Jurnal Komunikasi: Malaysian Journal of Communication
https://ejournal.ukm.my/mjc
Jilid 41(1) 2025: 87-106

Determinants of Health Information Verification: Mediating Roles of Fake News Awareness and Network Trust

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ABSTRACT

In the digital era, the proliferation of health information necessitates individuals to evaluate its accuracy and reliability critically. This study investigates the influential factors in predicting health information verification behaviours, focusing particularly on trust in networks and fake news awareness as mediating variables. Data were collected from 400 social networking users across five Malaysian states and analysed using partial least squares structural equation modelling. The findings indicate that fake news awareness emerged as the most significant predictor of health information verification behaviour. Furthermore, social tie variety and information quality significantly predicted fake news awareness. Through the mediation of fake news awareness, indirect relationships between information quality, social tie variety, and health information verification behaviour were identified. These findings highlight the need for practical interventions, such as digital literacy programs and awareness campaigns, to enhance users' ability to critically assess health information. Such efforts are essential for empowering social media users to distinguish reliable information from misinformation, ultimately contributing to better public health outcomes. Going forward, this research deepens the understanding of health information verification behaviour, expands the health sector's existing knowledge base, and provides a comprehensive framework that enriches our understanding of the factors influencing information verification behaviour within the context of health in a non-Western setting.

Keywords: *Health information verification behaviours, social networking users, Malaysia, fake news awareness, social tie variety.*

INTRODUCTION

In today's digital age, individuals can easily access vast amounts of health-related information (Chowdhury et al., 2021; Jayaraman et al., 2020). However, with the abundance of information available, it has become increasingly important for individuals to exercise caution and critical thinking when evaluating the accuracy, credibility, and reliability of the information they encounter (Barua & Barua, 2021; Rodgers & Massac, 2020; Swire-Thompson & Lazer, 2020). Health information verification behaviours are crucial in this process as they enable individuals to make informed decisions about their health and well-being while

*Corresponding author: akmar@upm.edu.my
E-ISSN: 2289-1528
https://doi.org/10.17576/JKMJC-2025-4101-06
Received: 25 July 2023 | Accepted: 5 November 2023 | Published: 30 March 2025

safeguarding themselves against potential misinformation (Howard et al., 2021; Spiekermann et al., 2022). Past research has highlighted the role of health literacy in promoting verification behaviours, yet gaps remain in understanding the specific dynamics within social networking contexts (Liu et al., 2020).

The significance of health information verification behaviour is particularly heightened in the context of social networking sites (SNSs) (Apuke, Omar, & Tunca, 2022). SNSs have gained immense popularity as platforms for seeking health information, sharing personal experiences, and connecting with others with similar health concerns. However, the open nature of these platforms also exposes users to a wide range of information, including misinformation, biased content, and unreliable sources (Khan & Idris, 2019). Consequently, it becomes imperative for individuals to exercise even greater scrutiny when engaging with health information on SNSs. By employing verification behaviour within this context, users can protect themselves from the potential risks of misinformation (Bastick, 2021; Bin Naeem & Kamel Boulos, 2021). Engaging with trusted sources such as reputable health organizations, healthcare professionals, and verified experts provides reliable, evidence-based information (Bautista et al., 2021; Kington et al., 2021).

Trust in network connections and awareness of fake news are two key factors that significantly influence the credibility of health information shared within social networks (Li & Barbieri, 2020). It shapes whether information is accepted at face value or scrutinized further, while fake news awareness empowers individuals to discern accurate information from misleading content (Majerczak & Strzelecki, 2022). By understanding these factors, individuals can critically evaluate health information, thus shielding themselves from potential misinformation and reinforcing their commitment to seeking reliable sources.

The interplay between trust in social networking and fake news awareness significantly influences health information verification behaviour (Khan et al., 2021). The level of trust placed in network connections can either facilitate or hinder verification efforts. Individuals with a strong foundation of trust may accept information without rigorous scrutiny, potentially overlooking the need for further verification. Conversely, those with heightened fake news awareness are more likely to adopt a critical stance, engaging in thorough fact-checking and verification processes (Apuke & Omar, 2020). Additionally, the relationship between social tie variety and trust in networks is another crucial factor to explore (Khan et al., 2021; Obadă & Dabija, 2022). A diverse network with expertise in the health sector can enhance trust in shared information. This trust, in turn, influences individuals' reliance on their network for health information verification, potentially reducing the need for extensive independent verification (Khan et al., 2021).

The quality of information available to individuals within the health sector is paramount (Southwell et al., 2020). Individuals with higher fake news awareness are more discerning when evaluating information quality (Kim & Kim, 2020; Majerczak & Strzelecki, 2022). Consequently, those aware of fake news prioritize high-quality information in their health-related decision-making processes (Dame Adjin-Tettey, 2022). Furthermore, consistent access to high-quality information reinforces trust in networks, strengthening reliance on these networks for accurate health information.

In networks characterized by high cognitive homogeneity, individuals are likelier to share similar beliefs and perspectives (Fadhila et al., 2021). This can create an echo chamber effect, where individuals reinforce each other's existing beliefs and are less exposed to conflicting viewpoints (Rahman et al., 2022). However, awareness of fake news and diversity of information sources can mitigate these effects, ensuring a more balanced and critical evaluation of health information.

Given the prevalence of misinformation in today's information landscape, there is a pressing need to address the lack of research on predictors of information verification behaviour in the health sector (Bin Naeem & Kamel Boulos, 2021; Röchert et al., 2021). This study focuses on Malaysia, where the accuracy and reliability of health-related information on social media are decreasing (Balakrishnan et al., 2022; Kovalan et al., 2021; Yatid, 2019). By investigating social tie variety, cognitive homogeneity, fake news awareness, information quality, and trust in networks, this study aims to fill this research gap and contribute to evidence-based interventions that promote informed decision-making and combat the detrimental effects of misinformation in the health domain.

RESEARCH FRAMEWORK

Fake News Awareness

The ability to identify and comprehend incorrect or misleading information in a person's social network is known as fake news awareness (Talwar et al., 2020). This ability is significant since it is linked to behaviours that involve verifying health information. Individuals who are more knowledgeable about fake news tend to critically assess and fact-check health information before accepting and acting upon it, actively seeking credible sources (Balakrishnan et al., 2022). This understanding is essential in health contexts since incomplete knowledge can result in poor choices and potentially hazardous actions (Morley et al., 2020). Despite previous cross-cultural studies conducted in Spain, Lebanon, and Poland reporting the beneficial effects of verification behaviour on detecting fake news (Dabbous et al., 2022; Majerczak & Strzelecki, 2022), there remains a significant gap in examining the direct impact of fake news awareness on health information verification behaviour, particularly in diverse cultural settings. To address this gap, this study formulated the following hypothesis:

H_1: There is a positive association between fake news awareness and health information verification behaviour.

Trust in Networks

The degree to which individuals trust or rely on others in their social network, particularly on social networking platforms, is called trust in the network (Torres et al., 2018). This trust significantly influences how users verify health information (Ayub et al., 2017; Rosemary et al., 2022). People with high trust in their networks may not actively seek further confirmation of information, as they believe their networks consist of trustworthy and knowledgeable individuals (Stefanone et al., 2019). Conversely, those with low trust in their networks are more likely to express scepticism about the health information given within their networks and doubt its veracity and correctness. This scepticism leads them to independently verify information by seeking alternative sources or professional advice. According to a recent study, individuals with high trust in reliable sources were less likely to disclose information

on WhatsApp because they were more likely to engage in verification activities (Vermeulen & Van Belle, 2023). Given this understanding, it is crucial to explore the nuanced role of trust in networks in influencing health information verification behaviour, particularly in how it may deter or encourage such behaviour. Based on this understanding, the following hypothesis was formulated:

H_2: There is a negative association between a high level of trust in the network and health information verification behaviour.

Social Tie Variety

Social tie variety refers to the wide range of offline communities and settings represented and manifested in a person's online social network (Gerhart & Sidorova, 2017). This concept incorporates the diverse connections and relationships that transcend in-person interactions into the virtual sphere. It recognizes that people engage with others from various offline groups, social networks, and societal contexts to have a robust online social presence. The diversity of identities and beliefs in an individual's online network encourages critical assessment and scrutiny of information, especially when it conflicts with pre-existing knowledge (Styvén & Foster, 2018). Previous studies among American users of social networking sites have demonstrated the importance of social tie diversity in predicting fake news awareness (Torres et al., 2018). Furthermore, according to Torres et al. (2018), there is a negative correlation between the variety of a person's social ties and their level of trust in their online networks, suggesting that as a person's online networks expand, so does their level of scepticism towards it. This expanded network exposure fosters an environment where individuals are more critical of information, increasing their fake news awareness and verification behaviours. However, this relationship needs further exploration across different cultural and contextual settings to better understand its implications for health information verification behaviour. Hence, the following hypotheses were proposed:

H_{3a}: There is a positive association between social tie variety and fake news awareness.

H_{3b}: There is a negative association between social tie variety and trust in the network.

Cognitive Homogeneity

Perceived cognitive homogeneity pertains to an individual's subjective evaluation of the degree to which social network members hold similar viewpoints and beliefs (Gerhart & Sidorova, 2017). This concept underscores the individual's perception of alignment between their cognitive perspectives and those of their online social networks. However, cognitive homogeneity often limits exposure to diverse perspectives, leading to increased susceptibility to fake news and misinformation (Allcott & Gentzkow, 2017). When surrounded by like-minded individuals who reinforce their beliefs, individuals may become less critical in evaluating information and less likely to question its accuracy or validity. This phenomenon can lead to a false sense of security and trust within the network, making individuals more vulnerable to misinformation. Torres et al. (2018) conducted a study that revealed a significant association between cognitive homogeneity, network trust, and fake news awareness. While this association is well-documented, there is a gap in understanding how cognitive homogeneity directly impacts health information verification behaviour across

different cultural contexts. Based on these findings, the following hypotheses were formulated for this study:

H_{4a}: There is a negative association between cognitive homogeneity and awareness of fake news.

H_{4b}: There is a positive association between cognitive homogeneity and trust in the networks.

Information Quality

Information quality is defined as the general dependability, accuracy, and credibility of information delivered inside a specific platform or context (Jiang et al., 2021). High information quality allows individuals to better discriminate between false and genuine information, thereby increasing their awareness of fake news. Furthermore, trust and information quality are closely related. Users are more likely to trust information that is accurate, trustworthy, and supported by dependable sources. Conversely, poor information quality, such as inaccurate or deceptive material, can diminish people's trust in SNSs and shared information. Research has shown that information quality has a stronger influence on developing trusting views than distrusting beliefs, highlighting its crucial role in fostering fake news awareness and verification behaviour (McKnight et al., 2017). Additionally, Kumar et al. (2023) found that information quality positively impacts individuals' intention to share fake news. In other words, greater awareness of the existence and characteristics of fake news is correlated with higher information quality. However, further research is needed to understand how information quality influences health information verification behaviour across different contexts and populations. Based on these insights, the following hypotheses were proposed:

H_{5a}: There is a positive association between information quality and fake news awareness.

H_{5b}: There is a positive association between information quality and trust in the networks.

Mediating Effects

This section explores the critical role of awareness and trust in understanding information verification behaviour within the health context. Awareness prompts individuals to actively verify health information, while trust in networks influences the perceived credibility of information sources and the necessity for further verification. The implications of this association between awareness, trust, and information verification behaviour are discussed in the context of promoting health literacy, enhancing critical evaluation skills, and fostering trust in reliable sources. While self-disclosure theory (Archer, 1979) posits trust as a mechanism that encourages personal information sharing in dyads, previous research has not fully examined trust in networks as a mediating mechanism (Nifadkar et al., 2019).

Additionally, a recent study by Apuke et al. (2022) examined the effect of fake news awareness as an intervention strategy for motivating news verification behaviour among social media users in Nigeria. This study revealed that fake news awareness was an effective intervention strategy, intensifying the urgency and necessity to verify news before sharing, thereby emphasizing its potential mediating role in verification behaviours. While prior research has demonstrated the direct effects of fake news awareness on news verification behaviour, no studies have examined fake news awareness as a mediator. Based on these research gaps, the following hypotheses were proposed for further investigation:

H_{5a}: There is a mediating factor of trust in networks on the relationship between social tie variety and health information verification behaviour.
H_{5b}: There is a mediating factor of trust in networks on the relationship between cognitive homogeneity and health information verification behaviour.
H_{6a}: There is a mediating factor of fake news awareness on the relationship between social tie variety and health information verification behaviour.
H_{6b}: There is a mediating factor of fake news awareness on the relationship between cognitive homogeneity and health information verification behaviour.
H_{6c}: There is a mediating factor of fake news awareness on the relationship between information quality and health information verification behaviour.
H_{7e}: There is a mediating factor of trust in networks on the relationship between information quality and health information verification behaviour.

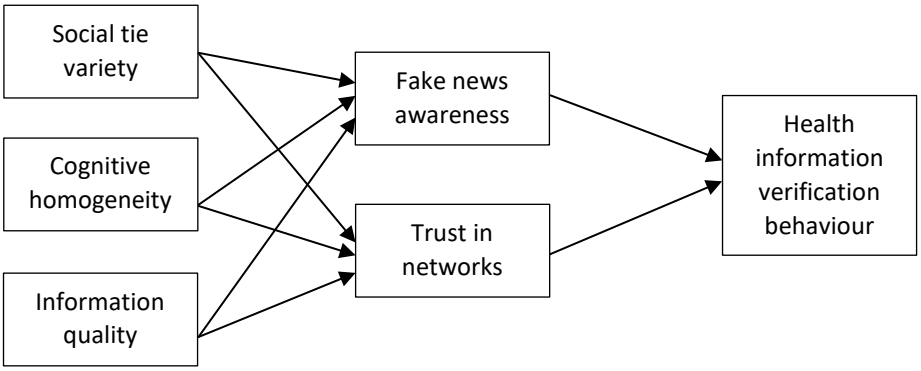

Figure 1: Research framework

METHODOLOGY

Participants and Procedures

Quantitative data for this study were obtained by administering self-reported surveys to Malaysian users of social networking sites. Participants were required to have possessed their smartphones for at least a month at the time of recruitment and have an account on at least one of the 23 most widely used social media platforms (Kemp, 2021). The questionnaire was designed based on established scales from previous research and was subjected to pilot testing to ensure its reliability and validity. A pilot test was conducted with 50 participants who were not included in the main study, and minor adjustments were made based on their feedback to enhance clarity and comprehension. The reliability of the instruments was confirmed through Cronbach's alpha, with all scales showing satisfactory internal consistency ($\alpha > 0.70$), thereby validating the questionnaire for the main study.

A multi-stage sampling strategy was utilized, as recommended by Ascione et al. (2016) and Etikan and Bala (2017), to ensure an unbiased selection procedure. Malaysia has five geographical regions: north, central, south, east coast, and Sabah. These specific regions were chosen to ensure a representative sample that reflects the diverse demographic and cultural characteristics of the Malaysian population. The random selection of one state from each region further enhances the representativeness and generalizability of the findings. Eighty users were randomly selected from each state. First, the normality of the acquired data was

investigated by analysing histograms and normal Q-Q plots of probability to determine the applicability of parametric testing.

Additionally, the Kolmogorov-Smirnov (K-S) test was used, demonstrating no outliers in the sample. Among the respondents, approximately 65.6% were younger than 23 years old, and most were male (52.8%). Of the 325 respondents who provided information about their ethnic background, the Chinese ethnic group constituted the largest proportion (34%), followed by Malay (29%), Indian (10%), and other ethnicities (0.5%). Moreover, most respondents (61%) were employed in the private sector. It was also noted that more than half of the participants (67%) were single.

Measures

Five independent factors were included in the study: social tie variety, cognitive homogeneity, information quality, fake news awareness, and trust in networks. Health information verification behaviour (HIVB) was the dependent variable. All measures were adapted from earlier research (Bailey & Pearson, 1983; Gerhart & Sidorova, 2017; McKnight & Chervany, 2001; Sussman & Siegal, 2003; Torres et al., 2018), with certain modifications to meet the study context. All characteristics were scored on a 5-point Likert scale (1 being strongly disagree, 5 being strongly agree).

Gerhart and Sidorova (2017) describe a nine-item scale for measuring social tie diversity. These items evaluated the range of offline groups and situations represented in an individual's online social networks. Participants assessed how much they agreed with statements like "*People I am connected to on my social network represent various activities I am involved in*" and "*People I am connected to on my social networks represent multiple stages of my life*". This scale's Cronbach's alpha reliability coefficient was .851, demonstrating strong internal consistency. Moreover, Gerhart and Sidorova (2017) defined cognitive homogeneity as the degree to which respondents considered their SNS network members to share their views and opinions. This concept was measured with four items: "*I find most news posted on social networks believable*" and "*I find most news posted on social networks accurate*". Cronbach's alpha reliability coefficient for this scale was 0.734, showing adequate internal consistency.

Fake news awareness, modified by Torres et al. (2018), measured participants' awareness of fake news and their concern about its prevalence in their networks. It was measured using 12 items, including statements like "I am aware of the existence of fake news" and "I am concerned about fake news". Cronbach's alpha reliability coefficient for this scale was .912, suggesting strong internal consistency. Trust in networks was assessed using items derived from McKnight and Chervany (2001). This construct was measured using four items: "*It is easy for me to trust a person/thing*" and "*My tendency to trust a person/thing is high*". Cronbach's alpha reliability coefficient for this scale was .853. Furthermore, health-related information quality was examined using five items adapted from Bailey and Pearson (1983) and Sussman and Siegal (2003), including the statement, "*Health-related information on social media is relevant to me*." This scale's Cronbach's alpha reliability coefficient was 0.788. Finally, eight items were used to assess HIVB), such as "*I will ensure that the authors of health-related news on social media are experts or qualified*". This scale's Cronbach's alpha reliability coefficient was 0.88. Overall, the internal consistency of the scales employed in the

study was good to acceptable, indicating that the items within each construct were dependable for measuring the intended concepts.

Common Method Bias

As all the responses received were from the same source, common method bias had to be tested. Harman's single factor test was performed to determine any potential bias, and a factor only accounted for 23.3% of the most significant variation explained, implying that there was no issue of common technique bias because it was less than 50% (Ramayah et al., 2017). Following the recommendations of Kock and Lynn (2012), the full collinearity test was used to test common method bias further. A dummy variable was regressed against every variable in the model, and the results demonstrated that all values were below the 3.3 cutoff, indicating that the study was not affected by common method bias (Table 1).

Table 1: Full collinearity assessment

Variable	Random Dummy Variable
STV	1.204
CH	1.153
IHQ	1.926
FA	2.413
TIN	1.048

Note: Social tie variety = STV, Cognitive homogeneity= CH, Health information verification behaviour = HIVB, Fake news awareness= FA, Trust in networks = TIN, information health quality = IHQ

Data Analysis

With this, a complex model was created. For the usage of complex models, structural equation modelling (SEM) is an effective analytical approach (Schumacker & Lomax, 2010). However, there are two ways to use SEM: variance-based and covariance-based. According to Hair et al. (2017), "PLS-SEM [partial least squares structural equation modelling] should be used if the research is exploratory or an extension of an existing structural theory" (p.144). This study is exploratory since the links between the topics addressed were not thoroughly examined. Hence, it may be stated that the relationships between these structures must be clarified. Consequently, PLS-SEM was utilized in the current investigation.

RESULTS

Assessing The Reflective Constructs

The current study's authors examined the lower-order reflective constructs' internal consistency, convergent and discriminant validity (Ramayah et al., 2017). Composite reliability (CR), and rho_A, internal consistency was assessed utilizing Cronbach's alpha. The average variance extracted (AVE) and factor loadings were used to assess the convergent validity. The discriminant validity was evaluated utilizing the Heterotrait-Monotrait Ratio of Correlations (HTMT). According to this viewpoint, all factor loadings except IS3, IS5, FNA1, 2, 11, 12 were more than 0.7. As a result, loadings less than 0.7 were removed (Table 2). Furthermore, AVE, CR, CA, and rho_A exceeded the required thresholds of 0.5, 0.7, and 0.7. The authors discovered no problem with discriminant validity because the HTMT values were all less than 0.89 (Table 3).

Table 2: Convergent validity (reflective constructs)

Construct	Item	OL	α	rho_A	CR	AVE	M	SD
CH	CH_1	0.616	0.74	0.745	0.839	0.568	8.04	2.94
	CH_2	0.816						
	CH_4	0.803						
	CH_5	0.762						
FA	FA_1	0.7	0.859	0.866	0.891	0.507	2.43	1.39
	FA_{10}	0.76						
	FA_{12}	0.641						
	FA_2	0.66						
	FA_3	0.726						
	FA_4	0.84						
	FA_5	0.713						
	FA_9	0.734						
HIVB	$HIVB_1$	0.797	0.836	0.861	0.882	0.56	3.62	2.07
	$HIVB_2$	0.798						
	$HIVB_3$	0.857						
	$HIVB_4$	0.808						
	$HIVB_7$	0.702						
	$HIVB_8$	0.774						
IHQ	IHQ_1	0.876	0.764	0.787	0.893	0.807	3.75	1.96
	IHQ_2	0.92						
STV	STV_1	0.794	0.772	0.848	0.848	0.589	2.48	1.35
	STV_2	0.862						
	STV_3	0.823						
	STV_8	0.752						
TIN	TIN_1	0.789	0.853	0.86	0.9	0.693	7.85	3.22
	TIN_2	0.852						
	TIN_3	0.822						
	TIN_4	0.865						

Note: Cognitive homogeneity= CH, Health information verification behaviour = HIVB, Fake news awareness= FA, Trust in networks = TIN, information health quality = IHQ, social tie variety = STV, Outer loadings = OL

Table 3: Discriminant validity Heterotrait–Monotrait (HTMT), Q^2, and R^2

Construct	1	2	3	4	5	6	Q^2	R^2
1. HIVB	0.748						0.672	0.204
2. TIN	0.193	0.832					0.484	0.044
3. CH	0.347	0.287	0.753					
4. FA	0.593	0.184	0.313	0.712			0.364	0.121
5. IHQ	0.363	0.178	0.253	0.351	0.899			
6. STV	0.203	0.05	0.281	0.419	0.205	0.767		

Note: Cognitive homogeneity= CH, Health information verification behaviour = HIVB, Fake news awareness= FA, Trust in networks = TIN, information health quality = IHQ, social tie variety = STV

The bootstrapping approach (5000 samples, no sign changes) was used to assess the structural model (inner model). The results of the structural model analysis revealed that four out of the eight hypothesized pathways were statistically significant, while the other four were not (Table 3). Specifically, H_1 was supported with a significant positive effect ($\beta = 0.501$, $p < 0.001$), indicating that fake news awareness significantly impacts health information verification behaviour. H_{3b} also showed a significant negative effect ($\beta = -0.581$, $p = 0.009$),

suggesting that social tie variety negatively influences trust in networks. Similarly, H_{3a} was supported with a significant positive effect (β = 0.317, $p < 0.001$), and H_{5b} was significant (β = 0.234, p = 0.016), indicating a positive effect of information health quality on fake news awareness. On the other hand, H_2, H_{4b}, H_{4a}, and H_{5a} did not achieve statistical significance ($p > 0.05$), leading to the rejection of these hypotheses.

Finally, the coefficient of determination R^2, the effect size f^2, and the predictive relevance Q^2 were calculated. First, the model's predictive power was evaluated using R^2 values for endogenous factors (Hair Jr et al., 2014). The R^2 values for the three endogenous variables—health information verification behaviour, fake news awareness, and trust in networks were 0.204, 0.121, and .044, respectively, indicating low predictive power (Henseler et al., 2009). These values suggest that while the model explains a moderate amount of variance in health information verification behaviour, it explains less variance in fake news awareness and trust in networks. The model's prediction accuracy was further assessed using the Q^2 criterion, derived from the blindfolding procedure (Sharma et al., 2021). The cross-validated redundancy values for the three endogenous dimensions (trust in networks: 0.464, fake news awareness: 0.3644, and health information verification behaviour: 0.672 were all over medium criteria (0.15), supporting the model's predictive significance. These findings, as shown in Table 3, underscore the importance of considering both R^2 and Q^2 metrics when evaluating model fit.

Mediation Analysis

The key mediators in this study were fake news awareness and trust in the networks, and bootstrapping was used for the mediation experiments. Only one mediator was evaluated in one model; hence two models were employed. With the Sobel Test, there were two paths with significant full mediation effects (cognitive homogeneity → fake news awareness → Health information verification behaviour), whereas there were three paths with significant partial effects. ATT did not mediate the paths between information quality, cognitive homogeneity, and health information verification behaviour. The results are depicted in Table 4. In summary, among all 22 hypotheses, 13 were supported paths (but two were with small effects and/or predictive relevance); five were partially supported, and four were unsupported. The results are summarized in Table 5.

Table 4: Significance testing results of the structural model path coefficients

Hypothesis	*Path*	*Std.Beta*	*SE*	*t*	*sign.*	*p*	F^2
H_1	FA → HIVB	0.501	0.109	4.61	0	***	.312
H_2	TIN → HIVB	0.028	0.081	0.349	0.727	n.s.	.001
H_{3b}	STV → TIN	-0. 581	0.114	3.21	0.009	**	.033
H_{3a}	STV → FA	0.317	0.095	3.33	0.001	***	.123
H_{4b}	CH → TIN	0.249	0.14	1.773	0.077	n.s.	.012
H_{4a}	CH → FA	0.146	0.1	1.462	0.144	n.s.	.010
H_{5a}	IHQ → TIN	0.138	0.14	0.986	0.325	n.s.	.019
H_{5b}	IHQ →AA	0.234	0.097	2.414	0.016	**	.069

Note. Cognitive homogeneity= CH, Health information verification behaviour = HIVB, Fake news awareness= FA, Trust in networks = TIN, information health quality = IHQ, social tie variety = STV., Std. Beta=Path Coefficient; SE=Standard Error; Sign. =Significance, ns= non-significant, $^{**}p<0.01$; $^{***}p<0.001$

Table 5: Significance testing results of the mediation effects of fake news awareness and trust in the networks

Hypothesis	*Path*	*Direct Effect*	*Indirect Effect*	*Sobel z*	*Remark*
H_{5a}	CH → TIN → HIVB	.009(n.s)	.011(n.s.)	1.45	NE
H_{5b}	IHQ → TIN → HIVB	.004(n.s)	.019(n.s)	1.164	NE
H_{5c}	STV → TIN → HIVB	-0.173**	.119***	4.509	PE
H_{6a}	CH → FA → HIVB	-.106(n.s)	.104***	2.968	FE
H_{6b}	IHQ → FA → HIVB	.122*	.105***	3.926	PE
H_{6c}	STV → FA → HIVB	.185**	.083***	3.453	PE

Note. Cognitive homogeneity= CH, Health information verification behaviour = HIVB, Fake news awareness= FA, Trust in networks = TIN, information health quality = IHQ, social tie variety = STV, Std. Beta=Path Coefficient; SE=Standard Error; Sign. =Significance, ns= non-significant, No effect =NE, Partial effect = PE, Full effect = FE. *p<0.05; **p<0.01;***p<0.001

DISCUSSION AND IMPLICATIONS

This study significantly contributes to the understanding of health information verification behaviour within the context of social networking platforms. By extending the existing knowledge base and addressing previously unexplored aspects, this research provides valuable insights into the factors influencing information verification behaviour. The mediation roles of fake news awareness and trust in the networks are elucidated, offering a more comprehensive understanding of the underlying mechanisms. By specifically focusing on a non-Western setting, this study uniquely addresses a critical gap in the literature, emphasizing the importance of cultural context in shaping health information behaviour. The proposed practical interventions provide actionable recommendations to empower individuals to pursue reliable health information. Overall, this research enriches understanding of health information verification behaviour, enhances the health sector's knowledge base, and offers a comprehensive framework applicable to non-Western settings.

Similar Findings to Prior Studies

This research reaffirms several findings supported by earlier research. Firstly, social tie variety continues to be a significant predictor within the research framework, with its importance regarding trust in networks and fake news awareness being consistent with previous studies (Khan et al., 2021; Torres et al., 2018; Villafranca & Peters, 2019). Social tie variety also demonstrates a substantial impact on other constructs within the framework (Shi et al., 2018; Torres et al., 2018). Specifically, in this study involving social networking users in Malaysia, social tie variety exhibits significant positive direct relationships with fake news awareness. This highlights the importance of having diverse social connections in increasing individuals' awareness of fake news.

However, it is worth noting that previous studies have suggested similar findings regarding the relationship between social tie variety and trust in networks. Specifically, some studies have reported a negative association between social tie variety and trust in networks (e.g., Torres et al., 2018). These findings align with the Social Influence Theory, which suggests that diverse social connections might lead to varying levels of trust and influence within networks (Kelman, 1958; Shaw & McKay, 1942). This discrepancy highlights the complexity and context-dependency of the relationship between social tie variety and trust in networks. Further research is needed to explore the underlying mechanisms and potential moderating factors contributing to these contradictory findings.

Moreover, the results uncovered a noteworthy association between fake news awareness and verification behaviour, which aligns with previous research findings (Majerczak & Strzelecki, 2022; Pundir et al., 2021). This consistent pattern supports the Information Processing Theory (Anderson, 1983), emphasizing that individuals' awareness of fake news plays a crucial role in their tendency to engage in verification behaviours. The significance of this relationship lies in its potential implications for the spread and impact of misinformation. However, this study's focus on health information within a non-Western context adds a novel dimension to the existing literature, emphasizing that the awareness of fake news in such a specific cultural setting may influence health-related decisions differently compared to general contexts. While prior studies have examined the relationship between fake news awareness and verification behaviour in general terms, this research uniquely focuses specifically on health. Such specificity is vital, given the distinctive nature of health information and the potential consequences of misinformation within this context.

Different Findings to Prior Studies

This study presents novel findings that deviate from prior research. Specifically, it highlights the prominence of information quality over cognitive homogeneity as a crucial factor concerning fake news awareness (Fadhila et al., 2021; Guo et al., 2020). The results demonstrate a significant correlation between information quality and the awareness of fake news, particularly within the context of health-related information. This supports the Information Processing Theory which posits that the quality of information directly affects cognitive processes related to misinformation detection. The study reveals that individuals who perceive themselves as innovative online users exhibit greater awareness of fake news, leading to increased accuracy and reliability in their understanding of health-related information. Notably, this research is the first to explore the role of information quality as a determinant of verification behaviour within the health sector, whereas previous studies have primarily focused on its implications for decision-making in organizations (Azemi et al., 2018; Hamedan et al., 2019; Moges et al., 2016).

Furthermore, this study diverges from prior research, specifically regarding the relationship between cognitive homogeneity, trust in networks, and fake news awareness. Unlike the findings of previous studies (Tkáčová et al., 2021; Torres et al., 2018), the results of the present research indicate that cognitive homogeneity does not demonstrate a significant correlation with either trust in networks or awareness of fake news. This challenges earlier findings and suggests that cognitive homogeneity may not always influence information processing and trust as previously thought (Eagly & Chaiken, 1993). In other words, the extent to which individuals share similar cognitive perspectives and beliefs with their networks does not appear to impact their trust in these networks or their ability to discern and identify fake news. This disparity in findings highlights a departure from earlier studies, where cognitive homogeneity was directly associated with trust in the networks and fake news awareness. In addition, the current research indicates that trust in the networks does not exhibit a significant association with verification behaviour in the health sector. This finding contrasts with the Social Influence Theory, which typically posits a positive relationship between trust and verification behaviour**.** This suggests that social network users' level of trust in the sources and platforms within their networks does not necessarily

influence their inclination to verify information and fake news thoroughly. This contradicts earlier studies that proposed a positive relationship between trust in the network and verification behaviour (Majerczak & Strzelecki, 2022; Vermeulen & Van Belle, 2023).

These disparities in findings between the present study and previous research could be attributed to several factors. Firstly, differences in the sample characteristics and study context may have contributed to the observed discrepancies. Factors such as demographic composition, cultural background, and the specific domain or topic under investigation can significantly influence the relationships between variables. Furthermore, variations in the measurement instruments used to assess trust in the network, verification behaviour, and cognitive homogeneity could also contribute to the contrasting results. Different operationalisations of these constructs might lead to different outcomes, particularly in the health information context.

Additionally, it is important to consider the temporal aspect. The evolving nature of the media landscape, technological advancements, and changes in the prevalence and sophistication of fake news dissemination may introduce dynamic shifts in the relationships between these variables over time. Therefore, previous studies might have captured different circumstances and dynamics than the present study, leading to different conclusions.

Findings on the Mediators

Moreover, this study brings attention to two critical mediators—fake news awareness and trust in networks—and their roles between the predictors and health information verification behaviour. Regarding two mediators—fake news awareness and trust in networks—the findings demonstrate that both are key mediators between the predictors and health information verification behaviour. Although some studies showed that predictor variables affect fake news awareness and trust in networks, these results are distinctive from prior studies (Apuke, Omar, & Tunca, 2022; Wei et al., 2023). This study illustrates that fake news awareness performs complete mediation between cognitive homogeneity and health information verification behaviour, and it performs partial mediation between the indirect relationships between social tie varies, information quality, and health information verification behaviour. However, trust in networks does not have any mediation effect on information quality, cognitive homogeneity, and verification behaviour in the health context, and it only performs partial mediation between social tie varies and health information verification behaviour. Therefore, in the extended model, habitual online usage becomes a more influential mediator than attitude.

Practical Implications

Given the increasing influence of social networking sites as sources of health information, healthcare professionals are increasingly seeking accurate and reliable information on these platforms. This study provides valuable insights into the key determinants that drive prompt health information verification behaviour on social media platforms. By understanding these determinants, healthcare professionals can focus on factors contributing to verifying reliable health information. This study's findings demonstrate the impact of various determinants, emphasizing the importance of fake news awareness and trust in networks in influencing the tendency to engage in verification behaviour. This knowledge assists healthcare professionals

in formulating effective targeting, segmentation, and online strategies to enhance health information verification. These strategies can address specific goals and objectives.

First, practical interventions should prioritize raising awareness among healthcare professionals regarding the prevalence and impact of fake news on social media platforms. For instance, developing a structured training program that includes workshops on identifying and combating misinformation could be highly effective. Additionally, creating a resource toolkit with real-world examples of common misinformation cases can further equip professionals with practical skills to identify and critically evaluate fake news, enabling them to make informed decisions and provide accurate health information. Healthcare professionals should consider establishing partnerships with reputable organizations and fact-checking services to ensure the accuracy of health information disseminated on social media. Implementing regular audits of health-related content shared on social media platforms and using evidence-based guidelines to evaluate this content can also enhance the reliability and credibility of health information, facilitating the verification process for professionals and the public.

Third**,** the study highlights the influence of social tie variety on fake news awareness, which indirectly affects health information verification behaviour. Healthcare professionals can leverage this knowledge by organizing networking events and online forums that encourage diverse interactions among colleagues and experts. Promoting interdisciplinary collaborations and incorporating diverse viewpoints in discussions on health topics can expose professionals to different perspectives and increase their awareness of fake news, facilitating the verification of health information.

In summary, the practical implications of this study involve implementing targeted and segmented strategies, focusing on fake news awareness, enhancing information quality, leveraging social tie variety, and developing practical interventions for healthcare professionals. These implications can guide professionals in formulating effective online strategies, enhancing health information verification, and ultimately improving overall health outcomes on social media platforms.

CONCLUSION

With a specific focus on network trust and false news awareness as mediating variables, this study's findings illuminate the key variables determining health information verification behaviours. The results emphasize the importance of fake news awareness as the most important predictor of health information verification behaviour, indicating that people who are more aware of the existence and impact of fake news are likelier to verify health information thoroughly. The study also shows that social tie diversity and information quality significantly affect how much people are aware of fake news. Through the mediation of fake news awareness, the mediation analysis also reveals indirect correlations between information quality, social tie diversity, and health information verification behaviour. Despite its contributions, this study has several limitations.

First, the findings cannot be generalized to other populations or circumstances because the data were only gathered from a limited sample of Malaysian social networking users. To enhance the generalizability, future research should explore how these findings might differ across various cultural and geographical contexts. For instance, comparing data

from users in Western countries or other regions with different social media practices could provide insights into how cultural factors influence health information verification behaviours. Additional research should replicate the study using different samples to establish the validity and generalizability of the findings.

Second, because the study used self-reported data, recollection, and response biases could have affected the results. Future research may include objective metrics or behavioural data to validate and support self-reported findings. Furthermore, because the study concentrated on a narrow range of determinants, it did not examine additional variables that might affect individuals' propensity to verify health information.

To understand the phenomenon more deeply, future research should consider including other variables and examining how they relate to verification behaviour. Furthermore, given the dynamic nature of social media platforms, longitudinal studies can shed light on the temporal correlations between the variables under study, enabling a more nuanced understanding of how they interact over time. Last but not least, cross-cultural comparison studies can illuminate the cultural aspects that influence health information verification behaviour and help identify context-specific methods for enhancing verification efforts.

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