Media coverage of DeepFake disinformation: An analysis of three South-Asian countries

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Abstract

A lot of people are concerned about DeepFakes in modern society. Despite its wide range of uses, DeepFakes has gotten little public recognition. The main goal of this research is to analyze DeepFakes and their originators, as well as their potential and risks. We analyzed 203 news articles from 16 media outlets in Bangladesh, India, and Pakistan to achieve our goal. The extracted news had been categorized under threat, prevention, and entertainment centric news. It has been revealed after analyzing DeepFake-related news from the leading English daily of these countries that more than 50% news of Pakistani newspapers related to DeepFake was on the threat of this heinous technology. On the other hand, one-third news of Indian and Bangladeshi newspapers was in this regard. The widespread broadcast of misleading information through media outlets might boost their legitimacy and reception for a short time but slowly and steadily smear their good name. This study also highlights the significant role media professionals have in spreading disinformation about the people and topics they cover.

Keywords: DeepFake, News Media, DeepFake Detection, Disinformation, News credibility.

INTRODUCTION

The earliest documented endeavor to exchange an individual's facial features, dating back to around 1865, is seen in a prominent depiction of the United States President, Abraham Lincoln. The lithographic artwork amalgamated the visage of President Abraham Lincoln with the physique of prominent Southern statesman John Calhoun. Following the murder of Lincoln, there was a significant surge in the demand for lithographs depicting him, resulting in the rapid emergence of engravings featuring his head on various bodies **(Lorant, 1969).** The issue of edited films with altered facial appearances has garnered significant attention over the last couple of years, particularly after the emergence of DeepFake technology, which uses deep learning algorithms to distort photos and videos. The use of auto encoders or generative adversarial networks enables the DeepFake algorithm to effectively substitute the faces present in the source video with those found in the target video. The emergence of Deep Neural Networks (DNN) produced counterfeit films gained significant public awareness towards the end of 2017. This phenomenon was first brought to light by a Reddit account named "DeepFakes," which shared fabricated pornographic videos created using a DNN-powered algorithm for face-swapping. Following this, the

term "DeepFake" has been used more expansively to include any films made by artificial intelligence that aim to impersonate individuals. At now, three primary categories of DeepFake videos exist.- 1. The head puppetry which involves the synthesis of a video in which the entire head and upper-shoulder region of a target individual are replaced with that of a source individual, resulting in the synthesized target exhibiting similar behavioral characteristics as the source individual. - 2. Face swapping refers to the process of generating a video in which the original faces of the target individuals are replaced with artificially synthesized faces of the source individuals while preserving the original facial expressions. - 3. Lip syncing, which entails the creation of a manipulated video by selectively altering the lip region of the target individual, giving the illusion that they are speaking words or phrases that they did not actually utter in reality. The creation of DeepFakes does not need the use of specialist hardware beyond a GPU often found in consumer-grade devices. Additionally, several readily available software packages have been developed to generate DeepFakes. The convergence of these circumstances has resulted in a significant surge in their widespread appeal, encompassing the creation of satirical movies for amusement purposes, as well as their utilization in deliberate assaults directed at specific persons or establishments **(Floridi, 2018).** The use of DeepFake films presents intriguing and innovative possibilities; nonetheless, their potential for weaponization is a concern, primarily stemming from the close connection between facial features and personal identification. According to **(Chesney & Citron 2019),** well-produced DeepFake films have the ability to fabricate the appearance and actions of an individual, generating deceptive perceptions that deviate from reality. Consequently, this phenomenon may have significant ramifications of a political, social, economic, and legal nature.

The potential risks associated with DeepFake technology encompass a wide range of scenarios. These include the creation and dissemination of revenge pornography, wherein an individual's face is synthesized and inserted into explicit videos without their consent. Additionally, there is the possibility of generating convincingly realistic videos depicting state leaders making inflammatory statements that they never actually uttered. Another concern is the manipulation of high-level executives using DeepFake technology to influence the global stock market by providing false commentary on their company's performance. Lastly, there is the potential for online sexual predators to exploit DeepFakes in video chats, assuming the visual identity of a family member or friend to deceive their victims. The transformative aspect of DeepFakes lies in the extensive reach, magnitude, and complexity of the underlying technology, enabling almost anybody with access to a computer to produce counterfeit videos that are very difficult to discern from genuine media **(Fletcher, 2018)**. Given the availability of extensive datasets, the generation of face-manipulated films has become quite straightforward using this technique. Up until now, the tools that have been made available for generating DeepFake movies have been extensively used to fabricated explicit videos featuring celebrities or engaging in acts of retribution. The aforementioned category of pornography has already been prohibited by many platforms such as Reddit, Twitter, and Pornhub. The use of fabricated recordings has already resulted in the exacerbation of political tensions, prompting governmental bodies to acknowledge their significance. Upon further examination, it becomes evident that the DeepFake films included in current datasets exhibit significant disparities in visual fidelity when compared to the authentic DeepFake videos that are widely disseminated on the Internet. The datasets often exhibit many visual abnormalities, such as the presence of low-quality synthetic faces, noticeable splicing borders, color discrepancies, apparent remnants of the original face, and irregular orientations of synthesized faces. These artifacts probably arise from the inherent imperfections in the stages involved in the synthesis procedure, as well as the absence of meticulous curation of the synthesized movies prior to their inclusion in the datasets. Furthermore, it is important to note that DeepFake films characterized by subpar visual quality are unlikely to be persuasive and are improbable to have significant consequences. The initial instances of DeepFakes primarily targeted prominent political figures, actresses, comedians, and entertainers, wherein their facial features were digitally manipulated and incorporated into explicit content **(Hasan & Salah, 2019).** Nevertheless, it is expected that forthcoming implementations of DeepFakes will progressively encompass activities such as the distribution of non-consensual explicit content for revenge, the utilization of digital manipulation to engage in online harassment, the creation of fabricated video evidence to influence legal proceedings, the subversion of political systems, the dissemination of extremist propaganda, the act of coercing individuals through blackmail,

the manipulation of financial markets, and the dissemination of misleading or inaccurate information **(Maras & Alexandrou, 2019).**

The issue of fake news identification is a pertinent concern within society and has garnered significant interest from the academic study community. Detecting fake news is a significant challenge due to the involvement of several entities in its creation and dissemination, as well as the limited public knowledge and intricate propagation mechanisms used on social media platforms **(Rabanser, Shchur, & Gnnemann, 2017).** The primary factor influencing journalists' lack of concern for individuals' reputational harm is their prioritization of economic gain above other considerations. The concepts of truth and lies have significant importance in the fields of philosophy, political science, and mass communication study since they are considered essential for the proper functioning of a democratic society, which relies on an educated population. Simultaneously, the primary objective of professional journalism is to report the objectively verifiable truth. There has been a longstanding concern among scholars and journalists on the capacity of individuals to acquire knowledge about objective reality **(Lippmann, 1925).** Nevertheless, throughout the course of the last decade, there has been a noticeable increase in public awareness of the dissemination of inaccurate information, surpassing the level of worry around information scarcity. This research examines a selection of news items about DeepFakes sourced from news media websites in three South Asian nations. This study makes a valuable contribution to the rising bodies of research on fake news and DeepFakes. It does this by conducting a thorough examination of DeepFakes and situating this emergent phenomenon within the context of academic discourse. Additionally, the study proposes potential strategies for politicians, journalists, entrepreneurs, and other stakeholders to effectively address the issue of DeepFakes.

LITERATURE REVIEW

Despite having some welcoming utilities, the technology named DeepFake poses a great threat to the privacy of individual, institution, and so on. After doing a thorough search on this technology the following matters have been extracted that can be related to the study area.

Due to its recent emergence on the Internet in 2017, there is a limited amount of research literature available on the subject of DeepFakes. Therefore, the objective of this paper is to examine the nature of DeepFakes and their creators, evaluate the advantages and risks associated with DeepFake technology, provide instances of existing DeepFakes, and propose strategies for mitigating their impact.

In relation to the phenomenon known as 'DeepFake', **Whyte (2020)** posited that the broader effects on society's capacity to evaluate the trustworthiness, source, and authenticity of information have significantly enhanced the utility of this technology when used in conjunction with specific cyber operations. In their study, **Kaliyar, Goswami, and Narang (2021)** used a deep neural network model known as DeepFake to conduct an analyze on the identification of fabricated news. The model they presented, known as DeepFake, demonstrated superior performance compared to previous approaches. It reached a validation accuracy of 85.86% with the BuzzFeed dataset and 88.64% with the PolitiFact dataset, establishing itself as the current leading approach. According to **Dobber (2021)**, the use of micro-targeting methods has the potential to enhance the impact of DeepFakes. This is achieved by allowing malevolent political entities to customize DeepFakes in a manner that exploits the vulnerabilities of the intended recipients. The researchers conducted an empirical investigation whereby they created a simulated representation of a political figure using advanced technology, including both visual and auditory elements. Subsequently, they proceeded to examine the impact of this artificially generated content on individuals' political beliefs and opinions using an online experiment with a sample size of 278 participants. The researchers discovered a significant decrease in opinions against the politician in question after exposure to the DeepFake, although attitudes towards the politician's political party remained relatively unchanged compared to the control group. The utilization of social media can have a substantial impact on the populace. Based on research published by UNESCO, the existence of fake news and DeepFake material has the capacity to disseminate false propaganda, potentially instigating political and social turmoil. The problem of detecting DeepFakes has been addressed by **Zhao et al. (2021)** via the formulation of a fine-grained classification

task. In their research, a unique multi-attentional DeepFake detecting network has been presented. To address the difficulties inherent in the learning process of their network, the researchers used a unique regional independence loss and a data augmentation approach driven by attention. In their recent publication, **Narayan et al. (2022)** introduced an innovative algorithm called DeepFake Source Identification (DeSI) that aims to discern the origins of DeepFake content shared on the social media platform Twitter. The researchers conducted thorough testing of their method in experimental settings that were both limited and unconstrained and then documented the findings they saw. In the limited context, the system successfully detected and attributed all the DeepFake tweets. Various entities such as technology businesses, media organizations, think tanks, colleges, and governments are actively endeavoring to tackle the issue of political deep fakes. In contrast, the presence of pornographic deep fakes has become a ubiquitous aspect inside the realm of the internet.

DeepFake identification is a potentially effective strategy to mitigate the risks posed by DeepFakes. Numerous datasets on DeepFakes have been made available for facilitating the training and evaluation of DeepFake detection systems. Notable examples include the DeepFakeDetection dataset **(Deep Fake Detection Dataset, 2019)** and the FaceForensics++ dataset **(Rossler et al., 2019).** Detectors created using these datasets may exhibit diminished efficacy when confronted with authentic DeepFake content disseminated on the internet. In order to enhance the efficacy of DeepFake identification in practical scenarios **(Zi et al. 2020)** proposed the use of a novel dataset called WildDeepFake. This dataset comprises 7,314 face sequences that have been recovered from a collection of 707 DeepFake films obtained only from the internet. A comprehensive evaluation was conducted on a series of baseline detection networks, using both pre-existing and proprietary WildDeepFake datasets. The findings indicate that the WildDeepFake dataset has more challenges, since the detection performance may see a notable reduction. The researchers also put forth two Attention-based DeepFake identification Networks (ADDNets), namely a 2D and a 3D network. These networks use attention masks on genuine and fake faces to enhance the identification process. The authors **Li et al. (2020)** presented Celeb-DF, an innovative and comprehensive dataset including a collection of DeepFake films. The dataset consists of 5,639 DeepFake videos showcasing celebrities, which were generated using an advanced synthesis method, ensuring their excellent quality. The primary objective of this dataset is to facilitate the advancement and assessment of DeepFake detection algorithms. The researchers performed a thorough assessment of DeepFake detection techniques and datasets in order to illustrate the increased difficulty presented by Celeb-DF. In addition to the phenomenon of DeepFakes, many face-swapping algorithms based on Generative Adversarial Networks (GANs) have also been documented in academic literature, along with their corresponding source code. In order to address the growing concern, In their study, **Dolhansky et al. (2020)** generated a comprehensive dataset including a significant number of face swap films. The primary objective of this dataset was to support the advancement of detection algorithms. Additionally, they coordinated the DeepFake Detection Challenge (DFDC) Kaggle competition to complement this effort. **Güera and Delp (2018)** introduced a novel approach in their scholarly article, which incorporates temporal awareness to autonomously identify DeepFake films. The researchers conducted an experimented using a dataset consisting of 600 videos, half of which were DeepFakes sourced from various video hosting platforms. Their findings demonstrated that by employing a basic convolutional LSTM architecture, they achieved a high level of accuracy in determining whether a video had undergone manipulation or not, based on as little as 2 seconds of video data.

In order to provide a modern and thorough evaluation of the academic inquiries about the detection of DeepFake material, **Rana et al. (2022)** undertook a systematic literature review (SLR). This study included a total of 112 pertinent publications published between 2018 and 2020, which together exhibited a diverse range of approaches used in the field. The researchers conducted an assessment of the detection efficacy of different strategies across many datasets. The results of their study suggest that deep learning-based methodologies provide a higher level of effectiveness in comparison to other techniques within the domain of DeepFake identification. The objective of the study conducted by **Yu et al. (2021)** was to provide an overview of the present research landscape pertaining to the detection of DeepFake videos. Specifically, the study focused on elucidating the creation process of DeepFakes, various detection techniques used, and the benchmarks that now exist in this domain. The findings of their study demonstrated that existing detection approaches remain inadequate for

practical use in real-world scenarios. Consequently, future research efforts should prioritize the enhancement of generality and robustness in these systems. **Westerlund (2019)** used the nascent academic literature and publicly accessible news stories pertaining to DeepFakes. The researcher gathered a comprehensive set of 84 articles sourced from 11 distinct news organizations' websites. The purpose of this collection was to do an analysis of the nature of DeepFakes, their creators, the advantages and risks associated with DeepFake technology, instances of notable DeepFakes, and potential strategies for mitigating the impact of DeepFakes. The findings indicate that DeepFakes pose a substantial risk to society, the political system, and businesses. However, effective measures can be taken to address this issue, including the implementation of legislation and regulation, the establishment of corporate policies and voluntary initiatives, the provision of education and training, and the advancement of technology for detecting, authenticating, and preventing DeepFakes. According to **Maddocks (2020)**, an analysis of source material obtained from Twitter revealed three distinct processes that have contributed to the proliferation of false pornography. These processes include the deliberate omission of critical news coverage, the gradual acceptance and integration of such content within pornographic platforms, and the automated dissemination of fake pornographic material. Through an examination of the persistent elements shared by pornographic and political deep fakes, the researcher investigated the interconnectedness between these two phenomena. The findings of this study revealed that both political and pornographic deep fakes exhibit analogous mechanisms aimed at suppressing dissenting voices.

Individuals often possess little expertise in their respective professions and must depend heavily on the views and guidance provided by specialists. Nevertheless, in the era of digitalization, the discernment of dependable and trustworthy sources of information remains ambiguous **(Kovács, 2020).** The dissemination of disinformation through various media channels has been observed since the inception of mass communication. However, there is a growing consensus among scholars and experts that the present era can be characterized as the emergence of a "misinformation society" **(Pickard, 2016, p. 119),** marked by the prevalence of "alternative facts" and a disregard for objective truth **(Benkler et al., 2018; Madrigal, 2017).** According to recent studies conducted by **Fletcher et al. (2018)**, the influence of fake news sites and the prevalence of consuming false news articles online, as shown by **Grinberg et al. (2019)** and **Guess et al. (2019),** are found to be confined to relatively small segments of the community. According to the findings of **Guess et al. (2018),** the impact of fake news items on individuals' political opinions is likely to be mitigated due to the limited exposure of disinformation to a certain subset of citizens, namely those with mostly conservative online media consumption patterns. According to the findings of **Zimmermann and Kohring (2020),** those who exhibit lower levels of trust in news media are more susceptible to being influenced by disinformation, thereby impacting their voting choices.

Collectively, this suggests that a considerable number of individuals may become exposed to fabricated news narratives through established news outlets. Hence, a paradoxical scenario emerges whereby mainstream media, despite their intended objective of rectifying misinformation, inadvertently contribute to its propagation. Nevertheless, there is much empirical data that indicates a significant concentration of exposure to false news inside the realm of social media. An examination of Twitter engagement during the 2016 United States election reveals that a significant majority of false news narratives, up to 80%, were ingested by a minuscule fraction of the population, namely 1% **(Grinberg et al., 2019).** In a research conducted by **Guess et al. (2019),** the authors discovered that the act of posting false information on social media platforms, namely Facebook, was a very rare occurrence. The aforementioned result was derived by the examination of survey data in combination with the participants' Facebook profiles. The study revealed that 8.5% of the respondents, for whom the authors were able to effectively link Facebook data, engaged in the dissemination of false news on their social media feeds. **Grinberg et al. (2019)** found that a mere 0.1% of Twitter users were accountable for 80% of the dissemination of material originating from sources of false news. The imperative to disclose factual information and ensure its accuracy has long been a fundamental tenet of journalistic ethics **(Godler & Reich, 2017).** However, its significance has become increasingly pronounced in recent years, coinciding with the emergence of a professional milieu that places greater emphasis on critical analysis, contextual understanding, and interpretive frameworks, in addition to the mere transmission and documentation of news occurrences **(Esser & Umbricht, 2014; Salgado & Strömbäck, 2012).** One significant drawback of news coverage pertaining to fake news lies in the need for

mainstream journalists to repeat erroneous information in order to report on it, despite the potential benefit of providing the correcting alongside the misinformation. The issue at hand presents a challenge since the recurrence of information has been identified as a significant obstacle in endeavors to rectify false or misleading content **(Lewandowsky et al., 2012; Walter & Tukachinsky, 2019).**

Finding out how the prominent media of a country cover the news regarding DeepFake might be an interesting area of study. No study could be extracted about the matter especially from a South Asian perspective after holistic searches from different databases. In this study, a comprehensive analysis of DeepFake-related news covered by Top South Asian media outlets has been performed.

METHODOLOGY

A content analysis was undertaken to investigate the media portrayal of DeepFake misinformation, including a range of news articles pertaining to DeepFakes spanning the years 2017 to 2023. Three South Asian nations, namely Bangladesh, India, and Pakistan, were chosen for the study. A total of 16 news sources were picked from these countries. A comprehensive search was conducted using the keyword "DeepFake" to obtain news stories from the web databases of these 16 English-language news media organizations. A selection of 203 news stories was made, thereafter categorized based on three distinct criteria: Threat, Prevention, and Entertainment. The news stories were gathered from the online platforms of the following media organisations- Bangladesh (www.thedailystar.net, www.tbsnews.net, www.dhakatribune.com, www.daily-sun.com, https://en.prothomalo. com, https://thefinancialexpress.com.bd), India (www.timesofindia.indiatimes.com, www.hindustantimes. com, www.thehindu.com, www.telegraphindia.com, www.economictimes.com), Pakistan (www.dawn.com, www. pakobserver.net, www.thenews.com.pk, www.tribune.com.pk, www.nation.com.pk).

DATA ANALYSIS

The six most significant Bangladeshi news media sites were chosen and articles were obtained following a keyword search for "DeepFake". The Daily Star published 19 stories on DeepFake, including 7 on threats, 7 on entertainment news, and 5 on abuse prevention. The Business Standard published 13 articles: 2 on potential threats, 2 on prevention, and 9 on entertainment. 3 of Dhaka Tribune's 7 DeepFake articles were on likely threats and 4 were about prevention. Daily Sun ran 14 stories—8 on threats, 3 on prevention, and 3 on entertainment. Another major publication, Prothom Alo, released 11 pieces on DeepFake: 4 on threats 4 on prevention, and 3 on entertainment. The Financial Express has just six DeepFake stories—1 on threats, 4 on prevention, and one on entertainment. Overall, these 6 prominent Bangladeshi news media outlets published 70 articles about DeepFake **(Table 1).**

Table 1: Articles from Bangladeshi news sources

Name of news sources	Criteria for news articles			Total
	Threat	Prevention	Entertainment	
The Daily star	7 (10%)	5 (7.14%)	7 (10%)	
The Business Standard	2 (2.86%)	2 (2.86%)	9 (12.86%)	70
Dhaka Tribune	3 (4.28%)	4 (5.71%)	0 (0%)	
Daily Sun	8 (11.43%)	3 (4.28%)	3 (4.28%)	
Prothom Alo	4 (5.71%)	4 (5.71%)	3 (4.258%)	
The Financial Express	1 (1.43%)	4 (5.71%)	1 (1.43%)	

Following a search for the keyword "DeepFake" on the five most significant Indian news media websites, articles were retrieved. The Times of India published twenty articles on DeepFake, twelve of which dealt with threats, four with entertainment news, and four with abuse prevention. Hindustan Times also published twenty articles, with only one focusing on prospective threats, three on prevention, and sixteen on entertainment. Seven of The Hindu's twenty DeepFake articles focused on potential threats, two on entertainment, and eleven on prevention. The Telegraph Online only published five articles, two on threats and three on entertainment. The Economic Times published 19 articles on DeepFake, including nine on threats, six on prevention, and four on entertainment. These five prominent Indian news outlets published a total of 84 articles on DeepFake **(Table 2).**

Table 2: Articles from Indian news sources

Name of news sources	Criteria for news articles			Total
	Threat	Prevention	Entertainment	
Times of India	12 (14.29%)	4 (4.76%)	4 (4.76%)	
Hindustan Times	1 (1.20%)	3 (3.57%)	16 (19.05%)	84
The Hindu	7 (8.33%)	11 (13.09%)	2 (2.38%)	
The Telegraph Online	2 (2.38%)	0 (0%)	3 (3.57%)	
The Economic Times	9 (10.71%)	6 (7.14%)	4 (4.76%)	

After searching for "DeepFake" on the five largest Pakistani news media websites, articles were found. Dawn wrote 11 articles on DeepFake, 7 on threats, 1 about entertainment, and 3 about abuse prevention. Pakistan Observer published only two articles about potential threats. 7 of The News International's 14 DeepFake articles addressed threats, 5 entertainment, and 2 prevention. The Express Tribune produced 13 articles—6 on threats and 7 on prevention. DeepFake was covered in 9 Nation pieces, including 5 threats, 2 prevention, and 2 entertainment. These five major Pakistani news outlets published a total of only 49 DeepFake articles **(Table 3).**

Table 3: Articles from Pakistani news sources

Name of news sources	Criteria for news articles			Total
	Threat	Prevention	Entertainment	
Dawn	7 (14.28%)	3 (6.12%)	1 (2.04%)	
Pakistan Observer	2 (4.08%)	0 (0%)	0 (0%)	49
The News International	7 (14.28%)	2 (4.08%)	5 (10.20%)	
The Express Tribune	6 (12.24%)	7 (14.28%)	0 (0%)	
The Nation	5 (10.20%)	2 (4.08%)	2 (4.08%)	

In summary, a total of 83 articles (40.88%) were dedicated to addressing potential risks associated with DeepFakes. Additionally, 60 articles (29.56%) focused on discussing the preventive measures that should be implemented to effectively counteract this. Furthermore, another 60 articles (29.56%) were categorized under the genre of entertainment **(Table 4).**

Table 4: An overview of the examined news articles

Categorization criteria	Sampled countries			Total
	Bangladesh	India	Pakistan	
Threat	25 (30.13%)	31 (37.34%)	27 (32.53%)	83 (40.88%)
Prevention	22 (36.67%)	24 (40%)	14 (23.33%)	60 (29.56%)
Entertainment	23 (38.33%)	29 (48.33%)	8 (13.34%)	60 (29.56%)
Total				203

FINDINGS AND DISCUSSION

The majority of news articles originating from Pakistan had DeepFakes pertaining to political personalities and matters, hence corroborating the assertion that political players are often the subjects of fabricated news narratives (**Humprecht, 2018**). For a story to get attention, it must capture the interest of reporters and editors. According to **Jordaan (2013),** journalists have increasingly included the monitoring of social and online media within their assigned areas of coverage, considering it a significant aspect of their professional responsibilities. Certain news organizations have implemented dedicated areas of coverage specifically focused on tracking developments on social media platforms (**Broersma & Graham, 2012**). Additionally, other organizations have taken measures such as employing or providing training to personnel with expertise in monitoring online platforms (**Schifferes et al., 2014**). The prevalence of DeepFake news in India mostly revolves around celebrities, including instances when they become targets of DeepFake manipulation or engage in playful interactions using DeepFakes. This phenomenon may be ascribed as a significant contributing factor. The retention of misinformation from media reports about fake news is influenced by the congruence between the misinformation and the prior attitudes, beliefs, and opinions of the audience. Previous research has shown that the ability to correct misinformation is weakened by the preexisting beliefs of the audience (**Walter & Tukachinsky, 2019**). Hence, a significant proportion of news articles in Bangladesh focused on the urgent need for the regulation of disinformation, potential risks, and possible remedies.

Zannettou et al. (2019) identify various entities involved in the creation and dissemination of DeepFakes, encompassing governmental bodies, political activists, criminal elements, and individuals with malicious intent who generate fabricated content, both compensated and uncompensated trolls, conspiracy theorists, unwitting accomplices, and automated bots in the propagation of DeepFakes across social media platforms. He posits that the actions of these actors may be driven by a range of motivations, such as a deliberate desire to harm others, the manipulation of public opinion on specific subjects, the creation of confusion or discord among the general public, financial gain, or a strong personal commitment to a particular idea or organization. Our findings are consistent with the research conducted by **Zannettou et al. (2019),** which emphasizes the existence of individuals and organizations, including television businesses, that actively produce and endorse DeepFakes. These entities aim to advance and utilize DeepFake technology for legitimate purposes, such as creating paid music videos.

Based on our research, DeepFakes pose a significant societal, political, and commercial risk due to their impact on the ability of journalists to discern authentic news from fabricated content, their potential to undermine national security through the dissemination of election-related propaganda, their contribution to eroding public trust in authoritative information sources, and their implications for cybersecurity across individuals and organizations. In a similar line, the study provides substantial support for the conclusions drawn in prior studies (**Aldwairi & Alwahedi, 2018; Bates, 2018; Chawla, 2019; Hamborg et al., 2018; Lin, 2019; Wagner & Blewer, 2019**).

In order to comprehensively investigate DeepFake technologies and their applications, it is imperative to first overcome the prevailing unfavorable perceptions associated with this technology. A significant number

of individuals exhibit hesitancy and fear as a result of the substantial ramifications associated with the use of deceptive media, which may be employed to deceive, misunderstand, or exploit **(Wagner & Boczkowski, 2019).** The current legal framework has not kept pace with the rapid growth of DeepFakes. Nonetheless, the establishment of a thorough legal framework would facilitate the supremacy of DeepFake recognition software over DeepFake media production, therefore guaranteeing the consistent identification of falsified content from authentic material.

LIMITATIONS OF THE STUDY

It should be noted that the study does have several limitations. Initially, it is worth noting that the empirical investigation encompassed a sample of 203 online news stories pertaining to DeepFakes. However, it is important to acknowledge the existence of a larger body of literature on this subject. Considering the rapid pace of technological advancements in this domain, these extra pieces may offer supplementary insights into DeepFakes and propose more strategies for combating them. Furthermore, the empirical data utilized in this study was obtained from publicly accessible sources, specifically online news media platforms. By incorporating alternative sources of data, such as online forums dedicated to DeepFake discussions and conducting interviews with individuals involved in the development of Generative Adversarial Networks (GANs) and DeepFake artists, including those who are recognized for their contributions to both DeepFake technology and anti-DeepFake technology, it is possible to gain further understanding of the approaches employed to counteract the proliferation of DeepFakes. Moreover, it is worth noting that several news items under examination contained commentary sections that exhibited a substantial volume of opinions and ideas expressed by readers. Examining these comments could potentially provide further insights into the perceptions of DeepFakes among a broader audience. Consequently, such insights can inform the development of education-focused strategies aimed at combating DeepFakes. These constraints present significant prospects for future study on DeepFakes.

CONCLUSION

In an era characterized by the escalating significance and ambiguity of digital perception, individuals are increasingly engaging with their surroundings through the medium of cyberspace. This virtual realm also serves as a battleground for influential entities equipped with advanced tools for manipulating reality. In this context, the utilization of DeepFake technology holds the potential for bolstering our collective capacity for discernment, thereby mitigating our susceptibility to misinformation Over time, it can also facilitate the intentional transition from instrumental rationality to social rationality centered on trust, wherein placing faith in individuals becomes a more feasible approach to achieving personal fulfillment within a cohesive network of trusted individuals, as opposed to relying solely on information-based expectations. In recent years, there has been a significant advancement in the development of DeepFake technologies, which heavily rely on deep learning techniques. The widespread availability of the Internet facilitates the rapid dissemination of DeepFake films, which are modified using malicious algorithms to alter facial expressions. This poses a significant risk to both social stability and personal privacy. In pursuit of this objective, various commercial enterprises and research organizations across the globe are actively engaged in conducting pertinent investigations aimed at mitigating the adverse consequences associated with DeepFake films on individuals. The topic of fake news has garnered considerable attention in recent years, with numerous discussions and analyses. However, the extent to which mainstream news media contributes to the propagation of fake news has not been well explored. In order to enhance comprehension regarding DeepFakes, the objective of this study is to do a comprehensive examination of 203 recent public news items. The analysis aims to shed light on the nature of DeepFakes, their creators, and the associated risks they bring. The study's findings make valuable contributions to the growing corpus of academic research on DeepFakes.

The adage "seeing is believing" has predominantly endured in the era of digital technology. This emotion has been further augmented by the alternative expression "pics or it didn't happen." The increasing prevalence of

DeepFakes poses a significant challenge to the longstanding assumption that visual evidence can be unquestionably relied upon. Both Hollywood blockbusters and manipulated photographs challenge this epistemic premise, but DeepFake technology enables a large number of individuals to create persuasive video evidence of events that never occurred. Consequently, there is a prevalent and intense public apprehension regarding the capacity of this technology to significantly harm the standing of political leaders and undermine the overall integrity of the political news landscape. If the level of trust among social media users towards online news diminishes further, it is possible that their inclination to engage in collaborative and responsible behavior when sharing news with other users may decrease. Over time, the prevailing belief that a significant portion of online content lacks credibility may exacerbate a cycle of permissive attitudes toward online information. According to **Chadwick and Vaccari (2019),** the consequence of this phenomenon is a potential decrease in individuals' perception of accountability towards the information they disseminate. The presence of uncertainty in news reporting may potentially prompt individuals to disengage from news consumption as a means of mitigating the stress associated with such uncertainty **(Wenzel, 2019).** In this given context, the facilitation of substantial public discourse would be rendered more challenging, as individuals grapple with the inherent inclination to place trust in visual media, while simultaneously recognizing the imperative of remaining cautious in the face of deceptive DeepFakes. The prevalence of uncertainty can potentially provide an opportunity for unscrupulous politicians to evade allegations of dishonesty by asserting that the absence of concrete evidence renders their statements unverifiable and subject to personal interpretation.

This study highlights the significant impact that media professionals have in spreading disinformation through their decisions regarding the individuals and topics they choose to cover. By opting to unquestioningly relay statements and comments made by individuals of influence, without necessarily corroborating or refuting the veracity of such assertions, there is a potential inadvertent facilitation of the spread of inaccurate information. Moreover, it is worth noting that fact-check articles tend to be published at a later stage, implying that a substantial amount of disinformation is being disseminated to the public without being rectified. The repetition of disinformation in mainstream media platforms has the potential to enhance its legitimacy and acceptance among the audience, whereas social media misinformation may be approached with greater skepticism. In order to mitigate this situation, we propose that media coverage should prioritize the inclusion of authentic experts and representatives from scientific organizations. This approach aims to prevent the unintentional dissemination of inaccurate information. In contrast, the media should rectify any misinformation disseminated by prominent figures contemporaneously within their reports, rather than addressing it thereafter.

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