

Gender-Specific Public Perceptions of the Problem of Deepfake Technology and Support for Regulatory Policies under The Influence of Presumed Influence

Can Jin

Faculty of Arts and Social Sciences, University of Sydney, Sydney, New South Wales 2050, Australia

Abstract: With the rapid development of deepfakes, the potential threat to social trust, information authenticity and personal privacy has attracted attention. Baudrillard (1983) noted the increasingly visible transformation of versions of reality through simulation and mediated reproduction and warned that hyperreality could become indistinguishable from the reality of human existence. Deepfake increases the difficulty of distinguishing reality from the real thing. Little is known about the generative adversarial networks used to manipulate videos in deepfakes, but the media is full of reports of malicious uses of "deepfakes". The public's knowledge of deepfake technology basically comes from the media and others, so the public and their support for regulatory policies may be affected by the influence of others and the media. Based on the theoretical model of The Influence of Presumed Influence (IPMI), this study will explore how the public of different genders perceive the impact of deepfake technology and how this cognition affects the public's support for relevant regulatory policies, starting from the harmfulness of deepfake technology. The study uses a questionnaire survey method to analyze the risk perception, media influence, and policy support of the public of different genders regarding deepfake technology. It is found that women are more likely to believe that media content related to deepfakes will hurt other women or the public. Therefore, they will have a sense of risk perception and social responsibility and promote regulatory policies.

Keywords: Deepfake; The Influence of Presumed Influence; Gender Differences; Policy Support

1. Introduction

New digital technologies have made it increasingly difficult to distinguish between real and fake media[1]. The term "deepfake" combines the words "deep learning" and "fake" and refers to the use of deep learning technology to generate highly realistic images or video content. The term originally came from the username of an anonymous Reddit user in late 2017, who used deep learning technology to replace other people's faces in pornographic videos to generate realistic fake images[2]. In recent years, fake news produced by deep fake technology has become a significant issue threatening social opinion and democracy—fake news is fictional news fabricated to deceive the public[3]. Although the increase in fake news is worrying, videos are more touching than any text or picture, and the danger of such hoaxes spreading and affecting our cognition is many times higher[4]. The media is a double-edged sword for news consumption.

However, on the other hand, it makes fake news spread widely. The post-truth era has led to the proliferation of digital false information[5]. Deepfake technology has made the spread of false information even easier. Deepfake technology allows anyone to swap two identities in a single video[6]. This artificial intelligence-based synthesis technology can generate or tamper with audio and video content with high realism. Fake news, videos and pictures produced by deep fake technology are difficult to distinguish and significantly impact social opinion and personal privacy. Therefore, the public's perception of deepfake technology and its attitude towards regulatory policies may be greatly influenced by media reports or others.

2. Literature Review

Due to the difficulty in distinguishing deepfakes, false information spread by deepfakes may

mislead society and eventually cause serious social problems [7]. People have more doubts than trust about the potential applications of deepfakes [8]. The public's attitude towards deepfakes may be affected by many factors, among which gender differences are an important dimension worthy of attention. Women may be more likely to view deepfakes as objects than men. Although celebrities are the primary targets, ordinary women and various female public figures are also increasingly becoming targets [9]. An alarming example of deepfakes is superimposing women's faces onto pornographic videos, objectifying women's bodies as something for visual consumption [10]. Women tend to experience stronger adverse emotional reactions, such as disgust and discomfort when watching media containing violent content. Women tend to experience stronger adverse emotional reactions, such as disgust and discomfort when watching media containing violent content. This may be related to women's higher empathy and concern for harm to others [11]. According to Gender Risk Perception Hypothesis proposed by Davidson & Freudenburg (1996), women show higher sensitivity and worry levels when facing potential risks than men, especially when it comes to risks in health, environment, safety, privacy, morality, etc. This difference is believed to be not only due to physiological factors, but more importantly due to the long-term influence of gender socialization [12]. This can effectively explain why women show stronger risk perception and higher willingness to support supervision when facing deep fake technology. Considering that women are more frequently victims of deep fake content (such as involuntary forged gendered images, identity information abuse, etc.), this expected risk of "others may be harmed" further strengthens the attitude response of the female group under the framework of "assumed media influence". Therefore, women are more likely to support strict policy regulation on gender. At the same time men may be more concerned about the innovative ability of technology and thus have a relaxed attitude towards regulatory policies. Therefore, based on The Influence of Presumed Influence model, this study explores how the public of different genders perceive the risks posed by deep fake technology and how this cognition affects the public's support for regulatory policies.

The Influence of Presumed Influence holds that people are not only directly affected by media information but also that individuals believe that media information may change the views of others and adjust their attitudes and behaviours accordingly [13]. This cognition will further change and shape individual attitudes and behaviours. Davidson (1983) pointed out that the most significant social effects of mass media often come from the public's "perception" or "assumption" of its influence, rather than its actual persuasiveness. Therefore, the belief in media influence is a social force that can indirectly promote attitude changes, policy making, and even social action. The media's influence may occur indirectly, and this indirect influence is equally powerful and important. Specifically, people perceive that certain information will affect others and then change their attitudes and behaviours based on this cognition. Studies have shown that the more people feel that harmful media content has a substantial negative impact on others, the more they will support censorship [14]. Therefore, The Influence of Presumed Influence can show that people may form attitudes towards censorship and freedom of speech based on their tendency to believe that the media hurts others [15]. Tal-Or et al. (2010) further verified IPMI through experimental research. The causal path of the theory. They found that if the subjects were led to believe that a specific type of media content (such as pornography) has a significant negative impact on others, they would be more inclined to support the censorship and regulation of related content. When the media reports on the dangers of deep fake technology, the public of different genders may show different tendencies in policy support. Studies have shown that gender is also an effect of media influence that affects the public's assumptions about deepfake technology. Women tend to show higher anxiety and stronger risk perception when faced with false information, privacy leaks or online fraud. This higher risk perception may cause women to be more affected by the assumed media model when facing deepfake technology and, thus, be more inclined to support regulatory policies. The way the media affects the public's political life is not single, direct, and linear, but indirectly affects their trust, participation, and behavioural responses to the political system by affecting people's views on

their group image (that is, "how we are seen in society") [16]. Under the assumed framework of media influence theory, the public's response to media content will be based on the position of "I don't believe it, but others will believe it". People may not worry about being fooled by fake videos and pictures. However, they believe the public will be misled or incited by fake videos and pictures, and people will support the government in introducing stricter regulatory policies. Therefore, we can propose the research hypothesis:

- (1) The public's attention to deepfake information on social media has a positive impact on the public's perception of the risk of others being affected by deepfakes
- (2) The public's perception of the risk of others being affected by deepfakes has a positive impact on their support for relevant regulatory policies
- (3) Women are more likely than men to believe that media content has a negative impact on others

3. Analysis

(1) Research design: This study adopts a quantitative research method. Through a questionnaire survey, the public of different genders is collected to collect their opinions on deepfake technology, their perception of media influence, and their support for regulatory policies. The questionnaire design is mainly based on the Likert five-point scale. The questionnaire is published on the Internet. After eliminating invalid questionnaires, 400 questionnaires are collected, and the sample diversity is included.

Four hundred valid questionnaires were collected in this survey (see Table 1), and the gender distribution of the samples was relatively balanced, with males accounting for 51% (204 people) and females accounting for 49% (196 people). The age structure shows that the respondents are mainly young people, with the 18-25 age group accounting for the highest proportion (26.8%, 107 people), followed by the 26-30 age group (21.5%, 86 people), and the 60-plus age group accounting for the lowest proportion (4.2%, 17 people). This distribution feature may have a potential impact on the research results. Since most people in this age group are "digital natives", they have a higher exposure and understanding of emerging media technologies (such as deep fakes) and may also

pay more attention to issues such as online privacy protection and gender stereotypes. Therefore, when faced with deep fake technology, they show a stronger sense of risk and willingness to support regulation.

In addition, young people have a strong sense of participation in social hot issues and are more easily guided by public opinion on social platforms. This information environment may amplify their attention to technology risks. Therefore, the high proportion of young people in the sample may have raised the overall public's support for the regulation of deep fake technology to a certain extent.

The results of this survey show that the public has a high level of awareness and exposure to Deepfake technology. Specific data show that 74.3% of the respondents said they had watched Deepfake-related videos or news, of which 39.5% chose "in line with" and 34.8% chose "very in line with"; 71% of the respondents have actively searched for relevant information, and the proportions of "in line with" and "very in line with" were 37.8% and 33.2% respectively.

Regarding risk perception, 72% of respondents believe that others are more likely to be negatively affected by Deepfake content, of which 36.5% chose "agree" and 35.5% chose "very agree". This cognitive difference shows that the assumed influence of the media affects the public's cognitive bias towards technological risks.

The survey found that Deepfake content has a significant communication influence. The data shows that 73.4% of respondents believe such information is attention-grabbing (39.2% agree, 34.2% very agree), and 70.2% believe it is persuasive (31.2% agree, 39% very agree). These data confirm the effectiveness of Deepfake technology in actual communication.

In terms of regulatory attitudes, a phenomenon worthy of attention is presented: although 75.5% of the respondents (35.5% agreed, 38% strongly agreed) believed that ordinary people lacked a say in government actions, at the same time, 71.3% (33.8% agreed, 37.5% strongly agreed) supported government intervention in regulating the spread of Deepfake information, and 72% (35.2% agreed, 36.8% strongly agreed) believed that social media platforms should bear legal responsibility. This seemingly contradictory attitude reflects the public's complex psychology on the issue of technology

governance.

Table 1. Analysis of Questionnaire Results

Basic characteristics	Category	Frequency	proportion
1. Your gender:	Female	196	49%
	Male	204	51%
2. Your age group:	Over 60	17	4.20%
	51~60	24	6%
	41~50	63	15.80%
	31~40	69	17.20%
	26~30	86	21.50%
	Under the age of 18	34	8.50%
	18~25	107	26.80%
3. I actively searched for information about deepfakes[17]	Neutral	76	19%
	Agree	133	33.20%
	Strongly Agree	14	3.50%
	Strongly Disagree	151	37.80%
	Disagree	26	6.50%
4. I have watched videos or read news about deepfakes	Neutral	55	13.80%
	Agree	139	34.80%
	Strongly Agree	23	5.80%
	Strongly Disagree	158	39.50%
	Disagree	25	6.20%
5. Others are more likely to be negatively impacted by Deepfake content than I am by myself.[18]	Neutral	64	16%
	Agree	146	36.50%
	Strongly Agree	142	35.50%
	Strongly Disagree	28	7%
	Disagree	20	5%
6. Deepfakes attract my or someone else's attention	Neutral	65	16.20%
	Agree	157	39.20%
	Strongly Agree	137	34.20%
	Strongly Disagree	15	3.80%
	Disagree	26	6.50%
7. Deepfake information is convincing to me or others	Neutral	66	16.50%
	Agree	125	31.20%
	Strongly Agree	156	39%
	Strongly Disagree	30	7.50%
	Disagree	23	5.80%
8. People like me have no say in what the government does.[19]	Neutral	63	15.80%
	Agree	142	35.50%
	Strongly Agree	152	38%
	Strongly Disagree	24	6%
	Disagree	19	4.80%
9. Governments must intervene to sanction the spread of deepfake information	Neutral	80	20%
	Agree	135	33.80%
	Strongly Agree	150	37.50%
	Strongly Disagree	18	4.50%
	Disagree	17	4.20%
10. When deepfake information spreads, online platforms such as Facebook must be subject to corresponding legal sanctions	Neutral	73	18.20%
	Agree	141	35.20%
	Strongly Agree	147	36.80%
	Strongly Disagree	16	4%
	Disagree	23	5.80%

4. Conclusion

This paper combines the gender dimension and The Influence of Presumed Influence as a framework, focusing on the media influence of deep fake technology, and explores the different risk perceptions of the public of different genders in the face of deep fake technology, as well as their attitudes and support for relevant regulatory policies. The study found that the hypothetical media influence has a significant performance in the issue of deep fake technology. That is, an individual's attitude towards media content depends not only on whether he or she is directly affected but also on his or her subjective judgment of "others may be affected". It is worth noting that women's high support for regulation may not only stem from their recognition of social responsibility, but may also be related to their concerns about the abuse of personal privacy and gender image. Studies have shown that women are more frequently victims of deep fake content, especially in situations such as involuntary sexual transmission and sexualized image forgery, making women more sensitive to the potential infringement brought by such technology. This finding reveals the key role of gender in media risk perception and policy attitude formation. In summary, the hypothetical media influence theory provides strong support for explaining the mechanism of gender differences in deepfake technology cognition and regulatory support.

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