



The Impact of YouTube Pandemic Advertising on People's Attitudes Towards COVID-19

Zarqa Shaheen Ali^{1,2*}

 0000-0002-7145-5788

Xuening Yang¹

 0000-0002-0709-3719

¹ ICL Graduate Business School Auckland, NEW ZEALAND

² University of Auckland, NEW ZEALAND

* Corresponding author: zsha016@aucklanduni.ac.nz

Citation: Ali, Z. S., & Yang, X. (2022). The Impact of YouTube Pandemic Advertising on People's Attitudes Towards COVID-19. *Online Journal of Communication and Media Technologies*, 12(3), e202214. <https://doi.org/10.30935/ojcm/11922>

ARTICLE INFO

Received: 15 Oct 2021

Accepted: 13 Mar 2022

ABSTRACT

The main objective of this study is to examine the impact of YouTube pandemic advertising on people's attitudes towards COVID-19. YouTube, as one of the most well-known social platforms, has performed well in this pandemic situation in terms of transmitting vital information through advertising. A quantitative approach was employed and the data were collected from 205 respondents through an online survey. People's opinions of pandemic advertisements and the dissemination of information through YouTube are both critical factors in determining the impact of YouTube pandemic advertisements on people's attitudes towards COVID-19. The findings also reveal that there is an impact of COVID-19 advertising on its viewers. Majority of respondents followed instructions with varied degree such as keeping social distance found in the advertised information and became more willing to pay attention to health issues in future.

Keywords: COVID-19, pandemic advertisement, YouTube

INTRODUCTION

At the very beginning of 2020, COVID-19 pandemic became a global phenomenon. COVID-19 has an impact on almost every field of human life and business (Abubakar, 2020). People have been strictly confined by lockdowns with limited activities and restricted travel distances. During the lockdown periods, online entertainment such as online games, YouTube, TikTok, and Twitter became the main means for people to stay in touch with the rest of the world (Thelwall & Thelwall, 2020). For many people, it is true that the more time they spend at home, the more interactions with various online platforms they would have.

As a result of this, increasing the time spent on online platforms, the chance increased that all types of online advertising would be exposed in front of viewers (Ahn, 2020). When people face new and different situations their attitudes and opinions may change accordingly (Lee & Cho, 2020), and a global pandemic of COVID-19 is such a situation. During a time of the epidemic, informational advertising has its value in transmitting messages to the right destination.

This research seeks to explore the impact of online pandemic advertising on people's attitudes towards COVID-19, especially when using the social media video platform of YouTube. 'YouTube pandemic advertising' means all the advertising on YouTube platforms related to pandemic issues, particularly advertising related to COVID-19. For most of the pandemic advertisements, they are the government advertisements giving official advice to the locals. The impact of YouTube pandemic advertisements has been measured through the opinion of the respondents about their attitude towards the prevention measures taken for COVID-19.

Background

Pandemic advertising has the power to guide the public regarding a fast-spreading health crisis (Damm et al., 2011; Healy et al., 2014; Mejova & Kalimeri, 2020). Pandemic advertising must be evidence-based (Halabchi et al., 2018; Jones et al., 2010) and provide information (Turner, 2020), avoiding any misleading or unproven resources. Advertising regarding a health crisis such as a pandemic is an essential tool for improving the level of public health. It should be precise, timely and attractive. What COVID-19 brought for the advertising industry proved to be double-edged from a commercial perspective. When COVID-19 appeared, it presented a completely new challenge for the world. The lockdown situation provided a new opportunity for evaluation of online advertising because of its continuity of availability, as opposed to offline sources of information (Taylor, 2020). As a result, online advertising seems to get the chance of blooming at this time. According to Tomes (2000), pandemic advertising must be an educational force for the public about the serious disease and should be presented with clear content and understandable information. Pandemic advertising has a responsibility to make contributions to transmitting significant messages about health issues and building the self-protection consciousness against a pandemic. Most significantly, pandemic advertisements need to get feedback from the public.

Online platforms broke the boundaries of location and time for advertising and increase the involvement with people and advertisements can more accurately reach their target population, which provides advertising in real-time and raises its value (Choi et al., 2020; Mansoor et al., 2018). Social media advertising disseminates information to the largest group in a short period, especially when it comes to an extremely urgent situation like COVID-19 (Ali et al., 2020; Gray et al., 2012; Xu et al., 2015). Pandemic advertising is more efficiently spread through social media platforms nowadays, which helps people with updated information and the most useful self-protection instructions. Social media advertisements, with attractive information in the content, has been noted as an extremely influential method to motivate the intention and behaviors of the audience (Badade & Shende, 2019). The interest, involvement and reaction to an advertisement determine its effectiveness in a tangible way (Bauer & Lasinger, 2014; Campos et al., 2016; Cher & Arumugam, 2019; Chih-Chung et al., 2012). An online advertisement that approaches the audience with understanding and sympathy will help the advertiser to achieve their expectations (Fedric & Singh, 2018; Sabuncuoglu-Inanc et al., 2020). Online advertisement is considered to be the most outstanding source for attracting and interesting target audience with the dynamic environment provided by online platforms (Gupta et al., 2017). Some advertisers have defined online channels as valuable supplementary vehicles, whereas others valued them more and switched entirely to online advertising investments (Lee & Cho, 2020). All of the previous pandemics such as H1N1 swine flu, West African Ebola and Zika virus which has erupted in the 21st century have made an irreversible mark on human history. Information regarding all of them has been shared through the channels that can be used such as TV, newspaper and social media platforms like Facebook and Twitter. YouTube has been used to spread vital information about public issues.

YouTube Advertising

You Tube has experienced unprecedented viewership during the COVID-19 pandemic (Dutta et al., 2020). YouTube has been considered as one of the main sources for more and more people to obtain online information. A Pew Research Centre survey in 2018 showed that YouTube already had surpassed Facebook and Twitter and had become one of the most used platforms for the young generation (Anderson & Jiang, 2018). Most YouTube viewers are also customers for YouTube advertisements, and YouTube has become one of the most popular means of promotion worldwide for all kinds of advertising (Harshita et al., 2017). A large volume of information can be contained in the video advertisements, the fair payment plan of that they can only pay as they are viewed by people and the powerful back-up by the Google search engine all contribute to the success of YouTube advertising in reaching large population in a very short time (Duffett, 2020). YouTube advertisements can be very influential for many advertisers including companies, but also for government information and pandemic advertisements (Gupta et al., 2018; Raji et al., 2019). YouTube advertising has the ability to double the influence of certain kinds of information with a higher level of user engagement, which makes it very effective for delivering related information and promotions to the target audience within its reach (Fedric & Singh, 2018). The cumulative engagement of video advertisements creates an advantage for YouTube, in which people would get add-up influence rather than from other platforms.

On the other hand, people will gain awareness of many social issues through YouTube. There could be positive, negative or no impact on people's attitude towards those advertised issues. In some cases, if the advertisements on YouTube cannot evoke the attraction and transmit information without significant usefulness, the expected impact would not occur to persuade the people to make new decisions. Even though video advertisements might be more attractive than other types of presentation, a considerable number of views are presented with YouTube video advertisements displaying automatically. Nevertheless, the 'skip-ad' option gives YouTube users a certain level of satisfaction about this issue, which is essential for them if they are to find YouTube advertising more acceptable. After a pandemic advertisement reaches the target group, the response from people aligned with what has been delivered from the advertisement should be generated: actions such as following the instructions and advice or changing behavior (Jones et al., 2010; Knell et al., 2020). The attitude towards social issues from the receivers' point of view influences the degree of impact they would get from related advertisements (Abrams et al., 2020; Hamouda, 2018; Park & Ha, 2020).

The Objective of the Study

The main objective of this study is to examine the impact of YouTube pandemic advertising on people's attitudes towards COVID-19, which can be further explore in the following three aspects:

1. To investigate the dissemination of information about COVID-19 on the YouTube platform;
2. To understand the viewers' attitude towards YouTube pandemic advertising during the COVID-19; and
3. To explore YouTube pandemic advertising's impact on people's attitudes towards COVID-19.

Many authorities and government organizations in Europe and the United States chose social media as the main tool to diffuse COVID-19 related information and linked protection methods to the public. Spanish, Belgium and Latvia's governments set up limitations on advertisements about particular activities during COVID-19 (Cecere et al., 2020; Håkansson, 2020). Accordingly, the advertisements on social media platforms associated with pandemic issues are under strictly monitored by all the governments. New Zealand's Government put a lot of effort into promoting the use of COVID-19 tracing applications. Governments use diverse social platforms to achieve their goals of some certain promotion or forbidden campaigns. YouTube is also used by the New Zealand government to disseminate information about the COVID-19 to save people from this pandemic.

Literature Gap

Although a considerable amount of research about pandemic information and YouTube advertisements has been conducted, there are few relevant studies relating to the situation of COVID-19. Video advertisements are a unique method for pandemic advertising reach to people with their particular impression and the studies of YouTube as the most famous platforms are not sufficient about the role they played under the specific circumstance of COVID-19 (Marchal & Au, 2020). This research will fulfil the gap in this area and reflect the current situation of the impact on people's attitudes in New Zealand.

MATERIALS AND METHODS

The primary data is collected through an online survey. It would take approximately three to five minutes for each respondent to complete the whole survey. As the viewers of the advertising are the most direct and valuable observers, the online questionnaire was distributed to YouTube viewers by using a convenience sampling to reduce the difficulty of gaining access to the participants and to simplify the practical problems of data collection procedure (Maisiri & van Dyk, 2019; Tang et al., 2020). As the pandemic situation persists, convenient sampling helps the researcher to collect data from a reachable pool of participants, which is one of the best choices of sampling techniques: simple, prompt and cost-saving. Google forms is used to conduct data collection processes because of its powerful summative and analytical functionalities.

This ensures that participation in the survey is completely voluntary and ensures sufficient recruitment while maintaining social distancing. The participant information sheet and the consent form were distributed to respondents at the beginning of the questionnaire to explain the general information about the survey. It was an entirely voluntary survey, and all participants were able to leave and recall their contributions before the analysis stages started.

Table 1. Demographic information of the respondents

Demographic information		Percentage (%)
Gender	Male	49.0
	Female	49.0
	Prefer not to say	2.0
Educational background	Professional	3.4
	PhD	3.0
	Master	37.9
	Bachelor	49.8
Occupation	Full-time	50.2
	Part-time	10.2
	Student	34.1
	Homemaker	0.6
	Retired	1.6
	Unemployed	2.9
	Prefer not to say	0.4

5. How often do you watch YouTube per day?
205 responses

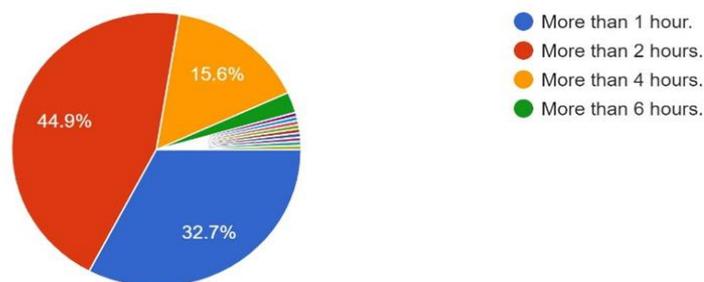


Figure 1. Time spent on YouTube per day

Most of the questions in the survey related to variables are closed-ended questions with a five-point ranking scale with 1–strongly disagree, 2–disagree, 3–neutral, 4–agree, and 5–strongly agree. All the results of closed-ended statements are presented with descriptive analysis.

FINDINGS

Demographic Information

In this section, all four items of demographic data (age, gender, educational background, and occupation) are analyzed and are presented in **Table 1**. **Table 1** indicates that the majority age group of all the respondents lies between 18 and 30. The second-largest group among all respondents is between the ages of 31 and 40. The percentages in **Table 1** show the age group between 18-30 is 62.9% and none of the participants is above the age of sixty in this survey. Only a few respondents are in the age group of 51-60, which is with the percentage of 2%. As shown above, the number of male and female participants is almost same. Majority of the respondents are with a bachelor’s degree (49.8%). There are 37.9% of people with a Master degree. Only 3% of people with a doctorate and 3.4% of people with a professional degree participated in this research. As a result, the total number of people with a Bachelor’s or Master’s degree reach nearly 87.7%; a quite large proportion. **Table 1** shows that the largest proportion (50.2%) among the respondents are in full-time employment. The second largest group is of students with 34.1% of the total. There are 10.2% of people having part-time jobs. 2.9% of respondents are unemployed and there are only small percentages of respondents are retired, homemaker, unemployed, and preferred not to share their employment status.

Extent and Frequency of YouTube Viewing

Figure 1 shows the time that respondents spent on YouTube every day. As can be seen from the pie chart, 44.9% of respondents watch YouTube for more than 2 hours per day. The percentage of respondents who spend more than 1, 4, and 6 hours is 32.7%, 15.6%, and 2.4%, respectively.

6. How many times have you watched COVID-19 advertisements on YouTube per day?

205 responses

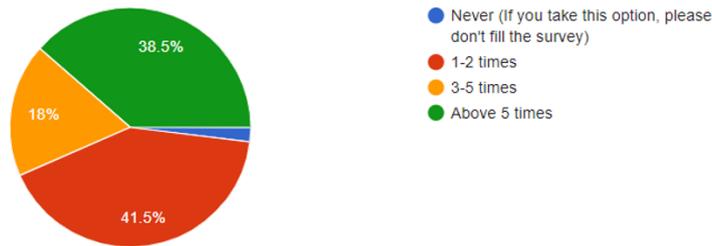


Figure 2. Frequency of watching YouTube COVID-19 ads

19. The form of the presentation I want to receive about COVID-19 advertisements through YouTube is?

201 responses

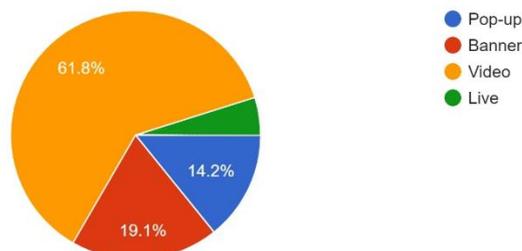


Figure 3. Preference of presentation forms for YouTube COVID-19 advertisements

As shown **Figure 1**, more than half of the respondents spent more than two hours on YouTube, which created more opportunities for them to watch COVID-19 advertisements.

Figure 2 shows majority of the respondents watched COVID-19 advertisements on YouTube 1 to 2 times with a percentage of 41.5%. However, 38.5% of the respondents had watched COVID-19 advertisements more than 5 times per day. And there are 18% of people stated that they have watched COVID-19 advertisements 3-5 times per day. 2% of the respondents have not watched the COVID-19 advertisements while they were watching videos on the YouTube platform. Because this research is focused only on the attitude changes after people watched COVID-19 advertisements on YouTube, the survey results given by these four respondents were removed from the analysis process.

As shown in **Figure 3**, 61.8% of the viewers from YouTube platforms preferred video advertisements about pandemic issues. There is little difference in numbers between the people who choose “Banner” and “Pop-up”, and the least chosen answer is “Live”. Although only 3.4% of people selected this answer, it means that YouTube nonetheless has a certain number of viewers who would prefer to receive updated COVID-19 pandemic information through live channels.

Attitude of Respondents Towards Pandemic Advertisements

Figure 4 shows the responses for the acceptance of pandemic advertisements after the outbreak of COVID-19. 84% of respondents found it more acceptable to watch pandemic advertisements after becoming aware of the seriousness of the COVID-19 situation. 13.2% of people had a neutral opinion and 6.3% of the respondents did not agree that pandemic advertisements after COVID-19 become more acceptable.

The respondents’ opinion on the “Skip-Ad” button for COVID-19 advertisements is displayed in **Figure 5**. It shows that more than 60% of the respondents thought it reasonable for YouTube to not apply “Skip-Ad” buttons on any COVID-19 advertisements. However, more than 20% of the respondents have shown their disagreement of skipping the COVID-19 advertisements which means that even though the acceptance of pandemic advertisements among the general population has increased a lot so far, there are still a certain number of people who prefer either skip or watch the relevant advertisements by themselves.

17. Pandemic advertisements become more acceptable after COVID-19.
201 responses

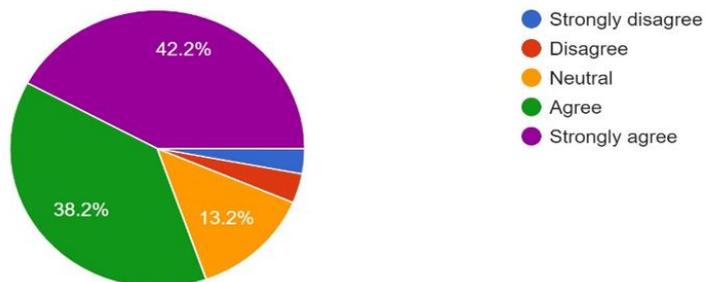


Figure 4. Acceptance of pandemic advertisements after COVID-19

18. I think it is reasonable if there is no 'Skip-Ad' button for COVID-19 advertisements.
204 responses

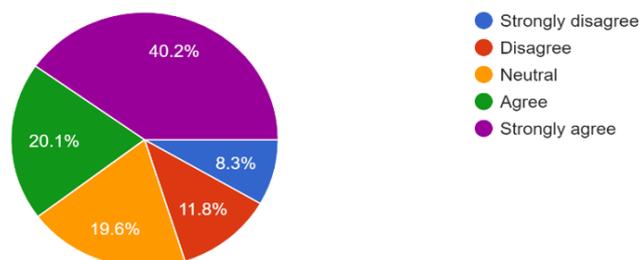


Figure 5. Opinion of "Skip-Ad" button for COVID-19 advertisements on YouTube

7. Has YouTube advertised about COVID-19 immediately after the outbreak?
201 responses

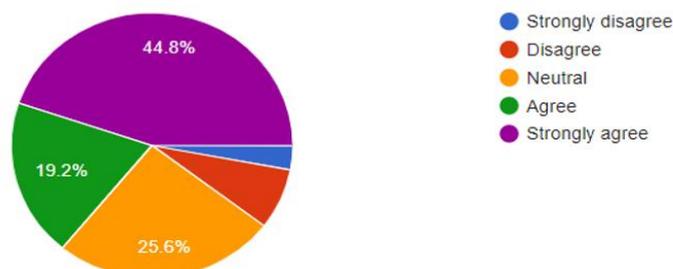


Figure 6. Broadcasting of COVID-19 advertisements by YouTube

Dissemination of Information About COVID-19 on YouTube

YouTube, as a social media platform, has been used to broadcast information about social and pandemic issues. The timeliness and accuracy of the information that broadcasting on this platform is reflecting the role of YouTube in disseminating pandemic advertisements.

As shown in Figure 6, 44.8% of the respondents watched COVID-19 advertising immediately after the outbreak. However, only 10.4% did not watch the COVID- advertisements immediately after the outbreak. The large number indicates that most of the viewers watched COVID-19 advertisements immediately following the global outbreak of COVID-19.

According to the Figure 7, about 72.6% of respondents agreed on the statement asked. This indicates that most respondents trust the accuracy of the information provided by YouTube pandemic advertising. However, 19.1% of the respondents did not share their opinion on YouTube pandemic advertisement's accuracy. We also found that there are a remaining 8.3% of people who have no trust in the information of COVID-19 provided in YouTube pandemic advertisements.

9. I trust the accuracy of the information provided by COVID-19 advertisements on YouTube.
201 responses

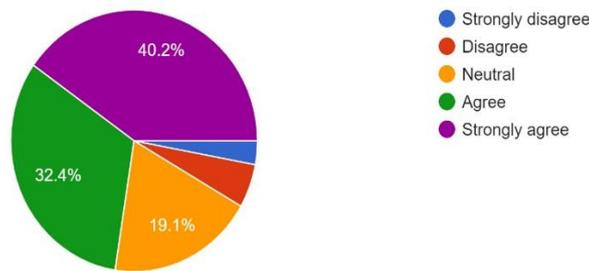


Figure 7. Trust in the information accuracy in YouTube advertisements

8. The information received about COVID-19 through YouTube is? (Please tick more than one options, if applicable).

201 responses

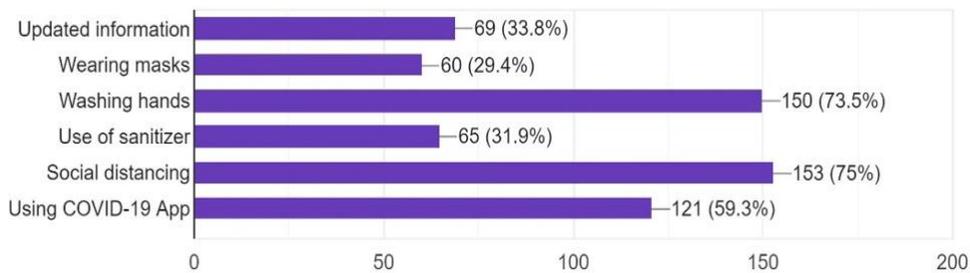


Figure 8. Information received in YouTube COVID-19 advertisements

Among the diverse information contained in pandemic advertisements on YouTube, 75% of respondents were of the opinion that these advertisements raised people’s awareness of keeping a social distance from other people. In the second place is the need to increase hand-washing with a very high percentage of 73.5%. Figure 8 shows 59.3% of the respondents received information about the use of COVID-19 tracer applications through advertisement on YouTube. The least chosen item is about the actions of wearing masks, which a rate of 29.4%. Many complex reasons may lead to this low rate. One of the main reasons for this will be that at the beginning of the pandemic, wearing masks was not seen as an essential protection method by most of the governments in the Western world. The respondents who chose of getting updated information and the use of sanitizer have a close percentage with 31.9% and 33.8%, respectively.

Impact of Pandemic Advertisements

According to Table 2, more than 74% of the respondents indicated that the importance of pandemic advertisements had increased due to COVID-19. They are all holding an agreeable thought of the influence on how they value the pandemic advertisements after the breakout of COVID-19. However, despite the pandemic, 15.2% of people held a neutral opinion and about 10% of the respondents expressed their disagreement about the increased importance of pandemic advertisements due to COVID-19. Regarding the effectiveness of COVID-19 advertisements in making people more concerned about their health, 78.4% of respondents were agreed that the increased frequency of advertisements enhanced the importance of this information. In other words, the increased number of pandemic advertisements did have a positive impact on the great majority of the respondents. However, apart from the positive results, there are still 12.7% of people gave a neutral response, and 8.1% of people believe that the increased numbers of COVID-19 advertisements did not enhance the importance of health issues. It was asked whether people should wear masks to protect themselves from COVID 19, and as can be seen from Table 2, 53.4% of the respondents hold a disagreeable opinion towards the statement, which means that COVID-19 advertisements they watched through YouTube platform not convince them to wear a mask to prevent themselves from coronavirus.

Table 2. Impact of YouTube pandemic advertisements

Impacts	Scale	Percentage (%)
Increased importance of pandemic ads due to COVID-19	Strongly disagree	2.0
	Disagree	8.3
	Neutral	15.2
	Agree	34.3
	Strongly agree	40.2
Importance of health issues due to the enhanced frequency of COVID-19 ads	Strongly disagree	2.9
	Disagree	6.0
	Neutral	12.7
	Agree	35.3
	Strongly agree	43.1
COVID-19 ads on YouTube convinced me to wear a mask	Strongly disagree	10.8
	Disagree	42.6
	Neutral	21.1
	Agree	16.7
	Strongly agree	8.8
COVID-19 ads on YouTube convinced me to keep social distance	Strongly disagree	2.5
	Disagree	9.7
	Neutral	16.7
	Agree	26.5
	Strongly agree	44.6
COVID-19 ads on YouTube convinced me to do online shopping	Strongly disagree	8.3
	Disagree	11.8
	Neutral	18.6
	Agree	23.5
	Strongly agree	37.7
I feel much safer to follow the COVID-19 instructions given by YouTube	Strongly disagree	5.9
	Disagree	7.4
	Neutral	24.0
	Agree	24.0
	Strongly agree	38.7
The advertisements for COVID-19 make me pay more attention to pandemic issues than before	Strongly disagree	4.8
	Disagree	6.9
	Neutral	16.2
	Agree	29.9
	Strongly agree	42.2

As shown in [Table 2](#), 71.7% of the participants agreed with the statement that COVID-19 advertisements on YouTube platform gave good advice about keeping a social distance from other people and convinced respondents to protect themselves from the possible infection from unknown people. About 61.2% of the respondents stated that they were convinced to switch to doing more online shopping to prevent the virus from spreading. The complete responses to the last three items measured show that a switch to online shopping was the suggestion from the advertising that was the least agreed with. It mirrors the fact that the least changes in people's mind are to switch to online shopping compared to the other two. Of the group of respondents, 62.7% responded that they felt an enhanced sense of safety when they followed the instructions given in the COVID-19 advertisements shown on YouTube. However, 24% of respondents were neither feel agreeable nor disagreeable about this statement. The lowest response was strongly disagreeing at 5.9% and disagreeing with 7.4%, respectively. Thus, a total of 13.3% of respondents did not believe that the COVID-19 advertisements they had viewed on YouTube had any effect of increasing their sense of safety in this health emergency. The data [Table 2](#) also reveals the responses collected regarding the attention people paid to pandemic issues. There are 42.2% and 29.9% of respondents strongly agree and agree, respectively with this proposition, which reveals that COVID-19 advertisements on YouTube did increase their attention to pandemic issues. On the other hand, 16.2% of the total respondents hold the opinion of being neutral on this item. A total of 11.8% of participant thought that COVID-19 advertisements had not influenced their attention on pandemic issues. As the associated impacts of COVID-19 advertisements on YouTube have been given, the next item presents the ranking of the most influential among them.

After we have been through such a time period like the COVID-19 pandemic, several long-term influences might remain in people's lives. People may have changed their attitudes and behaviors after COVID-19 due to

the instructions they received in pandemic advertising. Among all the possible impacts listed, 33.3% of all of the respondents thought that they would pay more attention to health issues and 20.6% of them thought that the pandemic advertisements themselves were the greatest influence. 16.7% of participants become more concerned about the wellbeing of society. Nearly the same number of respondents selected to maintain social distance from people (12.7%) as the number of people who chose to wash hands more frequently (12.3%). Only a few respondents choose of doing more online shopping as the influence they got from COVID-19 advertisements, with a percentage of 4.5%.

DISCUSSION

This research has explored the viewing and impact of YouTube advertisements on people's attitudes towards COVID-19. The respondents generally hold an opinion that the pandemic advertisements displayed on YouTube have impact on them. Most of the respondents felt that they had received accurate and updated information about COVID-19. Most of the participants believe that it is much safer to follow the suggestions proposed in COVID-19 advertisements on YouTube, which indicates that YouTube makes significant contributions to educating the public. After watching various COVID-19 advertisements on the YouTube platform, people changed their attitudes towards pandemic advertisements, and intend to take more care about health issues and wellbeing resources in the near future. The education and engagement of people is very important in the management of COVID-19 by ensuring public understanding and adherence with health messages. YouTube is a powerful educational tool that can be used by health professionals and governments to disseminate information and influence public behavior (Andika et al., 2021; Atac et al., 2020; Li et al., 2020). From this point of view, the discussion moves to further findings relating the three research objectives proposed.

Research Objective 1

The first objective is to understand the viewers' attitude towards YouTube pandemic advertising in the COVID-19 lockdown period. A considerable number of YouTube viewers regard pandemic advertisements as more acceptable advertisements in the context of the intense circumstances after the COVID-19 outbreak because of the continually updated information they received. At the same time, the respondents' view of the importance of pandemic advertisements had increased by a large amount compared to their pre-epidemic views. This finding is mirrored in research done by Casais and Proença (2018), which showed that people's attitudes towards pandemic advertising would be changed after an outbreak of serious pandemic issues.

The pandemic advertisements on the YouTube platform are through videos, banner and Pop-up (Hussain et al., 2018). Most of the respondents showed their understanding that it should be mandatory to watch pandemic advertisements in this situation of the COVID-19 pandemic. A number of respondents agreed the removal of the 'Skip-Ad' function. This provides backup for YouTube to support their removal of the "Skip-Ad" function on all pages displaying pandemic advertisements. Research into online video advertisement avoidance has suggested that (Hussain & Lasage, 2014) reduction of the ability to skip online video advertisements increases the rate of viewing of online video advertisements, meaning that more viewers will be exposed to the contents. It could definitely affect the impact of pandemic advertisement on the viewers' perspective with appreciable acceptance, also higher social influence will be created.

Research Objective 2

Research objective 2 is to investigate the quality and effectiveness of dissemination of COVID-19 information on YouTube. The information delivery speed for broadcasting COVID-19 related advertising paralleled the appearance of the pandemic issues in the viewers' perspective, which indicates that a timely reaction was properly achieved by the platform. This also reveals that the circumstance of efficiency of the YouTube pandemic advertisements within a satisfying level. However, there are many studies which are not satisfied with the quality of the information provided to the public through YouTube.

The majority of the respondents acquired substantial information about COVID-19 through the YouTube pandemic advertisements. The COVID-19 advertisements provided instructions to their viewers with effective measures against the coronavirus, such as washing hands more frequently, keeping a social distance from

people, using the COVID-19 application, and doing more shopping online. It was revealed in the study done by Jhummon-Mahadnac et al. (2012) that people can get relevant information about self-protection measures through pandemic advertisements. The respondents in this study were active users of the YouTube platform, and according to the descriptive data analysis outcome of the relevant items, viewers have their trust in the information they could receive from this platform. Many of the respondents did believe and trust the quality of information and instruction provided. Platforms with a good reputation may do better since they have already built a relationship of trust with their users, which will make it easier to present personalized advertisements accurately to target groups without hurting the privacy of audience (Aguirre et al., 2015). It had been demonstrated in the research done by Dutta et al. (2020) that for pandemic advertising, no matter whether it related to H1N1 influenza in 2009 or COVID-19 in 2019, YouTube stands in a significant position for broadcasting information about pandemic issues. The platform helps associated organizations to deliver precise information in a considerable online range within the whole society. This also shows the sense of social responsibility of the YouTube platform, and its awareness of its importance. Collaboration between health-related organizations and established medical and educational YouTube content producers provides an opportunity for the dissemination of high-quality information on COVID-19 vaccination. Such collaboration holds potential as a rapidly implementable public health intervention aiming to engage a wide audience and increase public awareness and knowledge about COVID-19 preventive measures (Chan et al., 2021).

Research Objective 3

The last objective of this study is to establish the impact of YouTube advertising on people's attitudes towards COVID-19. Increasing the frequency of pandemic advertising could be an underlying reason for people to re-evaluate serious health issues. It has been demonstrated in the research done by Al-Hadrusi and Sarhan (2014) that increasing the display frequency will impact people's attitudes toward the products or issues in the content of advertisements as its continuous, repetitive appearance can affect its viewer subconsciously. In this study, as an analyzed result from an online survey, the more that COVID-19 advertisements have been explored in the middle of the video the respondents watched, the more attitudes and behavior changes they would make to protect themselves against pandemics.

Dutta et al. (2020) found in their study that 77.0% You Tube videos addressed one or more aspects of the transmission of SARS-CoV-2, including basic precautionary measures like handwashing and social distancing. Despite the fact that the benefits of wearing masks were not promoted in certain countries by their governments, most of the respondents to this study felt convinced to follow the other suggestions and instructions, such as keeping a social distance from people in public places and doing more shopping online to avoid direct personal contact with other people who may be infected with COVID-19. The content analysis of You Tube advertisements by Tohang and Meisuri (2021) found that the information about COVID-19 protocol such as wearing a mask, keep the distance, use of hand sanitizer, washing hand, keep cleaning and stay away from the crowd were disseminated through You Tube advertisements. It is very important to implement COVID-19 protocol as the disappearance of this virus and the increasing number of effected people is dependent on the community itself.

Hand hygiene is of extreme importance in the prevention of COVID-19 transmission and You Tube videos were consequently created to demonstrate proper handwashing videos to the public (Samy et al., 2020). As Cher and Arumugam (2019) noted, the engagement of people is one of the most vital pace setting factors for advertisements. Once there is low engagement with viewers, the advertisement contents appear less attractive and are less effective. The actions that were taken by people, such as washing hands more often, putting masks on more often, keeping a greater social distance and so on after they viewed COVID-19 advertisements on YouTube is reflecting the effectiveness of pandemic advertisements on this platform. Further, following the instructions provided in YouTube pandemic advertisements increased the sense of security in COVID-19 emergency for most of the respondents.

Furthermore, most of the respondents paid more attention to health issues after they experienced a large number of COVID-19 related advertisements, which is considered to be the most significant influence respondents receive from watching YouTube COVID-19 advertisements. It has been discussed in research done by Fung et al. (2015) that social media platforms would have a significant influence on the opinions people hold on health issues. The changes in attitude towards pandemic advertisements are in the second

place of the most addressed impact of YouTube COVID-19 advertisements. Finally, YouTube provides its active users with a comprehensive social platform from which viewers can obtain many sorts of information, which makes this platform an excellent source for important things like pandemic information. It is, indeed, a useful platform for most people in their daily lives. The pandemic information advertised through the YouTube platform did impact people's attitudes towards COVID-19.

With the increasing number of confirmed cases and deaths every day around the world, people began to lose their confidence and become anxious. They may always fear being the next person exposed to the virus so that immediate, timely and long-lasting support and professional guidance such as the contents that were offered on the YouTube platform is very important to reduce people's negative thoughts and rebuild their confidence during this nightmarish period of time. On the other hand, the level of impact of YouTube COVID-19 advertisements has been positively influenced both by people's opinion of the pandemic advertisements themselves and dissemination of information. The more people see pandemic advertisements as valuable, the more impact YouTube COVID-19 advertisements will have. Also, the higher the level of trust people have in the significant information that has been delivered, the more influence it would have upon people.

CONCLUSION

This can be concluded that YouTube pandemic advertisements have had a significant impact on people's attitude toward COVID-19. The viewers would change their attitudes towards these advertisements during the pandemic crisis and concern themselves more about health issues and wellbeing resources. The perceptions people have of pandemic advertisements and the information they received from the YouTube platform determine the level of the impact.

It is very hard to influence people's opinions within a short period of time in general, much less to be immediately ready as a platform for precise information delivery under the current COVID-19 situation, which is full of misleading information, fear and uncertainty. Such influence requires a careful method to exert an imperceptible impact on people's thinking. The viewers' attitude towards an advertisement directly determines the impact of the advertisement on them. In most of the viewers' opinion, video is the best way to present pandemic-related information. Instead of pop-up and banner advertisements, it is more effective to advertise pandemic information in video form. As investigated by Dutta et al. (2020), the share of videos contributed by Government and Health Agencies was low. Medical institutions and health agencies should produce content for YouTube to disseminate quality medical and epidemiological information to create awareness among people.

It is better to keep the 'Skip-Ad' button at the bottom right of the page with most of the repeatable pandemic advertising since according to the collected data, people still would want to retain their choice of whether to avoid repeated information or not. Mejova and Kalimeri (2020) one of the most vital functionalities of pandemic advertisements is to quiet the anxiety of the public. The more acceptance people have of pandemic advertisements, the more effective it will be.

The speed of broadcasting information in YouTube advertisements about the COVID-19 situation would be marked as impressive in the users' point of view. The first time pandemic advertisements are watched should be immediately after the outbreak of the pandemic within local districts. The efficiency factor can help the platform like YouTube build its reliability regards to the latest trend of serious issues and the updated information within a global range. The quality of the video is the most important factor – it must be concise, easy to understand; clear and to the point. The content of online pandemic advertisements needs to have consisted of the correct self-protection measures, updated news and information and the practical actions promoted by local governments; such as using the COVID-19 tracing application and the availability of medical facilities for the COVID-19 situation. Further, platforms like YouTube need to build a bridge of trust between the platform and its users so that the accuracy of the information advertised on the platform can be trusted and well-followed and viewers' attitudes and behaviors can be changed accordingly, and then lead to an increased sense of security and confidence among the population as it fights against COVID-19.

As shown in the result, the increased frequency of YouTube COVID-19 advertisements enhanced the importance of the health issues in the viewers' eyes, by increasing their knowledge and understanding of the virus and the actions taken by the Government. In this very serious situation, it is reasonable for a platform

like YouTube to advertise pandemic-related information in such a serious situation. They can higher the frequency of pandemic advertisements to remind people of taking care and be aware of current health issues. People may be persuaded to change their attitudes and behaviors because of the information they received from pandemic advertising by washing hands more often and wearing more PPE (personal protective equipment) like goggles, gloves and masks, and pandemic advertisements need to give all the useful instruction about it. However, the frequency should be maintained within an acceptable range and the instruction should be simple to follow in order to avoid viewers' annoyance about excessive information. People need to learn the means to keep themselves safe and how to protect themselves in a pandemic situation. In another possible future pandemic, related advertisements should attract people's attention to so that they take notice, and provide the viewers' reassurance so that viewers feel confident and well-guided to face any coming situation.

It is also notable that the strongest impact on people from COVID-19 advertisements was not the practical actions like washing hands more frequently or keeping a social distance but the ideological thinking such as the attitude to the pandemic advertisements themselves, more attention to health issues and more concern about wellbeing resources. Therefore, platforms like YouTube can advertise more associated items to provide the handful channel for people to increase their awareness of these topics, which will probably meet the satisfaction requirements, reduce the concerns and increase the user's loyalty with the platform.

Limitations of the Research

The limitation of this research can be explained in two areas. Firstly, from the demographic perspective, the age group of the respondents of the online survey is mainly within the range of 18-30. This means that the final result of the survey mostly reflects the opinion of this particular age group. There is a possibility exists that if the age range of participants was wider during the data collection stage, the result would be different from what has emerged in this study. The educational background with bachelor's and master's degrees is nearly 87.7%. This high proportion may influence the outcome of this research because people with other educational backgrounds may have distinct responses to some of the survey items, which would not be covered within the current results. There is also a differential distribution in occupational data: numbers of people in the categories of "Homemaker", "Retired" and "Unemployed" are much less than in the first three groups so that opinions from these three groups could not be well covered. The uneven distribution in occupational data, the difference in the percentage of occupation types might lead to an influential impact on the final results which should also be considered as part of the factor. As a result, the particular spread of the age, educational and occupational data in this research may have had an influence on the results. Secondly, because of the time constraints for the study, the sample size was restricted. If a larger number of respondents could have participated in the survey, there might be some certain changes occurred in the implementation of conducting this research.

Further Research

This research is mainly focused on data collected from New Zealand. As YouTube is a cross-national global platform and different actions were taken by each nation, this topic can be addressed in other nations and districts. And the quantitative method can be measured with various methods and surveyed on different groups of people. Furthermore, people's attitudes may change during different periods of the pandemic. For example, at the very beginning of the COVID-19 outbreak, people might not have paid much attention to the epidemic since there was not much information disclosed by either local governments or social media. During the lockdown time, people began to fear the uncertainty of the upcoming future and the severity of the virus. Even after went through a serious situation, people's attitude would be different. Further research could be categorized in accordance with the time period to discover more significant topics in the future scope of the relevant field.

Author contributions: All authors were involved in concept, design, collection of data, interpretation, writing, and critically revising the article. All authors approve final version of the article.

Funding: The authors received no financial support for the research and/or authorship of this article.

Declaration of interest: Authors declare no competing interest.

Data availability: Data generated or analyzed during this study are available from the authors on request.

REFERENCES

- Abrams, J. A., Odlum, M., Tillett, E., Haley, D., Justman, J., Hodder, S., Vo, L., O'Leary, A., Frew, P. M., & HIV Prevention Trials Network 064 (HTPN) Study Team. (2020). Strategies for increasing impact, engagement, and accessibility in HIV prevention programs: Suggestions from women in urban high HIV burden counties in the Eastern United States (HPTN 064). *BMC Public Health*, 20(1), 1340. <https://doi.org/10.1186/s12889-020-09426-6>
- Abubakar, A. (2020). Coronavirus (COVID-19): Effect and survival strategy for businesses. *Social Science Research Network*. <https://doi.org/10.31014/aior.1992.03.02.229>
- Aguirre, E., Mahr, D., Grewal, D., de Ruyter, K., & Wetzels, M. (2015). Unraveling the personalization paradox: The effect of information collection and trust-building strategies on online advertisement effectiveness. *Journal of Retailing*, 91(1), 34-49. <https://doi.org/10.1016/j.jretai.2014.09.005>
- Ahn, J. B. (2020). A study on advertising future development roadmap in the fourth industrial revolution era. *International Journal of Internet, Broadcasting and Communication*, 12(2), 66-76. <https://doi.org/10.7236/IJIBC.2020.12.2.66>
- Al-Hadrusi, M. S., & Sarhan, N. J. (2014). A scalable delivery solution and a pricing model for commercial video-on-demand systems with video advertisements. *Multimedia Tools and Applications*, 73(3), 1417-1443. <https://doi.org/10.1007/s11042-013-1597-3>
- Ali, S. H., Foreman, J., Capasso, A., Jones, A. M., Tozan, Y., & DiClemente, R. J. (2020). Social media as a recruitment platform for a nationwide online survey of COVID-19 knowledge, beliefs, and practices in the United States: Methodology and feasibility analysis. *BMC Medical Research Methodology*, 20(1), 116. <https://doi.org/10.1186/s12874-020-01011-0>
- Anderson, M., & Jiang, J. (2018, May 31). Teens, social media & technology 2018. *Pew Research Center: Internet, Science & Tech*. <https://www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018/>
- Andika, R., Kao, C. T., Williams, C., Lee, Y. J., Al-Battah, H., & Alweis, R. (2021). YouTube as a source of information on the COVID-19 pandemic. *Journal of Community Hospital Internal Medicine Perspectives*, 11(1), 39-41. <https://doi.org/10.1080/20009666.2020.1837412>
- Atac, O., Ozalp, Y. C., Kurnaz, R., Guler, O. M., Inamlik, M., & Hayran, O. (2020). YouTube as an information source during the Coronavirus disease (COVID-19) pandemic: Evaluation of the Turkish and English content. *Cureus Journal of Medical Science*, 12(10), e10795. <https://doi.org/10.2196/preprints.21469>
- Badade, K., & Shende, S. (2019). Impact of advertisement through social media on undergraduate students in Pune City. *Sumedha Journal of Management*, 8(3), 347-357.
- Bauer, C., & Lasinger, P. (2014). Adaptation strategies to increase advertisement effectiveness in digital media. *Management Review Quarterly*, 64(2), 101-124. <https://doi.org/10.1007/s11301-014-0101-0>
- Campos, D., Hernández-Torres, J. J., Agil, A., Comino, M., López, J. C., Macías, V., & Campoy, C. (2016). Analysis of food advertising to children on Spanish television: Probing exposure to television marketing. *Archives of Medical Science*, 12(4), 799-807. <https://doi.org/10.5114/aoms.2016.60969>
- Casais, B., & Proença, J. F. (2018). Social advertisements for public health and epidemic dynamics. *Journal of Social Marketing*, 8(4), 397-420. <https://doi.org/10.1108/JSOCM-07-2014-0049>
- Cecere, G., Jean, C., Lefrere, V., & Tucker, C. E. (2020). Tradeoffs in automated political advertising regulation: Evidence from the COVID-19 pandemic. *Social Science Research Network*. <https://doi.org/10.2139/ssrn.3603341>
- Chan, C., Sounderajah, V., Daniels, E., Acharya, A., Clarke, J., Yalamanchili, S., Normahani, P., Markar, S., Ashrafian, H., & Darzi, A. (2021). The reliability and quality of YouTube videos as a source of public health information regarding COVID-19 vaccination: Cross-sectional study. *JMIR Public Health and Surveillance*, 7(7), e29942. <https://doi.org/10.2196/29942>
- Cher, M. F. E., & Arumugam, V. (2019). The factors affecting the effectiveness of online video advertising: A study on Malaysian consumers' perspective towards ads on YouTube. *Global Business and Management Research*, 11(2), 167-184.
- Chih-Chung, C., Chang, C., Lin, L. W.-C., & Yau-Nang. (2012). The effect of advertisement frequency on the advertisement attitude-the controlled effects of brand image and spokesperson's credibility. *Procedia-Social and Behavioral Sciences*, 57, 352-359. <https://doi.org/10.1016/j.sbspro.2012.09.1197>

- Choi, H., Cho, W., Kim, M.-H., & Hur, J.-Y. (2020). Public health emergency and crisis management: Case study of SARS-CoV-2 outbreak. *International Journal of Environmental Research and Public Health*, 17(11), 3984. <https://doi.org/10.3390/ijerph17113984>
- Damm, K., Schubert, J. M., & von der Schulenburg, J.-M. (2011). Promoting vaccinations—An analysis of measures taken by German statutory health insurers. *Health Economics Review*, 1(1), 16. <https://doi.org/10.1186/2191-1991-1-16>
- Duffett, R. (2020). The YouTube marketing communication effect on cognitive, affective and behavioural attitudes among generation Z consumers. *Sustainability*, 12(12), 5075. <https://doi.org/10.3390/su12125075>
- Dutta, A., Beriwal, N., Van Breugel, L. M., Sachdeva, S., Barman, B., Saikia, H., Nelson, U.-A., Mahdy, A., & Paul, S. (2020). YouTube as a source of medical and epidemiological information during COVID-19 pandemic: A cross-sectional study of content across six languages around the globe. *Cureus Journal of Medical Science*, 12(6), e0862. <https://doi.org/10.7759/cureus.8622>
- Fedric, K., & Singh, S. (2018). Emotions as predictor for consumer engagement in YouTube advertisement. *Journal of Advances in Management Research*, 15(2), 184-197. <https://doi.org/10.1108/JAMR-05-2017-0065>
- Fung, I. C.-H., Hao, Y., Cai, J., Ying, Y., Schaible, B. J., Yu, C. M., Tse, Z. T. H., & King-Wa, F. (2015). Chinese social media reaction to information about 42 notifiable infectious diseases. *PLoS One*, 10(5), e0129525. <https://doi.org/10.1371/journal.pone.0126092>
- Gray, L., MacDonald, C., Mackie, B., Paton, D., Johnston, D., & Baker, M. G. (2012). Community responses to communication campaigns for influenza A (H1N1): A focus group study. *BMC Public Health*, 12(1), 205. <https://doi.org/10.1186/1471-2458-12-205>
- Gupta, H., Lam, T., Pettigrew, S., & Tait, R. J. (2018). Alcohol marketing on YouTube: Exploratory analysis of content adaptation to enhance user engagement in different national contexts. *BMC Public Health*, 18, 141. <https://doi.org/10.1186/s12889-018-5035-3>
- Gupta, H., Singh, S., & Sinha, P. (2017). Multimedia tool as a predictor for social media advertising—a YouTube way. *Multimedia Tools and Applications*, 76(18), 18557-18568. <https://doi.org/10.1007/s11042-016-4249-6>
- Håkansson, A. (2020). Changes in gambling behavior during the COVID-19 pandemic—A web survey study in Sweden. *International Journal of Environmental Research and Public Health*, 17(11), 4013. <https://doi.org/10.3390/ijerph17114013>
- Halabchi, F., Hosseini, L., Zebardast, J., & Seif - Barghi, T. (2018). Popularization of science in exercise, nutrition and lifestyle: A successful example of science communication in Iran. *Asian Journal of Sports Medicine*, 9(3), e59339. <https://doi.org/10.5812/asjasm.59339>
- Hamouda, M. (2018). Understanding social media advertising effect on consumers' responses: An empirical investigation of tourism advertising on Facebook. *Journal of Enterprise Information Management*, 31(3), 426-445. <https://doi.org/10.1108/JEIM-07-2017-0101>
- Healy, K., Hamilton, G., Crepeau, T., Healy, S., Unlu, I., Farajollahi, A., & Fonseca, D. M. (2014). Integrating the public in mosquito management: Active education by community peers can lead to significant reduction in peridomestic container mosquito habitats. *PLoS ONE*, 9(9), e108504. <https://doi.org/10.1371/journal.pone.0108504>
- Hussain, D., & Lasage, H. (2014). Online video advertisement avoidance: Can interactivity help? *Journal of Applied Business Research*, 30(1), 43-49. <https://doi.org/10.19030/jabr.v30i1.8279>
- Hussain, R., Ferdous, A. S., & Mort, G. S. (2018). Impact of web banner advertising frequency on attitude. *Asia Pacific Journal of Marketing and Logistics*, 30(2), 380-399. <https://doi.org/10.1108/APJML-04-2017-0063>
- Jhummon-Mahadnac, N., Knott, J., & Marshall, C. (2012). A cross-sectional study of pandemic influenza health literacy and the effect of a public health campaign. *BMC Research Notes*, 5, 377. <https://doi.org/10.1186/1756-0500-5-377>
- Jones, S. C., Waters, L., Holland, O., Bevins, J., & Iverson, D. (2010). Developing pandemic communication strategies: Preparation without panic. *Journal of Business Research*, 63(2), 126-132. <https://doi.org/10.1016/j.jbusres.2009.02.009>
- Knell, G., Robertson, M. C., Dooley, E. E., Burford, K., & Mendez, K. S. (2020). Health behavior changes during COVID-19 pandemic and subsequent "stay-at-home" orders. *International Journal of Environmental Research and Public Health*, 17(17), 6268. <https://doi.org/10.3390/ijerph17176268>

- Lee, H., & Cho, C.-H. (2020). Digital advertising: Present and future prospects. *International Journal of Advertising*, 39(3), 332-341. <https://doi.org/10.1080/02650487.2019.1642015>
- Li, H. O. Y., Bailey, A., Huynh, D., & Chan, J. (2020). YouTube as a source of information on COVID-19: A pandemic of misinformation? *BMJ Global Health*, 5(5), e002604. <https://doi.org/10.1136/bmjgh-2020-002604>
- Maisiri, W., & van Dyk, L. (2019). Industry 4.0 readiness assessment for South African industries. *South African Journal of Industrial Engineering*, 30(3), 134-148. <https://doi.org/10.7166/30-3-2231>
- Mansoor, R., Zhang, J., Hafeez, I., Nawaz, Z., & Naz, S. (2018). Consumer attitude towards different location based advertisements types and their impact on purchase intention. *Journal of Management Information and Decision Sciences*, 21(1), 1-19.
- Marchal, N., & Au, H. (2020). "Coronavirus EXPLAINED": YouTube, COVID-19, and the socio-technical mediation of expertise. *Social Media+Society*, 6(3), 2056305120948158. <https://doi.org/10.1177/2056305120948158>
- Mejova, Y., & Kalimeri, K. (2020). COVID-19 on Facebook ads: Competing agendas around a public health crisis. In *Proceedings of the 3rd ACM SIGCAS Conference on Computing and Sustainable Societies* (pp. 22-31). <https://doi.org/10.1145/3378393.3402241>
- Park, D., & Ha, J. (2020). Comparison of COVID-19 and MERS risk communication in Korea: A case study of TV public service advertisements. *Risk Management and Healthcare Policy*, 13, 2469-2482. <https://doi.org/10.2147/RMHP.S269230>
- Raji, R. A., Rashid, S., & Ishak, S. (2019). The mediating effect of brand image on the relationships between social media advertising content, sales promotion content and behavioural intention. *Journal of Research in Interactive Marketing*, 13(3), 302-330. <https://doi.org/10.1108/JRIM-01-2018-0004>
- Sabuncuoglu-Inanc, A., Gokaliler, E., & Gulay, G. (2020). Do bumper ads bump consumers? An empirical research on YouTube video viewers. *El Profesional de la Información [The Information Professional]*, 29(1), e290114. <https://doi.org/10.3145/epi.2020.ene.14>
- Samy, M., Abdelmalak, R., Ahmed, A., & Kelada, M. (2020). Social media as a source of medical information during COVID-19. *Medical Education Online*, 25(1), 1791467. <https://doi.org/10.1080/10872981.2020.1791467>
- Tang, C., Goldsamt, L., Meng, J., Xiao, X., Zhang, L., Williams, A. B., & Wang, H. (2020). Global estimate of the prevalence of post-traumatic stress disorder among adults living with HIV: A systematic review and meta-analysis. *BMJ Open*, 10(4), e032435. <https://doi.org/10.1136/bmjopen-2019-032435>
- Taylor, C. R. (2020). Advertising and COVID-19. *International Journal of Advertising*, 39(5), 587-589. <https://doi.org/10.1080/02650487.2020.1774131>
- Thelwall, M., & Thelwall, S. (2020). Retweeting for COVID-19: Consensus building, information sharing, dissent, and lockdown life. *ArXiv:2004.02793 [Cs]*. <http://arxiv.org/abs/2004.02793>
- Tohang, L. B., & Meisuri, M. (2021). Semiotic of COVID-19 protocol in YouTube advertisement. *Journal of English Language Teaching and Learning of FBS UNIMED*, 10(4).
- Tomes, N. (2000). The making of a germ panic, then and now. *American Journal of Public Health*, 90(2), 191-198. <https://doi.org/10.2105/AJPH.90.2.191>
- Turner, L. (2020). Preying on public fears and anxieties in a pandemic: Businesses selling unproven and unlicensed "stem cell treatments" for COVID-19. *Cell Stem Cell*, 26(6), 806-810. <https://doi.org/10.1016/j.stem.2020.05.003>
- Xu, X., Gong, T., Zhang, Y., Wu, C., Xie, Y. J., Wang, H. H., Zhu, R., Li, W., An, L., & Zhao, Y. (2015). Evaluation of anti-smoking television advertising on tobacco control among urban community population in Chongqing, China. *Tobacco Induced Diseases*, 13(1), 31. <https://doi.org/10.1186/s12971-015-0057-4>

