



# Research on Fear of Missing Out of Mobile Social Media Users

Lang Lang\*

Psychology, LSA, University of Michigan, Ann Arbor, 48109, United States

\*Corresponding author. Email: [langlang@umich.edu](mailto:langlang@umich.edu)

**Abstract.** The update and iteration of mobile communication tools and the reduction of traffic fees have provided important technical and carrier support for the development of social media, which has been deeply integrated into people's daily lives. Users face a large amount of information every day, and many users express fear of missing out on exciting content. This phenomenon is called FoMO, short for Fear of Missing Out. This article elaborates on its concept in detail, analyses the S-O-R pattern of formation mechanism, and categorizes and summarizes the adverse effects of loss anxiety. Faced with anxiety of loss, we suggest that social media users regulate their personal emotions through mindfulness training to maintain mental health.

**Keywords:** Fear of Missing Out, FoMO, mobile social media

## 1 Introduction

Social media refers to content production and exchange platforms based on user relationships on the Internet. Social media is a tool and platform for people to share opinions, opinions, experiences and opinions with each other. At this stage, it mainly includes social networking sites, microblogs, WeChat, forums, Tiktok, Xiaohongshu, etc. Social media has flourished on the fertile soil of the internet, bursting with dazzling energy. The information it spreads has become an important content for people to browse the internet, not only creating one hot topic after another in people's social life, but also attracting traditional media to follow up. As of January 2022, global social media users exceeded 4.62 billion, equivalent to 58.4% of the global population [1]. In the past year, 424 million new users joined social media, equivalent to an average of over 1 million new users added per day. In the past year, people have been using social media for an average of nearly 2.5 hours per day, gradually increasing at a rate of 2 minutes per day.

However, as people's use of mobile social media continues to deepen, the normal use of media gradually triggers a series of cognitive and behavioral reactions. Users, afraid of missing certain content, repeatedly check their smartphones and constantly refresh social media interaction pages. The report released by Penguin Zhiku shows that among the existing users of WeChat, almost all WeChat users open WeChat every

day, with over half of users opening WeChat more than 10 times a day, and over 30% of heavy users opening WeChat more than 30 times a day. The concept of FoMO (Fear of Missing Out) provides a new perspective for us to understand the behavior of users repeatedly viewing social media [2]. Users' fear of missing friend information or status updates creates a diffuse anxiety, which directly leads to users repeatedly viewing social media applications to ensure they are always online. Mobile social media was originally a technological means to provide more opportunities for participation in interpersonal communication and social interaction, but the pathological usage habits of mobile social media may lead to excessive reliance on online social interaction, leading to a decrease in offline social interaction. This article will focus on exploring the generation mechanism and adverse effects of FoMO among mobile social media users, and propose corresponding countermeasures and suggestions to provide reference for contemporary severe mobile phone users.

## 2 Concept of Fomo

An author named Motk Morfbrd proposed the concept of loss anxiety disorder in 2010. He described FoMO as a urban disease that is extremely addictive, but like a nightmare, it always gives people an irresistible feeling: there are so many wonderful things happening in life, but we cannot know or participate. The first academic study on loss anxiety disorder can be traced back to 2013, Psychologist Przyzyylski et al. define first-time anxiety disorder as "a common sense of anxiety that arises from not being aware of or participating in meaningful events that others may experience in a timely manner. The core characteristic of FoMO is the expectation of uninterrupted information synchronization or virtual presence with what others are doing. This groundbreaking study separates FoMO from the similar concepts of internet addiction and social media dependence, and analyzes it as a special cognitive state and psychological feature. Specifically, the relationship between loss anxiety, social media dependence, and internet addiction in terms of emotional involvement is progressive [3]. However, in terms of the universality of the phenomenon, it belongs to a decreasing relationship. The three are different from each other, but also have a certain degree of interweaving and transformation: FoMO is the most common, and although it is in the early stage of emotional involvement, when the emotional involvement exceeds the critical point, FoMO will gradually evolve into behavioral symptoms of dependence or addiction. With the continuous development of mobile internet and the deepening of academic research on loss anxiety disorder, Domestic scholars' focus on FoMO is mainly on the anxiety disorder and its impact in the mobile internet environment. Scholars define FoMO in the context of mobile social media as "people hope to maintain real-time connection with the external world through mobile internet devices, and the disconnection of the connection can cause varying degrees of anxiety, which is reflected in behavior such as frequent viewing of mobile phones and excessive use of social media".

Based on the existing concepts of FoMO mentioned above, we can conclude that mobile social media loss anxiety disorder has the following characteristics: (1) it is a

general diffuse anxiety symptom that combines individual traits and specific states, belonging to a subcategory of anxiety; (2) The internal psychological characteristic is a strong desire to know what others are doing or happening, and a fear of not being able to maintain constant connection with the real or virtual world; (3) External behavior is manifested by frequent viewing of information, continuous refreshing of social media, or participation in social activities; (4) The specific symptoms vary depending on the degree, including but not limited to discomfort, unease, worry, irritability, panic, etc., which are different from but may lead to social media dependence or internet addiction.

### 3 GENERATION MECHANISM OF FOMO

Behavioral psychologist John Watson proposed the S-O-R model of general human behavior, where S (Stimulus) represents the stimulus or stimulus source, O (Organization) represents the individual's physiology or psychology, and R (Response) refers to the individual's response. The tempting titles and illustrations of mobile micro media are stimuli (S) generated by user FoMO, which trigger psychological changes such as attention, cognition, emotion organization (O) and behavioral responses (R), as shown in Figure 1.

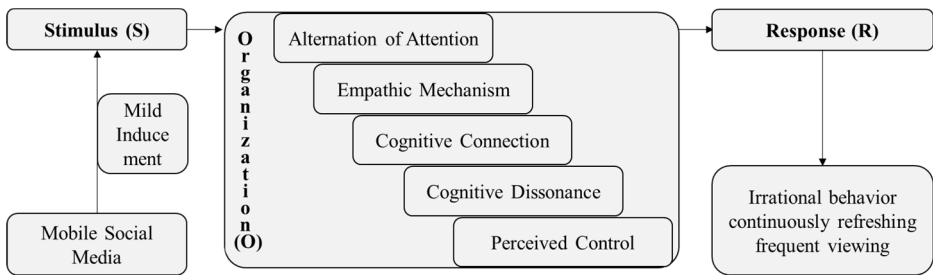


Fig. 1. Generation mechanism framework of FoMO (figure credit: original)

#### 3.1 3.1 Mild Inducement

Individuals who receive fewer rewards or incentives are more willing to change their attitudes or evaluations of their original attitudes than those who receive more rewards or incentives. Mobile micro media often uses nonsensical, confusing, rhetorical, interesting titles and illustrations as incentives to induce user behavior. These incentives are mild and can induce individual compliance behavior, leading to stickiness and dependence among users. The use of mild incentives in micro media tends to make users lose or blur the boundaries of their self-awareness. They subconsciously feel afraid of missing out. They feel that a little Tiktok and other micro media will not have much impact, leading users to unconsciously immerse themselves in mobile micro media situations, meeting the needs of user autonomy, pleasure, competence and social relations, stimulating the internal driving force of users' continuous use, and inducing compliance, obedience and herd behavior [4].

### 3.2 Alternation of Attention

Attention is an individual's psychological activity that generates direction and concentration towards a certain object, circulating between "casual browsing - unintentional attention - intentional attention" [5]. The uncertainty and unpredictability of what information is published on mobile micro media can trigger users' curiosity, desire to know new information, and fear of missing interesting or useful information. At this time, the anxiety of missing is stronger. The unintentional attention of users browsing micro media in an unexpected, unconscious, and purposeless state may result in information encounters. The novelty and intensity of micro media information, as a stimulus, match with user needs, interests, prior knowledge, emotions, etc., which can affect the change of attention state and shift to the intentional attention stage with concentration and directionality. During the intentional attention stage, users exhibit normalization and exclusivity, selecting, browsing, and reading information that aligns with their interests, hobbies, and needs. At this point, loss anxiety will decrease. Due to the instantaneous variability and massive nature of micro media information, users will switch from intentional attention to casual browsing and unintentional attention in order to avoid missing out. The continuous changes in the concentration and dispersion state of attention are accompanied by the evolution of the depth of FoMO.

### 3.3 Empathic Mechanism

Empathy is an effective mechanism for establishing interpersonal relationships and promoting mutual understanding, self-exploration, and emotional exchange. It involves individuals assigning subjective emotions to objective things, which in turn affect individuals' emotional feelings. The mechanism of empathy includes two parts: cognitive and emotional, based on cognition, manifested in the recognition of others' inner feelings and life states; The emotional component is manifested as an emotional infection of others' intuitive reactions, resulting in mapped emotions that share the same emotional experience as others, and evaluating the feelings after experiencing them is called reactive emotions [6]. The events and information about the situation of others published by mobile micro media trigger an emotional experience within users that is consistent with the emotions of others, that is, an empathetic response. Through emotional infection, contextual association, and resonance, it helps to unleash pro social behavior and sustainable social relationships. The empathy effect of users towards objective events causes them to show a fear of missing out on micro media content, desire to continuously understand others' dynamics, and hope for social interaction to gain a sense of attachment and belonging.

### 3.4 Cognitive Connection

Connection is the fundamental unit of psychological behavior and the foundation of learning, including innate instincts and acquired habits. Connection is to make the schema of cognitive structure more perfect and richer, to rebalance the imbalanced cog-

nitive structure through assimilation, adaptation, and meaning construction, to compensate for cognitive gaps and achieve self-regulation. Curiosity, fear of social exclusion, social interaction, and social prestige, among other basic human desires and values, promote users' desire to know new information released by mobile micro media, thereby impacting their original cognitive structure and causing imbalances. Under the need for cognitive connectivity, users may feel anxiety about loss, and they need to compensate for the sense of imbalance and avoid the dilemma of outsiders by obtaining this new information. The update of information will once again stimulate the user's cognitive structure, leading to diffuse anxiety.

### **3.5 Cognitive Dissonance**

Individuals focus their attention on smartphones while working, studying, and walking, constantly refreshing their content. They hold a negative attitude towards the inappropriate behavior of playing with their phones, but in reality, they persist in this behavior. This phenomenon can be explained as cognitive dissonance. When users shift their attention to situations such as WeChat, Weibo, WeChat videos, and client apps and give up or temporarily give up the original tasks they should have insisted on, they will experience negative emotions such as self-blame and anxiety. If they do not give up the original tasks and are worried about missing out on new information. In order to adjust their sense of imbalance, users may reduce and alleviate the degree of cognitive conflict by changing their cognition, attitude, behavior, or reducing their choices, rationalizing their behavior, turning to mobile micro media, and even generating dependence and addiction. The sense of imbalance gradually disappears after the user makes a decision, and the degree of cognitive imbalance dynamically changes during this process.

### **3.6 Perceived Control**

Control is an individual's need to master the environment, competitiveness, and superiority, and is an important factor driving user behavior, including actual control and perceptual control composed of cognitive control, decision control, and behavioral control. Mobile micro media users analyze and process micro media stimulation information under cognitive control, making judgments that the stimulation information is interesting, useful, and brings entertainment enjoyment. Under decision control, they make the decision to abandon the original task and choose to focus on the information, while under behavioral control, they restrict the execution of the original task. Micro media information can trigger user perceived control. If the sense of control is limited, it can trigger user anxiety about loss, which in turn strengthens user control over cognition, decision-making, and behavior, achieving the basic needs of competence, autonomy, and relationships [7].

## 4 Adverse Effects of Fomo

ALkis et al. divided social anxiety under social media usage into four dimensions: content sharing anxiety, privacy concern anxiety, interaction anxiety, and self-evaluation anxiety. This article elaborates on the adverse effects of FoMO through these four dimensions.

### 4.1 Shared Content Anxiety

Shared Content Anxiety (SCA) refers to the social anxiety that individuals experience when sharing content on social media. Content sharing refers to actively publishing content on social media, which refers to self-presentation or self-disclosure on social media. As of now, the contradiction and conflict between authentic self and impression management have been confirmed in many studies on self-disclosure [8]. When deciding when to self-disclose and what content to publish, individuals often face a dilemma when considering impression management. Therefore, in self-presentation, the contradiction between blindly highlighting positive aspects and displaying the true self often leads to individual stress and anxiety. The fear of loss can significantly enhance individuals' self-improvement behavior on social media, such as self-disclosure, accepting friend add requests, and modifying homepage content. Therefore, it can be inferred that individuals with higher levels of fear of missing out are more likely to engage in self-presentation on social media platforms, and are more likely to be troubled by the conflict between real self-presentation and positive self-presentation, leading to anxiety. The self-media nature of social media can exacerbate users' information compulsion psychology. Faced with such an information environment, users inevitably experience cognitive loss of information barriers when receiving information, leading to physiological and psychological oppression and anxiety. From the perspective of system characteristics, if social media encounters issues such as multiple functions, unclear interfaces, and unfriendly features in system design, it will reduce users' perception of the ease of use of social media.

### 4.2 Privacy Concern Anxiety

Privacy Concern Anxiety (PCA) refers to the social anxiety that individuals experience when disclosing or sharing personal information on social media platforms. The impact of privacy concerns on the cognition and behavior of social media users has always been a topic of concern for scholars. Previous studies have found that the prediction of the intention to continue using social media through fear of loss is moderated by perceived privacy risks. Specifically, the stronger an individual's perception of privacy risks, the greater the predictive effect of fear of loss on the intention to continue using social media sites. Therefore, the relationship between fear of loss and privacy concern anxiety is also worth further discussion. Social media platforms encourage the disclosure of users' personal information for the purpose of creating content to increase traffic. On the one hand, users form new social interactions through the release of personal

information, or maintain existing online social relationships through social media platforms. On the other hand, as users provide more and more information on social media, the phenomenon of personal information privacy leakage has become increasingly common [9]. The disclosure of personal information privacy has great appeal for operators with the purpose of online marketing, and user privacy information may be provided by social media platforms to developers, advertisers, and unidentified third parties, resulting in infringement of user personal interests, including issues such as user identity confirmation, user browsing information leakage, and reduced user control over the published information.

### 4.3 Interaction Anxiety

Interaction anxiety (IA) refers to the anxiety generated when interacting with others, especially those who have just met or are not familiar with them. Interactive communication is also one of the main functions of social media and an important factor in promoting people to actively use social platforms. When users are ready to post updates on their social media, they often have certain expectations for their friends' responses, and even anticipate the likes and comments they may receive. Based on expectations of friend responses, users will carefully select and edit Moments updates [10]. However, when friends' feedback fails to meet users' expectations in advance, users may feel disappointed or even dissatisfied. For individuals with fear of missing out who frequently view and refresh their friends' replies due to continuous curiosity, they are more likely to be trapped in the dilemma of interaction. Being too immersed in the brief pleasure brought by online socializing can easily lead to losing oneself and leading to new social problems: why doesn't he reply to my private messages, why only replies to other people's posts and never interacts with me? Once these questions cannot be answered in a timely manner, users will fall into self-doubt and develop interactive anxiety.

### 4.4 Self-Evaluation Anxiety

Self-Evaluation anxiety (SEA) refers to the anxiety that individuals experience when evaluating or examining themselves based on the opinions of others on social media. Self-Evaluation is the way a person views themselves, which is a continuous process that determines personal growth and progress. It can be improved or decreased through the behavior of an intimate other person. Compared to strangers, people are more likely to be compared and threatened by friends. Each person in the relationship hopes to maintain their psychological feelings through the comparison process with another person [11]. At the same time, the success of an intimate friend can reduce an individual's self-evaluation during the comparison process, as the success of an intimate friend can lead to doubt and disappointment in one's own abilities, which directly affects self-evaluation. The social image of an individual is achieved by fulfilling social roles recognized by others. In social media, people tend to portray satisfactory self-image to impress their peers. Social media can serve as an important scenario for people's identity development and maintaining social relationships. For individuals who exhibit fear

of making mistakes, their self-evaluation is more likely to be influenced by others because they often watch their friends' exciting updates or positive events on social media. Social media may become a source of stress or negative self-evaluation for them.

## 5 Countermeasures and Suggestions for Fomo

Individuals with higher levels of FoMO have lower levels of mindfulness attention. This is because modern technology and digital communication methods have affected individuals' self-response and subjective well-being, leading to a decrease in their ability to pay attention and perceive, as well as an increase in their negative emotional experiences, thereby affecting their mindfulness level. The inappropriate use of social media and the resulting impact of FoMO on teenagers cannot be ignored. Mindfulness training helps individuals increase their attention to current physical and mental experiences, clarify their intention to use social media, and respond to current physical and mental experiences in a nonjudgmental manner. Through the interaction of these mechanisms, individuals can better control their emotions and social media usage behavior. College students can reduce the troubles caused by FoMO and problematic mobile phone use by improving their mindfulness level.

Mindfulness training promotes changes in individual thinking or cognition. Research has shown that mindfulness training can reduce the recurrence rate of depression patients by breaking their automated cognition, and the shift of individual thinking from action mode to existence mode is key to helping individuals cope with emotional problems. Meta awareness refers to the transformation of an individual's observation perspective on their own internal and external experiences [12]. Mindfulness training helps individuals achieve the transformation of cognitive goals by changing the meta-awareness of their own attention towards the target, the automated evaluation of certain feelings and emotions, the self-awareness and evaluation of meta-awareness, and the self-values and social values of meta-awareness. Mindfulness training improves individual emotional state and regulatory function. Research has shown that mindfulness training can help individuals exhibit more positive emotions, reduce negative emotions, and help individuals exhibit more adaptive emotional regulation strategies when facing different emotional situations. For example, when negative emotions arrive, it can help individuals cope with them with an accepting attitude and shift attention to more meaningful activities. Trait mindfulness can regulate the impact of stress perception on negative emotions. Individuals with higher levels of trait mindfulness experience fewer negative emotions when feeling stress, indicating that trait mindfulness may play a buffering role between the two; Moreover, mindfulness training can reduce individuals' negative emotions and stress perception levels, and for individuals with lower trait mindfulness levels, mindfulness training can enhance their emotional regulation ability by improving their emotional inertia level.



## 6 Conclusions

FoMO, as a new negative emotional experience in the internet era, poses a threat to people's mental health. So, while paying attention to people's mental health, we should also pay attention to individual FoMO levels and their adverse effects on individuals. Mindfulness group training can not only improve the level of mindfulness and reduce their anxiety level, but also help people cope with negative emotions and maintain mental health. Through social media and other forms, FoMO patients who are willing to learn mindfulness training will be organized into groups to learn mindfulness related knowledge, practice mindfulness training techniques, conduct self-supervision and testing, and improve mindfulness level.

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