Indonesian Journal of Science & Technology

Journal homepage: http://ejournal.upi.edu/index.php/ijost/

Students' Intention to Share Information Via Social Media: A Case Study of Covid-19 Pandemic

Suhaizal Hashim, Alias Masek*, Nurhanim Saadah Abdullah, Aini Nazura Paimin, Wan Hanim Nadrah Wan Muda

Faculty of Technical and Vocational Education, Universiti Tun Hussein Onn Malaysia, 86400 Batu Pahat, Johor, Malaysia
Correspondence: E-mail: aliasmasek@gmail.com

A B S T R A C T

Agility of science and technology in communication has brought a new dimension of information dissemination, which may have influenced human perceptions, especially on the dissemination of news pertaining to this pandemic. This research aims to determine the students' sources of information regarding the COVID-19 disease and investigate their intention to share the information pertaining to COVID-19. A survey study was designed using an online questionnaire involving 147 higher education students. The online questionnaire; measures three elements of the students' intention, namely initiative, desire and resourcefulness. The findings; the sources of information regarding the COVID-19 pandemic are mainly the government authorities and local healthcare workers. The most preferred medium of information regarding the COVID-19 pandemic is social media, and the most trusted medium is the television broadcast. Also, finding suggests that the students take initiative to verify information and demonstrate a desire to share credible and right information with their family and friends through social media. As such, in an effort or attempt to disseminate credible information about any important matters to the general public, the government can count on students as agents for transmitting the information to third parties including their family and friends.

A R T I C L E   I N F O

1. INTRODUCTION

Science serves as a direct source of improvement in any technological advancement. Science and technology such as information and communication technology (ICT) also play important roles in ensuring the effectiveness of human communication and interactions especially in a long distance relationship (Dehghani & Keyvani, 2019). Communication technology include any medium of social media such as Telegram, Facebook and Whatsapp, all of which plays significant roles in increasing and improving the capability of human interactivity and access to the most recent news and informations. Information technology provides multiple platforms for users that enabling unlimited information spread easily at our fingertips and being shared in a single click, especially via the social media. The effect of science and technology on human interactions and behaviours during this COVID-19 pandemic is of interest to this research.

A social media is not merely a platform for fostering social relationships, but also serves as an information transmitter, disseminating all sorts of news, including that which could raise people's awareness of certain matter (Boukes, 2019). It is a medium or platform where users can share information pertaining to facts and figures about the current COVID-19; the informed users and the community are then able to make good decisions and take right actions to avoid potential infections.

The role of social media in influencing the community's perceptions and subsequent actions is undeniable; for instance, a study of Strekalova (2017) found that the characteristics of the communicative behaviours of the social media audience in response to the outbreak news have attracted community interest, rather than health promotion news on Facebook. Facebook feed presents the evidence of information behaviours for those who choose to communicate actively and play a role in information dissemination. Similarly, a study of McNeill et al. (2016), found that Twitter was accessible and easy to use; the most interesting was that the Retweet has depicted the community's reactions and emotions, rather than just a medium for sharing information.

In the current urgent situation of the pandemic, delivering fast, accurate, right and up-to-date information should be the main priority, as this is a pivotal step that can mitigate the ill-effects of and bring the outbreak to an end soonest possible. A flaw within the chain of effective information dissemination will contribute to a spike of the infections amongst a community, and the students in this case. Without sufficient knowledge and awareness, the students are actually at a high risk of exposure to the infections. A case study, for example proves the point: lacking of knowledge and awareness pertaining to healthy lifestyle has resulted in a poor practice of personal sanitation and hygiene, consequently exposing a certain group of migrants in Thailand to the influenza pandemic in 2016 (Hickey et al., 2016). On the other hand, in dealing with new cases of the pandemic, the spread of Coronavirus 2019 (COVID-19), formerly known as the novel coronavirus 2019 (2019-nCoV) originating in China (https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports), has brought panic and irrational fear to the people. The fast-increasing number of infections was due mainly to the people's lack of knowledge about the facts and symptom characteristics of COVID-19. In this case, the students participated in mass gatherings by attending classes, and exposed themselves to the risk of infections.

Schimmenti et al. (2020) suggested four types of outbreak fears. First, fear develops

when a person feels the need to protect herself or himself from all symptoms of an infection. Second, fear of approaching or being approached by others; this fear exists through the government's social action, for example, a lockdown or Movement Control Order (MCO). Third, fear of not knowing who in the community has carried and spread the Covid-19 virus. Fourth, fear in taking action by an individual in facing this issue. These four types of fears can be discussed along the line of emotional development of the Theory of Reasoned Action (TRA) model (Fishbein & Ajzen, 1975), which suggests individual beliefs (cognition) as a causal factor of emotional development (affection). Fishbein and Ajzen's theory also suggests that the state of an individual's emotion could influence the intentions to act (conation), and a combination of beliefs, emotion and intention could result in an appropriate behavioural action (Fishbein & Ajzen, 1975). To better understand an individual's actions during this COVID-19 pandemic, this study focuses on understanding intention and behaviours since these elements attract little attention among researchers compared with beliefs and emotions. Confessore and Park (2004) proposed four conative elements, namely desire, initiative, resourcefulness and persistence. It is assumed that an individuals' intention to act and react during this pandemic period can be attributed to these four elements.

In the trawl of literature, it is noted that previous studies have well documented this similar issue. In a Garrett (2020) study, information dissemination about COVID-19 through social media was seen as an uncontrolled pattern. Although various measures have been taken by authorities throughout the country to address the COVID-19 pandemic, problems arise, including fake news that causes misunderstanding of the facts and symptoms of the current pandemic. A control on the spreading of inappropriate or irrelevant information should be imple-

mented to prevent panic among members of the community, even if the dissemination method or content is legitimate. During the ZIKV virus outbreak, videos were used to disseminate information, but the videos uploaded by some independent users were at greater odds of being misleading than the government's and news agency's videos (Bora *et al.,* 2018). This created a flaw in the information delivery chain to the targeted community. Therefore, this research is intended to determine the students' sources of information regarding COVID-19 and investigate their intention to share the information with the following objectives:

a. What are the sources of information regarding the COVID-19 pandemic?

b. What is the most preferred medium of information regarding the COVID-19 pandemic?

c. What is the most trusted medium of information regarding the COVID-19 pandemic?

d. What are their intentions in sharing information during the COVID-19 pandemic period?

2. METHODOLOGY

A survey study was conducted using an online questionnaire, since most of the students have access to the internet. According to Wright (2005), an online survey is very fast, efficient, and saves cost; respondents have the convenience to answer the questions anytime, anywhere and at their pace.

2.1. Sampling and population

This study covers more than 1400 first-year to final-year students from a technical university in southern Johor, Malaysia. A total of 300 students were targeted as the sampling frame for this study, which satisfies the Krejcie and Morgan (1970) suggested requirement. Since the respondents were staying at various places during the Movement Control Order (MCO) period, the link

to the online questionnaire was shared through multiple social media platforms, including the students' WhatsApp group and the researchers' close contacts. Therefore, the selection of samples was quite easily done though the online platforms for the targeted population (Elfil & Negida, 2017) within the faculty. This questionnaire survey was carried out on a voluntary basis

2.2. Instrument

The online questionnaire was developed in three parts: Part A contains a total of six types of demographic information, including gender, year of study, and current location; Part B lists out five items, including information sources, media preferences, and trusted media; and Part C has a total of 15 intention items in three constructs based on the theory of Fishbein and Ajzen (1975) adopted in this study, namely initiative, desire and resources.

The Alpha Cronbach (α) test was used to determine the reliability index of the items. An α value of 0.60 and above is considered acceptable for a research purpose (Perera & Heneghan, 2008). Results of reliability coefficient for each construct are above the acceptable value as shown in **Table 1**.

Table 1. Reliability of construct

Construct	No of item	Alpha Cronbach
Initiative	4	0.842
Desire	5	0.901
Resources	6	0.852

2.3. Data Analysis

This study uses the descriptive statistics, including mode, frequencies, percentage and mean of each variable score in order to analyse the data.

3. RESULTS

Findings of this study showed that the gender distribution is not even (**Table 2**); the number of female participants is 30.6% greater than that of the male counterparts. The gender composition well represents the trend of the educational programmes, in which female students are more interested to be a teacher than the males.

Table 2. Gender distribution

	Frequency	Percent
Male	51	34.7
Female	96	65.3
Total	147	100.0

Table 3 shows that the majority of the students were under the controlled movement order (86.4%); 12.2% of them under self-quarantine, and 1.4% of them under compulsory quarantine. The students were placed under quarantine based on two conditions: i) they have direct contact with lecturers who are COVID-19 patients; and ii) they stay at the residential colleges and are prohibited from leaving the campus. About 86.4 percent of the respondents were placed under the MCO, which means they must stay at home. They are permitted to leave their house, but limited to places within 10 km radius only. The rest of the respondents (12.2%) were under self-quarantine. The respondents consist of first-year to final-year students, with most of them being undergraduate students, followed by Master and PhD students. Further details are as shown in **Table 3**.

Table 3. Status during MCO

	Frequency	Percent
Self-quarantine*	18	12.2
Under quarantine**	2	1.4
Under MCO	127	86.4
Total	147	100.0

3.1. Sources of information regarding COVID-19

In this section, the respondents were allowed to select more than one answer. The information sources that score the highest percentage value are the government authorities such as MKN/KKM/ministry, and local health staff, at 85.7% (N=147); this means the majori-

ty of the students rely on these two sources for their COVID-19 news and updates. Next, the students read about COVID-19 pandemic sharing from individuals through social media, such as WhatsApp, Telegram, Twitter, Facebook and Instagram (21.1%). Interestingly, the item of this construct that scores the lowest percentage is the printed material, which means the students rely least on pamphlets, newspaper, books and magazines for information about COVID-19. It can, therefore, be interpreted that the respondents prefer paperless platforms to gather relevant information. **Table 4** shows the sources from which the respondents received information about the pandemic.

3.2. Preferred media of information regarding COVID-19

The students were given eight options from which they would choose the most preferred media to receive the information about COVID-19-- website, newspaper, television, SMS, social media, magazine, radio, and medical staff. The students were allowed to select more than one answer. Results indicate that out of 147 students, only 14 of them or 9.5 percent prefer using social media. The students who prefer a combination of website, newspaper, television, SMS and social media share the same percentage (7.5%) with those who prefer using website, television, SMS and social media. Television, SMS and social media also share the same percentage with website and social media, which is at 6.8 percent. The rest of the data represent findings of several other combinations that are less than 5 in frequency, which are not included in **Table 5**. **Table 5** indicates the highest frequency of the preferred media chosen.

Tabel 4. Sources of information

Items	Frequency	Percent
I know about COVID-19 pandemic from the government information sharing, MKN/KKM/ministry and local health worker	126	85.7
I read about COVID-19 pandemic from individual information sharing through social media such as WhatsApp/Telegram/Twitter /Facebook/Instagram	108	73.4
I heard regarding COVID-19 pandemic from broadcasting media that include Television/Radio/Video streaming.	99	67.3
I noticed an issue on COVID-19 pandemic through multiple initiatives from NGO	23	15.6
I received information about COVID-19 from printed material such as pamphlet, newspaper, books and magazines.	16	10.8
I received information about COVID-19 verbally either from family members or friends.	68	46.3
I received information about COVID-19 direct from the trusted sources (e.g., medical staff).	71	48.3

Table 5. Preferred media

Media	Frequency	Percent
Television, SMS, social media	10	6.8
Website, newspaper, television, SMS, social media	11	7.5
Website, social media	10	6.8
Website, television, SMS, social media	11	7.5
Social media	14	9.5
Television	7	4.8
Website	5	3.4

3.3. Trusted media of information regarding COVID-19

More than half of the sampled students have chosen the television broadcast (57.1%) as the most trusted source of information. This result actually reflects the students' confidence and trust in the COVID-19 information broadcast by the authorities through the local television channels. The results recorded for other sources such as radio and newspaper, however, do not indicate the students' trust in them; the reason could be due to the students' lifestyle during the MCO period: while they stay at home, they probably spend most of their time watching the television rather than listening to the radio. About 12.9 percent of the students trust the information provided by the medical staff; this is the number of students who met the medical staff during this pandemic period. **Table 6** shows the respondents' trusted media of receiving the information about COVID-19 pandemic.

Table 6. Trusted media

Item	Frequency	Percent
Medical staff	19	12.9
Newspaper	11	7.5
Radio	2	1.4
SMS	5	3.4
Social media	14	9.5
Television	84	57.1
Website	12	8.2
Total	147	100

3.4. Students' intention to share in social media

Results indicate that the students have a high level of intention to share information in the social media, as evidenced by a mean score of 3.92 (Standard Deviation-SD =.79). According to the construct, the students' desire to share the pandemic information was rated with the highest mean score of 3.99 (SD= .85) while the students' initiative to share the pandemic information was rated with the

lowest mean score of 3.82 (SD= .89). Here is the interpretation: most of the students have a strong sense of curiosity to know more about the pandemic. Table 7 indicates the students' ratings on the initiative, desire and resources while sharing the information about COVID-19.

Table 7. Students intention constructs

Construct	Mean	Std. Deviation
Initiative	3.82	0.89
Desire	3.99	0.85
Resource	3.91	0.81
Overall mean	3.92	0.79

As an insight into each item, the students value the information they obtain from the social media, which was rated with the highest mean score of 4.43 (SD=.844); however, they rated their initiative to compile and create posting regarding the COVID-19 pandemic with the lowest mean score. The students do check the authenticity and accuracy of the information about the COVID-19 pandemic before sharing it with others (Mean = 4.20; SD =.913); and they avoid posting any sensitive information that may cause people to panic (Mean = 4.22; SD = 1.005). The rest of the items are presented in **Table 8**.

4. FINDINGS AND DISCUSSION

With the enforcement of the MCO, the entire student community is compelled to stay at home with limited freedom to leave the house; with lots of time on their hands, the students have the quietness to think through the issues of worries and fears about the COVID-19 pandemic and ways of preventing the infections. At this juncture, besides the advancement of communication technology, it seems relevant to revisit the several types of fears suggested by Schimmenti *et al.,* 2020 for a more detailed discussion: fear of being approached by others, fear of how to protect themselves, and fear to take actions. Initiative in

searching for adequate information is seen as important to avoid panic and worsening the outbreak situation. Thus, this study endeavours to shed some light on a few questions regarding the students' sources of information regarding the COVID-19 pandemic and investigate the students' intention to share the COVID-19 information through the various platforms of social media.

Tabel 8. Mean abrasion weight losses of high-performance DSP cementitious mortars with nano- and/or micro-scale reinforcement

Items	Mean	Std. Deviation
I value any information that I get about COVID-19.	4.43	0.844
I shared statistical information about COVID-19 to make community aware of the seriousness of the pandemic.	3.92	1.056
I posted information about the common symptoms of COVID-19 to help community aware of it.	3.97	1.006
I shared the best hygienic practices to help community understand ways to prevent it	4.04	0.964
I only shared information after checking the original source of information	4.20	0.913
I seek information from multiple websites to ensure that I get an accurate information	4.06	0.973
I shared information with my family members and friends to prevent them from getting the virus	4.36	0.859
I want to be among the first to inform any important information that I received	3.65	1.139
I made active searching in the website to compare the information that I get.	3.83	1.042
I will only stop searching information after I have gained enough information about the disease.	3.79	1.061
I made daily web searching about COVID-19 to ensure that I didn't left any recent information	3.65	1.144
I posted motivation words to support close friend/relatives who affected with the pandemic	3.69	1.132
I created posting to appreciate front-liners who have been working hard to save this country	3.59	1.186
I avoid posting any sensitive information to calm people from getting panic	4.22	1.005
I compiled information about COVID-19 for my personal references in the future.	3.59	1.145

Findings indicate that the students' two main sources of information regarding the COVID-19 pandemic are the government ministries or agencies and the local health workers visited; the government authorities usually resort to social media and television broadcast to disseminate the COVID-19 information as both media are very efficient tools for reaching the general public. It is imperative for the public health agencies to inform the people about the possible risks of infections while preventing the health issues from being blown out of proportion (Strekalova, 2017). However, an analysis of the spread of significant messages through Twitter shows that some criticisms were levelled at the health authorities' advice during the H1N1 pandemic in the United Kingdom (McNeill, Harris & Briggs, 2016). Videos from trustworthy sources like universities or health organisations were also scarce, as authenticating the health information of online videos is necessary (Bora _et al._, 2018).

In line with the study of Boukes (2019), social media are not the students' only preferred sources of information. In order to increase people's preparedness in dealing with a pandemic, several measures can be taken by the public health authorities: increase the accessibility to knowledge of pandemic prevention activities; distribute educational materials and conduct

programmes in health centres as well as offering formal education about the pandemic (Hickey *et al.*, 2016), especially to students in this context. Effective communication by the public health agencies during a pandemic is critical because members of the public are being bombarded with contradictory information and fake news from many unauthorised sources. As such, all healthcare directives mandated by the government should be followed to prevent a disease from spreading among the members of a community. Additionally, the social media seems to be the best platform to share the information (Boukes, 2019). However, the content must be vetted and controlled by the government so that all the information can be trusted and does not bring anxieties or fears to the public. Information behaviour and viewers' engagement are topic dependent. Besides, viewers who commented on news about an emerging pandemic were homogenous and varied in their degree of information strengthening (Strekalova, 2017). Besides, some have sought to limit misinformation about COVID-19 on social media by pressuring corporations, such as Facebook, Weibo, and Twitter to censor bad actors as an approach that has not stopped conspiracy theorists, trolls and liars (Garrett, 2020).

Findings of this study also indicate that the television broadcast is the students' most trusted medium of information regarding the COVID-19 pandemic. Local television channels are an important part of a country's digital transformation programmes, this traditional medium still plays a significant role in information dissemination, particularly information related to the COVID-19 pandemic (Ordóñez *et al.*, 2019). This is supported by the findings of a study: a communication channel that facilitated the acquisition of information about COVID-19 in Europe found that a commonly used source for information retrieval was the news broadcast through television (Meier *et al*, 2020). However, there is another study that has a different finding: the news footage on the television broadcast did not match the main public health messages about the risk levels and priority groups during the 2009 H1N1 pandemic (Luth *et al.*, 2013). Television news reporting is one of the most significant information sources, through which the media audience is acquainted with the current affairs related to all aspects of social life (Višňovský *et al.*, 2019).

The students in this study always verify the information received in the social media before sharing it with their friends and family. The students are careful not to post any sensitive information, which could breed fears and anxieties that will ultimately produce panics in the mind of people. In any crisis that affects the general public, it is always sensible and important to spread the latest reliable information to the people at large. Spreading false and misleading information during a disease outbreak can create panics in the community and it would be extremely difficult for the health authority to contain the contagion (Bora *et al.*, 2018). A network analysis of retweets shows that information from official sources predominated (McNeill *et al.*, 2016). Therefore, information of the public's awareness about health and the latest happening in their respective country seems vital. The students' desire tends to be the main push factor that spurs them to share information. The desire to share information plays important mediating roles between trust in members and information sharing behaviours (Liou *et al.*, 2016). Socially oriented factors, including anticipated positive emotions for social activities and perceived behavioural control for social activities, seem to drive individuals' desire to engage in social activities (Ko, 2018).

5. CONCLUSION

Two main credible sources of information regarding the COVID-19 pandemic are the government ministries or agencies and local health workers; various information, news or instructions are usually disseminated through the social media or the most trusted medium of television. The students always take initiative to verify the information received, and have the sincere desire to share credible and right information with their family and friends through the social media. The students refrain from sharing fake news from unreliable or questionable sources as they understand the negative consequences that could arise. The findings of this study have a significant implication: in an effort to disseminate critical information or any news about important matters, the government can count on students as agents who would pass them on to other people, including their family and friends. Further studies could be carried out on how students react (behavioural action) to the information received; the findings would be very useful and could contribute to the literature.

6. ACKNOWLEDGEMENTS

7. AUTHORS' NOTE

The author(s) declare(s) that there is no conflict of interest regarding the publication of this article. Authors confirmed that the data and the paper are free of plagiarism.

8. REFERENCES

Boukes, M. (2019). Social network sites and acquiring current affairs knowledge: The impact of Twitter and Facebook usage on learning about the news. *Journal of Information Technology and Politics*, *16*(1), 36-51.

Bora, K., Das, D., Barman, B., & Borah, P. (2018). Are internet videos useful sources of information during global public health emergencies? A case study of YouTube videos during the 2015–16 Zika virus pandemic. *Pathogens and global health*, *112*(6), 320-328.

Confessore, G. J., & Park, E. (2004). Factor validation of the learner autonomy profile, version 3.0 and extraction of the short form. *International Journal of Self-Directed Learning*, *1*(1), 39-58.

Dehghani, R., & Keyvani, F. (2019). The role of ICT information technology on the development of the interaction of Folks and religions in the countries multi nation, based on the matrix evaluation model SWOT. *Academic Scientific Journals, 42*, 324-336.

Elfil, M., & Negida, A. (2017). Sampling methods in clinical research; an educational review. *Emergency (Tehran, Iran)*, *5*(1), e52.

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Philippines: Addison-Wesley Publishing Company.

Garrett, L. (2020). COVID-19: the medium is the message. *The Lancet*, *395*(10228), 942-943.

Hickey, J. E., Gagnon, A. J., & Jitthai, N. (2016). Knowledge about pandemic influenza preparedness among vulnerable migrants in Thailand. *Health Promotion International*, *31*(1), 124-132.

https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports, retrieved on March 17, 2020.

Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30,* 607-610.

Ko, H. C. (2018). Social desire or commercial desire? The factors driving social sharing and shopping intentions on social commerce platforms. *Electronic Commerce Research and Applications*, *28*, 1-15.

Luth, W., Jardine, C., & Bubela, T. (2013). When pictures waste a thousand words: analysis of the 2009 H1N1 pandemic on television news. *PloS one*, *8*(5), e64070.

Liou, D. K., Chih, W. H., Hsu, L. C., & Huang, C. Y. (2016). Investigating information sharing behavior: the mediating roles of the desire to share information in virtual communities. *Information Systems and e-Business Management*, *14*(2), 187-216.

Meier, K., Glatz, T., Guijt, M. C., Piccininni, M., van der Meulen, M., Atmar, K., Jolink, A.T.C., Kurth, T., Rohmann, J.L., Najafabadi, A.H.Z. (2020). COVID-19 Survey Study group. Public perspectives on social distancing and other protective measures in Europe: a cross-sectional survey study during the COVID-19 pandemic. *medRxiv*. https://www.medrxiv.org/content/10.1101/2020.04.02.20049676v1.full.pdf+html, retrieved on March 17, 2020.

McNeill, A., Harris, P. R., & Briggs, P. (2016). Twitter influence on UK vaccination and antiviral uptake during the 2009 H1N1 pandemic. *Frontiers in Public Health*, *4*, 26.

Ordóñez, K., Vázquez, A. I. R., & Suing, A. (2019). Internet and Local Television in the Context of Digital Transformation. *World Conference on Information Systems and Technologies* (pp. 433-439). Springer, Cham. https://link.springer.com/chapter/10.1007/978-3-030-16187-3_42, retrieved on March 17, 2020.

Perera, R., & Heneghan, C. (2008). D, Badenoch. *Statistics toolkit, Blackwell Publishing: Massachusetts*.

Schimmenti, A., Billieux, J., & Starcevic, V. (2020). The four horsemen of fear: An integrated model of understanding fear experiences during the COVID-19 pandemic. *Clinical Neuropsychiatry*, *17*(2), 41-45.

Strekalova, Y. A. (2017). Health risk information engagement and amplification on social media: News about an emerging pandemic on Facebook. *Health Education and Behavior*, *44*(2), 332-339.

Višňovský, J., Gregus, Ľ., Mináriková, J., & Kubíková, K. (2019). Television News As An Information Source And Its Perception In Slovakia. *Communication Today*, *10*(1), 40-61.

Wright, K. B. (2005). Researching Internet-based populations: Advantages and disadvantages of online survey research, online questionnaire authoring software packages, and web survey services. *Journal of Computer-mediated Communication*, *10*(3), JCMC1034.