



# Drawbacks of College Students' Problematic Use of Social Media: Investigating Passive Impacts of FoMO in the Context of University Education

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**Abstract.** Albeit the impact of social media on people's lives, education especially, is enormous, with the concern of whether there are ill effects about this social-media-era phenomenon, more studies in academic circles have begun to address the relationship between people's mental health and social media. With the belief that social media's helpful to the majority, education on the proper use of new media should be carried out in continuous upgrading ways. This study aims to study whether adolescents' Fear of Missing Out due to social media use will eventually lead to social media fatigue through problematic social media use or social comparisons on social media. By using the WENJUANXING platform to create the questionnaire and forwarded it on social media platforms through the snowball sampling method, we expanded the sampling range and collected 212 valid data. The study found a clear and direct correlation between college students' social media fatigue and fear of missing out. This suggests that schools and families should make efforts to address the root causes of the problem and improve the ability of adolescents to cope with stress to avoid situations in which adolescents are stressed out. The limitation of this study is that we mainly focused on college students as our respondents. However, future scholars can look at the impact of social variables like education and career on these relationships to see whether they have an impact on the overall model's conduction effect.

**Keywords:** Fear of missing out · problematic social media use · social media fatigue · social comparison on social media

## 1 Introduction

In a rapidly developing digital world, the impact of social media on people's lives, education part especially, is enormous. For instance, when used properly, social media can enhance student learning efficiency and strengthen the relationship between students and teachers. Social media enables research to be conducted more conveniently by using polls, surveys, or even a simple question to provide enough survey groups with opinions on a particular topic. In addition, social media provides a relatively private form for

students who do not have the opportunity or are ashamed to raise their questions in public classes so that they can spit out their confusion without any worries.

Albeit the advent of social media has been enormously helpful in building and expanding people's social networks, with the concern of whether there are ill effects of this social-media-era phenomenon, more studies in academic circles have begun to address the relationship between people's mental health and social media. One study, in particular, focused on depression and suicide among adolescents due to inappropriate use of social media [40]. As the study expanded, researchers focused on one particular negative effect: assuming that social media use, problematic social media use primarily, may cause the fear of missing out (Fear of Missing Out), an increasingly common condition experienced by 66% of people in the current social media era.

Through further search, we decided to study how the Fear of Missing Out, caused by social media, leads to social media fatigue among the young generation in the following ways. First, whether fear of Missing Out is the initial psychological cause of social media use or the other way around, other than that, as more Internet celebrities appear that has an enormous impact on netizens, we intend to focus on social comparison on social media as the one out of two-mediation effect between Fear of Missing Out to social media fatigue. Also, given that the core appeal of Fear of Missing Out is the unnatural urge to know what others are doing [37], we believe it would be reasonable to study problematic social media use as a second mediation effect between Fear of Missing Out and social media fatigue.

However helpful that social media brings to the majority, education on the proper use of new media should be continuously upgraded. Therefore, with the research topic: 'Negative effect of Fear of Missing Out leads to social media fatigue through social comparison on social media, problematic social media use,' this study aims to explore the pattern of how people, the young generation, in particular, using social media. Other than that, the essential purpose of this study is to discuss severe social concerns about whether social media may cause ill influences on adolescents' mental health under this model. By given results, in the end, the discussion on the practical significance of our study will be drawn.

The main research question would be: Will adolescents' Fear of Missing Out due to social media use eventually lead to social media fatigue through problematic social media use or social comparisons on social media?

Regarding the choice of specific social media platforms, our research and data sources will be mainly based on Red; its functions and concepts in the Chinese software market are similar to Instagram abroad. Here is the main reason why our study chose Red: From the demand level, e-commerce media provide users with immediate needs, while Tik Tok, which is also a viral social media, provides users with more extensive entertainment. Red, however, provides a platform that emphasizes social communication where users share their daily lives to show and learn the potential needs of others. According to MAO Wen-Chao, CEO of Red, its' users are mainly aged 18 to 30, with most of the students and newer members of the workforce [34]. Based on psychophysiology, adolescents mainly have the characteristics of high emotional volatility, unformed values, and vulnerability to external influences, among which the most prominent is the vulnerability to external influences. Young generations are more susceptible to the influence of others' value

orientation than other social groups [1]. In short, the primary user base and main functions of Red are very forceful to support the research theme of this paper.

## 1.1 Variables Introduction

### 1.1.1 Fear of Missing Out

Fear of missing out was first studied by a marketing strategist named Dan Herman [20], and it is a kind of psychological trigger that can make humans anxious and cannot suppress. It was first used in marketing and later also described some phenomena that occurred on social media [17]. It can be defined as a fundamental need to belong [6], and it is caused by a sense that something meaningful has happened to someone else in their absence. This social anxiety is described as a desire to always connect to what other people are doing [18].

Previous studies have investigated fear of missing out and social comparison on social media. Some researchers found that some users posted information through social media and compared themselves [36]. When they find themselves inferior to others, they become unpleasant. Gartner [15] discovered that many users show symptoms of social tiredness. In 2018, another report released by Hill Holliday also showed that more than half of young users had curtailed their social media usage, and 34% have completely stopped using it. Swallow and Kuiper [36] suggested that social comparison on social media was why these users abandoned social media.

### 1.1.2 Social Comparison on Social Media

Social comparison is one of the most common social behaviors. They compare themselves with others by judging their living standards and social status based on their information [13]. Nowadays, people use social media to communicate, and they also share their life on social media platforms. At the same time, users can interact with each other and quickly get information.

A previous study from Vogel et al. [41] said that, after social comparison on Facebook, users with high social comparison orientation reported poorer self-perception, lower self-esteem, and poorer negative impact balance than users with low social comparison orientation. Latif et al. [27] said that social comparison could generate negative emotions such as envy, affecting the user's psychological condition. With the constant penetration of social media into people's lives, the sense of loss and burnout that social media abducts leads to negative use behaviour [41].

### 1.1.3 Problematic Social Media Use

Problematic social media use, known as social media addiction, is an unhealthy social media usage characterized by a lack of control over one's conduct and the continuation of one's activity despite adverse effects in one's life [14].

Fear of missing out predicted problematic social media use [14]. If the need for social connections is not acquired, more effort is invested in social networks [4]. When people exhibit the fear of missing out, they spend more time on social media to prevent themselves from missing out on some information. So, fear of missing out is associated

with social media addiction [2]. According to the previous study, being addicted to social media can have adverse effects, such as users suffering from anxiety and a sense of isolation [5]. Fear of missing out will lead people to experience various symptoms, which point to problematic social media use.

#### 1.1.4 Social Media Fatigue

Social media fatigue refers to the tendency of social media users to leave social media after receiving too much information and staying in touch with too many friends [39]. Users will experience fatigue due to their compulsive use of social media. Moreover, this kind of experience in social media is called social media fatigue. It is caused by the overload of information received by the user, resulting in unpleasant feelings or mental fatigue [9, 10].

A previous study suggested that fear of missing out can precursor social media fatigue [10]. As mentioned before, problematic social media use refers to the excessive use of social media. Moreover, due to the COVID-19, people became more desperate to access information from everything to compensate for their unmet social needs, which leads to their experience of fatigue. Numerous studies have found that when the frequency of social media use increases, it can trigger users to experience anxiety and depression [38].

### 1.2 Theoretical Framework

Researchers investigated that teenagers sometimes use social media for enjoyment and will much more likely to obtain unpleasant emotions or stresses [6, 44]. The Uses and Gratifications Theory (UGT), which has been widely used in the context of social media, is regarded as a further development of the Theory of Compensatory Internet Use (TCIU) [38]. Kardefelt [26] proposed the Theory of Compensatory Internet Use and views internet addiction as beneficial from a compensatory perspective. The Theory of Compensatory Internet Use says that people are motivated to relieve negative emotions through internet use because of their negative life situations. Internet use compensates for the emotions they cannot get from real life. This compensation, however, is seen in a negative light. In the long run, users may become dependent on the Internet for social stimulation, known as Internet addiction, from a pathological point of view. In the context of internet addiction, C. Liu [29] also studied that users can become addicted to Facebook because they use it to satisfy Fear of Missing Out. As mentioned above, internet addiction would also be categorized as problematic social media use in many scholars' studies. We utilize the Theory of Compensatory Internet Use to hypothesize that people who suffer from Fear of missing out will have increasing levels of social media for compensation. Such extreme exposure to social media caused by Fear of Missing Out might increase teenagers' capacity to feel fatigued. It is, therefore, reasonable to speculate as follows:

H1: Fear of Missing Out will positively predict problematic social media use.

H2: Problematic social media use will positively predict social media fatigue.

H3: Fear of Missing Out will positively predict social media fatigue.

Previous studies have used a variety of theoretical frameworks to identify causal linkages and consequences with social media fatigue, including the stressor-strain-outcome model [7], which perfectly aligns with the study's primary goal of discovering what causes social media weariness the effects or repercussions. The stressor-strain-outcome framework comprises three main components: stressors, emotional strains, and psychological or physical outcomes. Fear of missing out is a type of stressor due to the usage of media platforms [28]. Users are more prone to develop emotional deterioration due to this stress, including psychological tiredness and mental deficiencies [21]. Furthermore, stress manifests itself in weariness or exhaustion, which has a variety of unpleasant psychological and physical consequences. People seek stable and accurate evaluations simultaneously, and when they are unable to use objective information for self-evaluation, they self-evaluate by comparing themselves to others, a process known as social comparison [13, 16]. People make upward and downward comparisons depending on their motivation. Previous research suggests that social media users are more likely to engage in upward social comparisons, believing that other platform users are in a better position than they are [31]. Users will experience unpleasant or positive feelings due to both upward and downward social comparisons, and these emotions may influence how they use social media [8, 37]. So, it is reasonable that we hypothesize there is a relationship between fear of missing out, problematic social media use, social comparison on social media, and social media fatigue. As a result, employing the stressor-strain-outcome paradigm will provide more detailed explanations, which are crucial for comprehending the causes and consequences of social media fatigue. Therefore, we are reasonable to hypothesize as follows:

H4: Fear of Missing Out will positively predict social comparison on social media.

H5: Social comparison on social media will positively predict social media fatigue.

It may be noted that the variables social media comparison and problematic social media use lie in the middle of Fear of Missing Out and social media fatigue in our conjecture, so we also make the following hypothesis:

H6: Social comparison on social media mediates the association between Fear of Missing Out and social media fatigue.

H7: Problematic social media use mediates the association between Fear of Missing Out and social media fatigue.

Figure 1 depicts the final theoretical framework model and presents the hypothesized relationships developed in this paper, rationalized by the above theoretical support. The variable social media fatigue is influenced by three routes, starting with the fear of missing out: 1), Impacts variable of social comparison on social media and then influences social media fatigue. 2), Has an impact on problematic social media use, which in turn impacts social media fatigue. 3), Has a direct impact on social media use.

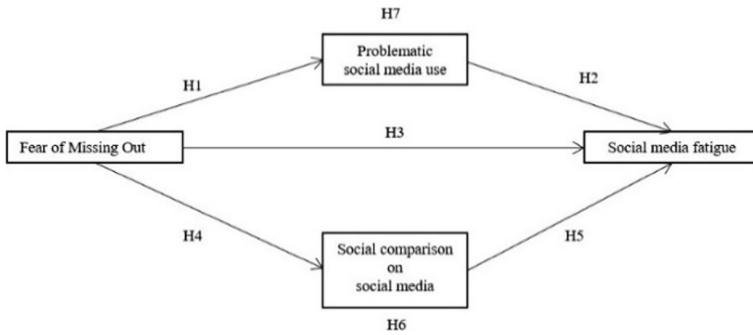


Fig. 1. Theoretical framework model.

## 2 Materials and Methods

This study mainly used the WENJUANXING platform to create the questionnaire and forwarded it on social media platforms (such as WeChat moments/group chat/Weibo, etc.) through the snowball sampling method, to expand the sampling range. The questionnaire uses summated-rating scales to measure the degree of agreement of participants with each statement. Excluding questionnaire data that took less than one minute to fill in and questionnaire participants that had not used RED, 212 valid data were finally collected. Participants were aware of the purely academic nature of the study and were assured that their responses would be anonymous and would not be disclosed.

### 2.1 Sample

This questionnaire contained gender as a demographic variable. Take Facebook as an example. Users of different genders have different habits when using Facebook. On average, women have 8% more friends on Facebook than men [12], and women account for 57% more Facebook users than men. This shows that women are more likely to use social media to communicate and are more likely to use social media than men. Since RED social media is used more by women, 80% of the data are female, and 20% are male. The questionnaire participants we focused on were all college students because previous studies have shown that social media has a more significant impact on young people than others [30]. Moreover, some reports show that college students have become the primary audience of mobile media due to their active thinking and strong ability to accept new things [35].

### 2.2 Measures

This study focuses on the relationship between mental health and social media. The data indicators of variable measurement are divided into fear of missing out, problematic social media use, social comparison on social media, social media fatigue. We also calculate the Cronbach's  $\alpha$  of each variable to test the validity of the measurements.

Currently, the measurement tools commonly applied in the academic world include the Fear of Missing Out S-P (Fear of Missing Out Scale) compiled by Przybylski [33],

consisting of 10 topics. Participants will be asked to choose a number from 1 to 5 based on the questions (1 strongly disagree, five strongly agree). Most representative scales were revised, deleted, or enriched based on Fear of Missing Out S-P. In order to better fit in with college students, this study has deleted three questions. The measure's internal consistency with our sample was excellent. (Cronbach's  $\alpha = 0.876$ ).

Andreassen [3]'s 9-item multiple-choice questions were used to assess problematic social media use. Respondents were prompted, "Spent more time on RED than initially intended?" or "Used RED in order to reduce restlessness?". Each item is scored on a 5-point scale using anchors of 1: Very rarely and 5: Very often. The measure's internal consistency with our sample was excellent. (Cronbach's  $\alpha = 0.926$ ).

The study normalized and averaged the scores on each subscale to compare social media scores [41]. Participants were required to consider about five sets of social comparison statements; each statement contains different characteristics, such as successful, popular, and intelligent. Participants were required to compare themselves with others in each statement, and they responded on a five-point scale (1 = much less than the average student, 5 = much more than the average student). The internal consistency of the measure with our sample was excellent. (Cronbach's  $\alpha = 0.884$ ).

Using the 6-item multidimensional scale perceived from Karasek [25], social media fatigue was measured. Participants were prompted with "how well do you think the following statement suits you best in your daily lives" and sampled with "I felt pretty tired". Participants rated themselves on a scale of one to five (1 = never; 5 = always). The answers were calculated to measure each respondent's level of social media fatigue. The measure's internal consistency with our sample was excellent. (Cronbach's  $\alpha = 0.933$ ).

### 2.3 Data Analysis Methods

The data were analyzed using SPSS, and the suggested association between factors was investigated. The objective was to test the association among fear of missing out, problematic social media use, social comparison on social media, and social media fatigue. Our methodological approach is consistent with the previous study in this field [24]. We derived the mean value for each participant in each variable measurement and used SPSS to calculate each variable's confidence interval and reliability coefficient. The correlation regression model of social media fatigue with fear of missing out, problematic social media use, and social comparison was performed to test the possible association. In this study, the mediating effect of problematic social media use and social comparison was analyzed by AMOS [43]. And the project validity and reliability were determined by confirmatory factor analysis (CFA) [31].

## 3 Result and Discussion

### 3.1 Result

#### 3.1.1 Reliability and Validity

Confirmatory factor analysis was performed on the data to verify the fit of the scales. The four variables involved in the study were constituted into a four-factor validated

**Table 1.** Pearson Correlation (r) Results.

		FoMO	PSMU	SC_SM	SMF
FoMO	r	1	0.583**	0.808**	0.621**
	Sig. (Two-tailed)		0.000	0.000	0.000
	N	212	212	212	212
PSMU	r	0.583**	1	0.577**	0.762**
	Sig. (Two-tailed)	0.000		0.000	0.000
	N	212	212	212	212
SC_SM	r	0.808**	0.577**	1	0.628**
	Sig. (Two-tailed)	0.000	0.000		0.000
	N	212	212	212	212
SMF	r	0.621**	0.762**	0.628**	1
	Sig. (Two-tailed)	0.000	0.000	0.000	
	N	212	212	212	212

factor analysis model, and the model was tested. The result shows that the model was fit and good validity of each variable since the GFI, NFI, CFI, IFI, RFI, TLI was higher than the standard value of 0.8 ( $\chi^2/df$  p = 0.0011, GFI = 0.976, NFI = 0.980, CFI = 0.982, IFI = 0.982, RFI = 0.882, TLI = 0.892).

### 3.1.2 Correlation Analysis

Firstly, the study tested the correlation between fear of missing out, problematic social media use, social comparison on social media, and social media fatigue. The Pearson correlation r results are shown in Table 1. There is a significant correlation between fear of missing out and problematic social media use, social comparison on social media, social media fatigue, which support **H1**, **H4**, **H3** ( $r = 0.583, 0.808, 0.621, P < 0.001$ ). Also, the r between problematic social media use and social media fatigue is 0.762,  $P < 0.001$ . Therefore, there is a significant correlation between the two, which supports **H2**. The same pattern can be seen in social comparison on social media and social media fatigue ( $r = 0.628, P < 0.001$ ), which supports **H5**.

Then conducting linear regression, the R square values reflected predictability of the proposed model (Table 2), while the path coefficients indicated the validity of each hypothesis (Table 3). Five hypotheses were supported: Fear of Missing Out was found to



**Table 2.** Results of R<sup>2</sup> Values.

	FoMO	PSMU	SC_SM	SMF
FoMO	1			
PSMU	0.340	1		
SC_SM	0.654	0.333	1	
SMF	0.386	0.581	0.394	1

**Table 3.** Results of Hypothesis Testing.

H <sub>x</sub>	Path	β	t	Sig.	Support
H1	FoMO → SC_SM	0.666	19.906	<0.01	Yes
H2	FoMO → PSMU	0.559	10.395	<0.01	Yes
H3	FoMO → SMF	0.511	11.495	<0.01	Yes
H4	SC_SM → SMF	0.627	11.687	<0.01	Yes
H5	PSMU → SMF	0.653	17.070	<0.01	Yes

be significantly connected with social comparison on social media, problematic social media use, and social media fatigue. Furthermore, both social comparison on social media and problematic social media use has significant effects on social media fatigue.

**Abbreviation: FoMO-Fear of Missing Out, PSMU-Problematic Social Media Use, SC\_SM-Social Comparison on Social Media, SMF-Social Media Fatigue.**

### 3.1.3 Mediation Analysis

From the above, there are correlations between the four variables of fear of missing out, problematic social media use, social comparison on social media, and social media fatigue, which satisfy the prerequisites of the mediation analysis. According to previous work, the internal relationship between fear of missing out, problematic social media use, social comparison on social media, and social media fatigue can be investigated [43].

Table 3 reveals the relation of social comparison on social media with Fear of Missing Out, indicating a statistically significant association between the two variables ( $\beta = 0.666, t = 19.906, p < 0.01$ ), which supports **H4**. It also shows the relation of problematic social media use with Fear of Missing Out, indicating a statistically significant association between the two variables ( $\beta = 0.559, t = 10.395, p < 0.01$ ), which supports **H1**. In addition, the association between social media fatigue and Fear of Missing Out was statistically significant ( $\beta = 0.511, t = 11.495, p < 0.01$ ), which supports **H3**. Comparing the coefficient indexes of each pair (Fear of Missing Out-social media fatigue and Fear of Missing Out-social comparison on social media, Fear of Missing Out-social media fatigue and Fear of Missing Out-problematic social media use), the index had increased

**Table 4.** Result of Mediation Analysis.

Path	$\beta$	SE	Bootstrap (95%CI)
Direct effect			
FoMO $\rightarrow$ SMF	0.165	0.093	(0.151, 0.565)
Indirect effect			
FoMO $\rightarrow$ SC_SM $\rightarrow$ SMF	0.182	0.016	(0.151, 0.565)
Direct effect			
FoMO $\rightarrow$ SMF	0.165	0.093	(0.324, 0.546)
Direct effect			
FoMO $\rightarrow$ PSMU $\rightarrow$ SMF	0.407	0.042	(0.324, 0.546)

from 0.511 to 0.666, and from 0.511 to 0.559 respectively, the result was significant, thus indicating both social comparison on social media and problematic social media use plays as the mediator in the hypothesis model.

The mediation analysis was conducted using AMOS, and the results were obtained by bootstrapping 5000 times based on previous research [19]. The analysis was used for hypotheses 6 and 7, examining the mediation effects of social comparison on social media (of Fear of Missing Out and social media fatigue) and problematic social media use (of Fear of Missing Out and social media fatigue). The significant testing of mediation effects can be seen in Table 4. The mediation path corresponding 95% confidence interval does not include 0, showing the significant effect of social comparison on social media among Fear of Missing Out and social media fatigue. The mediation effect value is 0.182. Also, there is a significant mediation effect of problematic social media use among Fear of Missing Out and social media fatigue, with the mediation effect value being 0.407. The result verifies the **hypotheses 6 and 7**.

### 3.2 Discussion

The results show that fear of missing out has a strongly positive correlation with social comparison and problematic social media use, and it can also positively predict social media fatigue. Fear of missing out is anxiety that arises from missing out on something meaningful in one's absence. Previous work has suggested that some users compare themselves to others on social media [36], and social comparison is one of the most common human behaviors. Users will subconsciously compare themselves to others as they see people on the Internet who have better and more successful lives than themselves. Users who always focus on the changes that happen to others and compare themselves with others from time-to-time fear of missing others' information will intensify social comparison on social media. As mentioned in the literature review, problematic social media use overuse social media platforms [14]. According to the Theory of Compensatory Internet Use, when users have symptoms of fear of missing out, they cannot help but spend more time on social platforms to compensate. When this behavior

becomes more frequent, it will make social media addiction more severe, which leads to problematic social media use mentioned in our study.

Social comparison has gradually permeated into people's lives with social media platforms. Continuously comparing oneself to others on social media can harm users, such as low self-esteem. Eventually, users get tired of this social comparison, and social media fatigue develops. Due to the uncontrolled use of social media, users receive too much information, and fragmented information is filling their brains. The consequence of information overload is that users tend to feel tired and anxious about social media, also known as social media fatigue. Also, according to the stressor-strain-outcome framework, fear of missing out acts as a stressor, forcing users to use social media constantly, eventually causing fatigue and unpleasant psychological or physical consequences when using social media.

This study examined the mediating role of social comparison on social media and problematic social media use between fear of missing out and social media fatigue. The results of the study indicate that fear of missing out has a significant and positive association with social comparison on social media, meaning that users become anxious for fear of missing out on information about people they follow on social media platforms, which motivates them to keep following others on social platforms. Moreover, after noticing what has changed in other people's lives, users will continue to compare themselves. In order to position their evaluation, people choose to compare themselves with others to determine the position they are in. Comparison in social media platforms will make users unconsciously devote themselves to social media. Under the influence of inferiority and anxious mood after much comparison, users will quickly fall into social media fatigue.

The results show that fear of missing out can significantly and positively predict problematic social media use, making users spend more time on social media. In an internet world where new information is coming out, it takes users' time to fill the information gap on social media. After moving from reasonable use of social media to satisfy their needs to excessive use of social media, users may trigger symptoms of anxiety and depression, also known as social media fatigue.

## 4 Conclusions

### 4.1 Implication

There are mainly two theoretical contributions in the study, deepening the academic comprehension of social media's negative mental impact. Initially, the study combines two theories to explain how people lead to social media fatigue stepping from FoMO in social media. It seems to provide scholars insightful reference to study the prospective influence of excessive social media use.

Furthermore, the outcome of this paper confirms that the inappropriate use of social media might damage people's mental health. The finding suggests that future scholars may consider incorporating theories from more disciplines when studying psychology and media-related topics, such as addictive behavior theory [23], psycho-dynamics theory, and more social theory aspects [32].

Regarding practical implications, by studying Fear of Missing Out caused by extensive social media uses of current college students, the relative impacts such as problematic social media use, social comparison on social media, and social media fatigue can be further explored to help school and family protect teenagers from the negative effects of social media.

The fear of missing out directly affects levels of college students' social media fatigue. Thus, less fear of missing out would lead to deduction of fatigue brought by social media, which will have a positive impact on students' anxiety levels. This connection indicates that schools and families should increase teenagers' ability to against stress to avoid the situation of teenagers stressing out.

After that, problematic social media use and social comparison on social media were found to be specific causes of social media fatigue, which requires us to control ourselves from comparing with others and use less of social media. Previous research proved that college students are spending more time on social media for self-promotion entertainment [22], with less time with friends and the outside world. This situation can make users easily compared on social media anxious more frequently, affecting their mental health. Therefore, it is suggested that college students control their behaviors that often cause anxiety by comparing them with others on social media. More offline social interaction can relieve anxiety and have an excellent physical and mental health.

## 4.2 Limitation and Future Scope

Firstly, our research data was collected from the self-reports of all respondents, and most of the measurements were asked about the subjects' perceptions and attitudes, such as fear of missing out. Self-reported data cannot fully reflect the respondents' actual status, while behavioural data can. More behavioral questions should be adopted and combined with attitudinal data in the future.

Secondly, our study is only applicable to particular social media platforms (RED). Future studies can test whether our model applies to the general or other popular social media platforms such as QQ, WeChat, etc. Also, since the study is limited to college students, future scholars can look at the impact of social variables like education and career on these relationships to see whether they impact the overall model's conduction effect.

Finally, the sample we collected is female primarily respondents, which may not represent the views of men. Future researchers were expected to investigate more researches with equal gender distribution. Besides, our framework may be used to a variety of developing country and social demographic samples to acquire a broader understanding of the correlations investigated and to analyze variations and relationships between regions and nations.

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