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RELATIONSHIP BETWEEN NEW MEDIA LITERACY AND MOTIVATION IN SOLVING FAKE NEWS PROBLEM

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A R T I C L E I N F O

A B S T R A C T

Fake news affects individuals and society in many countries including Malaysia. To stop fake news from being widespread, apart from the government's effort, the role of the public and their new media literacy in dealing with this problematic situation should be given attention. Hence, this study was initiated to measure the level of new media literacy among the respondents and to examine the relationship between new media literacy and motivation in solving fake news problem. Data were collected through a survey among university students in Malaysia. The findings showed that only critical presumption significantly contributed to motivation in solving fake news problem, and this dimension was also found to be the lowest level among the respondents. The findings shed light upon the need to train the public on critical thinking in media creation as another necessary effort in tackling fake news problem.

Disciplinary: Media and Communication Science, Information Technology, Social Engineering.

1. INTRODUCTION

Fake news has always caught the attention of worldwide researchers due to its impacts on society, locally and globally. According to a study by Newman et al. (2018), the truthfulness of online news has brought concerns to many countries, Brazil (85%) appears as the country that expressed the highest concern, followed by Portugal (71%) and Spain (69%), whereas Malaysia (63%) is in the top 10. In the digital era society, many people spend a lot of time searching for news and information online (Lee et al., 2017; Shahar, 2017; Pozveh et al., 2019), the digital social networks also enhance the information sharing process, both positively and negatively (Wok et al., 2012), when the platform opens for all to create and share information, misinformation, and disinformation that may cause undesirable outcomes can also be widespread. In India, a child kidnapping rumour gone viral over WhatsApp misled a large number of people to attack three

innocent men to injuries and death last year (Satish, 2018). A similar case occurred in Malaysia where an elderly Chinese woman was accused of being involved in abducting children during Chinese New Year, the news, which was later proven as fake news, had feared her from going out from her house throughout the festive season (Chong, 2017).

Fake news undermines national security particularly when it is jeopardizing the peace and order of a nation-state, there have been many studies on detecting and measuring fake news (Rubin et al., 2015; Waszak et al., 2018). Therefore many countries initiated approaches such as fact-checking to fight fake news (Haciyakupoglu et al., 2018). The United States used ClaimBuster, a fact-checking system, during the presidential election in 2016 (Hassan et al., 2017), Qatar created a website namely "Lift the Blockade" to debunk false information (Scott, 2017), and Malaysia has launched sebenarnya.com as an information verification portal to counter fake news (Shahar, 2017). Media literacy and critical thinking are also emphasised in the efforts of tackling fake news, Finland government hired consultants from the United States to train their government servants to identify and counter fake news, the school also educated students to be critical in reading news (Haciyakupoglu et al., 2018). The Italian government also collaborated with social media providers, Facebook, for instance, to teach students in recognizing false information (Horowitz, 2017).

Based on the abovementioned facts, the efforts to combat fake news have been placed in the hand of the government and education. It is good to have media literacy incorporated into education and training, especially for the younger generation in developing skills to question, analyse and judge all messages received from the media. However, what is the role of the public in stopping the widespread negative influences of fake news? Will the public be more motivated to tackle fake news when they are more media literate? The purposes of this study were to measure the level of each dimension of new media literacy as well as examine the relationship between new media literacy and motivation in solving fake news problem.

2. LITERATURE REVIEW

2.1 FAKE NEWS

Fake news is a topic that has been discussed by many researchers with different definitions. Gelfert (2018) defines fake news as the intended presentation of false claims as news. Rochlin (2017) explains the term as a purposefully untruthful online story that apparently looks authentic and is viral on social media. He further expounds that the situation of fake news will be worse when most of the social media users do not read information other than headlines. There are two similar components across different definitions of fake news: first, intentional falseness, second, misleading news consumers.

Allcott and Gentzkow (2017) identified six "cousins of fake news", they are reports with unintended fault, politicians' misleading statements, conspiracy theories, misleading but not totally untrue reports, a satire that is not usually to be considered as truth, and rumours that are not derived from any news article. Tandoc et al. (2018) found another five that are associated with fake news, namely advertising, news parody, propaganda, manipulation, and fabrication. The impacts of fake news can be found across different fields, such as tourism (Fedeli, 2019), health (Waszak et al., 2018), marketing (Visentin et al., 2019), and more prevalent in politics (Allcott & Gentzkow, 2017). Although people are having doubts or do not fully rely on online news and information, the

influences on them still exist and are unavoidable (Kanoh, 2018).

Many people like to use social media as they expedite the process of information sharing and exchange, nonetheless, the incorrect information especially fake news can also be viral (Tandoc et al., 2018; Watimin & Zanuddin, 2018) which may leave negative sentiments to people (Zanuddin & Watimin, 2018). People create fake news intending to acquire as many likes and shares as possible from other users, consequently generate money by earning people's clicks (Rochlin, 2017). Apart from personal gain, another motive to create fake news is to propagate a certain ideology (Tandoc et al., 2018). Media literacy has always been discussed with fake news, it is worth having a deeper understanding of it in this study.

2.2 MEDIA LITERACY

With the proliferation of the Internet and digital communication technologies, people nowadays are not only media consumers, they can also be active media producers as long as they have the skills that enable them to participate fully in this new communication environment. Therefore media literacy is of importance to ensure they consume media critically and produce media responsibly (Literat, 2014). Media literacy is regarded as the capability of people to access, understand and create communications in different circumstances (Buckingham, 2005). It is multi-dimensional (Potter, 2010) and applicable in both traditional and new media (Literat, 2014). Due to the increased usage of social media nowadays, new media literacy becomes a subject of study for many scholars.

One of the remarkable frameworks that sheds light upon new media literacy was developed by Chen et al. (2011), Based on two continuums: functional media literacy to critical media literacy; and consuming media literacy to prosuming media literacy, new dimensions of media literacy were unpacked. Functional media literacy covers the capability to not only understand but also create the media content and messages, whereas critical media literacy includes the capability to analyse, evaluate, critique, and create media messages and content (Chen et al., 2011).

The four dimensions of new media literacy are revealed in the frameworks by Chen et al. (2011). First, functional consumption, individuals who can access and understand media content. Second, critical consumption, individuals who not only understand the message but interpret and judge critically. Third, functional prosumption, individuals can create media content using new media. Fourth, critical prosumption, individuals know their position in media participation, construction, and publication. They can create media content that reflects their critical thinking. Thus, this study proposed the first research question.

RQ1: What is the level of each dimension of new media literacy in Malaysia?

2.3 MOTIVATION IN SOLVING FAKE NEWS PROBLEM

The motivation in solving fake news problems in this study is grounded on the situational theory of problem-solving (STOPS), which is useful in understanding the public's communicative actions when they are facing problems (Kim & Grunig, 2011). Situational motivation in problem-solving is one of the variables in the theory, defined as a state where people are epistemically and cognitively ready to resolve a problem (Kim & Grunig, 2011). This motivational variable helps the public identify something to be done instead of thinking about what to do (Kim & Grunig, 2011).

Critical thinking has been associated with problem-solving in past studies of different contexts (Fero et al., 2009). Toharudin (2015) also supported the fact that critical thinking can assist in

problem-solving. In the current study, people who are media literate tend to be able to think critically and perceive false information such as fake news as a problem in society. When they feel uneasy about the problem identified, they are inclined to know more about the problem in order to solve the problem (Choi & Kim, 2015). With that said, critical media literacy plays a key role in motivating media users to solve the problem of fake news.

Media literacy in relation to fake news had been widely discussed in past studies. El Rayess et al. (2018) suggested that media literacy is imperative to educate the students on the skills to evaluate the authenticity of the information. A long-term solution to fake news is also recommended to include the community to help tackle fake news and expand policies on media literacy and critical thinking, the public needs to be encouraged to verify information (Haciyakupoglu et al., 2018) as literacy encourages the analysis of hidden ideas behind the text (Pangrazio, 2018). However, the question of whether people with higher media literacy will be more motivated to take initiative to counter fake news remains unresearched. Therefore, this study proposed the following research question and hypotheses:

RQ2: What is the relationship between new media literacy and motivation in solving fake news problem?

H1: New media literacy is positively related to motivation in solving fake news problem.

H2: Critical consumption is more positively related to motivation in solving fake news problem than functional consumption.

H3: Critical prosumption is more positively related to motivation in solving fake news problem than functional prosumption.

3. METHODOLOGY

3.1 PARTICIPANTS

A total of 164 questionnaires collected from students who are 18-25 years old from a private university in Malaysia using a convenience sampling method. In this study, there were four independent variables (new media literacy dimensions) to be measured, a minimum of 129 sample size was suggested by G Power to conduct regression analysis. With that said, the sample size in this study has met the minimum requirement. The sample consisted of 68 males (41.5%) and 96 females (58.5%). In terms of age, there were 101 (61.6%) respondents from the age group of 18-21, whereas 63 (38.4%) respondents aged 22-25.

3.2 MEASURES

There were three sections in the questionnaire. Demographic information was collected in the first section. The second was new media literacy, where the scale was adopted from Koc and Barut (2016). There were four sub-scales which represent different dimensions of new media literacy, namely functional consumption, critical consumption, functional prosumption, and critical prosumption. All scales were measured using a 5-point Likert-type scale. The last section asked about the motivation in solving fake news problem, the scale, extracted and adapted from the situational theory of problem-solving scale (Kim & Grunig, 2011), comprised six items (e.g. I am determined to solve fake news problem as soon as possible), 5-point Likert-type scale was utilised to measure the items.

3.3 ANALYSIS

IBM SPSS Statistics 21 software was used to analyse the collected data. Factor analysis was

first conducted to identify the new media literacy dimensions. Means scores were used to answer RQ1. Pearson correlation and regression analysis were utilised to answer RQ2 by testing H1 to H3.

4. RESULTS AND FINDINGS

4.1 FACTOR ANALYSIS AND RELIABILITY

Exploratory factor analysis by using Varimax rotation was employed to examine the items and dimensions of new media literacy. The Kaiser-Meyer-Oklin values were .872, exceeding the threshold value of .6 (Kaiser, 1974). There were four factors with eigenvalues above 1 identified in the analysis, after removing items that were having factor loadings less than .5, cross-loadings or communality lower than .4, or not loaded on any factor. The results Table 1 showed that, based on the original scale, F1 with most items retained belonged to critical prosumption, which explained 35.8% of the variance.

Table 1: Factor loadings of new media literacy

Factors	F1	F2	F3	F4	Communality
Critical Prosumption (CP)					
CP1: Produce opposite or alternative media contents.	.803				.722
CP2: Design media contents that reflect critical thinking of certain matters.	.773				.640
CP3: Influence others' opinions by participating in social media environments.	.742				.618
CP4: Make a contribution to media by reviewing current matters from different perspectives (social, economic, ideological, etc.).	.741				.571
CP5: Make discussions and comments to inform or direct people in the media.	.690				.536
CP6: Construct online identity consistent with real personal characteristics.	.677				.598
CP7: Collaborate and interact with diverse media users towards a common purpose.	.636				.515
CP8: Produce media contents respectful to people's different ideas and private lives.	.629				.462
CP9: Develop original visual and textual media contents (video clips, web page, etc.).	.584				.464
Functional Prosumption (FP)					
FP1: Use hardware necessary for developing media contents (text, image, video, etc.).		.828			.740
FP2: Create user accounts and profiles in media environments.		.824			.718
FP3: Use software necessary for developing media contents (text, image, video, etc.).		.821			.759
Functional Consumption (FC)					
FC1: Perceive different opinions and thoughts in the media.			.748		.613
FC2: Notice media contents containing mobbing and violence.			.723		.599
FC3: Realise explicit and implicit media messages.			.643		.598
Critical Consumption (CC)					
CC1: Make a decision about the accuracy of media messages.				.810	.743
CC2: Evaluate media in terms of legal and ethical rules (copyright, human rights, etc.).				.808	.753
CC3: Analyse the positive and negative effects of media content on individuals.				.661	.557
Eigenvalue	6.441	2.171	1.443	1.151	
% of variance explained	35.781	12.060	8.018	6.393	
Reliability	.891	.820	.701	.745	

As for the other three factors, namely functional prosumption, functional consumption, and critical consumption, explained 12.1%, 8%, and 6.4% of the variance and retained three items respectively. In the current study, the sub-scales have a good internal consistency with a Cronbach's alpha coefficient reported at .701 (Functional Consumption), .745 (Critical Consumption), .820 (Functional Prosumption), and .891 (Critical Prosumption) fulfilling the minimum value of Cronbach's alpha coefficient as all are more than 0.7.

4.2 MEANS SCORES OF NEW MEDIA LITERACY DIMENSIONS

Table 2 showed that functional media literacy than critical media literacy. Of the four dimensions, respondents showed the highest score in functional prosumption, whereas critical prosumption is the lowest.

Table 2: Means scores of new media literacy dimensions.

New media literacy dimensions	M	SD
Functional Consumption	3.89	.62
Critical Consumption	3.71	.70
Functional Prosumption	4.01	.75
Critical Prosumption	3.29	.75

4.3 CORRELATION BETWEEN NEW MEDIA LITERACY AND MOTIVATION IN SOLVING FAKE NEWS PROBLEM

The correlation between new media literacy (independent variable) and motivation in solving fake news problem (dependent variable) was examined using Pearson correlation. The result showed that there was a medium, positive correlation between the two variables [r=.384, $n = 164$, p<.001], with high levels of new media literacy associated with greater motivation in solving fake news problem. The result supported H1.

The contribution of each dimension of the independent variable to the dependent variable was then measured using regression analysis. According to Table 3, the results showed that the dimensions explained 18.6% of the variance [$F(4, 159)$=9.073, p<.001]. However, only critical prosumption showed a significantly positive contribution [β=.397, p<.001] to motivation in solving fake news problem, functional consumption [β=.108, p>.05], critical consumption [β=-.011, p>.05] and functional prosumption [β=-.079, p>.05] did not have a significant contribution. Therefore, H2 was rejected, but H3 was supported.

Table 3: Regression analysis on the relationship between new media literacy dimensions and motivation in solving fake news problem

Dimensions	β	t	*p*
Functional Consumption	.108	1.232	.220
Critical Consumption	-.011	-.131	.896
Functional Prosumption	-.079	-.977	.330
Critical Prosumption	.397	4.671	.000
R Square	.186		
F	9.073		
p	.000		

5. CONCLUSION

This study examined the level of each new media literacy dimensions among the respondents. Functional prosumption achieved the highest mean score, this showed that the respondents were more competent in producing and sharing media content (e.g. image, video, and text) as compared to other dimensions. However, the ability to create media content critically (critical prosumption) was shown the lowest. This showed that respondents were less capable to produce media content or give comments that express their opinions over current issues from different perspectives as compared to the contents that show their lifestyle, entertainment, and interest which do not reflect their critical thinking.

Apart from that, the study further examined the relationship between new media literacy and motivation in solving fake news problem. The result indicated that new media literacy was positively related to motivation in solving fake news problem, however critical prosumption was found to be the only significant factor that contributes to the positive relationship. The findings suggested that the ability to understand the media content (functional consumption), evaluate the accuracy of media messages (critical consumption), or create media content (functional consumption) did not contribute significantly to the motivation in solving fake news problems. According to the new media literacy frameworks by Chen et al. (2011), criticality and prosumption are crucial. The current findings suggested that critical thinking, media content production and online discussion participation such as commenting on the issue and influencing others are the complete set of key abilities and skills that are essential to be a motivated problem solver. People who have different opinions about the media messages and write articles or posts that show different views of a certain topic in the media to influence others' opinions are more likely to perceive fake news as a serious problem and be more determined to solve the problem. With that said, critical prosumption plays a key role in motivating people to counter fake news, this can be done by leaving a comment on the fake news post on social media to claim or prove the post is incorrect.

Kim and Grunig (2011) explained that when people are motivated in problem-solving, they will take communicative actions such as select, seek and share information with others. When applied in this context, the motivation to resolve fake news problems exists when people are motivated to seek and share the truth of the news or information to avoid others from being fake news victims. Unfortunately, the respondents in this study showed the lowest level of critical prosumption. It is suggested that media literacy education should focus more on critical prosumption instead of merely teaching the younger generation how to use media.

6. AVAILABILITY OF DATA AND MATERIAL

Information in this study can be provided upon contacting the corresponding author.

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