

Text Analytics on Leadership from Social Media Network – Twitter

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Abstract

Text analytics are typically aimed toward extracting helpful data from the immense array of unstructured, free format text documents that are created by the majority structure processes. The success of any text mining application rests on the standard of the underlying information being analyzed, as well as each prognostic options and outcome labels. Text analytics or text mining is that the method of determinant and collection high-quality data from unstructured text like a mass of Twitter posts, a set of scientific papers, or edifice reviews, looking on the main focus of the organization conducting the analysis. Our analysis is meant to investigate the unstructured information exploitation text mining on the characteristics on leadership. This study used secondary information to seek out the key words that has a control on leadership exploitation using text analytics.

Key-words: Text Mining, Text Analytics, Sentiment Analytics, Leadership, Twitter.

1. Introduction

One may disagree that a frontrunner features an important impact on the work setting of a team which if a piece climate has a bearing on team effectiveness it might be promising for a frontrunner to power the team effectiveness, by influencing the work climate of a team. Tons of studies spotlight at the same time on leadership behavior and team effectiveness. There square measure several definitions for leadership and though they dissent they principally have generally that in most definitions leadership is seen as a method of influence. They dissent in aspects of United Nations agency inserts influence and in what means. Some students decide that the leadership will be found altogether or additional members of the cluster which this is often a social influence method between all this members, whereas others believe that leadership could be a specialized role exerted by usually one cluster member United Nations agency has additional influence. There's additionally

no agreement over the terms leadership and managers, though some students bring to a close that there's overlap connecting the two, others see them as being reciprocally exclusive. because it is understood that Motivation, communication, and team building skills square measure reticular and complementary that's why leadership has to development in these areas (Gilley, McMillan, and Gilley, 2009). So as a result, for effective modification development of social skills like communication, motivation, and team building is needed to totally interact staff and to cultivate success. Leaders perform at totally different levels of management, to be an efficient leader at Lower level, the leader should have the flexibility to inspire to induce the work done as a result of actual work is completed at this level of management and second it should have the flexibility to speak its worker's issues, recommendations and suggestions, etc to the upper level. thus at this level of management (Low Level), Leaders ability to inspire is additional necessary than that of communication and team building (Qureshi, 2009; cooking, N.d.; Kraut, Pedigo, McKenna, and Dunnette., 1989).

Data analytics refers to qualitative and quantitative techniques and processes accustomed enhance productivity and business gain. information is mined and categorised to spot and analyze behavioral information and patterns, and techniques vary in keeping with structure necessities.

2. Text Analytics

Text analytics is a general practice of applying algorithms or programs to text in order to analyze that text. Text analytics are also known as text mining.

Text Mining Examples

- Risk management
- Knowledge management
- Cybercrime prevention
- Customer care service
- Fraud detection through claims investigation
- Contextual Advertising
- Business intelligence
- Content enrichment
- Spam filtering
- Social media data analysis

3. Review of Literature

Social media produces massive amount of data (Edigeretal., 2010). Twitter is a micro blogging service where users create messages called tweets. These tweets sometimes express opinions about different topics (Go, Huang & Bhayani, 2009). Social media is used as the official media platform by the celebrities, politicians but the research can be centered around the events also. Millions and trillions of users share their opinions on social media sites. Athletes use tweets to interact with their fans. Twitter feeds can also be used for emergency events like natural disaster and crisis management during or after the time of disaster (Zielinski et al., 2012). The research can be done in English or any other language, where relevant tweets can be classified and extracted. Sentimental classifier is able to determine the neutral, negative and positive tweets. Algorithm can be made accurately to classify Twitter messages as positive or negative, with respect to a query term (Go, Huang & Bhayani, 2009). Searching the tweets can be more easily done by using the hashtags ahead of the subject to be searched. Hashtags are used to categorize the messages in the twitter. With the use of the hashtags, twitter users can propagate the ideas and promote specific topics and people. Hashtags are used to streamline the search and at the same time, to increase the effectiveness of the research (Wang et al., 2011). But the biggest problem is the size of an unstructured data, which is in chunks, and there can be lot of repetition in the data, so this unstructured data should be taken in large volumes and therefore more complex algorithms are used to classify very high number of tweets. Linguistic features can also be used to identify the language used in the tweets. The research is also done on how many retweets came and what are the factors contributing to the retweets (Naveed et al., 2011). The researchers brought much attention to the data from the tweets as the data is very irregular due the 140 character limits put on the tweets (Saif, He & Alani, 2012). The authors show how to automatically collect a corpus for sentiment analysis and opinion mining purposes. Using the corpus, the authors build a sentiment classifier that is able to determine positive, negative and neutral sentiments for a document (Pak & Paroubek, 2010).

4. Objective

The objective of the analysis paper is to try do the text analysis on the leadership normally. The analysis can provide the perception of the tweeters relating to leadership.

5. Research Methodology

The information associated with the analysis area unit the unstructured data. The unstructured information area unit extracted from twitter within the sort of tweets. For extracting the information from the twitter, we have a tendency to have copied the primary hundred tweets on leadership from net. The extracted tweets area unit traced and affixed to word generally format. within the analysis half, we have a tendency to area unit employing a text2data computer code for analyzing the extracted tweets, that more categorizes the tweets into the positive tweets, negative tweets and neutral tweets. It is finished with the help of text files having the list of positive and negative words. With this operate the tweets area unit rated to positive, negative and neutral. The leader topic was chosen from the theme of conference, and additionally the text analytics was abundant related.

6. Analysis and Discussion

The tweets were copied from twitter on leadership and pasted in word, then the text analysis is done on the tweets. Analysis is done through a software text2data as shown in table 1.

6.1. Process of Text Analysis

In this research the text2data which is an add-on for MS-excel was downloaded and the trial version was used to for text. The goal of this (text mining) technique is to introduce the text mining capabilities of text2data using MS-Excel with a limited option through a use of unstructured data. The unstructured data involves mining tweets on leadership.

Table 1 - Software text2data Output











Subjectivity: Strong Subjective

Detected Keywords

leaders	4.415	show	0.997	matter	-0.498
character	2.982	center	0.989	story	-0.498
great	2.724	learn	0.986	think	-0.495
leadership	2.523	interests	0.975	attempt	-0.494
team	1.91	focus	0.975	function	-0.49
success	1.844	any potential	0.923	attitude	-0.488
strength	1.841	start	-0.999	humility	-0.485
create	1.814	other	-0.998	useful	-0.475

delegate	1.261	title	-0.996	sorry	-0.472
best	0.922	making	-0.996	followers	-0.467
love	0.895	need	-0.996	wrong	-0.455
engaging	0.884	result	-0.995	concerns	-0.409
genuine	0.838	know	-0.995	busy	-0.389
outstanding	0.692	someone	-0.994	failure	-0.372
believe	0.498	demands	-0.994	avoid	-0.239
next	0.498	relentless	-0.988	time	-2.997
themselves	0.498	hard	-0.987	others	-2.983
take	0.497	common	-0.981	people	-1.995
amount	0.495	adopt	-0.979	person	-1.977
relevant	0.489	actions	-0.978	bad	-0.979
energy	0.488	gravity	-0.978	cheap	-0.525
information	0.488	logic	-0.976		
give	0.483	authority	-0.965		
TRUE	0.481	decision	-0.958		
steps	0.476	circumstances	-0.944		
treat	0.473	battles	-0.935		
talent	0.466	leader	-0.89		
explain	0.461	defensive	-0.888		
effective	0.46	league	-0.858		
share	0.457	decisions	-0.642		
honesty	0.448	stand	0.992		
purpose	0.443	want	0.986		
integrity	0.422	self-esteem	0.976		
greatest	0.411	expectation	0.974		
engage	0.392	arrive	0.958		
perform	0.388	boost	0.945		
strongest	0.367	adversity	0.914		
keys	0.315	areas	0.804		
startups	0.315				
buzzwords	0.315				
reasoning	0.315				
assumptions	0.315				
agree	0.315				
essential	0.315				
motivate	0.222				
model	0.215				

Table 2 - Core Sentences Extracted Using Text Analytics Software

Core sentences	Relevance		
Because appreciate gravity, we cannot escape our own commitment & dedication to hard work & mastery we're back at it... in pursuit of contentment being defensive and blaming others is one of the common strategy we human beings adopt to avoid taking responsibility.	9		-0.3040
Stop blaming others and start taking responsibility and you are a leader how we celebrate, who we celebrate, and what we celebrate tells everyone what we value most if you never say "no" then your "yes" has no meaning at all leaders do n't develop people just to improve the team.	9		-0.2786
What is the energy level when you arrive what is the energy level when you walk out the door outstanding leaders go out of their way to boost the self-esteem of their people.	8		+0.3293
When you delegate authority, you create leaders adding value to others is an act of love.	7		+0.3476
When you delegate authority, you create leaders the strongest people are not those who show strength in front of us, but those who win battles we know not about no excuse.	9		-0.4152
Understanding employment law aids leadership your focus should be more on what you are becoming than on what you are doing more commands & demands are not the ingredients of authentic leadership.	8		-0.3163
If we want teachers to engage students, as leaders, we must model this expectation by first engaging teachers... meet, model, motivate learn to love without condition.	7		+0.2600
Understanding where your organization sits in the quadrant of new power and old power values is useful to understand what leadership approaches can work - the next time you have a disagreement, attempt to understand the concerns of the other person.	14		-0.2737
Catch someone doing something right today and praise them for it so leadership is n't about being a charismatic, ivy league degree holder it is having speedy decision making, relentless reliability, adaptability to changing circumstances & excelling in managing relationship.	9		-0.3044
Fail is usually the result of horrible decisions made every day over time "logic will get you from a to b. imagination will take you	8		-0.2226











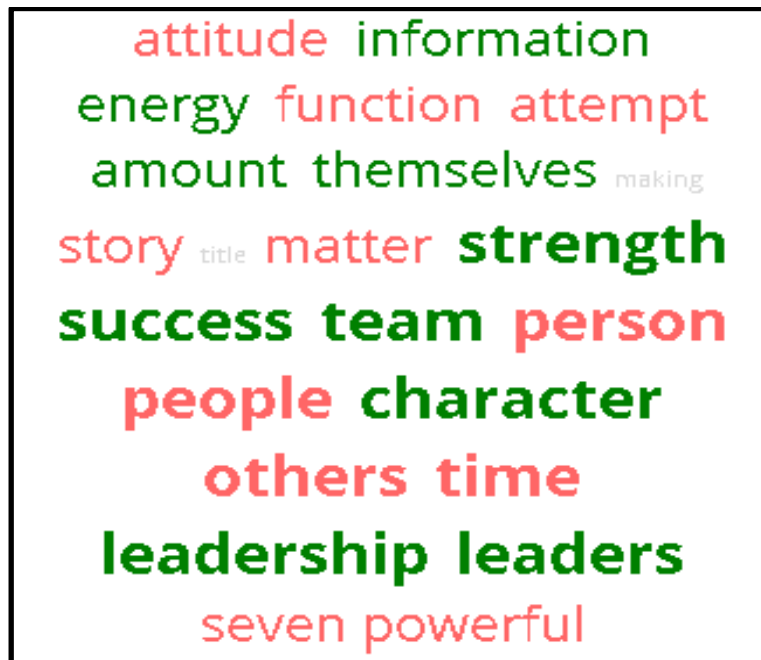
everywhere. "			
A leadership strength as a leader, are you developing or just using the talent in your team character is about being who you are, regardless of who you are with.	8		+0.3276
Great leadership lies in guiding others to success "nearly all men can stand adversity, but to test a man 's character, give him power".	7		+0.2302
Leadership requires you to act boldly and think creatively a legacy is created only when a person uses their position to do great things the quality of your attitude will determine the quality of your life "idea are cheap.	13		-0.3087
Leaders will go anywhere, as long as it is forward the function of leadership is to produce more leaders, not more followers good leaders are deep thinkers and feelers with lot of humility and kindness.	12		-0.2595
Leadership is purpose believing in self is the greatest step any potential leader can take leadership anyone who doesn't believe in themselves expects the worst not only of themselves but also of others every leader gets the same amount of time every day, great leaders spend it differently.	12		+0.1651
Honesty and integrity are absolutely essential for success in life... all areas of life. "	7		+0.7099
You don't need a title or position, just an awareness of how your actions and words will influence others.	9		-0.2751
Seven powerful statements great leaders use frequently: thank you i 'm sorry i was wrong great job i appreciate you how can i help you tell me your story... then, they simply listen no matter how busy you are or how stressed you are, there 's always time to treat those around you with both courtesy & respect.	14		-0.1443
7 keys to effective team leadership in startups ask genuine questions share relevant information agree on what buzzwords mean explain reasoning and intent focus on interests, not positions test assumptions jointly design next steps great leaders allow others to perform at their best.	15		+0.1967
In doing so, leaders motivate people" (bcg article) this is so true are you leading change from the center stage character is how you treat someone who can do not for you.	8		+0.2529

Figure 1 – Word Cloud (Tag Cloud) - Visualization Tweets on Leadership Extracted Using Text Analytics



7. Visualization Result

Visualizing information provides the power to drawing out necessary options that is important for higher and fast understanding of state of affairs that results in fast understanding regarding the tweets on explicit topic.

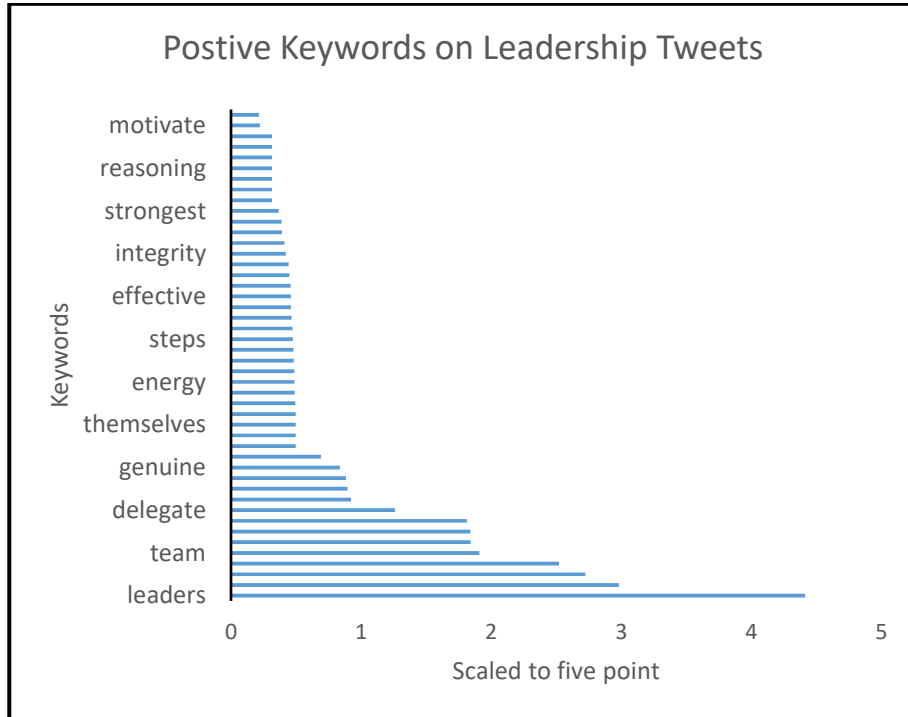
A Word Cloud or Tag Cloud could be a visual illustration of text knowledge within the style of tags, that area unit usually single words whose importance is envisioned by method of their size and color. As unstructured knowledge within the style of text continues to examine unprecedented growth, particularly at intervals the sphere of social media, there's associate degree ever-increasing ought to analyze the huge amounts of text generated from these systems. A Word Cloud is a wonderful choice to facilitate visually interpret text and is helpful in quickly gaining insight into the foremost outstanding things during a given text, by visualizing the word frequency within the text as a weighted list.

The first hundred tweets on leadership shows the foremost highlighted and often used words on leadership. The red font indicates the negative tweets on leadership, we are able to say that the leader mustn't possess that qualities. The inexperienced text daring and highlighted indicate the foremost wide used word within the tweet which attributes to the positive nature of leadership qualities

8. Result

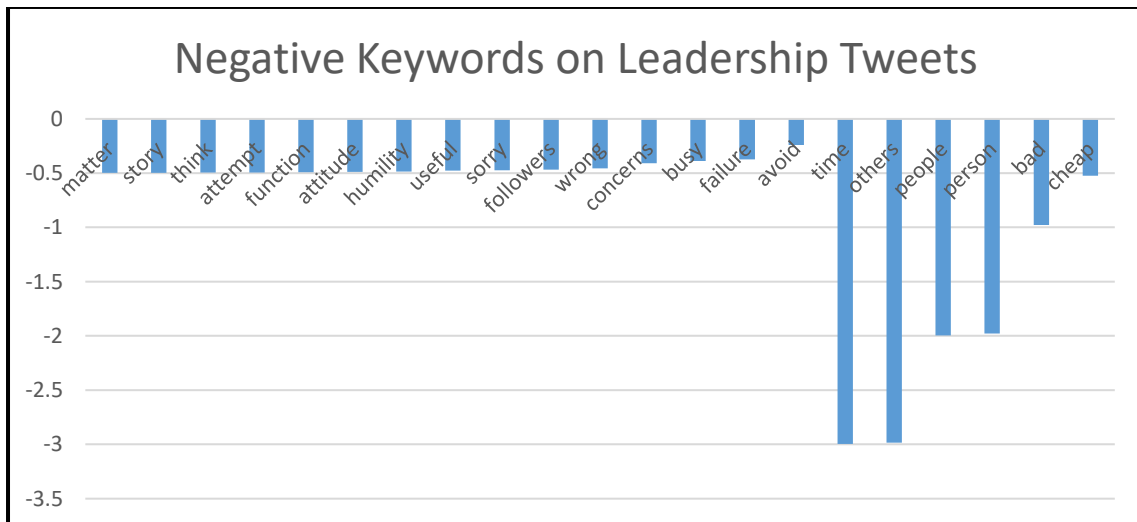
Analyzed Text

Figure 2 – Positive Keywords on Leadership Tweets



The above figure shows the positive tweets on leadership, the keywords were extracted from the text analytics software and the graph was plotted using MS-Excel.

Figure 3 – Negative Keywords on Leadership Tweets



The above figure 3 shows negative tweets on leadership, the keywords were extracted from the text analytics software and the graph was plotted using MS-Excel.

9. Discussion

This study presented overview of sentiment analysis for first hundred tweets on leadership. We covered different tools and techniques for better understanding of sentiment analysis approaches and we also highlighted sentiments through data visualization.

10. Conclusion

In this paper we analyzed sentiments or text analytics on leadership. We faced challenges and realized sentiment detection from social media is a difficult task. The tweets were limited to only hundred numbers. The unstructured data on any topic across the web for any sample size from social media can be analyzed using advanced analytic software's and techniques.

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