THE IMPACTS OF DIGITAL MEDIA ADVERTISING IN HEALTHCARE SECTOR DURING PANDEMIC COVID-19

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ABSTRACT - *The objective of the research is to study the factor influencing digital media advertising in the healthcare sector during pandemic covid-19. The study has conducted the hypotheses and the research question. Results show there is a relationship between the dependent variable which is a factor influencing digital media advertising in the healthcare sector during pandemic covid-19 and the independent variable which is information sharing, healthcare advertising, healthcare awareness and public service advertisement.*

Keywords – Digital Media Advertising; Healthcare Sector; Covid-19; Public Service Advertisement.

I. INTRODUCTION

Digital media are providing medical advice to the healthcare sector to spread their information to people. Therefore, medical professionals can directly access the views of the people and share health-related information with them[1]. This is because now the public acquires knowledge through social media [2]. As the World Health Organization (WHO) emphasizes using social media to communicate and avoid the health issues that bring risks and challenges to avoid the outbreak of the coronavirus covid-19[3]. Moreover, digital media advertising has a technical capability to solve some information or physical barriers to spread the medical and health and it has a powerful advantage [4]. This is the reason that medical information system is beneficial to the expansion of digital media. It is a source of viral marketing in the current covid-19 pandemic survey on digital media. Therefore, the digital media marketing effort to improve and enable people to understand the data, so that the news can be spread quickly and easily through online communities.

II. Literature Review

2.1 Digital Media Advertising

Research topics will be discussed in this section. The discussion is supported by previous research results [5]. This study identifies key trends related to digital advertising such as the shift to data-driven marketing, the impact of artificial intelligence on advertising production, and the impact of big data on advertising execution. In the context of these trends, they put forward for the future digital advertising management and targeted advertising methods and the system delivered to consumers. It also provides some advertising themes that can be widely used in data and for future research purposes [6]. Understanding digital media advertising, the next part will be discussing the factor influencing digital media advertising in the healthcare sector during pandemic covid-19.

2.2 Literature Review of the Variables

2.2.1 Information Sharing

The most important thing to combat coronavirus, covid-19 is to share all the information that has emerged between the country, people and medical people or the people having previous experiences. In addition to limiting to spread of the coronavirus covid-19, sharing information also helps in the fact that some developing countries [7]. Therefore, sharing information must be rapid and based on modern communications methods or real information According to Matteo Cinelli's research, this research will analyze the most popular social networking sites such as Twitter, Facebook, or YouTube [8]. Not only that, according to [9], it is also very important to rely on modern technology. This is because using the modern communication system and intelligent medical systems will not spread the infection to other people. Now the coronavirus covid-19 has spread widely all around the world.

Other than that, patients suffering from coronavirus covid-19 will take more initiative to understand their health status. Therefore, information sharing can enhance one of the abilities of patients. If there is no sharing of information, it is impossible to continue the discussion the meaningful discussion and make some decisions about medical care [10]. So, information sharing is a way for patients to interact with the healthcare sector and it can improve it. Without the outbreak of coronavirus covid-19, communications have become an indispensable element in daily life and it has also become more popular all around the world. So, the social process and online information sharing are slowly increasing [11]. Besides that, especially for those nurses of children, they need to get more information about the children from their parents to make more thoughtful healthcare decisions.

2.2.2 Healthcare Advertising

For the research, nowadays people like to use the digital media platform to source some healthcare advertisements. Therefore, the current coronavirus covid-19 awareness advertisements are very important, and it also can be proved by collecting professional responses to these healthcare advertisements on different media platforms [12]. This is

because now the phenomenon of coronavirus covid-19, and the people will highly and will be more concerned about the health issues. For most people, the health problem is a persistent phenomenon, and they will keep abreast of news trends to use a healthy lifestyle. In addition, traditional media platforms and social networking sites also contain advertisement campaigns to encourage people to adopt a healthy lifestyle. Hence, the advertiser will spend their time on social networking sites and strengthen the mass value on their health [13].

For this coronavirus covid-19, people will think that healthcare advertising will become more demand in today. Especially through digital media, it is possible to communicate with people from all around the world. These healthcare marketers use the new interactive media features and share healthcare thoughts and suggestions [14]. Hence, the government and the medical professionals in various countries have adopted a high-level healthcare advertising strategy, so that people can understand the current problems and solutions [15].

2.2.3 Healthcare Awareness

To provide healthcare awareness, the healthcare sector can use all the media platforms. Mainly when it comes to digital media advertising, then making it easier for people to access them. Not only that, the healthcare sector can also use digital media advertising which is pop-up advertising with phrases to attract users' attention [16]. Hence, pop-up advertising is the advertisement that suddenly appears on the screen before opening the page of the website [17]. According to Park's [18] research, the different profit-making and non-profit making medical associations use Facebook advertisements to increase healthcare awareness. The article cleverly uses Facebook to promote its healthcare awareness messages.

Most people, often use digital media advertising platforms such as social media to inquire about healthcare information. So, this is containing a larger function to help people adopt a healthy lifestyle [5]. According to Praveen Pillai, the research recommends strategic and organizational in order to obtain the expected results. This is because social media provides a very cost-effective aspect of spreading healthcare awareness. As a result, healthcare professionals and government resources have linked public healthcare advertising with digital media for more positive results [19].

In Malaysia, if digital media doesn't have to provide a proper education for people, it will cause the people to lack knowledge such as incomplete information or updates on time. Therefore, digital media need to design a free and open education network for people. This educational network should distribute healthcare awareness in a clear and operational format and change it with advanced technology [20]. For example, international and foreign people can attend their education as usual without any delay some of the important healthcare awareness.

2.2.4 Public Service Advertisement

Public service advertisement is paid or unpaid, and has a high impact, aiming to cause changes in attitudes. In order to achieve the well-being of society, these advertisements often continue to be aware of social and health issues [21]. According to Govoni, for government and non-protection organizations, public service advertisements are mainly

constituencies. They are designed to educate the public, provide awareness, raise funds and change behavior. This public service advertisement solves some issues like drug abuse, child rights and healthcare awareness [22].

Therefore, the public service advertisement appears of a vaccine delay. Due to the cause of the coronavirus covid-19 pandemic, then it delays the vaccination plan in the global. Especially in underdeveloped countries. If the vaccine plan is delayed, this could increase the outbreak of coronavirus covid-19. According to the data organized by the World Health Organization (WHO), there have more than 116 million babies received the vaccine in 2019, but there are still have 13 million babies that have not been vaccinated [23]. So, delaying the vaccine will affect the healthcare sector's inability to help the people vaccinate.

III. METHODOLOGY

3.1 Research instrument/measurement

Digital media advertising has completely changed the world. because social media enables marketers to reach the audience and effectively persuade them [15]. Thus, digital media enables marketers to provide more value to people [24]. The following details are the dependent variable and independent variables that lead to the question raised in this study.

3.1.1 Independent Variables

The measurement for independent variables is as illustrated in Table 3.1.

Table 3.1: Measurement for Independent Variables

Variables	Items	Sources
Information Sharing	1. Do you think that publishing more news related to COVID-19 on digital media advertising has spread fear and panic among the people? 2. Do you have published any information and news related to COVID-19 on digital media advertising? 3. Which social media platform do you use to get news and information about COVID-19. 4. Do you think the healthcare sector must collect information about coronavirus covid-19 on digital media advertising platforms? 5. Do you think that the healthcare sector disseminates wrong information about the coronavirus covid-19 and the consequences of digital media	[25] [26]

	advertising?	
Healthcare Advertising	1. Do you think patients will watch the healthcare advertising in digital media advertising as a source of about the coronavirus covid-19. 2. Does the healthcare sector think coronavirus covid-19 advertising is important to them? 3. Does the healthcare sector adopt social networking sites to advertise the coronavirus covid-19, so that people can understand a healthier lifestyle? 4. Do you think that people will value healthcare advertising in digital media advertising? 5. The healthcare sector can adopt digital media advertising such as billboards in health advertising such as lockdown advertising.	[27] [28]
Healthcare Awareness	1. Do you think the healthcare sector teaches people to increase the knowledge of healthcare awareness through digital media advertising? 2. Do you think that healthcare awareness is important to people? 3. The Healthcare sector must spread more health awareness such as health checkups in digital media advertising. 4. Do you think that the healthcare sector has a responsibility to collect health awareness to help people? 5. Do you think insurance is considered a healthcare awareness?	[27]
Public Service Advertisement	1. Does digital media advertising is	[29] [30]

important for the healthcare sector to publicize its advertisement?
2. Do you think that World Health Organization (WHO) should advertise healthcare information to public service advertisement through digital media advertising?
3. Do you think that the healthcare sector uses traditional platforms or modern platform methods to do public service advertising?
4. Do you think that vaccine delay advertisement can be trusted in public service advertisement?
5. Do you think that the information about vaccine delay will affect the public service advertisement then cannot spread more advertisement in digital media advertising about the coronavirus covid-19?

3.1.2 Dependent Variable
The measurement for the dependent variable is as illustrated in Table 3.2.

Table 3.2: Measurement for Dependent Variable

Variable	Items	Sources
Factor influencing digital media advertising	1. Does the healthcare sector actually can share the information coronavirus covid-19 in digital media advertising. 2. Is there any benefit to digital media advertising for the healthcare sector? 3. Adoption of digital media advertising start-up cost whether is high or low. 4. The Healthcare sector should use social networking to do advertisements such as Facebook. 5. In global, does the healthcare sector have confidence in digital media advertising?	[31]

V.   DATA ANALYSIS
4.1 Reliability Test
Table 4.1 Reliability Statistics for all variable

Reliability Statistics	
Cronbach's Alpha	N of Items
.940	5

The result of reliability analysis is only regarded as reliable when the Cronbach's Alpha is more than 0.7 refer to Table 4.1. As the result shown in Table 4.1, the Cronbach's Alpha for all the variables is 0.940 from all the total 200 sets of respondent data, then considered as reliable and further investigation can proceed.

Table 4.2 Reliability test for each variable

	Cronbach's Alpha	N of items
Digital Media Advertising	.852	5
Information Sharing	.717	5
Healthcare Advertising	.828	5
Healthcare Awareness	.817	5
Public Service Advertisement	.750	5

The reliability tests for all the dependent variable and independent variables as shown in Table 4.2 above from 200 sets of respondents of the data in this report. Therefore, the Cronbach's Alpha for all the variables has more than 0.7, so considered reliable and further investigation can proceed.

4.2 Z-score test of Skewness and Kurtosis
Z-score is another type to test the normality. So, when the data don't have to pass the normality test, then the value of the z-score is then examined. Hence, when the data is normally distributed, the value of the Skewness and Kurtosis range for Z-score is ±3.29 [32].

Table 4.3 Skewness and Kurtosis

			Statistic	Std. Error
DMA	Mean		4.1050	.05078
	95% Confidence Interval for Mean	Lower Bound	4.0049	
		Upper Bound	4.2051	
	5% Trimmed Mean		4.1578	
	Median		4.2000	
	Variance		.516	
	Std. Deviation		.71816	
	Minimum		1.00	
	Maximum		5.00	
	Range		4.00	
	Interquartile Range		.95	
	Skewness		-1.237	.172
	Kurtosis		2.826	.342

The Z-score formula is illustrated in the following:

$$\text{Z-Score} = \frac{\text{Statistics}}{\text{Standard Error}}$$
$$= \frac{-1.237}{0.172}$$
$$= 7.19$$

According to the result, the Z-score is 7.19 which is not in the scope of ±3.29. However, the result was found to be not normal distribution. Hence, the report must proceed to the next part to check to outliers through the boxplot from SPSS.

4.3 Box- Whisker Plot
Based on Diagram 4.1 above, it showed that inside there are a 1 star and 1 circle, which is referring to the out of topic and strongly out of the topic respectively. So, all the data should be deleted which is 18,193,7,125 are considered as the outliers and need to remove out from the data view because it to ensure have a better conclusion and the reliability of the data.

Diagram 4.1: Box- Whisker Plot for Digital Media Advertising
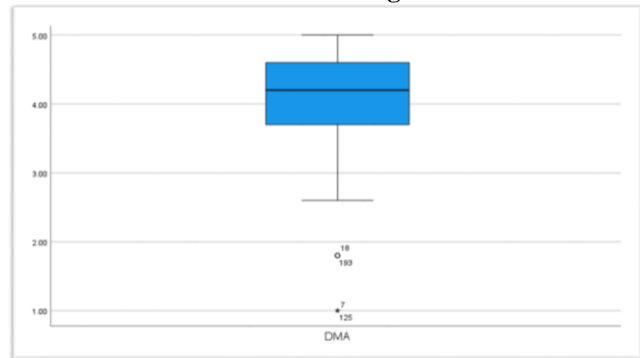
4.4 Histogram with Normal Curve
The histogram of the image indicates the relative frequency of the various color level in the image. Therefore, a normal histogram distribution of the data will display a bell-shaped [33]. Other than that, the functions of the histogram of digital media advertising are to measure the normality regarding collecting the data. As the result of the histogram shown as below in Diagram 4.2.

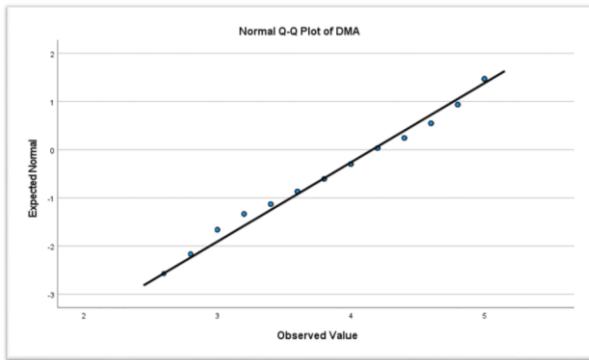**Diagram 4.2 Histogram of Digital Media Advertising**
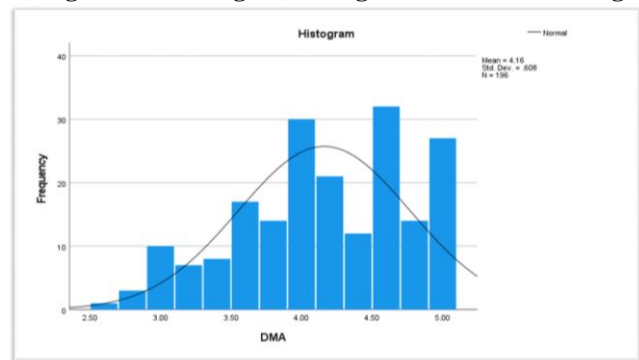
According to the histogram of digital media advertising, which is shown under Diagram 4.2 above, it shows that the histogram is approximately bell-shaped. This is indicated that the result of the 196 sets of respondent data are shown above were being issued out normally.

4.5 Normal Q-Q Plots
A normal Q-Q plot is an important diagnosis to check the normality assumption. So, when the data is normal then the line will be a straight line, but when the data is not normal then the line will be deviations [34]. The result of the Q-Q Plots was shown below in the Diagram which is 4.3.

Diagram 4.3 Normal Q-Q Plots of Digital Media Advertising

Normal Q-Q Plot of DMA

According to Diagram 4.3 above, the assembly points are close and together with the linear line. Therefore, it is acceptable that the 196 sets of respondent data of digital media advertising were normally distributed.

VI. DISCUSSION AND CONCLUSION
5.1 Overall Findings Based on the Research Objective
Table 5.1 Overall Findings

		Hypotheses	Significant Value	Gradient β	Results
H1		There is a significant positive relationship between the information sharing and digital media advertising in healthcare sector.	0.143	0.097	Rejected
H2		There is a significant positive relationship between the healthcare advertising and digital media advertising in healthcare sector.	0.001	0.280	Accepted
H3		There is a significant positive relationship between the healthcare awareness and digital media advertising in healthcare sector.	0.000	0.265	Accepted
H4		There is a significant positive relationship between the public service advertisement and digital media advertising in healthcare sector.	0.008	0.205	Accepted

The main purpose of this report is to find out the factor influencing digital media advertising in the healthcare sector during pandemic covid-19 and verify the factors shown above are significantly related to the dependent variable or not. Therefore, based on the result Table 5.1 above, there is one independent variable which is information sharing is doesn't have a relationship with digital media advertising as the significant value is 0.143, so it the reason that it does not meet the requirement which is less than 0.05. Thus, it is not accepted and practicable within the healthcare sector. In contrast, there are 3 independent variables as healthcare advertising, healthcare awareness and public service advertisement have a significant relationship with digital media advertising. The result shown in Table 5.1 above, the significant value is 0.001, 0.000 and 0.008, so there are all in the range of requirement. Hence, it is considered as significantly related to digital media advertising.

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