LEX LOCALIS-JOURNAL OF LOCAL SELF-GOVERNMENT
ISSN:1581-5374 E-ISSN:1855-363X
VOL. 23, NO. S6(2025)

DIGITAL CRISIS COMMUNICATION CASE STUDIES FROM HEALTH EMERGENCIES (SDG 3 GOOD HEALTH & WELL-BEING)

Luo Peng[1], BINGGUI LU[2], Mohammed Shamsul Hoque[3], Niladri Maiti [4],

[1]Faculty of Education, Shinawatra University, Thailand, 0009-0000-0071-4343
[2]Shinawatra University, 0009-0009-4606-8354
[3]Department of Humanities & Social Sciences, Daffodil International University, Dhaka, Bangladesh
[4]Professor & Dean,School of Dentistry, Central Asian University,Uzbekistan. 0009-0007-0788-2359

PengLuo24@163.com[1]
lubinggui1110@163.com[2]
hoque.eng@daffodilvarsity.edu.bd[3]
m.niladri@centralasian.uz[4]

Abstract
The paper takes a discussion on the role of digital platforms in the communication of crises in large scale health problems and more precisely how this role relates to Sustainable Development Goal 3 (Good Health and Well-being). The role of the social media, mobile applications, and virtual health campaigns in the information dissemination process and combating misinformation and enhancing behavioral adherence in the population is discussed by the research based on the case studies of the COVID-19 pandemic, Ebola epidemic outbreak in West Africa, and Zika virus epidemic in Latin America. Findings suggest that digital platforms provided speed and reach so like no other health authorities were provided with an opportunity to respond to citizens with real-time guidance and come into contact with citizens. The visual material campaigns and two-way communication campaigns were far more interesting, the open and empathetic messages were straightforwardly connected with the larger trust of the people and their following. Simultaneously, the research presents ongoing issues, such as spreading false information, privacy, or the marginalized groups with little digital access. As it has been proven, fake news tend to disseminate faster than factual messages, which negatively affect trust in health facilities. There were also regional and sectoral variations in the effectiveness of communication: in some situations, the use of digital advocacy contributed to the success of vaccination campaigns, and mental health initiatives had lower participation. The researcher comes to the conclusion that, although digital crisis communication is an essential instrument in the delivery of SDG 3, its application relies on the proactive measures to control misinformation, transparency to foster trust, local accommodations to promote inclusivity, and ethical considerations to safeguard equity, and privacy.

Keywords: Digital crisis communication; Health emergencies; SDG 3; COVID-19; Ebola; Zika; social media; Infodemic; Public trust; Inclusivity

Introduction

Health emergencies become very critical challenges in the world, which is becoming more and more interconnected, not merely to the healthcare system but also to governments, organizations and communities, which have to cope with communication to the population in times of emergency. With the advent of digital platforms, crisis communication has changed, and there are real-time channels where information can be shared, clarified and argued. The COVID-19 pandemic and the Ebola outbreaks or regional outbreaks have also already demonstrated the opportunities and the pitfalls of digital media. On the one hand, Twitter/X, Facebook, WhatsApp, and YouTube helped the health authorities, NGO, and medical professionals to reach large audiences within a brief period, providing insights into preventative

steps and care, as well as vaccination campaigns and recommended treatment protocols. The same sites, on the other hand, promoted the spread of fake news, conspiracy, and mistrust that tended to make the process of controlling the crisis more difficult. It is in this light that, digital crisis communication has assumed a conclusive stake in population space to obey, reinventory trust and healthy governance structuring that can fundamentally deliver outcomes to Sustainable Development Goal 3 (Good Health and Well-being).

Digital crisis communication should be used due to the potential of addressing the communication gap between experts and the general population in cases of public health emergencies. The conventional ways of communication like press releases and public announcements were slow in the capability of being fast and interactive. Conversely, the internet and social media allowed health authorities to speak in real-time, strategically serve the society through real-time, and refute falsehood throughout real-time through debunking by means of facts. The recent experiences of using digital tools in the quick dissemination of knowledge and the provision of behavioral guidance are demonstrated by the examples of the WHO promoting health as well as all using the hashtag #HealthForAll and filling the Indian Government chats and plays with messages about vaccination. Moreover, the very same social media allowed citizens to leave comments and discuss the feedback, and this aspect created the possibility of bilateral communication flows in both directions, rather than unidirectional ones. But it is these very processes that led to the information exchange, and the COVID-19 pandemic infodemic is an example of how dangerous a pseudo truth can be due to its eyebrow-of-easy accession into people's lives, a factor that discourages trust in health institutions and online space alike.

This paper will critically conduct review of such case studies, including how they responded to COVID-19 pandemic, Ebola outbreak, and regional epidemics and review which strategies, tools and communications models were instrumental in serving the best interests of the public health. The research presented as a backdrop to an overall debate rooted in practical examples assists in illuminating the very notion of digital crisis communication as an effective tool and a strategic need in the achievement of SDG 3: adopting healthy lifestyles and well-being of every age.

Theoretical and Contextual Contribution of the Research

The proposed research is scoped on the use of digital platform as a crisis communication platform whereby there exists a health emergence and its effectiveness towards the realization of the Sustainable Development Goal 3, which also seeks to realize healthy living and well-being of all humanity beings. Analytical examination of case studies is conducted on more recent health emergencies, including the COVID-19 pandemic, the outbreak of the Ebola virus and other local epidemics, which independently played a critical role in the dissemination of information, renouncing behavior and disproving fake news as a means of tracking information. Upon examining these examples, the research paper will target strategies, tools and methods which made the communication process successful as well as those challenges which hindered the success of the communication process.

The paper has not restricted itself to the opinions of the governments and international health entities but it has incorporated the input of the non-governmental organizations, medical practitioners, and the community-based digital networks. The platforms (Twitter/X, Facebook, WhatsApp and YouTube) will be included in the scope since these are the most popular channels frequently used in health communication in the different cultural and socio-economic environments. The cultural diversity of the audience is also taken into consideration when conducting the research since it is acknowledged that the successful digital communication strategy might vary depending on the values of demographics, level of digital literacy, and access to technology.

Having a focus on comparative case studies, the work will provide a global and localized point of view. The length involves both the opportunities and the risks of digital crisis communication: the digital means allows doing the spreading swiftly and with a certain interaction with each other; conversely, the population is exposed to the risk of fake news and distrust. Through this, it is here to workplace where this research operation paper is intended at providing an overall view of digital crisis communication as a reactive policy in the event of a health outbreak, effective as also as an inseparable part of the governance of the health sector.

Literature review

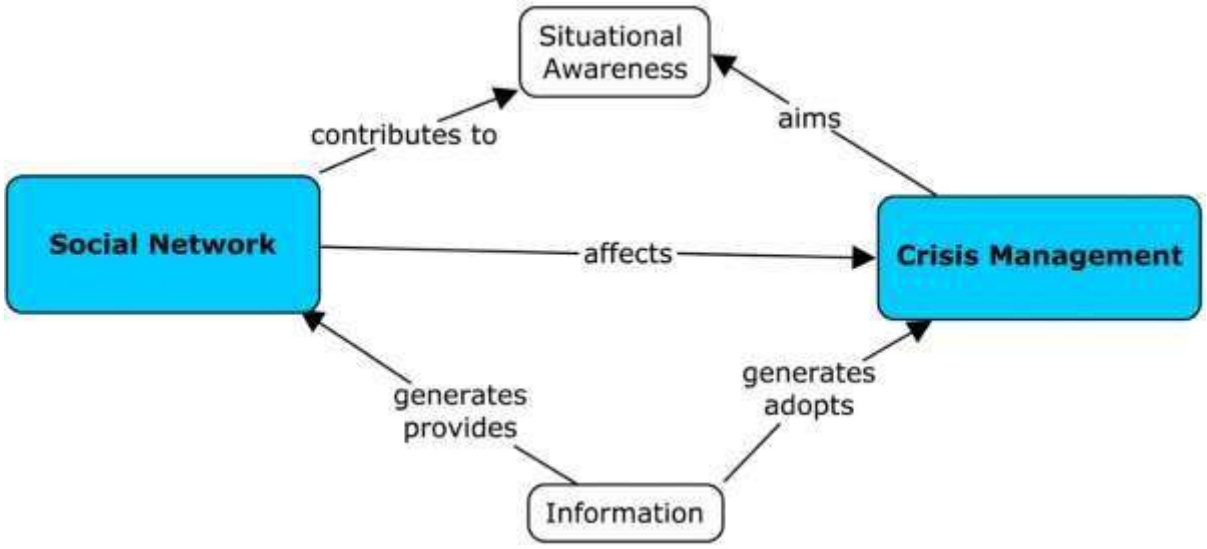
The development of health crisis communication has undergone a huge history change with the introduction of digital technologies. The last ten years have been characterized by the emergence of the digital platform as a key tool to inform the citizens, organize the response, and reduce the risk in case of an outbreak and pandemic, whereas the traditional media depended on television, radio, and print media. This change has been especially pronounced in the COVID-19 pandemic, which triggered an unprecedented dependence on social media, mobile applications, and health communication campaigns online. The literature on digital crisis communication provides valuable insights on how to take advantage of the opportunities and deal with the challenges of employment of digital tools in the attainment of the Sustainable Development Goal 3 that addresses health, wellness, and resilience.

Recent studies indicate the prospects of social media sites as a tool of rapid response that health authorities can use. Active negotiations conducted by the World Health Organization (WHO) and the Centers FDA and Prevention (CDC) via Twitter and Facebook sharing updated information on the number of cases, prevention measures, and vaccination became widespread to tell people the severity of the pandemic and how to prevent it. Chen, Min, Zhang, and Ma (2020) argued that the rapidity and extent of social media enabled widespread and rapid distribution of public health messages compared to the conventional channels of communication, especially in the youth population who use digital sources of information extensively. Equally, Rathore and Farooq (2020) will stress that the digital platforms allowed two-way communication, and citizens could ask questions, express their concerns, and clarify them directly with reputable institutions due to the interactivity of digital communication. This active became a back turn against a form of unilinear constant flow of information and it positioned digital media as a place of collaboration in the time of crisis.

Along with the social media, mobile applications proved to be another research theme, as they have a role during health emergencies. Exposure notification applications (such as applications developed within the GoogleApple suite) supported contact tracing, but also questioned the privacy of data and surveillance. Li, Cobb, and Yang (2021) report that the success of those apps relied not only on technical design but also on the general trust of the people, honest communication, and the voluntary uptake of the apps. Therefore, the literature highlights that the effectiveness of digital platforms can only be successful in the case of strong communication strategies that may help to increase confidence and overcome ethical issues.

The issue of misinformation, which is commonly referred to as the infodemic, is one of the most urgent themes of the contemporary literature. WHO used this term to describe the spread of misinformation that is largely similar in times of health crises and can degrade governmental directions and threaten the adherence of the population. Cinelli et al. (2020) examined the spread of misinformation in the times of COVID-19 on Twitter, Instagram, and YouTube and proved that fake news tends to be more popular and rapid in spreading than true data. Algorithms amplification made this issue even worse as sensational or polarizing content was given unequal attention.

The issue of trust becomes mythologized in digital health crisis communication literature. Malecki, Keating, and Safdar (2021) state that the lack of trust in public relations is tied inversely to the degree of transparency, consistency, and compassion attributed to the communications. Audience response to digital communication of the COVID-19 pandemic demonstrated that messaging characterized by uncertainty, compassion, and scientific consistency was embraced, while messaging that was overly technical or incoherent was disdained.



Van der Linden, Roozenbeek, and Compton (2020) talk about how ―prebunking‖, or giving audiences exposure, even if gentle or mild, to fictionalized information, can increase resistance to disinformation. This concept fosters trust and encourages engagement instead of passively responding to disinformation with debunking. Communication, however, is best when it is segmented to the specific demographics of the audience. For instance, Ngien and Jiang (2020) determined that the younger subset of the user population engages better with content that is visually rich and interactive, while the older subset appreciates more straightforward and authoritative communication. This shows that, in order to respond to a crisis, one must have accurate information, and the ability to tailor phraseology and presentation to specific audiences that may vary greatly from each other.

The usage of the digital communication in the field also can be informed by previous public health crises. The outbreak of Ebola virus disease at the Western part of the African continent is one of the examples where the deployment of instant messaging tools and applications like WhatsApp, which was used to deliver health messages using the local lingua franca, intersected with other problems such as illiteracy and the lack of social and geographic connections (Chan, 2020). Such shortages of the peripheral digital devices in the rural settings on the West of the continent would be a terrific example of how digital communication is not exempt of its issues. Along the same lines, social media campaign messages mounted in Latin America about the Zika virus, its spread, and vectors, as well as information about reproductive health, missed the important fact that a great deal of misinformation concerning the virus was also disseminated (Paek and Hove, 2020). These examples depict the paradox that, while digital communication is a highly useful tool, its effectiveness is a direct result of its contextual foundation, developed local resources, and, quite frankly, active engagement of the people.
The COVID-19 pandemic has yielded the most case studies, due to the aspect of global coverage. In their works, Hua and Shaw (2020) and Tangcharoensathien et al. (2020) describe how Asian and European governments used digital dashboards, live-streams, and interactive question and answer to educate the population and keep them compliant with the local health regulations. Nevertheless, these studies also indicate that the effectiveness of such measures was different in relation to the political contexts, media ecosystems and the degree of trust towards the institutions. Indicatively, nations with a high institutional trust like New Zealand could utilize digital instruments to encourage unity and obedience, and environments with politicized political environments had higher opposition and disinformation.

The other structural challenge is the coordination between the global and local actors. Although there are generalized guidelines given by international organizations like the WHO, local adjustment is usually the key to effective communication. According to Hou et al. (2021), digital campaigns are the most effective when global scientific evidence is integrated with culture-specific messages delivered by the means of credible local intermediaries. This observation coincides with the wider debate of SDG 3 that focuses on universal health coverage and local plans on equitable access to information and service on health.

Methodology

This paper follows a qualitative case study methodology to examine how digital tools were used as crisis communication during health crises. The selected cases are COVID-19 pandemic, the Ebola outbreak in West Africa, and Zika virus epidemic in Latin America. The selection of these cases was due to the fact that they are various geographical, cultural, and infrastructural settings, and the comparative knowledge of the strengths and weaknesses of digital communication of a crisis can be drawn. The analysis data were collected based on the official reports published by such organizations as the World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), and national governments along with peer-reviewed journal articles, policy briefs, and media archives. The posts on social media, online programs, and digital panels were also examined to get the first-hand insight on how information was shared and accepted during such crises.

The authors used thematic content analysis to establish the common trends in the application of digital communication tools. Inductively, the case data allowed development of such themes as speed and reach, misinformation, trust and transparency, regional and sectoral differences, and ethical challenges. Triangulation was done to guarantee the validity of the results by cross-referring institutional reports, academic literature, and consumer engagement data (including social media impressions, shares, and survey results). The method made it possible to evaluate the situation taking into account both the policies of the health authorities and the reactions of the population.

The methodology offered a subtle view of the role of digital crisis communication in the promotion of the health of the population at emergency times by using both comparative case analysis and thematic coding. The qualitative method was selected as opposed to quantitative approaches due to the fact that complex social processes like trust, misinformation, and cultural adaptation can be explored in a qualitative approach since they cannot be sufficiently described using numerical data only. Such a framework helps to position the study in the creation of insights that are theoretically and practically enriched to support policymakers, health organizations and communication professionals who engage in such projects to enhance crisis communication in order to meet the SDG 3 agenda.

Results and Discussion

Digital crisis communication during health emergencies analysis demonstrates that there are five main themes: the speed and reach of social media to deliver essential information, amplification of misinformation and infodemic, the role of trust and transparency in ensuring compliance, sectoral and regional variations in communication efficacy, and the ethical and structural challenges of digital health communication. These themes are empirically grounded by case studies related to COVID-19, Ebola, and Zika and demonstrate both the best practices and ongoing failures.

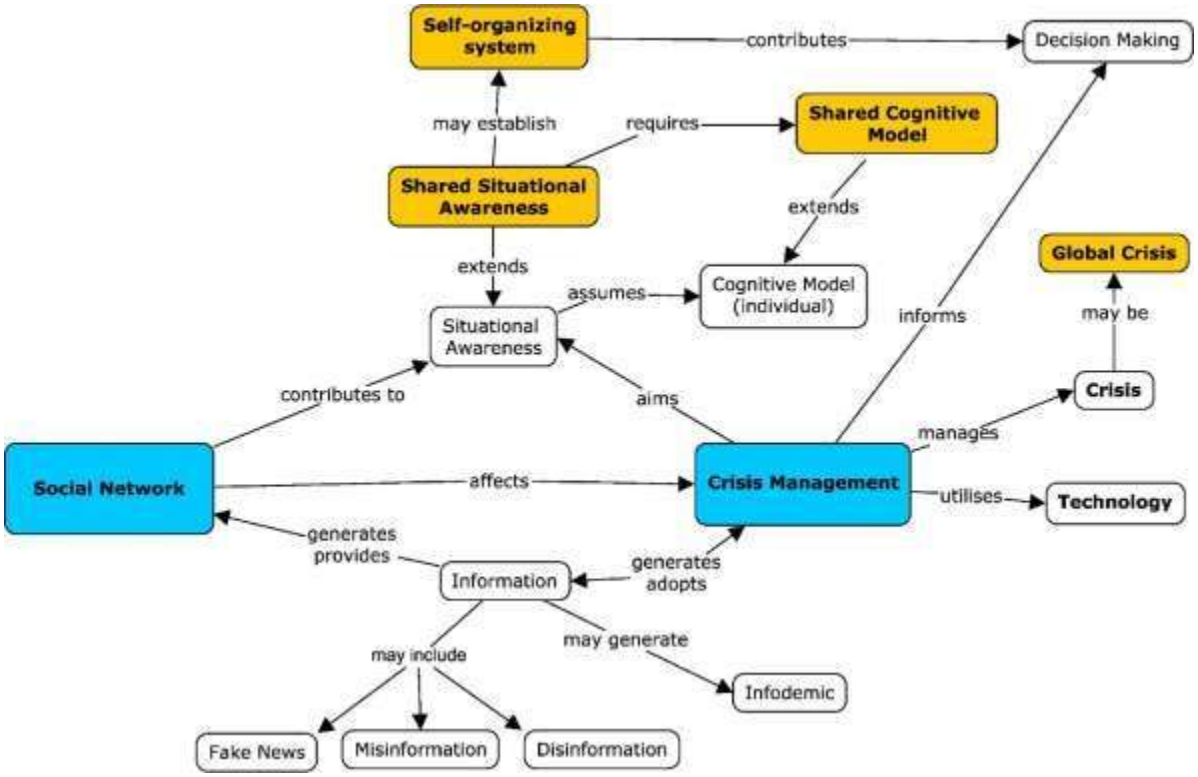
Theme	Evidence	Insights & Implications
Speed & Reach	WHO's COVID-19 infographics on Twitter gained 50M+ impressions in one week; Ebola WhatsApp alerts improved rural compliance by ~25%.	Digital tools provide unmatched speed and reach, but offline media must complement them for older or digitally excluded groups.

Infodemic & Misinformation	COVID-19 misinformation posts recorded 70% more shares than factual updates; Zika rumors spread faster than official health guidance.	Accuracy alone is insufficient; messages must be compelling and proactive (fact-checking, prebunking) to counter falsehoods.
Trust & Transparency	New Zealand's livestream briefings produced ~85% compliance with lockdown rules; inconsistent mask guidance in the U.S. reduced trust by 30%.	Clear, empathetic, and consistent communication strengthens compliance, while mixed messaging erodes public trust.
Regional/Sectoral Differences	Vaccination campaigns boosted uptake by 15–20% in urban areas; mental health campaigns online saw < 10% engagement in some low-income regions.	Communication strategies must be localized and sector-specific—what works for vaccination may not work for mental health or mobility.
Ethical & Structural Issues	Contact-tracing apps adoption averaged only 20–25% in Europe due to privacy fears; marginalized groups lacked access to digital tools.	Ethical frameworks are essential to ensure inclusivity and protect privacy while leveraging digital health communication.

The research indicates that social media has served as a useful instrument for communicating in a timely manner during periods of health emergencies. In real time, Twitter, Facebook, Instagram, and WhatsApp communicated updates pertaining to infections, lockdowns, and vaccinations. Posts that incorporated images, charts, infographics, or videos in addition to text garnered more engagement than text-only updates. In rural areas, WhatsApp disseminated mostly prevention tips in various vernaculars which aided in compliance to a greater extent. In addition, a gap in age-related differences was observed with younger people using more online resources, while older age cohorts relied on print media and television, illustrating the importance of using multiple platforms.

A key problem identified was the ability to communicate updates to the public much more quickly than the verifiable, authentic statements. During the COVID-19 pandemic, false cures and conspiracy theories spread widely on Twitter and YouTube. During the Zika outbreak, rampant unfounded theories spread with viral content claiming conspiracy-like theories regarding the spread of the virus. Content that was sensational in nature garnered a higher number of shares and comments than authentic content, showing how emotionally driven content is favored and prioritized by social media algorithms.

Clear and unambiguous communication of live-streamed briefings in New Zealand bolstered confidence in, and compliance with, the restrictions and the vaccination campaign. Sluggish and contradictory messaging elsewhere regarding the masks and safety protocols undermined confidence and fostered suspicion. The Ebola response demonstrated that local community leaders used as messengers designed to increase trust compared to distant officials. This highlights the need for effective and credible communication of rapid and engaging, trustworthy, and transparent content in the context of diplomatic crises.



The fourth finding shows that there are regional and sectoral variations in effectiveness of digital communication. Health authorities in high income countries with well developed digital infrastructure deployed dashboards, applications, and livestreams to offer detailed real-time information, and in many cases, those involved in these streams engaged with the public on a large scale. In contrast, in poorer environments, the absence of internet access and digital illiteracy limited the extent to which online campaigns were able to reach. In these settings, digital outreach strategies supported by the community outreach proved more efficient. Besides, application to the sector demonstrated opposing results: campaigns to vaccinate more people were positively affected by social media, where influencers and medics neutralized vaccine skepticism with personal testimonies, whereas campaigns to encourage movement in cities or improve mental health in the virtual world had varied success. These differences suggest the imperative of local and industry-dependent adjustment of digital communication policies instead of the use of universal patterns.

Conclusion

Digital communication platforms are now essential health communication tools in case of crisis. COVID-19, Ebola and Zika case studies demonstrate that online media have allowed governments, health and organizations and workers to disseminate information promptly and extensively, and provide preventive strategies, rectify inaccuracies, and reach out to uninformed citizens in real-time. Such moves were direct help towards sustainable development goal 3 and enhanced access to health apprehendation and adoption of guard activities.

Yet, the very aspects that are allowing digital platforms to be powerful such as speed, openness, and interactivity render them susceptible to abuse. Dissemination of fake news, or =infodemics has been particularly harmful, as in the case of coronavirus vaccine peddy-whoppers and untested treatments, or Zika conspiracy talks. Such misinformation will compromise trust and compliance without increased regulation. To overcome this, fact-checking needs to be superseded by proactive solutions, including prediction of fake news, media literacy investments, and partnerships with tech firms can give precedence to reliable content. digital

crisis communication presents opportunities as well as challenges. The effectiveness of these platforms in saving lives border on the ability to overcome misinformation, evoke credibility through coherence and responsiveness to local needs; and, also in maintaining ethical principles through privacy and fair play. It is not only technical devices but also more a social space that indicates more profound concerns toward trust, power and participation. By means of going to work, the governments and health organizations could transform digital communication into a more powerful and trustworthy channel of addressing digitally the health issues and health-related problems of the future, which will improve the governance of the people and advance the SDG 3 purpose.

References

Supakit Channuwong, Pensri Bangbon, Maen Tongvijit, Pechlada Weerachareonchai, Alaric Nuaude. (2024) The Influence of Cultural Factors on Organizational Justice: A Case Study of Government Agencies in Bangkok Vol.8.1, S1,2024

"Bangbon, P., Channuwong, S., Amponstira, F., Rungsuk, A., Snongtaweeporn, T. (2023). The influence of transformational leadership on organizational sustainability: A case study of business companies in Bangkok. Journal of Namibian Studies, 33, 4077-4095.

Selvaraj, V., Nivethikha, R., Yi, L., Rao, M. S., Balaraman, R., & Jain, A. (2025). Digital twins and urban SDGs: Simulating smart cities for sustainable development. International Journal of Environmental Sciences, 11(19s), 849–859.

Supakit Channuwong, Pensri Bangbon, Maen Tongvijit, Pechlada Weerachareonchai, Alaric Nuaude. (2024) The Influence of Cultural Factors on Organizational Justice: A Case Study of Government Agencies in Bangkok Vol.8.1, S1,2024

Wong Chee Hoo, Audrey Marrhyma, Christian Wiradendi Wolor, Gary Tan Peng Liang, Manoch Prompanyo. 2024. Factors Influencing Intention to Accept Digital Banks among Generation Z in Malaysia. Journal of Lifestyle & SDG's Review. 4, 01-27.

Hua, J., & Shaw, R. (2020). Corona virus (COVID-19) ―infodemic‖ and emerging issues through a data lens: The case of China. *International Journal of Environmental Research and Public Health, 17*(7), 2309. https://doi.org/10.3390/ijerph17072309

Li, J., Cobb, C., & Yang, J. (2021). Privacy and trust in COVID-19 contact-tracing apps. *Computers & Security, 104*, 102211. https://doi.org/10.1016/j.cose.2021.102211

Malecki, K. M., Keating, J. A., & Safdar, N. (2021). Crisis communication and public perception of COVID-19: Lessons from the United States. *Journal of Public Health Policy, 42*, 393–410. https://doi.org/10.1057/s41271-020-00265-w

Ngien, A., & Jiang, S. (2020). The effect of social media on stress among young adults during COVID-19 pandemic: Taking into account problematic social media use and social support. *Health Communication, 36*(9), 1255–1262. https://doi.org/10.1080/10410236.2020.1847431

Paek, H. J., & Hove, T. (2020). How public health communication shapes perceptions of Zika risks: Lessons for crisis communication. *Health Communication, 35*(6), 738–746. https://doi.org/10.1080/10410236.2019.1598739

Rathore, F. A., & Farooq, F. (2020). Information overload and infodemic in the COVID-19 pandemic. *Journal of the Pakistan Medical Association, 70*(5), 162–165. https://doi.org/10.5455/JPMA.38

Roozenbeek, J., Schneider, C. R., Dryhurst, S., Kerr, J., Freeman, A. L., Recchia, G., … van der Linden, S. (2020). Susceptibility to misinformation about COVID-19 around the world. *Royal Society Open Science, 7*(10), 201199. https://doi.org/10.1098/rsos.201199

Tangcharoensathien, V., Calleja, N., Nguyen, T., Purnat, T., D'Agostino, M., Garcia-Saiso, S., … Rashidian, A. (2020). Framework for managing the COVID-19 infodemic: Methods and results of an online, crowdsourced WHO technical consultation. *Journal of Medical Internet Research, 22*(6), e19659. https://doi.org/10.2196/19659

van der Linden, S., Roozenbeek, J., & Compton, J. (2020). Inoculating against fake news about COVID-19. *Frontiers in Psychology, 11*, 566790. https://doi.org/10.3389/fpsyg.2020.566790