THE IMPACT OF SOCIAL MEDIA INVOLVEMENT RISK PERCEPTION TOWARDS CONTAINING THE SPREAD OF COVID-19 IN MALAYSIA

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ABSTRACT This paper explores the involvement of social media among Malaysians during the COVID-19 pandemic particularly in terms of risk perception. This paper aims to achieve certain objectives which are investigating the effects of social media on risk perceptions towards COVID-19 and determining the strengths of the relationships between media and people's perceptions towards COVID-19. Questionnaires were distributed to 605 people in Malaysia which according to the high severity of COVID-19 cases: red zone (EMCO). It is expected that this research will aid in identifying the personal and social risk perception towards COVID-19. The result from this paper is expected to be aligned with the cultivation theory where it states that the time spent on media impacts people's perception in a more significant effect compared to people who spend less time on media. The study suggested social media exposure affect the personal risk level than social risk level of the people who lived in the area that declared as red zone (EMCO).

Keywords: Risk Perception, Cultivation Theory, Impact Of Social Media

INTRODUCTION

The current situation of COVID-19 all over the world, including Malaysia has changed the way we live. The Movement Control Order (MCO) was enacted on March 2020 and ever since then, Malaysians have gone through multiple phases of lockdown procedures such as MCO, Conditional Movement Control Order (CMCO), Enhanced Movement Control Order (EMCO) and subsequent National Recovery Plan (NRP). Since there is no validated treatment for COVID-19, Malaysians must take active precautions by preventing the virus from infecting them or, at the very least, contain the disease from spreading to others should they be infected. Hence, it comes to no surprise that the media plays a significant role in disseminating the preventive measures to lessen the number of cases daily. The existence of areas classified by the government also in other way influence the perception among the people lived in the red zones. However, media especially the social media have not only created awareness among the people, but it also actively shaping the perception towards the reality of world.

Even though the attention towards the role of social media during infectious disease outbreaks is gaining traction, not much is known about the in-depth steps and procedures of how social media use can affect the risk perception and preventive behaviours during such outbreaks (Oh, Lee & Han, 2020). This is one of the reasons why this research was initiated. Therefore, this research is expected to explore these new dimensions in the study of social media on COVID-19 issues. At the end of the day, this research is expected to provide some understanding on the involvement of media in the process of forming the risk perception. Eventually the research will be able to make important recommendations on the ways in which people behave to curtail the spread of the virus of COVID-19.

LITERATURE REVIEW

Lockdown measures were preemptively taken by governments worldwide when the COVID-19 pandemic outbreak happened. In the wake of these measures, internet and social media use has reached unprecedented peaks (Marzouki, Aldossari & Veltri, 2021). Various national and global media such as CNN Health have reported the number of infected, quarantined, at critical danger and casualties. Not only that, but these media channels also serve as an outlet to broadcast policy measures and restrictions introduced and implemented by the government.

Media in its traditional sense still maintains itself as a vital role in determining risk perception. However, social media can be considered even more influential than the traditional media as it is used as a primary source for COVID-19 information (Tsoy, Tirasawasdichai & Kurpayanidi, 2021). Not only that, social media is also the most trusted information sources due to the fact that the accessibility of legitimate information released by health professionals are constantly accessible to the public (Zhong et al., 2020). Such massive amount of information that is available both online and offline may create awareness, but it also can shape their perception towards the reality of the world.

Risk perception is based on an individual ability to judge on the severity of the potential harm due to some instances that are caused by natural hazards as well as environmental and health threats subjectively (Douglas, 1986). Brewer et al. (2007) has stated that the dimensions of risk perception is a three folded one which are the likelihood of perception, sense of susceptibility and the severity of risk. Social risk perception is defined as the ability for individuals' to approximate the overall level of damage or loss to society as a whole, while personal risk perception refers to the probability for an individual to feel or at least have a sense of loss or damage felt (Tyler & Cook, 1984).The risk perception, is attributed by the way a person makes a subjective approximation and think or feel on risk; people with a tendency on perception might underestimate the risk that they are taking (Svetlova & Karl-Heinz Thielmann, 2020).

The cultivation theory states that the time used on media affects the perception of the masses when compared to others that spends a relatively less time on it. These perceptions have a profound impact towards their behavioural intentions (Tsoy, Tirasawasdichai & Kurpayanidi, 2021). On the flip side, social media has the ability to provide relevant information that is almost identical to the experience of individuals who are directly affected by pandemic or disaster. These types of information have the ability to manipulate said individuals' perception on the calamity and ultimately can aid them in terms of the aftermath of any disaster. The cultivation theory has been fleshed out throughout the years by multiple researchers that not only discussed on the exposure of media but also the type of content that is aired by said media (Schiappa et al., 2006).

Cultivation Theory states that cultivation is a lifelong process where the information from the media has a direct correlation with a person's direct experience. The cultivation theory started out as an instrumental theory to observe the effect of exposure of media on the public's risk perception (Shrum & Bischak, 2001). Proposed by Gerbner in the 1970s, the theory sought to explains the effect of television exposure on people's perception of the real world. However, this theory was also sharply criticised by other researchers where Gebner et al. proposed hypothesis is that the relationship between television viewing and cultivation could only be fake or explained by other factors. This phenomenon is called the fake relationship (Doob & Mcdonald, 1979).

METHODOLOGY

This paper employs a quantitative research strategy, using online questionnaires. Questionnaires were chosen for this research because they are efficient and a quick method to allow large populations to be assessed with relative ease as well as to help reduce bias. The online method of collecting data also suitable in this period where the COVID-19 is still around. The data result is analysed within a reasonable time frame.

The population (n) of this study is Sabah population. Probability sampling using stratified sampling technique employed in this study. There were 605 respondents from the red zones. The questionnaire survey has been posted to multiple platforms in social media which includes Facebook, WhatsApp and Telegram. Collected samples are sufficient enough based on the sample size formula suggested by Krejcie and Morgan (1970). Due to the fact that the population of Sabah is more than 1 million which was estimated to be approximately 3.41 million in year 2021 to 2022, the total of samples for this study can be consider as a sound sample.

The data collected has been analysed using SPSS software. This paper also examines the relationship between media and risk perceptions and therefore some inferential data analyses were also performed using ANOVA and Regression to test the strength of relationships between Independent variables (Social Media) and Dependent variables (Risk Perceptions).

RESULTS AND DISCUSSION

The data was analysed through several tests which will be discussed below. N refers to the populations. The reliability analyses are used to test the reliability of the data. In order to determine the effect of social media exposure on levels of soial and personal risk between-light viewers (0-2 hours), medium viewers (2-4 hours) and heavy viewers (more than 4 hours). A one way analysis of variance (ANOVA) is used. Regression analysis is used in order to forecast the effect of social media on risk perceptions. The correlation was used to identify the significant connection between the variables.

Table 1: Variables and Their Corresponding Reliability, Mean and Standard Deviation For Variables In The Study

Construct	N	Cronbach's	Mean	Std. Deviation

		Alpha		
Social Risk	605	0.838	4.548	0.590
Personal Risk	605	0.780	3.655	0.758

One-Way ANOVA Between-Groups for Social Media Exposure, Social Risk Perception and Personal Risk Perception

A between group ANOVA has been conducted by dividing the respondents into three groups based on their frequencies in visiting social media (Group 1: 0 – 2 hours; Group 2: 2 to 4 hours; Group 3: More than 4 hours). Based on Table 2, it is revealed that the ANOVA resulted in a statistically significant difference at the $p < 0.05$ in Social Risk score for three viewing time groups: ($F(3, 601) = 2.439$, $p = .064$).

Table 2 also exhibits a significant difference at p level < .05 for Personal Risk scores for all three viewing time groups: $F(3, 601) = 2.881$, $p = .002$. Tukey's HSD Test, which is a test, used to find the significant difference of means between Social Media and Personal risk with the aforementioned 3 Groups for multiple comparisons.

Based on Table 2, it is found that the mean value of Social Media and Personal Risk was significantly different between Group 3 and Group 1 ($p = 0.002$, 95% C.I. = [.0725, .4624]).

Table 2: One-Way Between-Groups ANOVA for Social Media Exposure with Social Risk and Personal Risk

Dependent Variable: Social Risk
Tukey HSD

(I) Social Media exposure 3 groups	(J) Social Media exposure 3 groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
0-2 hours	2-4 hours	-.12275	.06303	.209	-.2851	.0396
	More than 4 hours	-.15714*	.05928	.041	-.3099	-.0044
2-4 hours	0-2 hours	.12275	.06303	.209	-.0396	.2851
	More than 4 hours	-.03439	.05664	.930	-.1803	.1115
More than 4 hours	0-2 hours	.15714*	.05928	.041	.0044	.3099
	2-4 hours	.03439	.05664	.930	-.1115	.1803
Note : *The mean difference is significant at the 0.05 level.						

Dependent Variable: Personal Risk
Tukey HSD

(I) Social Media exposure 3 groups	(J) Social Media exposure 3 groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
0-2 hours	2-4 hours	-.23915*	.08044	.016	-.4464	-.0319
	More than 4 hours	-.26746*	.07566	.002	-.4624	-.0725
2-4 hours	0-2 hours	.23915*	.08044	.016	.0319	.4464
	More than 4 hours	-.02831	.07230	.980	-.2146	.1579
More than 4 hours	0-2 hours	.26746*	.07566	.002	.0725	.4624
	2-4 hours	.02831	.07230	.980	-.1579	.2146
Note: *The mean difference is significant at the 0.05 level.						

Regression Analysis

Based on Table 3, it is shown that a total of 2.9% variances in social risk can be demonstrated by Exposure to Facebook, Exposure to WhatsApp, Exposure to Telegram, Exposure to Instagram, Exposure to Twitter and Exposure to WeChat ($R2 = 0.029$, $p< 0.007$). Therefore, from this result, only one variable; namely Expose to Facebook ($\beta = .166$, t-value= 3.367, $p < 0.001$) was determined to have a significant effect on social risk.

Table 4 shows that the R2 value is 0.057. This means that 5.7% of personal risk variation can be explained by Exposure to Facebook, Exposure to WhatsApp, Exposure to Telegram, Exposure to Instagram, Exposure to Twitter and Exposure to WeChat ($R2 = 0.057$, $p< 0.001$).The results show that two variables; namely Exposure to Facebook ($\beta = .159$, t-value= 3.280, $p < 0.001$) and Exposure to Twitter ($\beta = .153$, t-value= 3.480, $p < 0.001$) has a massive influence on personal risk. Namely, the finding indicates that Expose to Facebook, Expose to Twitter, 0 to 2 hours and more than 4 hours of media exposure have a deep impact on personal risk.

Table 3: Regression Analysis of Social Media with Social Risk

Dependent Variable	Independent Variable	Std. Beta	t-value	Sig.	VIF	Results
Social Risk	Exposure to Facebook	.166	3.367	.001	1.495	Supported
	Exposure to WhatsApp	.012	0.236	.814	1.646	Not Supported

	Exposure to Telegram	-.055	-1.178	.239	1.332	Not Supported
	Exposure to Instagram	-.020	-0.397	.691	1.494	Not Supported
	Exposure to Twitter	.062	1.386	.166	1.222	Not Supported
	Exposure to WeChat	.006	0.151	.880	1.076	Not Supported
	R	.170				
	R^2	.029				
	Adjusted R^2	.019				
	Sig. F	2.96				
Note : Significant levels: **p<0.01, *p<0.05						

Table 4: Regression Analysis of Social Media with Personal Risk

Dependent Variable	Independent Variable	Std. Beta	t-value	Sig.	VIF	Results
Personal Risk	Exposure to Facebook	.159	3.280	.001	1.495	Supported
	Exposure to WhatsApp	.068	1.333	.183	1.646	Not Supported
	Exposure to Telegram	-0.24	-.522	.602	1.332	Not Supported
	Exposure to Instagram	-0.43	-.890	.374	1.494	Not Supported
	Exposure to Twitter	.153	3.480	.001	1.222	Supported
	Exposure to WeChat	-.059	-1.425	.155	1.076	Not Supported
	R	.238				
	R^2	.057				
	Adjusted R^2	.047				
	Sig. F	5.97				

The Correlation Result

Based on the result in Table 5, there is a positive relationship between Exposure To Facebook (r=.154, p<0.001) and Exposure to WhatsApp (r=.083, p<0.05) in Social Risk which shows that the strength of association between the two variables is weak. Table 6 show there is positive correlation between social media and personal risk which is explained by Exposed to Facebook (r=.181, p<0.001), Exposed to WhatsApp (r=.145, p<0.001) and Exposure to Twitter (r=.142, p<0.001). the strength between the association between the variables are also weak.

Table 5: The Results of Correlation of Social Media with Social Risk

Variables		Exposure to Facebook	Exposure to WhatsApp	Exposure to Telegram	Exposure to Instagram	Exposure to Twitter	Exposure to WeChat
Social Risk	Pearson Correlation	.154**	.083*	.016	.033	.060	.032
	Sig. (2-tailed)	.001	.041	.692	.423	.142	.430
	N	605	605	605	605	605	605
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

Table 6: The Results of Correlation of Social Media with Personal Risk

Variables		Exposure to Facebook	Exposure to WhatsApp	Exposure to Telegram	Exposure to Instagram	Exposure to Twitter	Exposure to WeChat
Personal Risk	Pearson Correlation	.181**	.145**	.067	.066	.142**	-.010
	Sig. (2-tailed)	.001	.001	.100	.105	.001	.806
	N	605	605	605	605	605	605
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

Based on the previous literature (Angawi & Albugmi, 2022), social media exposure to COVID-19 information has a positive impact on shaping an individuals' risk perception. However, this study was conducted to explore the aspect of the risk perception that was suggested by Tyler and Cook (1984), which is social and personal levels. It shown in this study has been confirmed that social media exposure as well as the media use such as WhatsApp, Facebook and Twitter do have a positive risk perception about COVID-19 on a personal level. In the other words, social media exposure affects the personal risk level of the people who lived in the area that declared as red zone (EMCO). Detailed analysis of the social media exposures shows that no

significant effect on social level. This is also assuming that even though respondents that exposed heavily to media contents, they will not be affected by what they saw on media. Personal risk level was more significant in social media exposure because of the more feel and think the chance of loss or damage felt by individuals on themselves (Tyler & Cook, 1984).

CONCLUSION

In conclusion, this study has shown that both hypotheses were not entirely proven. These results partially support the theory proposed by Gerbner et al. (1994). This study suggests that although media effects are present when exposure is high, the effect is not applied to all situations. This study has shown that 'heavy viewers' perceptions about risk were only heightened when it involves other people. They seem to be afraid that people at large might be affected by the COVID-19 virus compared to themselves (personal level). However, the Cultivation Theory cannot prove the correlation between social media exposure and the social level of risk perception. The gap in this study as well as the suggestions for the reasons behind them could be an interesting topic to explore in the future.

REFERENCES

Angawi, K., & Albugmi, M. (2022). The impact of social media on risk perceptions during COVID-19 in Saudi Arabia. *Frontiers in Public Health,* 10. https://doi.org/10.3389/fpubh.2022.898041

Brewer, N. T., Chapman, G. B., Gibbons, F. X., Gerrard, M., McCaul, K. D., & Weinstein, N. D. (2007). Meta-analysis of the relationship between risk perception and health behavior: The example of vaccination. *Health Psychology,* 26(2), 136–145. https://doi.org/10.1037/0278-6133.26.2.136

Doob, A. N., & Macdonald, G. E. (1979b). Television viewing and fear of victimization: Is the relationship causal? *Journal of Personality and Social Psychology,* 37(2), 170–179. https://doi.org/10.1037/0022-3514.37.2.170

Douglas, J. E., Ressler, R. K., Burgess, A. W., & Hartman, C. R. (1986). Criminal profiling from crime scene analysis. *Behavioral Sciences & the Law,* 4(4), 401–421. https://doi.org/10.1002/bsl.2370040405

Gerbner G., Gross L., Morgan M., & Signorielli N. (1994). *Growing up with television: The cultivation perspective. Against the mainstream: The selected works of George Gerbner*. Hillsdale, NJ: Lawrence Erlbaum Associates. pp. 193–213.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement,* 30(3), 607–610. https://doi.org/10.1177/001316447003000308

Marzouki, Y., Aldossari, F. S., & Veltri, G. A. (2021). Understanding the buffering effect of social media use on anxiety during the COVID-19 pandemic lockdown. *Humanities and Social Sciences Communications*, 8, Article 47.

Oh, S., Lee, S. Y., & Han, C. (2020). The Effects of Social Media Use on Preventive Behaviors during Infectious Disease Outbreaks: The Mediating Role of Self-relevant Emotions and Public Risk Perception. *Health Communication,* 36(8), 972–981. https://doi.org/10.1080/10410236.2020.1724639

Schiappa, E., Gregg, P. B., & Hewes, D. E. (2006). Can One TV Show Make a Difference?aWill & Graceand the Parasocial Contact Hypothesis. *Journal of Homosexuality*, 51(4), 15–37. https://doi.org/10.1300/j082v51n04_02

Seo, M. (2019). Amplifying panic and facilitating prevention: Multifaceted effects of traditional and social media use during the 2015 MERS crisis in South Korea. *Journalism & Mass Communication Quarterly,* 98(1), 221–240. https://doi.org/10.1177/1077699019857693

Shrum, J. (2001). Mainstreaming, resonance, and impersonal impact. Testing moderators of the cultivation effect for estimates of crime risk. *Human Communication Research,* 27(2), 187–215. https://doi.org/10.1093/hcr/27.2.187

Statista. (n.d.). Statista - the statistics portal. https://www.statista.com/aboutus/our-research-commitment/3346/amanda-siddharta

Svetlova E. & Thielmann K. H. (2020). Financial risks and management. *International Encyclopedia of Human Geography*. 5, 139–145, https://doi.org/10.1016/b978-0-08-102295-5.10065-4.

Tsoy, D., Tirasawasdichai, T. & Kurpayanidi, K. I. (2021). Role of Social Media in Shaping Public Risk Perception during COVID-19 Pandemic: A Theoretical Review. *The International Journal Of Management Science And Business Administration,* 7(2), 35–41. https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.72.1005

Tyler, T. R. (1984). Assessing the risk of crime victimization: the integration of personal victimization experience and socially transmitted information. *Journal of Social Issues*, 40(1), 27–38. https://doi.org/10.1111/j.1540-4560.1984.tb01080.x

Tyler, T. R., & Cook, F. L. (1984). The mass media and judgments of risk: Distinguishing impact on personal and societal level judgments. *Journal of Personality and Social Psychology*, 47(4), 693–708.

Zhong, Y., Liu, W., Lee, T., Zhao, H. & Ji, J. (2020). Risk perception, knowledge, information sources and emotional states among COVID-19 patients in Wuhan, China. *Nursing Outlook*, 69(1), 13–21. https://doi.org/10.1016/j.outlook.2020.08.005