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PEER-REVIEWED ARTICLE

Lessons learned from Covid-19: Analysis of Malaysia's health pandemic engagement through Malaysiakini Facebook posts

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ABSTRACT

During public health crises, social media becomes crucial for public health communication due to its speed and accessibility. This study uses the COVID-19 pandemic, a global health crisis, as a case study to investigate Facebook news engagement in Malaysia. By conducting quantitative content analysis, this study examines the effect of local news organization, *Malaysiakini*'s Facebook posts on social media news engagement. Data were collected from June and August 2021 and yield a total of 1959 COVID-19 related posts, coded and processed into SPSS 26 for analysis. Bivariate correlation analysis was run to check the proposed research question and hypotheses on the relationships between post characteristics (content type, post time, post word, image, video, hashtag, hyperlinks,) and social media engagement (number of reactions, comments and shares). According to the findings, combating rumors is the most popular news topic among users. Correlational studies, on the other hand, demonstrate that content type has no significant relationship with likes and shares behavior, but only a minor relationship with comments. Furthermore, this study discovered that engagement techniques (post time, post word) may have a negative or no impact on social media engagement. In terms of media richness, image posting correlates positively with all social media engagement indicators, whereas video posting has the opposite effect, negatively impacting engagement intention. These findings have contributed to fresh perspectives on Media Rich Theory and it has the theoretical and practical consequences for governments, health organizations, the news practitioner, and researchers in terms of epidemic communication and public engagement.

Keywords: *COVID-19; Facebook; Social media engagement; Media richness; Quantitative content analysis*

INTRODUCTION

In 2019, the emergence of COVID-19 presented an unprecedented global challenge. The virus spread rapidly across countries, prompting governments to prioritize efforts to contain its spread. Over 100 nations implemented full or partial lockdowns during the early stages of the pandemic (BBC News, 2020). Malaysia was also significantly affected by COVID-19, with fluctuating case numbers leading the government to impose three separate Movement Control Orders (MCOs) aimed at curbing transmission by restricting citizens' movement and banning mass gatherings (Tang, 2020).

During a health crisis, there is a high demand for relevant and accurate information to minimize harm (Rodin et al., 2019). Effective health communication is essential to control the virus's spread and reduce fatalities. Traditional methods of information exchange have largely been replaced by social media platforms, which offer unparalleled speed, reach, and penetration (Merchant & Lurie, 2020). Social media has become the broadcasting powerhouse of the twenty-first century (Guo & Sun, 2022). In Malaysia, a survey revealed that 83% of 1,100 respondents used Facebook as their primary news source before the first MCO, and 70% continued to rely on it after the third phase (Statista, 2021). Facebook became a central platform for news organizations and the public to discuss, debate, and stay informed about the public health crisis (Rodin et al., 2019; Zhou et al., 2024). Therefore, understanding factors that influence social media engagement during pandemics is crucial, as it enables news organizations to assess how their messages resonate with audiences and to refine their health communication strategies.

Previous research has primarily focused on extensive use of social media by governments to raise awareness and educate the public about preventive measures (e.g., Bajouk and Ferré-Pavia, 2023; Chen et al., 2020; Ngai et al., 2020; Zhou et al., 2024). This study argues that, in addition to government-affiliated organizations, news media also play a crucial role in disseminating pandemic information to the public through social media platforms. However, research on how online news media leverage social media for content dissemination remains limited. Existing studies have compared content differences between news media websites and Facebook pages (Rodin et al., 2019) and examined the effectiveness of social media as a news platform (Garcia & Berton, 2020). Additionally, social media platforms are frequently utilized by news organizations for content optimization and audience monetization (Guo & Sun, 2022). They function as automated news feeds (Messner et al., 2011) and as

promotional tools to direct traffic to primary websites (Angelou et al., 2019; Engesser & Humprecht, 2015; Hille & Bakker, 2013).

While in the Malaysian context, research on health information dissemination via social media has been somewhat limited. One notable study by Rahim et al. (2019) explored factors influencing health information diffusion on the Ministry of Health Malaysia's Facebook page. Most relevant studies have been conducted in larger countries like the United States and China (Rahim et al., 2019). This research aims to address these gaps by examining COVID-19 news engagement on Malaysian news media's social media platforms. Given the important role social media played in delivering pandemic-related news, understanding what drives public engagement with COVID-19 content is crucial. The major objectives of this research are (i) To examine the type of news content that draws more Facebook news engagement; (ii) to examine the engagement techniques Malaysiakini utilize on Facebook; and (iii) to examine whether social media features affect user engagement on Facebook. By performing content analysis on 1,959 Facebook news post from Malaysiakini's Facebook page, this study investigated the effects of the content type, media richness, and posts features on user engagement in terms of reactions, shares, and comments during the time of crisis.

LITERATURE REVIEW

Social Media News Engagement

User interaction with news content has been widely studied, though its conceptualization and operationalization vary across platforms and settings (Chen & Pain, 2019; Lim et al., 2015). Focusing specifically on social media news engagement, Chen and Pain (2019) identified two dimensions: *Content-Interaction* and *Exposure Engagement*. Content-Interaction refers to the different levels of interaction users have with news content, such as reacting, sharing, commenting, or posting personal opinions (Chen & Pain, 2019). In contrast, Exposure Engagement involves paying attention to news, the frequency of news consumption via social media, and the satisfaction derived from using social media for news (Chen & Pain, 2019). Zhou et al. (2024) further summarize social media-based engagement into three types, which are affective, cognitive and retransmission. These notions of engagement are consistent with the broader literature on social media news engagement, which defines engagement as the time spent on related content (O'Brien, 2011; Kang et al., 2023), the quality of attention (Chan-Olmsted & Wolter, 2018), and interaction between content, platform, and audiences (Chen & Pain, 2019).

Engagement significantly influences user behavior and perceptions of news content and news brands. Audience engagement is positively correlated with brand loyalty and awareness, which can shape how users perceive online content (Chen & Pain, 2020). Additionally, active user engagement can impact the perceptions of other users. For instance, social media metrics like sharing, liking, and commenting can influence the credibility (Karlsen, 2021; Park & Lee, 2023) and perceived quality of news (Chung & Myojung, 2017). Furthermore, Dutceac Segesten et al. (2020) found that user engagement varies based on news type, as disputes in comments on soft news increase attention to comment sections, while they reduce attention in hard news topics.

The widespread and accessibility of social media have surged, leading to substantial increase in information exposure on social media platforms (Bajouk and Ferré-Pavia, 2023). The COVID-19 pandemic has been a dominant global news story, with social media playing a crucial role in crisis communication. Besides, it has enabled users to access and share credible information, fostering public understanding and cooperation (Yang et al., 2020). For instance, the study of Zeballos Rivas et al. (2021) has found the positive association between extensive exposure to COVID-19 information on social media and increased risk perception. Statistics indicate that traffic to news sites and social media usage surged during the pandemic (Comscore, 2020; Statista, 2021). Social media has proven beneficial during pandemics, including H1N1, Ebola, Zika, and COVID-19, by swiftly disseminating guidelines and preventive measures (Ytre-Arne & Moe, 2021). However, misinformation remains a major concern, fueling confusion and anxiety. Experts suggest obtaining information from trustworthy health professionals and emphasize the need for media practitioners to craft accurate, engaging content to combat misinformation and enhance public engagement (Hauer & Sood, 2020).

As social media news consumption continues to rise, user engagement plays a crucial role in enhancing the credibility of news organizations. Consequently, news practitioners have increasingly focused on engaging audiences, particularly online. To maximize audience engagement, it is essential for news organizations to effectively use social media to produce engaging content.

Media Richness And Social Media

The Media Richness Theory, proposed by Daft and Lengel, serves as the theoretical foundation for this study. The theory posits that effective communication requires

aligning the richness of a medium with the complexity or ambiguity (equivocality) of a task. Equivocality is defined as confusion or a lack of understanding that cannot be resolved simply by increasing the amount of information, but rather by enhancing the quality or richness of the information (Daft, Lengel, & Trevino, 1987). According to the theory, the "richness" of a medium is determined by factors such as immediate feedback, multiple cues, language variety, and personal focus (Daft & Lengel, 1986; Sheer, 2020). A medium that can quickly clarify complex information and improve understanding is considered "rich," while one that requires more time to convey the same information is considered "lean" (Daft & Lengel, 1986; Shee, 2020).

In the context of Media Richness Theory, social media is generally categorized as a lean channel. However, modern social media platforms, with their embedded technical features, may enhance users' perceptions of a medium's richness (Ng & Liu, 2024; Ishii, Lyons, & Carr, 2019). For instance, social media messaging can now include advanced features such as videos, audio, photos, stickers, emojis, hyperlinks, and other elements that foster greater connection and engagement with content (Guo & Sun, 2022). Several studies have examined the relationship between media richness and social media user engagement (Guo & Sun, 2022; Guo & Sun, 2020; Srivastava, Saks, Weed, & Atkins, 2018; Chen et al., 2020; Stellefson, Paige, Apperson, & Spratt, 2019; Zhuang et al., 2023), yielding varied results. As media theory suggested, higher media richness is not always better; rather, it should be matched to the specific context of the target to achieve the best results. The present study attempts to apply the media richness theory to explain the extent of rich media format (message vividness and message interactivity) can be leveraged to stimulate user engagement during the pandemic outbreak. This study identifies specific Facebook news post features—such as post content, message vividness, interactivity, post timing, and word count—and argues that media richness influences user engagement.

News Content

Various types of news stories can address the information needs of local communities while simultaneously engaging a broader audience of news consumers (Guo & Sun, 2020). Prior research has shown that content type has the impact of a significant difference on social media user engagement (Bonsón et al., 2015; Bonsón et al., 2019; Guo & Sun, 2020; Wenzel el., 2021). To date, only a few studies have so far investigated the effects of the various content types published by local government on different forms of user engagement during the COVID-19 pandemic (e.g., Chen et al., 2020; Chen et al., 2021; Ngai, 2020; Pang, Jiang & Chan, 2021; Wahid., 2021; Yang et al., 2020). These studies' coding of content types is summarised below:

Table 1: Categories of COVID-19 social media content in the existing studies

Literatures	Content Types
(Chen et al., 2020; Chen et al., 2021)	• Latest news about the COVID-19 crisis • Appreciation of front-line emergence services • Guidance for stakeholders • Information about the government's handling of the crisis
(Ngai et al., 2020)	• Action • New Evidence • Reassurance • Disease prevention • Health Care Services • Uncertainty
(Pang et al., 2021)	• Plans and Measures • Public Health Messages • Rumor Control • Latest News • Appreciation • Community Resilience • Press Conference Live
(Wahid., 2021)	• Precautions and care • Announcements or measures • Donated money, goods or services • Emotional support to victims • Help seeking • Criticizing authorities • Non-Situational Information
(Yang et al., 2020)	• News report • Notice release • Government measures • Epidemic data release • Scientific guidance • Thank the workers • Dispel rumours • Encouragement

According to the research, news content has a significantly different impact on news engagement (Pang et al., 2020). The user's focus will shift over time to different types of news according to the pandemic situation. However, the majority of the research focuses on the initial state of the crisis, when the pandemic first occurred in the particular country. As a result, there is a shortage of research on how the public engages with various news items when COVID-19 has become the norm in their lives. Furthermore, the majority of related research focuses on government health content communication. Hence, there is also a lack of understanding of the pandemic news released by news media. The current study attempts to fill these gaps. Therefore, this study proposes the following hypothesis:

H1- Content type significantly correlated with the social media news engagement.

Post Time

Social media posting time can impact user engagement and is a significant factor affecting behaviours such as likes and shares (Antonakopoulou & Veglis, 2022). In terms of social media platforms, one study discovered that posting in the morning on Facebook created greater engagement than posting in the afternoon (Kanuri et al., 2018). The similar finding was seen in Ntonakopoulou and Veglis's (2021) study, which proposed that users are more willing to engage during the morning hours. Specialized to news content posting on Facebook, Guo & Sun (2022) found that the optimal time for posting is during the morning hours (6:00-8:59 am), as this period generates the highest levels of emoji-based reactions and comments from readers. On the other hand, Sorares et al. (2022) found that posting time did not significantly affect user engagement in the context of higher education institutions. However, previous research on the ideal post time were conducted in the usual circumstances, when there was no pandemic outbreak and the user's daily routine was not disrupted by a movement control order. As a result, there is still limiting research concerning the optimal post time during a pandemic period, therefore, this study aims to fill in this gap. The following hypothesis was proposed:

H2- Engagement techniques (post words, post time) employed by Malaysiakini is significantly correlated with social media engagement.

Message Vividness

The degree of message vividness can differ in two dimensions: breadth and depth (Moron, 2019). The number of senses triggered by the message is referred to as

breadth, while the quality of the presentation is referred to as depth (Moron, 2019). Social media allows diverse multimedia content to be published in the message content such as images and videos. The use of these elements improves message usefulness (Ganguly et al., 2024) and information presentation efficacy, resulting in increased levels of audience engagement on social media (Ji et al., 2019). Media analyses of television stations' Facebook posts also concluded that the use of pictures encourages audience engagements, leads to more likes and comments compared to text-only posts (Guo & Sun, 2020). The study of Ji et al. (2019) also demonstrated the positive effect of vividness on engagement, suggesting that images and videos may enhance the telepresence and sensory experience of the user and, therefore, more likely to engage the audiences. Such results are also supported by the recent findings on the effects of message vividness on audience engagement (e.g., Paul & Das, 2023; Moran et al., 2019; Yang et al., 2020;). Drawing from the findings of past works of literature, this study posits that message vividness (videos and photos) positively influences the audience's news engagement.

Message Interactivity

Media interactivity has been conceptualized and operationalized from various perspectives. Sundar, Kalyanaraman, and Brown (2003) distinguished two types of interactivity: functional and contingent. Functional interactivity refers to "an interface's capacity for conducting a dialogue or information exchange between users and the interface" (Sundar et al., 2003, Zhang et al., 2020). It emphasizes the technological elements of an interface that allow message senders and receivers to connect and contribute to mutual communication (Sundar et al., 2003; Zhang et al, 2020). The more features a website has, the more interactive it is (Jiang, 2018). Interactivity, on the other hand, occurs at the message level under the contingency perspective, where users' communication roles are replaceable and communicators engage to one another (Jiang, 2018). The more messages relate to one another, the greater its interactivity (Jiang, 2018). Given that this study focuses on the news media's interactivity technique, which is the hyperlinks features on Facebook, the functional view of interactivity is adopted herein.

In practice, the media organisation can embed clickable hyperlinks that link social media posts to their official website to draw more traffic from the social media platform to the newspaper website (Angelou et al., 2019; Ju et al., 2013). Although the study has proven the positive correlation between social media and readerships (Ju et al., 2013). However, whether the interactivity features can drive more engagement on social media is still remain unknown, due to varied result of research findings. For example, some studies suggested that both interaction cues and media

richness content components have a favourable impact on boosting consumer-brand engagement outcomes (Moran et al., 2019). Higher functional interactivity tends to increase the user's sense of control and self-efficacy, which resulted in higher levels of engagement (Liu et al., 2017). While some studies found a negative relationship between message interactivity and audience engagement outcomes, suggesting that overabundance of message interactivity features may increase the cognitive load of the audience (Ji et al., 2019) Therefore, this study posits the usage of the hyperlink function as the indicator of message interactivity of Facebook posts, attempt to find out the effectiveness of message interactivity in encouraging the audience engagement. This study proposes the following hypothesis:

H3- Higher media richness (message vividness, message interactivity) is significantly correlated with social media engagement

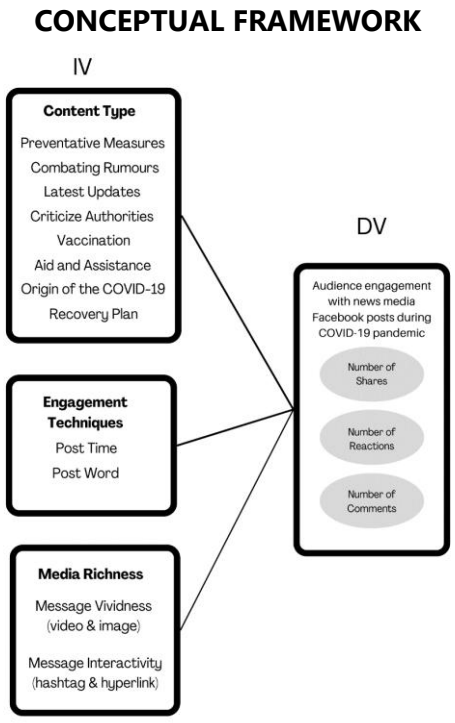

Figure 1. The conceptual framework of the study

Figure 1 demonstrated the research model used to examine the relationships between the independent variables (news content, message vividness, message interactivity, post time, post word) and the dependent variables (audience engagement with *Malaysiakini* Facebook posts during the COVID-19 pandemic). The

audience engagement in this study was measured using the metrics of number of shares, number of likes, and number of comments. The present study hypothesised that news content, media richness (message vividness and message interactivity) and engagement techniques (post words, post time) would have a significant impact on Facebook page audience engagement.

RESEARCH METHODOLOGY

Research Design

To achieve the objectives of this study, a quantitative content analysis was conducted on Facebook posts during the COVID-19 pandemic. Malaysiakini' Facebook account was selected as the unit of analysis, as it is a leading alternative news platform known for providing independent political and current affairs news (Malaysiakini, n.d.). Malaysiakini is the most popular online news source in Malaysia, attracting over 600,000 daily readers, and it ranks as the top traffic news website in the country (FG Media, 2021). Its Facebook page, with over 1.8 million followers, is one of Malaysia's most popular news platforms on social media. A survey also revealed that Facebook served as the primary source of COVID-19 pandemic news for Malaysians during the Movement Control Order (MCO) period (Statista, 2020), making it an ideal choice for data collection.

This study captured all pandemic-related news posts on Malaysiakini's Facebook page and analyzed audience reactions, including likes, shares, and comments. The research aimed to identify the types of news content that generate higher engagement, the engagement strategies Malaysiakini employs on Facebook, and how social media features influence user interaction. Given that the study seeks to explore the relationships between these variables, as outlined in the conceptual framework (Figure 1.0), a relational quantitative content analysis was deemed the most appropriate method for this research.

Data Collection

For data collection in this study, a combination of web scraping application and manual extraction was used. The present study collected data from *Malaysiakini*'s Facebook page using *Facepager*. The application was the best choice for this study since it saves time retrieving big amounts of data, and the researcher may afterward use Microsoft Excel to analyse the data acquired in a graphical format, which may ease the coding process. In this study, *Facepager* has been utilised to extract the information of post text, post date, post time, comments, and the number of likes

and shares from *Malaysiakini*'s Facebook- Feeds. Then, the data were further processed using correlation analysis in Statistical Package for the Social Sciences 26 (SPSS).

The extraction of data from Facebook using Facepager has revealed a large amount of missing data. In recent years, Facebook has tightened the access restrictions to its API and introduced a new limitation on the maximum amount of page posts retrievable through Graph API (Chun, 2020). As a result of this limitation, the user will only retrieve 600 posts each year and page using data extraction application. A more comprehensive literature on this limitation can be found in Chun (2020). To address the missing gaps, the researcher has adopted manual data extraction for the missing posts to enhance the accuracy of the research. Hence, this research has used a combination of Facepager application and manual extraction for data collection.

Sample Size and Sampling Method

The data collected ranges from June 1, 2021, to August 31, 2021. The sampled period began from June 1, 2021, when MCO 3.0 start implemented due to the rapid increase in confirmed COVID-19 cases in Malaysia as a result of the Sabah election. At this period, the public was confronted with this severe situation unexpectedly, therefore the public's online reaction may be substantially heightened. Furthermore, the ongoing vaccination program would also attract people's interest in reading the news, leading to significant exchange of information during this period. The sampled period ended on August 31, 2021, when the National Recovery Plan went into effect and the confirmed case numbers began to fall. Notably, in May 2025, COVID-19 cases have resurged across several Asian countries, including Taiwan, Thailand, and Malaysia's neighbor Singapore (Focus Taiwan, 2025; Free Malaysia Today, 2025). Therefore, analyzing data from the 2021 period may offer valuable insights to enhance preparedness for future crisis communication strategies.

Purposive sampling is a non-probability sampling that is widely ultilised for quantitative content analysis. Due to a vast amount of data obtained, purposive sampling was employed to limit all data to only COVID-19 pandemic-related posts from Malaysiakini. Reposts from politicians or other external sources were excluded from the analysis. However, since Malaysiakini rarely republished content from outside sources, only a small number of posts were omitted from the dataset. The present study concluded a keyword search to collect the data from a relevant Facebook post. By referring to prior research (e.g., Al-Zaman, 2021) and observation

of the COVID-19 situation in Malaysia, the study came to the following keywords: "coronavirus", "COVID-19", "pandemic", "vaccination", "vaccines", "standard operating procedure", "SOP", "virus", "movement control order", "death toll", "health DG", "health minister", "MCO", "quarantine", "SARS-Cov2", "positive cases", "Omicron", "Omicron virus", "Delta", "Pfizer", "AstraZenacca", "Sinovac", "Mysejahtera". The study would employ a combination of Microsoft Excel's text filter function and manual filtering. After removing irrelevant posts, the sample size was 1959 posts.

Data Analysis

Content analysis was used to analyse the data collected from the *Malaysiakini* Facebook page. In this study, the researcher is the sole performer of human coding and content unitization. The researcher is in charge of both developing and implementing the codebook. After coding the variables, the results were generated using simple bivariate correlation analysis.

Data Coding

This study's independent variables include content type, message vividness, message interactivity, post words, and post time. The research will code the category of Facebook postings based on their text content. By referring to the existing literature on the content of social media during the COVID-19 pandemic (Figure 2.0) and observation of the researcher, a codebook has been developed to serve as a guide for the analysis. The coding for the content type includes the (a) preventative measures, (b) combating rumours, (c) latest updates, (d) criticize authorities, (e) aid and assistance, (f) vaccination, (g) origin of the COVID-19, (h) recovery plan and (i) others. A detailed codebook for content type is shown in the table below (Table 2.0). In this study, the message vividness of the posts was reflected by the use of photos and videos in the posts. If an image is included in the Facebook news post, it is code as "1," whereas a video is code as "2." If both elements are missing, then it is labelled as "0." While the use of hyperlinks and hashtags reflected the postings' interactivity. If there is a hyperlink in the post, it is code as "1," otherwise it is code as "0." Likewise, if there is a hashtag in the post, it is code as "1," otherwise it is code as "0." Post word refers to the number of words in a Facebook post. This study collected the complete texts of all posts from June to August 2021, and then used Microsoft Excel formula to automatically count the number of words in each post. For the coding of post time, this study followed the same technique as Guo and Sun (2018), who separated posting time into ten segments, setting up two hours as one segment during non-overnight hours ranging from 6:00 a.m. to 11:59 p.m. To represent the inactive

posting period, the overnight periods between 12:00 and 5:59 a.m. were coded as "0."

Table 2: Content type codebook

Content Type	Brief Definition	Full Definition	Example Post
Preventative Measures	Steps taken by the government to combat the pandemic.	Announcements, policies, implementations, measures, plans, or education taken by the government in response to prevent or minimise the spread of the COVID-19 pandemic.	"*Defence Minister Ismail Sabri Yaakob today announced all economic and social sectors - except those on the essential service list - will not be allowed to operate under the "total lockdown" that will come into force next Tuesday.*"
Combating Rumours	Posts for clarifying false and misleading information.	Posts that clarify the local or international misinformation regarding the disease, policies, vaccines, cures, measures or infections.	"*Monkey wearing Covid-19 pink wristband is fake news.*"
Latest Updates	Latest news about the reach	The most recent information on the COVID-19	*"There were 72 Covid-19 deaths reported today, bringing the June death toll*

	and impact of the pandemic.	situation, including updates on confirmed cases, positivity rates, the emergence of new clusters, recovery rates, or death numbers.	*1,552. Total fatalities in May were 1,289. The overall death toll now stands at 4,348."*
Criticize Authorities	Criticizing the government's response measures during the pandemic.	Disapproval or judgement on the government's perceptions, decisions, or actions in reaction to the pandemic.	*"Political scientist Wong Chin Huat said one of the reasons that the government had failed to manage the pandemic and economy is because MPs are unable to do their job. He said there were many policies blind spots due to the narrow base involved in the policy making process. He also called for Parliament to reconvene with the setting up of more parliamentary special select committees"*
Vaccination	Information about the vaccine and updates on the vaccination programme.	Information related to the vaccination programme announcements, knowledge, progress, or side effects, as well as	*"Vaccines to be delivered from July, says embassy."*

		public's reactions to vaccines.	
Aid and Assistance	Donation and relief effort during the pandemic.	Any form of assistance provided by the government, community and foreign countries during the pandemic, including finances, food, medical devices, medical supplies, medical advices, or vaccines.	*"COVID19 | The US$250,000 donation was handed over to the National Disaster Management Agency (Nadma) to help manage the pandemic response operations, besides PPE like face masks, hand sanitisers and thermometers for frontline workers."*
Origin of the COVID-19	Updates, and information about the origin of the virus.	Discussion, research, findings, and hypotheses about the true origin of the COVID-19 virus.	*"Antony Blinken affirms US support for additional studies into the origins of Covid-19, including in China."*
Recovery Plan	The government's exit strategy from the COVID-19 pandemic.	The policies on the reopening of borders, economic sectors, social activities and cross-state activities.	"*11 types of businesses in Phase 1 areas will reopen on Aug 16."*
Others	Posts that do not fall into any of		

	the above-mentioned content types.

** All of the example posts are taken from Malaysiakini's Facebook page.*

Dependent Variables

This study proposed that the content type, engagement technique, and media richness will influence the user engagement on *Malaysiakini*'s Facebook. In this study, the researcher examines the effect of *Malaysiakini*'s Facebook news posts on user actions. Three behavioural metrics were used as dependent variables, including reactions, shares, and comments. The study will capture this objective data using *the Facepager* application.

Table 3: Social media metrics

Metrics	Definition
Reactions	The number of reactions of the Facebook post, including love, like, haha, wow, sad, angry, care
Shares	The number of shares of the Facebook post
Comments	The number of comments of the Facebook post

DESCRIPTIVE STATISTICS

Table 4: Overview of Descriptive Statistics

Variables	Percentage/Mean	Standard Deviation(D)
Independent Variables		
	Content Type	

	Preventative Measures	13.30%
	Combating Rumours	2.70%
	Latest Updates	18.80%
	Criticize Authorities	14%
	Vaccination	30.50%
	Aid and Assistance	5.30%
	Origin of the COVID-19	0.80%
	Recovery Plan	2.20%
	Others	12.50%
Vividness		
	Image	93.30%
	Video	6.70%
Interactivity		
	Hyperlink	93.80%
	Hashtag	7.70%
Post Time		
	12.00am-5.59am	0.20%
	6.00am-7.59am	3.80%
	8.00am-9.59am	10.50%

	10.00am-11.59am	10.70%
	12.00pm-1.59pm	11.90%
	2.00pm-3.59pm	16.20%
	4.00pm-5.59pm	17.40%
	6.00pm-7.59pm	12.00%
	8.00pm-9.59pm	10.50%
	10.00pm-11.59pm	5.80%
	Post Words	
	0-44	85.30%
	45-89	11.50%
	90-134	2.40%
	135-179	0.70%
Dependent Variables		
	Social Media Engagement	
		Mean / Standard Deviation
	Shares	47.4 / 125.34
	Comments	97.27 / 172.3
	Reactions	295.96 / 563.2

Descriptive statistics have been generated using SPSS 26 software and the results were summarized above (*Table 4.0*). A total of 1,959 COVID-19 related news posts from June 2021 to August 2021 were collected from *Malaysiakini*'s Facebook

page. According to the findings, the mean number of reactions, comments, and shares per post was 296.19 (*SD* = 563.58), 97.27 (*SD* =172.30), and 47.40 (*SD* = 125.34), respectively. It was discovered that among the reactions, *like* (N=341627) is the most frequently used reaction, followed by *haha* (N=121398). While the *care*, which was the latest introduced reaction by Facebook during the pandemic is the least common reaction employed by the users (N=3408).

As for Facebook news topics, 30.5% of the 1959 posts were focused on vaccination, followed by latest updates (18.8%), criticize authorities (14%), and preventative measures (13.3%), respectively. The number of post words ranged from zero to 134 and the average number of Facebook news posts was 29 words (SD = 20.90). As for posting time, the most prevalent posting time is evening hour (4.00pm- 5.59pm), which consists of 17.4% (341 posts), followed 16.2% (317 posts) during late afternoon (2.00pm- 3.59pm) and 12% (235 posts) during dinner time (6.00pm- 7.59pm).

In terms of media richness, the statistics shown that image (93.3 percent, 1,828 posts) is the primary method through which *Malaysiakini* delivers content, followed by video (6.7 percent, 131 posts), and no post is text-only post. Furthermore, Malaysiakini would prefer to include an interactive hyperlink to direct users to access their official news pages or telegram for detailed information in the majority of the posts (92.2 percent, 1,807 posts) rather than a hashtag, with only 7.7 percent (151 posts) of the posts including a hashtag feature despite the fact that it tends to yield the highest engagement rate, with shares (Mean= 79.76, SD= 164.93), comments (Mean= 163.05, SD=230.12), and reactions (Mean=490.77, SD=873.41). The most commonly used hashtags were #MkiniNews, #KiniNews, and #COVID19.

INFERENTIAL STATISTICS

Correlation Analysis

Table 5: Inferential Statistics

Variables	Shares		Comments		Reactions	
	Pearson Correlation	P value	Pearson Correlation	P value	Pearson Correlation	P value
Content Type	-0.018	0.427	.045*	0.046	0.031	0.172

Engagement Techniques						
Post Words	-.050*	0.028	-.089**	0.000	-.102**	0.000
Post Time	-0.011	0.637	0.007	0.749	0.017	0.447
Media Richness						
Image	0.035	0.120	.062**	0.006	0.077	0.001
Video	-0.035	0.120	-.062**	0.006	-.077**	0.001
Hyperlinks	0.033	0.140	.053*	0.019	.069**	0.002
Hashtag	.075**	0.001	0.11**	0.000	0.100**	0.000

*Correlation is significant at the 0.01 level (2-tailed).***
*Correlation is significant at the 0.05 level (2-tailed).**

In this study, SPSS was used to test relationships between two variables using simple bivariate correlation. Table 5 indicates the correlation coefficients between all factor pairings, including content type, engagement techniques, media richness, and social media engagement metrics, which are further broken down into a total number of shares, comments, and reaction. The strength of the correlation was identified according to "Guilford's Rule of Thumb".

Regarding the H1's assumption about the relationship between content type and social media engagement, an insignificant coefficient results were indicated between content type and the number of shares (r=-0.018, p=0.427) and number of reactions (r=0.031, p= 0.172). Nonetheless, the findings revealed a positive connection between content type and quantity of comments (r= 0.045, p= 0.046).

This study further categorized engagement techniques as post time and post words to examine H2, which is the relationship between *Malaysiakini*'s engagement tactics and social media engagement. The correlation analysis indicated that there is a significant connection between the number of post word and engagement outcomes, which is a negative connection with shares (r=-0.050, p=0.028), comments (r=-0.089, p=0.000), and reactions (r=-0.102, p=0.000). On the contrary, using Spearman correlation analysis, no significant correlations were found between post time and either number of shares (r=-0.011, p=0.637), comments (r=0.007, p=0.749), or reactions (r=0.017, p=0.447).

H3 predicted that there is a significant correlation between media richness and social media engagement. Regarding the media richness factors, the richness has been

examined with the existence of images, videos, hyperlinks, and hashtags. First, in terms of image, the result shows that there was no significant association between image and number of shares (r=0.035, p=0.120). Meanwhile, a positive significant correlation was found between the presence of the image and the number of comments (r=0.062, p=0.006), and the number of reactions (r=0.077, p=0.001). A similar result has been indicated when testing the correlation between the presence of video and the number of engagements. there was no significant correlation between video and number of shares (r=-0.035, p=0.120), yet, it has a negatively very weak correlation with the number of comments (r=-0.062, p=0.006), and the number of reactions (r=-0.077, p=0.001). For hyperlinks, there was a significant positive connection between hyperlinks and number of comments (r=0.053, p=0.019) and number of reactions (r=0.069, p=0.019), but not for number of shares (r=0.033, p=0.140). Finally, a positive correlation was found between hashtag and engagement rate, such as comments (r=0.11, p= 0.000), shares (r= 0.075, p= 0.001), number of reactions (r=0.100, p=0.000).

DISCUSSION

Through analyzing the 1959 news posts collected from *Malaysiakini*'s Facebook page, this paper indicated that the effect of post features varies from one variable to another. Facebook provides a diverse variety of tools for social media interaction. Consistent with earlier research (e.g., Lappas et al., 2021), this study found that social media followers were more inclined to press the reactions buttons than other types of active engagement, such as sharing a post or posting a comment. When compared to reacting to a post, which is an affective motivated response, comments and shares required a greater cognitive effort (Kim & Yang, 2017; Antonakopoulou & Veglis, 2022). While reacting is an impulsive activity, comments and shares required users to be self-conscious and participate in the process of "creating" a message, which is considered to be a higher level of social media behavior due to the effort invented.

This study indicates the impact of news type on user engagement during pandemic outbreak. In all aspects of social media metrics, combating rumors has garnered much more interaction than other categories during the pandemic period, followed by preventative measures and vaccination. This finding is consistent with Yang et al. (2020) and Pang et al. (2021), who analyzed the content type released by governmental agencies on social media during the epidemic. During times of uncertainty, authorities and the general public tend to devote significant attention to curbing rumors in order to avoid misinformation and panic (Yang et al., 2020).

Effective rumor clarification can make a substantial difference in crisis prevention and control, not to mention increasing public trust in the fight against the virus (Huang, Jin Lynn & Men, 2021).

However, neither of the two types of engagement approaches, post time nor post word, would increase user engagement on *Malaysiakini*'s Facebook. The findings of this study indicated that the engagement tactics used in Facebook news posts had no significant influence on posting time or even discouraged people from interacting with the Facebook post message (post words). Fast processing capability and time effort may explain the negative association (Schultz, 2017). Past study has suggested that the best length for Facebook advertising text should range from 18 to 19 words (Guo & Sun, 2020). For the unit of analysis in this study, the average word count of Malaysiakini's posts was 29 words. As a result of the lengthier captions on Malaysiakini, readers needed more time to comprehend the message, resulting in a negative impact on social media engagement. In contrast, there is also no shortage of research suggesting that the word count of a post has a positive impact on engagement behavior (eg. Guo & Sun, 2020; Yang et al., 2020). However, the disparity could be due to a variety of factors, including methodological disparities, audience cultural variations, linguistic idiosyncrasies, or industry specificities. Besides, media richness may weaken the impact of text length due to information redundancy and cognitive load (Zhuang et al., 2023). Regarding post time, this study's result discovered that posting time had no relevant relationship with any of the social media engagement indicators. This paper has also partially agreed with the result of Siyam et al. (2020) who found that post time did not highly impact citizens' engagement in Dubai government Twitter accounts. Similar results showing engagement is independent of time of day have been obtained by Coffield & Kausar (2025). The researcher proposed that their research topic is capable of delivering critical information to participants and has the ability to engage them on a daily basis (Coffield & Kausar, 2025). This proposal may also apply to the current study, which demonstrates that *Malaysiakini* has the potential to keep their audience engaged every day because COVID-19 is an essential subject to follow up on throughout that time period; thus, there is no significant relationship between variables.

The vividness of the message was tested in terms of picture or video containment in the post. In contradiction to Yang et al. (2020)'s earlier study, which indicated that both image and video were positively correlated with citizen participation in COVID-19 news on social media, this study solely confirmed the positive relationship between image and social media engagement. Video, on the other hand, is negatively associated with social media participation. In the interpretation of other scholars,

users tend to engage in image posting to video posting since it is easier to comprehend and requires less cognitive strain (Sabate et al., 2014). The readers can generate a short comment based on their reaction to the visual in a matter of seconds. Video content may be considered more intrusive, thus, likely to detract experiences and increase information overload, subsequently negatively affecting the engagement intention of the public (Chung et al., 2023; Fortin and Dholakia, 2005). When discussing the context of Malaysiakini, the videos posted on the organization's Facebook page largely consist of news reporting from KiniTV, its sub-TV news site. Broadcast news reporting is frequently regarded as lengthy, monotonous, serious, and uninteresting. As a point of reference, a news broadcast video on Malaysiakini's Facebook page could last up to 10 to 13 minutes, which is far too long for the public's regular information update and entertainment purpose in fragmented time (Chen et al., 2021). Subsequently, it has had a detrimental impact on the number of replies and comments due to its burdensome and time effort needed.

In a sharp contradiction with previous research that found media richness is positively correlated with the sharing behavior (eg, Guo & Sun, 2020), this study found that message vividness is not very influential in generating the intention to share among users. Perhaps this indicates that while users are happy to signal their interest by reacting and expressing their feelings through comments, they are less inclined to share the post with their friends for self-presentation motive.

This study measured message interactivity through the presence of hyperlinks and hashtags in news posts, with results showing differing effects on social media engagement. While previous research indicated that hyperlinks often reduce engagement due to information (Sabate et al., 2014; Guo & Sun, 2020), this study found a slight but positive relationship between hyperlinks and the number of reactions and comments, consistent with Yang et al. (2020). Hyperlinks enhance the "usefulness of information" by allowing users to explore more on a topic, contributing to increased engagement (Rybalko & Seltzer, 2010). The widespread use of hyperlinks (93.8% of posts) in Malaysiakini's Facebook posts may have diluted their impact. In contrast, hashtags proved to be the most effective for driving all forms of engagement, including likes, shares, and comments, with a higher correlation value than any other variable in the study. Hashtags help categorize information, increase discoverability, and foster online community interaction (Olinski & Szamrowski, 2021), as demonstrated by Malaysiakini's use of #COVID-19 and other tags. Both hashtags and hyperlinks facilitate access to additional information, reinforcing the notion that interactive elements can enhance social media engagement, albeit with varying

strength. This finding supports Media Richness Theory and the hypothesis that interactivity positively influences user engagement.

LIMITATION AND FUTURE STUDIES

This study provided valuable insights into the use of Facebook post features for communication during a public health crisis, but it faced several limitations. The main issue was with data collection, as Facebook's tightened API restrictions limited the number of posts retrievable through Facepager, requiring a mix of automated and manual data collection. This process was time-consuming and prone to errors. Additionally, the researcher's sole involvement in designing and implementing the codebook may have compromised the reliability of the results, and Facebook's algorithm could have affected engagement data by prioritizing certain content for users. These factors may have contributed to the negligible correlations found between variables. For future research, combining qualitative methods like interviews and content analysis with quantitative approaches could offer deeper insights into user motivations and behavior. Text mining user comments could also help better understand public reactions. Expanding engagement metrics beyond likes, shares, and comments to include metrics like post reach, impressions, and time spent would also enrich future studies.

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