# Fake news and COVID-19: modelling the predictors of fake news sharing among social media users

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A B S T R A C T

Fake news dissemination on COVID-19 has increased in recent months, and the factors that lead to the sharing of this misinformation is less well studied. Therefore, this paper describes the result of a Nigerian sample ($n = 385$) regarding the proliferation of fake news on COVID-19. The fake news phenomenon was studied using the Uses and Gratification framework, which was extended by an "*altruism*" motivation. The data were analysed with Partial Least Squares (PLS) to determine the effects of six variables on the outcome of fake news sharing. Our results showed that *altruism* was the most significant factor that predicted fake news sharing of COVID-19. We also found that social media users' motivations for *information sharing, socialisation, information seeking* and *pass time* predicted the sharing of false information about COVID-19. In contrast, no significant association was found for *entertainment* motivation. We concluded with some theoretical and practical implications.

## 1. Introduction

The increase of fake news is becoming a worldwide issue (McGonagle, 2017). Though fake news is not novel, however, it is now worrisome because of social media popularity which permits interaction and diffusion of new ideas (Zhou & Zafarani, 2018). Consequently, social media users can advance ideas or spread the news through shares, likes or retweets; hence, they are invariably exposed to an uncontrollable type of information especially news that is coming from independent authors. As such, social media is now a place to disseminate misinformation and fake news rapidly (Rampersad et al., 2019). It has been shown that social media is an influential device for the spreading of large amount of unfiltered content (Lazer et al., 2018), authorising a misinformation phenomenon and consequently aggravating the possibility of manipulating the public's perception of reality through the dissemination of fake news content (Ireton & Posetti, 2018). Duffy et al. (2019) defined fake news as concocted content that copycat legitimate news, presented subtly to lure the public into believing it is legitimate.

Fake news sharing has become rampant in today's digital world. This suggests that even some government officials and individuals engage in the proliferation of misinformation to a large audience to suit their agenda (Rampersad et al., 2019). Thus, fake news has touched virtually every aspect of our life (Wasserman & Madrid-Morales, 2019), and the most worrisome in recent months is the circulation of false content in this period of the coronavirus disease 2019 (COVID-19) outbreak (Hou et al., 2020). In December 2019, a novel virus called COVID-19 was reported in China, and in recent months the virus has spread to other parts of the world, killing many people. Initially, it was alleged to be transmitted from animals to humans. However, it is now transmitted from human to human via fomites, contacts, and droplets (Sahu et al., 2020). Report shows that as of May, 14, 2020 the cases of COVID-19 were

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over 4.4 million globally. More than 1.6 million recoveries were reported, and about 298,000 deaths (World Health Organization [WHO], 2020). According to recent research, many rumours and false news stories are circulating about the COVID-19. It is becoming increasingly difficult to distinguish fake news from reports whose veracity should not be questioned (Huynh, 2020). Consequently, misinformation in social media has fuelled panic among members of the public regarding the COVID-19 pandemic, prompting governments and authorities to urge citizens to confirm the genuineness of news stories before circulating them (Huynh, 2020; Hou et al., 2020). In this view, research has found that as the urgency to find a treatment for COVID-19 continues across the globe, fake news proliferation has intensified on social media, which many experts believe is contributing to the threats of the pandemic (Lampos et al., 2020).

It has been found that false information regarding health issues constitutes a probable threat to public health. However, the motivations for sharing such false information has been less well developed (Waszak et al., 2018). Thus, the explosive growth of fake news sharing, particularly during pandemic requires extensive research to comprehend the nature and reasons behind fake news proliferation via social media. Presently limited knowledge is known about predictors of fake news proliferation. Moreover, studies focusing on fake news are limited, but the literature is growing (Apuke and Omar, 2020). It is yet to be known why individuals disseminate fake news content during this COVID-19 outbreak. Prior evidence has shown that misinformation on health issues are not new. However, the advent of social media, which permit people to share information without restriction, has intensified the proliferation of false content in the health ecosystem (Waszak et al., 2018).

Unlike previous literature that studied news sharing using university students as a sample, we focused on general social media users (Lee & Ma, 2012). It has also been shown that most of the studies on fake news have been in the UK and US. Therefore, researchers have been encouraged to investigate another context (Duffy et al., 2019). To respond to this call, we selected Nigeria, a developing country which is less well studied (Apuke and Omar, 2020; Wasserman and Madrid-Morales, 2019) to provide another view of understanding the global problem of fake news proliferation. Another reason for selecting Nigeria stems from the fact that fake news in Nigeria is discouraging medical advice, offering false medications, stirring panic and being used for political point-scoring (Olapegba et al., 2020). Report shows that as of May 14, 2020, the country had about 4,971 cases of COVID-19, and 164 deaths were recorded (Nigeria Centre for Disease Control [NCDC], 2020).

Therefore, to comprehend the predictors of fake news sharing on social media, we developed a comprehensive model drawing from the Uses and Gratification perspective. We extended this theory by adding an "*altruism*" component. The novelty of this study is that it extends the literature on news sharing to test fake news propagation during COVID-19 pandemic. We argue that the gratifications obtained from prior news sharing studies could be extended to examine fake news sharing because of the intrinsic participatory nature of social media (Ma et al., 2014). Moreover, the limited literature on fake news sharing prompted this research to explore and extend to test fake news sharing using established news sharing determinants in prior studies (Thompson et al., 2019; Ma et al., 2014).

## 2. Literature review

This section covers the fake news concept. This is preceded by a review of the growing number of studies that examined fake news sharing on COVID-19. The theoretical underpinning will also be discussed.

### 2.1. Fake news

Scholars have conceptualised fake news in many ways, but with almost the same meaning. McGonagle (2017) described fake news as a deliberately fabricated information that is circulated to misinform and deceive individuals into accepting lies or uncertain verifiable facts. Consistent with this view, Duffy et al. (2019) categorised fake news as any information that mimics legitimate news story but has false and misleading content. In this current research, fake news is viewed as untrue information, including myths, rumours, conspiracy theories, hoaxes as well as deceptive or erroneous content intentionally or unintentionally disseminated on social media platforms (Wang et al., 2019). Based on this definition, there is a divergence between the creation and dissemination of fake contents on social media platforms. By implication, fake news sharing may be unintentional, but its creation could be highly intentional (Egelhofer and Lecheler, 2019). This view is related to the issue of COVID-19, where people may reshare false content with the intention of helping.

Recent research disclosed that people shared misinformation related to the Ebola virus with the aim of proffering solution as well as warning others (Apuke and Omar, 2020). Since the sharing of information has become easy on social media, people turn to this platform to update family members, acquaintances and others on essential issues that potentially affect their lives. The more people share news, the more likely they share fake news if they are not vigilant of the content. According to Pulido et al. (2020), an obvious act of false information dissemination has been reported in the field of health. The spread of falsified health news could jeopardise the safety of people, suggesting that people could be lured into taking some false precautionary measure that leads to severe health damage (Pulido et al., 2020).

### 2.2. Studies of fake news sharing related to COVID-19

Research into the proliferation of false news is emerging in the age of COVID-19 pandemic. Some studies have attempted to realise the connection between social media and misinformation in this era of the pandemic (Hou et al., 2020; Huynh, 2020). Recent research has shown that in recent months, the most notable fake news sharing that is deleterious to the health has been on COVID-19

pandemic (Pennycook et al., 2020). This supports a growing view that false content concerning COVID-19 has become more pronounced in social media (Frenkel et al., 2020; Russonello, 2020). It has also been observed that many people now seek information online that they perceive to be helpful, leading to a wide range of fake news consumption and sharing (Huynh, 2020). Pennycook et al. (2020) observed that since the COVID-19 emerged, there has been fake news proliferated online, which suggest preventive cures and tips on how to cope with the virus. Similarly, Lampos et al. (2020) found that the flurry of fabricated information on the pandemic has made many to believe that they could get cured using salty water, drinking bleach, and eating oregano. The authors also concluded that many believed the Chinese government had created the virus. While others have also been made to understand that the US government created the virus to undermine the Chinese government. This fake news proliferated not only create hate on the Chinese race but also put the health of people at risk as well as undermine the efforts of government in implementing preventive measures.

Similar research conducted by Hou et al. (2020) discovered that the more people make use of social media to obtain COVID-19 information, the more risk perception regarding the virus. Correspondingly, Huynh (2020) found that citizens of Vietnam believed that the information on fake news related to COVID-19 is more than the official information announced by the government. Frenkel et al. (2020) also found that in Taiwan, numerous posts on social media suggest that the country has witnessed a considerable number of infections, which was later found to be false. The same survey found that there was circulated fake news suggesting that the virus has infected the Taiwan President. Similar research conducted in the US found that many people disseminated false information related to the virus because they failed to reason appropriately if a content is true or not before sharing (Pennycook et al., 2020). The study suggested that people should verify the information and think about its accuracy before forwarding to other members in their network.

In the context of Nigeria, which is the focus of this study, a growing number of false information about COVID-19 have been shown to flood social media (Alpert, 2020). Hassan (2020) remarked that the motivation for this fake news proliferation could be to gain online followership. For instance, there was a tweet suggesting that the Nigerian President Muhammadu Buhari was sick and probably had contracted the virus. Within some hours, the tweet generated 3,300 likes and was reshared more than 2,000 times (Hassan, 2020). In other cases, sensationalist annotations by so-called "health experts" have been widely distributed. Hassan (2020) found that on March 23, 2020, an audio clip was released on WhatsApp by an alleged WHO worker, forecasting that about 45 million Nigerians would die due to the pandemic. Consistent with this finding, Sahu et al. (2020) found that some so-called experts in Nigeria are attempting to proffer false cure such as sitting in the sun and having constant sex. Others have alleged that the virus cannot harm Africans (Lampos et al., 2020). None of these claims is medically proven, but they have been continuously spread among social media users in Nigeria and the world at large.

Despite the effect of false information sharing on COVID-19, empirical research on the factors that lead to fake news is less well studied. Most of the recent studies on COVID-19 has been opinion, commentary, laboratory experiment and exploratory research. Moreover, more studies have focused on understanding the virus (Sohrabi et al., 2020), documenting comprehensive reports on the virus (Sahu et al., 2020), media reports on the virus (Zhou et al., 2020), and tackling the virus (Lampos et al., 2020). Aside from investigating these areas, it should be noted that the dissemination of false news on the virus is deleterious to the human health as many individuals are now following false precautionary measures shared online (Hou et al., 2020). Thus, examining the predictors of fake news sharing related to COVID-19 also requires scholarly and empirical attention. Generally, empirical investigation related to fake news sharing is lacking as most previous works do not have a theoretical framework or model that empirically increases our knowledge of fake news dissemination conduct on social media, either deliberately or inadvertently (Talwar et al., 2019). Responding to the gaps in the literature, we developed a predictive model (See Fig. 1) that included factors that explain the reasons social media users tend to circulate fake contents related to COVID-19 pandemic.

### 2.3. Theoretical underpinning

The current study's model was formulated using the Uses and Gratification perspective (Katz et al., 1974). This theory attempts to realise the rationale behind people's use of certain media. The theory elucidated how and why people deliberately select specific media and how they make use of such media to please their desires (Halpern et al., 2019). The theory does not only attempt to understand what the media does to people but extend to examine the functions provided by a medium, putting into consideration that the motivations of an audience are a crucial factor. The theory offers the foundation for the motivation of an individual to connect with others which consequently affect the selection of a particular media as well as the usage and interpretation of the content obtained from such media (Rubin et al., 2015).

The initial development of the U&G theory addressed the use of traditional media, however, in recent years, its application has been extended to internet studies especially social media studies (Thompson et al., 2019). Therefore, the U&G theory has been adopted by social media researchers to realise the gratifications an individual gain from the usage of social media platforms. For instance, Introne et al. (2018) established information seeking, information erudition, entertainment, and relational communication as some of the gratifications people obtain from the usage of social media. Similarly, Dunne et al. (2010) found that information probing, relationship conservation and peer approval were associated with the usage of SNS. Also, Park and Blenkinsopp (2009) established some gratifications associated with social media usage to include entertainment, status-seeking, information seeking and socialisation. These gratifications have also been extended to understand news and knowledge sharing behaviour (Thompson et al., 2019; Lee & Ma, 2012; Chiu et al., 2006). Thompson et al. (2019) study found that status-seeking and information-seeking gratification were associated with news sharing behaviour. Similarly, it has been proven that people with higher motivation for status-seeking, socialisation and information-seeking disseminate news more often on social media (Lee & Ma, 2012).

With regards to knowledge sharing, past research showed that socialisation and social communication were positively related to knowledge sharing behaviour (Chiu et al., 2006). Drawing from the views of previous investigators and the U&G theory perspective, we contend that some gratifications gained while using social media could lead to fake news sharing because of the intrinsic features of social media which permit high interactivity and dissemination of unsupervised content. We thus adopted some gratifications and added '*altruism*' which is well suitable to our study, to extend the understanding of U&G theory with a focus on fake news sharing. The extensive usage of U&G in media studies has undoubtedly extended the understanding of media usage in the contemporary online milieu, yet, none of the previous studies have used this theory to realised if the gratifications gained from the utilisation of social media could lead to fake news allotment.

## 3. Developing the research model and hypotheses

This study's model was developed with the U&G theory and previous studies. We hypothesised the relationship of some carefully chosen antecedents; entertainment, socialisation, pass time, altruism, information seeking, information sharing with fake news sharing on social media (See Fig. 1).

### 3.1. Altruism and fake news sharing

Altruism entails giving someone something without expecting any favour in return. Altruistic behaviour occurs when individuals share with others without thinking of any reward. Relating this to news sharing, altruism could be described as the act of disseminating news and information without expecting a reward for such an act (Plume & Slade, 2018). An altruistic person constantly has the mind to serve others. This indicates that when people seek information and news, an altruistic person is always eager to share such news to help without expecting any recompense in the future. The altruistic behaviour has been well tested and documented in knowledge, information and news sharing studies (Plume & Slade, 2018; Ma and Chan 2014; Fang & Chiu, 2010). For instance, Ma and Chan (2014) revealed that altruism is positively associated with the voluntary gathering and dissemination of information, suggesting that users of social media would assist without expecting remuneration.

Consistent with this view, studies have shown that disseminating of news on social media platforms is carried out to contribute to the social cohesion. Furthermore, individuals engaging in such activities are motivated by the emotive influence and significance the news may exert on the recipient (Duffy et al., 2019). Recent research found that people have the habit of sharing information to help others without considering if it is factual or not, as far it carries some precautionary measures on specific issues (Apuke and Omar, 2020). Consequently, the link between altruism and fake news sharing behaviour can be expected. It is argued that those with higher altruistic attitude may have more tendency to share misinformation on COVID-19 while trying to share information that could help others. Therefore, we propose that:

**H1:** *Altruism gratification* will be positively related to sharing fake news pertaining to COVID-19 pandemic.

### 3.2. Entertainment and fake news sharing

The entertainment gratification is attained when individuals use social media to pass time, engage in the act that is entertaining to them, as well as escape from their everyday lives. It is the utilisation of social media to amuse oneself as well as ease emotional tension and anxiety (Lee & Ma, 2012). Relating this view to sharing, previous study revealed that individuals share on Facebook for entertainment, relaxation and enjoyment (Baek et al., 2011). Kim et al. (2015) study established a positive connection between entertainment and Facebook usage. The same study found that individuals use Facebook like button to express their view on some issues. Conversely, prior research found that using social media to entertain oneself is not associated with news sharing online, suggesting that people do not gain pleasure from such an act (Lee et al., 2011).

Nevertheless, there is evidence to show that individuals find it entertaining to disseminate information in the online community because they wish to exchange information with others in a social relationship (Anspach & Carlson, 2018). This supports finding, which shows that social media users disseminate information to kill time, entertain themselves as well as for fun (Ha et al., 2013). It has also been revealed that social media users engage with social media as a hobby, which in turn helps them find useful information that is subsequently shared with other online members (Lin and Lu, 2011). Though there are no studies that have shown entertainment gratifications to be related to fake news sharing on pandemic or epidemic, we argue that in the light of the mandatory self-isolation worldwide, it is anticipated that the tendency for using social media for entertainment will increase, many people will be online to monitor the situation of the virus as well as try to be the first to disseminate this information, and this could lead individuals to post unverified information. Due to this, we hypothesised that:

**H2:** *Entertainment gratification* will be positively related to sharing fake news pertaining to COVID-19 pandemic.

### 3.3. Socialisation and fake news sharing

The socialisation gratification, also known as social interaction gratification encompass the need for connectedness. It is merely the desire to establish associations and relate with others (Lee & Ma, 2012). It has been established that social media which supports participatory communication, is used for expressing oneself as well as building a relationship (Sihombing, 2017). Therefore, sharing information on social media is done to develop and maintain a relationship, especially among individuals with a similar view and interest in the shared content (Park et al., 2012). Past research found that a sense of belonging and trust is gained when people relate

with each other (Lee & Ma, 2012). Park et al. (2012) found an association between social interaction and the use of social media. A positive link has been found between news sharing and socialisation gratification (Lee et al., 2011). This indicates that people see sharing of news as a suitable way of preserving and extending their relationship and networks as it permits them to discuss and relate with friends through posting, commenting, chatting, and liking news stories which in turn enhance the sense of belonging (Lee et al., 2011).

With regards to misinformation sharing, Chang et al. (2017) study revealed that socialisation gratification positively predicted false information dissemination. The authors reason that their outcome could be because using social media for socialising is viewed as a way to converse. As such, recent research found that individuals tend to believe the information disseminated by friends and family members more than strangers (Wasserman & Madrid-Morales, 2019). Chang et al. (2017) found that persons with higher socialising nature tend to share more on social media. Consistent with this view, Karnowski et al. (2018) remarked that individual's news consumption is now seen as a socially driven act. We, therefore, argue that individuals who are moved by the stronger desire for social interaction are more likely to disclose information as well as share news, including false news. Moreover, amidst the COVID-19 pandemic, many individuals would highly want to share and contribute to the news, and this may lead to fake news sharing. We then propose that:

**H3:** *Socialisation gratification* will be positively related to sharing fake news pertaining to COVID-19 pandemic.

### 3.4. Pass time and fake news sharing

Pass time has been established to be a significant predictor of general social media use (Kircaburun et al., 2018). It is defined as the use of social media platforms to ease tedium and occupy time (Kircaburun et al., 2018). The connection between pass time and misinformation sharing has been established in the literature (Vicario et al., 2016). This indicates that as people make use of social media to pass the time, their tendency to properly verify a message before forwarding is less likely to occur. On the other hand, Thompson et al. (2019) found no link between pass time and news sharing. While, Choi (2016) revealed that apart from socialisation, pass time gratification was the most significant predictor of news sharing behaviour. We, therefore, contend that as social media users are engaging in passing time with social media during this total lockdown caused by the COVID-19 pandemic, there is less tendency to verify information on COVID-19 before sharing and this may lead to sharing fake news. We then propose that:

**H4:** *Pass time gratification* will be positively related to sharing fake news pertaining to COVID-19 pandemic.

### 3.5. Information seeking and fake news sharing

In this study, information seeking is designated as the level to which news circulated in social media can offer individuals essential and up-to-date information. Lampos et al. (2020) accentuated that as the cases of the COVID-19 increase around the world, there has been a flurry of misleading or false news stories emerging, as well. This indicates that a great deal of individual search for information regarding how to cope with the virus, which could turn out to be untrue. Information seeking has been linked with using social media for news dissemination (Ma et al., 2013). It has been established that individuals wish "to be in the know" result to the reception and propagation of fake news on social media (Duffy et al., 2019). Supporting this view, it has been shown that news content on social media is circulated among users that demonstrate similar interest (Anspach & Carlson, 2018). Once such content is shared, people could retrieve them quickly at a subsequent time and when the need arises.

A study has associated information seeking on social media with fake news sharing (Chen, 2014). This could be due to the million unsupervised messages found on social media that individuals continuously seek to consume. We, therefore, contend that as people's movement is restricted due to the COVID-19 pandemic, and as the cases of the pandemic keep increasing individuals would seek for information on social networking sites without much consideration if the content is accurate or not as far as it contains some suitable way to combat the virus. They may as well share such information among their networks, which could increase the wave of fake news and hoaxes that has already been reported in recent months (Hou et al., 2020; Huynh, 2020). We thus proposed that:

**H5:** *Information seeking gratification* will be positively related to sharing fake news pertaining to COVID-19 pandemic.

### 3.6. Information sharing and fake news

Evidence has shown that the usage of social media platforms is accelerating the circulation of false content online (McGonagle, 2017). One possible reason for this could be because sharing news on social media has become easier as people can take part in the creation and dissemination of information (Tandoc et al., 2018). Information sharing stems from the need to offer information to others (Thompson et al., 2019). Information-sharing behaviour has been well documented in prior studies (Anspach & Carlson, 2018; Chen et al., 2015). Chen et al. (2015) revealed that misinformation circulation is positively associated with the information dissemination gratification. The same research revealed that people circulate false stories for informational reasons than for entertainment. Drawing from this perspective, we contend that due to the already millions of information on COVID-19 on social media, sharing misinformation is likely to take place if individuals do not verify accordingly. We reasoned that at this time of the pandemic where everyone desires to be a reporter, the tendency of verifying messages before sharing is unlikely. Therefore, we proposed that:

**H6:** *Information sharing gratification* will be positively related to sharing fake news pertaining to COVID-19 pandemic.

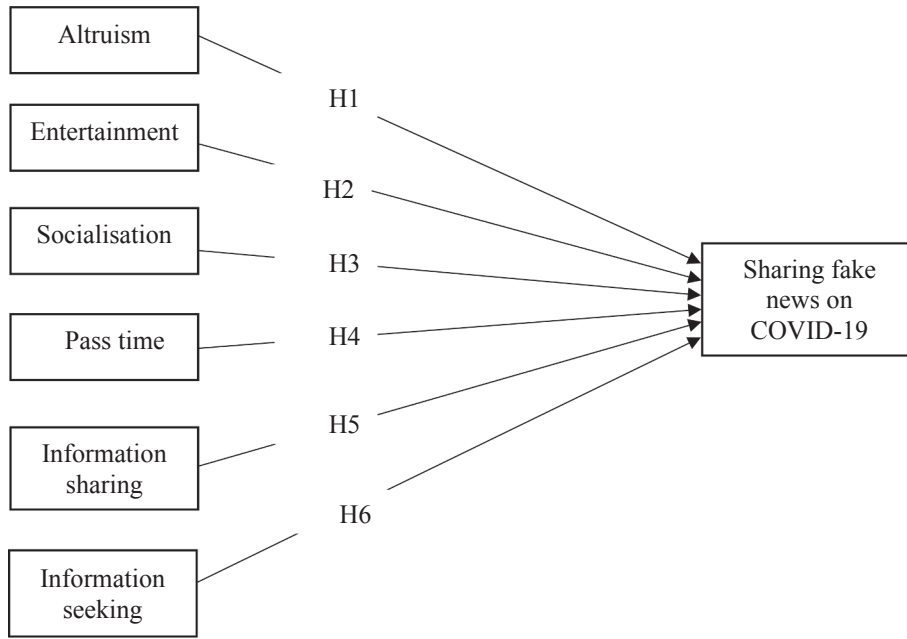Fig. 1 demonstrates the model we formulated using past studies and the U&G theory.

**Fig. 1.** A research model for fake news sharing.

## 4. Methods

This section demonstrates the method used to accomplish this investigation. We employed a survey research design. This section consists of the procedure we used for collecting the data and participants we targeted for the survey. It also covers the construct measurements.

### 4.1. The procedure used for the collection of data

Our proposed research model was tested using an online survey created using a Google form. The purpose of our study was to realise the factors that predict fake news sharing, with a focus on the COVID-19 pandemic. Our participants aged 18 and above were drawn from the Nigerian population. To calculate our sample size, we used the G*power analysis, which is highly suggested for structural equation modelling (Hair et al., 2017). Our model has six predictors; therefore, to get a medium effect size and a power of 0.8, 96 minimum sample size is required. However, we increased our sample size to 385 since we are dealing with a heterogeneous populace (Hair et al., 2019). A sample size of 385 will yield a power over 0.9; therefore, our sample is enough to demonstrate confident findings.

A network sampling also called a chain referral (Babbie, 2013), was used to reach a highly dispersed population of social media users in Nigeria. To collect data, the survey link was advertised on various social media platforms. The respondents were invited to fill the online survey and extend the link to other members found in their network. This process continued until we had our desired number of samples for analysis. Unlike probability sampling, an online survey is advantageous because it is cost-effective and has no limitations of geographical boundaries (Baltar & Brunet, 2012). However, an online survey has been shown to have issues of sample bias and generalizability (Sadler et al., 2010). Therefore, a recent study recommends the increase of a sample size to reduce bias selection in the online survey (Kirchherr & Charles, 2018). Following this recommendation, we increased the sample size of this study from the minimum 96 established using G*power to 385. Research also recommended the comparing of the study sample with the national demographic statistics (Baltar & Brunet, 2012), to reduce bias and demonstrate if a sample represents the population. From the demographic variable in Table 1, it could be deduced that our sample did not differ much with the Nigerian demographic data (National Bureau of Statistics Nigeria [NBSN], 2018). Therefore, sampling bias in this study was addressed (Baltar & Brunet, 2012).

**Table 1**

The demographic information of the respondents (*n* = 385).

| Characteristics | Frequency | Percentage (%) |
|---|---|---|
| *Gender* | | |
| Male | 205 | 53.2 |
| Female | 180 | 46.8 |
| *Age* | | |
| 18–24 | 129 | 33.5 |
| 25–34 | 105 | 27.3 |
| 35–44 | 82 | 21.3 |
| 45–54 | 39 | 10.1 |
| 55–64 | 20 | 5.2 |
| 65 and above | 10 | 2.6 |
| *Working status* | | |
| Employed full time | 80 | 20.8 |
| Employed part-time | 43 | 11.1 |
| Student | 149 | 38.7 |
| Retired | 15 | 3.9 |
| Unemployed | 58 | 15.1 |
| Others | 40 | 10.4 |
| *Education* | | |
| High school | 120 | 31.2 |
| Diploma | 22 | 5.7 |
| Bachelor's Degree | 139 | 36 |
| Master's Degree | 50 | 13 |
| PhD | 43 | 11.2 |
| Others | 11 | 2.9 |
| *Frequently used SNS* | | |
| WhatsApp | 155 | 40.3 |
| Facebook | 116 | 30.1 |
| Twitter | 56 | 14.5 |
| Instagram | 39 | 10.1 |
| Others | 19 | 4.9 |
| *Time* | | |
| 10–12 h | 214 | 55.6 |
| 7–9 h | 86 | 22.3 |
| 4–6 h | 65 | 16.9 |
| 1–3 h | 20 | 5.2 |
| *Ethnicity* | | |
| Igbo (Eastern Nigeria) | 110 | 28.6 |
| Yoruba (Western Nigeria) | 103 | 26.7 |
| Hausa (Northern Nigeria) | 95 | 24.7 |
| Others (Other regions) | 77 | 20 |

To be eligible for this study, participants must be 18 years and above and must have an active account on social media. Therefore, on the screening question of the survey, if a participant indicates to be below 18 and not an active social media user, the survey terminated with a thank you note. The data were collected from February 2020 to May 2020, when the outbreak of COVID-19 started becoming worrisome and more cases were reported in Nigeria (Sahu et al., 2020). We had no issues of missing data as respondents were required to complete all questions. However, if a respondent is not willing to continue the survey, he/she was free to discontinue the survey.

As shown in Table 1, our sample had more male (53.2%) participants than female (46.8%). Most of the respondents were between the ages of 18–34 (60.8%). In terms of working status, a considerable number of the respondents were students (38.7%), followed by fully employed (20.8%), part-time employed (11.1%), unemployed (15.1%) and others (10.4%). Only a small number of participants reported being retired (3.9%). Furthermore, a substantial number of participants reported having a High School Certificate (31.2%) and a Bachelor's Degree (36%). On the other hand, (13%) had Masters, (11.2%) had PhDs, and only (5.7%) had a Diploma. Most of the participants selected WhatsApp (40.3%) and Facebook (30.1%) as the most used SNS. More than half of the participants (55.6%) use SNS for about 10–12 h while only a small number (5.2%) use it for about 1–3 h. The sample consisted of (28.6%) Eastern Nigerians, (26.7%) Western Nigerians, (24.7%) Northern Nigerians and (20%) from other minority regions in Nigeria.

### 4.2. Construct measurement

We had seven constructs; Six (6) independent variables, and (1) dependent variable, which is fake news sharing. All the measures were reflective. Furthermore, all the items were adapted from prior studies. We adapted the information-seeking gratification from the study of Lee and Ma (2012). The pass time, information sharing, entertainment and socialisation were adapted from the work of Thompson et al. (2019). Altruism was adapted from past studies (Plume & Slade, 2018; Wasko & Faraj, 2005). Fake news sharing construct was adapted from recent studies (Talwar et al., 2019; Chadwick & Vaccari, 2019; Khan & Idris, 2019) (See Table 2). All our

**Table 2**
The result of the convergent validity.

| Constructs | Code | Items | Outer loading | Cronbach alpha | CR | AVE | M | SD | Source |
|---|---|---|---|---|---|---|---|---|---|
| Altruism | ALT1 | I share content related to COVID-19 on social media because I love assisting others | 0.89 | 0.96 | 0.94 | 0.77 | 4.75 | 1.75 | (Wasko & Faraj, 2005) |
| | ALT2 | I share content related to COVID-19 on social because it feels right to assist others to resolve their issues | 0.91 | | | | 4.93 | 1.69 | |
| | ALT3 | I share content related to COVID-19 on social media because I want motivate and inspire others | 0.72 | | | | 4.97 | 1.73 | (Plume & Slade, 2018) |
| | ALT4 | I share content related to COVID-19 on social media because I want to offer information to others | 0.81 | | | | 5.36 | 1.53 | |
| | ALT5 | I share content related to COVID-19 on social media because I want to admonish others | 0.85 | | | | 4.83 | 1.77 | |
| Information sharing | IS1 | I share content related to COVID-19 that might be valuable to others | 0.75 | 0.94 | 0.94 | 0.76 | 3.62 | 1.70 | (Thompson et al., 2019) |
| | IS2 | I share content related to COVID-19 on social media to get feedback on the information I have found | 0.82 | | | | 3.67 | 1.64 | |
| | IS3 | I share content related to COVID-19 on social media to provide information | 0.90 | | | | 3.32 | 1.63 | |
| | IS4 | I share content related to COVID-19 on social media to share practical knowledge or skill with others | 0.91 | | | | 3.29 | 1.63 | |
| | IS5 | I share content related to COVID-19 on social media to express myself easily | 0.89 | | | | 3.04 | 1.72 | |
| | IS6 | I share content related to COVID-19 on social media to disseminate information that might interest or entertain others | 0.75 | | | | 2.72 | 1.48 | |
| | IS7 | I share content related to COVID-19 on social media to provide personal information about myself | 0.88 | | | | 2.55 | 1.40 | |
| | IS8 | I share content related to COVID-19 on social media to inform others a little about myself | 0.87 | | | | 4.45 | 1.79 | |
| Information seeking | ISK1 | I share content related to COVID-19 to assist me to store valuable Information | 0.82 | 0.85 | 0.91 | 0.79 | 4.65 | 1.72 | (Lee & Ma, 2012) |
| | ISK2 | I share content related to COVID-19 because it is easy for me to retrieve information when needed | 0.90 | | | | 4.83 | 1.69 | |
| | ISK3 | I share content related to COVID-19 on social media to keep abreast on the current news and events | 0.92 | | | | 4.93 | 1.71 | |

**Table 2** (*continued*)

| Constructs | Code | Items | Outer loading | Cronbach alpha | CR | AVE | M | SD | Source |
|---|---|---|---|---|---|---|---|---|---|
| Socialisation | SOC1 | I share content related to COVID-19 because I can freely talk about issues with others | 0.80 | 0.94 | 0.89 | 0.81 | 5.46 | 1.50 | (Thompson et al., 2019) |
| | SOC2 | I share content related to COVID-19 because I feel involved with other people's issues | 0.82 | | | | 4.81 | 1.75 | |
| | SOC3 | I share content related to COVID-19 because I can effortlessly interact with other members in my network when sharing | 0.83 | | | | 4.11 | 1.75 | |
| | SOC4 | I share content related to COVID-19 because I can easily exchange views with other members in my network efficiently | 0.86 | | | | 3.91 | 1.75 | |
| | SOC5 | I share content related to COVID-19 because it helps me keep in contact with other members in my network | 0.89 | | | | 3.22 | 1.60 | |
| Entertainment | ENT1 | I share content related to COVID-19 because I find it entertaining | 0.88 | 0.86 | 0.85 | 0.75 | 3.66 | 1.73 | (Thompson et al., 2019) |
| | ENT2 | I share content related to COVID-19 on social media because it is funny | 0.90 | | | | 3.58 | 1.86 | |
| | ENT3 | I share content related to COVID-19 on social media because it is exciting | 0.86 | | | | 4.42 | 1.89 | |
| | ENT4 | I share content related to COVID-19 on social media because it is enjoyable | 0.84 | | | | 3.32 | 1.84 | |
| Pass time | PT1 | I share content related to COVID-19 on social media because I scarcely like to work around with social media | 0.74 | 0.75 | 0.89 | 0.84 | 4.65 | 1.72 | (Thompson et al., 2019) |
| | PT2 | I share content related to COVID-19 on social media because it is a habit just something to do | 0.75 | | | | 4.83 | 1.69 | |
| | PT3 | I share content related to COVID-19 on social media because I have nothing much to do | 0.79 | | | | 4.93 | 1.71 | |
| | PT4 | I share content related to COVID-19 on social media because I can pass the time away, especially whenever I am bored | 0.77 | | | | 5.46 | 1.50 | |
| Fake news sharing on COVID-19 | FNS1 | I have shared information related to COVID-19 virus that I later found out as a hoax | 0.91 | 0.82 | 0.81 | 0.79 | 4.81 | 1.75 | (Chadwick & Vaccari, 2019; Talwar et al., 2019; Khan & Idris, 2019) |
| | FNS2 | I have shared content on social media related to COVID-19 that seem accurate at a time and I later found was made up | 0.89 | | | | 4.13 | 1.72 | |
| | FNS3 | I have shared content on social media related to COVID-19 that was exaggerated, but was not aware it was exaggerated at the time of sharing | 0.90 | | | | 3.91 | 1.75 | |
| | FNS4 | I share content on social media related to COVID-19 without checking facts through trusted sources | 0.88 | | | | 3.97 | 1.80 | |
| | FNS5 | I shared content on social media related to COVID-19 without reading the entire article | 0.75 | | | | 4.32 | 1.62 | |

**Table 3**

Discriminant validity (Fornell and Larcker Criterion).

|  | Construct | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|
| 1 | Information sharing | **0.763** | | | | | | |
| 2 | Socialization | 0.562 | **0.892** | | | | | |
| 3 | Entertainment | 0.483 | 0.402 | **0.901** | | | | |
| 4 | Altruism | 0.332 | 0.283 | 0.521 | **0.792** | | | |
| 5 | Information seeking | 0.623 | 0.484 | 0.502 | 0.412 | **0.873** | | |
| 6 | Pass time | 0.194 | 0.454 | 0.334 | 0.294 | 0.532 | **0.884** | |
| 7 | Fake news sharing | 0.112 | 0.293 | 0.022 | 0.043 | 0.154 | 0.622 | **0.782** |

items were gauged using a 5-point Likert scale in which 1 represents Strongly Disagree, and 5 indicates Strongly Agree. To decrease the vagueness of the items, we conducted a pilot study with ($n = 30$) participants before the actual data collection. We also consulted some experts to validate our items. Based on the outcome, we obtained from the pilot study and the recommendations from the experts; we reworded some items to increase its clarity.

## 5. Data analysis and outcomes

In order to analyse the research model, we applied structural equation modelling (SEM) (Hair & Sarstedt, 2019). Specifically, Partial Least Squares (Smart PLS 3.3.2) was used. Therefore, to examine the model's path, a bootstrap resampling method with 5000 samples was used. We used PLS for some reasons. Firstly, we realised that our samples were not normally distributed, which could be accommodated by PLS (Hair et al., 2017). Shapiro-Wilk test was significant p $< 0.05$. Additionally, the data were entered into the Mardia's coefficient website; https://webpower.psychstat.org/models/kurtosis. The results indicated that both Skewness ($\beta = 5.532$, p $< 0.01$) and kurtosis ($\beta = 53.328$, p $< 0.05$) were significant. Secondly, PLS has been shown to comfortably deal with smaller samples (Hair & Sarstedt, 2019). Thirdly, PLS can well suit exploratory studies like this current one (Ringle et al., 2013). This study adhered to the two-stage approach recommended by Hair et al. (2019), which is estimating the measurement and structural model.

Common method bias (CMB) was checked since we collected data from the same survey. Firstly, Harmon's single-factor analysis was carried out, and the results demonstrate that a single factor explained 18.5% variance. Secondly, we used the correlation matrix procedure (Bagozzi et al., 1991). This procedure suggests that CMB is present in a study if the correlation among the main construct is more than 0.9 (Ramayah et al., 2018). Thus, the correlations of latent variables were assessed among the main constructs in the correlation matrix. However, none was found to be more than 0.9. Fourthly, the Variance Inflation Factor (VIF) (between 1.14 and 2.34) were all less than the recommended limit of 5 (Hair et al., 2017). Therefore, CMB and collinearity do not affect the model of this current research (Nitzl et al., 2016).

### 5.1. The measurement model

In the measurement model, two things are examined, which are the convergent validity and discriminant validity. To gauge the convergent validity, we first checked the indicator loading and the entire indicator loading were more than the threshold of 0.7 (Hair et al., 2019). Secondly, we confirmed the average variance extracted (AVE) and found that the AVE were more than 0.5. Thirdly, we checked the Composite Reliability (CR) and they were all above 0.7 (Hair et al., 2017). Fourthly, we confirmed the Cronbach's alpha value and realised that all the values were above the recommended threshold of 0.7 (Hair et al., 2017) (See Table 2). Based on these outcomes, we had no issues regarding convergent validity. We also examined the discriminant validity (Hair & Sarstedt, 2019). Table 3 demonstrates that each construct AVE's square roots surpassed their correlations with other constructs (Fornell & Larcker, 1981). Therefore, we had no issues of discriminant validity. We can conclude that all the measures in our model demonstrated excellent psychometric properties.

### 5.2. The structural model

For the structural model, the path coefficient ($\beta$ values), the *t*-test value, the size of the effect ($f^2$), predictive relevance ($Q^2$) and the coefficient of determination ($R^2$) were examined (Hair et al., 2017). The hypothesis and its significance were tested using a 5000 resample bootstrapping technique with a 5% significance level and a one-tailed test option. Our results showed support for five (5) structural hypothesis. *Altruism* ($\beta = 0.44$, $p < 0.001$), *information sharing* ($\beta = 0.34$, $p < 0.001$), *socialization* ($\beta = 0.28$, $p < 0.01$), *information seeking* ($\beta = 0.24$, $p < 0.05$) and *pass time* ($\beta = 0.22$, $p < 0.05$), positively predicted fake news sharing related to COVID-19 pandemic. This supports H1, H3, H4, H5 and H6. Contrary to our expectations, the entertainment gratification H2 ($\beta = 0.01 p < 0.05$), was not found to be a significant factor affecting the intention to share fake news related to COVID-19 (See Fig. 2 and Table 4).

After realising the path coefficient ($\beta$ values), we checked the effect size ($f^2$) (Hair & Sarstedt, 2019), which could range from small 0.02, medium 0.15, and large 0.35 (Cohen, 1988). Results indicate that the effect sizes ($f^2$) for the five relationships are all achieved from small to large effect size. Finally, the $Q^2$ assessment showed that the research model had a $Q^2$ score of 0.189, which is
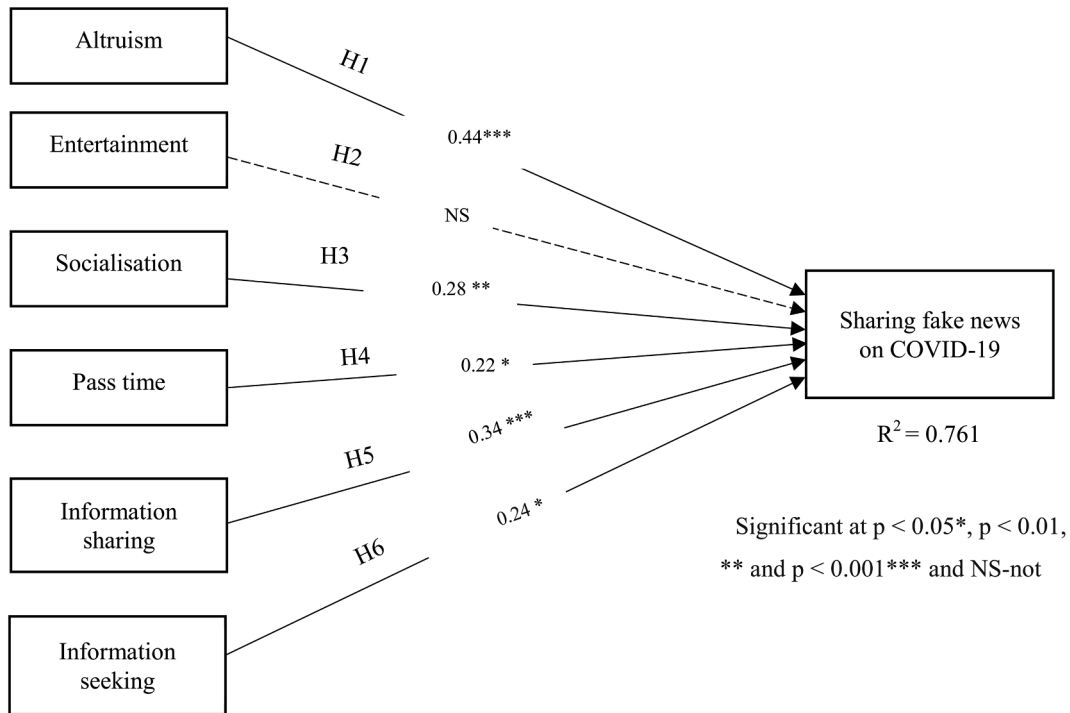
**Fig. 2.** The structural model for fake news sharing.

**Table 4**
The structural model's outcome.

| Hypothesis | Hypothesised relationship | β and t values | Q² | f² | Result |
|---|---|---|---|---|---|
| H1 | Altruism → fake news sharing | 0.44 (5.80) *** | | 0.432 | Supported |
| H2 | Entertainment → fake news sharing | 0.01 (0.88) | | 0.000 | Not supported |
| H3 | Socialisation → fake news sharing | 0.28 (2.90) ** | | 0.182 | Supported |
| H4 | Pass time → fake news sharing | 0.22 (2.21) * | | 0.057 | Supported |
| H5 | Information sharing → fake news sharing | 0.34 (4.87) *** | | 0.391 | Supported |
| H6 | Information seeking → fake news sharing | 0.24 (2.23) * | 0.189 | 0.081 | Supported |

Significant at $p < 0.05*$, $p < 0.01$, ** and $p < 0.001***$.

higher than zero. This indicates that the relevance of the model's prediction is excellent. Taken together, our exogenous variables explain 76.1% of the variance in fake news sharing related to COVID-19, and this variance is substantial (Henseler et al., 2014).

## 6. Discussion and implications

This section discusses the results, theoretical and practical implications as well as the limitations of the study.

### 6.1. Discussion of findings

We modelled the predictors of fake news dissemination among social media users, using the U&G theory and past related studies. Specifically, we measured the influence of pass time, altruism, information sharing, information seeking, entertainment, and socialisation on fake news sharing. Altruism was found to be the strongest predictor of fake news sharing related to COVID-19. This supports our first hypothesis H1. This outcome is in line with a recent study which showed that altruistic motive influences the choice to contribute on social media platforms (Plume & Slade, 2018). Past studies have also established the influence of altruism in dissemination of information on social media (Ma & Chan, 2014). That means an altruistic person enjoys the act of helping others. Nevertheless, we argue that if an individual does not pay closer attention to what is being shared, it could contribute to the proliferation of misinformation and false news. In the Nigerian context, altruism has been shown to be a unique characteristic of an average Nigerian (Apuke and Omar, 2020). It is more of a cultural trait.

Most Nigerians often have this characteristic of helping one another which is evident when sharing information, not minding if it is true or not as far as it contains precautionary measures on certain issues (Apuke and Omar, 2020). Consistent with this view, it has been shown that news sharing on social media is carried out to contribute to social cohesion. Individuals engaging in such activities

are motivated by the emotive influence and significance the news may exert on the recipient (Duffy et al., 2019). Moreover, in this period of a pandemic where panic is all over the country, people may share made-up precautionary measures to curb COVID-19, in turn, share fake news that could be deleterious.

Our results further showed support for H5, suggesting that information sharing is the second-highest predictor of sharing fake news pertaining to COVID-19 pandemic. Consistent with this finding, Chen et al. (2015) revealed that misinformation circulation is positively associated with the information dissemination gratification. The same research revealed that people circulate false stories for informational reasons than for entertainment. The reason for this could be because sharing news on social media has become easier as people can take part in the creation and dissemination of information (Tandoc et al., 2018). Another possible reason is that we are in the period of a very dangerous pandemic; therefore, a lot of Nigerians and the world at large would want to be the first to provide information regarding safety tips and how to cope with the virus without necessarily verifying the messages before sharing which could lead to fake news and misinforming the public. Recent research has shown that misinformation shared on social media regarding the COVID-19 has led to death and severe injury (Zhou et al., 2020).

As expected, H3 was supported in this current study. The result showed that socialisation gratification positively predicted fake news sharing related to COVID-19. It was the third most significant predictor. Previous study reported that the desire for social connection predicted news sharing behaviour (Dunne et al., 2010). Evidence from one research also shows that people are more likely to share information shared by a friend on social media (Fu et al., 2017). In the same way, Chang et al. (2017) study revealed that socialisation gratification positively predicted false information dissemination. The authors reason that this outcome could be because using social media for socialising is viewed as a way to converse. Therefore, we reason that as Nigerians are utilising social networks to maintain social connections, sharing tips, cures, and preventive measures for COVID-19, this leads to the circulation of unconfirmed and fake news content. It has been proven that information that comes from friends and family are more trusted by social media users (Wasserman & Madrid-Morales, 2019).

Our results also establish that information seeking is associated with fake news related to COVID-19 pandemic. It was the fourth most significant factor. This outcome supports H6. In line with this result, recent research has shown that as the cases of the COVID-19 increase around the world, there has been a flurry of misleading or false news stories emerging, as well (Lampos et al., 2020). This suggests that many people seek information online regarding how to cope with the virus, which could turn out to be false. Seeking information on social media has been shown to be the most documented gratification associated with the usage of social media platforms (Ma et al., 2013). It has been established that individuals desire "to be in the know" result to the reception and propagation of fake news content on social networking sites (Duffy et al., 2019).

Findings from past research established the link between pass time gratification with misinformation sharing (Vicario et al., 2016). Consistent with this perspective, we found that pass time gratification positively predicted fake news dissemination. Though, it was the least significant predictor. This outcome implies that as individuals use social media to continue to pass time, their tendency to properly verify a message before forwarding is less. Contrary to this opinion, Thompson et al. (2019) found no link between pass time and news sharing. Still, Choi (2016) study established that dissemination of news was associated with pass time. Recent research also demonstrated that using social media to pass time which leads to fatigue predicts fake news dissemination (Talwar et al., 2019).

Contrary to our expectation, entertainment gratification had no relationship with fake news dissemination of COVID-19. Therefore, H2 was not supported. This implies that sharing of news content is not seen as an act of entertainment at the time of the pandemic. This result negates the outcome of prior investigators (Diddi & Larose, 2010; Larose et al., 2010). Nevertheless, this outcome supports a recent study which found no link between entertainment and dissemination of news content on social media platforms (Thompson et al., 2019). On one hand, our findings suggest that social media users did not share unverified news on COVID-19 for entertainment purposes; perhaps because of the seriousness of the pandemic. On the other hand, it could be said that social media offers its users with many exciting features and applications - such as chat and games - which they may rely on to satisfy their entertainment needs.

*6.2. Theoretical implication*

Our study contributes to the theoretical advancement of the U&G perspective. Previous researchers often used the U&G to predict determinants of news sharing (Thompson et al., 2019; Kim et al., 2015; Ma et al., 2014; Lee & Ma, 2012). We extended the news sharing determinants and added altruism to our model, to establish some factors that predict fake news sharing among social media users. No doubt, our research has provided another dimension to the application of the U&G theory. We have established that altruism, information sharing, socialisation, information seeking and passing time are related to fake news dissemination. There is evidence to show that the investigation into fake news sharing is still scarce as most of the past and current research has not developed a theoretical model to empirically increase the understanding of fake news dissemination behaviour on social media (Talwar et al., 2019).

Therefore, our study is important as it modelled the factors that predict fake news dissemination on social media platforms with a focus on the case of COVID-19. The outcome of this study could also be extended to understand fake news dissemination in general. As such, our study extends the inadequate knowledge of fake news dissemination behaviour. The scientific community and health care workers could use our findings as it provides them with factors that prompt fake news dissemination among social media users. No doubt, the threat of fake news during this pandemic is becoming worrisome and additional knowledge on fake news would assist in the formulation of effective policies in shielding the society from the menace of fake news circulation. Another contribution of this

research is that fake news studies are largely focused on the Western part of the world. Contrary to this, we used samples from Nigeria, which has gained little research attention thus far.

### 6.3. Practical implication

The current study sets up some practical implications. Firstly, this study has shown that individual motivations for *altruism, information sharing, information seeking, socialisation* and *passing time* lead them to share fake news related to COVID-19. Our study found that altruism was the strongest predictor of fake news sharing among the sampled population, and this requires some actions. We urge users of social media to be critical when sharing news even though it carries precautionary measures with the intention to help others. Generally, our study suggests that Nigerians share unverified information on the COVID-19 leading to fake news spread which may cause panic among the citizens and damage to their health. This is because some may opt for cures found online that are not medically established.

Our study provides clear evidence that social media users were motivated by various factors to share news related to COVID-19. It is their behaviour, either vigilant or ignorant when consuming and disseminating messages related to COVID-19, that contribute to fake news spreading and its grave impacts on society. The importance of fake news awareness has been highlighted in past research (Torres et al., 2018), and this study reiterates its significance to combat the deleterious effect of fake news amidst the pandemic. Moreover, the world at large, health care providers and specifically the Nigerian government, must engage with the citizens, providing relevant information during the crucial time of the pandemic. That is, correct information should be shared widely to the public domain through various conventional and online media. This will reduce the circulation of fake news on the concocted cure and prevention tips found online. Accurate information is required at this time because tackling COVID-19 requires everyone to follow medical advice; therefore, without clear and immediate action to refute misinformation online, the COVID-19 pandemic will be much more challenging.

### 6.4. Study limitations

Though our research contributes to knowledge, we acknowledge that it has some limitations. Firstly, we conducted this study with a focus on COVID-19 pandemic as well as drew our sample from the Nigerian society. It is possible that our findings may not be generalised to general fake news sharing. Nonetheless, the findings may be generalised to other nations that have a similar culture to the Nigerian society. Moreover, this study has answered a recent call which suggests that authors should look beyond researching fake news from the US and UK contexts (Duffy et al., 2019). Future researchers could extend this study to explore another context to validate the outcome of this research.

Secondly, since *entertainment* gratification did not affect fake news sharing, prospective investigators could examine other variables such as social media fatigue, self-disclosure, and online trust. Thirdly, our study failed to test whether cultural background, age, income, gender would moderate the effect of fake news sharing. Future researchers could add up these demographic variables to test if it has any effect on the outcome of our model. Fourthly, we did not use any controlling variable in our model; future studies could replicate our model and include appropriate control variables such as age, cultural background, income, and gender. Finally, we acknowledge that our samples were not very large, and that might have affected the predictive power of our independent variables, yet, the power was found to be substantial and acceptable. Future researchers could increase the samples to get a more robust statistical outcome.

## 7. Conclusion

Building on the U&G theory, we demonstrated factors that predict fake news sharing. We drew our samples from the Nigerian society. Based on the outcome of our research, we conclude that altruism is the most significant predictor of fake news sharing among Nigerians. We also conclude that information sharing, socialisation, information seeking and pass time predict fake news sharing. Conversely, entertainment was not significantly associated with fake news sharing in this study. It should be noted that our conclusion is based on the analysed selective constructs. There are other possible attributes of fake news spreading such as ignorance, unawareness, peer pressure, and attention-seeking. Nevertheless, based on the outcomes of this study and the increasing health risk false information proliferation is causing during the outbreak of COVID-19, we feel there is a need for social media users to confirm the authenticity of the information they come across as well as share on social media. This can be achieved through considering the source of information, reading beyond the headlines, checking the authors, in-depth investigation of a news article by checking the dates, examining evidence to confirm enough facts and figures, confirming fake images, searching other sources and asking professionals when in doubt.

### Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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