UNIVERSITY OF MEDIA, ARTS AND COMMUNICATION

(UniMAC)

INSTITUTE OF JOURNALISM

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BY

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A DISSERTATION SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES AND RESEARCH OF THE UNIVERSITY OF MEDIA, ARTS AND COMMUNICATION, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF A MASTER OF ARTS DEGREE IN PUBLIC RELATIONS WITH MARKETING

DECEMBER 2025

DECLARATIONS

STUDENT'S DECLARATION

I Anthony Dakyie I declare that except for references to others works which have been duly cited and acknowledged, this work is entirely mine and has not been submitted by any other institution and has been conducted by the supervision of Dr. Rhodalene Amartey

Anthony Dakyie	MADC24059	…….	…….
Student	**Index Number**	**Signature**	**Date**

DECLARATION BY SUPERVISOR

I, the undersigned supervisor, declare that I supervised the preparation and presentation of this work in accordance with the guidelines for the supervision of MA dissertation as laid down by the University of Media, Arts and Communication (UniMAC).

Dr. Rhodalene Amartey	……..	……
Supervisor	**Signature**	**Date**

DEDICATION

I dedicate this work to my family, whose unwavering love, encouragement, and support have been my strength throughout these years. You have been my pillar in every sense, and I am deeply grateful to you all. I love and appreciate you always.

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ABSTRACT

Synthetic media is being produced and disseminated through Artificial Intelligence (AI) technology, while AI is increasingly producing new forms of digital media and generating fake news. This research project explores how journalists and media professionals in Ghana employ AI to identify and mitigate the effects of synthetic media generated fake news within Ghana's digital media environment. To explore these issues, I conducted a qualitative research project based upon semi-structured interviews to determine whether synthetic media is becoming a trend; to what degree journalists utilize AI-based media detection technologies; and to identify the obstacles that exist when attempting to minimize misinformation. The results indicate that while awareness of synthetic media is increasing, there is considerable variance among journalists in terms of their experience with synthetic media. While many believe that AI-based detection tools such as automated verification systems are beneficial to their work, there is no consistency in terms of the utilization of those tools. Additionally, there are numerous barriers to utilizing AI-based detection tools, including rapid dissemination of synthetic media; inadequate institutional capacity; and the need for specialized training. Consequently, I suggest that journalists receive more education regarding AI; increase collaboration between media outlets; and implement robust regulatory frameworks to address emerging threats. Ultimately, my research will provide contextually relevant data for developing effective strategies to mitigate the potential for misinformation in Ghana's evolving digital media environment.

Key Words: *Artificial Intelligence (AI), Synthetic Media, Fake News, Deep flakes, Misinformation, Disinformation, Media Verification, Fact-checking, Digital Journalism, Ghana.*

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CHAPTER ONE

INTRODUCTION

1.0 Overview of the Study

This chapter addresses the background of the study, the research objectives, problem statement etc.

1.1 Background of the Study

Artificial Intelligence (AI) has transformed how we communicate globally. An important aspect of that is the production of synthetic media which Chesney & Citron (2019) define as "content generated or altered through AI." Examples include fake videos, AI-generated photos, synthetic voice-overs and AI-created written text. Although synthetic media has provided new opportunities for innovation in the fields of entertainment, education and creative industries, it has also produced very serious challenges related to the authenticity of information and public confidence in media. Synthetic media has become a key tool in disinformation campaigns around the world, and its use has impacted various aspects of society including politics, the economy and social cohesion (CPA, 2023; Verdoliva, 2020). Since advances in AI have made it possible for anyone with little technical knowledge to create highly believable and fabricated content, there are no longer clear lines between what is factual and what is fictional. Such loss of public confidence can be especially damaging in democracies, where citizens rely on credible information to make informed decisions regarding their government. Reports indicate that AI-generated misinformation has been used to manipulate election processes and damage the reputations of public figures, such as the widespread use of a fabricated video of the Ukrainian President surrendering to Russia. The concern over

synthetic media undermining institutional credibility has led organizations like the World Economic Forum to take notice (ZeroFox Intelligence, 2023).

While these global trends have contributed to the rapid growth of digital adoption in Ghana, the trend has been intensified in Ghana due to the high levels of digital adoption. In 2025, Ghana's internet penetration rate is expected to reach 98% with over 34 million active internet users. Today, many Ghanaians receive their news and information from social media platforms, with Facebook boasting more than 10 million users, while Twitter, Instagram and YouTube are also popular (StatCounter, 2025). Ghana's increased connectivity has positively impacted social and economic development, but it has also created new vulnerabilities in Ghana's information ecosystem.

The vulnerability of Ghana's information ecosystem to synthetic media was evident in the country's 2024 general elections. Fact-checking initiatives documented the existence of AI-generated disinformation circulating online, including deepfake videos of political figures and audio recordings that were fabricated and attributed to public officials (Media Foundation for West Africa, 2025). Many of these disinformation materials were spread via social media and could potentially confuse voters, increase political tension and alter public perceptions.

However, the effects of synthetic media in Ghana extend far beyond the realm of politics. Advertising, journalism, public safety and societal trust have all been negatively affected by synthetic media. For example, programmatic advertising systems often place legitimate advertisements adjacent to disinformation content, thus inadvertently lending legitimacy to the negative messages. One well-documented example involves a fabricated Joy News broadcast that promoted a fraudulent mobile app called "Slot New Generation" that utilized real footage combined with synthetic voiceovers (MyjoyOnline.com, 2023). The incident exemplifies why

effective and reliable detection mechanisms and greater public awareness need to be developed urgently.

However, AI creates problems, but it also creates solutions. Detection tools, automated verification algorithms and digital watermarking technology all represent viable ways to identify and mitigate synthetic media. Nonetheless, the effectiveness of such systems will require adaptations to Ghana's language diversity, media consumption patterns, and infrastructure realities. Thus, this research examines the dual nature of AI as both an enabler of synthetic media and as a means of countering synthetic media. By examining Ghana specifically, the study assesses the prevalence and effects of synthetic media, evaluates the currently available AI-based detection frameworks, and provides contextually relevant strategies for policy, education, and technological implementation for Ghana's media space. The research aims to enhance media resilience, protect democratic processes, and support the attainment of Sustainable Development Goal 16 (peace, justice and strong institutions).

1.2 Problem Statement

Although there have been numerous reports showing the proliferation of synthetic media and its influence on election processes, democracy, and trust in governmental bodies, there are few adequate frameworks for identifying and combating synthetic media in Ghana.

As a result of the rapid proliferation of AI generated disinformation in Ghana, there are many gaps in media literacy, regulatory oversight and technological capabilities to identify synthetic media. In many cases, journalists and media outlets are unable to distinguish between genuine content and manipulated content, which often results in unintentionally spreading false information.

AI based detection tools were generally developed for use in the Western world, and thus are generally not tailored to Ghana's language, culture, and media usage patterns, making them less effective if used locally. Lack of coordination among national policies and poor cooperation between government agencies, media regulators, technology companies and civil society, makes it even more difficult to counteract synthetic media in Ghana.

The 2024 presidential election showed Ghana's lack of resilience in responding to synthetic media threats in the digital space, as fake videos and audio materials spread rapidly across the country, and affected public debate and behavior related to politics. These events show that Ghana's regulatory and technological structures cannot yet effectively respond to emerging threats of synthetic media.

If left unattended, the unchecked proliferation of manipulated content could threaten democratic governance, social unrest and undermine public trust in credible sources of information. This study aims to address this urgent issue by analyzing the extent of the problem and recommending AI-based, context-sensitive solutions.

1.3 Research Objectives

The Objectives of this study are:

1. To investigate current trends and frequency of synthetic media in Ghana's media and social media ecosystems.
2. To evaluate current AI-based tools and frameworks to detect and mitigate synthetic media.
3. To present context-sensitive AI-based tool recommendations and policy recommendations for Ghana's media regulators and stakeholders.

1.4 Research Questions

1. Which types of synthetic media are now being distributed in Ghana's digital environment?
2. Who/what is responsible for disseminating synthetic media in Ghana?
3. Are journalists and media professionals aware of the risks associated with synthetic media?
4. Which AI-based tools and strategies exist internationally, and how can they be adapted for the Ghanaian context?
5. What are the roles that regulations, education and technology can play in reducing the negative impacts of synthetic media to align with SDG 16?

1.5 Justification of the Study

The study is justified due to the increased sophistication and availability of synthetic media technologies and the increasing threat to information quality posed by those technologies. Most of the previous research and policy development on synthetic media has occurred in wealthy nations, creating large gaps in Africa. There are no local empirical studies and strategic frameworks to effectively deal with synthetic media risks in Ghana. By focusing on Ghana, this research fills critical knowledge gaps and offers contextualized insights.

Ghana is a high-priority nation for researching how synthetic media functions in developing digital spaces because of its high level of Internet penetration, vibrant democratic culture and expanding digital infrastructure. The study also supports SDG 16 in the area of peace, justice, and strong institutions by promoting information integrity. Findings of the study will be useful to journalists, educators, policymakers, media regulators and civil society organizations. They will also help

develop policies, train programs, and technological systems that respond to Ghana's unique digital reality.

1.6 Scope of the Study

This study addresses the role of AI in detecting and countering synthetic media in Ghana's media environment. It examines deepfakes, AI-generated text, manipulated audio, and other content created using AI that has been modified in some way, whether in social media or traditional media. The study evaluates the implications of synthetic media for media credibility, public trust, political communication, and democratic stability. The study does not examine synthetic media solely used for entertainment or creative purposes (other than when such content is used to create disinformation or to compromise media credibility). While references are made to international tools and frameworks, the study remains focused on Ghana's technological, social, and political contexts.

1.7 Limitation of the Study

The study will contribute to the body of knowledge on synthetic media in an African context, as well as provide empirically derived insights that contest the hegemony of perspectives from the Global North and the necessity of culturally situated interventions.

Technology-wise, this study identifies the advantages and disadvantages of AI based detection technology and also how such technologies may be adapted or localised for developing countries. In a societal sense, this study equips stakeholders with the knowledge to combat disinformation; to support professional journalism and to protect democratically instituted institutions. Overall, the

study supports the advancement of digital resilience and sustainable development through achievement of SDG 16.

1.8 Organization of the Study

This thesis has been structured around five chapters. Chapter one gives an overview of the study; it outlines the study's background, problem statement, objectives, research question(s), scope, rationale, importance and overall organization. Chapter two reviews the relevant literature and describes the conceptual/theoretical framework used in the study. Chapter three explains the research method used in the study. Chapter four describes and analyzes the data collected and presented in the study. Chapter five draws conclusions based on the study's findings and presents recommendations based on those findings.

1.9 Chapter Summary

Chapter One introduces the study by explaining how AI-generated synthetic media—such as deepfakes, fake audio, and AI-written text is threatening information integrity, public trust, and democracy. In Ghana, high social-media use has made the country vulnerable, especially during the 2024 elections when synthetic videos and audios spread widely and shaped political discussions.

The chapter highlights key challenges, including low media literacy, weak regulation, and the lack of Ghana-specific AI detection tools. It outlines the study’s purpose: to examine how synthetic media is used in Ghana, assess the effectiveness of current detection technologies, and propose context-appropriate solutions. The chapter also states the research questions, significance, scope, and structure of the thesis.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Synthetic media - defined as AI-created, AI-altered images, audio, video, and text - has made rapid advancements and introduced new ways to express creative ideas along with significant risks to the validity of communicated information (Chesney & Citron, 2019). Advances in AI technology now allow the creation of very realistic synthetic media, which is becoming increasingly difficult to tell apart from authentic content. This raises the question of how true the reporting of digital communication in the future will be (Cooke et al., 2024). In Ghana and in all of Africa, the spread of AI-driven misinformation is beginning to undermine the public's faith in journalists, public officials and democratic institutions. The purpose of this chapter is to review previously published research on synthetic media-based misinformation in terms of its impact on journalism, public health, gender, national security and civic education using global, African and Ghanaian perspectives.

2.2 Definitions of Major Terms

Artificial Intelligence (AI) is defined as a machine system that makes predictions, provides recommendations or makes decisions that affect real or virtual worlds (OECD, 2024).

Generative AI refers to an AI model that is trained on a large dataset to produce new synthetic output, such as text, images, audio, and/or video (Liang et al., 2023).

Synthetic media is defined as any type of media that has been entirely or partially generated and/or altered by AI to create a fake version of authentic content (Chesney & Citron, 2019).

Deepfakes refer to a form of synthetic media that uses deep learning to replace or superimpose a face, voice, or scene in a highly realistic but fake representation (Mirsky & Lee, 2021).

Misinformation refers to the sharing of false or inaccurate information with no intention to do harm (Wardle & Derakhshan, 2017).

Disinformation refers to false information created and distributed with the intent to deceive (European Commission, 2020).

Fake News refers to the presentation of fabricated or misleading information in a manner that mimics legitimate journalism (Lazer et al., 2018).

Information Integrity refers to the accuracy, consistency and reliability of information, assuring that it is accurate and free from unauthorized alteration (UNESCO, 2021).

2.3 Journalism and Media Authenticity

The emergence of synthetic media has created significant challenges for journalism globally. Many independent media organizations and fact checking organizations have documented the use of AI to fabricate or alter news content and consequently reduce public confidence in news organizations. As reported in Ghana, there have been several incidents of AI-generated deepfakes leading up to the 2024 general election. Online videos and graphics created through manipulation created false narratives (Media Foundation for West Africa, 2025; FreedomHouse, 2025). According to UNESCO, the spread of coordinated disinformation campaigns and online harassment of journalists are undermining public confidence in media institutions (UNESCO, 2021).

One example of the problem in Ghana was when scammers cloned the voice of a well-established Ghanaian radio host to market fraudulent products (MyjoyOnline.com, 2023). These examples

indicate a gap in the ability of news organizations to verify authenticity due to the absence of the necessary technological capabilities and expert knowledge to identify AI-manipulated content. Additionally, forged "news cards" labeled to appear similar to legitimate news graphics have also been frequently used. To address the issue, some Ghanaian media outlets now apply bold "FAKE NEWS" labels to manipulated content in order to limit additional dissemination of the same.

Literature indicates that maintaining journalistic credibility requires investment in digital verification tools, ongoing professional development, and increased accountability of platforms. UNESCO and the United Nations advocate for formal training in forensic digital analysis and the utilization of AI-based detection tools (UNESCO, 2025; UN, 2024). Collaborations between news organizations in Africa and specialists, such as WITNESS's Deepfakes Rapid Response Team, have developed to analyze suspected media content. Fact-checking networks, such as Ghana Fact, provide immediate debunking of manipulated media (FreedomHouse, 2025). There is consensus among scholars that the misapplication of AI in political communication can negatively impact trust in authentic events and may make it challenging for citizens to discern truth from fiction.

2.4 Public Health and Health Communication

Health communication through public health has been dramatically affected by AI-generated misinformation. Misinformation about COVID-19 spread much faster than accurate public health information from trusted sources during the COVID-19 pandemic. Some examples of misinformation about COVID-19 included claims that COVID-19 vaccines would render people infertile, and according to Winters et al. (2025) nearly half of Ghanaians who were surveyed thought at least one major COVID-19 claim was true. Many times, these claims were made up of

both international conspiracy theories and local rumors and were distributed using graphic and audio manipulation.

Global organizations have responded to misinformation about health by implementing "infodemic management" strategies to coordinate responses to the dissemination of misinformation. The World Health Organization defines infodemic management as the "coordinated, systematic effort to manage excessive and misleading information during public health emergencies" (Rubinelli et al., 2022). As part of its response to the pandemic, the WHO's Africa Infodemic Response Alliance and Viral Facts Africa worked with fact-checkers and media outlets to identify and debunk false claims related to health issues in Ghana. In addition, partnerships between UNICEF and Ghana Fact-Check assisted in the distribution of accurate health information to the public.

Research conducted in Ghana has indicated that cultural tailoring of interventions can be effective in reducing the number of individuals who believe misinformation about health. For example, a Ghanaian study indicated that the use of audio dramas created in local languages decreased beliefs in misinformation regarding COVID-19 and resulted in lasting reductions in those beliefs (Winters et al., 2025). This research indicates the importance of creating interventions based on the social norms of the community and building trust among members of the community when developing interventions to combat misinformation regarding health issues.

2.5 Gender Rights and Online Harassment

There is an obvious gendered effect of synthetic media. According to research, women, especially journalists and politicians, are being targeted by AI generated abuse more than men. CSIS (2023) reports that globally, many cases of deepfake image involve women in non-consensual or

degrading ways. UNESCO (2023) states that technology-facilitated gender-based violence is becoming a crisis worldwide, and AI is being used to create deepfake pornographic material, manipulated images and threatening messages.

During election periods in Africa, there has been an increase in AI driven smear campaigns against female political candidates and journalists. According to CIPESA (2025), women in Ghana have been subjected to fabricated videos intended to discredit their professional integrity. Smear campaigns such as these, in addition to reinforcing negative stereotypes about women, limit women's voice and discourage women from participating in the public sphere. Researchers suggest that if left unchecked, AI enabled harassment will further exacerbate existing gender inequities and hinder advances towards gender equality.

2.6 National Security and Information Warfare

As a result of the increasing usage of synthetic media to spread disinformation, it is currently viewed as a regional and national security threat. Disinformation campaigns, which are often funded by foreign governments, have targeted several African countries to alter political discourse and reduce the confidence of the public. The Africa Center for Strategic Studies has identified several operations run by foreign powers, including Russia and China, to spread anti-western propaganda in West Africa (Africa Center for Strategic Studies, 2024).

In addition to using disinformation, violent extremist groups are beginning to experiment with AI to enhance their grievances and instigate conflict. Researchers predict that deepfakes could be used to create fictional military orders, produce staged atrocities, or instill panic during emergencies (Byman et al., 2023). Ghanaian government officials are concerned that misinformation could create unrest during election periods. Reports following election-related violence in districts such

as Ablekuma North demonstrate the need for enhanced platform governance and digital surveillance in order to develop more comprehensive electoral security frameworks (Abeni, 2025).

2.7 Civic Education and Media Literacy

Media and information literacy is generally recognized as the most important method to defend oneself against synthetic disinformation. UNESCO (2021) describes Media and Information Literacy (MIL) as the ability to locate, assess, utilize and generate information responsibly. In Ghana, journalism training programs now contain modules focused on detecting misinformation, and national action plans are increasingly emphasizing media literacy.

Organizations such as Penplusbytes are leading pre-bunking and media literacy initiatives, instructing citizens on methods such as conducting a reverse-image search, and identifying reliable sources (Penplusbytes, 2024). Bodies responsible for monitoring and correcting false content such as the Media Foundation for West Africa are active fact-checkers. Legislatively and policy-wise, Ghana's Right to Information Act (2019) aims to foster transparency and provide the public with access to credible information; ultimately enhancing public demand for accuracy rather than enforcing censorship.

2.8 Implications of the Theoretical Framework

The combination of Media Dependency, Inoculation, and Technology Affordance theories offer a wide-angle lens to analyze AI-driven misinformation in Ghana. Media Dependency Theory explains the reasons for audience vulnerability, Inoculation Theory defines methods to prevent misinformation, and Technology Affordance Theory demonstrates how the design of social media platforms enable or limit both the ability to create misinformation and the ability to develop

countermeasures to that misinformation. Together, this theoretical framework will help assess the ways in which Ghana's information environment is vulnerable to the use of synthetic media and how AI may aid in mitigating those effects.

2.9 Chapter Summary

This chapter surveyed research on synthetic media and AI-driven misinformation and demonstrated how it impacts the work of journalists, public health, women's right to gender equality, national security, and civic education both globally and in Ghana. This chapter has shown that while AI allows for the development of very believable misinformation, AI also provides tools to identify and mitigate the effects of misinformation. With the guidance of Media Dependency Theory, Inoculation Theory, and Technology Affordance Theory, this study will investigate the vulnerabilities and resilience-building strategies within Ghana's information environment and assess the potential of AI in preserving information integrity.

CHATER THREE

METHODOLOGY

3.1 Introduction

In this section we will discuss how qualitative methodologies were used to investigate the experiences of journalists working at Media General in Ghana. First, an overview of the paradigms and assumptions underlying the overall research is provided. Then the research approaches and designs used to collect data are explained. Next, the sampling strategies and processes of collecting the data are then described. Afterward, the safeguards for ethics and measures of authenticity and trustworthiness are outlined. Finally, the analytical techniques used to analyze the data is discussed. In summary, the study employed a qualitative, interpretative research paradigm to answer the research questions posed in this study.

3.2 Research Paradigm

As noted above, this study adopted an interpretative research paradigm. According to Ayton et al. (2023), in an interpretative/constructivist paradigm, there are numerous and socially constructed "realities." For example, each of the journalists interviewed may have had a unique subjectively created "reality" based upon their individual contexts. Furthermore, the use of an interpretative research paradigm implies that the researcher creates knowledge as he interacts with the participants. This differs from a positivist paradigm which assumes there is only one "true" objective reality. Generally, qualitative research such as this study is conducted using an interpretative paradigm assuming that understanding develops as a result of dialogue with the participants (ibid).

3.3 Philosophical Assumptions

As mentioned above, the study's ontological position assumes that multiple subjective realities exist and are socially constructed through interactions. Additionally, epistemologically, knowledge is formed through the everyday interactions between the researcher and the journalists creating meaning together when examining their experiences. Axiologically, the researcher acknowledges his values to impact the study and aims to develop a balanced and reflective interpretation of the data (Ayton et al., 2023). Therefore, the researcher recognizes and transparently communicates his bias in conducting the study. As previously noted, these assumptions fit with the qualitative practice of inductive, emergent inquiry.

3.4 Research Approach

As stated earlier, an inductive, exploratory qualitative research approach was utilized in this study. Open-ended questions were probed during semi-structured interviews to enable the emergence of themes from the participant's accounts. Therefore, this design is consistent with an exploratory research design since it seeks to address the "how" and "why" aspects related to journalists' perceptions without establishing any preconceived hypotheses (Thomas, 2003). This allowed the researchers to develop concepts from the ground-up utilizing the participants' own words to develop the themes and interpretations found in the study.

3.5 Research Design

The study is a qualitative case study of Media General. Case studies enable researchers to examine a particular "case" (Media General in this instance) within the context where the case exists naturally. Yin states that a case study offers an "in-depth, multi-faceted understanding of a

complex issue in its real-life context" (Yin, 2014). Therefore, by focusing on journalists and editors in this one media outlet, the research examined the phenomenon of interest in depth. The naturalistic research design of this study captured rich contextual details which would have been missed by experimental or survey type designs.

3.6 Sampling Strategy

Purposive sampling was the method used to identify participants who would be the most knowledgeable and experienced regarding the topic of interest. Three individuals; two experienced journalists and one editor at Media General were selected based on their positions of relevance to the study. Purposive sampling is commonly utilized in qualitative research where "settings and people [are] selected based on their expected contribution to the study" (Campbell et al., 2020). Thus, in this study, participants were selected based on the likelihood that they would possess the greatest amount of knowledge and experience on the researched topic. Since this was a non-probabilistic sampling method, each participant could provide in-depth explanations of newsroom routines and decision-making processes. Although the sample size was limited, the number of participants was sufficient for an exploratory study providing the opportunity to thoroughly examine each case.

3.7 Data Collection Process

Data was collected through semi-structured interviews. Key topics (e.g. editorial decisions and newsroom routines) were addressed in an interview guide; however, the sequence of questions and wording of the questions varied among participants. Utilizing semi-structured interviews permitted the conversation to evolve based on the participant's responses. Each interview was audio-recorded

(with consent) and subsequently transcribed verbatim. Participants were encouraged to expand on their responses to elicit rich detail. The data collection process generated detailed data directly from the newsroom professionals.

3.8 Ethical Consideration

This is about the ethical considerations of the study. All ethical safeguards were adhered to; informed consent was administered to the participants when their participation was explained, and when it was noted that participation was optional, and that they may opt out at any time. The anonymity and confidentiality of the participants was guaranteed by removing all identifying information from the transcripts. The data was stored on password protected computer devices. There were no risks to the participants beyond any mild discomfort they may have experienced. Institutional approval for the study was received, and extreme caution was exercised in protecting the identity and welfare of all participating interviewees.

3.9 Qualitative Research Rigor (Trustworthiness)

A number of Alexander's (2019) criteria for trustworthiness/quality of qualitative research were used to address the issue of the study's trustworthiness/quality (i.e., qualitative rigor).

Credibility: Credibility, or confidence in the "truth" of the data and the interpretations made from those data, was improved by thorough familiarity with the transcripts, peer debriefing, and, whenever possible, member checking of key themes with the participants.

Dependability: Dependability, which, according to the criteria, pertains to the reliability of the findings across both time and condition, was facilitated by maintaining an audit trail of decisions

(the coding schemes, analytic memos) to document the research process so that others could see how the interpretations developed.

Confirmability: Confirmability, which is meant to provide assurance of objectivity and neutrality in the findings, was demonstrated by providing detailed documentation of the methods employed in addition to the coding rules and analytical steps.

Transferability: Transferability, which, as per the criteria, provides evidence of the extent to which the findings are applicable to other settings/context, was provided through detailed descriptions of the context including the Ghanaian media, the organizational setting in which the participants worked, and the participants' backgrounds, so that readers would be able to assess how the insights may apply to other settings.

Collectively, these practices contributed to enhancing the authenticity of the study's conclusions.

3.10 Data Analysis Methods

Thematic coding was used to analyze the interview transcripts. NVivo software was utilized to assist with managing and coding the qualitative data. First, the researcher repeatedly read the transcripts and applied open codes to the relevant sections of the text. The researcher then grouped the codes into categories and identified themes inductively. Analysis followed Miles & Huberman's model. Specifically, analysis progressed through three broad stages including data reduction through coding and distillation of raw data), data display by organizing the codes into charts or models) and finally drawing conclusions by interpreting patterns and verifying themes (Dhakal, 2022). This systematic approach allowed the researcher to ensure that the themes were authentic representations of the participants' experiences, rather than previously established interpretations.

3.11 Theoretical Foundations of the Study

Three complementary theoretical foundations will guide this study: Media Dependency Theory; Inoculation Theory; and Technology Affordance Theory.

First, Media Dependency Theory describes how people are so reliant on media as an information and social resource, particularly when there are uncertainty and stress due to crisis events (Lin, 2015). Since Ghana has a large number of users consuming digital media content, especially during times of political or social crises, such reliance makes them even more susceptible to synthetic false information.

Second, Inoculation Theory (McGuire, 1961) is a psychological theory designed to build resistance to misinformation. Through providing individuals with weak versions of misinformation along with corrections, their cognitive immunity is enhanced (Roozenbeek et al., 2020). Therefore, educating digital literacies through pre-bunking, digital literacy education and early warnings systems may provide a great way to protect against misinformation in Ghana.

Third, Technology Affordance Theory (Gibson, 1979) considers how technology's design and functionality influence user behavior (Leung et al., 2023). In terms of synthetic media, AI offers an ease of creating "deepfakes" while social media affords the ease of rapid dissemination of information without verification. On the other hand, AI-based detection algorithms and watermarks afford new opportunities to prevent the spread of synthetic media. As Ghana does not have direct authority over many global social media platforms, Ghana faces structural limitations resulting from the architecture of the technology itself.

Together, the three theories afford a comprehensive analytical framework for the study of AI-driven misinformation in Ghana because they consider the social, psychological and technological components of the issue.

3.12 Chapter Summary

This chapter has described a qualitative, interpretivist research methodology suited to the research context. The use of a case study design with a form of non-probability sampling referred to as purposive sampling and semi-structured interviews enable a very in-depth examination of the perspectives of the journalists. The careful consideration of the ethical issues involved in conducting the research and ensuring the trustworthiness of the findings, supports the validity of the results. Data analysis occurred through the application of inductive coding and thematic interpretation, utilizing the NVivo software to aid in the organization of the data. The overall methodology outlined in this chapter provides the necessary structure to allow for the analysis of the findings from the interviews in the next chapter.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

This Chapter presents the empirical evidence collected from the semi-structured interviews conducted with media professionals in the radio and television media segments and online journalists to assess the role of Artificial Intelligence (AI) in detecting and combating the spread of fake news using synthetic media in Ghana. This Chapter will be organized around the three research questions of this study and will present the most relevant themes relating to the presence of synthetic media in Ghana's media and social media ecosystems, the use of AI-based detection tools and context-specific methods to fight misinformation in Ghana's media ecosystem.

4.2 Presence and Trends of Synthetic Media in Ghana's Media and Social Media Environments

The interviewees reported a trend of increasing synthetic media content in Ghana's media and social media environments, though the prevalence of the phenomenon is inconsistent. The majority of the interviewees indicated that the amount of manipulated content had increased, while some interviewees claimed to have encountered minimal or no manipulated content at all, possibly as a result of varying levels of awareness and experience among newsrooms.

Synthetic media was seen by the interviewees to be primarily located in the digital/social media environment. Specifically, the interviewees mentioned a rise in manipulated video and manipulated audio content. One interviewee stated, "*People's speeches were doctored; voices were changed, and news content was altered to mislead people*," showing how synthetic content is used to develop and shape the narrative in online environments. Synthetic media was also

associated with political contexts, as interviewees believed synthetic media was often used to shape the perception of citizens toward politicians.

Interviewees also reported that synthetic media is far more likely to appear in social media reel and digital broadcast environments rather than in traditional media environments. The interviewees attributed this to the fact that established media organizations are unable to control the user created digital environment. As one interviewee stated, "*Traditional media is usually safe from synthetic media manipulation since those creating synthetic media cannot access those types of platforms.*" However, the interviewees concluded that because of the uncontrolled nature of digital environments, social media is the primary platform through which users can access synthetic media.

Although the interviewees' experiences varied with regards to the occurrence of synthetic media, few interviewees indicated that they had experienced deep fakes or AI-generated media in their work. The variations in the interviewees' experiences demonstrate that while the phenomenon is expanding, synthetic media is not a ubiquitous problem in all journalistic areas of Ghana.

4.3 AI-based Detection Platforms and Context-Specific Solutions for Synthetic Media

The interviewees showed different degrees of familiarity and use of AI-based platforms to detect synthetic media. The interviewees indicated that some interviewees understood digital verification tools well, while others had little to no knowledge of such tools.

The interviewees that understood AI-based platforms identified multiple platforms (Google Reverse Image Search, Chat GPT, Gemini AI) as useful in verifying media. As an example, one interviewee stated "*There are verification platforms that help identify false media*" and further described these platforms as "*Generally very trustworthy*."

Some journalists reported that they utilize AI tools personally and professionally for verification purposes. In general, the interviewees reported positive experiences with the AI tools. For instance, a respondent stated that "*These platforms are reliable and accurate…although there are limits to what they can offer*," reflecting a reliance on the tools and an understanding of the tools' limitations.

However, the interviewees stated that some journalists reported that they rarely or never utilize AI-based detection tools. Instead, journalists rely heavily on traditional verification methods, including source verification. As an example, a respondent stated "*We verify from the source or supposed source*," illustrating a continued reliance on traditional manual journalistic practices versus the use of AI-based detection systems.

As such, it seems that AI-based detection frameworks do exist and are somewhat well-known in certain media communities, but the usage of AI-based detection frameworks is uneven and is developing in various forms throughout Ghanaian newsrooms.

4.4 Challenges in Identifying and Counteracting Synthetic Media

Interviewees pointed out a number of key barriers to the effective identification and counteraction of synthetic media-fake news. The speedy dissemination of misinformation, especially via social media, appeared frequently as a barrier. "*Fake media can spread very fast, and many times, people who are gullible will take it,*" stated one interviewee, who noted the difficulties in keeping pace with the fast-spreading misinformation.

Regardless of the barriers to identify the misinformation, interviewees repeatedly asserted that there is a strong journalistic tradition of verification and professional obligation. Interviewees emphasized that, regardless of pressure of time, or demand for a story, verification continues to be

a basic tenet. As one interviewee stated, "*It's always better to check first, rather than publish false information*."

Viewpoints concerning the readiness of newsrooms for synthetic media varied among interviewees. While some felt that Ghanaian media organizations have adequate capabilities to address synthetic media issues, others stressed the necessity for additional institutional backing. Collaboration was viewed as being essential; interviewees indicated that newsrooms, fact-checkers, and technology companies should collaborate to develop improved filtering and verification mechanisms. One interviewee recommended embedding fact-checkers in newsrooms to facilitate the verification process, emphasizing organizational integration as a means to address the issue.

4.5 Chapter Summary

This chapter has documented the findings of interviews conducted with Ghanaian media professionals relative to synthetic media and the function of artificial intelligence in detecting fake news. The study shows that synthetic media is becoming increasingly prominent, especially in digital and social media environments, although levels of exposure vary among journalists. AI-based tools are acknowledged as useful but are not uniformly employed across media organizations. The major challenges include the rapid diffusion of misinformation and inconsistent access to technological resources. Furthermore, the study highlights the need for AI-training programs, increased institutional cooperation, and policy interventions to increase Ghana's ability to identify and counteract synthetic media based-fake news. These findings provide an empirical basis for the discussions and recommendations presented in the subsequent chapter.

CHAPTER FIVE

CONCLUSION, SUMMARY AND RECOMMENDATIONS

5.1 Introduction

In Chapter Five of this study, the major findings from the study regarding the role of Artificial Intelligence (AI), in detecting and countering fake news based on synthetic media in Ghana are presented. These results are discussed against the backdrop of the research questions and place within the larger body of research related to misinformation, media credibility, and emerging digital technologies. Additionally, recommendations for improving the overall media ecosystem in Ghana via technological, institutional, and policy-based responses provided.

5.2 Summary of Major Findings

5.2.1 Trends and Prevalence of Synthetic Media in Ghana

The study shows that synthetic media has become an increasing and emergent threat in the digital media sphere of Ghana. While some of the participating journalists had direct exposure to the manipulated content they described (e.g., doctored speeches or modified videos) most stated they had limited personal experience with the manipulated content, which may reflect the relatively early stages of the emergence of synthetic media in Ghana, where exposure to manipulated content seems to occur more often in social and digital media spaces than in the traditional media spaces. Furthermore, participants' reports of synthetic media being utilized by politicians mirror global trends of election-related disinformation and political propaganda. The accounts of manipulated content related to regional politics demonstrate that synthetic media is becoming a key tool for

shaping narratives and influencing public opinion. This trend is consistent with previous research that identifies political contexts as areas of high risk for AI-based disinformation campaigns.

5.2.2 Efficiency and Use of AI-Based Detection Methods

The study demonstrated that there is an awareness of AI-based detection methods; however, use varies significantly across Ghanaian newsrooms. Many journalists who participated in the study actively used AI-based detection methods such as ChatGPT, Gemini AI, and Google Reverse Image Search and believed these to be effective in terms of reliability, particularly when using the more advanced features. However, other journalists continued to rely upon traditional journalistic verification methods (i.e., verifying sources). These differences highlight the transitional phase Ghanaian journalism currently finds itself in – a time where traditional verification methods coexist with AI-based detection methods.

The differences in awareness of AI-based detection methods and actual use of those methods highlight capacity and structural barriers to adoption such as lack of training, limited resources, and institutional resistance to change. The study supports that journalists in Ghana recognize the value of AI-based detection methods but face significant barriers to integrating these new methods into their reporting processes.

5.2.3 Obstacles to Combating Synthetic Media Based Fake News

Journalists identified speed of dissemination of fake information as a primary obstacle. The ability of fake media to rapidly disseminate throughout social media platforms limits the ability of journalists to verify the accuracy of the information in a timely manner. However, the journalists who participated in the study also demonstrated a commitment to professionalism and verification. Thus, it was evident that there was a sense of resilience within the journalism profession.

However, the data collected during the study indicated that there was a significant variation in the level of preparedness of media institutions to combat synthetic media. Some journalists believed that media institutions in Ghana have the necessary tools and infrastructure in place to adequately address the issue, while others believed that more collaborative efforts and better-integrated fact-checking systems were needed. The results of the study suggest that combating synthetic media is not just a technological challenge, but rather an institutional and structural challenge as well.

5.3 Policy and Practical Recommendations

On the basis of the results of the study, several practical and policy-based recommendations are presented below.

5.3.1 Training and Capacity Development

There is clearly a need for structured and continuous AI-focused training programs for journalists and media professionals in Ghana. The training should include:

- Training on identifying indicators of synthetic media
- Training on the utilization of AI-powered detection tools
- Training on digital verification methods

Training institutions for the media, and journalism schools should incorporate AI literacy and misinformation detection into their curricula.

5.3.2 Institutional Collaboration Frameworks

It is recommended formal partnerships be established between:

- Media organizations

- Fact-checking bodies
- Technology companies

• Government agencies

These collaborations should be developed with clear Memoranda of Understanding (MOUs) that will enable the sharing of detection tools, databases, and coordinated response strategies.

5.3.3 Strengthening Legal and Regulatory Frameworks

Regulators and policy makers in Ghana should develop:

- Clear legal frameworks that address AI-generated disinformation
- Specific standards for content authenticity and accountability of platforms
- National guidelines for the ethical use of AI in media

An active and proactive regulatory approach will assist in limiting the potential for abuse, while fostering innovative uses of AI in media.

5.3.4 Investing in AI Infrastructure and Tools

News organizations should invest in subscription-based and enterprise-level AI detection tools so that journalists have access to functional and up-to-date technology. International partners and donor agencies can support this effort through financial assistance and technical support.

5.4 Contribution of the Study

This study adds to the existing body of knowledge by providing empirical insights into how AI-driven misinformation is viewed and combated in Ghana's media ecosystem. The study further highlights the difference between the availability of AI-driven detection tools and the actual usage

of those tools by Ghanaian journalists. The study also emphasizes the necessity of institutional and policy-based initiatives to accompany the development of AI-based technologies.

5.5 Recommendations for Future Research

The interviews provided a number of recommendations to enhance Ghana's response to synthetic media and fake news. A common thread running throughout the interviews was the need to build capability in artificial intelligence (AI). Several interviewees emphasized that journalists required structured education/training in order to better comprehend AI-related technologies. Consistently, interviewees emphasized the need for "*education in AI*" because of a perceived lack of skills in this developing field.

Another approach recommended by interviewees was formalizing collaboration frameworks between news organizations, fact-checking entities, technology companies, and governmental agencies. Interviewees recommended that such collaboration could occur through institutional agreements; one interviewee stated that "*enter into contractual agreements to help in fact-checking*," indicating that formalized partnerships may improve access to verification resources and technical expertise.

Interviewees suggested that access to sophisticated AI platforms at a reasonable cost, such as through subscription, would be beneficial to improve detection abilities. Interviewees referenced specific tools such as Gemini AI and ChatGPT as particularly useful, provided they utilize all of the features. Interviewees believed that broader access to these types of tools would enable a significant improvement in detection capabilities.

Aspects related to the future, interviewees were cautiously optimistic about AI's potential to positively influence journalism. AI was referred to as "*an innovative tool that improves journalism by increasing efficiency and effectiveness,*" however, also posed threats if not regulated properly. Interviewees emphasized the need to strengthen regulatory frameworks in order to contain the detrimental effects of AI, while enhancing the benefits of AI in journalism.

Future studies can include but are not limited to:

- public awareness surveys about synthetic media for non-media professional populations,
- experimental testing of AI detection tools to determine their effectiveness,
- election-specific synthetic media risk assessments in Ghana.

5.6 Conclusion

In this Chapter the conclusions from the study's findings have been outlined and targeted recommendations to address the problem of fake news created through the use of synthetic media in Ghana have been provided. The findings indicate that although the potential for using AI in detection and efficiency applications is significant, there is a high level of risk associated with using AI without regulation. To ensure that AI can serve as a tool to protect information integrity in Ghana, strengthening of training programs, institutional collaborations and regulatory frameworks will be necessary.

REFERENCE

Abeni, Collins. T. (2025, June 15). *Social Media Amplifies Tension: Misinformation & Graphic Videos Fuel Ablekuma North Anger*. Morden Ghana. https://www.modernghana.com/news/1416949/social-media-amplifies-tension-misinformation.html

Africa Center for Strategic Studies. (2024, March 13). *Mapping a Surge of Disinformation in Africa – Africa Center*. https://africacenter.org/spotlight/mapping-a-surge-of-disinformation-in-africa/

Alexander, A. P. (2019). LINCOLN AND GUBA'S QUALITY CRITERIA FOR TRUSTWORTHINESS. *IDC International Journal*, *6*(4).

Ayton, D., Tsindos, T., & Berkovic, D. (2023). *Chapter 2: Foundations of qualitative research – paradigms, philosophical underpinnings – Qualitative Research – a practical guide for health and social care researchers and practitioners*. https://oercollective.caul.edu.au/qualitative-research/chapter/2/

Byman, D., Gao, C., Meserole, C., & Subrahmanain, V. (2023, January). *Deepfakes and international conflict | Brookings*. Brookings. https://www.brookings.edu/articles/deepfakes-and-international-conflict/

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive sampling: complex or simple? Research case examples. *Journal of Research in Nursing*, *25*(8), 652–661. https://doi.org/10.1177/1744987120927206

Chesney, B., & Citron, D. (2019). Deep fakes: A looming challenge for privacy, democracy, and national security. *California Law Review*, *107*(6), 1753–1820. https://doi.org/10.15779/Z38RV0D15J

CIPESA. (2025, February 5). *Digital Shadows: Deepfakes Used As Violence Against Women in Journalism and Politics During African Elections – Collaboration on International ICT Policy for East and Southern Africa (CIPESA)*. https://cipesa.org/2025/02/digital-shadows-deepfakes-used-as-violence-against-women-in-journalism-and-politics-during-african-elections/

Cooke, D., Edwards, A., Day, A., Nair, D., Barkoff, S., & Kelly, K. (2024, November 1). *Crossing the Deepfake Rubicon*. Center for Strategic and International Studies. https://www.csis.org/analysis/crossing-deepfake-rubicon

CPA. (2023). *PARLIAMENTARY HANDBOOK ON DISINFORMATION, AI AND SYNTHETIC MEDIA*.

CSIS. (2023, May 9). *Disinformation and Deepfakes: Countering Gender-Based Online Harassment | CSIS Events*. Center for Strategic and International Studies. https://www.csis.org/events/disinformation-and-deepfakes-countering-gender-based-online-harassment

Dhakal, K. (2022). NVivo. In *Journal of the Medical Library Association* (Vol. 110, Issue 2, pp. 270–272). Medical Library Association. https://doi.org/10.5195/jmla.2022.1271

European Commission. (2020). *EU action plan against disinformation Audit preview Information on an upcoming audit*.

FreedomHouse. (2025). *Ghana: Freedom on the Net 2024 Country Report | Freedom House*. FreedomHouse. https://freedomhouse.org/country/ghana/freedom-net/2024

Lazer, D. M. J., Baum, M. A., Benkler, Y., Berinsky, A. J., Greenhill, K. M., Menczer, F., Metzger, M. J., Nyhan, B., Pennycook, G., Rothschild, D., Schudson, M., Sloman, S. A., Sunstein, C. R., Thorson, E. A., Watts, D. J., & Zittrain, J. L. (2018). The science of fake news: Addressing fake news requires a multidisciplinary effort. *Science*, *359*(6380), 1094–1096. https://doi.org/10.1126/science.aao2998

Leung, D. K. Y., Wong, F. H. C., Wong, E. L. Y., Sze, L., Chan, M., Liu, T., Fong, A. P. C., Kwok, W. W., Shum, A. K. Y., Wong, G. H. Y., & Lum, T. Y. S. (2023). Technology Affordance in an Information and Communication Technology Delivered Group Psychotherapy and Exercise Program for Older People With Depressive Symptoms: A Multiple Triangulation Qualitative Study. *Innovation in Aging*, *7*(6). https://doi.org/10.1093/geroni/igad063

Liang, W., Yuksekgonul, M., Mao, Y., Wu, E., & Zou, J. (2023). GPT detectors are biased against non-native English writers. In *Patterns* (Vol. 4, Issue 7). Cell Press. https://doi.org/10.1016/j.patter.2023.100779

Lin, Y. (2015, December 15). *Media dependency theory | Effects on Communications & Society | Britannica*. Britannica. https://www.britannica.com/topic/media-dependency-theory

Media Foundation for West Africa. (2025, February 19). *Disinformation and elections: Here's what we learnt during Ghana's 2024 elections*. Media Foundation for West Africa. https://mfwa.org/issues-in-focus/disinformation-and-elections-heres-what-we-learnt-during-ghanas-2024-elections/

Mirsky, Y., & Lee, W. (2021). The Creation and Detection of Deepfakes. In *ACM Computing Surveys* (Vol. 54, Issue 1). Association for Computing Machinery. https://doi.org/10.1145/3425780

MyjoyOnline.com. (2023, March 31). *Fake Joy News video used to promote fraudulent mobile app in Ghana - MyJoyOnline*. MyjoyOnline.Com | The Multimedia Group. https://www.myjoyonline.com/fake-joy-news-video-used-to-promote-fraudulent-mobile-app-in-ghana/

OECD. (2024, May). *AI Principles Overview - OECD.AI*. OECD.AI Policy Observatory. https://oecd.ai/en/ai-principles

Penplusbytes. (2024, March 13). *Curbing Misinformation and Disinformation ahead of Ghana's 2024 General Elections: The Critical Role of MIL – Penplusbytes*. https://penplusbytes.org/curbing-misinformation-and-disinformation-ahead-of-ghanas-2024-general-elections-the-critical-role-of-mil/

Roozenbeek, J., Van Der Linden, S., & Nygren, T. (n.d.). *Prebunking interventions based on "inoculation" theory can reduce susceptibility to misinformation across cultures*. www.getbadnews.com

Rubinelli, S., Purnat, T. D., Wihelm, E., Traicoff, D., Namageyo-Funa, A., Thomson, A., Wardle, C., Lamichhane, J., Briand, S., & Nguyen, T. (2022). WHO competency framework for health authorities and institutions to manage infodemics: its development and features. *Human Resources for Health*, *20*(1). https://doi.org/10.1186/s12960-022-00733-0

StatCounter. (2025). *Social Media Stats Ghana | Statcounter Global Stats*. https://gs.statcounter.com/social-media-stats/all/ghana

Thomas, D. R. (2003). *A general inductive approach for qualitative data analysis*.

UN. (2024, June 21). *Countering hate speech and misinformation- UNESCO kickstarts regional trainings for journalist ahead of 2024 elections | United Nations in Ghana*.

https://ghana.un.org/en/272297-countering-hate-speech-and-misinformation-unesco-kickstarts-regional-trainings-journalist

UNESCO. (2021). *MEDIA AND INFORMATION LITERATE CITIZENS THINK CRITICALLY, CLICK WISELY! MEDIA & INFORMATION LITERACY CURRICULUM FOR EDUCATORS & LEARNERS*. http://en.unesco.org/

UNESCO. (2023). *"Your opinion doesn't matter, anyway" Exposing Technology-Facilitated Gender-Based Violence in an Era of Generative AI*. https://en.unesco.org/open-access/cc-sa

UNESCO. (2025). *CONFERENCE ON INFORMATION INTEGRITY IN WEST AFRICA AND THE SAHEL CONCEPT NOTE 3-5 September 2025 Cabo Verde*. https://doi.org/10.25167/ees.2018.46.29

Verdoliva, L. (2020). Media Forensics and DeepFakes: an overview. *IEEE Journal of Selected Topics in Signal Processing*, *14*(5), 910–932. https://doi.org/10.1109/JSTSP.2020.3002101

Wardle, C., & Derakhshan, H. (2017). *INFORMATION DISORDER : Toward an interdisciplinary framework for research and policy making Information Disorder Toward an interdisciplinary framework for research and policymaking*. www.coe.int

Winters, M., Christie, S., Melchinger, H., Iddrisu, I., Al Hassan, H., Ewart, E., Mosley, L., Alhassan, R., Shani, N., Nyamuame, D., Lepage, C., Thomson, A., Atif, A. N., & Omer, S. B. (2025). Debunking COVID-19 vaccine misinformation with an audio drama in Ghana, a randomized control trial. *Scientific Reports*, *15*(1). https://doi.org/10.1038/s41598-025-92731-0

Yin, R. (2014). *Case study research : design and methods* (5th ed.). SAGE Publications, Inc.

ZeroFox Intelligence. (2023, April 19). *3 Notable Synthetic Media Attacks | ZeroFox*. https://www.zerofox.com/blog/synthetic-media-attacks/

APPENDIX

Semi-Structured Interview Guide for Journalists and Editors

Title: The Role of Artificial Intelligence in Detecting and Countering Synthetic Media-Based Fake News in Ghana

Target Group: Journalists and Editors (print, broadcast, and online media)

Estimated Duration: 45–60 minutes

1. Background and Professional Context

1. Could you describe your current role and responsibilities in the newsroom?
2. How long have you been working in journalism, and in what types of media (print, radio, television, online)?

2. Experiences with Synthetic Media

3. Have you encountered synthetic media (e.g., deepfakes, AI-generated text, altered images) in your work? If so, can you share specific examples?
4. How often do such incidents occur, and in what contexts (elections, public health, celebrity news, etc.)?
5. How do you currently verify whether a piece of media is authentic or manipulated?

3. Awareness and Use of AI Detection Tools

6. Are you aware of AI-based tools for detecting fake or manipulated media? Which ones?
7. Have you or your newsroom used any of these tools? If yes, what has your experience been?
8. In your opinion, how accurate and reliable are these tools for verifying content?

4. Challenges in Detecting and Countering Synthetic Media

9. What are the biggest challenges you face in detecting AI-generated fake news?
10. How do time pressures, resource constraints, or lack of training affect your ability to verify content?
11. Do you think Ghanaian newsrooms are adequately equipped to deal with this challenge? Why or why not?

5. Collaboration, Training, and Best Practices

12. What type of training or capacity-building would help journalists detect and counter synthetic media more effectively?
13. How can newsrooms collaborate with fact-checkers, tech companies, or government agencies in this area?
14. Can you share examples of successful verification or debunking efforts in your newsroom?

6. Recommendations and Future Outlook

15. What strategies or tools would you recommend for Ghanaian media to better address synthetic media-based fake news?
16. How do you see the role of AI evolving in Ghanaian journalism over the next five years?

7. Closing

- Is there anything else you would like to add about your experiences with synthetic media or AI tools?
- Thank the participant for their time and insights.