

## Examining the Effect of Dependency Relations on Weibo Female Users' Media Anxiety

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### Abstract

Social media's rapidly expanding influence has transformed modern communication paradigms and reshaped user experiences, bringing particular repercussions for psychological well-being. Against this backdrop, the psychological impact of social media usage, especially among female users, is emerging as a significant area of both academic interest and societal concern. Grounded in the Media System Dependency (MSD) theory, this study delved into the complex dynamics of users' dependence on social media. Within this theoretical framework, three primary dependency dimensions—understanding, orientation, and play—were identified. These were further delineated across personal and societal dimensions, yielding six distinct dependency factors: Self-understanding (SeU), Social Understanding (SoU), Action Orientation (AO), Interaction Orientation (IO), Solitary Play (SiP), and Social Play (ScP). The primary aim of this research was to discern the impact of these dependency relations on media-induced anxiety. To achieve this, a meticulously designed cross-sectional study was conducted, surveying 400 female users of Weibo, a leading social media platform. By employing the robust PLS-SEM methodology for data analysis, the study formulated and tested a set of hypotheses. The empirical findings clearly demonstrated that dependency relations significantly influence media anxiety. This research not only enriches the academic discourse on MSD in varied digital contexts but also sheds light on the intricate relationship between media dependency and the mental well-being of female Weibo users.

**Keywords:** Media System Dependency, Media Anxiety, Weibo, Female

### Introduction

In the contemporary digital era, social media has risen to prominence among communication tools, fundamentally transforming how individuals connect, interact, and perceive their surroundings (Smith & Anderson, 2018). This meteoric ascent of social media platforms has not only reshaped communication paradigms but has also altered the very essence of user experiences. Like any significant transition, however, it comes with its set of consequences. Some of these repercussions play out on the psychological plane, affecting individuals' mental well-being (Kross et al., 2013).

The expansive influence of social media has ignited a myriad of academic and societal conversations, particularly regarding its impact on users' psychological health (Twenge & Campbell, 2018). This dialogue becomes even more relevant for female users who, influenced by a mix of socio-cultural and biological factors, may engage with and interpret digital interactions distinctively (Sumter et al., 2018). In this evolving landscape, the Media System Dependency (MSD) theory emerges as an insightful framework for deep exploration (Ball-Rokeach & DeFleur, 1976).

The MSD theory, by identifying three primary dimensions of dependency (understanding, orientation, and play), and further categorizing them across personal and societal spectra, furnishes a holistic framework to probe the intricate dependency dynamics (Lowrey, 2004).

Among the vast array of social media platforms, Weibo distinguishes itself with its significant presence and distinct user dynamics. Thus, comprehending the role of MSD in framing the experiences of female Weibo users, especially concerning media-induced anxiety, becomes crucial (Cheng et al., 2015). This context sets the stage for the current investigation, aspiring to unravel the complex relationship between dependency relations and anxiety among Weibo's female users. Thus, the following research objectives are proposed:

- Exploring the factors of dependency relations based on MSD theory.
- Examining the effect of dependency relations on Weibo female users' media anxiety

## **Literature review**

### **Media Anxiety Among Female Weibo Users**

Mass media profoundly influences how women perceive themselves. With platforms like Weibo becoming increasingly integral to daily life, the implications of this media exposure are magnified. The media's portrayal of the 'ideal' woman often triggers comparative self-assessment among women, heightening anxiety (Guo, 2021). Factors such as Weibo's immersive nature, the dominance of visual culture, the subtle cues within media narratives, the relative lack of a feminist counter-narrative, and peer pressures might intensify feelings of dependency and, as a result, escalate female media anxiety.

Psychologists, like Bekker, conceptualize anxiety as arising when individuals wrestle with uncertainty, undergoing distress in unpredictable environments. In the realm of social media, this often pertains to ever-changing social validations and digital interactions (Bekker et al., 2003). So, how does dependency fit in? As users grow more dependent on platforms like Weibo for social validation, information, and even self-worth, the significance of each interaction escalates, potentially intensifying feelings of anxiety.

Guo (2021)'s research indicates that prolonged exposure to social networking platforms correlates with negative emotions, such as anxiety, stress, and depression. For female Weibo users, these feelings might be exacerbated by the pressure to adhere to specific standards or ideals, heightening their reliance on the platform for social feedback. McCord et al. (2014)'s study layers on another dimension, suggesting that those predisposed to social anxiety might find their dependency on platforms like Weibo even more distressing.

Dependency on social media transcends mere time spent or interaction frequency. It encompasses the depth of emotional commitment, the importance ascribed to validation on

these platforms, and how online narratives are intertwined with self-worth and identity. The unique features of Weibo, when combined with individual personality characteristics, cultivate a distinct dependency dynamic. For example, the deluge of information on Weibo can result in cognitive overload, intensifying dependency as users continuously seek clarity or affirmation, thereby boosting anxiety levels (Guo, 2021).

Delving into the characteristics of Weibo users, Osatuyi (2015)'s research provides insights into the nexus between specific personality types and anxiety on social platforms. Traits like creativity, neuroticism, and conscientiousness, when interfaced with the nuanced dependency dynamics on Weibo, might amplify anxiety among female users.

In conclusion, grasping the relationship between dependency relations on Weibo and the ensuing media-induced anxiety among female users demands a multifaceted analysis that covers platform nuances, user traits, and societal influences. This study aims to elucidate these intersections, offering an in-depth understanding of the female Weibo user experience.

### **Dependency Relations and Media Anxiety**

One primary objective of this research is to delve deeply into the motivations behind individual media consumption. While the extant literature has extensively mapped out the effects of media use, it hasn't necessarily zeroed in on the underlying reasons why people depend on certain media platforms to garner resources and fulfill their objectives. This research, therefore, employs the Media System Dependency (MSD) theory to elucidate these motivations more holistically.

MSD theory, as defined by Ball-Rokeach (1985), outlines a unique relationship wherein the success of individuals in achieving their objectives depends on the informational resources provided by media systems. In essence, both individuals and broader entities, such as organizations or groups, rely on resources primarily controlled by others—in this context, the media systems. These systems intrinsically offer pivotal 'dependency-inducing' information, making individuals dependent on them to procure the necessary knowledge.

Analyzing MSD relations can be approached at multiple levels: one might adopt a macro perspective, focusing on overarching systems, or a granular micro perspective targeting individual motivations, as articulated by Ball-Rokeach et al. (1990). This study emphasizes the latter, the individual-centric micro-level, to illuminate personal dependencies on media platforms.

Delving deeper into individual MSD relations, three significant objectives emerge: understanding, orientation, and play, as proposed by previous studies (Ball-Rokeach et al., 1984). Ball-Rokeach et al., (1990) elucidate that 'understanding' entails an individual's endeavor to comprehend and rationalize their environment and their place within it. 'Orientation' pertains to the necessity for effective and appropriate behaviors during interpersonal interactions and personal decision-making. Meanwhile, 'play' encapsulates elements of escapism and leisure. When interpreted through the lens of personal and societal contexts, these objectives give rise to six distinct MSD relations: Social Understanding, Self-understanding, Action Orientation, Interaction Orientation, Solitary Play, and Social Play, as detailed by Ball-Rokeach et al. (1984) (see Table 1)

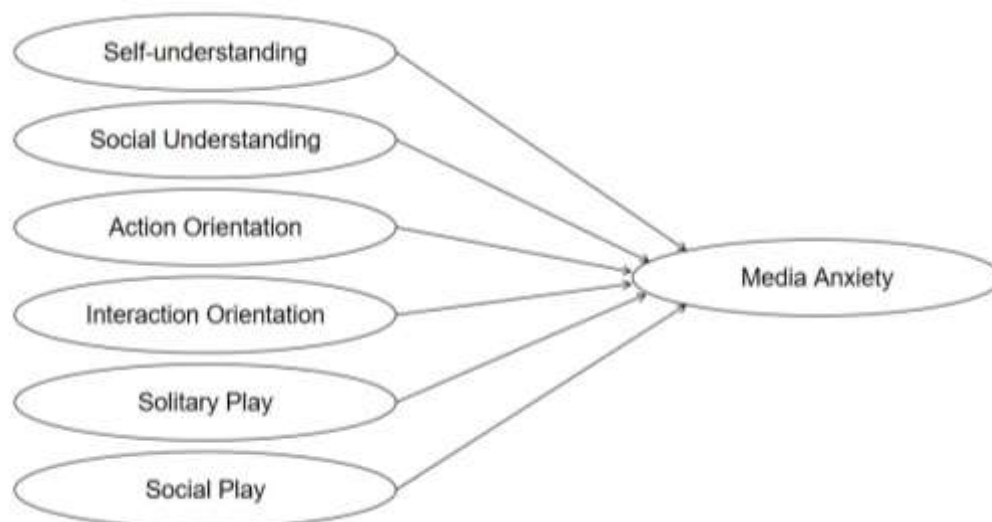
Table 1

*An overview of six distinct MSD relations*

	Personal	Social
<b>Understanding</b>	Self-understanding	Social Understanding
<b>Orientation</b>	Action Orientation	Interaction Orientation
<b>Play</b>	Solitary Play	Social Play

This research postulates that these six dimensions of media dependency, spanning from Self-understanding to Social Play, exert a significant influence over media-induced anxiety levels, particularly among Weibo's female users. The following hypotheses and conceptual framework (see Figure 1) are proposed:

- H1: Self-understanding significantly affects media anxiety.  
 H2: Social Understanding significantly affects media anxiety.  
 H3: Action Orientation significantly affects media anxiety.  
 H4: Interaction Orientation significantly affects media anxiety.  
 H5: Solitary Play significantly affects media anxiety.  
 H6: Social Play significantly affects media anxiety.

**Figure 1** Conceptual framework

## Methodology

### Participants

A cross-sectional study design was used to examine the effect of dependency relations on Weibo female users' media anxiety. To ensure representative and unbiased sampling, participants were selected from registered users of Sina Female, the foremost female-centric Weibo topic in China, boasting an impressive follower count of 7.9 million (Guo, 2021). Given the vast pool of potential participants, a randomized sampling strategy was utilized. This approach was crucial for ensuring a comprehensive representation across varied age groups, socio-economic statuses, and Weibo usage patterns.

Data collection incorporated both online and offline methods, resulting in an initial total of 420 questionnaire responses. However, 20 of these were disqualified due to conspicuous

regularities in their answers or failure to pass attention checks aimed at eliminating inattentive or insincere participants. Following this rigorous filtering process, 400 valid responses were retained for subsequent analysis.

### **Instrument**

Regarding dependency relations, the scale includes items that measure the six dependency relations: Social Understanding, Self-understanding, Action Orientation, Interaction Orientation, Solitary Play, and Social Play. The instruments employed to gauge various aspects of dependency relations were derived from pivotal works in the field, ensuring a reliable and evidence-based approach to data collection. Specifically, Social Understanding was assessed using four items from Loges (1994). Similarly, Self-understanding was measured using four items, sourced exclusively from Loges (1994). For Action Orientation, a composite scale of four items was applied, based on works by Ball-Rokeach et al. (1984), Lin (1993), and Loges (1994). Interaction Orientation was assessed using four items drawn from Lin (1993). The domain of Solitary Play was evaluated with four items, referencing Ball-Rokeach et al. (1984) and Conway and Rubin (1991). Finally, Social Play was gauged using four items, based on the studies by Svennevig (2000). Each relation was measured using a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree).

Regarding the Media Anxiety Scale, this scale assessed participants' levels of media-induced anxiety. Media Anxiety was evaluated using four items, sourced from Primack et al. (2017). The scale was adapted to the specific context of Weibo, with items rated on a 7-point Likert scale, from 1 (strongly disagree) to 7 (strongly agree).

### **Data Collection**

Online surveys were distributed to the selected participants via Weibo's platform. Informed consent was obtained prior to the survey, ensuring participants understood the study's objectives and their rights. The survey remained accessible for a month, after which data was compiled and prepped for analysis. Participants' demographic characteristics are summarized in Table 2.

### **Data Analysis**

Data was analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method. This method was selected for its ability to manage complex models and its appropriateness for exploratory research. The main focus of the analysis was discerning the relationship between the six MSD relations and media-induced anxiety among Weibo female users.

### **Validity and Reliability**

Both convergent and discriminant validity of the scales used were verified. Convergent validity was established through the Average Variance Extracted (AVE) and Composite Reliability (CR) values, while discriminant validity was ascertained using the Fornell-Larcker criterion. Cronbach's alpha values were also calculated for each scale to ensure internal consistency.

Fornell and Larcker (1981) suggest that CR values should exceed 0.70 to indicate adequate reliability. Table 2 confirms that all CR values surpassed this threshold. To establish

convergent validity, all indicator loadings on their respective constructs exceeded 0.70, as recommended by Fornell and Larcker (1981). Another criterion for assessing convergent validity posits that the AVE for each construct should be 0.5 or greater (Fornell & Larcker, 1981). Table 4 reveals that all AVE values exceeded this threshold, thereby confirming adequate convergent validity. To assess discriminant validity, diagonal elements should be larger than the off-diagonal elements. The results demonstrated good discriminant validity.

Table 2

*Results of validity and reliability*

	CA	CR	AVE	SeU	SoU	AO	IO	SiP	ScP	MA
<b>SeU</b>	0.776	0.777	0.615	0.854						
<b>SoU</b>	0.775	0.800	0.813	0.051	0.852					
<b>AO</b>	0.781	0.788	0.610	0.496	0.267	0.794				
<b>IO</b>	0.855	0.869	0.867	0.063	0.595	0.197	0.939			
<b>SiP</b>	0.704	0.707	0.772	0.566	0.444	0.447	0.338	0.851		
<b>ScP</b>	0.808	0.821	0.836	0.757	0.049	0.419	0.001	0.496	0.886	
<b>MA</b>	0.760	0.813	0.803	0.622	0.529	0.515	0.369	0.794	0.545	0.838

Note: CA, Cronbach's Alpha; CR, Composite Reliability; AVE, Average Variance Extracted; Discriminant validity was ascertained using the Fornell-Larcker criterion

**Result**

Table 3 presents the outcomes of the hypothesis testing, elucidating the relationships between various dependency relations and media anxiety (MA). H1 proposes a relationship between SeU and MA. The resulting path coefficient for this hypothesis was 0.280. Given the highly significant p-value of less than 0.001, this relationship received empirical support, indicating that an increase in SeU corresponds to a rise in media anxiety among Weibo's female users. H2, which investigates the effect of SoU on MA, reported a slightly higher path coefficient of 0.333. This, too, was statistically significant at the  $p < 0.001$  level, reinforcing a strong connection between social understanding and the intensity of media-induced anxiety. H3 assesses the relationship between AO and MA. The documented path coefficient was 0.288. This was found to be significant at the  $p < 0.001$  level, suggesting that action orientation significantly influences media anxiety among the users. H4, evaluating the influence of IO on MA, yielded a coefficient of 0.336, which is one of the most robust associations in this study. This relationship was statistically significant at the  $p < 0.001$  level, emphasizing the significant role interaction orientation plays in media anxiety. H5 delves into the effect of SiP on MA, with a resulting coefficient of 0.331. This association was also highly significant, marked by a p-value of less than 0.001, denoting that solitary play can substantially contribute to feelings of media anxiety. H6 examines the impact of ScP on MA. Although this hypothesis had the lowest coefficient at 0.174, it remained statistically significant at the  $p < 0.05$  level. This infers that while social play does influence media anxiety, its impact may be less pronounced than other dependency relations.

In conclusion, the data substantiated each of the posited relationships between the six dependency relations and media anxiety, each with distinct degrees of strength and significance. This emphasizes the complex array of influences these relations exert on media-induced anxiety among female Weibo users.

Table 3

*Results of hypothesis test*

Hypothesis	Path coefficient	P value	Remark
H1 SeU -> MA	0.280	0.000***	Supported
H2 SoU -> MA	0.333	0.000***	Supported
H3 AO -> MA	0.288	0.000***	Supported
H4 IO -> MA	0.336	0.000***	Supported
H5 SiP -> MA	0.331	0.000***	Supported
H6 ScP -> MA	0.174	0.027*	Supported

Note: \*p<0.05; \*\*p<0.01, \*\*\*p<0.001

**Discussion**

The results of this study affirm the significant influence of dependency relations on media-induced anxiety among Weibo's female users. Grounded in the Media System Dependency (MSD) theory, this research sheds light on the motivations behind individual media consumption, especially within the female demographic on the Weibo platform.

A standout revelation from the study's findings is the profound impact of both Social and Self-understanding on media anxiety. This is in line with the theory's emphasis on individuals' endeavors to comprehend and rationalize both their environment and their roles within it (Ball-Rokeach & DeFleur, 1976). As female users engage with Weibo for such insights, the platform's informational richness (or occasionally its scarcity) could either soothe or exacerbate their anxiety levels.

Furthermore, both Action and Interaction Orientations showed pronounced associations with media anxiety, echoing the MSD theory's emphasis on the importance of appropriate behaviors during interpersonal engagements and decision-making processes. As an interactive medium, Weibo significantly influences how its female users approach their social interactions and subsequent decisions. While it provides valuable perspectives and behavioral frameworks, it can also amplify pressures to conform, thereby increasing anxiety.

Interestingly, the domains of Solitary Play and Social Play, representing escapism and leisure, also emerged as significant drivers of media anxiety. While platforms like Weibo offer a digital reprieve, underlying anxiety stemming from comparisons, content saturation, or the fear of missing out (FOMO) persists.

The overarching implication is evident: Dependency on media platforms, rooted in diverse motivations, profoundly influences users' emotional states, especially anxiety. For Weibo's female audience, these dependencies are prominent, with each of the six discerned dimensions, ranging from Self-understanding to Social Play, playing a significant role.

Given these insights, digital platforms, policymakers, and mental health professionals should be attuned to the delicate balance between media consumption motivations and user well-being. By grasping these dynamics, stakeholders can foster more nurturing digital environments, catering to user needs while alleviating potential stressors. Additionally, awareness campaigns can help users identify potential challenges and equip them with strategies for healthier online engagements.

In summary, this research illuminates the intricate ties between dependency relations and media anxiety, underscoring the diverse ways media consumption motivations affect the emotional well-being of Weibo's female users. Subsequent studies might delve into specific subsets within this user group or broaden the scope to other platforms, providing a comprehensive view of media dependencies in today's digital landscape.

### **Conclusion**

In an era where social media is intricately woven into daily life, comprehending its psychological effects is crucial. This study, anchored in the Media System Dependency (MSD) theory, explores the subtle interplay between media dependencies and the resultant anxiety, focusing on female Weibo users. By examining the three foundational dependency dimensions (understanding, orientation, and play) and further subdividing them into six specific relations, the study offers crucial insights into the influence of each on media-induced anxiety.

Employing a rigorous cross-sectional research design, the study unequivocally revealed a marked correlation between social media dependency and heightened anxiety levels among female Weibo users. Each identified dimension, from Self-understanding to Social Play, demonstrated considerable impact, highlighting the intricate balance between users' reliance on social media and their psychological well-being.

At its core, this research underscores the profound influence of social media dependencies on mental health, especially among Weibo's female demographic. Beyond enriching academic discourse on the MSD theory in our digital era, the findings spotlight the necessity for all stakeholders — from platform creators to mental health experts — to acknowledge and address these ramifications. As social media's integration into our lives deepens, identifying and mitigating sources of media-induced anxiety becomes paramount, ensuring a healthier digital environment for all.

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