

The Post-Truth Era: An Exploration of the Online Image of the Elderly Population in China

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Abstract. This study investigates the influence of social media on perceptions of and attitudes towards the elderly in the post-truth era. It addresses challenges faced by older adults in navigating online information, including risks related to misinformation and deception. Emphasizing social media's role in shaping public attitudes, the research underscores how negative stereotypes and stigmatization of the elderly are amplified. By targeting audiences aged 15-60 and those 60 and above, data collection involved filtering social media reports on the elderly and conducting surveys to gauge audience perceptions. Statistical analysis reveals age-related differences in attitudes towards the elderly. Findings highlight the necessity for strategies to enhance elderly online experiences, mitigate risks, and challenge stereotypes through targeted educational initiatives. Efforts to foster a more accurate understanding of older adults aim to combat social isolation and enhance their mental well-being, contributing to a nuanced comprehension of social media's impact on perceptions of the elderly.

1 Introduction

In contemporary society, with the rapid development of technology, social media has become an important platform for daily communication for people of all ages. This phenomenon is particularly pronounced among the elderly population. According to a report by China Business Network in June 2020, by the end of 2019, the number of elderly people aged 60 and above in China had reached 254 million, accounting for 18.1% of the total population. It is projected that China will officially enter an aging society around 2022. The social media activities of the elderly mainly include chatting, browsing news, listening to music, and watching TV dramas, which to a certain extent enrich their daily lives and provide important opportunities for social interaction.

However, the prevalence of social media also brings many challenges to the elderly. The complex and constantly changing nature of online information, as well as numerous security risks such as online pornography, internet scams, false advertising, and misinformation, greatly increase their susceptibility to harm. This situation is particularly prominent in the context of the so-called "post-truth era," characterized by emotions and personal beliefs often prevailing over objective facts, influencing public opinion trends. In this era, the

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dissemination of information often relies on stirring emotions, reinforcing biases, and catering to sentiments, rather than presenting facts comprehensively and accurately.

"Post-truth" was once selected by the Oxford English Dictionary as the Word of the Year. The Oxford Dictionary defines "post-truth" as "relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief." In this era, the importance of truth is relatively low, while factors such as emotions, personal beliefs, and subjective perceptions play a larger role in shaping public opinion.

In the post-truth era, disseminators of information often do not present news facts in their entirety. Instead, they spread content that aligns with the subjective perceptions of the audience but deviates from the original truth of events by stirring emotions, reinforcing biases, and catering to sentiments. In this situation, objective facts and rational deliberation are disregarded by both disseminators and recipients of information, leading to public opinions on events being based more on personal emotional reactions and ideological positions rather than factual analysis and judgment.

This is particularly detrimental to marginalized and easily stigmatized groups, as the deconstruction of truth by post-truth narratives can lead internet users to distort perceptions of these marginalized groups in order to conform to their own subjective understanding. It can result in these marginalized groups being incorrectly treated in society or having their needs unmet, thereby exacerbating social isolation. Social isolation refers to the state in which an individual lacks close social connections and support networks within society. This sense of isolation may arise from factors such as personal social skills, environmental influences, or societal structures, and it often leads to the exacerbation of mental health issues and a decline in social functioning. Social isolation can have adverse effects on both individuals and society as a whole. As a vulnerable group in terms of information technology use, the elderly often find it difficult to accurately judge the authenticity of information and are susceptible to being misled by false information. More seriously, the mode of information dissemination in the post-truth era may further reinforce societal stereotypes against the elderly, often associated with negativity, decline, and helplessness, thereby affecting the social status and psychological well-being of the elderly. Furthermore, long-standing stereotypes not only solidify prejudices against the elderly but may also lead to increased isolation and misunderstanding in society.

Social isolation is another serious problem faced by the elderly, which not only refers to a lack of close social contacts but also involves insufficient support networks. This sense of isolation may be caused by individual social abilities, environmental factors, or changes in social structures, and often leads to exacerbated mental health problems and declining social functioning. In the cultural context of China, cognitive attitudes related to stereotypes about the elderly are widespread, and these attitudes are highly correlated with cognitive aging in the elderly, which in turn may affect their memory abilities.

Based on the above, through an exploration of the online image of the elderly population in the post-truth era, this paper will analyze the role and impact of social media in the internet landscape. This research aims to propose effective strategies to improve the online experience for elderly individuals, reduce internet risks, and provide better support and protection within the social media environment.

2 Literature review

In the era of post-truth, social media significantly influences people's perception and access to truth. Helena Webb and Marina Jirotko argue that social media has become a driving force in the development of post-truth, complicating public exposure to facts [1]. Huang Qitong

further emphasizes that social media not only alters the dissemination of information but also exacerbates societal polarization [2].

Yan Jin and Wang Shijun analyze how media commercialization constructs a new symbolic reality through selective reporting and information reprocessing, exacerbating the dissemination chaos of the post-truth era [3]. Zhi Tingrong points out that post-truth is rooted in Western political soil and has been propelled into the public eye through the popularity of social media [4]. Similarly, Li Tiechui believes that social media reinforces existing beliefs, making individuals more likely to find "truth" that aligns with their viewpoints while neglecting broader facts [5].

Chen Wenyu and Ren Lixue observe that social media blurs the line of news truth, leading to trust alienation and news reversal, highlighting that post-truth is not a new phenomenon but a longstanding issue [6]. Stephan Lewandowsky and John Cook discuss how misinformation affects people and strategies to correct it, analyzing how social media facilitates widespread misinformation [7]. They argue that the rise of post-truth is a societal trend requiring technological and psychological approaches for resolution.

Ma Guangjun notes that social media provides technical support for the spread of post-truth, creating new communication scenarios that deepen social fragmentation and value deviation [8]. Xu Tianbo discusses the influence of User-Generated Content (UGC) on social media platforms from the perspective of actor-network theory, emphasizing how UGC encourages the public to explore truths aligned with their emotions and community cognition [9].

Li Na emphasizes that the internet redistributes discourse power, overturns the hegemony of traditional media, and activates personalized communication among the public [10]. Rubén Arriazu Muñoz analyzes how the internet catalyzes the coexistence of multiple truths, prompting critical thinking and questioning of mainstream media [11].

Regarding stereotypes of elderly groups on social media, Chow Nelson and Bai Xue highlight the negative impact of such portrayals on their psychological state, fostering self-doubt and isolation [12]. Chen Yuehua and Lan Yun's research underscores the need to break stereotypes in mass media communication, showing discrepancies between symbolic reality and objective truth regarding elderly individuals [13].

Addressing stereotypes, Lachman's "buffering effect" theory suggests that education can mitigate threats posed by age stereotypes [14]. By promoting positive aging self-concepts, education can reduce negative impacts and enhance memory performance among elderly individuals with negative self-concepts. These studies collectively reveal the diverse roles and influences of social media in shaping the post-truth era.

Scholars have extensively explored the complex impacts of social media in the post-truth era on information dissemination, truth perception, and public opinion formation. While previous research broadly covers how social media affects different demographics, this paper specifically focuses on a particular and often overlooked group — the elderly. By conducting a deep analysis of the challenges faced by the elderly in social media environments, such as the reception and processing of misinformation, deception, and threats to online security, the aim is not only to identify and unravel stereotypes against the elderly but also to raise public awareness of these issues, promoting social fairness and justice.

By enhancing access to better information and participation opportunities for elderly marginalized groups, this can help reduce discrimination against them and advance society towards greater inclusivity and fairness. Overall, this study provides an important perspective and specific strategies for understanding and improving the well-being of the elderly in the post-truth era, complementing existing literature.

3 Methodology

This study aims to filter out reports on the elderly from mainstream social media platforms in China and collect audience perceptions and attitudes towards these reports through a questionnaire survey. The research design is divided into two parts, targeting young audiences aged 15-60 and elderly audiences aged 60 and above.

Firstly, reports related to the elderly are filtered out from mainstream social media platforms in China (such as Weibo, Douyin, etc.) and subjected to content analysis to determine the focus and characteristics of the reports.

Two versions of the questionnaire were designed for different age groups. For audiences aged 15-60, the questionnaire mainly includes surveys on their attitudes and perceptions towards the elderly on social media, as well as inquiries into their own perceptions of the elderly. For individuals aged 60 and above, the questionnaire focuses on their perceptions and opinions of themselves in society on social media, as well as any experiences of deception.

The questionnaire link was distributed through online survey platforms to invite participants. The questionnaire is designed in a convenient and easy-to-understand language to ensure that participants can accurately understand and provide authentic feedback. Throughout the questionnaire distribution process, the privacy and data security of participants were ensured.

The collected questionnaire data were compiled and analyzed anonymously. Statistical analysis methods were used to quantitatively analyze the questionnaire data, including descriptive statistical analysis and correlation analysis, to reveal the relationship between attitudes and perceptions of the elderly among different age groups.

A total of 345 valid questionnaire responses were collected for this study, including young audiences aged 15-60 and elderly individuals aged 60 and above. Stratified analysis of the data ensured the representativeness and credibility of the sample.

Ethical principles were strictly adhered to during the questionnaire survey process to protect the rights and privacy of participants. Personal information was protected and handled during data analysis and result presentation to ensure data security and privacy.

Through the methods described above, this study was able to collect and analyze data on attitudes and perceptions towards the elderly on Chinese social media, providing important insights into understanding attitudes and perceptions of different age groups towards the elderly.

4 Results

For respondents aged between 18 and 60 years old, the questionnaire results include two aspects: their perception of the elderly as either negative or positive, and the perception they observe of the elderly on social media as either positive or negative. Conduct correlation analysis, cross-tabulation, and chi-square tests to explore the relationship between these two variables. In the following table (Tables 1, 2), "YOUR PERCEPTION" refers to "Whether your perception of the elderly group on social media is positive", while "SOCIAL MEDIA PERSPECTIVES" refers to "Whether the perception of the elderly group on social media is positive".

Table 1. Correlation Between Non-Elderly Social Media Perceptions and Media Portrayals of the Elderly.

		YOUR PERCEPTION	SOCIAL MEDIA PERSPECTIVES
YOUR PERCEPTION	Pearson Correlation	1	0.572**
	Sig. (2-tailed)		>0.001
	N	203	203

SOCIAL MEDIA PERSPECTIVES	Pearson Correlation	0.572**	1
	Sig. (2-tailed)	>0.001	
	N	203	203

** . Correlation is significant at the 0.01 level (2-tailed)

Table 2. Chi-square Test of Association Between Non-Elderly Social Media Perceptions and Media Portrayals of the Elderly.

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	66.320 ^a	1	>0.001		
Continuity Correction ^b	36.551	1	>0.001		
Likelihood Ratio	14.822	1	>0.001		
Fisher's Exact Test				0.001	0.001
Linear-by-Linear Association	65.993	1	>0.001		
N of Valid Cases	203				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 14.90.

b. Computed only for a 2x2 table

Among the various outputs of the two results, whether your perception of the elderly group is negative or positive, and whether the perception of the elderly group seen on social media is positive or negative, the results of the correlation test show a significant correlation, and the output result of the chi-square test is $P < 0.05$, which indicates that the results are significant, correlated, and positively correlated.

For respondents aged 61 and above, the questionnaire results include two aspects: whether they have experienced being deceived online and the overall impression they sense people have of the elderly on social media, categorized as either predominantly negative or positive. Conduct correlation analysis, cross-tabulation, and chi-square tests to explore the relationship between these two variables. In the following table (Tables 3, 4), "YOUR SENSING" refers to "Overall, do you perceive the impression of the elderly group on social media as negative or positive? "

Table 3. Correlation Between Elderly Online Scam Experiences and Social Media Perceptions of the Elderly.

		Experience of being deceived	Your sensing
Experience of being deceived	Pearson Correlation	1	0.228**
	Sig. (2-tailed)		0.006
	N	142	142
YOUR SENSING	Pearson Correlation	0.228**	1
	Sig. (2-tailed)	0,006	
	N	142	142

** . Correlation is significant at the 0.01 level (2-tailed).

Table 4. Chi-square Test of Association Between Elderly Online Scam Experiences and Social Media Perceptions of the Elderly.

	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	7,399 ^a	1	0.007		
Continuity Correction ^b	6.393	1	0.011		
Likelihood Ratio	7.214	1	0.007		
Fisher's Exact Test				0.008	0.006
Linear-by-Linear Association	7.347	1	0.007		
N of Valid Cases	142				

a. 0 cells (0.0%) have an expected count of less than 5. The minimum expected count is 14.90.

b. Computed only for a 2x2 table

Among the various outputs of the two outcomes of whether you have been deceived on the Internet and whether you perceive the impression of the elderly group on social media as a whole is negative or positive, the correlation test results show a significant correlation in the chi-square test output of $P < 0.05$, which means that the results are significant, correlated, and positively correlated.

The analysis of the questionnaire data revealed two significant findings regarding the impact of social media stereotypes on perceptions and behaviors towards the elderly population:

1. Reinforcement of Negative Stereotypes: The study found that social media stereotypes regarding the elderly tend to reinforce or exacerbate negative perceptions among the audience. The portrayal of elderly individuals in a stereotypical manner on social media platforms contributes to the formation and solidification of negative stereotypes among the audience. These stereotypes not only shape the attitudes of the audience towards the elderly but also influence their behavior and interactions with this demographic group.

2. Impact on Cognitive Processes and Vulnerability: Furthermore, the study identified that the negative stereotypes perpetuated by social media platforms can significantly impact the cognitive processes and vulnerability of the elderly population. Specifically, the portrayal of negative stereotypes about the elderly on social media platforms affects their self-perception and cognitive abilities. Moreover, these stereotypes contribute to a decreased cognitive level among the elderly, regardless of whether they are consciously aware of the stereotypes. This subconscious threat effect, as evidenced in related experiments (Hess, Auman, Colcombe, 2003), suggests that negative stereotypes can lead to a decline in cognitive functioning among elderly individuals, thereby influencing their susceptibility to online scams and deception.

These findings underscore the pervasive influence of social media stereotypes on attitudes, perceptions, and vulnerabilities related to the elderly population. The reinforcement of negative stereotypes through social media platforms not only affects societal perceptions but also has tangible consequences on the cognitive processes and susceptibility of the elderly to online deception. Understanding these dynamics is crucial for developing interventions and strategies aimed at mitigating the impact of stereotypes and enhancing the well-being and safety of the elderly population in the digital age.

5 Discussion

5.1 Negative stereotypes impacting the image of China's elderly population

The image of the elderly population in China is increasingly influenced by negative stereotypes. Media plays a significant role in shaping this image, often portraying the elderly in a predominantly negative light. Researchers tend to focus on negative aspects such as physical frailty, victimhood, or undesirable behaviors, leading to the labeling and stigmatization of the elderly population and perpetuating low levels of public awareness and understanding.

Several factors contribute to this phenomenon. Firstly, the media often prioritizes sensational and attention-grabbing stories, thus tending to highlight unfortunate events or negative behaviors among the elderly to attract viewership. Secondly, societal biases and stereotypes about the elderly influence how they are portrayed in the media. Long-standing negative stereotypes, such as aging, physical weakness, and helplessness, make it easier for the media to associate the elderly with negative labels.

The proliferation of negative stereotypes about the elderly has various societal impacts. It exacerbates discrimination and prejudice against the elderly, hindering their social integration and development. Moreover, it affects the cognitive and mental health of the elderly themselves, making them more susceptible to negative emotions and undermining their self-identity and self-esteem.

Addressing these negative stereotypes requires concerted efforts. Media should strive for more balanced portrayals of the elderly, reducing the exaggeration and amplification of negative images. Additionally, society should enhance support and care for the elderly, advocating for respect and highlighting their positive contributions to counteract stereotypes.

5.2 Social media exacerbates negative stereotypes of the elderly, detrimental to China's aging population

Social media platforms are increasingly saturated with negative stereotypes of the elderly, posing threats to their cognitive and mental well-being. These stereotypes negatively impact the cognitive abilities and memory of the elderly, affecting their ability to process information and posing risks to their safety in the digital age.

The rapid dissemination and wide coverage of information on social media, including a plethora of negative stereotypes about the elderly, largely reflect societal prejudices and stereotypes. Furthermore, the unregulated nature of information dissemination on social media platforms makes it difficult to control and manage, leading to the spread and reinforcement of negative stereotypes, exacerbating the negative cognitive perceptions and psychological stress experienced by the elderly.

The proliferation of negative stereotypes on social media has adverse effects on the elderly. It contributes to poor mental health, increasing the risk of depression and anxiety among them. Additionally, it undermines their cognitive abilities and information processing skills, making them more susceptible to misinformation and deception online, thereby increasing their vulnerability to online risks.

To mitigate the impact of negative stereotypes on social media, measures must be taken. Social media platforms should enhance content moderation and management, rigorously reviewing and filtering negative information related to the elderly to reduce the spread of negative stereotypes. Moreover, society should enhance elderly individuals' digital literacy, improving their awareness of online safety and information processing skills to mitigate the risks of misinformation and deception.

5.3 Implicit harm may exist in elderly services in Chinese society

Implicit harm exists in elderly services, largely stemming from the internalized biases and conservative stereotypes towards the vulnerable elderly population, potentially resulting in unaddressed issues within elderly services in Chinese society. Such implicit harm leads elderly individuals to perceive discrimination and unfair treatment when accessing services, affecting their cognition and sense of well-being.

The existence of implicit harm primarily originates from societal biases and prejudices towards the elderly. Long-standing negative impressions of the elderly have led to discrimination and unfair treatment in elderly services, particularly evident due to stereotypes perpetuated by service providers. Additionally, the attitudes and awareness of service providers towards the elderly contribute to implicit harm, as some may treat them unfairly or with indifference due to ingrained stereotypes.

Implicit harm in elderly services has various adverse effects on elderly individuals. It diminishes their self-esteem and confidence, leading to feelings of disrespect and reduced satisfaction and happiness in life. Moreover, it undermines their trust and reliance on services, making them more reluctant to accept various forms of assistance, thereby increasing their difficulties and risks in life.

Reducing implicit harm in elderly services necessitates multifaceted efforts. Society should strengthen respect and care for the elderly, reducing stereotypes and discriminatory behavior. Service providers should enhance training and education on elderly care, fostering greater understanding and empathy towards the elderly to improve service quality and attitudes. Additionally, society should establish a more comprehensive elderly service system to fundamentally reduce implicit harm in elderly services.

6 Conclusion

In conclusion, this study has explored the impact of social media on the elderly population in the post-truth era. The findings highlight the challenges faced by older adults in navigating the complexities of online information and the potential risks associated with misinformation, scams, and online security. The prevalence of social media has disrupted traditional media structures and reshaped the distribution of communication power, allowing previously silent groups, including the elderly, to become active participants on social media platforms.

The post-truth era has brought about a shift in how truth is accessed and perceived, with social media playing a significant role in shaping public attitudes and beliefs. The proliferation of various truths and the questioning of mainstream media have fostered a more critical approach to information consumption, enabling individuals to engage with diverse perspectives and encouraging critical thinking. However, this environment has also amplified negative stereotypes and stigmatization of the elderly, perpetuating a one-dimensional portrayal that emphasizes passivity, vulnerability, and incompetence.

The study also highlights the detrimental effects of these stereotypes on the self-perception of older adults and their social integration. The negative portrayal of the elderly in social media can lead to self-doubt and isolation, impacting their mental well-being and social status. Social isolation is a significant concern for older adults, not only in terms of lacking close social connections but also in terms of limited support networks. This isolation can be influenced by individual social skills, environmental factors, and societal changes, leading to exacerbated mental health issues and decreased social functioning.

In light of these findings, it is crucial to develop effective strategies to improve the online experience of older adults, reduce online risks, and provide better support and protection within the social media environment. This may include targeted educational programs and training on online safety and information processing for older adults. Additionally, efforts

should be made to challenge and break down the stereotypes associated with the elderly, promoting a more nuanced and accurate understanding of this diverse population.

By addressing the challenges and negative stereotypes faced by older adults, it is hoped that this research will inform interventions and policies aimed at enhancing the online experiences and well-being of older adults in the digital age.

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