

Research on Anxiety Caused by Social Comparison in a Society Dominated by Social Media: Case of The Red Note

Zhen Jia^{1,*}

¹ School of Journalism & Communication, Jilin University, Changchun, 130000, China

*Corresponding author:
jiazhen9923@mails.jlu.edu.cn

Abstract:

Social media's pervasive influence, particularly its role in triggering social comparison and anxiety, represents a critical area of research within communication studies. Platforms like The Red Note, with algorithmically curated content that highlights luxury consumption and flawless self-presentation, intensify these phenomena. This study synthesizes existing literature to investigate the mechanisms through which social comparison on social media, specifically The Red Note, contributes to user anxiety. It reviews key concepts—social media as a communication environment, The Red Note as a representative platform, social comparison as a psychological process, and anxiety and happiness as core emotional outcomes—and analyzes prevalent research methodologies, from early correlation surveys to recent longitudinal and computational studies. The findings reveal that algorithmic recommendations on platforms create an environment of unattainable comparison targets, singular comparison dimensions, and uncontrollable comparison frequency, significantly amplifying upward social comparisons. This process acts as a core trigger for anxiety, overshadowing potential benefits to user happiness. The study concludes by highlighting the core contradiction between technological ethics and communication efficiency, suggesting a multi-stakeholder governance model involving algorithm transparency and media literacy education as a necessary future direction.

Keywords: Social media; anxiety; social comparison.

1. Introduction

The dramatic rise of social media in recent years have not only deeply impacted the landscape of social interaction, self-portrayal and information expo-

sure, especially for the young generations, the social media for lifestyle and content sharing has played a major role in the contemporary experience of social life. The Red Note is one of a rapidly-growing ecosystem of influencer recommendation apps in China,

moving from retail guide app to a multi-purpose platform, where tens of millions of people post and read curations of personal lives, consumption, and aspiration. With advanced algorithms and analysis of users' behavior, it shapes a ubiquitous context for social comparison, a ubiquitous human cognitive process in which people measure their standing in contrast to others.

Numerous studies have shown positive correlation between the use of social media and psychological health factors such as emotional stability, self-esteem and life satisfaction but with anxiety as a common negative result, some scholars have used different techniques in this respect. In early works (2015-2019) major references used large population surveys and tools as the Social comparison scale (INCOM), while used some limitation such as culture inadaptation issues. After 2019, studies then progress with longitudinal monitoring and computational techniques such as data modelling and web crawling so that the nature of comparison behaviours and emotional reactions can be better studied in response to algorithmic practices.

Previous interdisciplinary research has shown several pathways by which SNS trigger anxiety, e.g., through the phenomenon of emotional diffusion, the hypervisible information, and, of specific interest to people here, self-comparisons. SNS's prioritization systems on photo sharing platforms (e.g., The Red Note) enhance attention on extreme and high arousal media for overconsumption to create a 'highlight filter': social comparison using data with the most attention. Such information sharing, decontextualized, inspires to do upward comparisons, that is, comparisons with people assumed to be at higher positions than oneself that causes a feeling of inferiority, discontent and fear. Moreover, ethical issues emerge from the way algorithms keep users stuck to a stream of bad news depending on their interaction history.

Nonetheless, this line of work is still faced with a fundamental dilemma, namely the balance between algorithmic personalization that aimed for improved communication effectiveness and ethical concerns of such a technology. There is a significant gap in establishing a practical framework aimed at mitigating some of these adverse consequences without entirely preventing platform usefulness. Thus, the purpose of this study is to aggregate the relevant knowledge by probing into the particular effect of the mechanism of social comparison on user anxiety under the context of The Red Note's setting. The characteristics of the platform, social comparison theory, and the resulting anxiety based upon those of the current literature have been elaborated. The study propose that the design—both at the level of the platform architecture and the algorithm—of the Red Note leads to exacerbated social

comparison in a particularly anxious format and as such, is an informative case study. Most importantly, this study hopes to contribute to the literature on responsible platform design and draw out some future considerations for governance models aimed at the well-being of its users.

2. Core Concepts

2.1 Social Media and The Red Note

2.1.1 Definition of Social Media

Social media refers to Internet applications built on Web 2.0 technology and ideology, characterized by user interactivity, participatory culture, and networked communities, designed to facilitate interaction and content sharing among users. It allows users to create personal profiles, generate, share and disseminate content. Compared with traditional media that relies on professional production and one-way dissemination, social media is more inclined to focus on UGC (User-Generated Content) and interaction.

2.1.2 The Red Note

The Red Note, launched by Xingying Information Technology Co., Ltd. in 2013, has since evolved into a platform with millions of active users, enabling the creation and sharing of diverse content [1]. At its inception, The Red Note functioned primarily as an application for sharing shopping guides. Through years of exploration, The Red Note has successfully overcome its original bottlenecks and has made detailed deployments in algorithm recommendation and user behavior tracking fields, and has conducted extensive advertising placements based on user preferences [1]. At the same time, The Red Note has invited many celebrities to join, successfully building a nationwide 'grassroots recommendation community'. Users can record and share their lives through short videos, pictures, etc. on the The Red Note platform. Through this way, The Red Note can have a very detailed understanding of users' behavioral preferences and use them for personalized and individualized recommendations.

2.2 Social Comparison

Social comparison refers to 'the process of thinking about information about other people or multiple people and one's own situation'. Comparison is a basic human cognitive phenomenon that exists in various cultures and helps humans position themselves within social groups, providing information about one's relative status [2]. In situations where there are no objective evaluation standards, individuals will, to a certain extent, consciously or

unconsciously compare their abilities, viewpoints, social status or life circumstances with those of others, to form self-awareness and position their social identities. This process involves not only individual-level self-evaluation and emotional responses, but also factors such as social structure, group relationships and cultural norms, and is an important mechanism for maintaining or challenging social inequality.

In today's era of the prevalence of social media, social comparison has become an inevitable social phenomenon. Especially on the social media platform The Red Note, a large number of exquisite and beautiful images and texts are presented to users. With high-end keywords such as 'High-energy Self-disciplined Girls' Day, ' which implicitly valorize discipline, elitism, and consumer success, users are encouraged to engage in comparison ' #Students with Excellent Scores at Tsinghua University' ' #Lawyers of Hong Circle' as the content of the topics, which in turn causes users to unconsciously engage in social comparison, comparing their own and others' situations, thereby triggering emotions such as anxiety and tension.

2.3 Anxiety

'Anxiety' can be defined as a collective psychological state shaped by the social structure of modern society and the information dissemination environment. Its core characteristics are the anticipation of uncontrollable risks, the perception of social uncertainty, and cognitive dissonance under information overload [3]. In communication studies, 'media anxiety' is a very significant social phenomenon. In the digital age, information overload and algorithmic push mechanisms can cause individuals to experience 'cognitive overload, ' a phenomenon well-documented in cognitive psychology studies of decision fatigue 'cognitive overload, ' manifested in confusion, fatigue, and reduced decision-making capacity. : such as information asymmetry, where the proliferation of false information exacerbates the misjudgment of risks; or social comparison pressure, where the 'perfect life' and 'perfect persona' displayed on social media cause social media users to unconsciously enhance their anxiety levels, etc.

2.4 Happiness

Different cultures have different definitions of 'happiness'. From a sociological perspective, happiness is an overall positive result of evaluation made by an individual in the process of socialization, based on cultural standards, regarding their own quality of life, including social relationships, role fulfillment, resource allocation, etc. It is manifested as the harmonious state between the individual

and the social structure, as well as the recognition of 'social completeness'. In the field of journalism and communication studies, happiness is the dynamic interpretation of the meaning of life formed by individuals through information practices, or through behaviors such as production and consumption, in a mediated society. Its level is modulated by the content of the media, the emotional feedback triggered by the usage behavior, and the trust relationship with the media.

Regarding 'what happiness is', people from different cultures and backgrounds have different opinions, so it is difficult to provide a unified and absolute definition. In today's society, happiness has complex evaluation dimensions and is a concept that integrates subjective and objective aspects.

3. The Impact of Social Comparison in the Social Media Environment on Anxiety

Social media has deeply integrated into contemporary social life, especially becoming the core arena for social interaction and self-expression among teenagers and college students. Research shows that Chinese teenagers spend over 5 hours per day using social media, with 60% of that time spent browsing others' posts, which intensifies exposure to social comparison triggers. This highly exposed media environment has given rise to a new type of social comparison model - Individuals are forced to evaluate their self-worth in a global sample pool, often disregarding cultural contexts that shape values and achievements differently (such as global influencers, elite students from prestigious schools) and symbolic competition indicators (likes, followers).

The theory of social comparison states that humans have an inherent tendency to position themselves in society through comparison. In the context of social media, this behavior undergoes three forms of alienation:

The unattainability of comparison objects: Algorithms prioritize the display of extreme success cases, which fosters unrealistic expectations and feelings of inadequacy among users., such as 'annual salary of one million', 'ideal slimness', etc., creating a form of visibility violence, referring to the psychological harm caused by constant exposure to extreme success stories; which causes people to be influenced by the content on social media without their awareness, thereby affecting their emotions.

The singularity of comparison dimensions: Social value is often reduced to quantifiable indicators such as follower count, likes, and reposts, such as the most representative interaction volume, number of followers, etc., which is

very prone to triggering data performanceism.

The uncontrollability of comparison frequency: The infinite scrolling design triggers a Skinner box-like behavioral pattern, where users are conditioned to repeatedly seek stimuli through endless comparison, with daily triggering of comparison behaviors exceeding 300 times.

By studying the existing literature, the author has summarized the following research methods used in previous studies:

The early research (2015-2019) mainly relied on large-scale questionnaires to measure the correlation between the intensity of social media usage and psychological indicators. Koutamanis et al. used the Social Comparison Scale (INCOM) combined with the Body Image Scale to reveal the mechanism of negative feedback reception among European teenagers, and concluded that risky self-presentation behavior increased the probability of receiving negative feedback. In Alblowi et al's article, through regional stratified sampling surveys. It was found that there were differences in body image anxiety among Saudi teenagers between the east and west regions, but the study has not yet addressed the issue of cultural adaptability deficiency, which means teenagers who live in different areas may have different living habits and these factors may influence the result of research [4].

After 2019, breakthroughs were achieved in the longitudinal tracking research mechanism, particularly through panel data and repeated measures designs. The research shifted to the dynamic relationship between social comparison and social media, and at the same time, the innovation of the social science paradigm was calculated, which means it can be quantified. This provided technical support for opening up new paths of big data analysis, such as predictive modeling of anxiety risk factors for internal research within the industry. Subsequent numerous studies revealed the algorithm reinforcement mechanism through modeling and python web scraping [5].

Based on the existing literature research, the author summarizes the following points: Firstly, the cross-disciplinary research on social media and news dissemination has revealed multiple mechanisms, such as Emotional contagion is evident when users' moods are influenced by exposure to friends' negative posts., for the generation of anxiety. At the information consumption level, the algorithm-driven news distribution system amplifies the spread of anxiety through the 'high-arousal content preference mechanism'. This emotional contagion is particularly prominent in social media. After users passively receive sudden news, the innovation in visual communication further intensifies the upward social comparison effect. Social media platforms such as The Red Note have formed a significant 'highlight filter', where users selectively showcase only their most

successful or glamorous moments [6]. It raises people's dissatisfaction for the present dramatically, which further cause anxiety.

Secondly, the ethical crisis caused by social comparison is particularly prominent in cross-platform research: In the current fast-paced life, in order to increase the interest of social media users and attract their attention in a short period of time, content publishers often fragment social media information, which disrupts context and undermines users' ability to critically interpret information, resulting in the loss of key context [7]. This kind of dissemination method that departs from the original context may lead to public cognitive biases, such as confirmation bias and availability bias. More covertly, the platform's algorithms track users' behaviors, which raises concerns about surveillance, privacy leakage, and manipulation, thereby causing some content that triggers negative emotions to get trapped in a cycle, thereby intensifying users' anxiety. This kind of dissemination method that departs from the original context may lead to public cognitive biases, such as confirmation bias and availability bias. More covertly, the platform's algorithms track users' behaviors, which raises concerns about surveillance, privacy leakage, and manipulation, thereby causing some content that triggers negative emotions to get trapped in a cycle, thereby intensifying users' anxiety [8].

At the heart of the current dilemma of this study is technological ethics and communication effectuality. In this process, news media using sentiment analysis algorithms to achieve a communication effect would record and monitor users' likes and preferences, the ethical and legal issue of which they disseminate news by means of. Future research needs to establish a responsible communication framework, focusing on transparency, accountability, and inclusiveness. In response to the problem of causing anxiety among social media users like The Red Note, a multi-stakeholder governance model should be proposed, which requires the transparency of algorithms and the promotion of media literacy education simultaneously.

These phenomena lead to a significant increase in upward social comparison, although some studies note that downward comparison may provide temporary relief, becoming the core trigger of anxiety. At the same time, it is not difficult to notice that compared to 'happiness', the widespread use of social media brings to users more emotions such as anxiety, tension, and unease. Social media users will consciously or unconsciously engage in social comparison during their use of social media, thereby generating negative emotions [3].

4. Summary

The analysis leads to several key conclusions. Firstly, the algorithmically curated environment of The Red Note, which emphasizes idealized and high-arousal content, creates a pervasive ‘highlight filter. ‘This environment fundamentally alters the nature of social comparison by inducing three specific forms of alienation: the unattainability of comparison targets the singularity of comparison dimensions, and the uncontrollability of comparison frequency. Consequently, this process significantly amplifies upward social comparisons, leading to decreased self-esteem and heightened anxiety, where individuals compare themselves to those perceived as superior. This amplified comparison is identified as a core trigger for feelings of inadequacy, dissatisfaction, and anxiety among users [9]. The study concludes that these negative impacts overshadow potential benefits, such as community support or informational gains social media might offer to user happiness, highlighting a central conflict between technological efficiency and ethical implications.

5. Proposed Recommendations and Implications

Based on its findings, this study proposes a multi-stakeholder governance model to mitigate the negative impacts identified. The recommendations are twofold. Firstly, it advocates for enhanced algorithm transparency, suggesting that platforms should provide greater clarity and user control over content recommendation mechanisms. Secondly, it emphasizes promoting media literacy education, particularly among adolescents and parents to equip users, particularly younger demographics, with the skills to critically evaluate curated online content and understand the constructed nature of social media presentations. This combined approach is presented as a necessary future direction to reconcile the pursuit of communicative efficiency with the ethical obligation to safeguard user well-being.

6. Research Significance

The significance of this research is both theoretical and practical. Theoretically, it contributes to the discourse in communication studies and media psychology by synthesizing existing literature and providing a structured analysis of the specific mechanisms linking algorithmic curation on lifestyle platforms to psychological outcomes. It clearly delineates the threefold alienation of social comparison in the digital age, offering a refined framework for future research. Practically, this study holds substantial

implications for responsible platform design and ethical technology development. By pinpointing the specific features of algorithmic systems that exacerbate user anxiety, it provides actionable insights for policymakers, educators, and platform developers to foster a healthier digital ecosystem, measured by reduced anxiety prevalence and improved user satisfaction alongside engagement.

7. Conclusion

This study has synthesized existing literature to examine the mechanisms through which algorithmically driven social comparison on social media, specifically within the environment of The Red Note, contributes to user anxiety. The analysis confirms that the platform’s architectural and algorithmic design, which prioritizes and disseminates idealized, high-arousal content, creates a pervasive ‘highlight filter. ‘This environment fundamentally alters the social comparison process by subjecting users to three specific forms of alienation: the unattainability of comparison targets, the singularity of comparison dimensions, and the uncontrollability of comparison frequency. Consequently, these mechanisms significantly amplify upward social comparisons, where individuals compare themselves to those perceived as superior in narrowly defined, often materialistic terms. This excessive upward look-up is recognized as a primary source of such negative mental symptoms, such as frustration, frustration, and especially anxiety. 7 In comparison to these deleterious effects, the possible advantages of happiness, like comfort and know-how acquisition, is marginal and concealed. Hence the contradiction between the primary technological communication efficiency versus the consequences that arise.

Overall, this results highlight that moving from detecting these negative effects towards actual action can only be achieved by embracing a multi-stakeholder governance. The model is predicated on two recommendations, the first being for improving algorithm transparency to allow users to have more awareness and control over content recommender algorithms, the other being to encourage media literacy learning that allows the users, and in particular vulnerable groups such as the teen-age audience, to have more analysis skills to de-construct the ‘curated’ content online. Finally, balancing the twin aims of expressive utility with the moral duty of protecting user welfare is not simply a technical issue, but a question of morality necessary for a positive, functional marketplace.

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