

ONLINE NEWS CONSUMPTION ABOUT COVID-19 PANDEMIC A SNAPSHOT FROM VIETNAM

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Abstract - Misleading and fake news surroundings COVID-19 crisis cause confusion and risk-taking actions that can harm public and society wellbeing. Research on media effect on news consumption has soon attracted high scholarly interest. However, the majority of existing studies were Western-dominated and conducted in the early stages of the pandemic. Aiming to address these gaps, this paper probes into news consumption about COVID-19 in the 4th wave of Vietnam. Results show that internet-based websites (exclude online newspapers) were most-used by correspondents for news about the health pandemic. However, the internet users were less frequently to access news than online newspapers readers. Vietnamese public paid a huge attention to the COVID-19 situation whereas they diverged their interests in other pandemic information, i.e governmental policies, vaccine issues and scientific knowledge about Coronavirus. Despite their prime reliance on websites and other internet channels for COVID-19 updates, people did not trust them as a credible source of health risks.

Key words - News consumption; COVID-19; infodemic; fake news; risk communication

1. Introduction

In the midst of COVID-19, the world has been threatened by another crisis: The infodemic which is warned by WHO that bringing as dangerous consequences to human and society as the health pandemic does [1], [2]. The spreading of misinformation, hoaxes and fake news about this disease and its treatment has caused serious damage to human and the social wellbeing. Research on COVID-19 infodemic and the news consumption as well as avoidance have soon attracted high scholarly interest [3]–[6]. However, the majority of existing studies focus on Western context but there is insufficient understanding of how lay public in the developing countries engage with the pandemic information. Furthermore, research was primarily conducted in the early stages of the pandemic when the little is known about the virus and its consequences at the “new-normal” stages. Research also limited to local rather than and nationwide level and mostly Western-dominated [3], [7], [8]. Aiming to address these gaps, this study employs a national survey to explore how Vietnamese citizens consume COVID-19 news in the 4th stage of COVID-19. This paper particularly focuses on the online news consumption because Internet becomes the most popular news platform in Vietnam [9]. By analysing the audience use and gratification, it is hoped to feature initial suggestions and lessons to improve journalism practice in and post-pandemic time.

2. Literature review

Research on media consumption has attracted a substantial scholarly interest in the West. PEW Research Centre and Reuter Institute are the two leading research institutions annually measuring public news consumption, especially their digital usage. For example, PEW recent publication reveals that about half of Americans get news on social media at least sometimes. Facebook outpaces other all other social media channels to become the prominent social media sources [10]. This finding is in accordance with Reuter digital news report 2021 that the use of social media for news is high, especially in terms of low levels of education and among young people. Particularly, according to this report, there was a tendency of news avoidance during the infodemic time. Fake news and misleading information, especially on social network, such as Facebook and WhatsApp become a global concern. The report also shows a prime reliance on big mainstream national brands for digital news. Yet, an emerging increase of subscription was given to local or regional newspapers because their coverage of local information including politics and crime was relevant to public daily lives [11]. In the United Kingdom, a national survey by Jigsaw research shows that television was the main source of news (79%), followed by the internet (73%), with nearly half of adults using social media (49%) and/or other websites/apps (49%). Similar to Reuter and Pew research, Jigsaw study has seen a difference of news consumption in terms of age. While the over 65-year-old adults mostly chose television as their prime news medium, British youth primarily obtained news from internet.

Along with general research on news consumption, during the last two years, researchers around the world have seen a vital need to explore what and how public change their media consumption in the chaotic pandemic and infodemic. Early research by Jigsaw and Nielsen et al. both show a sharp rise in media consumption and television and online news [12], [13]. However, according to Van Aelst et al. [6], despite this overall increase, there was difference of news use across nations. For example, among 17 European countries, Poland, Romania and Austria saw the lowest rise in news consumption whereas highest news usage was found in Germany, Belgium and Sweden. Results of Nielsen et al. consolidate the divergent news use by revealing that while online news use surpassed television news consumption in Argentina, South Korea, Spain, UK and the US, an opposite trend was seen in German [13].

Report by Nguyen et al. also find a clear fluctuations of British news consumption of COVID-19 caused by the pandemic seriousness and its associated lockdown status [8]. Notably, despite of the wide reach of online news caused by the strong need for information in the times of crisis, legacy media remains the most trustworthy source of COVID-19 information. As observed in European countries, public service media has a higher level of trust among people in comparison to commercial counterpart in the fight over COVID-19 misleading information [6]. Study in the UK provides data that mainstream media outlets were the dominant and important sources about pandemic for British public while information shared by friends of family on social media was among least important sources of pandemic updates [8]. The increasing reliance on mainstream media and official sources for accurate and transparent information suggests the crucial role that cannot be replaced of legacy media in the health crisis.

Existing research on media and the COVID-19 pandemic is largely Western-centred. As such, it has limited capacity to provide a holistic account of how audience consume and engage with COVID-19 news. Our study aims to fill in this gap by providing a snapshot into the media diaries of Vietnamese audience. As seen in the literature that several changes in news consumption, particularly the recovery of television and decline of print consumption were not only caused by the audience themselves but also due to the practical constrains of lockdown. Thus, this research focuses on the digital news consumption during the 4th wave of COVID-19 in Vietnam. As online news becomes a dominant source of information across the globe and Vietnam [9], by examining the online news consumption in the period of pandemic, it hopes to explore the extent to which COVID-19 impacts on news consuming in Vietnam.

3. Theoretical frameworks

3.1. News consumption

According to Inal and Sevik, media consumption is the habits of reading newspapers, magazines, blogs, books, listening to music, watching TV shows or movies in a given time [14]. Tombul defines media consumption as the total amount of time a person spends on media products [15]. Zenith research on media consumption in 71 countries, including Vietnam, does not mention the concept but emphasises the duration of time as the prominent indicator of news consumption [16]. Media consumption thereby refers to the mass of time an audience spends on reading newspapers and magazines, watching television, listening to radio, going to the cinema, watching outdoor advertisements, and surfing on the Internet. However, according to PEW research centre, studying media consumption is not only about exploring which platforms audience used to access news, but more importantly, identifying how and by what way they consume news [17].

Despite various approach to media consumption, scholars were in high consensus that race, socio-economic status and education level are primary factors having

significant impact on public news consumption.

For example, research by Samuelson, Carter, and Ruggels [18] shows that the higher education level a person reaches, the more interested in news he would be. This study also reveals television is not a popular channel for highly educated public. Instead of watching TV shows, they spend more time on books, newspapers, magazines and their families [18]. In the same vein, Westley and Severin [16] agree that the highly educated group prioritise printed newspapers to television as a trustworthy source. Age, sex, place of residence and socioeconomic status, as well as political preference are also dependent factors affecting the way people consume news [19].

In tandem with education, McCombs pointed out race plays an important role on news consumption [20]. There was difference between the White-educated and Negro non-educated people towards political news. However, race was not an influential factor in case of high school graduated audience. Both White and non-White evaluated prints as more accurate sources of news than television.

Income is another important factor affecting information consumption. It is evidenced in the experiment of Greenberg and Dervin that income had more impact than race on news diaries [21]. Respondents who lived under the average income spend as twice time as those with average income and above for television. Regardless races, the low earners mainly relied on television for information, while high income group was more flexible with both prints and broadcasting channels.

However, in the 21st century, internet has destroyed the old habits and rituals of news consumption [22]. Instead of consuming news at a certain time of day which were driven by personal choice and the social structure (i.e. what time does the paper delivered, what channel is the show on), modern audience can consume news everywhere and anytime because they are now surrounded by news. The internet offers news 24/24, in various formats, platforms and to any devices. The transition of public from traditional to digital platforms has brought drastic change to the news industry. A large of research was conducted to re-examine the new media consumption to find an appropriate business models for the news organizations [10], [22], [23]. In our recent study, more than 70% of the respondents chose internet as the prominent channels they frequently used to update news. The data was 54% for television, 42% for print newspapers, respectively. Just over 10% of respondents accessed print newspapers for news usage.

However, there are also empirical data showing that despite of high-tech explosion, news users are still influenced by past consumption habits. Although changes have occurred, particularly in terms of traditional media decline, they have not significantly affected the news consumption situation [24]. Early research during the last decade showed that the online displacement to traditional media was merely among younger media users and was geographically divergent. Online news access also varied according to socioeconomic status, educational attainment, and age [24]. Thus, this study employs Vietnamese online news consumption to re-evaluate the possible change of

audience behaviour over time as a result of technological development.

Along with technology and the world-wide-web development in particular, research also found health crisis has a drastic impact on the media consumption [6], [25]. Even though previous studies saw most people sought pandemic information through digital news platforms, their attitude to online news were varied due to the misleading information on the internet. Whether online news is considered as the most important and reliable source of pandemic news is the crucial issue of news consumption research. In tandem with fake news, lockdown status has changed the way we live, consume, and avoid news. Research show that people stay in their homes for a longer time during the day increases the time they spend on television and internet. Several studies even observe a domination of mainstream media to other alternative news channels, i.e. social media [8], [12]. Our study, thus, probes into the context of Vietnam to explore whether the digital news routine is affected by the pandemic. It is hoped to illustrate the multiple ways in which Vietnamese audience engage with online media during the public health crisis. Demographic factors, including sex, education levels and area of residence will be used to portray Vietnamese news consumer in the time of Corona pandemic.

3.2. Media and public health crisis

Public understanding of health and health policy merely shaped by the media discourse of health and illness. Print, broadcasting and online media representation of health play an indispensable role to set public perception of, promote their engagement in and guide their actions towards healthcare practices, and health policy [26]. Its role is even more important in health crisis and natural hazard [27] when people are uncertain and vulnerable to the risk. Public is seen to pay more interest in health crisis and risk news vice versa [16]. However, media communication of risk has been found to underrepresent or overemphasise the health threat and its consequences [28], [29]. Imbalance health news coverage sometimes leads to conflicts of interest that may influence public decision towards health advices [30].

The media effect on public understanding of health has attracted a substantial attention of media scholars [26]. Ahmed and Bates suggest a comprehensive knowledge of media role in health education and promotion should take digital news channels into account. Online media, especially social media, has brought a new mechanism to health care as it offers a channel for the public, health professionals and health policy makers to communicate about health issues [26]. This study considers COVID-19 as a case study to explore the impact of crisis on news consumption. While in the past, when crises occurred, people often relied on news media for news updates [6], contemporary audience have multi-choices of news sources. Thereby, whether this traditional news consumption remains in the present competitive media environments or people turn into other platforms for information? A national survey with online news user in Vietnam would provide further robust and comprehensive

understanding of health news consumption in the time of pandemic.

4. Research question

This study aims to answer the key research question “How Vietnam audience consume online news about COVID-19?”, which can be divided in bellowed sub-questions:

- RQ1: What online channels did they use to update COVID-19 news?
- RQ2: How often did they update online news about COVID-19?
- RQ3: What were COVID-19 information they pay attention to?
- RQ4: How did they assess COVID-19 online news?

5. Methodology

An expected 1000 participant-questionnaire survey from Vietnamese public members aged 18 plus, in their wide range of sex, education level, and region of residence was targeted to answer the research questions. A sufficiently large and representative sample size like this one is hoped to provide scientific evidence and allows the research team to generalise their conclusions to the entire Vietnamese science journalism's audience.

A combination of purposive and quota sampling was used to ensure: (1) The sample was sufficiently divergent with regards to age, sex and location; (2) The feasibility of data collection caused by COVID-19 fieldwork restriction; (3) The limited research time and financial budget.

The survey was conducted in March 2022 which is acknowledged the 4th waves of COVID-19 pandemic in Vietnam. At this stage, the government has changed their responses to COVID-19. Instead of measuring the infected cases, testing and serious national lockdown, Vietnam central bodies and localities issued flexible strategies to deal with the pandemic at local level. At the same time, public, who were fully or partly vaccinated, were not too frightened to the virus as they were in the 1st and 2nd COVID-19 waves. Carrying out the survey in this period, thus, the researcher expected to obtain a comprehensive understanding of how Vietnamese audience experience and respond to the pandemic.

The questionnaire was developed based on PEW study of news consumption across social media [10] and Reuters Institute 2021 research on digital news [11]. Questions were also adopted from a survey about news consumption in the United Kingdom during the pandemic by Office Communications [12]. Pilot survey was carried on with different targeted groups to ensure the validity of each question.

After revisions, the survey was delivered to both online and offline population. 487 valid questionnaires were collected, reaching nearly 50% of the total expected responses. Data were then analysed by SPSS 27.0, primarily using descriptive, chi-square and t-tests to explore how Vietnamese consume pandemic news.

6. Results and discussions

6.1. Online channels used for COVID-19 news

Our survey shows that online websites, social media and other internet channels were the most-used online sources about COVID-19 (61%), surpasses online newspapers, i.e. Dantri, Vnexpress, Vietnamnet, Tuoitre News or Thanh nien Daily (39%). A chi-square test of independence shows there is no statistically significant difference between male and female in choosing their news sources (data not shown). However, there is statistically significant difference between levels of education in the online platforms consumption ($X^2(1, N=487)=6.59, p<.05$) (Table 2). While high school and undergraduate audience tend to earn COVID-19 information from the so-call contemporary news media, postgraduate are more likely to use the more traditional – online newspapers. Similarly, Fisher exact test indicates a statistically significant difference between region of residence and online media sources of COVID-19 outbreak. Standardized residual examination shows that urban citizens prefer e-papers than online alternative news (data not shown). Recent years have seen both a decline in public follows and their trust in mainstream media [8]. Our findings seem to offer some interesting evidence that during a crisis the higher educated audience go back to mainstream media for more and official accurate sources.

Table 1. Online channels used for COVID-19 news

Channels	Frequency (N = 487)
Online newspapers	39.0
Other online websites and internet channels	61.0

Table 2. Online channels used for COVID-19 news by level of education

	Online newspapers	Other online websites and internet channels
High school (N=147)	42.9	57.1
Undergraduate (N=290)	34.8	65.2
Post-graduate (N = 50)	52.0	48.0

$X^2=6.59, p<.05$

Among *other online websites and channels*, online news sites (i.e. baomoi, 24h, Ybox.vn, Kenh14.vn,...) [31] comes first with 79.5%, slightly higher than social networks, being used by more than three quarter of our samples (79.1%). Similar to British citizens, before the COVID-19 outbreak, expert blog/websites and health authorities such as WHO, MOH were not assumed as a popular news sources for Vietnamese lay citizen [8]. However, the pandemic has changed the public consumption of news. In tandem with online news websites, governmental and NGO channels is as highly reached as digital news sources about COVID-19. It is because during the COVID-19, the daily governmental updates on national and local inflected cases and their strategy to control the outbreak became the major news events, attracting huge audience and dominate the news agenda. Further, audience also turn their attention to expertise blog and websites because of these channels offer in-depth scientific analysis about the Coronavirus and related issues.

Table 3. Other online websites and internet channels used for COVID-19 news

Other online websites and internet channels	Frequency (N = 487)
Online news sites (Baomoi, 24h, Ybox.vn, Kenh14.vn,...)	79.5
Social networks (Facebook, Zalo, Youtube...)	79.1
International, national and local agencies (inc. health authorities and scientific authorities)	51.5
Personal blog or websites (inc. scientific key person)	58.2
Others	18.5

6.2. Frequencies of COVID-19 news consumption

Although the number of public usage of blogs, websites, social networks is higher than that of online newspapers, the survey shows that the frequency of consumption (5-likert scale from *very rare* to *very frequently*) on electronic newspapers is higher than on the Internet ($\mu=3.9 > \mu=3.82$). The online newspapers audience tend to read pandemic news stories more regularly than Internet users. However, both of these internet-based news channels reach a high level of frequency, which might because people primarily depend on Internet for their work and entertainment during lockdown and social distance status. This finding is in line with a report by *We are social*, that in the beginning of 2022, Vietnamese spend an average of 6h38m on digital platforms. Finding information and following news and current events are in top-three main reasons for their internet consumption. Particularly, reading news stories is also the second most important reasons Vietnamese used social media [9]. In addition, the public heavy reliance on online media found in this study might relate to the disruption of daily routines during the pandemic when people are limited access to traditional media [6].

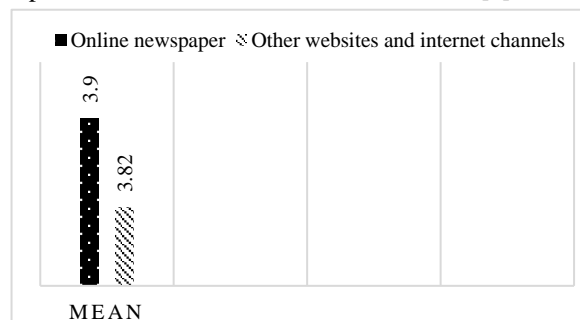


Figure 1. Following news about COVID-19

To compare the potential difference between male and female news routine, a set of independent t-test was run. In terms of online newspaper, result (Table 4) reveals there is no statistical difference in frequency of accessing online newspapers between two sexes, $t(144)=.106, p=.913$. Similarly, there is no statistically significant difference in frequency of accessing other internet-based channels between male and female audience, $t(295)=-.058, p=.954$ (Table 4).

Another set of one-way Anova test further shows that there is no statistical difference between correspondents who obtained high school education and those who got undergraduate and post graduate degrees in the amount of time they use for both online newspapers and other online

websites and internet channels (data not shown). These findings show an equivalence of different groups in digital news consumption during the COVID-19 outbreak.

Table 4. Online channels used for COVID-19 news by sex

	t	Df	Sig(2-tailed)	Mean difference	95% Confidence interval of the difference	
					Lower	Upper
Online newspapers	.106	144.8	.913	.008	.080	-.150
Other website and internet channels	-.058	295	.954	-.005	.087	-.177

6.3. COVID-19 knowledge informed by online news

Public understanding of science is essential for the scientific innovations being better understood and more likely to be accepted by the public and supported by the investors and policy makers. In the context of a health epidemic, and COVID-19 particularly, public understanding of disease plays an important role to protect their physical and mental wellbeing from the pandemic. This study shows that: (1) Information about the epidemic situation; (2) Vaccine research and related issues; (3) State regulations and policies about COVID-19 are three most popular news topics that public often seek for. Both online newspaper readers and other internet-based channel users pay significant attention to the latest case numbers and related information about the pandemic situation. However, the results also reveal a difference in terms of audience consumption of coronavirus scientific knowledge. Other internet-based channel users tend to give a preference to expertise information about the controversial virus while online newspaper audience are more likely to pay more attention to the disease prevention and treatment.

Table 5. Online news topics about COVID-19

News topics	Online newspapers (N=190)	Other online websites and internet channels (N=297)
Scientific knowledge about Coronavirus and COVID-19	42.1	51.5
The COVID-19 situation	69.5	66.0
Vaccine research and related issues	55.3	58.6
Governmental policies and regulations about COVID-19	54.7	58.6
COVID-19 treatment	52.1	42.8
Others	0	1.0

By the same way, although male and female share similar interest in COVID-19 happenings and the epidemic's impact on people's daily lives, their thirst for other pandemic news topics is comparatively varied. For example, women prioritise governmental policies and regulations about COVID-19 outbreak to vaccine related issues whereas men prefer updated information about vaccine research. Further, the former group who often respond for family care, are more likely to COVID-19 treatment and prevention guidelines than the latter group, who weigh understanding of coronavirus more importantly.

Table 6. Online news topics about COVID-19 consumed by sexes

News topics	Male (N=275)	Female (N=209)
Scientific knowledge about Coronavirus and COVID-19	48.4	47.8
The COVID-19 situation	68.0	67.5
Vaccine research and related issues	59.3	55.0
Governmental policies and regulations about COVID-19	54.5	61.2
COVID-19 treatment	44.7	49.3
Others	0.4	1.0

Table 7. Online news topics about COVID-19 consumed by levels of education

News topics	High school (N=145)	Undergraduate (N=289)	Postgraduate (N=50)
Scientific knowledge about Coronavirus and COVID-19	43.4	52.6	36.0
The COVID-19 situation	59.3	69.2	84.0
Vaccine research and related issues	54.5	59.2	56.0
Governmental policies and regulations about COVID-19	57.9	58.5	50.0
COVID-19 treatment	47.6	44.3	58.0
Others	0.7	0.7	0.0

Regarding the levels of education, it is shown that the online news topics consumed by high school, undergraduate and postgraduate are different. Excluding the high attention to the pandemic infected cases and latest news, these three groups share divergent concerns on digital news about COVID-19 outbreak. For instance, while high school correspondents are attracted by policy response to the pandemic, undergrads give much concern on vaccine development, postgrads are found to pay considerable attention to COVID-19 treatments and medications. Surprisingly, interviewees who got postgraduate degree are not interested in scientific research about virus. Only 36% choose "scientific knowledge about Coronavirus and COVID-19" as their online favourite news topic. However, as the number of correspondents is only 50, this result cannot be generalised for the postgraduate media consuming routine. Further research should take this finding as a point of consideration.

6.4. Attitudes to COVID-19 news

Although other websites and internet channels are most used by audience, they do not gain a high trust among the news consumers. The survey shows that according to a 5-likert scale estimation (from *not at all* to *very much*), internet users rate online newspapers as a high level of accurate and trustworthy COVID-19 provider ($\mu=4.0$). On the other hand, they are not satisfied with information on social network and other internet-based websites. The average belief for internet news accuracy only reaches a level of $\mu=3.51$. This finding is not a surprise because although the internet provides a large amount of information and diversified types of news, in the time of recent pandemic, it is the prime platform for misinformation spread.

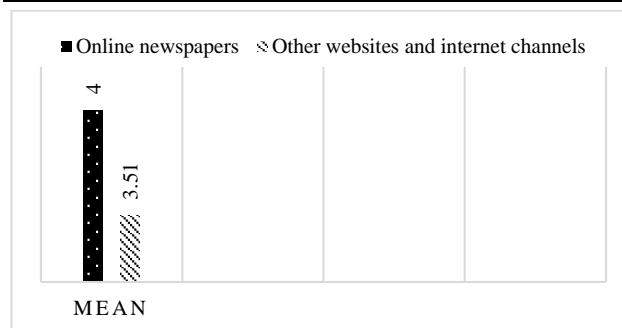


Figure 2. Audience trust in online COVID-19 news

To compare the potential difference between male and female satisfaction on online news accuracy, a set of independent t-test is run. Table 8 indicates a statistical difference between male and female audience about their trust in COVID-19 news obtained from digital newspapers, $t(188)=.770$, $p=.025$. On the other hand, there is no statistical difference among the two sexes in terms of their belief in pandemic information gained from other internet-based channels, $t(290.5)=.764$, $p=.445$.

Table 8. Male and female trust in online COVID-19 news

	t	Df	Sig(2-tailed)	Mean difference	95% Confidence interval of the difference	
					Lower	Upper
Online newspapers	.770	188	.025	.180	.023	.336
Other website and internet channels	.764	290.5	.445	.061	.079	-.095

Another set of one-way Anova test is carried out to explore the attitude of correspondents who obtained high school education and those who got undergraduate and post graduate degrees towards online news about Coronavirus. Results show there is no statistical difference among the three groups in their trust over news accessed from online newspapers and from other websites and internet channel (data not shown).

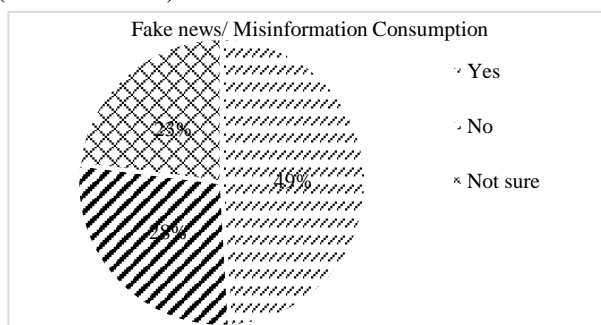


Figure 3. Audience perception of fake news/ misinformation

Data from the survey show that along with traditional news platforms, i.e. prints, broadcasting and online newspapers which remains a dominant source of scientific information, social media platforms have become important sources of health information and a fora for public engagement. However, the health and science presented on these platforms are often lacked evidence based. A study by Nguyen and Nguyen [3] shows that there are three major types of misinformation that was amplified

on social media in Vietnam. The first is the false information and conspiracy theories about the origin of the virus, the second is fake news about the infected cases and death caused by the virus and the third is surroundings the “health advice” to prevent and treat COVID-19. This research findings are reinforced in our study that out of 487 respondents, nearly a half meets fake news about COVID-19, two times for than those do not. Especially, approximately a quarter of the total participants (23%) is confused to identify whether they have accessed fake news. Regarding the origin of fake news, the survey shows that the majority of fake news comes from the internet, largely from Facebook and other internet sources such as YouTube and TikTok (data not shown). The amplification of COVID-19 misinformation on social media not only confuses the public, enhances their fear and anxiety but also reinforces their wrong understanding of health issues. As a consequence, its harm is reflected in the public panic and illogical response to COVID-19 pandemic in Vietnam.

7. Conclusions

Studying online news consumption about COVID-19 in the 4th wave of the health pandemic in Vietnam is among the very first research providing initial insights into the news habits and rituals of Vietnamese in a health crisis. First, it is found a domination of internet – but not online newspapers – channels on the public news diaries. This finding reinforces recent findings about the crucial news supplier of online platforms during the time of health crisis [12], [32]. However, the frequency that public access other websites and internet channels, i.e. social network or state websites is lower than that of online newspapers. Second, public pay the highest attention to the pandemic situation. Yet their other concern on COVID-19 is not homogeneous. Male and female as well as audience with different education levels are dissimilar in their pandemic information priority. Third, despite a large amount of time spending on internet-based media, digital users give less confidence in their accuracy and transparency. They instead trust online newspapers as a credible source of pandemic news. This finding consolidates previous studies that in a health crisis, legacy media remains its crucial source of information [6], [8], [12]. Yet the attitude towards COVID-19 online news is not similar for all citizens. Male and female readers have different satisfaction towards news obtained from online newspapers.

In line with previous studies on the influence of health crisis on news consumption, this study contributes to the lacked understanding of news consumption during the pandemic in Vietnam. While fake news is found as a prominent issue leading to public lacked trust in online media, fact-check tools and literacy course should be established to improve audience capacity to assess news validity.

Although the outbreak of the COVID-19 pandemic offered us a distinctive opportunity to examine the impact of health crisis on news consumption, our study has several limitations. First, the limitation of time and financial budget may have influence on the sample representative. Second, quantitative research does not offer space for

deeper exploration of why media consumption on the internet was unchanged during the COVID-19 and what respondents identified as the most important “uses and gratifications” of consuming news in time of risk society. Future studies, also using more qualitative approaches, should therefore fill in the gap on how and why news consumption change under the dramatic health crisis.

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