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Assessment of the spread of fake news of Covid-19 amongst social media users in Kano State, Nigeria

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ABSTRACT

The issue of fake news and its impact has become prominent in recent times. This study is motivated by the need to assess the spread of fake news on Covid-19 amongst social media users in Kano State. The study adopted the Technological Determinism theory. It sought to investigate the extent to which social media users in Kano State are aware of fake news on Covid-19, to find key areas of Covid-19 on which fake news was spread on social media in Kano State, to find out the factors that influence the spread of fake news on Covid-19 among social media users in Kano State as well as to examine the consequence of the spread of fake news on Covid-19 among social media users in Kano State. A quantitative approach was adopted through the administration of 395 questionnaires to the respondents. The study found that 65.6% of the respondents are aware of fake news on Covid-19 in Kano state, 41.3% of the respondents agreed that inflated number was a major topic/key area being discussed, 30.1% of the respondents said trending topics on Covid-19 influenced the spreading of fake news on the topic and 41.8% of the respondents are of the view that the consequence of the spread of Covid-19 fake news is non-adherence to safety measures. Hence 74.2% of the respondents agreed that social media aids the spread of fake news on Covid-19. The study concludes that the number of people who were exposed to fake news stories on Covid-19 on social media was significantly high in Kano State.

Introduction

It is evidence in the literature that consumers relied on the traditional form of media, such as radio and television, which involved relatively fewer and more established sources of news. Nowadays consumers are exposed to online sources of information (Internet), the Internet emerged for information dissemination, thereby determining what information is made available as well as the impression people have on issues (Savrum & Leon, 2015). The Internet also consists of Social Networking Sites (SNS), these networking sites are known as social media. Social media refers to the electronic network or networks that link(s) people and information through computers and other digital devices; thereby allowing for person-to-person communication and information retrieval (DiMaggio, Hargittai, Neumann & Robinson, 2001).

The year 2020 ushered in the outbreak of coronavirus disease (Covid-19) in Nigeria and most parts of the world, the virus formerly referred to as ‘2019 novel coronavirus or ‘2019-CoV’ emerged as a respiratory infection with significant concern for global public health hazards. The virus is transmitted through human-to-human contact via droplets from saliva or contact with affected persons (Sahu et al., 2020). Nigeria recorded its first case on February 28, 2020. Since then, there has been an observed increase in the exploitation of various social media platforms to share information about the disease (Sulaiman et al., 2020). Covid-19 is a global pandemic, which has affected most countries in different ways and different control mechanisms have been deployed to manage the situation. The nature of the virus makes it difficult to detect, hence, it is difficult to estimate the actual number of people infected (Sahu et al., 2020).

In the Nigerian context, social media is a means of keeping up with occurrences all over the globe and is used to shed light as regards the Nigerian situation, the ability to sieve authentic information from an avalanche of half-truths and false information available on social media networks is a challenge in Nigeria. However, Aondover (2020) adds that the outbreak of Covid-19 in Nigeria spurred a digitalized reaction with citizens surfing about Covid-19 content to gather information about the virus. Facebook, Instagram, WhatsApp, and Twitter, appeared to be among the prominent platforms consulted by Nigerians to create awareness on Covid-19 in the country.

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2451-9588/© 2022 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
The motivation for this study stems from the unique global disrupting event that is the Covid-19 pandemic which sprung up in the year 2020, in which the above scenarios are likely to be heightened or experienced in Nigeria, as a good number of citizens believe that the virus is a hoax created by the government to corruptly enrich few State officials. This belief is difficult to erase from the minds of many people, thus making it almost impossible to adhere to personal hygiene instructions issued by both the WHO and the Nigeria Centre for Diseases Control (NCDC) (Obi et al., 2020).

Fake news on Covid-19 spread around the world, but in Northern Nigeria, precisely Kano, the month World Health Organisation (WHO) declared Covid-19 a global pandemic, the state confirmed its first positive Covid-19 case, unfortunately in the same month the state witnessed what was described as mysterious deaths, claiming hundreds of lives including the Emir of Rano and seven Professors from Bayero University, which was linked to the pandemic but was later rebuffed by the government, a lot of fabricated news stories sprung up afterward (Kurfi, Aondover & Idris, 2021). Thus, going by empirical evidence as articulated in the literature, this study seeks to assess the spread of fake news on Covid-19 amongst social media users in Kano State, Nigeria.

A study by Sulaiman et al. (2020) stated that Nigerian youths mostly shared and engaged in information about Covid-19 on social media using Facebook, Twitter, WhatsApp, and Instagram during the pandemic to understand, monitor, and build relationships with the online communities, have fun and develop a political friendship.

A survey of 400 respondents on Public Awareness, Knowledge, and Perception of Covid-19 examined public perception of the pandemic in Tarauni and Kano Municipal LGA. The study found that respondents are aware of the Covid-19 but have low knowledge of virus in the two local governments, the study also revealed that the majority of the respondents did not believe in the existence of Covid-19 (Fate et al., 2020).

Based on the above empirical studies, it is clear that the Covid-19 pandemic deepens the fake news problem and there are instances of the use of social media to spread fake news about the pandemic, most of the studies focus on exposure, awareness, behavioural, influences, political, and preventive perspectives and to ascertain prominent platforms used in the spread of fake news on Covid-19. To bridge this knowledge, this study seeks to assess COVID-19-related fake news that is produced, lived, and propagated on social media.

The aim of this study is to assess the spread of fake news on Covid-19 amongst social media users in Kano State. In order to achieve the broad aim of the study, the following specific objectives are set:

1. To investigate the extent to which social media users in Kano State are aware of fake news on Covid-19.
2. To find the key subject areas of Covid-19 on which fake news was spread on social media in Kano State.
3. To find out the factors that influence the spread of fake news on Covid-19 among social media users in Kano State.
4. To examine the consequence of the spread of fake news on Covid-19 amongst social media users in Kano State.

Literature review

Conceptualizing the influence of social media regarding Covid-19

Media coverage and public opinion can have a significant effect on both the public and private sectors in deciding with regards to suspending programs like airline programs, compared to the actual need for public health (Depoux et al., 2020). Social media have long been regarded as a critical source of public perceptions of risk, through the media, people acknowledge topics that offer risk warnings and interpret the risk issues regarding the pandemic (Ob et al., 2013). The risk information is presented in a manner that influences people’s perception of risk, especially sensational media reporting of a pandemic crisis. Additionally, the issue of disinformation which is deliberately and often overtly spread the rumors on Covid-19 to influence public opinion or obscure the truth (Chong & Choy, 2018).

In particular, it is believed that anxiety and anger mediate the effect of media exposure on the perception of personal-level danger and therefore increase beneficial preventive behaviours (Wazib, Ansar & Goswami, 2021). The outbreak of Covid-19 is a negative occurrence, resulting in an unpredictably high number of illnesses and mortalities, eliciting negative self-relevant emotions from the public (Oh et al., 2013). People usually express their concerns about the pandemic outbreak through social media (Oh et al., 2013). In some instances, however, the mass media are unable to capture the epidemic on time, and thus fail to become the prime indicator (Liu & Huang, 2020). Since mass media news reports fall behind real-time coronavirus trends, it does not play a useful pre-warning role in communicating and sensitizing about public health also as the virus is new and there is not enough research on it, a volume of misinformation transmitted leads to adverse psychological effects among people such as anxiety, rage or sadness (Liu & 2020).

Spread of information (fake news) on Covid-19 in Nigeria

Social media users in their quest to seek information about Covid-19 on social media have met with millions of fake content due to unsupervised messages on social media that its users consume (Apuke & Omar, 2021). In Nigeria, there is a growing number of false information online as regards Covid-19. During this period of the Covid-19 pandemic, the government (NCDC) also used the media platform to pass across updates on the state of the country’s state of health as regards the spread of the flu. This led to the creation of fake accounts related to the NCDC, thus, Hassan (2020), observed a tweet suggesting President Muhammadu Buhari was sick and had contracted the virus, this tweet generated above 3000 likes and was retweeted more than 200 times within a few hours. Similarly, an audio clip by an alleged WHO health worker was circulated to forecast the death of millions of Nigerians due to the pandemic (Wenlin & Gao, 2016).

Sahu et al. (2020) corroborate this with the involvement of health workers or self-acclaimed experts who proffer false cures by sitting in the sun for long hours so as the virus dies due to heat. While others claimed the virus cannot harm Africans or survive in Africa (Lampos et al., 2020).

Although sharing news is seen as contributing to social cohesion, users doing so are motivated by the emotional impact the news is seen to have, the relevance it might have for the receiver, and the sender’s intention to “provide advice or warning”. These motivations are unique to Nigerian people who are often described as those with much altruistic attitudes (Apuke & Omar, 2020). 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 specific issues (Nasir et al., 2020).

Empirical review

Nasir et al. (2020) found that the explosion of social media allowed individuals to spread information without cost, with little investigation and fewer filters than before. This amplified the old problem of fake news, which became a major concern nowadays due to the negative impact it brings to the communities. In order to tackle the rise and spreading of fake news, automatic detection techniques have been researched building on artificial intelligence and machine learning. The recent achievements of deep learning techniques in complex natural language processing tasks, make them a promising solution for fake news detection too. This work proposes a novel hybrid deep learning model that combines convolutional and recurrent neural networks for fake news classification. The model was successfully validated on two fake news datasets (ISO and FA-KES), achieving detection results that are significantly better than other non-hybrid baseline methods.
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Theoretical framework

This study espouses Technological Determinism Theory. This communication theory propounded by Marshall McLuhan 1964 explains to whom or what could have a controlling power in human affairs by questioning the degree to which human thought or action is influenced by technological factors. It supports that media technology shapes how individuals in a society think, feel, act and how the society operates and moves from one technological age to another.

Hauer (2017) argues that the proponents of technological determinism in society are influenced and shaped by technological development, it has to adjust and adapt to new technologies and innovations and the negative consequences of the technological development are the result of poor use by the people, not of the very nature of technology. Society is influenced by technological developments, the negative effects are caused by poor use by the people, not by the nature of the technology itself, and also the introduction and use of new technologies is the result of the social order.

The theory has various assumptions broken down into individual interpretations, Metatheoretical assumptions which cover ontological assumptions, epistemological assumptions, and axiological assumptions. Thus, McLuhan is of the view that important technological inventions influenced a major impact on societies (technological determinism) while Karl Marx believed in economic determinism and that the economic organization of society constitutes an essential aspect of his life, and Freud believed that sex plays a fundamental role in the life of an individual and society.

The theory postulates that the medium is the message but some media researchers see that the medium is the determinant of the quality of communication and its impact hence McLuhan views that the content of the media cannot be viewed independently of the media’s technologies. This to an extent seems to be closely related to the agenda-setting theory which describes the ability (of social media) to influence the salience of topics on the public agenda.

That is if a news item is covered frequently and prominently the audience will regard the issue as more important. The innovations that increase the spread of fake news on Covid-19, especially in the area of online technology have to a large extent influenced the widespread of fake news in society. The types of phones that were used to communicate back then are now advanced and have been a major tool used to influence the way communication is done on social media. Taking a look at some other assumptions of the theory sheds more light as we access the spread of fake news on the Covid-19 pandemic amongst social media users in Kano State.

The theory posits that recipients of the message do not need to exert effort, participation, or coexistence, such as printing, radio, and cinema. And since the globe has become a “global village”, McLuhan confirms that this led to what he called “the era of anxiety”, where the electronic media helped shrink the globe and shrink it in time and space until it was described as a “global village”. Human awareness of his responsibility to the utmost degree, and this situation led to what might be called the “era of anxiety”, because the new immediate electronic revolution forces the individual to commit and participate deeply.

A criticism by Richard Black is considered one of the most critical of this theory, he notes that the “global village” no longer has a real presence in society, explaining that the technical development that McLuhan, as he considers that the term “global” village that McLuhan claimed its existence no longer has a real presence in contemporary society, and in this regard, “Black” says that the development on which he relied McLuhan “When describing the global village, he continued to develop further, leading to the destruction of this global village and its fragmentation.

Another criticism of technological determinism is that technology never operates by itself on members of society. The choice of using technology and experiencing its effects, therefore, lies in the hand of a human being.

The nexus between Technological Determinism Theory is that even the Internet form of sharing information gives room for webcasting, online, which is the digital distribution of fake news via the Internet. Thus, going by the tenets of the theory, the assumptions of the theory must be in agreement with the subject matter as far as the purpose of this study is concerned. The tenets of the theories are also in line with what scholars like Hauer (2017) established in their study because
information technology and the changing role of the Nigerian media need technological driven especially the social media that is using the technological or modern way of information dissemination.

Research methodology

The choice of this research method was informed by the positivist approach using a cross-sectional survey method whereby data was collected at one point in time. Survey design is one in which a group or item is studied by collecting and analyzing data from only a few people or items considered to be representative of an entire population, and are useful for collecting information on audiences and readership (Wimmer & Dominick, 2011). This study adopts a descriptive survey because it simply describes data on variables of interest. Considering the population size of this study, a survey was the appropriate methodology to be employed.

Population of the study

According to Asika (2010) a population is made up of all conceivable elements, subjects, or observations relating to a particular phenomenon of interest to the researcher. Kano state has 44 local government areas which are divided into three (3) senatorial zones that make up its population. There are 15 LGAs in Kano South, 15 LGAs in Kano Central, and 14 LGAs in Kano North. Kano state has 8,336,296 million active internet subscribers as retrieved from the Nigeria Bureau of Statistics (NBS, 2020). Therefore, these 8,336,296 million subscribers make the population for the study. It is important to note that studying the entire social media users in Kano State will be difficult due to the high population for obvious reasons of time and logistics, a sample of the population was used.

Sampling technique/sample size

This study adopts the purposive sampling technique. Asemah (2012) observed that purposive sampling is a method in which the researcher uses his or her judgment to choose respondents and select those that best meet the purpose of the study. In this study, the target population is the active social media users in this location. Purposive sampling was used to select one local government from each senatorial zones namely. Wudil, Bichi and Ungogo LGAs because they represent a sub metro environment, also the existence of tertiary institutions in the environment would cause a better knowledge of communication and the environment will have active social media users to answer the needed research questions. The distribution of questionnaires within these locations was based on the population strength of the local governments in the state like Bichi 3%, Ungogo 3.9%, and Wudil 2%.

According to Creswell (2014), the parameters of interest, size of the population, purpose and the complexity of the study and the budgetary constraints should also be taken into consideration in determining the precise sample size. Determining the sample size of this research is calculated by using Taro Yamane’s formula with 95% confidence level.

\[
n = \frac{N}{1 + N(e^2)}
\]

The computation in the light of the above is as shown below:

\[
n = \frac{8,336,296}{1 + 8,336,296(0.05)^2}
\]

\[
n = \frac{8,336,296}{2,084,075}
\]

\[
n = 399.9
\]

Therefore, going by Taro Yamane’s formula of determining sample size, 400 respondents were selected and questionnaires were distributed to them. The distribution of the questionnaire was in these categories: 135 were distributed in Bichi LGA, 175 in Ungogo LGA, and 110 in Wudil LGA based on the adequate proportion of the population.

Research instrument/method of data analysis

The questionnaire was used to collect data from respondents who are active social media users. The questionnaire contained close-ended questions. The questionnaire is one of the few instruments that can allow a researcher to collect data objectively to obtain valid answers in the questionnaire. For a clearer understanding, the study made use of frequency and percentage tables for the presentation of data. Closed-ended questions were quantified using descriptive analysis in the form of Yes and No, often, very often, and rarely was designed to collect the respondent’s opinion using Statistical Package for Social Science (SPSS).

Findings and discussion

RQ1: To what extent are social media users in Kano State aware of the spread of fake news on Covid-19 in Kano State?

This research question attempts to investigate the extent to which social media users in Kano State are aware of fake news on Covid-19. Based on the result of the study, social media users were aware of the existence of fake news on social media in Kano State. Concerning research question one; the following questions were examined as follow:

Table 1 presents data on the duration of the respondents’ uses of social media cumulatively in a day. The data shows that 28.9% (n = 114) of the respondents used 10–12 h on social media in a day. 17.5% (n = 69) used 7–9 h, 18.7% (n = 74) used 4–6 h and 34.9% (n = 138) used 1–3 h in a day. Based on the result of the study, the category of respondents who used social media from 1 to 3 h in a day is significantly higher. This Corroborates the findings of Kurfi et al. (2021) that Kano residents were adequately exposed to digital images that often accompanied news in social media, and Kano residents are influenced by fake news with digital images on Covid-19 to a very great extent.

Table 2 examines the main sources of Covid-19 information. Based on the result, 59.5% (n = 235) of the respondents said their source of information was social media. 8.3% (n = 33) was radio, 20.5% (n = 81) was television, 11.4% (n = 45) was newspapers and 0.2% (n = 1) was others. The data points out that social media was the main source of Covid-19 information within the period of the study.

Table 3 ascertains the social media platform that the respondents often get information on Covid-19. From the data generated, 42.3% (n = 167) of the respondents said Facebook, 12.4% (n = 49) agree on Twitter. Similarly, 16.4% (n = 65) said Instagram, 27.3% (n = 108) said WhatsApp and 1.5% (n = 6) are within the category of others. Based on the result of the study, most of the respondents normally use Facebook as a social media platform to get information on Covid-19. Corroborating, Sulaiman, Adeyemi, and Ayegun’s (2020) findings revealed that most Nigerian youths used Facebook, Twitter, WhatsApp, and Instagram to share information on covid-19.

Table 1

| Duration of use per day | Frequency | Percentage % |
|-------------------------|-----------|--------------|
| 10–12 h                 | 114       | 28.9         |
| 7–9 h                   | 69        | 17.5         |
| 4–6 h                   | 74        | 18.7         |
| 1–3 h                   | 138       | 34.9         |
| Total                   | 395       | 100          |

Source: (SPSS version22, Field work, 2021)
RQ2: What are the key subject areas of Covid-19 on which fake news are being spread amongst social media users in Kano State?

Research question two attempts to find out the key subject areas of Covid-19 on which fake news was spread on social media in Kano State. From the result of the study, the inflated number is one of the related topics that propel the spread of fake news Covid-19 on social media. In line with the research question two, the following questions were examined:

Table 4 attempts to find out whether the respondents are exposed to fake news stories on Covid-19 on social media. Based on the data, it was evidence that 65.6% (n = 259) of the respondents were exposed to fake news stories on Covid-19 on social media. 34.4% (n = 136) of the respondents were not exposed to fake news stories on Covid-19 on social media. This implies that the number of respondents who were exposed to fake news stories on Covid-19 on social media is significantly high compared to those that were not exposed to fake news stories Covid-19 on social media.

Table 5 examines how often the respondents were exposed to fake news stories on social media. From the data generated, 42.1% (n = 109) of the respondents said very often, 32.0% (n = 83) said often and 25.9% (n = 67) said rarely. Based on the result of the study, the respondents

Table 2
Main source of Covid-19 information.

| Source of information | Frequency | Percentage % |
|-----------------------|-----------|--------------|
| Social media          | 235       | 59.5         |
| Radio                 | 33        | 8.3          |
| Television            | 81        | 20.5         |
| Newspaper             | 45        | 11.4         |
| Others                | 1         | 0.2          |
| Total                 | 395       | 100          |

Source: (SPSS version22, Field work, 2021)

Table 3
Social media platform the respondents often get information on Covid-19.

| Social Media platform used | Frequency | Percentage % |
|----------------------------|-----------|--------------|
| Facebook                   | 167       | 42.3         |
| Twitter                    | 49        | 12.4         |
| Instagram                  | 65        | 16.4         |
| WhatsApp                   | 108       | 27.3         |
| Others                     | 6         | 1.5          |
| Total                      | 395       | 100          |

Source: (SPSS version22, Field work, 2021)

Table 4
Exposure to fake news stories on Covid-19 on social media.

| Exposure to fake news | Frequency | Percentage % |
|-----------------------|-----------|--------------|
| Yes                   | 259       | 65.6         |
| No                    | 136       | 34.4         |
| Total                 | 395       | 100          |

Source: (SPSS version22, Field work, 2021)

Table 5
The level at which the respondents are expose to fake news stories on social media.

| Level of Exposure | Frequency | Percentage % |
|-------------------|-----------|--------------|
| Very often        | 109       | 42.1         |
| Often             | 83        | 32.0         |
| Rarely            | 67        | 25.9         |
| Total             | 259       | 100          |

Source: (SPSS version22, Field work, 2021)
were very often exposed to fake news stories on social media.

Table 6 presents data on whether the respondents do spread fake news stories on Covid-19 on social media. Based on the data, 26.1% (n = 103) of the respondents agree that they do spread fake news stories on Covid-19 on social media, while 73.9% (n = 292) of the respondents said no, they don’t spread fake news stories on Covid-19 on social media. This means that majority of the respondents do not spread fake news stories on Covid-19 on social media. Similarly, Apuke and Omar (2021) found that social media users in their quest to seek information about Covid-19 on social media have met with millions of fake content due to unsupervised messages on social media that its users consume.

RQ3: What are the factors that influence the spread of fake news on Covid-19 amongst social media users in Kano State?

Research question three examines the factors that influence the spread of fake news on Covid-19 amongst social media users in Kano State. Based on the result of the study, trending topics is one of the major factors that influence the spread of fake news on Covid-19 on social media. Similarly, Apuke and Omar (2021) found that social media users in their quest to seek information about Covid-19 on social media have met with millions of fake content due to unsupervised messages on social media that its users consume.

Table 7 presents data on how often the respondents do spread this Covid-19 fake news stories on social media. Based on the result of the study, 25.2% (n = 26) said very often, 33.0% (n = 34) said often and 41.7% (n = 43) said rarely. This means that most of the respondents rarely spread this Covid-19 fake news stories on social media.

Table 8 examines the factor that influences the spread of fake news on Covid-19 on social media. From the data generated, 24.3% (n = 25) of the respondents said self-disclosure is one of the factor that influences the spread of fake news on Covid-19 on social media. 23.3% (n = 24) said to gain followship, 30.1% (n = 31) is on trending topics and 22.3% (n = 23) is on political opinion. This means that trending topics is one of the major factors that influence the spread of fake news on Covid-19 on social media. This Corroborate the findings of Kurfi et al., (2021) that factors like perception or instinct, eagerness to be the first to share images and lack of knowledge about image verification tools often propels one to spread of fake news with digital images on Covid-19 among social media users in Kano.

Table 9 presents a related topic that propels the spread of fake news on Covid-19 on social media. Based on the data, 17.2% (n = 68) of the respondents said the existence of the virus, 41.3% (n = 163) said inflated number, 23.8% (n = 94) said political or government manipulation, 17.2% (n = 68) said effectiveness of the vaccine and 0.5% (n = 2) are within the category of others. This means that inflated number is one of the related topics that propel the spread of fake news Covid-19 on social media.

RQ4: The consequences of the spread of fake news on Covid-19 amongst social media users in Kano State

Research question four ascertains the consequences of the spread of fake news on Covid-19 amongst social media users in Kano State. The result of the study revealed that non-adherence to safety measures constitutes a major consequence of the spread of fake news on Covid-19 amongst social media users in Kano State. About research question four, the following questions were examined:

Table 10 examines how the respondents normally authenticate the credibility of Covid-19 information received on social media. The result of the study shows that 41.8% (n = 165) of the respondents said NCDC website, 26.8% (n = 106) said mainstream media, 13.7% (n = 54) said family, 16.7% (n = 66) said friends and 1.0% (n = 4) are within the category of others. Based on the result of the study, the majority of the respondents do authenticate the credibility of Covid-19 information received on social media through the NCDC website.

Table 11 ascertains how the spread of fake news on Covid-19 affects the respondents and users of social media. Based on the data generated, 41.8% (n = 165) of the respondents said non-adherence to safety measures constitutes a major consequence of the spread of fake news on Covid-19 amongst the respondents and users of social media. Depouzet et al., (2020) observed that media coverage and public opinion can have a significant effect on both the public and private sectors in deciding with regards to suspending programs like airline programs, compared to the actual need for public health.

| Spread of fake news stories | Frequency | Percentage % |
|-----------------------------|-----------|--------------|
| Yes                         | 103       | 26.1         |
| No                          | 292       | 73.9         |
| Total                       | 395       | 100          |

Source: (SPSS version22, Field work, 2021)
The spread of fake news on Covid-19 affect users of social media. Within this context, the findings of the study have substantially addressed and resolved the issues in the research objectives and research questions which impliedly suggests that the study has achieve its goal of assessing the spread of fake news of Covid-19 amongst social media users in Kano State, Nigeria.

### Table 10

| Credibility          | Frequency | Percentage % |
|----------------------|-----------|--------------|
| NCDC website         | 165       | 41.8         |
| Main stream media    | 106       | 26.8         |
| Family               | 54        | 13.7         |
| Friends              | 66        | 16.7         |
| Others               | 4         | 1.0          |
| Total                | 395       | 100          |

### Table 12

| Social media aids the spread of fake news on Covid-19. | Frequency | Percentage % |
|------------------------------------------------------|-----------|--------------|
| Yes                                                  | 293       | 74.2         |
| No                                                   | 102       | 25.8         |
| Total                                                | 395       | 100          |

Source: (SPSS version22, Field work, 2021)

### Table 11

| Response                                      | Frequency | Percentage % |
|-----------------------------------------------|-----------|--------------|
| Non adherence to safety measures              | 165       | 41.8         |
| Increase in number of infected                | 106       | 26.8         |
| Distrust for government                       | 54        | 13.7         |
| Fear to get vaccinated                        | 66        | 16.7         |
| Others                                        | 4         | 1.0          |
| Total                                         | 395       | 100          |

Source: (SPSS version22, Field work, 2021)

**Declaration of competing interest**

The authors declare that they have no known competing conflict of interests or personal relationships that could have appeared to influence the work reported in this paper. Therefore, it is our singular honor to see our research paper appear in this journal. The authors have no conflict of interest in the study.

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