# Why Students Share False Information on Social Networking Sites: A Conceptual Framework

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**Abstract.** The act of spreading false information through social networking sites have made a big impact in the world today, and mostly the effect is damaging and hard to constrain. Most users of social networking sites share false information without first authenticating or getting the facts right regarding the information. Thus, this paper is aimed at discovering the correlation between having a formal education in information management and the spread of false information through social networking sites. Based on the framework used in past studies, this paper is also adopting the research model from Xinran Chen et al. to propose as a framework for further research on the context. From the comprehensive literature search, this paper highlighted three independent variables and one dependent variable, respectively, Information Literacy Background, Motivation, Type of Message and the spread of false information through social networking sites to be studied.

Keywords: Information management, Social Networking, False Information, Conceptual Framework

## 1 Introduction

The world we know today is different from ten years ago. Some may say that ten years is a short time for an epic event that could transform the course of history, however as ten years is enough for the world to change aggressively through the introduction of web 2.0. With the introduction of web 2.0 in 2004 at the web 2.0 conference by Tim O'Reilly, the world changed overnight or ten years to be precise. The rise of social networking sites such as Facebook, Twitter, Instagram and mobile messaging apps such as WhatsApp, WeChat and Viber killed or in softer terms lowered the number of users of the once-popular chatting sites such as yahoo messenger (YM), Internet relay chat (IRC) and many more. The reason social networking sites are increasingly popular compared to the old chatting sites is due to the simplistic nature and user-friendly environment provided. Unlike the old chatting system, it is effortless to use social networking sites, making it possible for even children at the age of 10 years old to start using Facebook or WeChat. This, in return, creates a generation that for the better part of their existence has been using social networking sites as their main source of information and knowledge sharing. A handful of people who are experts in the information fields knows that any information disseminated through social networking sites are false until proven otherwise. The problem nowadays is that users of social networking sites do not bother to validate the information that they receive thus creating a chain of events that will eventually spread out of control when they simply share the information with other people.

One of the premises of the first amendments in America is the freedom of speech; it is used all around the world in the guise of fundamental human rights. To a degree, freedom of speech is an ideal form of expression that is demanded by everyone, and at this time of age, everyone is exercising their so-called human rights. However, a coin has two sides, and the freedom of speech is just a side to a coin, the other side of the coin is that a person is free to speak his mind. Nevertheless, he is also responsible for what he speaks and any consequences that may come. The same rules apply towards the spread of misinformation, the use of social networking sites are free to validate the information before spreading it or vice versa, however, the user is responsible towards any damage towards any individuals if the information is false. The problem today is nobody will admit that they have spread incorrect information, thus making it almost impossible to determine the exact person that spread the first lies.

The spread of misinformation through social networking sites may sound like a small matter that would not be of any concern. However, there have been some cases where false information made the front page of popular newspapers and the topic of popular news websites. Following the disappearance of Malaysia Airways flight MH370 in March 2017, NBC News also highlighted various false reports spreading on social media, which alleged that the plane had made a safe landing. Viral information on crucial matters has caused people to believe in whatever information they read on social networking sites. Even news portal with numerous numbers of editors and journalist uses fake information as the front-page news, how will the ordinary people understand the information they just read on a trusted website. The nature of people towards information in the context of the information age is people tends to want to be the first in everything especially the knowledge of new information regarding an event or tragedy regardless of its truth.

There is numerous research regarding the spread of misinformation and the social network. However, they do not address the people itself in which will they be responsible for the information they spread. The core problem is not the one who creates the false information but how a person that receives the information will react towards it and will that person take responsibility to dismiss it as wrong or fact and will that person spread the information regardless of the validity. Furthermore, there is also a lack of study regarding how people who have a formal education in information management towards managing false information compared to non-background students. As long as this problem is not stressed and fixed, there will always be false information that will go viral in social networks. Thus, this paper is aimed at discovering

the correlation between having a formal education in information management and the spread of false information through social networking sites. It is also intended to find out what is the reason people do not validate the information they receive through social networking sited and does information literacy background plays a vital role as the factor for spreading false information through social networking sites among university students.

## 2 Literature Review

#### Spread of misinformation through social networking sites

In the past newspapers, radios, or any form of mass media needs to validate their information before publishing, making it a more reliable source of information some of the time. Unlike the past, information nowadays is shared on social networking sites from individuals through their point own point of views, thus creating perception before any validation. Once information goes viral, it is hard to control, which is the same as when a wildfire is blazing in a thick forest. When some part of the fire is put down, another part will ignite. It will take a lot of effort to extinguish a wild fire much like a viral information fully. In recent years much false information has spread throughout the world. According to an analysis by Nahon and Hemsley (2013), the role of "gatekeepers" is central to whether something goes viral or not. These gatekeepers – people who are well placed within a network to share information with others – are often old-fashioned journalists or people "in the know". Some false information that went viral is a result of people who are famous in social networking sites; they are called "instafamous", "tweetfamous" and many more. These people act as gatekeepers and are trusted by their social media followers. Thus when they share a piece of information or a "news" whether it is legitimate or false, their followers will not subject them to any scrutiny and believe them wholeheartedly.

Furthermore, as a Good Samaritan, their followers will share the information with others, consequently making the information spread to all walks of life. Whenever this happens, even false information will be considered the truth. One of the many reasons why information is easily shared is that the premise of the social networking site itself is to make it easier for users to share news, Facebook has a like button and a share button that when clicked will instantaneously share the information to all their Facebook friend.

Twitter has a retweet button that will share any tweets from anyone to their followers, and even the Instagram which has no option to re-share its content is solved by using a third-party application such as photo repost to share pictures with friends. The spread of false information has become an epidemic that is now starting to take shape and is recognized by many nations around the world, according to Farida Vis (2015) the top three issues highlighted for 2014 (world economic forum) concerned rising societal tensions in the Middle East and North Africa; widening income disparities, and persistent structural unemployment. Perhaps surprisingly, in tenth place was a concern over the rapid spread of misinformation online, mainly social media's role in

this. At a value of 3.35, this was somewhat to very significant. According to Cousins (2012) in the United States, we've seen several major misinformation campaigns over the years, perpetrated by both the media and politicians. Some of the most prominent campaigns include attempts to convince Americans that climate change is a hoax that Saddam Hussein was somehow involved in the attacks of 9/11 and that President Barack Obama wasn't born in America. To refute all of these claims by "leaders" would take time and research by individuals, which is often neglected. As the report explains, this is how these misinformation campaigns become successful. Most of the false information originates or is disseminated through social networking sites. The growing use of social networks may foster the quick and wide dissemination of misinformation. The fractionation of the information landscape by new media is an important contributor to misinformation's particular resilience to correction (cousins, 2012). According to Farida Vis (2015), false information spreads just like accurate information. Important work is being developed on the spread and circulation of online information, specifically academic and industry studies on virality. This work seeks to better understand the circumstances under which information has or may spread. What is clear is that it is difficult to isolate specific patterns, users or types of content that may result in the spreading of information online.

#### The psychological aspect of sharing everything on social networking sites

The rise of social networking sites and the wide availability of internet connection has made it easier for anyone to share anything at anytime, anywhere. This made social networking sites a far more valuable medium of information dissemination. According to Lee and Ma (2012), recent events from the crisis in the Middle East to the earthquake and tsunami disaster in Japan have demonstrated that social media (e.g., Facebook, Twitter, and YouTube) are changing the way individuals consume and share the news. Specifically, a news item can be distributed across societies and discussed by people around the world within minutes via social media platforms. For instance, news of the protests in the Middle East was spread through social media networks Twitter and Facebook.

Similarly, in the earthquake and tsunami disaster, instant updates were available and shared on many social media platforms. In both situations, thousands of stories, photos and videos were posted, which immediately attracted world-wide attention, demonstrating that social media platforms play pivotal roles in supporting news production and diffusion. From here, we can see that social network connects people globally; any person from Malaysia could communicate with peers from another continent, such as the United States in real-time. This was different from the past, where information could only be obtained through the newspapers.

According to Coojimans (2005), there are two motifs for spreading false information: 1. The spreader believes the information is reliable; 2. The spreader has an interest in getting others to believe the information is correct. Most social networking sites users spread information because they believe it to be true; their intentions may be noble, but, the repercussion may lead to a bigger problem. Coojimans (2005) further elaborated that if someone is not intelligent enough to comprehend the matter, he is dealing with, he may arrive at false conclusions and express false ideas. He will not change his ways even when provided with the relevant, correct information. There is

no cure. This claim is further strengthened by Cousins (2012) according to the team of psychological scientists working on the study, led by Stephan Lewandowsky of the University of Western Australia, the main reason that people are more likely to believe false information (for example, that climate change is a hoax) is because it takes less brain power to believe a statement is false than to accept it as truth. Finding the truth takes time and effort that people often don't care enough to spend on particular issues that aren't of immediate concern. Some of the root problem to spreading false information is how the first person that disseminate the information perceive the world such as educational level, background, living environment and many more, as the saying goes "a picture is worth a thousand words".

#### Damages that may occur through spreading false information

The first method of spreading information widely and fast was through the radio. When the radio was first introduced, everyone was flocking towards it to listen to the latest news. It was on October 30, 1938, the first misinterpreted information was perceived by a huge number of people, a radio station in America aired a story about a huge meteorite that had smashed into a New Jersey farm and that New York City was under attack by Martians. This news created mass hysteria throughout the nation, "Thousands of people, believing they were under attack by Martians, flooded newspaper offices and radio and police stations with calls, asking how to flee their city or how they should protect themselves from "gas raids." Scores of adults reportedly required medical treatment for shock and hysteria". However, it was just a radio play narrated by Orson Welles, and the play was written and performed to sound like a real news broadcast about an invasion from Mars (Lovgen, 2005). This showed how powerful information could affect a country much less the whole earth. In the context of today, the internet, mainly any social networking site is the same with the radio; however, with a much faster transfer of information and a larger audience. Thus, any information spread through social networking sites could have the same effect as the Martian invasion story but with larger and longer-lasting hysteria.

According to Farida Vis (2015) on the anniversary of the 2013 Boston Marathon bombings, it's worth remembering that information posted on Reddit led to the New York Post printing images of two suspects on its front page, who had nothing to do with the bombings. The online crowds weren't always wise following the Boston Marathon bombings. For example, the online community Reddit and some Twitter users were criticized for pillorving an innocent student as a possible terrorist suspect (Talbot, 2013). From here, we can see that some false information may result in damages that are far worse than previously thought. The information was from a social networking site called Reddit, where people could post any news and users could follow or comment on the postings. She further elaborated another example "Following the disappearance of Malaysia Airways flight MH370 in March, NBC News also highlighted various false reports spreading on social media, which alleged that the plane had made a safe landing." False information has made its way to the mainstream news agency, which may lead to more considerable damage and broader spread. The reason why some news agency adopted this so-called information from social networking sites is ample because, being first to report breaking news has long been a key value for traditional media outlets (Farida Vis, 2015).

#### Social responsibilities towards halting the spread of misinformation

Whenever a person shares information, they are burdened by being responsible for the consequences of what that information may lead to. You cannot expect a group of people to sit around and not do anything when their belief system is ridiculed in a manner which irritates the calmest of people just because of false information and the use of the freedom of speech that is claimed to be a human rights as their defence. Everyone, no matter who is responsible towards what he or she shares, talks, writes and anything that is related to spreading information. According to Fitts (2014), the internet makes it easy to spread misinformation-a bad article picked up, unverified, in dozens of blog posts, its reach furthered by tweets and Facebook shares. But as easy as it is to spark a rumour, it's challenging to squash it. In pre-digital days, a newspaper could write a correction in the next day's issue. Now, by the time a story's debunked, it has already travelled, with no guarantee that readers will navigate back to the source—or any source at all—to see a corrected version. The fact of the matter is, right now there is no definite method of halting the spread of misinformation, there are some websites that offer solutions but even with the facts and the information already debunk it is hard to change the people's perceptions. According to O'Neil (2014):

Based on that, ultimately the only person that could stop spreading false information is ourselves, and as a social responsibility we should also spread the news that is factual and true that could debunk any misinformation

#### Correlation of information literacy and the spread of false information

The need for formal education on all levels regarding information management has never been higher than before, because of the rampant exposure of people from all walks of life to unfiltered information that consists of factual information, misinformation, false information or rumours disseminated mostly by social networking sites. As mentioned by Xinran Chen et al. (2015), "the increasing use of social media for information sharing has elevated the need for information literacy (IL) education to prepare students to be effective information creators and communicators". Xinran Chen et al. (2015) mentions about Information Literacy, which is a component of information management. Information Literacy is defined as the ability to distinguish when information is required and can locate, evaluate, and use the required information (American Library Association, 1989) effectively. However, there has been no concrete proof that information literacy helps in curbing the spread of false information, especially in the realms of social networking sites. Most of the solution in past articles relates to the enhancement of security measures or collective effort to curb the spread of false information, as mentioned by Alessandro Bessi (2016) since the World Economic Forum listed massive digital misinformation as one of the main threats to the society, community-driven, and algorithmic-driven solutions have been proposed to counteract the pervasiveness of online misinformation. Therefore, there is a need to dig deeper into the relationship between information literacy or to have a formal education in information management and the sharing of false information or misinformation through social networking sites.



Fig. 1. Framework.

### 3 Conclusion

Based on the framework used in past studies, this paper proposed to adopt the research model from Xinran Chen et.al. The rationale of choosing this research model is based on its relevance to the topic at hand. However, there are some elements to the independent variable that have been changed and adopted by other authors to better suit the overall issue at hand.

## References

Arefin, M. S., & Morimoto, Y. (2012). Skyline Sets Queries for Incomplete Data. *International Journal of Computer Science & Information Technology (IJCSIT)*, 4 (5), 67-80.

Khalefa, M. E., Mokbel, M. F., & Levandoski, J. J. (2008). Skyline Query Processing for Incomplete Data. 2008 IEEE 24th International Conference on Data Engineering.

Sajeev, J., & A., N. V. (2016). Top-K Dominating Queries On Incomplete Data : A Survey. *International Journal of Scientific Research in Science and Technology*, 2 (6), 359-361.

Le, T. M., Cao, J., & He, Z. (2013, April 24). Top-k best probability queries and semantics ranking properties on probabilistic databases. *Data & Knowledge Engineering*, pp. 248-266.

Cormode, G., Li, F., & Yi, K. (2009). Semantics of Ranking Queries for Probabilistic Data and expected ranks. *International Conference on Data Engineering*, (pp. 305-316).

Hua, M., Pei, J., Zhang, W., & Lin, X. (2008). Ranking Queries on Uncertain Data: A Probabilistic threshold approach. *SIGMOD*, 673-686.

Zhang, W., Lin, X., Pei, J., & Zhang, Y. (2008). Managing Uncertain Data: Probabilistic Approaches. *The Ninth International Conference on Web-Age Information Management*.

Cheng, R., Kalashnikov, D. V., & Prabhakar, S. (2003). Evaluating Probabilistic Queries over Imprecise Data. *Proceedings of the ACM SIGMOD International Conference on Management* of Data, 551-562.

Le, T. M., Cao, J., & He, Z. (2016). Answering skyline queries on probabilistic data using the dominance of probabilistic skyline tuples. *Preprint submitted to Information Science Journal*, 1-32.

Atallah, M. J., & Qi, Y. (2009). Computing All Skyline Probabilities for Uncertain Data. Proceedings of the ACM SIGACT-SIGMOD-SIGART Symposium on Principles of Database Systems, 279-287.

Antova, L., Koch, C., & Olteanu, D. (2009). 10<sup>(10<sup>6</sup>)</sup> Worlds and Beyond: Efficient Representation and Processing. *The International Journal on Very Large Data Bases*, 18 (5), 1021-1040.

Soliman, M. A., Ilyas, I. F., & Ben-David, S. (2010). Supporting ranking queries on uncertain and incomplete data. *The very Large Database Journal*, 19 (4), 477-501.

Miao, X., Gao, Y., Zheng, B., Chen, G., & Cui, H. (2016). Top-k dominating queries on Incomplete Data. *IEEE Transactions on Knowledge and Data Engineering*, 28 (1), 252-266.

Tao, Y., Cheng, R., Xiao, X., Wang Kay Ngai§, B. K., & Prabhakar, S. (2005). Indexing Multi-Dimensional Uncertain Data with Arbitrary Probability Density Functions. *Proceedings of the 31st VLDB Conference*, (pp. 922-933). Trondheim, Norway.

Reynold, C., & Sunil, P. (2003). Managing uncertainty in sensor database. SIGMOD.

Pei, J., Jiang, B., Lin, X., & Yuan, Y. (2007). Probabilistic Skylines on Uncertain Data. *VLDB*, 15-26.

Semantics of Ranking Queries for Probabilistic data and expected ranks. (n.d.).

Yan, D., & Ng, W. (2011). Robust Ranking of Uncertain Data. International Conference on Database Systems for Advanced Applications.

Mares, M. (2007). Fuzzy Data in Statistics. Kybernetika.

'Skrbi'c, S., & Rackovi'c, M. (2014). Fuzzy Databases - Monograph -.

Benouaret, K., Benslimane, D., Hadjali, A., & Barhamgi, M. (2011). Top-k Web Service Compositions using Fuzzy Dominance Relationship. *IEEE International Conference on Services Computing*.

Alwan, A., Ibrahim, H., Udzir, N., & Sidi, F. (2018). Missing Values Estimation for Skylines in Incomplete Database. *The International Arab Journal of Information Technology*, *15* (1), 66-75.

Batista, G. E., & Monard, M. C. (2003). An analysis of four missing data treatment methods for supervised learning. *Applied Artificial Intelligence Journal*, 17 (5), 519-533.

Grzymala-Busse, J. W., & Hu, M. (2000). A Comparison of Several Approaches to Missing Attribute Values in Data Mining. *in Porcessing of the second International Conference on Rough Sets and Current Trend in Computing.* 

Abuelyaman, E. S., & Al-Sehibani, A.-A. S. (2008). Optimization of the Hamming Code for Error Prone Media. *International Journal of Computer Science and Network Security*, 8 (3), 278-285.

Gao, Y., Miao, X., Miao, X., Chen, H. C., & Li, Q. (2014). Processing k-skyband, constrained skyline, and group-by skyline queries on incomplete data. *International Journal of Expert System with Application*, 41 (10), 4959-4974.

Lian, X., & Chen, L. (2011). Shooting top-k stars in uncertain databases. *The VLDB Journal*, 20:819-840.

Soliman, M. A., Ilyas, I. F., & Chang, K. C.-C. (2007). Top-k Query Processing in Uncertain Databases. 2007 IEEE 23rd International Conference on Data Engineering.

M.Naveena, & S.Sangeetha. (2013). Fuzzy Multi-Join and Top-K Query Model for search- asyou- type in Multiple tables. *International Journal of Computer Science and Mobile Computing* , 2 (12), 114-118.

Ayed, A. B., Halima, M. B., & Alimi, A. M. (2014). Survey on clustering methods: Towards fuzzy clustering for big data. 2014 6th International Conference of Soft Computing and Pattern Recognition.

Liu, X., Yang, D.-N., Ye, M., & Lee, W.-C. (2013). U-Skyline: A New Skyline Query for uncertain databases. *IEEE Transactions on Knowledge and Data Engineering*, 25, 945-960.

Ilaria, B., Paolo, C., & Marco, P. (2014). Domination in the Probabilistic World: Computing Skylines for arbitrary correlations and ranking semantics. *ACM Transactions on Database Systems*, *39*, 14:1-14:45.

Lee, C. S., & Ma, L. (2012). News sharing in social media: The effect of grafitications and prior experience. *Computers in Human Behavior*, 331-339.

Wang, Z., Tchernev, J. M., & Solloway, T. (2012). A dynamic longitudinal examination of social media use, needs, and gratifications among college students. *Computers in Human Behavior*, 1829–1839.

Hussain, D. I. (2012). A Study to Evaluate the Social Media Trends among University Students IETC2012. *Procedia - Social and Behavioral Sciences* 64, 639–645.

Hughes, D. J., Rowe, M., Batey, M., & Lee, A. (2012). A tale of two sites: Twitter vs. Facebook and the personality predictors of social media usage. *Computers in Human Behavior*, 561–569.

Mocanu, D., Rossi, L., Zhang, Q., Karsai, M., & Quattrociocchi, W. (2015). Collective attention in the age of (mis)information. *Computers in Human Behavior*.

Park, C. S. (2013). Does Twitter motivate involvement in politics? Tweeting, opinion Does Twitter motivate involvement in politics? Tweeting, opinion. *Computers in Human Behavior*, 1641–1648.

Hoeck, N. V., Begtas, E., Steen, J., Kestemont, J., Vandekerckhove, M., & Overwalle, F. V. (2014). False belief and counterfactual reasoning in a social environment. *NeuroImage*, 315–325.

SangwonBae, JinkyuJang, & JinwooKim. (2013). Good Samaritans on social network services: Effects of shared context in formation onsocial supports for strangers. *Int. J.Human-ComputerStudies*, 900–918.

Vis, F. (2015). Hard Evidence: how does false information spread online?

Jin, B. (2013). How lonely people use and perceive Facebook. *Computers in Human Behavior*, 2463–2470.

Tang, S., Xian Teng, S. P., & Shu Yan, Z. Z. (2015). Identification of highly susceptible individuals in complex networks. *Physica A*, 363–372.

Osatuyi, B. (2013). Information sharing on social media sites. *Computers in Human Behavior*, 2622–2631.

Ahn, D., & Shin, D.-H. (2013). Is the social use of media for seeking connectedness or for avoiding social isolation? Mechanisms underlying media use and subjective well-being. *Computers in Human Behavior*, 2453–2462.

Tian, R.-Y., & Liu, Y.-J. (2014). Isolation, insertion, and reconstruction: Three strategies to intervene in rumor spread based on supernetwork model. *Decision Support Systems*, 121–130.

Silver, C. (2015). *LIES, DAMN LIES, AND VIRAL CONTENT HOW NEWS WEBSITES* SPREAD (AND DEBUNK) ONLINE RUMORS, UNVERIFIED CLAIMS, AND MISINFORMATION. Columbia Journalism School.

Jacob, C. (2014). Preventing the Spread of False Information.

Cooijmans, P. (2015, June 16). *The psychology of false information*. Retrieved from High-Range Intelligence Tests: http://www.paulcooijmans.com/psychology/false\_information.html

Psychological Study Reveals Why Misinformation Is So Effective. (2014).

Li, H., & Sakamoto, Y. (2014). Social impacts in social media: An examination of perceived truthfulness and sharing of information. *Computers in Human Behavior*, 278–287.

Spread of false information causes dangers, says Sunstein - Harvard Law Today. (2014). *Harvard Law Today*.

(2005). "War of the Worlds": Behind the 1938 Radio Show Panic. National Geographic.

Monika Mital, D. I. (2010). Information exchange and information disclosure in social networking we sites: Mediating role of trust. *The Learning Organization*, 479 - 489.

Jaeung Lee, M. A. (2015). Message diffusion through social network service: The case of rumor and non - rumor related tweets during Boston bombing 2013. *InfSyst Front*, 997 - 1005.

Khaled Ahmed Nagi Rashed, D. R. (2014). Community and trust-aware fake media detection. *Multimed Tools Appl*, 1069 - 1098.

Vishwanath, A. (2015). Diffusion of deception in social media: Social contagion effects and its antecedents. *Inf Syst Front*, 1353 - 1367.

Silverman, C. Lies, damn lies, and viral content: How news websites spread (and debunk) online rumors, unverifies claims, and misinformation. Columbia Journalism School.

SHOHEI USUI, F. T. (2015). Why Did False Rumors Diffuse after the 2011 Earthquake off the Pacific Coast of Tohoku? Impact Analysis of the Network Structure. *Electronics and Communications in Japan*, 1796 - 1805.

Arndt, J. (2006). Distinctive information and false recognition: The contribution of encoding and retrieval factors. *Journal of Memory and Language*, 113 - 130.

Ming Jia, H. R. (2017). How rumors fly. Journal of Business Research, 33 - 45.

Wouter Jong a, M. L. (2016). Self-correcting mechanisms and echo-effects in social media: An analysis of the "gunman in the newsroom" crisis. *Computers in Human Behavior*, 334 - 341.

Bessi, A. (2017). On the statistical properties of viral misinformation in online social media. *Physica A*, 459 - 470.

Huaye Li, Y. S. (2014). Social impacts in social media: An examination of perceived truthfulness and sharing of information. *Computers in Human Behavior*, 278 - 287.

Liming Zhao, J. Y. (2016). An exploration of rumor combating behavior on social media in the context of social crises. *Computers in Human Behavior*, 25 - 36.

Johannes Putzke, K. F. (2014). Cross-cultural gender differences in the adoption and usage of social media platforms – An exploratory study of Last.FM. *Computer Networks*, 519 - 530.

Didier Henry, E. S. (2017). Social media, diffusion under influence of parameters : survey and perspectives. *Procedia Computer Science*, 376 - 383.

Symeon Papadopoulos, K. B. (2016). Overview of the Special Issue on Trust and Veracity of Information in Social Media. *ACM Trans. Inf. Syst.* 

Baldry, C. (1934). Editorial: chronicaling the information revolution. *New technology, work and employement*.

Oleg V, P. R. (2008). A communication model with limited information - processing capacity of recipients. *System Dynamics Review*, 377 - 405.