primary keywords as the top topics. Examples of additional keywords derived from tracker search are "*korupsi*" (corruption); "*kebanggaan*" (*pride*); "*freeport*" and "*reklamasi*"(reclamation).

Second step, we identified the number of tweets in each topic and the accounts involved in each topic. Two types of accounts described in this study, namely *top active account* (TAA) and *top mentioned account* (TMA). TAA refers to an account who frequently exist in the twitter by posting original tweet, whereas TMA refers to account which frequently mentioned by other account while discussing one topic. Illustration on TMA and TAA could be found from this tweet, *@pramonoanung: Hari ini Presiden @jokowi dan Wapres @Pak_JK mengumpulkan eselon 2 yg berjumlah 1810, memberikan arahan ttng arah dan tujuan Pemerintahannya.* From this tweet, TAA refers to @pramonoanung

and TMA refers to @Pak_JK and @jokowi. Last step, we conducted valence and arousal analysis for various tweets concerning each topic using AK. There are 2 types of scores in this study. First score related to tweet's score in each topic and second score related to topic's score. Tweet score is calculated by using valence and arousal score in unique words and total number of unique words captured. Topic score is the aggregate score produced from mean score in eachtweet.

RESULTS

DESCRIPTION OF TOP TOPICS

In this study, top topic is a combination between primary keyword and additional keyword in twitter. Based on tracker search, there are ten top topics with the highest tweets occurrence. Table 1 identifies those 10 top topics based on combination between primary keyword and additional keywords. From 10 top topics, six topics categorized as political events (*terorisme*; *freeport*; *setya novanto*; *ojek online*; *reklamasi* and *korupsi*), whereas four topics related to jokowi's activity as a President (*kunjungan*; *kebanggaan*; *reshuffle* and *hambalang*). Each topic consists of specific event in Indonesia as described in Table 3.

TABLE 1. TOP TOPICS IN TWITTER

TOPTOPICS	TOTALTWEETS	TWEETS WITH VALENCE AND AROUSAL SCORE
Jokowi freeport (freeport)	40.451	36.500
Jokowi terorisme (terrorism)	38.467	37.266
Jokowi kebanggaan (pride)	34.053	33.787
Jokowi korupsi (corruption)	25.790	25.237
Jokowi setya novanto (setya novanto)	24.660	23.484
Jokowi reklamasi (reclamation)	19.209	17.292
Jokowi reshuffle (reshuffle)	16.084	15.001
Jokowi kunjungan (visit)	15.844	14.918
Jokowi hambalang (hambalang)	12.673	11.973
Jokowi ojek online (online ojek)	7.198	6.695

TABLE 2. TOP TOPICS AND ACCOUNT INVOLVED IN THE TOPIC

TOP TOPICS	TOP 3 MENTIONED ACCOUNTS (TMA)	TOP 3 ACTIVE ACCOUNTS (TAA)
Jokowi freeport	@jokowi (5927) @andiarief_aa (1760) @ramlirizal (836)	@alimahsunapkli (276) @satyapartii (144) @ronnie_rusli (128)
Jokowi terorisme	@jokowi (27860) @pramonoanung (865) @detikcom (571)	@ninjacapkampak (100) @triwul82 (59) @jokowi_jk_ahok (55)
Jokowi kebanggaan	@jokowi (29657) @_joeyalexander (1638) @kemenpora_ri (478)	@19452014 (56) @beritasatu (26) @dellov (23)
Jokowi korupsi	@jokowi (13921) @kpk_ri (3157) @brani2000 (878)	@saskiagothic (427) @kevinjulio08 (415) @prilylatucon (414)
Jokowi setya novanto	@jokowi (2689) @masnovanto (1686) @changeorg_id (1619)	@jokowi_jk_ahok (269) @wijaya_sugeng (98) @gmailhb (92)
Jokowi reklamasi	@jokowi (11883) @susipudjiastuti (3179) @sitinurbayalhk (2298)	@bobbyalcoholic (247) @melon_murdock13 (221) @ngurasuta4 (183)
Jokowi reshuffle	@jokowi (2006) @detikcom (353) @metrotv (246)	@saskiagothic (132) @kevinjulio08 (127) @asepdarsa2000 (126)
Jokowi kunjungan	@jokowi (4896) @pramonoanung (826) @detikcom (499)	@infokaltim (312) @nanuths (48) @defnanobi (42)
Jokowi hambalang	@jokowi (5818) @sbyudhoyono (1907) @krmtroysuryo (807)	@adha_mona (42) @triwul82 (26) @krmtroysuryo (25)
Jokowi ojek online	@jokowi (3526) @gojekindonesia (1078) @sipiqi (229)	@humaira979 (21) @jemingin (19) @maspiyungan (18)

In order to describe further the top topics, we also analyze the relationship between top topics and the accounts categorized into TMA and TAA. This analysis is conducted to frame a picture on the relation between top topics and the main actors in each topic. Table 2 describes the accounts who involved as *men-*

tioned account (TMA) and active account (TAA). Result shows the relation between specific events represented by top topic and the actors who involved in the conversation. Number in parenthesis inside Table 2 reflects the frequency of specific account who actively posts tweets (TAA) and how many accounts mentioned by others (TMA).

THE DYNAMIC BETWEEN TOP TOPICS

In this study, we also measure the dynamic between top topics from November 2015 to May 2016. This analysis is conducted as an attempt to understand public response towards various political topics in Indonesia. This analysis also useful to understand the relation between media and how one topic becomes viral in society. Result in Figure 3 shows that each topic has different dynamic in each month from November 2015 until May 2016. This result shows that public opinion on political issues is dynamic and tend to change in short period of time, approximately one month. For further exploration, we also analyze from the media what causes each topic become viral in twitter. Table 3 provides explanation of news from various media and the relation to top political topics.
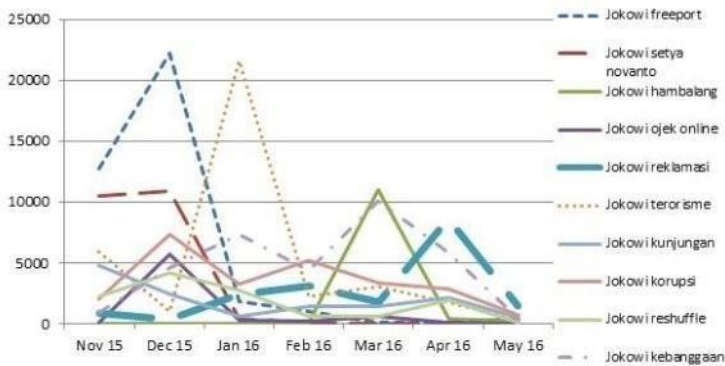

FIGURE 3. THE DYNAMIC OF TOP TOPICS FROM NOVEMBER 2015 TO MAY 2016

To achieve further qualitative explanation, we conducted manual search using internet using top topics as the keyword. Based on our search, we highlight some important news reports related to the top topics. Result in Table 3 shows a relation between specific event reported in the media and the significant increase of tweets in each topic. From the descriptive analysis, we could draw a relation between the events that could affect public opinion in Indonesia. For example, the issue of *Jokowi korupsi* emerged due to the election for new leaders of *National Commission for Corruption Eradication* (KPK) which also happened in December 2015 (Parlina, 2015).

TABLE 3. TOP TOPICS AND THE EXPLANATION OF HIGHEST BUZZ

TOP TOPICS	HIGHEST AMOUNT OF TWEETS	NEWS REPORT
Jokowi *freeport*	December 2015	Freeport scandal between Setya Novanto and Riza Chalid (Tan, 2015)
Jokowi *terorisme*	January 2016	Terrorist attack in Sarinah (Quiano, McKirdy & Payne, 2016)
Jokowi *kebanggaan*	March 2016	Jokowi's visit to Entikong and other border areas in Indonesia (Amindoni, 2016)
Jokowi *korupsi*	December 2015	The inauguration of new KPK leaders (Parlina, 2015)
Jokowi *setya novanto*	December 2015	Ethical court towards Setya Novanto due to Freeport's scandal (Hermawan, 2015)
Jokowi *reklamasi*	April 2016	The reclamation issue between Central Government and DKI Jakarta Provincial Government (Harbowo, 2016)
Jokowi *kunjungan*	November 2015	Jokowi's working visit to Lampung, South Sulawesi, South Kalimantan, and various Indonesian districts (Matic, 2016)
Jokowi *reshuffle*	March 2016	The second reshuffle issue appeared in March 2016 (Toriq, 2016)
Jokowi *hambalang*	March 2016	Jokowi visits Hambalang (Nurbianto, 2016)
Jokowi *ojekonline*	December 2015	The issue of new policy to ban all transportation based on mobile apps (Rahayu, 2015)

VALENCE AND AROUSAL IN TOP TOPICS

Valence and arousal analysis is conducted by using AK to analyze tweets in each topic. Valence and arousal score in each topic is derived from average score based on valence and arousal

score in each tweet. Figure 5 describes valence and arousal score in each topic. From Figure 4, topicwith the highest valence (3,98) and arousal (2,95) score is *Jokowi kebanggan*. This topic is related with the activity when Jokowi visited Entikong (border area of Indonesia). From [Russell's framework (2003),](#) highvalence and arousal is related to various emotional labels such as pride; enthusiast; elated and excited, which means when people discussed *jokowi* and *kebanggaan*, they are covered with various positive emotions. In contrast, topic that has lowest valence score (3,06) is *Jokowi korupsi* and the lowest arousal score is *Jokowi reklamasi*.

From Figure 5, each topic has different valence and arousal score. However, the graph shows a huge gap between *kebanggaan* (pride) and *korupsi* (corruption). In order to explore whether the difference is caused by empirical pattern or possibility, we test the difference using *t-test*. Method of *t-test* is statistical method applied to identify the mean difference betweentwo groups (Field, 2011). Two groups are used for *t-test* calculation, first group consists of tweets related to *kebanggaan* (N=33.787) and second group related to tweets which discussed *korupsi* (N=25.237). In order to overcome the unequal sample size, we test the *homogeneity of variance* between the two groups using *Levene's test*. Result shows that two groups did not meet the principle of *homogeneity of variance* for valence (F=9870,45; p<.05) and arousal (F=210,83; p<.05). Based on *t-test* calculation using *equal variance not assumed* principle, these two groups has significant difference for valence (t(59022)=243,93; p<.05) and arousal (t(59022)=172,51; p<.05). This difference is due to each topic represents different emotional condition. When users discussed about pride, specifically it was happened during the visit of Jokowi to Entikong to see border, Jokowi often state that our border areas need to be equal with other country. This statement became the trigger in twitter that causes public response related to pride and other positive emotions related to pride. In opposite, corruption topic is perceived with negative valence and low level of arousal. Emotion labels related to this condition are *tired*; *sad* and *gloomy*. It is oc-

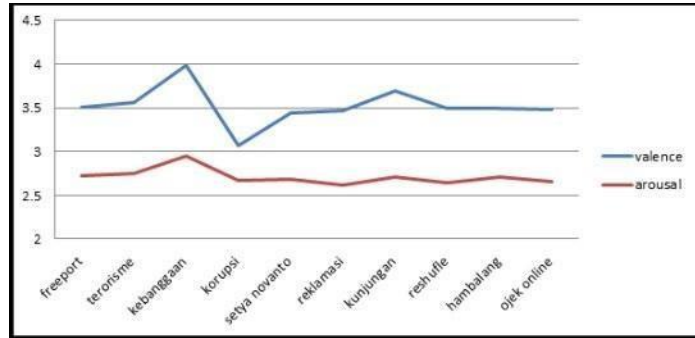curred due to the generic definition of corruption as a crime.

FIGURE 4., VALENCE AND AROUSAL SCORE IN TOP TOPICS

DISCUSSION

Text analysis has been applied for various purposes, such as investigating the dynamic of by American citizens after 9/11 attack through *blog* (Cohn, Mehl & Pennebaker, 2004); studying Marilyn Monroe's Fragments (Fernandez-Cabana, Garcia-Caballero, Alves-Perez, Garcia-Garcia & Mateos, 2013) up to examining the psychological aspect of song lyrics made by The Beatles (Petrie, Pennebaker & Sivertsen, 2008). These studies are using LIWC (Pennebaker, Booth & Francis, 2007) to examine various psychological aspects inside the text. Besides LIWC, another text analysis instrument to discover psychological aspec is ANEW (Bradley & Lang, 1999). ANEW is words collection containing valence and arousal in each word and it is used to analyze the emotional content in text. ANEW is used by Dodds and Danforth (2010) to investigate blogs and song's lyrics and also Preotic-Pietro et al. (2016) who focusing their analysis on numerous facebook posts.

Based on the promising evidence from various studies, in this study, we are focusing on twitter as the analysis unit to understand further about public opinion. Various studies in Indonesia only describe public opinion by using survey and other descriptive data, this study will reveal it comprehensively by apply-

ing valence and arousal theory as our primary analysis. By analyzing valence and arousal, we could more accurately predict what kind of social movement will be appeared in public. Result in Figure 3 and Figure 4 has shown an empirical insight which applicable as a tool to understand how public response various political issues which occurred in Indonesia. This result also could become an insight and other stakeholders to map and manage political stability. Managing political stability is fundamental issue due to its relation with economic growth, foreign investment, social conflict and any other issues related to public well-being. In conclusion, this study is not just useful as empirical support in social studies, but also as an attempt to understand "people in democracy".

CONCLUSION

Study of human behavior in twitter is an alternative method to understand public opinion towards various political issues. Various tweets published by numerous accounts are the analysis units that could describe the dynamic of public opinion and how people feel towards Government, President, politicians and other political issues. This study is a combination between computer science and psychological approach. This combination is the alternative to reveal various political issues that could not be captured by survey and other common research method. By using primary keywords, *Jokowi* and additional keywords derived from computer algorithm, we could collect various data from from twitter that represents Indonesia's political situation. In the end, this study is the innovation in the context of social and human behavioral studies.

To genuinely understand public response, this study is focusing its attention on valence and arousal (emotion) in tweets regarding each political topic. Valence and arousal are the psychological approach that becomes primary issue related to politics and democracy. By understanding valence and arousal, this study also capture specific emotional labels that related to each topic

according to specific core affect (Russell, 2003). In democratic country like Indonesia, emotion functions as the glue that placards people and government (Marcus, 2002). By understanding valence and arousal as representation of emotion, we could predict psychological attachment between people and government. In democratic country, a state is like a big ship, people are the crew and government is the captain. The ship will not move directly on the proper destination if the captain could not manage the crew. By understanding valence and arousal in twitter, the captain will have comprehensive data to support navigation process.

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