VERIFICATION OF COVID-19 MISINFORMATION ONLINE:
LITERACY CONTRIBUTIONS OF FACT-CHECKING WEBSITES DURING THE
COVID-19 PANDEMIC IN NIGERIA

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DEDICATION

There comes a time in a man's life where he must decide to follow the path that the Holy Spirit leads on towards fulfilling destiny. Pursuing a communications masters is a step towards my God-ordained purpose.

I am grateful to my parents, Olugbenga and Adebimpe Aina, who counselled me severally to not give up and focus on the goal ahead.

Lastly, thank you to the Father of All Lights who knows all things; the Only Wise God whom all the earth will hear me testify of His power in this time and in the age to come. Amen.

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ABSTRACT

With the rise of social media have come problems of authorship and mis- and dis- and mal-information. Social media allows everyday people to become content creators and gives a voice to ordinary citizens to express themselves. Despite the benefits of citizen participation, misinformation continues to thrive in both Western and non-Western contexts. Three fact-checking websites, Dubawa, Africa Check, and Fact Check Hub were analyzed in this thesis to identify the current literacy efforts towards tackling misinformation in Nigeria. The results revealed that there was a significant difference between news topics that debunked misinformation (χ^2 (5, 146) =19.083^a, p = .002) and no significant difference between the news topics that encouraged misinformation literacy (χ^2 (5, 146) = 3.166^a, p = .674) from articles analyzed in their efforts to present accurate information during the COVID-19 pandemic in Nigeria. This thesis proposes that fact-checking organizations' resources and fact checks be included as a crucial part of future literacy policy making efforts in the quest to fight misinformation on the continent. Future research should assess the extent to which fact-checking organizations deliver interventions i.e., fact-checked posts close to the sites where misinformation is propagated. Furthermore, there needs to be an assessment of the utilization of the proposed fact-checking skills identified by fact-checking organizations by individuals when they encounter misinformation online to assess their self-efficacy in responding appropriately to misinformation following misinformation literacy exposure.

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With the rise of social media have come problems of authorship and mis- and dis- and mal-information. Social media allow for everyday people to become content creators, and while giving a voice to ordinary citizens to express themselves has in some cases shown to be good for democratic communication purposes (Busari, 2020; Dambo et al., 2020), the lack of oversight of who is posting what, as well as the anonymity that social media afford have created an environment ripe for the spread of misinformation. Despite the benefits of citizen participation, as demonstrated during the Arab Spring, which helped shed light on how citizen journalism can shape social discourse and curb the excesses of institutionalized agencies, especially when they are corrupt (Vos & Thomas, 2018), misinformation continues to thrive in both Western and non-Western contexts (Beauvais, 2022; Tandoc et al., 2017).

Political ideologies and underpinnings have also been found to be drivers of misinformation in recent history (Beauvais, 2022), with its influence gaining credence in mainstream media in 2016 during the U.S. presidential elections. Following this defining event, the rapid proliferation of misinformation along with its consequences have garnered scholarly interest to decipher the motivations, impact, and solutions to curb its spread (Laskar & Reyaz, 2021).

With the popularization of misinformation across the world, one of the sites of contention of the heightened spread of misinformation is Nigeria (Wasserman & Madrid-Morales, 2019). In Nigeria, researchers have identified a high level of the burden to "warn

and update" on social happenings and phenomena (Apuke & Omar, 2020; Wasserman & Madrid-Morales, 2019). This burden, identified as a civic obligation, poses a threat to proper journalistic reporting and spurs the spread of misinformation. As a result, there is an increased reliance on international media (Otulugbu, 2020; Wasserman & Madrid-Morales, 2019) to provide Nigerian citizens with credible information about local and international news, particularly during the COVID-19 pandemic. This type of news consumption follows a long history of government and media distrust in Nigeria. A common trend of government interference in the media is found with Nigerian political parties' deliberate pushing of online rumors into conventional media forums. For instance, political consultants called Sojojin Baci ("soldiers of the mouth") in Northern Nigeria, often make media appearances through television debates and radio phone-ins with the aim of amplifying false information already circulating on social media that makes their political godfathers look good and discredits their opponents (Hassan & Hitchen, 2020; Otulugbu, 2020).

The Nigerian media also have long been identified as party to misinformation dissemination (Okoro & Emmanuel, 2018) as their dearth of prompt reporting and making official information available on issues of high public interest leads to the saturation of misinformed user generated content on social media. Often, media's intervention tends to worsen suspicions and already existing tensions in Nigeria. For example, in 2018, the Nigerian media's circulation of fake pictures on social media that falsely depicted inter-communal violence spurred a three-day violence spree which led to the death of over 200 people in Plateau state (Apuke & Omar, 2020). Two distinct images; one of a woman with a gaping shoulder wound, and the other of half a dozen people killed in attacks, falsefully

portrayed the situation on ground. Amid this pandemonium, a media outlet fueled existing tensions by highlighting false claims made by Danladi Circoma, a leader of the Miyetti Allah Cattle Breeders Association, who stated that the attacks in Plateau were revenge for the loss of 300 cows. This claim was later refuted. These are some highlights of the existing rate of misinformation encouraged by both the media and government of Nigeria.

The need for news literacy has been a phenomenon within health contexts in the continent of Africa for about a decade. In the United States, there has also been an emphasis on news literacy since the rise of fake news during the 2016 U.S. presidential election. This emphasis has risen with the influx of misinformation during the recent coronavirus pandemic. The resultant increase in the awareness of misinformation, and its resultant effects in several societal contexts, stresses the need to address information disorder in Nigeria. Similar issues requiring news literacy arose when efforts to ensure accuracy of health information during the Ebola outbreak proved ineffective with the uptake of misinformation on social media that influenced death rates negatively (Oyeyemi et al., 2014). While literacy efforts and interventions in Western, educated, industrialized, rich, and democratic (WEIRD) societies are often researched (Henrich & Norenzayan, 2010), there is a paucity of scholarship on the prevailing interventions towards news literacy in Africa. Thus, there is a need for news literacy efforts to be identified and employed to equip news consumers with the literacy skills necessary to decipher misinformation online in the country of Nigeria (Khan & Idris, 2019; Tully et al., 2020; Vraga & Tully, 2016).

In certain under-researched contexts like Africa, media libraries, which are the primary sites with a growing role in promoting and teaching news ideals are bereft of

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news literacy interventions and sufficient resources (Cunliffe-Jones, et al., 2021, p. 22).

Despite being identified as a site of high saturation of misinformation exposure when

compared vis-a-vis to WEIRD countries (Wasserman & Madrid-Morales, 2019), the

requisite literacy interventions suggested by research have not been implemented within

the continent.

       This is not to neglect the current media literacy efforts that are being employed

within the educational context, however, they are still at an elemental level of building

relevant Information Communication Technology (ICT) skills and are yet to attain a level

of saturation requisite with the overall efforts towards increasing the permeation of media

literacy, particularly in Nigeria (Cunliffe-Jones et al., 2021). More so, when media literacy

is not established, it is difficult to introduce news literacy and misinformation literacy into

the conversation. Recent discourse on news literacy continue to highlight the

government's inadvertent restriction of literacy efforts as discussions on including media

literacy into the curriculum continue to prove futile (Tully et al., 2021). Cunliffe-Jones et

al. (2021) highlight that there remains an "absence of any elements of news or

misinformation literacy from schools despite the efforts of a series of initiatives since

2004 aimed at promoting media literacy in schools and the formation of the African

Centre for Media and Information Literacy (AFRICMIL)" (p. 40). Cunliffe-Jones et al.

(2021) also advocate for the proposal of a new type of news literacy, misinformation

literacy, that would extend beyond the provisions of news or media literacy to educate

individuals on the specific skills to distinguish misinformation from accurate information.

The sole evidence in the Nigerian educational system of news literacy is restricted to

deliberate efforts that fact-checking organizations make to introduce seminars or sessions

at a handful of schools on identifying misinformation. However, these efforts are not enough to ground news literacy in the nation.

Consequently, the proposed measures of government regulation of misinformation on social media presents a unique challenge given the history of government intervention in the media in Nigeria (Onyemelukwe, 2020). In 2019, the Nigerian government's proposal of the *Protection from Internet Falsehood and Manipulation Bill 2019* was accompanied with the fear of repression of expression because some of the tenets prohibited prejudiced statements from being made to national security officials that would diminish public confidence in the government (Onyemelukwe, 2020). Widespread criticism of this bill proposal led to the campaign *#SayNoToSocialMediaBill*, which was a direct affront to the enactment of this bill that would violate international laws protecting the freedom of speech (Ewang, 2019).

As social media deepens divisions in Nigeria (Hassan & Hitchen, 2020), issues arising from the varying ideologies that political parties adopt in their quest for political office also tend to spill over into various issues of societal concern and impact to worsen existing political rivalries (Nwankwo, 2021). Consequently, a vacuum has been created which necessitates the identification of deliberate efforts towards countering the growing reign of misinformation in Nigeria.

Although there has been a handful of studies erected to understand the spread and effects of misinformation in Nigeria, Africa deserves continued attention in journalism studies, particularly in the realm of misinformation research moving beyond case studies and empirical descriptions towards theory-building and the expansion of conceptual frameworks to include attention to the specific intersections of media, politics and society

in this important part of the world. Therefore, this thesis examines the existing fact-checking landscape in Nigeria, topics they emphasize, and the extent to which Nigerian fact-checking sites not only debunk misinformation but contribute to efforts that improve misinformation literacy using a content analysis of three Nigerian fact-checking websites.

II. LITERATURE REVIEW

1) News and Misinformation

Misinformation is a subset of information disorder. In *Journalism, Fake news & Disinformation,* the term information disorder is defined through three distinct concepts namely misinformation, disinformation, and mal-information. Misinformation represents information that is false, but the agent or author believes it to be the truth. Its subset, disinformation, is likewise false information but the agent is aware of the falsity of the claim being made (Ireton & Posetti, 2018). The differentiating factor between misinformation and disinformation is the intent to harm. This intent, however, cannot be deciphered deductively, hence, this thesis' emphasis on misinformation that focuses on news content has been published online, independent of the intent of the author at publication. This differentiation is particularly important in this thesis as the review of fact-checked information does not decipher the agent's intent to mislead or deceive. Furthermore, Wardle (2019) pointed out the intersection of disinformation and misinformation with the explanation that "when disinformation is shared it often turns into misinformation," adding that misinformation is "false content but the person sharing does not realize that it is false or misleading. Often a piece of disinformation is picked up by

someone who does not realize it is false, and shares it with their networks, believing that they are helping" (Wardle, 2019). Lastly, mal-information is content based on reality or the truth, but used to inflict harm on a person, organization, or country (Ireton and Posetti, 2018, p. 46). Based on these definitions, false information can only take the form of misinformation and disinformation due to its nature of falsity. Thus, mal-information will be a misrepresentation if utilized in this thesis. Therefore, this thesis' emphasis on misinformation represents all false information online represented by the author's inability to decipher intent and that have been featured on fact-checking organizations websites to be debunked during the COVID-19 pandemic.

Misinformation thrives in an atmosphere of fear and panic that causes individuals to ignore their ability to use critical thinking skills to identify and verify misinformation (Wardle, 2019; Wardle & Derakhshan, 2017). Such was the case during the global coronavirus pandemic. This event is preceded by several historical instances that portray the effects of hysteria and the resultant consequences of information that has been misrepresented. An earlier instance of misinformation was propelled at the induction of legacy media featuring Orson Welles adaptation of *The War of the Worlds* being aired on the radio when it was misinterpreted by listeners as live factual reporting. However, this does not discredit the existence of malicious intent of agents of disinformation whose aim is the deliberate creation and sharing of information known to be false. Studies have identified three major motivations of the authorship of misinformation as financial, political, social, and psychological (Tandoc et al., 2017; Wardle and Derakhshan, 2017) which serve as the underlying factors for the continued spread of disinformation.

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Misinformation tends to thrive in the form of news parodies, political satire, propaganda and within health contexts. In research identifying the popularization and effects of misinformation, it tends to occur during elections or the execution of political duties. News is expected to include accurate and truthful information (Tandoc et al, 2017), however, when it comes to disinformation, particularly within the African context, Nigerians saw a rise in coronavirus stories that were forged and intended to mislead particularly among health and political content (Oji, 2022). This conclusion stems from the fact that at the time that these misinformation campaigns were made public, official sources were still at the initial stages of deciphering the impact and cure for the coronavirus. A common occurrence of misinformation, particularly in health contexts, arose with the recommendation of traditional African potions and home remedies during the Ebola outbreak in Nigeria and home remedies which were still being proposed as the cure of the coronavirus (Oyeyemi et al., 2014).

Thus, the first research question this thesis explores is: RQ (research questions) 1: What are the differences in news topics in terms of what kinds of misinformation prompts debunking vs. misinformation literacy education?

The spread of misinformation is one of immense importance to the discussion at hand. Social media can account for contributing to both issues of authorship and dissemination of misinformation as there is little to no monopoly on the creation of news content which was previously restricted to traditional news sites. Valenzuela et al. (2019) identify how social media gives voice to citizens with limited political power. On the other hand, the collective nature of the Nigerian society, especially consumption patterns that exist helps give credence to and describe how messages are transmitted. For instance,

given the collectivistic nature of African societies, there tends to be a sense of solidarity that exists where traditional sources of information dissemination are unlikely to be brought to question given the element of trust found within these societies. These values of solidarity towards traditional news sharing habits like word-of-mouth dissemination of information; and traditional news sources like local television, the daily newspaper and radio technologies which often disseminate news mirroring word-of-mouth communication then extends to social media platforms like Facebook, WhatsApp, and Twitter. On these social media platforms, information is not only consumed in the public sphere, but also consists of close-knit friendship and familial ties which becomes a diverse form of the practice of word-of-mouth communication. Consequently, these collectivistic attitudes based on trust make it easier for misinformation perpetuators to take advantage of these avenues to champion the "extremist" views on politics and more recently, regarding health awareness and misinformation since the onset of the coronavirus pandemic (Ogola, 2021; Oyeyemi et al., 2014).

Apuke & Omar (2021) identify that news sharing behaviors are closely tied to status-seeking motivations of perpetrators with self-aggrandization being a primary motivation for misinformation dissemination. Inversely, these agents are sometimes salient to the communication process as the quest for news and information in African countries lies in the hands of opinion leaders who often have access to internet technologies. They simplify media messages on politics and economy into dispersible bits that are then distributed severally in the form of images, voice recordings and clips. Madrid-Morales et al. (2021)'s study of motivations identified this scenario when their research witnessed ideological motivations that occur mostly due to the digital divide, and

this remains a major hinderance to access to information about social happenings and occurrences. In the next section, this thesis will shed more light on the current misinformation landscape present in Nigeria.

2) Nigeria's Misinformation Landscape

The ability to contribute to sharing news as a social-civic responsibility has been identified as crucial in the Nigerian context. However, there arises the tendency to accentuate misinformation when the intention to "warn and update" on issues pertaining to health causes people to ignore the burden of verification and leave message recipients to decipher misinformation themselves (Chakrabarti et al., 2018; Otulugbu, 2020; Sharma & Kapoor, 2022; Wasserman & Madrid-Morales, 2019). Consequently, misinformation has presented several negative outcomes such as mass anti-vaccination campaigns and death within health contexts in Nigeria (Apuke & Omar, 2020; Chakrabarti et al., 2018; Wasserman & Madrid-Morales, 2019). For instance, a rumor coined against a Nigerian government anti-polio initiative led to an increase in polio cases as several individuals were averse to taking the polio vaccines following the rumor (Otulugbu, 2020). In another scenario, a fake text message claiming that the cure to Ebola was saline water baths led to the death of two Nigerians who adopted the home-made remedy (Oyeyemi, 2014). These avoidable consequences of misinformation reinforce the need for effective responses to resist the adverse effects of misinformation in Nigeria.

The primary social consequence of diverse sites of content creation, spurred by the deconstruction of traditional institutions that fuel mass uncertainty, is the rate of media distrust in Nigeria (Okoro & Emmanuel, 2019; Otulugbu, 2020; Wasserman & Madrid-

Morales, 2019). Wasserman & Madrid-Morales (2019)'s study which surveyed media users in Kenya, Nigeria, and South Africa found Nigerians had the least amount of trust in the existing media organizations. They discovered that Nigerians' perceived exposure to disinformation is high due to the state's control, and often ownership, over the media. The government stifles full press freedom and journalistic integrity, which hinders confidence in media structures to publish credible information, thus promoting the reign of misinformation (Ogbette et al., 2019; Wasserman & Madrid-Morales, 2019). Given Nigeria's colonial history and offshoots of the deeply rooted corruption harbored within its government, citizens have continually sought decentralized means to meet their need for credible and factual unbiased information (Okoro & Emmanuel, 2019).

Similarly, Ogbette et al. (2019) in their study of the causes, effects, and management of fake news in Nigeria identify the quest for relevance by hostile government and civil actors, as well as the effects of poor regulation of the internet through penalizing sites where misinformation emanates as the primary causes of misinformation in Nigeria. The authors then express optimism for a future where the government provides full freedom and journalistic integrity to remedy current restrictions to the press. Consequently, Nigerians put more confidence in international media for their news consumption of national events, especially in health-related issues. However, in a situation where investments are geared towards building partnerships between media specialists in Nigeria and good, reputable, and credible international media organizations, misinformation in Nigeria will reduce as such partnerships will spur the increase of literacy efforts in the African context which are necessary to counter misinformation (Cunliffe-Jones et al., 2021; Otulugbu, 2020).

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The resultant decline of trust in media sources in Nigeria influenced the rise of gossip blogs and SNSs (Social Network Sites) like Facebook, WhatsApp and Twitter as alternative sources of COVID-19 content regarding information on the spread and perceived cure in Nigeria during the pandemic (Matyek, 2021, p. 7). Along with SNSs being sites for information dissemination during the COVID-19 pandemic, the use of SNSs in Nigeria have helped to further decentralize information dissemination when local experts or opinion leaders who often have access to internet technologies help translate media messages to their peers in rural communities where social networking services are scarce (Tully et al., 2021). This decentralized pattern of news consumption in Nigeria still emphasizes the long history of media distrust grounded on the social and political climate of Nigeria (Madrid-Morales et al., 2021; Tully et al., 2021).

Nigeria operates in a multi-party system with the All-Progressive Congress (APC) being the ruling party in power for the past eight years and their main opposition party being the People's Democratic Party (PDP). In Nigeria, the Yoruba, Igbo, and Hausa tribes are the largest ethnic groups in the country and have historically controlled the social and economic affairs since independence. Some Igbos advocate that states in their ancestral southeast region should secede from Nigeria, a cause which was the focus of a bloody civil war in the late 1960s (Goldstein et al., 2022). This is because within the Nigerian political system and the federal system of government, the Igbo tribe feel alienated because neither party has run an Igbo candidate from the country's third largest ethnic group, but only from the Yoruba and Hausa candidates. These divisions and alienations are salient to this thesis because they underline a popular scenario in recent Nigerian history of disinformation that arose from partisan issues.

Consequently, these existing frustrations led to the establishment of a secessionist movement called the Indigenous People of Biafra (IPB) championed by Nnamdi Kanu, a British-Nigerian from among the Igbo tribe in 2014 (Goldstein et al., 2022; Hassan and Hitchen, 2020). In November 2018, a rumor propagated by Nnamdi Kanu during a radio broadcast by the sect's radio outlet, *Radio Biafra,* began to circle the internet and gain traction internationally two months prior to the 2019 Nigerian presidential elections. The rumor stated that the 76-year-old Nigerian head-of-state, President Muhammadu Buhari, had died and was replaced by a clone who was believed to be a Jubril Aminu from Sudan. Jubril was the rationale generated by the misinformation agents behind the alleged cloning of the president, suggesting it as the cause of the president's departure for a three-month medical vacation in 2017. However, on December 2, 2018, a counter video generated by *The Guardian News newspaper outlet* about Buhari began circulating on various major international news platforms. The YouTube video's tag line, *Nigerian president denies being a clone,* was the president's response to a conspiracy theory that had been spread about him. This misinformation thrived in the news until the president publicly addressed the falsity of this claim (Guardian News, 2018). This rumor was able to thrive because the country has seen politicians and even the president-elect himself leaving the dilapidated health infrastructures in Nigeria for standardized and effective medical structures that exist overseas.

The secessionist group's capitalization on the current Nigerian government's inability to remedy the existing health infrastructures created a basis for disapproval of the regime. More so, with gravity of COVID-19 pandemic, a health crisis with a global scale that shook even the nations with established health care systems, there is the plausibility

of opposition when the current administration proposes safety and health measures during the pandemic. To this effect, Goldstein et al. (2020) highlighted that "supporters of the main opposition party were more likely to believe misinformation than ruling party supporters because they were more suspicious of official statements - which have generally been accurate - coming from the federal government" (p. 4). Their findings describe that there are other social and political factors like vaccine hesitancy that contribute to matters which arose during the COVID-19 pandemic amidst misinformation that thrives in developing countries. The Minister of Information and Culture, Alhaji Lai Mohammed alluding to the dire state of news in the country stated that fake news was becoming a serious threat to global peace, including in Nigeria, and if left unchecked, it could endanger human existence (Ogbette et al., 2019).

Along with these social and political impacts that misinformation has on Nigeria, news literacy interventions have the most consensus as the requisite response to counter misinformation within the region (Apuke & Omar, 2020; Otulugbu, 2020; Tully et. al, 2020; Vraga & Tully, 2016). Research has proposed that solutions to the widespread lack of trust in the Nigerian media and government would encompass media literacy campaigns by both fact-checking organizations in their capacities of countering mis- and dis- information with practical fact-checking actions, as well as educational policy making in the fight against misinformation. Their interventions will encompass both the formal educational systems like schools and literacy programs including SNSs particularly among the WhatsApp platform users where misinformation tends to go unchecked (Wasserman & Madrid-Morales, 2019; Apuke & Omar, 2020; Ijioma & Odu, 2020). This will also include numerous amounts of privately-owned but publicly accessed online news

blogs and websites who pedal sensationalist stories that make it to the digital sphere

without undergoing the requisite authentication channels (Nnaane & Olisa, 2022).

3) The Need for Truth

Journalists are the principal agents within the communication channel responsible

for verifying and fact-checking news content in the public's interest (Wardle &

Derakshan, 2017). This journalistic function serves as the greatest source of their

journalistic agency, which only recently began to be brought to question as changes in

participatory journalism were introduced. However, their functioning remains crucial to

communication processes as the absence of an established veritable institution will cause

grave consequences to the essentiality of social order that each society must keep. The

role of journalists in the media in verifying and fact-checking information helps to

maintain the similitude of social order.

Verification is performed ex-ante to information dissemination where primary

evidence is the basis of news. Fact-checking can be defined as "the evaluation of the

solidity of reporting, double-checking facts and figures as well as an overall round of

quality control for a news outlet's content before publication" (Mantzarlis, 2018, p.86).

However, an ex-post form of fact checking is deemed necessary after a false claim

becomes publicly relevant following its publication. Ex-post fact-checking is the primary

method of verification that fact-checking organizations employ to be able to address

claims made by politicians and other public figures to keep them accountable for the

truthfulness of their statements (Ireton & Posetti, 2018). There is a need to account for

false posts shared on social media by everyday citizens within ex-post fact-checking. Fact-checkers in this line of work seek primary and reputable sources that can confirm or negate claims made to the public (Ireton & Posetti, 2018, p. 86). The main goal of fact-checking is to debunk fake news and viral hoaxes that sway public opinion towards misinformation.

Debunking, on the other hand, is a subset of fact-checking and requires a specific set of skills that are common with verification (Ireton & Posetti, 2018). This term typically addresses the verification of fake news and viral hoaxes in the media. Chan et al. (2017) identifies effective debunking as "presenting a corrective message that establishes that the prior message was misinformation." Thus, debunking is deemed essential to decipher misinformation. Their study of the effects of debunking identified that corrections as result of debunking may be partial, with updates being made to the existing details of the information, or complete with a complete retraction of inappropriate or fabricated evidence that the authors no longer endorse.

Chan et al. (2017) identifies three recommendations in debunking misinformation that will be addressed in this thesis. The first recommendation states that debunking should reduce detailed reports in support of the misinformation because elaboration in line of the misinformation reduces the acceptance of the corrected debunking message. The second recommendation was that debunking should facilitate understanding of detailed counterarguments that should yield optimal acceptance of the debunking message. The third recommendation was that counter messages should not simply label the misinformation as wrong rather, when misinformation is debunked, new details should be

accounted for in the line of debunking (Chan et al., 2017). These three recommendations will furnish the specifications of debunking within this thesis.

Thus, the second research question this thesis explores is: RQ2: What is the rate of fact-checked content that debunked misinformation on fact-checking websites?

Tandoc et al. (2017) identified the role of news organizations in upholding standards of truth. This role creates the binding force of journalistic practices as it prevents altering news content to create misleading or inauthentic narratives in information dissemination. Furthermore, the emergence of digital news sites and outsourcing as well as the increase in audience participation enabled by peer-to-peer modes of sharing information has led to a drastic reduction of newsroom staff and revenue to fund on-the-ground reporting (Chakrabarti et al., 2018). With fewer journalists left in traditional newsrooms to deal with reporting and deadline pressures, there has been a decline in fact-checking by traditional news outlets and quality control which has led to the mass production of click-bait headlines meant to increase the profitability of newsrooms at the expense of creating critical thinking among the masses (Chakrabarti et al., 2018).

With the emphasis on the need to remedy the consequences of misinformation, it is incredibly difficult to dismiss the need for the contribution of citizens and participatory journalism in enhancing the verification processes established by the media. For example, citizen participation as demonstrated during the Arab Springs, helped shed light on how citizen journalism can shape social discourse and curb the excesses of institutionalized agencies, especially when they are corrupt (Vos & Thomas, 2018). However, instead of the contributions of citizens being lauded, they are often criticized when their attempts at

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truth purveyance are outweighed by an overwhelming amount of misinformation perpetuated by certain mal-intending independent sources of information from among the masses. Thus, truth and its peddlers, i.e., trained journalists, are crucial in creating checks and balances meant to curb the excesses of power concentration and stifle the hand of misinformation. Furthermore, the emphasis on truth needs to be highlighted given the distressing reign of uncertainty brought about by misinformation tactics that spread more rapidly than wildfire and affect the structural function of the press within conventional communication structures found in networked public spheres.

Journalism in Nigeria has undergone a series of transitions. The need for citizen participation in verification efforts has also been highlighted by several authors in their recommendations on how to curb misinformation in Nigeria. A survey of journalists identified that although there was a knowledge of user-generated content, it was not widely employed in the news gathering process. It was also identified that a difference lies between newspaper and television's adoption of UGC (User Generated Contents) even across social media platforms like Twitter and YouTube (Nnaane & Olise, 2020). To this end, Mare and Munoriyarwa (2021) recommend that fact-checkers should "implement efficient mechanisms of decentralizing their activities" along with efforts geared towards increasing access to and awareness of verified information. With the continued increase in participatory journalism where citizens can identify factual accounts from content encountered online, it would be easier to combat misinformation within social contexts as more actors are involved.

Essentially, the journalistic practice exists as the main institution to publish factual accounts of truth i.e., debunking and misinformation literacy to combat misinformation.

Furthermore, this function serves as the greatest source of their journalistic agency, which has only recently begun to be brought to question as changes in participatory journalism were introduced. However, this function remains crucial to news and communication processes as the absence of an established veritable institution will cause grave consequences to the essentiality of social order that each society seeks to maintain.

This supports the need for news literacy, as citizens who are equipped with the knowledge on how to decipher credible information in news content can call out news media's discrepancies. If citizens use journalistic verification methods, the chances to reduce the spread of misinformation will be heightened. Therefore, not only is it necessary for journalists and traditional media outlets to amplify their fact-checking roles to hold the statements of those in authority to the standards of truth, but they also need to work to empower citizens to know how to identify misinformation and how to respond to it (Tucker et al., 2017). The following section seeks to address literacy, its subparts, and the role of the media in enhancing misinformation literacy in Nigeria as a tool to combat the adverse effects of misinformation in the continent.

4) The Need for Literacy

Bontcheva and Posetti (2020) highlighted four major responses to misinformation: identification responses including fact-checking which deals with existing misinformation; responses aimed at producers and distributors that deal with policy and legal responses; responses aimed production and distribution mechanisms, which address incentivization of creators of misinformation; and responses aimed at the target audiences of disinformation campaigns. Identification responses such as fact-checking emphasize

the role that audiences must play as creators, distributors, and consumers of misinformation. Finally, there are educational and empowerment responses aimed at target audiences of disinformation campaigns.

An online survey conducted in Indonesia emphasized information verification skills possessed by individuals can be crucial in combating misinformation (Khan & Idris, 2019). The study concluded that it was important to train individuals to deal with prevailing misinformation online by devising mechanisms whereby internet-related skills are imparted. Particularly, the authors stated that information literacy programs should emphasize understanding the characteristics of credible information sources (Khan & Idris, 2019). Literacy concepts from past research identifies news, media, digital and information as dimensions of literacy (Buckingham, 2019).

However, research has emphasized the need for news literacy efforts to be embedded within the formal educational curriculum. This Vraga & Tully (2016) study on the impact of a news media literacy PSAs (Public Service Announcements) showed that students with media-focused courses reported higher levels of media trust and news media literacy with a higher perceived media literacy. They identified the need for moving literacy messages outside the classroom through informal educational contexts which will be concentrated at the sites of misinformation production and consumption which is typically among the populations (e.g., adults) who tend to be neglected in media literacy interventions (Vraga & Tully, 2016). However, Vraga and Tully (2016) suggest that brief messages like PSAs may not be effective among those without a background in media or news literacy.

News literacy education campaigns serve as an effective response to misinformation by equipping users with skills to recognize false information, engage critically with content, and correct misinformation where it is identified (Bulger & Davison, 2018; Cunliffe-Jones et al., 2021; Vraga & Bode, 2020; Vraga et al., 2021). In parallel, Tully et al. (2021), using data from 36 focus groups in six sub-Saharan African countries, examined audiences' experiences with misinformation and perceptions of institutional and personal roles, and responsibility for preventing and intervening in the spread of misinformation. Their findings emphasize that a multiplicity of interventions are crucial to combatting misinformation in all contexts with the need for literacy being the foremost intervention along with fact-checking, changes in how news is produced and circulated, government oversight and regulations that extend beyond context-specific interventions. They also propose the typology of possible responses to misinformation as highlighted by Bontcheva et al. (2020) as crucial in battling misinformation. Furthermore, Tully et al. (2020) highlighted that news literacy (NL) messages should increase credibility perceptions of high-quality information. They state that "reminding people of the markers of 'good' and 'bad' information should help them identify each, improving their perceptions of credible information through an implicit comparison to less credible information" (Tully et al., 2020, p. 26). Their study tested the ability of news literacy messages to affect perceptions of information credibility and news literacy beliefs on social media. They found that NL messages could increase perceptions of misinformation where low-quality information exists. These results suggest the need for NL campaigns that use multiple tailored and tested messages that are repeated to bolster key messages because only then will they be effective towards perceptivity to correct information.

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Although research has suggested the need for NL efforts to be directed to online social environments like Twitter (Bosah, 2018; Matyek, 2021), this thesis will be addressing the need for identification and educational & empowerment responses like misinformation literacy as well as the role that media organizations, particularly fact-checking organizations play in fostering misinformation literacy.

5) Misinformation Literacy

The onset of the COVID-19 pandemic led to an increase in health information seeking behaviors all around the world given the novelty of the coronavirus. It caused a strain not only on medical institutions but on scientific and governmental agencies (Cucinotta & Vanelli, 2020). The same occurred in Nigeria and several organizations soon took advantage to garner credibility on providing health information to the Nigerian populace in the quest to battle misinformation. These health seeking behaviors find their root from the Theory of Planned Behavior (TPB)/ Theory of Reasoned Action (TRA) which suggests that behavior cannot be shown without an understanding of the consequences of such action. The same applies to self-efficacy with which people assess their ability to perform behavior such as verification. However, with verification of news content, there needs to be an identification with news and an ability to decipher its accuracy, particularly as regards the sites of production. To this end, Vraga (2021) identifies that becoming news literate is not an end in itself but the application of news literacy explains individual's behavior. It is from this premise that Cunliffe-Jones et al. (2021) propose the definition of misinformation literacy, a sub-type of news literacy as the "knowledge of the forms that misinformation and accurate information take, the processes

by which they are produced or emerge, are distributed and consumed, by whom, where and on what topics, and the skills to distinguish one from the other".

Research on identification and verification behaviors have mostly emphasized the need for media literacy to encourage verification behaviors (Chakrabarti et al., 2018; Edgerly et al., 2020; Tully et al., 2021). These behaviors are not limited in scope but begin from the very point of contact with news content which allow for identifying misinformation, particularly as found within health contexts, and rejecting conspiracy beliefs which are all a part of civic responsibilities that individuals account for as members of society.

Misinformation literacy however culminates these literacy capabilities to present a well-grounded individual who can decipher accurate information from misinformation. Cunliffe et al. (2021) identify six fields of knowledge and skills essential to identifying and dismissing false information. They include:

- **Context:** knowledge of the contexts – social, cultural, economic, political, informational and events – in which false and accurate information are produced.
- **Creation:** knowledge of the types of people and institutions found to create false and accurate information, their different motivations, and the skills to identify those who produce specific information online.
- **Content:** knowledge of the difference between facts and opinions, the different ways information can mislead and the skills and practices to distinguish accurate and inaccurate information.
- **Circulation:** knowledge of the processes by which accurate and inaccurate information circulates and what drives people to share information.

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- **Consumption:** knowledge of the reasons we as individuals may believe false or misleading information to be true.
- **Consequences:** knowledge of the different forms of actual and potential harm caused by believing and sharing false and misleading information.

In summary, misinformation literacy includes the knowledge and skills that help to consistently identify misinformation. These knowledge and skills can be identified in understanding the context in which misinformation thrives, the brains behind misinformation creation and dissemination, the forms of misinformation, where it thrives in circulation, and why people believe it enough to propagate it (Cunliffe-Jones et al., 2021, p.27).

Literacy efforts needed in combatting misinformation can be found within media, news and misinformation literacy. It can be argued that literacy development follows a degree of progression from having media literacy skills, to news literacy skills and then misinformation skills. A review of the curricula in state-run primary and secondary schools in seven sub-Saharan countries found that although there was an expressed interest in broad media literacy, there was barely any element of media literacy, talk less of misinformation literacy. As of June 2020, the only media and information literacy element in Nigeria was a long-standing curriculum of teaching ICT/computer skills with curriculum authority still being in the talks on proposals for literacy taught in schools (Cunliffe-Jones et al., 2021).

To this end, fact-checking sites were assessed because they have been identified within the African context, including Nigeria, to be proactively engaging efforts towards news literacy (Cunliffe-Jones et al., 2021). Tully et al. (2020) identify that news literacy

messages, as such that are represented on fact-checking sites, represent a proactive step at addressing misinformation and have the potential to influence subsequent processing of varied news and information in their audiences (pg. 27).

Due to the difficulty that tends to arise in the quest to make fact-checking mainstream on social media, fact-checking organizations in Nigeria have been employing a proactive step towards making high-quality fact-checked information available on their channels which are then accessible to the public to consume (Cunliffe-Jones et al., 2021, Tully and Bode, 2020). However, the extent of their pervasiveness and effectiveness is unknown i.e., how many individuals review their fact-checks located on their websites.

Thus, the third research question this thesis explores is: RQ 3: What is the rate of fact-checked content that promoted misinformation literacy on fact-checking websites?

According to UNESCO (2020), fact-checking initiatives were already being employed by independent fact-checking websites such as International Fact Checking Network (IFCN), AFP, IPA, BBC Reality Check, Dubawa, Cross Check Naija, Verify Nigeria, Africa Checks, google fact checking tools, World Health Organization, news organizations (local and international), non-governmental organizations, government, social media platforms and civil society organizations such as Nigeria Health Watch, as well as collaborations between these in Nigeria. Dubawa features fact checked posts in Hausa, a major language in Nigeria, along with its regular content thus increasing access to fact-checked information by non-English speakers. Matyek (2021) also conducted an online content analysis to understand how fact-checking websites Dubawa Nigeria and Dubawa Ghana investigated the sources of fake news stories on COVID-19 in Nigeria and Ghana. In order of prominence, the research showed that gossip blogs, Facebook,

WhatsApp, Twitter, prominent persons, government officials and news websites (some owned by traditional news media) were primary sources of fake news stories on COVID-19.

Porter and Wood (2021) conducted a meta-analysis of misinformation research about these four countries, including Nigeria, with varying social, political, and racial lines but all with the presence of fact-checking websites signed on to the standards of the International Fact-Checking Network, the global umbrella body for fact-checking. The researchers argued that it is crucial for future research into the study of the effectiveness of fact-checking to not only consider diverse national contexts, as their study portrayed, but also to intentionally partner with fact-checking websites to deliver fact-checking interventions near sources of misinformation. A viable solution to misinformation would arise when misinformation is not only debunked, but also the debunking process itself is made transparent to increase awareness of fact-checking interventions as they are being clarified to enhance misinformation literacy. The study argued a salient point from their meta-analysis in Argentina, Nigeria, South Africa, and the United Kingdom that fact-checking reduced the public's belief in misinformation (Porter & Wood, 2021), alluding to its effectiveness. Thus, this thesis will also be analyzing fact-checking websites and their emphasis on misinformation literacy as a response to the growing reign of misinformation online, specifically at the onset of the COVID-19 pandemic (Matyek, 2021; Laskar & Reyaz, 2021).

III. METHODS

This thesis examining debunking, a subset of fact-checking, the promotion of misinformation literacy during the onset of the COVID-19 pandemic in Nigeria and the topical focus of fact checks relied on a content analysis of fact-checking websites' posts to show the emphasis on reminding people of the markers of "good" and "bad" information that assist in differentiating credible information from misinformation (Tully et al., 2020). Content analysis is central to mass communication research, and it helped to explore the misinformation literacy efforts and debunking processes adopted by fact-checking websites at the onset of the COVID-19 pandemic in Nigeria. Using a quantitative content analysis, this thesis examined the frequencies, news categories and topics of fact-checked content featured on the fact-checking websites. Neuendorf, K. (2017) defined quantitative content analysis as:

the systematic and replicable examination of symbols of communication, which have been assigned numeric values according to valid measurement rules, and the analysis of relationships involving those values using statistical methods, to describe the communication, draw inferences about its meaning, or infer from the communication to its context, both of production and consumption (p. 312).

The results of a content analysis should be replicable by any researcher performing analysis under similar circumstances, replicating the data either for comparison or emphasis. It must be noted that the limits of this method constrain manifest content to the realm of researchers' descriptions and of study concepts and operations.

For this study, the site of analysis was fact-checking websites verifying misinformation posted on blogs and social media platforms like WhatsApp, Facebook,

Twitter, and blogs. Researchers have historically identified these social media sites as the predominant origin of misinformation online (Bosah, 2018). Three Nigerian fact-checking websites, Dubawa, Africa Check, and Fact Check Hub, were included in the analysis. These fact-checking sites have been identified by past research as being credible fact-checking organizations in the region and internationally i.e., their fact checks are compliant with the International Fact-Checking Network (IFCN), a Poynter Institute forums' principles (Ireton & Posetti, 2018; Matyek, 2021; Tully et al., 2021). Furthermore, all three sites provided fact-checked information at the onset of the COVID-19 in Nigeria.

Dubawa is a West-African independent verification and fact-checking project founded in 2014 to establish investigative journalism, open data, and civic technology as tools to advance fundamental human rights. It is the brainchild of the Centre for Journalism Innovation and Development (CJID), a non-governmental organization whose scope of operation is to serve as a think tank for innovation and development within the West African media ecosystem (Premium Times, 2022). Dubawa was designed to provide accurate information to people to allow for more informed choices that are essential to promote good governance and accountability (Owoseye & Onyeji, 2018). Its website features fact-checking posts vetted by the Dubawa team which consists of editors, researchers or fact-checkers and copy editors in English and in Hausa, a major language in Nigeria, increasing access to fact-checked information by non-English speakers (Dubawa, n.d.).

Dubawa is housed in Nigeria, but is also operational in Ghana, Sierra Leone, Liberia, and the Gambia. It has launched several fact-checking campaigns through

education and training of West African journalists and forging strategic partnerships with media and civic organizations across West Africa (Reuters, 2022). For example, Dubawa hosts *Week for Truth*, a notable media and information literacy campaign launched in 2019 that advocates for accurate information to be upheld in public policy, public discourse, and journalistic practice (Danso, 2021). Dubawa has received several national and international recognitions, including being a recipient of the Google News Initiative (GNI) Challenge in the Middle East, Africa and Turkey regions that has enabled them train newsrooms in West Africa on digital journalism, verification, and fact-checking skills. The initial phase of the GNI training project was launched in Nigeria and subsequent trainings are scheduled to occur in Ghana, Sierra Leone, and the Gambia in 2023 (Dubawa, 2023). In 2022, Dubawa was awarded $450,000 in grant support to DUBAWA from the International Fact-Checking Network (Balogun, 2022). Jonah Nyabor, a DUBAWA fact-checker, emerged the winner of the 2022 African Fact-checking Awards in the *Fact-Check of the Year by a Professional Fact-Checker* Category (Sanni, 2022). In its history, Dubawa has had 771 posts under its fact checks page, 131 Media Literacy posts, 139 explainers and it represents five languages on its website (Dubawa, 2023).

Africa Check is Africa's first independent non-profit fact-checking organization. It was established in South Africa in 2012 but began operations in Nigeria in 2016. Its fact-checking operations are supported by individual donations and organizations and its work is guided by the International Fact-Checking Network's fundamental operating principles of commitment to impartiality, transparency, and accuracy (Africa Check, 2022). The Africa Check team consists of about 40 members who are responsible for fact-checking

claims, publishing fact sheets and guides on contested issues. Africa Check also trains journalists on verification best practices with the goal of fostering and supporting a community of nonpartisan fact-checkers across the continent. To this end, Africa Check launched the Africa Facts Network in 2017 to build a community of African fact-checkers who share knowledge and skills to fight the spread of false information (Africa Check, n.d.).

Africa Check hosts the longest-running awards program, the annual African Fact-Checking Awards program to honor fact-checking journalism by the media in Africa since 2014 (Africa Check, n.d.). The event in 2022 garnered 193 entries from 24 countries in Africa. They also host a media literacy campaign *#KeepTheFactsGoing* in six languages. For this campaign, Africa Check sends out a WhatsApp voice note that brings fact-checking skills to their audience and debunks common health myths. Its episodes are also aired on local radio stations in South Africa, Nigeria, and Senegal.

The Africa Check website features an Info Finder page that eases finding reliable data. The page features facts in a Q & A format with three steps to find facts based on a country and topic filter. The locations under consideration include the continent of Africa, Ethiopia, Ghana, Kenya, Nigeria, South Africa, and Zimbabwe. The topics featured in their fact checks range from *#YouAsked*, Agriculture, COVID-19, Crime & Justice, Economy, Education, Elections & Political Parties, Environment, Governance & Service Delivery, Health, Housing, Land, Migration, Natural Resources & Energy, Sex & Gender and Welfare & Population (Africa Check, n.d.). Tully et al. (2021) state that Africa Check works to fact-check claims that spread online and to disseminate high-quality news and information in partnership with media outlets and international organizations. In its

history, Africa Check has published more than 1,300 fact-check reports, fact-checked over 1,800 claims, published 180 factsheets and 47 guides and trained 4,500 journalists including over 7 million clicks on their website (Africa Check, n.d.).

The Fact Check Hub, established in Abuja, Nigeria in 2020, aims to apply the best practices of both journalism and technology to increase public knowledge and understanding on all public issues with a focus on Africa. It is an independent, impartial fact-checking organization initiated by the non-governmental organization; The International Centre for Investigative Journalism (ICIR). In 2021, it officially became the fourth fact-checking platform in Nigeria to become a signatory of the International Fact-Checking Network, a Poynter Institute forum which deems the Fact Check Hub as compliant with the IFCN principles when subjected to the established vetting process and evaluated by external assessors (Ayodeji, 2021). Their fact-checking process is conducted by editors, reporters, and a team of dedicated journalists.

Ahead of the 2019 Nigerian presidential elections, Fact Check Hub launched Cross Check to serve as a collaborative verification project aimed at helping the public make sense of what and who to trust online. Similarly, during the time preceding the 2023 Nigerian elections, the Fact Check Hub in collaboration with the ICIR launched an online trivia game to checkmate the spread of misinformation (Abeka, 2023). In its history, Fact Check Hub has 639 fact checks, 5 forum questions with 8,331 views, 10 tutorials, 76 fact-check videos and 4 webinars on its website to enhance misinformation literacy (FactCheckHub, n.d.). Their objective is to foster a fact-checking culture among the public by improving public knowledge and creating an online platform that serves as a repository of factual and truth-based information that will assist members of the public in

making informed decisions and holding the government accountable (FactCheckHub, n.d.).

The period of analysis under consideration in this thesis is from the 19th of February 2020 (this was when the first fact check was conducted on Dubawa from the sample under analysis) to November 23, 2020, which marks the last fact check in the sample. However, February 27, 2020, was when the first case of COVID-19 arrived at Murtala Muhammed International Airport in Lagos (COVID-19 Outbreak in Nigeria Report, 2020), depicting that fact-checking organizations had begun responding to misinformation before the coronavirus came to Nigeria. This timeline was chosen for the sample from the three fact-checking websites to coincide with the time that saw the most fact-checked posts regarding the COVID-19 pandemic and when they dropped off in frequency after November 2020 on the three fact-checking websites.

The three fact-checking sites, Dubawa, Africa Check and the Fact Check Hub had 107, 7 and 32 fact checked posts respectively within the range for the sample (n=146). All posts were included in the final sample in this study. These posts were identified by entering the search criteria, COVID on Dubawa and COVID-19 on Fact Check Hub and Africa Check from February 19, 2020, to November 23, 2020. The fact-checked posts for each site are the unit of analysis for this study. Each post resembles an article length of about 2 - 5 minutes reading time. Two posts included in the sample are outliers i.e., following the data analysis, a duplicate post, and a request to sign up for a newsletter had been included in the sample (see Appendix A for an example of a newsletter sign up post).

On Dubawa, the fact-checked posts feature a highlighted summary box with the fact-checked tags that follows their rating system. Dubawa's general fact-checked tags

include True, False, Mostly True, Mostly False, Misleading, More Context Needed/ Wrong Context and Insufficient Evidence. However, given its partnership with Facebook, Dubawa rates certain claims from the social media platform in accordance with Facebook's rating system i.e., False, Partly False, Missing Context, True, Satire, Not Eligible & Not Rated (Dubawa, n.d.). The verdict of the fact-checked posts on Dubawa's websites' is followed by the full text which contains the original post and subsequently, misinformation literacy.

On Africa Check, the fact-checked posts include the claim and verdict accompanied by a summary box with bullet points of the fact check. It is accompanied by misinformation literacy and does not directly include the original post in its analysis but links it and other information to the fact-checked article. Their rating criteria includes one of the following tags i.e., Correct, Mostly Correct, Unproven, Misleading, Exaggerated, Understated, Incorrect and Checked (Africa Check, n.d.).

The Fact Check Hub's fact-checked posts begin with a clear statement of the claim to be fact-checked, followed by the findings and the verdict. The Fact Check Hub verdicts follow their rating pattern called the Fact Gauge Metre Ratings. They include True, Mostly True, Half True, False, Mostly False and Miscaptioned/Misleading (FactCheckHub, n.d.). The original posts as well as subsequent information are accompanied by links under the fact-checked post (see Appendix B for an example of a fact-checked post).

For this thesis, two coders, including the author, were trained on the codebook. The coders conducted three rounds of coding prior to coming to 100% agreement for the intercoder reliability. During this time, the coders clarified how to determine each

variable. The codebook was developed based off variables identified by Matyek (2021) with modifications made to accommodate to this study. After training and two rounds of coding practice, two coders, including the author, achieved inter-coder reliability of .8 or higher Cohen's Kappas on 20% of the sample. Both coders then coded the remainder of the sample on their own. The final intercoder reliability results are detailed below (See Table 1).

Table 1

Intercoder Reliability Results

	Percent Agreement	Scott's Pi	Cohen's Kappa	Krippendorff's Alpha	N Agreements	N Disagreements	N Cases	N Decisions
Var 1	100	1	1	1	17	0	17	34
Var 2	100	*undefined	*undefined	*undefined	17	0	17	34
Var 3	100	*undefined	*undefined	*undefined	17	0	17	34

Note: This table shows the results of the intercoder reliability tests prior to final data analysis.

The coding categories that were used to identify debunking and misinformation literacy were patterned after the following criterion to help decipher the characteristics involved in debunking, misinformation literacy and the distinction between news topics in relation to fact checks that contained misinformation literacy and debunking. The categories include:

1. **News Topic:** Does the corrected information include one of the following topics?

   Definition: For this variable, coders had to decide from among 11 news topics by considering the title of the fact check to prevent several inputs from being entered in this variable, as was the issue at the initial stage of coding because several topics were present. The News Topic variables do not have a specified COVID-19 topic because all news topics fall under the effects of the COVID-19 pandemic in 2020. The coders coded 1 – 11 in the code sheet for this variable.

   1. **Government/Politics:** What news topics feature Nigerian government parastatals regardless of their government or political affiliated position?

   2. **Health:** What news topics feature health-related information during the COVID-19 pandemic?

   3. **International:** What news topics feature other countries apart from Nigeria or a comparison of Nigeria with other countries on an international level?

   4. **Sports:** What news topics feature information about sports or sports players?

   5. **Education:** What news topics feature mention of educational institutions, activities, or materials?

   6. **Arts/Entertainment:** What news topic features arts/ entertainment?

   7. **Science:** What news topics feature scientific explanations or clarifications based on facts and evidence?

   8. **Immigration:** What news topics feature immigration?

   9. **Economy:** What news topics feature the state of the Nigerian economy in relation to trade, employment, or unemployment?

10. **Media:** What news topic featured the impact of the media?

11. **Other:** What news topics are present in the fact-checked post but are not

included in this enumeration?

2. **Debunking:** Does the fact-checked post debunk information?

   Definition: Debunked posts include those that specify the information as

   true/mostly true/half true/correct/mostly correct OR false/mostly false/partly false/

   incorrect OR misleading/miscaptioned OR satire/exaggerated OR unproven/not

   eligible/ not rated/understated OR that provide corrected information. The

   Debunking was a dichotomous yes/no variable, where yes = 1 and no = 0 (see

   Appendix C for an example of a debunked post).

3. **Misinformation Literacy:** Does the fact-checked post provide misinformation

   literacy?

   Definition: Misinformation Literacy includes how to identify misinformation OR

   defines misinformation OR contains literacy messaging i.e., tells readers how to

   find credible sources by citing credible sources in the fact-checked post, mentions

   reverse image search OR includes repetition that bolsters key messaging). The

   Misinformation Literacy was a dichotomous yes/no variable, where yes = 1 and no

   = 0 (see Appendix D for an example of a misinformation literacy post).

   During the coding process of the news topic variable, Education,

Arts/Entertainment & Sports which were originally included in the codebook as variables

did not have enough variables to account for each variable in the analysis. Thus, the news

topic variables were re-coded so that topics that appeared less than 5% of the time were

collapsed into Other. For RQ1 and RQ2, the frequencies of the debunking and

misinformation variables were run, and for RQ3, Chi-Square Tests were run using the

debunking and misinformation literacy variables. The independent variable (IVs) was

News Topic, and the dependent variables (DVs) were Debunking and Literacy.

IV. RESULTS

For RQ1, of all topics, which examined the differences in news topics in terms of

what kinds of fact-checked posts contain debunking vs misinformation literacy, the

Government/ Politics topic had the most fact-checked posts (22.5%) that included

debunking information. This was followed by Health (18%), Sports (12.6%), International

(10.8%), and Education (4.5%) (See table 2).

Table 2

Crosstab on Debunking Misinformation

		News Topic						
		Government/Politics % (n)	Health % (n)	International % (n)	Sports % (n)	Education % (n)	Other % (n)	Total % (n)
Debunking	No	11.4% (4)	5.7% (2)	2.9% (1)	2.9% (1)	14.3% (5)	62.9% (22)	100.0% (35)
	Yes	22.5% (25)	18.0% (20)	10.8% (12)	12.6% (14)	4.5% (5)	31.5% (35)	100.0% (111)
Total		19.9% (29)	15.1% (22)	8.9% (13)	10.3% (15)	6.8% (10)	39.0% (57)	100.0% (146)

The results of the chi-square test shows that there is a significant difference

between news topics that debunked misinformation (χ^2 (5, 146) =19.083, p<.01) (see

Table 3) and there was no significant difference between the news topics that encouraged

misinformation literacy (χ^2 (5, 146) = 3.166, p = .674) (see Table 3).

Table 3

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	19.083[a]	5	.002*
Likelihood Ratio	19.861	5	.001*
Linear-by-Linear Association	12.502	1	<.001*
N of Valid Cases	146		

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.166[a]	5	.674
Likelihood Ratio	3.806	5	.578
Linear-by-Linear Association	2.945	1	.086
N of Valid Cases	146		

Similarly, of all the news topics, the Government/ Politics topic had the most fact-

checked posts (20.1%) that encouraged misinformation literacy. This was followed by

Health (15.3%), Sports (10.4%), International (9.0%), and Education (6.9%) (see Table 4).

Table 4

Crosstab on Promoting Misinformation Literacy

		Government/Politics % (n)	Health% (n)	International % (n)	Sports % (n)	Education % (n)	Other% (n)	Total% (n)
Literacy	No	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	100.0% (2)	100.0% (2)
	Yes	20.1% (29)	15.3% (22)	9.0% (13)	10.4% (15)	6.9% (10)	38.2% (55)	100.0% (144)
Total		19.9% (29)	15.1% (22)	8.9% (13)	10.3% (15)	6.8% (10)	39.0% (57)	100.0% (146)

Note: The "News Topic" heading spans Government/Politics through Other% columns.

Answering RQ2, which questioned the rate of fact-checked content that debunked misinformation on fact-checking websites, results showed 76% (n=111) of posts across Dubawa, Fact Check Hub and Africa Check websites debunked information (see Table 5).

Answering RQ 3, which questioned the rate of fact-checked content that included misinformation literacy on fact-checking websites, results revealed that 98.6% (n =144) of fact-checking posts across the three sites included misinformation literacy (see Table 6).

Table 5

Debunking Frequency Table

	N	%
No	35	24.0%
Yes	111	76.0%

Table 6

Literacy Frequency Table		
	N	%
No	2	1.4%
Yes	144	98.6%

V. DISCUSSION

The goal of this thesis was to examine how often fact-checking sites in Nigeria published posts debunking misinformation or promoted misinformation literacy through a content analysis of their fact-checked posts in 2020 during the COVID-19 pandemic. In the sample, the coding categories for debunking misinformation and the categories for promoting misinformation news literacy education efforts implemented by the fact-checking organization often overlapped showing that (n = 111) posts included debunking and misinformation literacy simultaneously. This supports Nnaane & Olise (2020)'s argument stating that fact-checkers increase access to verified information to aid understanding of credible information towards enhancing misinformation literacy. Furthermore, the measures used in fact checks that promote misinformation literacy recognize the presence of misinformation, defining mis- or dis- information and if the post tells the public how to find credible sources to code for the presence of tailored messages, repeated in fact-checked posts i.e., in relation to the emerging details on the novel coronavirus, to bolster key messages for literacy.

For the debunking variable, there are three itemizations that make the basis of a debunking that is thoroughly executed. Debunking should:

- increase elaboration of debunking message

- facilitate understanding of detailed counter arguments to yield optimal acceptance of the debunking message and,

- include new details in line of debunking and not simply label the misinformation as wrong.

The presence of misinformation literacy education on the three fact-checking websites has the potential to be leveraged as an effective identification and educational response to combat misinformation by equipping users with skills to recognize false information, engage critically with content, and correct misinformation where it is identified (Bontcheva and Posetti, 2020; Cunliffe-Jones et al., 2021). Furthermore, the statement that reminding people of the markers of "good" and "bad" information should help them identify each, improving their perceptions of credible information through an implicit comparison to less credible information (Tully et al., 2020, p. 26), has been supported with this study as the three fact-checking organizations model the identification of credible information via misinformation literacy. However, the behavior of utilizing fact checks to identify less credible information cannot be identified as it is not the focus of this study.

Another finding from the sample collected from three fact-checking organizations in Nigeria shows that debunking was present in fact-checking posts (n = 111), but the fact-checked posts contained more misinformation literacy (n = 146). Most of the posts in the sample were newsletters, research papers or enumerations on how to identify misinformation and on emerging topics as related to the coronavirus pandemic. These posts that were not solely debunking were contributing to misinformation literacy on the websites. For example, a Dubawa post titled *10 Tips for Identifying Fake News* outlines

step-by-step instructions for viewers on how to be skeptical of headlines, look closely at links, investigate the source, watch for unusual formatting, consider the photos, inspect the dates, check the evidence, look at other reports, determining if the story is a joke and thinking critically about stories falsity as tips to help decipher misinformation (see Appendix E). These steps also relate closely to Cunliffe-Jones et al. (2021)'s enumeration of the elements of misinformation literacy which highlight the context, creation, content, circulation, consumption, and consequences of misinformation.

These results present an interesting point that slightly depart from past research which identified that the main goal of fact-checking is to debunk misinformation (Ireton & Posetti, 2018). However, these results highlight how the impact of misinformation within the country has presented a new emphasis for fact-checking organizations to offer misinformation literacy alongside debunking, and from the results, exceeding their primary fact-checking role which is to debunk misinformation. More so, the emphasis of mainstream media both home and abroad on the need for news literary serves as an influence for increased misinformation literacy interventions on fact-checking websites. Furthermore, the notion that misinformation literacy efforts are miniscule within the continent of Africa can be challenged as such interventions do exist, however, they have been concentrated on fact-checking websites rather than being present in government policy and in the educational system (Cunliffe-Jones et al., 2021). The sole efforts that exist towards misinformation literacy are solely being implemented by fact-checking organizations who bring misinformation literacy into the classrooms.

As relates to the rate of news topics that prompted both debunking and misinformation literacy, topics on Government/Politics exceeded every other topic. Health

was the second most frequent news topic followed by Sports and International (see Table 2 and Table 4). These topics were related to the burgeoning need to understand the ongoing coronavirus at the time of analysis. However, it helps to shed more light on the events and agents that prompt the spread of misinformation. In the Nigerian context, the main scenarios that lead to an increase in misinformation are political and health contexts and they have been supported with this analysis. More so, these contexts become more mainstream during elections or a national health crisis. This can be identified as an area of study into locating what contexts and topics have encouraged the rise of misinformation and consequently, the need for misinformation literacy in Nigeria. Furthermore, the third prominent news category, Sports, presents the need for entertainment during a global health crisis like the coronavirus pandemic and the fourth prominent news topic, International, shows Nigerians reliance on international sources for credible news reporting during COVID-19.

Among the three fact-checking websites, Dubawa had more fact-checking posts on Nigeria. Dubawa is a West-African borne fact-checking organization making them more inclined to report on the Nigerian context while Africa Check is a pan-African fact-checking organization that focuses on other countries in the continent. The Fact Check Hub was launched amid the COVID-19 pandemic and had the second most posts contained in this analysis. Hence, the differences between the rate of fact-checking posts derived from each website.

VI. CONCLUSION

To increase the effectiveness of fact-checking organizations in executing their duties, Porter and Wood (2021) identify that they should deliver their interventions close to the sources of misinformation. By displaying of the processes of debunking, fact-checking organizations are by consequence improving media literacy since media literacy is aimed at developing the essential skill of inquiry necessary for citizens of a democracy (Center for Media Literacy, n.d).

This study has identified that there are existing misinformation literacy efforts being executed in Nigeria by fact-checking organizations. Fact-checking organizations are playing a major media literacy role in Nigeria as pertains to the efforts towards combatting misinformation, and if availed, could provide a more pervasive role in making misinformation literacy efforts mainstream in Nigeria. Future emphasis needs to be placed on the access to and dissemination of misinformation literacy in Nigeria more broadly.

Consequently, this study proposes that solutions to the widespread lack of trust in the Nigerian media and government would stem from their effectiveness in enacting misinformation literacy campaigns, as their respective capacities afford, towards countering mis- and disinformation through implementing practical fact-checking actions and educational policy making. Particularly, by delivering interventions at every existing level of educational access. In this vein, due to the proactivity of fact-checking organizations in offering misinformation literacy on their platforms within the Nigerian context, the government and educational systems can utilize fact-checking organizations as a reference point for prevailing misinformation literacy online. These fact-checking organizations are also equipped with several resources that itemize how to identify

misinformation (see Appendix E). Their interventions can be applied in both the formal educational systems like schools and literacy programs as well as on SNSs themselves, particularly among the WhatsApp platform users where misinformation tends to go unchecked (Apuke & Omar, 2020; Ijioma & Odu, 2020; Wasserman & Madrid-Morales, 2019).

Therefore, not only is it necessary for fact-checking organizations to amplify their fact-checking roles to hold the statements of those in authority to the standards of truth (Tucker et al., 2017), but they also need to work to empower the current population by providing misinformation literacy through partnership with the existing structures of power to make the interventions more pervasive towards remedying misinformation.

VII. LIMITATIONS

There is a limited number of fact-checking organizations operating on the continent that publish fact checks regularly. Furthermore, the sample identified in this thesis is subject to both the news selection biases of the fact-checking organizations. For example, there is a news selection bias present with Fact Check Hub's operations as it hosts Forum Discussions where users can suggest claims to be fact checked. Other biases can be accounted for in what news topics that end up being debunked by all three fact-checking organizations. However, this news selection bias aligns with the fact-checking organization's public forward goal which is to empower individuals with the skills requisite to tackle misinformation regardless of the context.

Future research should assess the extent to which fact-checking organizations deliver interventions i.e., fact-checked posts close to the sites where misinformation is propagated i.e., social media, blogs etc. There also needs to be an assessment of the utilization of the proposed fact-checking skills by individuals when they encounter misinformation to assess the self-efficacy in responding appropriately to misinformation that they encounter online after being exposed to misinformation literacy.

Furthermore, future research should assess the differences between fact-checking organizations on the continent. This analysis will assess their reach and fact-checked content in terms of topics and trainings they provide on their websites, as well as their effectiveness in providing misinformation literacy among the range of countries within Africa that each of these fact-checking organizations prioritize. In terms of the content analysis methodology that was used for this study, there were several issues in deciding the main news topic while assessing the fact-checked posts. As a result, three rounds of coding were completed in order to fine tune each variable as to what counts as debunking and as misinformation literacy from the fact checked posts on the three fact-checking organizations' websites.

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APPENDIX A

Example of A Newsletter Sign Up

APPENDIX B

Example of a Fact-checked Post

APPENDIX C

Example of A Debunked Post

APPENDIX D

Example of a Misinformation Literacy Post

APPENDIX E

Dubawa's 10 Tips for Identifying Fake News