

SOCIAL MEDIA AS AN E-HEALTH COMMUNICATION CHANNEL: THE USE OF (@MEDTWEETMYHQ) AMONG STUDENTS OF UITM MELAKA

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Abstract

Social media are now acknowledged as one of the platforms for engaging e-health that contributing to serious discussion and information regarding on medical and health issues. However, there are challenges and risks associated with social media in medical and health care which is misinformation. Misinformation can spread quickly on Twitter and each retweet is exposing to wider audiences. The aim of this paper is to identify the use of @MedTweetMYHQ among its' users sepcifically among UiTM Melaka students. The researchers used in-depth interviews to five informants based on purposive sampling. The data was analysed using thematic analysis. Four themes emerged from the analysis which are the use of @MedTweetMYHQ to receive updated useful information on health, to share information on healthy lifestyle, to debunk health myths and as a platform for health discussions.

Keywords: *E-health, communication, social media, twitter.*

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Introduction

Social media is a communication mechanism that allows users to communicate with thousands, and perhaps billions, of individuals all over the world (Williams et al., 2012). Social media also refer as a websites or online tools that help interactions between user by providing opportunities to share information, opinion and interest (Khan, 2013).

In today's world, it is undeniable that social media plays an important role in impacting culture, economy and our overall view of the world. Social media is a new forum that brings people to exchange idea, connect with, relate to, and mobilize for a cause, seek advice, and offer guidance (Amedie, 2015). Social media can be divided into two categories which is internet based and smartphone based. Internet based can be easily accessed through any devices that connected with internet. For instance, email, IDs and Google+ whilst Smartphone based are limited as it can only be accessed with phone number and could not access using personal computer (Khan et al, 2014).

With the development and advancement of the Internet, social media such as Twitter, Facebook, Wechat and LinkedIn has taken the world by transforming the way society communicate with each other. This medium helps society in sharing and exchanging information over the Internet. (Dahl, 2015; Lim et al, 2012; Luarn and Chiu; 2015; Yavuz and Toker, 2014). Social media also creates interactions and help in increasing individual's social contacts (Hajli, 2013).

Micro-blogging

Micro-blogging has rapidly developed as a recently emerging service because of its timeliness and convenience, and a large number of people utilize this service to publish and share messages on different subjects (Java et al., 2007). Microblogging sites such as Twitter and Tumblr are largely popular and provide individuals with innovative ways to share information. Twitter is one of the earliest social media that provide services of Micro-blogging (Williams et al., 2012). Micro-blogging allows users to communicate with others without PCs but mobiles. Through sharing knowledge and experiences, learners can develop knowledge related to their field or their interests (Jean & Wenger, 1991).

Micro-blogging is one of the latest Web 2.0 applications and can best be exemplified by the highly popular Twitter application (Ebner et al., 2010). Like blogging, microblogging allows personal publication and conversation between writers and readers. As for twitter, it allows users to write up for only 140 characters per post. This limitation forces micro-bloggers to post concise messages. However, the limitation of words makes it easier for people to follow up on a conversation and give immediate feedback (Ebner et al., 2010) because individuals do not need to put in too much time and effort at once.

Micro-blogging are also used as a social networking tool to promote social interaction among communities. It is also found that microblogging enhanced process-oriented learning because learners were able to help in shaping each other's developing ideas through posting thoughts and information pieces (Ebner et al., 2010). Retweeting is a key mechanism for information diffusion in microblogging and is a user-driven convention that emerged in Twitter communication as people spread information that they feel or know to be newsworthy through retweeting (Starbird et al., 2010).

Micro-blogging was found to not only act as a tool for daily chatting, but also as an important platform for information publishing and sharing during mass crises and emergency situations. Thus, microblogging has become an important platform for information publishing and dissemination (Ma et al., 2014).

E-health as a communication channel

E-health revolution has produced an increasing number of new communication channels and strategies such as health information on the Internet. It helps in disseminate information and enrich the perspective of both health practitioner and consumer. The purpose of e-health technologies is for information seeking, communicating with physicians and managing medical information (Lustria et al, 2011).

The specialties of e-health as communication channel are it enables specific and detailed information based on the user interest. (Jacobs et al, 2014). To produce better outcomes, technology offer great potential to help by enabling health research and care. Patient with poor health condition may engage in appropriate self-care. For instance, in how to take medications and to understand the labels on the medicine. (Jacobs et al, 2014).

Due to the widespread and accessibility to the internet, social media are now acknowledged as one of the platforms for engaging e-health that contributing to serious discussion and information regarding on medical and health issues (Campbell & Craig, 2014). E-health will rapidly grow and become important components of today's medical care. It has the potential to reduce health care costs, increase communication for both patients and employees, and expand patient outreach (Gomes et al., 2015). The value of ICTs in development of e-health helps to create a more connected society (Mason & Rennie, 2007) that can share their experiences.

The development and advancement of medical and health care information technologies hold immense potential for further improvements in the delivery and promotion of medical and health care

practices (Fay et al, 2014; Fisher et al, 2008; Lim and Ting, 2010, 2012). The creation and exchange of user-generated content over the internet has taken the world by storm, revolutionizing the way we communicate as a society (Dahl, 2015; Lim et al, 2012; Luarn and Chu, 2015; Yavuz and Toker, 2014) including in the medical and health community. Strategies must be carefully selected and employed in order to successfully communicate correct and useful information that is required by different target audiences in the best way to guide medical and health care promotion (Kreps, 2008).

Twitter as an e-health communication channel

In 2008, Twitter has become one of the mainstream and widely used applications which allow its user to communicate in up to 140 characters (Zhao & Rosson, 2009). The convenient use of Twitter has made it a nature medium for sharing news, report about events, information about politics and social issues (Muralidharam et al, and Ross et al, 2011) to a larger community (Dork et al, 2010). Twitter has been one of the ten most popular sites on the internet (Alexa, 2012). There are different kinds of information spread over twitter and there is no procedure on how messages are spread over twitter network (Anbe et.al, 2016). Twitter is also being experimented in the health care field (Bush, 2009).

With the accessibility of information, Twitter has open an opportunity to health care industry in offering education, disease management (Ball & Lilis,2001) and health-care related information to online communities. It also enables communication between doctors to guide medical and health care promotion (Kreps, 2008) that is required by different target audiences. The strategies must be carefully selected and employed due to potential risks of inappropriate use including defamation, privacy and accuracy of information (Boulos & Wheeler, 2007).

There are also challenges and risks associated with social media in medical and health care which is misinformation. One's might fail to understand what exactly the General Practitioner trying to inform and it will lead to misunderstandings thus, tarnishing the image of the physician or the medical institution (Butt, 2012). Misinformation can spread quickly on Twitter and each retweet is exposing to wider audiences (Kelly, 2013). Besides, Twitter is less effective to disseminate complex information because of the limitations in characters. 140 characters would not be enough to convey important information that need to be describes in detail which will lead to inaccurate information to the society.

Another challenges and risks is privacy. Sharing too much information can lead to jeopardizing the privacy of patient personal information and lead to undesired circumstance (Gomes & Coustasse, 2015). General Practitioner should never reveal private and confidential information of a patient on Twitter, even if their intention is to uses it as an inspiration for others.

Thus, the main aim of this research is to find out the process of disseminate information in Twitter by the doctors to the communities using Twitter as a communication channel and as a platform for engaging to serious discussion on medical and health issues (Campbell & Craig,2014). This medium helps to save consumer money by accessing important information and data regarding of the health issues which can help in diminished the cost of consultation (Ball & Lilis, 2011).

This research attempts to examine health related information in @MedTweetMYHQ and the use of these information among university students. This twitter account is handled and monitored by Dr. Khairul Hafidz Alkhair bin Khairul Amin, a general medical officer. Currently, there are 17,000 followers in @MedTweetMYHQ account in Twitter.

Methods

In-Depth interview

In-depth interviewing is a qualitative research technique that involves conducting individual interviews in a small group of respondents to analyze their perspectives on idea, program, or situation (Boyce & Neale, 2006). This method provides more detailed information rather than what is available from others data collection. There are some key characteristics of in-depth interview that were used in this particular research. Open-ended or semi –structured questions were given to the informants. The questions were being worded so that informants cannot simply answer yes or no, but expound on the topic (Boyce & Neale, 2006). Researchers let the questions flow naturally based on information provided by informants. The interview session was conducted in Alor Gajah campus and was recorded. It lasted more than an hour for each informant. The data collection took a month to complete.

A non-random sampling method was chosen for this research. Purposive sampling allows the researchers to study intrinsically certain situations and exploring phenomena. The informants selected were Universiti Teknologi Mara (UiTM) Melaka students who have twitter accounts and are avid followers of @MedTweetMYHQ. The total participants who agreed to be interviewed were five informants (N=5). The informants were:

- 1) Arif Firdaus (19 years old, student of Diploma in Communication and Media)
- 2) Mohd Aqil Ezfer (19 years old, student of Diploma in Communication and Media)
- 3) Nur Syafeeqa Anisya Dullah (19 years old, student of Diploma in Communication and Media)
- 4) Muhammad Aqif Rizal (20 years old, student of Diploma in Business Management)
- 5) Norsiah Sikin (20 years old, student of Diploma in Communication and Media)

Data Analysis

Thematic analysis is a method for identifying, analysing and reporting patterns within data. It is simple to use which lends itself to use for novice researchers who are unfamiliar with more complex types of qualitative analysis. It allows for flexibility in the researcher's choice of theoretical framework. Some other methods of analysis are closely tied to specific theories, but thematic analysis can be used with any theory the researcher chooses. Through this flexibility, thematic analysis allows for rich, detailed and complex description of the data (Braun & Clarke, 2006).

The analysis involved a six-phase process. Firstly, the researchers familiarised with the data. The researcher collected the data from audio recording. Secondly, the researchers coded every two or three lines of text that identify key words and concepts to come out with the findings of the main points of the research. Thirdly, the researchers identified the themes and sub-themes of the research which are the patterns that have collected from the coding data. Themes emerged from patterns, such as conversation topics and questions asked. Fourth, the researcher filtered the data collected and how the themes support the data. If the data collected seems incomplete, the researchers went back and find the missing data. Fifth, the researchers finalized the name of each theme and then wrote its description and illustrate it with a few quotations from the original text to help communicate its meaning to the readers.

Theoretical framework

According to Media Dependency theory, there is an internal link between media, audience and large social system. The audience learning from the real life is limited, so they can use media to get more information to fulfil their needs. An extensive use of media generates dependent relation in audience and also Media can able to create dependence relationship with target audiences to achieve their objectives.

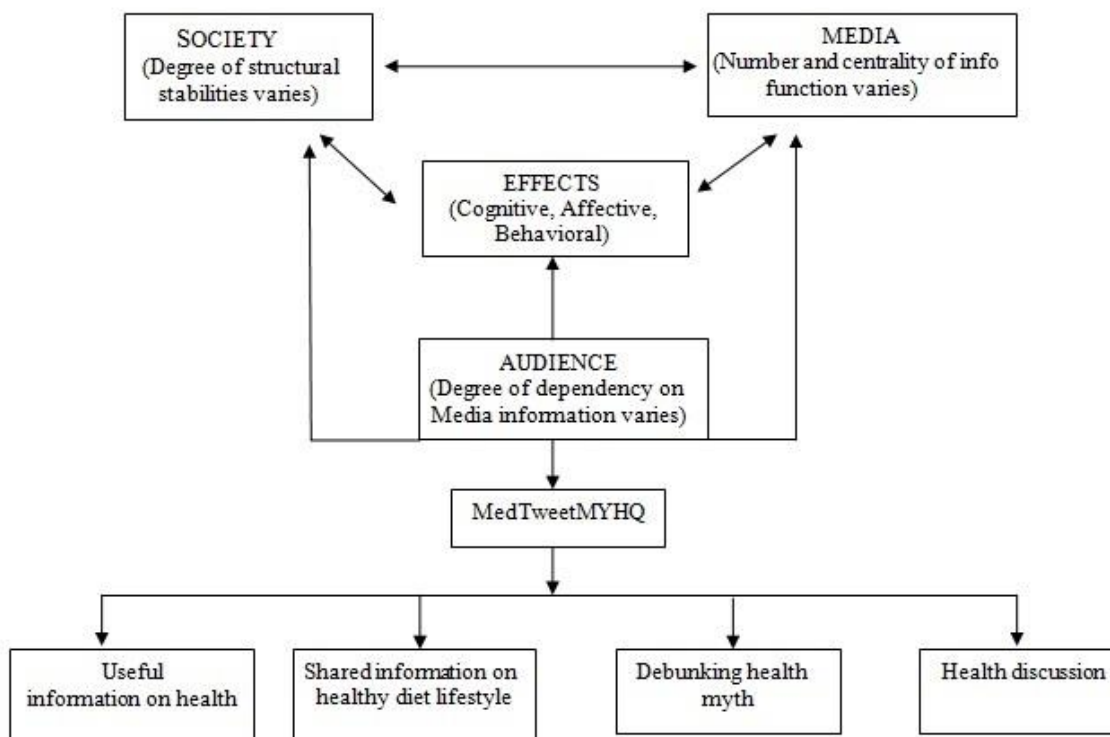


Figure 1. A model of Media Dependency Relationships. Source: Adapted from Ball-Rokeach, 1985.

Result and Discussion

RQ: How does @MedTweetMYHQ help spread health information to university students?

Updated and useful information on health

The information on health in @MedTweetMYHQ was found to be very useful for the followers of @MedTweetMYHQ. One of the informants Aqil said the tweet account is very useful to get the latest information on certain diseases.

“I think the information I get from @MedTweetMYHQ is very useful to me especially when I wanted to know about certain diseases. Plus, the information provided is always updated”

This statement was also supported by another informant Arif.

“For me, the information @MedTweetMYHQ posted is very valuable and priceless. They shared many kinds of diseases and some of them which I have never heard before. So it was really good to know new things sometimes.”

The third informant, Aqif mentioned the twitter account is useful for younger generations who are into social media.

“The information I got so far from @MedTweetMYHQ is very valuable. It is useful not only to me but also to the younger generations in this era because teenagers nowadays are more prone on using the social media. Moreover, @MedTweetMYHQ always shares on the tips and ways to take care of the way we consume our food in keeping us healthy.”

Informant Syafeeqa believed having a platform such as Twitter is a good medium to get updated health information.

“In my opinion, all the information posted by @MedTweetMYHQ is great because we can gain new things from the account itself. It serves as a good input about medication and with the existence of this Twitter account. For me this medium is good because the society nowadays likes to use media social to get the information and at the same time they can help to spread this information to the others.”

This statement was also supported by another informant Norsiah.

“I think the information posted in @MedTweetMYHQ is very beneficial especially to the teenagers in this era. The teenagers nowadays are lack of awareness so through this twitter account they can gain many types of information in terms of various diseases including health related information and health tips that maybe we are not aware about today.”

Shared information on healthy diet lifestyle

The informants agreed that @MedTweetMYHQ shared information on healthy diet lifestyle. Informant Aqil said the twitter account gave information on the best ways of healthy eating habits to lose weight.

“@MedTweetMYHQ used to post about what is the best method to lose weight and it is stated by practicing balance eating or jogging and not by avoiding eating any foods because when we start to eat again we can gain more weight than before. It is actually just a myth because we always thought by not eating anything we can get skinnier but actually it is making it worse.”

Arif another informant reiterated the same sentiment.

“Of course, I had seen @MedTweetMYHQ posted about how to count your calories in every meal you take and how to manage calories that is ideal for every meal taken. For me, this is very useful especially to the people who are very concern about their health and for the people who are on their diet.”

This statement is also agreed by the fourth informant, Syafeeqa who said,

“Yes, Dr. Khairul Hafidz the admin of the twitter account did share information on healthy diet lifestyle. For instance, in giving useful tips on how to get skinnier body by monitoring your calories and practice the eating in the food pyramid that can guide you to gaining a healthier body.”

Informant Norsiah gets additional information on healthy diet lifestyle from the twitter account.

“@MedTweetMYHQ did post about how to have a healthy diet lifestyle. For instance, right now I am practicing the Atkins diet, so I can easily get the information posted by @MedTweetMYHQ about the Atkins diet. I am implementing the information given in the post with my daily life. I have started this Atkins diet since December 2016 until today March 2017 and it works!”

Aqif mentioned @MedTweetMYHQ also gave other healthy living tips.

“In my opinion, @MedTweetMYHQ posted much information about health-related information especially on how to take good care of our body and what to avoid. There is also some interesting information on how to stop smoking. This can be beneficial to the social media users to maintain a healthy lifestyle.”

Debunking health myths

As an E-health communication channel in social media @MedTweetMYHQ acts as an important source in solving health myths. Aqil said,

“In my opinion, it gives new knowledge to people when @MedTweetMYHQ stated the truths about the myths that we believe in our lives as nowadays people are lazy to read books.”

The next informant Arif explained the twitter account clarified health myths that have been told from generation to generation.

“In my opinion, @MedTweetMYHQ is a life saver in helping our people from getting lost with the myths brought by our ancestors long ago. The post from @MedTweetMYHQ about this myth makes me realised that not everything is true and we should be more careful especially if it involves about health related issue.”

Aqif explained that @MedTweetMYHQ creates awareness by preventing society from creating more health myths.

“For me, the information about the myths is very useful to us as it creates awareness which eventually can stop us from creating more myths about health-related issue. By posting about these myths we can later in the future fight back about the myths that are spreading vigorously today.”

The forth informant, Syafeeqa agreed on the statement given by Aqif.

“In my opinion, it is a great way of solving the myths so that we would not be mistaken by the old sayings anymore. Some of them really do need to be corrected and we need a scientific prove in order to stop the myths.”

Norsiah the next informant stated that false information about health is easily spread but @MedTweetMYHQ helps to clarify them.

“I think @MedTweetMYHQ is holding a big responsibility in solving the myth issue to help the people to get the correct information because nowadays, society is often surrounded with false information on health-related issue. For instance, it is very common to hear that you are not allowed to drink any cold water during your period because you could be getting serious stomach pain. However, believe it or not, it is one of the popular myth that is going through all around Malaysia right now. That is

why we need @MedTweetMYHQ to clarify and stop these myths from occurring again.”

A platform for health discussions

As far as the informants were concerned, Twitter is actually a good platform to discuss health related issue. Aqil said;

“In my opinion, many people nowadays spend lesser time watching the television or something printed like newspapers. So @MedTweetMYHQ is using the best medium, which is Twitter as a platform to spread on health related issue because now people depend a lot on their gadgets and it is an essential for each person to carry their own mobile phones.”

This statement was agreed by Arif.

“For me I think, @MedTweetMYHQ can be a great platform to discuss health related issue as long as @MedTweetMYHQ maintains the truthfulness in delivering their information to the people.”

The next informant Aqif explains the replies he received pertaining health related issues are every useful.

“In my opinion, @MedTweetMYHQ is a great platform to discuss the issues on health because in my experience, I once used to ask something from the admin of the account @MedTweetMYHQ and he answered it with some very useful information.”

Syafeeqa the fourth informant also agreed with the statement above.

“In my opinion, Twitter is a good medium to share health related issue as we know the society especially the teenagers often use Twitter as one of their social media. Not only it is for the teenagers, but many of the working people also used Twitter to gain any information.”

Norsiah, however believes that the discussion between the admin and followers must be brief because of words limitation in Twitter.

“I think @MedTweetMYHQ can be a platform to discuss issues on health but the topic that is discussed must be simple and brief as there are words limitations in Twitter however there is an exchange of views between the doctors and society in @MedTweetMYHQ.”

Conclusion

The findings of this research revealed the types of health-related information university students seek on internet specifically in twitter. The information seek by students would vary depending on the students' intentions and motivations and the twitter account they choose to follow. However, for @MedTweetMYHQ the information most seek by the students are health information related to their lifestyle, used as a platform for the students to discuss health issues and to look for validity on health myths. As millennial generations depend mostly on social media for information seeking therefore the researcher found that @MedTweetMYHQ is very beneficial for these students to be informed on health issues because of its timeliness, simple and straightforward information. One of the drawbacks with twitter due to its simplicity in disseminating information is that not much of elaboration on health information can be done unless the admin of the account takes a progressive step by attaching a

link on its twitter feeds for exhaustive information on health.

The obvious limitation in generalizing these findings was the purposive sampling participation among the university students. Although such a sample design would not provide a good description for such research it might suffice for an exploratory study. Further research can be done in quantitative method to provide useful descriptions of the total population.

References

- Alexa. (2012), Top sites. Retrieved from <http://www.alexacom/> [27 September 2012].
- Amedie, J. (2015), "The Impact of Social Media on Society". *Advanced Writing: Pop Culture Intersections*. 2
- Anber, H., A. Salah, & A. A. Abd El-Aziz. (2016), "A Literature Review on Twitter Data Analysis", *International Journal of Computer and Electrical Engineering*, vol 8(3).
- Ball, M.J. and Lillis, J. (2001), "E-health: transforming the physician/patient relationship", *International Journal of Medical Informatics*, vol. 61(1), pp. 1-10.
- Ball-Rokeach, S. J. (1985): 'The origins of individual media system dependency: A sociological framework', *Communication Research*, 12, 485—510.
- Boulos, M.N.K. & Wheeler.S. (2007), "The emerging web 2.0 social software: an enabling suite of sociable technologies in health and health care education", *Journal of Health Information and Libraries*, (24). pp. 2-23.
- Boyce, N. (2006), A Guide for Designing and Conducting In-Depth Interviews for Evaluation Input. Retrieved 18th January 2017 from <http://compositionaweb.pbworks.com/f/conducting+in+depth+interviews.pdf>.
- Braun, V. & Clarke, V. (2006), "Using thematic analysis in psychology", *Qualitative Research in Psychology*, 3(2). pp. 77-101.
- Bush, H. (2009). "Time to tweet?". *Hospitals & Health Networks / AHA*, 83(6). pp. 46.
- Butt, C.M. (2012). "The Role of Social Media within Participatory Medicine: Methods to Establish User-centered Design to Promote Digital Literacy". *Medicine*, 366. pp.782-783.
- Campbell,C.B & Craig,M.C. (2014), "Health Professions Students Academic and Personal Motivations for Using Social Media", *Journal of Communication and Health*, vol.1(3).
- Dahl, S. (2015), "Social Media and Marketing: Theories and Applications", Sage Publications, Thousand Oaks, CA.
- Dork, M., Gruen, D., Williamson, C. & Carpendale, S. (2010), "A Visual Backchannel for Large-Scale Events", *IEEE Transactions on Visualization and Computer Graphics*, Vol. 16(6), pp. 1129-1138.
- Ebner, M., Lienhardt, C., Rohs, M., & Meyer, I. (2010). "Microblogs in higher education – A chance to facilitate informal and process-oriented learning?", *Computers & Education*, 55, 92–100.
- Fay, C.P., Lynette, K. & James, K.-T. (2014), "Online HIV prevention information: how black female college students are seeking and perceiving", *Internet Research*, vol. 24 (4), pp. 520-542.
- Fisher, J., Burstein, F., Lynch, K. & Lazarenko, K. (2008), "Usability usefulness trust": an exploratory study of Australian health web sites", *Internet Research*, vol. 18(5), pp. 477-498.
- Gomes, C., & Coustasse, A. (2015). "Tweeting and treating: How hospitals use Twitter to improve care". *Journal of Health Care Manager*, 34(3), pp. 203-214.
- Hajli, Bugshan, Lin & Featherman. (2013), "From e-learning to social learning – a health care study", *Journal of Training and Development* vol. 37(9), 2013 pp. 851-863.
- Jacobs, Lou, Ownby & Caballero. (2014), "A systematic review of eHealth interventions to improve health literacy", *Journal of Health Information* vol. 22, Issue 2.
- Java, A., Song, X., Finin, T. & Tseng, B. (2007), "Why we twitter: understanding microblogging usage and communities", in Proceedings of the 9th WebKDD and 1st SNA-KDD 2007 workshop on Web mining and social network analysis - WebKDD/SNA-KDD '07, pp. 56-65.
- Kelly, H. (2013). "The power of one wrong tweet". Retrieved 18th January 2017 from <http://edition.cnn.com/2013/04/23/tech/social-media/tweet-ripple-effect/index.html>.
- Khan, G. F. (2013). "The government 2.0 utilization model and implementation scenarios", *Information Development*, vol. 31(2), pp. 135-149.

- Khan, G.F., Swar, B., & Lee, K.S. (2013). "Social Media Risks and Benefits: A Public Sector Perspective", *Journal of Social Science Computer Review*, vol. 32(5), pp. 606-627.
- Kreps, G.L. (2008), "Strategic use of communication to market cancer prevention and control to vulnerable populations", *Health Marketing Quarterly*, vol. 25(1-2), pp. 204-216.
- Lave, J., & Wenger, E. (1991). "Situated learning: Legitimate peripheral participation". New York, NY: Cambridge University Press.
- Lim, W.M. & Ting, D.H. (2010), "Healthcare marketing: an imperative field of research in the 21st century", *6th International Conference of the Global Academy of Business and Economics Research*, New York, NY, October 17-19.
- Lim, W.M. & Ting, D.H. (2012), "Healthcare marketing: contemporary salient issues and future research directions", *International Journal of Healthcare Management*, vol. 5 (1), pp. 3-11.
- Lim, W.M., Ting, D.H., Puspitasari, M., Prasetya, I. & Gunadi, S. (2012), "Overexposure in social networking sites", *Journal of Research for Consumers*, vol. 22, pp. 25-40.
- Luarn, P. and Chiu, Y.-P. (2015), "Key variables to predict tie strength on social network sites", *Internet Research*, vol. 25(2), pp. 218-238.
- Lustria, M.L.A., Smith, S.A. & Hinnant, C.C. (2011). "Exploring digital divides: An examination of eHealth technology use in health information seeking, communication and personal health information management in the USA", *Journal of Health informatics* vol. 17(3), pp. 224-243.
- Ma, Y., Zhang, H., Liu, Y., & Liu, Y. (2014). "Development of a joint official microblog platform to improve interactive communication with the public under a centralized system". In *ISCRAM*.
- Mason, R. and Rennie, F. (2007), "Using Web 2.0 for learning in the community", *The Internet and Higher Education*, vol. 10(3), pp. 196-203.
- Mia Liza A. Lustria, Scott Alan Smith & Charles C. Hinnant. (2011). "Exploring digital divides: An examination of eHealth technology use in health information seeking, communication and personal health information management in the USA". Retrieved 23th January 2017 from <https://fsu.digital.flvc.org/islandora/object/fsu:207263/datastream/PDF/view>.
- Muralidharan, S., Rasmussen, L., Patterson, D. & Shin, J.-H. (2011), "Hope for Haiti: An analysis of Facebook and Twitter usage during the earthquake relief efforts", *Public Relations Review*, vol. 37(2), pp. 175-177.
- Raghupathi, W., & Raghupathi, V. (2014). Big data analytics in healthcare: promise and potential. *Health Information Science and Systems*, 2, 3. <http://doi.org/10.1186/2047-2501-2-3>.
- Ross, C., Terras, M., Warwick, C. and Welsh, A. (2011), "Enabled backchannel: conference Twitter use by digital humanists", *Journal of Documentation*, vol. 67(2), pp. 214-237.
- Starbird, K., Palen, L. Hughes & Vieweg. (2010), "Chatter on the Red: What Hazards Threat Reveals about the Social Life of Microblogged Information", *Journal of Computer Science*.
- Trisha, D. B. (2012). "Effectiveness of Social Media as a tool of communication and its potential for technology enabled connections: A micro-level study", *Journal of Scientific and Research Publications*, vol. 2(5).
- Williams, D.L., Crittenden, V.L., Keo, T. & McCarty, P. (2012), "The use of social media: an exploratory study of uses among digital natives", *Journal of Public Affairs*, Vol. 12(2), pp. 127-136.
- Williams, S.A., Terras, M.M. & Warwick, C. (2012), "What do people study when they study Twitter? Classifying Twitter related academic papers", *Journal of Documentation*, vol. 69(3), pp.384-410.
- Yavuz, R. & Toker, A. (2014), "Location sharing on social networks: implications for marketing", *Marketing Intelligence and Planning*, vol. 32(5), pp. 567-585.
- Ye, Z., Ngoc, D., Shu, T, W., Cheng, H, H., & Nalini, V., (n.d), "O2SM: Enabling Efficient Offline Access to Online Social Media and Social Network, Retrieved 18th January 2017 from <https://pdfs.semanticscholar.org/e22d/53961dc6ff368845b030db2d5bbc84af1d42.pdf>.
- Zhao, D. & Rosson, M.B. (2009), "How and Why People Twitter: The Role that Micro-blogging Plays in Informal Communication at Work", *Journal of Social and Behavioral Science*, pp. 243-252.
- Zhiming, L., Lu, L., & Hong, L. (2012), "Determinants of information retweeting in microblogging", *Internet Research*, vol. 22(4), pp. 443 – 466.