

## Factors Influencing Social Media Users' Privacy Disclosure Intention: Model and Empirical Study Postprint

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### Abstract

[Purpose/Significance] Frequent privacy leakage incidents involving social media users affect users' privacy disclosure willingness. By revealing the influencing factors of social media users' privacy disclosure willingness, it provides a reference for social media platform operators to optimize their services. [Method/Process] Based on privacy calculus theory, communication privacy management theory, etc., a model of social media users' privacy disclosure willingness is constructed from a dual perspective of individual rational and emotional factors. Taking WeChat as an example, 468 valid questionnaires were collected through an online survey, and the Partial Least Squares Structural Equation Modeling (PLS-SEM) method was used to verify the rationality of the model construction. [Results/Conclusion] The study finds that from a rational perspective: privacy control positively influences privacy disclosure willingness, while privacy risk and privacy concern negatively influence privacy disclosure willingness; privacy risk positively influences privacy concern, and privacy control negatively influences privacy concern. From an emotional perspective: social media trust and habit positively influence privacy disclosure willingness, while role pressure negatively influences privacy disclosure willingness. Privacy concern plays a partial mediating role in the influence of both privacy risk and privacy control on privacy disclosure willingness.

### Full Text

#### Preamble

#### A Model of Factors Influencing Privacy Disclosure Intention of Social Media Users: An Empirical Study

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**Abstract:** [Purpose/Significance] Frequent privacy leakage incidents involving social media users affect their willingness to disclose personal information. By revealing the influencing factors of social media users' privacy disclosure intention, this study provides references for social media platform operators to optimize their services. [Method/Process] Based on privacy calculus theory, communication privacy management theory, and other frameworks, this paper constructs a model of social media users' privacy disclosure intention from dual perspectives of individual rational and emotional factors. Using WeChat as a case study, 468 valid questionnaires were collected through an online survey, and the Partial Least Squares Structural Equation Modeling (PLS-SEM) method was employed to validate the model. [Result/Conclusion] The findings reveal that from a rational perspective: privacy control positively influences privacy disclosure intention, while privacy risk and privacy concerns negatively affect it; privacy risk positively influences privacy concerns, and privacy control negatively influences privacy concerns. From an emotional perspective: social media trust and habit positively influence privacy disclosure intention, while role stress negatively affects it. Privacy concerns partially mediate the effects of both privacy risk and privacy control on privacy disclosure intention.

**Keywords:** social media; privacy disclosure intention; communication privacy management; privacy calculus; role stress

Social media serves as an open interactive platform where users share their thoughts, browse others' updates, and engage in real-time communication [1]. With the proliferation of social media, privacy disclosure has become a common social practice for users to document their lives and shape their identities. By disclosing private information to other users or the platform itself, users obtain desirable social relationships or personalized services that satisfy their needs. However, frequent privacy disclosure behaviors also create opportunities for the unauthorized use of personal information. Privacy security issues have become increasingly prominent in the social media landscape. According to the 2018 Norton LifeLock Cybersecurity Survey, 77% of social media users restrict their information sharing to protect personal privacy [2].

Privacy disclosure, as an information-sharing behavior on social media, is also constrained by privacy security concerns. Yet such disclosure behavior is indispensable for the sustainable development of social media platforms. How to maintain users' privacy disclosure intention has become an urgent issue for social media service providers. Simultaneously, protecting users' legitimate rights to disclose privacy constitutes an important aspect of building a harmonious online environment.

Therefore, this study addresses the following questions: What factors influence social media users' privacy disclosure intention, and how do these factors affect it? To answer these questions, we construct a research model of social media

users' privacy disclosure intention from dual-factor perspectives of rationality and emotion [3]. From the rational factor perspective, we examine users' privacy disclosure intention resulting from conscious, systematic, and deep-level thinking, focusing on three variables: privacy risk, privacy concern, and privacy control. Additionally, this study innovatively incorporates an emotional factor perspective to investigate privacy disclosure intention arising from intuitive, shallow-level thinking, introducing three variables: social media trust, role stress, and habit.

As China's most widely used social media platform, WeChat is a strong-tie social media built on acquaintance relationships that provides information interaction services while posing potential privacy leakage risks [4]. Therefore, we select WeChat as our research object and employ Partial Least Squares Structural Equation Modeling (PLS-SEM) to verify the hypotheses in our research model and explore the internal mechanisms influencing social media users' privacy disclosure intention. Theoretically, this study broadens the research perspective in the existing social media privacy disclosure field and more comprehensively reveals the influencing mechanisms of privacy disclosure intention. Practically, it provides relevant countermeasures for protecting users' privacy security and offers reference approaches for social media service providers to maintain users' privacy disclosure intention and improve operational capabilities.

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## **Introduction**

Drawing on Lu Xiaobin et al.'s experience in reviewing cloud computing adoption literature [5], this study categorizes relevant research on social media users' privacy disclosure behavior intention into three types:

### **2.1 Theoretical Extension Research**

Theoretical extension research refers to studies that add new variables or redefine existing variables based on a single theory to form a new model. In the

social media privacy disclosure field, theoretical extension models have been built upon privacy calculus theory, trust theory, social capital theory, and others. Privacy calculus theory-based research treats users' privacy disclosure on social media as a rational exchange behavior, examining how perceived costs and benefits influence disclosure intention [6]. Y. Sun et al. evolved utilitarian and entertainment benefits from perceived benefits, further extending the privacy calculus model [7]. Some studies incorporated trust variables into privacy calculus theory [8-9]. H. Krasnova et al. also introduced variables such as uncertainty avoidance and individualism to explore how different cultural factors affect social media users' privacy disclosure behavior [9]. Additionally, Niu Jing et al. built a theoretical extension model based on trust theory, dividing trust into social media trust and online interpersonal trust, and added privacy risk perception variables to examine trust's influence on privacy risk perception and self-disclosure intention [10]. Social capital theory-based extension research investigated how various forms of social capital affect privacy disclosure, with R. Chen introducing identification, trust, and reciprocity as three types of social capital to explore their internal influences and effects on privacy disclosure [11].

## 2.2 Theoretical Combination Research

Theoretical combination research refers to studies that integrate two or more theories to construct models more suitable for the research context. Existing research primarily combines privacy calculus theory with other theories. For example, Li Qi et al. explored the influence of privacy calculus and social capital on privacy disclosure intention among Weibo and WeChat users [12]. C. Cheung et al. treated social media privacy disclosure as a social exchange behavior, dividing variables into perceived benefits and costs to examine influencing factors from a rational calculation perspective [13]. Li Haidan [14], Sun Xiaoling [15], and F. Xu [16] combined privacy calculus theory with the Theory of Planned Behavior to study factors affecting privacy disclosure from attitudes, subjective norms, and perceived control perspectives. Li Haidan [14] and L. Zhao et al. [17] applied fairness theory to examine the relationship between perceived fairness and social media privacy disclosure. Zhang Yue [18] and S. Mouakket [19] combined privacy calculus theory with the Technology Acceptance Model to investigate how perceived ease of use and usefulness affect disclosure intention.

## 2.3 Theoretical Integration Research

Theoretical integration research employs multiple theories and introduces relevant variables to form integrated research models. For instance, Guo Hailing et al. built an integrated model for social media privacy disclosure intention by introducing privacy concern and privacy tendency variables based on privacy calculus theory and communication privacy management theory [6]. H. C. Ko added positive feedback variables to a model combining privacy calculus and habit theory [20]. S. Sharm et al. integrated perceived usefulness and perceived enjoyment into a model based on communication privacy management theory

and information exchange fairness theory [21].

In summary, existing research provides a rich foundation for studying social media users' privacy disclosure intention, with privacy calculus theory and communication privacy management theory being the most widely used. Privacy calculus theory analyzes privacy disclosure intention through a model of privacy cost-benefit calculations, while communication privacy management theory manages privacy disclosure behavior through privacy boundary control [6]. These theories guide users' privacy disclosure intention through rigorous calculation and control of individual pros and cons, providing references for constructing the rational factor perspective in this study.

However, existing literature offers room for further research. Current studies are primarily based on the economics "rational person" assumption, applicable to scenarios where users conduct rational analysis and calculation. Yet with deepened social media use, complex interpersonal relationships and trust in platforms continuously blur users' privacy boundaries, leading to irrational privacy disclosure behaviors. Specific emotional elements in different contexts, pressure elements formed between different actors, and habitual elements among participants all influence privacy disclosure intention. This new context gradually weakens the influence of the rational perspective on privacy disclosure decision-making processes, while emotional factors such as emotion, habit, and pressure play crucial roles. However, few existing studies systematically explain social media users' irrational privacy disclosure behaviors. Therefore, this study investigates privacy disclosure intention from dual perspectives of individual rationality and emotion, combining privacy calculus theory and communication privacy management theory with role stress, habit, and social media trust variables to construct an integrated theoretical model. Through empirical research using self-reported data from social media users, this study more reasonably explains social media users' privacy disclosure intention.

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### 3 Theoretical Foundation

#### 3.1 Privacy Calculus Theory

Privacy calculus theory, proposed by R. S. Laufer and M. Wolfe [22], is an important theory in privacy decision-making research, with calculation being its core concept [23]. The theory posits that privacy disclosure depends on users' calculation of risks and benefits. When perceived benefits outweigh risks, users choose to disclose; when benefits are smaller than risks, privacy disclosure intention decreases [15]. Currently, social media has become a popular context for applying privacy calculus theory [6], with numerous studies using it to reveal factors influencing social media users' privacy disclosure intention.

Privacy risk and privacy concern are common constructs in privacy calculus theory. Privacy concern serves as a more intuitive indicator of users' privacy risk

perception, and both typically act as cost factors inhibiting privacy disclosure intention. Against the backdrop of frequent privacy security incidents on social media in recent years, this study focuses on risks and costs from the perspective of privacy calculus theory as part of the rational factor perspective. Therefore, we selected privacy risk and privacy concern variables to examine how users' privacy risk perception affects privacy concern levels, and how privacy risk and privacy concern influence social media users' privacy disclosure intention.

### 3.2 Communication Privacy Management Theory

Communication Privacy Management Theory (CPM), proposed by S. Petronio [24], treats social media users' privacy disclosure as a communication behavior [25] and introduces the concept of privacy boundaries to control and manage personal privacy, making it an important theory in privacy disclosure research. Social media brings more diverse interaction partners than offline life, requiring users to continuously adjust their privacy boundaries to balance the concealment and disclosure of personal information.

The core of CPM lies in privacy control. Users' privacy control means their ability to manage privacy boundaries [6], with adjustments to personal privacy boundaries reflecting changes in privacy disclosure intention. Social media platforms emphasize the impact of privacy control on users' privacy disclosure intention, often providing corresponding privacy permission settings to maintain users' disclosure intention. To examine whether these privacy control measures can effectively maintain users' privacy disclosure intention, this study introduces privacy control variables in the rational factor perspective to explore how this rational control capability affects users' disclosure intention. Additionally, trust in social media platforms leads users to open their privacy boundaries [26]. As users engage more deeply with social media, platforms can collect large amounts of user privacy information. Only when users believe that social media can guarantee their privacy security will they boldly disclose private information on these platforms. Therefore, we include social media trust as an important factor potentially affecting privacy disclosure intention in the emotional factor perspective. CPM's concept of dynamic privacy boundary changes explains the influence of privacy control and social media trust on privacy disclosure intention, making it applicable to this study.

### 3.3 Privacy Disclosure Decision-Making from Rational-Emotional Perspectives

Emotionality is relative to rationality, generally referring to the cognitive form or stage of sensation, intuition, and representation formed when external stimuli act on human sensory organs. Emotional behavior, or irrational behavior, often makes impulsive or altruistic decisions based on immediate internal emotions and past experiences [27]. Rationality, in contrast, emphasizes understanding the essence of things and obtaining rational knowledge through rational capacity [28]. Rational behavior makes optimal decisions based on cost-benefit cal-

culations. Emotional and rational behaviors are not mutually exclusive; both emotional and rational thinking coexist in people's cognitive processes [3].

This study builds upon rational and emotional factor perspectives to explore social media users' privacy disclosure intention from two different viewpoints. Compared to the emotional perspective, the rational perspective represents users' deeper understanding of social media privacy disclosure. Privacy risk and privacy control regulate individuals' privacy concern levels through rational thinking. Social media users' privacy risk increases their privacy concerns, while privacy control capabilities can alleviate privacy security issues and reduce anxiety caused by privacy risk. Privacy risk and privacy control can complement each other in explaining users' privacy concerns, thereby maintaining social media users' privacy disclosure intention. Therefore, we incorporate three variables—privacy risk, privacy concern, and privacy control—into the rational factor perspective.

The emotional perspective construction represents this study's innovation. Most privacy disclosure theories apply under the premise of users' rational decision-making [29], with the limitation of neglecting the power of emotional factors in privacy decisions [30]. Existing research confirms that emotion plays an important role in consumer decision-making [31-32], leading us to believe that emotional factors also exert non-negligible influence on user behavior intention in the social media privacy disclosure domain. While many studies explaining antecedents of privacy disclosure have gradually incorporated emotional factors, they have not systematically distinguished between rational and emotional perspectives. Variables reflecting users' past behavioral experience (habit), emotional aspects (pleasure, anger, trust, stress), and personal traits (optimism, impulsivity) documented in previous literature all represent shallow cognitive emotional factors [33]. Users' habits of self-disclosure on social media form from past behaviors in stable, repetitive environments where behavior regulation becomes increasingly automatic [34]. Therefore, we select habit, social media trust, and role stress from the emotional factor perspective as influencing factors of social media users' privacy disclosure intention.

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## 4 Research Hypotheses and Model

### 4.1 Research Hypotheses

**Privacy Risk** is users' expectation of losses resulting from privacy disclosure behavior [35]. When users believe that disclosing personal information on social media will endanger themselves, their privacy disclosure intention decreases. Using social media involves disclosing personal information to specific users or platforms. This behavior of making private information more public inevitably entails privacy risk. In the social media context, privacy risk primarily stems from: profit-driven use of privacy information, information dissemination, and unauthorized access [6]. Based on privacy calculus theory, privacy disclosure

is an action users take after weighing risks and benefits [7]. Therefore, privacy risk acts as an inhibiting factor affecting users' privacy disclosure intention. Li Haidan et al.'s survey of university students found that perceived risk showed a significant negative correlation with privacy disclosure intention in social media contexts [14]. Based on this, we argue that the higher the privacy risk social media users perceive, the lower their privacy disclosure intention. Therefore:

**H1: Privacy risk negatively affects privacy disclosure intention.**

Privacy risk triggers users' concerns about personal privacy security issues. The Theory of Reasoned Action posits that individuals' predicted behavioral outcomes dominate their behavioral attitudes. When users have negative expectations about privacy disclosure outcomes, they respond to privacy disclosure with more negative emotions or attitudes [16]. This anxiety that increases with privacy risk represents high privacy concern [23]. Previous studies have confirmed privacy risk's effect on privacy concern. For example, Zhang Xuebo et al. found a positive correlation between social network privacy security and privacy concern [36]; F. Xu et al. confirmed that privacy risk positively affects privacy concern [16]; and Zhu Hou et al. argued that in the sharing economy context, stronger perceived risk leads to higher privacy concern [9]. Based on this, we argue that the higher the privacy risk social media users perceive, the higher their privacy concern level. Therefore:

**H2: Privacy risk positively affects privacy concern.**

**Privacy Concern** is users' worry about potential losses from privacy security issues [6], including four measurement dimensions: collection of privacy data, unauthorized secondary use, inappropriate access, and errors [37]. Users can be categorized into three types based on privacy concern level: high concern, pragmatist, and unconcerned [17]. When users have high privacy concern levels, they reduce their privacy disclosure intention [9, 38]. High privacy concern individuals have more acute perception of risks from privacy disclosure [18] and experience negative emotions such as anxiety and doubt when disclosing privacy. Based on the user adaptation coping model, social media users choose to reduce privacy disclosure intention to decrease emotional discomfort [38]. H. Krasnova et al. noted that users with high privacy concern feel anxious and frustrated when they cannot manage their privacy information during self-disclosure on social media, which limits their privacy disclosure [9]. Based on this, we argue that individuals with higher privacy concern have lower privacy disclosure intention. Therefore:

**H3: Privacy concern negatively affects privacy disclosure intention.**

According to Communication Privacy Management Theory, **Privacy Control** represents users' authority over personal privacy information. Users should have the freedom to control whether to disclose privacy on social media and to control the visibility scope of personal privacy information. When users are confident in their privacy control capabilities, their privacy concern level significantly decreases. To enhance user privacy control, some social media platforms provide

functions to modify privacy permissions and inform users about relevant privacy policies [39]. To some extent, these measures make platforms' privacy processing and protection methods transparent, reducing users' post-disclosure uncertainty concerns about their privacy. F. Xu et al. also identified four measures social media platforms use to enhance user privacy control and confirmed that improving privacy control can effectively reduce users' privacy concern [16]. Based on this, we argue that stronger privacy control capability leads to lower privacy concern. Therefore:

**H4: Privacy control negatively affects privacy concern.**

According to the Theory of Planned Behavior, behavioral control capability directly affects users' behavioral intention [15]. When users have strong control over privacy information, they are more willing to disclose personal privacy information on social media. Based on Communication Privacy Management Theory, privacy control can be viewed as users' dominance over their privacy boundaries [6]. With higher privacy control levels, users perceive their privacy boundaries as more secure and attempt to expand these boundaries, increasing privacy disclosure intention [33]. The effect of privacy control on privacy disclosure intention has been confirmed in previous studies. For example, L. N. Zlatolas et al. found that Facebook users' privacy control had no significant effect on disclosure intention [40], while Guo Hailing et al. found that perceived information control positively affected privacy disclosure intention [6]. Based on this, we argue that social media users' privacy control level affects their privacy disclosure intention—the higher the privacy control level, the stronger the disclosure intention. Therefore:

**H5: Privacy control positively affects privacy disclosure intention.**

**Trust** is defined as “the expectation that the other party will choose behavior consistent with one's expectations even when alternative options exist” [12], and it is a prerequisite for self-disclosure behavior [11]. In social media contexts, trust includes trust in the platform and trust in other users. **Social Media Trust** refers to users' belief that social media platforms are reliable and ethical [35]. Only when users consider social media platforms trustworthy will they disclose self-information on these platforms. First, social media trust as a positive emotion can weaken users' privacy risk perception [10] and reduce uncertainty concerns about social media usage costs [13]. According to privacy calculus theory, users recalculate the benefits and risks of privacy disclosure behavior, thereby participating more actively in social media interactions [8]. Based on Communication Privacy Management Theory, when users trust social media, they believe their information is protected [41] and choose to break or expand existing privacy boundaries, increasing privacy disclosure intention [6]. R. Chen et al. used social capital theory to confirm that trust positively affects self-disclosure [11]. Based on this, we argue that the higher users' social media trust, the stronger their privacy disclosure intention. Therefore:

**H6: Social media trust positively affects privacy disclosure intention.**

The concept of “role” originates from theater and has been widely applied in social psychology. Role theory is premised on shared understanding of relationship rules, focusing on different roles individuals play in society and the various expectations they accept [42]. **Role Expectation** is an important concept referring to behaviors that a role should fulfill [43]. Each role has corresponding expectations, while every individual simultaneously assumes multiple different roles in social life, such as student, child, and friend. Social media brings multiple roles together on the same platform, increasing the difficulty of role switching. When individuals anticipate that their abilities or resources cannot meet the demands of multiple roles and their transformations, accompanied by negative consequences [44], they experience **Role Stress**. Role stress mainly stems from three aspects: role overload, role conflict, and role ambiguity [45]. Role overload occupies too much time and energy, preventing individuals from receiving new resources. Due to limitations in cognitive resources and abilities, individuals experience certain role pressure when coping with multiple roles [46]. Role conflict manifests when role expectations from different roles conflict or when different social circles have conflicting expectations for a particular role [44, 47]. These conflicts also create significant pressure for individuals. Meanwhile, when the authority scope of an individual’s role is unclear, role stress also affects users’ emotions and behaviors [44].

Role stress in social network environments originates from the currently prevalent phenomenon of social overload. Social media platforms bring complex interpersonal relationships, where individuals hold multiple roles on the same platform and must provide different social support for different roles. When users feel they provide excessive social support or when multiple roles generate inconsistent and incompatible expectations [33], conflicts between multiple roles create strong role pressure. Facing different role expectations, maintaining personal privacy boundaries becomes particularly important [46]. On one hand, users hope to present rich and satisfactory images through social media; on the other hand, the complexity of roles adds difficulty to personal image shaping. Users often set different privacy boundaries for different roles. However, as the number of roles individuals assume increases, their multiple privacy boundaries become blurred. When disclosing privacy, users find it difficult to distinguish which social circles can see their personal information. This difficulty increases with the number of roles, prompting users to directly shrink privacy boundaries and reduce privacy disclosure intention to minimize negative impacts on personal role shaping [46]. Z. Liu’s research confirmed that role conflict weakens users’ information control capability and enhances their perceived privacy risk, thereby reducing privacy disclosure intention [33]. Based on this, we argue that stronger role pressure leads to lower privacy disclosure intention. Therefore:

**H7: Role stress negatively affects privacy disclosure intention.**

B. Verplanken et al. define **Habit** as “a learned sequence of acts that automatically responds to specific situations and may affect specific goals and final conditions” [48]. Habit is considered automatic, subconscious, and thoughtless

action [19]. When users develop the habit of updating their status on social media, their privacy disclosure intention becomes stronger than that of users without such habits. Dual-process theory suggests that users' decision-making processes are jointly controlled by automatic processing and controlled processing [33]. Habit formation transforms users' information processing methods from high-intensity to low-intensity mechanized processing [33]. Once a habit of privacy information disclosure forms, users automatically and mechanically repeat the behavior, thereby neglecting risk assessment of privacy disclosure [19]. Therefore, as a form of automatic processing, habit affects users' privacy disclosure intention in non-rational calculation environments. Research shows that bloggers' habit of writing blogs positively affects continuous self-disclosure [20]. S. Mouakket et al. confirmed that habit positively affects social media users' privacy information disclosure [19]. Based on this, we argue that social media users with privacy disclosure habits have stronger disclosure intention. Therefore:

**H8: Habit positively affects privacy disclosure intention.**

## 4.2 Research Model

Based on the above analysis, the research model of social media users' privacy disclosure intention is constructed as shown in Figure 1 [Figure 1: see original paper]. In the rational factor perspective, privacy risk and privacy concern variables derive from privacy calculus theory, while the privacy control variable comes from communication privacy management theory. In the emotional factor perspective, we introduce social media trust from communication privacy management theory, role stress from role theory, and the habit variable. C. Chang et al. found that factors such as Facebook usage time, number of Facebook friends, and gender differences affect Facebook users' self-disclosure behavior [49]. To eliminate the interference of individual demographic characteristic differences on social media users' privacy disclosure intention, we include gender, age, education level, daily time spent on WeChat Moments (usage time), number of friends on WeChat (friend count), and frequency of updates to WeChat Moments (update frequency) as control variables to reveal their interference effects on privacy disclosure behavior.

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## 5 Measurement Scale and Data Collection

### 5.1 Scale Design

All measurement scales in this study were adapted from existing mature scales and modified for WeChat. The questionnaire consists of two parts: The first part measures latent variables, including privacy concern, privacy risk, social media trust, privacy control, role stress, habit, and privacy disclosure intention. Each latent variable includes 4 measurement items, as shown in Table 1. Specifically,

privacy risk measurement references L. N. Zlatolas [26] and Z. Liu [33]; privacy concern measurement references L. N. Zlatolas [26, 40] and F. Xu [16]; privacy control measurement integrates Z. Liu [33], F. Xu [16], and C. Cheung [13]; social media trust measurement adapts C. Cheung [13]; role stress measurement items derive from S. Zhang [47]; habit measurement integrates H. C. Ko [20] and Z. Liu [33]; and privacy disclosure intention measurement references Li Haidan [14] and H. C. Ko [20]. The second part collects basic personal information including gender, age, education level, frequency of WeChat Moments updates, daily time spent on WeChat Moments, and number of WeChat friends.

To ensure content validity of questionnaire items, this study invited WeChat users and experts in social media user behavior to conduct a pre-test before the formal survey. Based on feedback from the pre-test, some questionnaire items were revised to generate the final measurement scale for latent variables. All items used a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree), with specific items shown in Table 1 .

## 5.2 Sample Descriptive Statistics

WeChat is one of China’s most influential social media platforms, with users from diverse professional and social backgrounds whose behaviors are representative. Therefore, we targeted WeChat users as survey respondents, creating an online questionnaire through the “Wenjuanxing” platform (<https://www.wjx.cn>) and distributing it via WeChat, QQ, Weibo, and other tools. Each IP address could submit only one response. After excluding questionnaires with identical answers to all items or excessively short completion times [43], 468 valid questionnaires were collected. The descriptive statistics of respondents are shown in Table 2 .

Among the 468 samples, 93.8% had bachelor’ s degree or higher education, and 92.3% were under 40 years old, consistent with user characteristic data in the “2017 China Mobile Social User Insight Report” [50]. Male and female users accounted for 46.8% and 53.2% respectively, approaching a balanced ratio. Respondents’ WeChat Moments update frequencies ranged from “daily updates” to “almost never updates,” with daily time spent on WeChat Moments and number of WeChat friends also showing relatively dispersed distributions. This indicates that respondents had varying degrees of WeChat and Moments usage and relatively high education levels, enabling them to provide reasonable answers based on their own situations, making the sample representative.

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## 6 Data Analysis

We chose Partial Least Squares Structural Equation Modeling (PLS-SEM) instead of Covariance-Based SEM (CB-SEM) for the following reasons [51-52]: PLS does not require normally distributed data; PLS is prediction-oriented and provides optimal predictive accuracy; PLS is suitable for analyzing complex structural equation models with many latent and indicator variables; PLS can

simultaneously analyze both structural models (relationships between independent and dependent variables) and measurement models (relationships between latent variables and their indicators); and PLS should be used when latent variable scores are needed for subsequent analysis.

## 6.1 Measurement Model Analysis

We used SmartPLS 3.0 software to conduct reliability, convergent validity, and discriminant validity analyses, with results shown in Table 3 and Table 4 .

**(1) Reliability:** The Cronbach' s  $\alpha$  values for latent variables ranged from 0.761 to 0.944, and Composite Reliability (CR) values ranged from 0.847 to 0.921, all exceeding the 0.7 threshold [53]. Therefore, the measurement items have high reliability and effectively measure the latent variables.

**(2) Convergent Validity:** All latent variables included at least 3 measurement items, with standardized factor loadings all above 0.6 (see Table 3) and P-values below 0.001. All Average Variance Extracted (AVE) values exceeded 0.5. Therefore, the measurement items have high convergent validity.

**(3) Discriminant Validity:** According to the Fornell-Larcker criterion, the square root of each latent variable' s AVE should be higher than its correlation coefficients with other latent variables. The diagonal values in Table 4 represent the square roots of AVE values, while off-diagonal values represent correlation coefficients between latent variables. Table 4 shows the lowest diagonal value is 0.763, while the highest off-diagonal value is 0.608, indicating high discriminant validity among latent variables.

## 6.2 Structural Model Analysis

The structural model analysis results are shown in Figure 2 [Figure 2: see original paper] and Table 5 . Structural model evaluation focuses on three aspects [53]: Standardized Root Mean Square Residual (SRMR), coefficient of determination ( $R^2$ ), and path coefficient significance levels.

The model' s SRMR value is 0.054, below the 0.08 threshold, meeting PLS-SEM model fit requirements. The variance explanation rate ( $R^2$ ) for privacy disclosure intention is 0.582, meaning 58.2% of variance is explained, exceeding the  $R^2$  requirement for consumer behavior research proposed by J. F. Hair et al. [52].

**(1) Effects of Rational Factors on Privacy Disclosure Intention:** Privacy risk ( $\beta = -0.105$ ,  $p < 0.01$ ) has a significant negative effect on social media users' privacy disclosure intention, supporting H1. Privacy risk ( $\beta = 0.405$ ,  $p < 0.01$ ) has a significant positive effect on privacy concern, supporting H2. This shows that increased privacy risk heightens users' privacy concern and reduces disclosure intention. Privacy concern ( $\beta = -0.091$ ,  $p < 0.05$ ) negatively affects privacy disclosure intention, supporting H3, indicating that higher privacy concern reduces social media privacy disclosure intention. Privacy control ( $\beta =$

-0.207,  $p < 0.01$ ) significantly negatively affects privacy concern, supporting H4. Privacy control ( $\beta = 0.127$ ,  $p < 0.01$ ) significantly positively affects privacy disclosure intention, supporting H5. This demonstrates that privacy control alleviates privacy concern, and stronger control capability increases disclosure intention.

**(2) Effects of Emotional Factors on Privacy Disclosure Intention:** Social media trust ( $\beta = 0.087$ ,  $p < 0.05$ ) positively affects privacy disclosure intention, supporting H6, showing that increased platform trust enhances disclosure intention. Role stress ( $\beta = -0.346$ ,  $p < 0.01$ ) significantly negatively affects privacy disclosure intention, supporting H7, indicating that greater role pressure reduces disclosure intention. Habit ( $\beta = 0.374$ ,  $p < 0.01$ ) significantly positively affects privacy disclosure intention, supporting H8, showing that users with disclosure habits have stronger intention.

**(3) Effects of Control Variables:** Gender, age, education level, Moments update frequency, and usage time do not significantly affect privacy disclosure intention. The number of WeChat friends affects privacy disclosure intention at the 10% significance level, possibly because friend count reflects personal social status and personality to some extent. Users with more friends tend to be more extroverted with broader social circles, and in the context of massive information on social media, they have higher intention to disclose personal information.

**(4) Mediating Effect of Privacy Concern:** We used the bootstrap method with 5,000 samples and 95% bias-corrected confidence intervals to test for mediating effects. If the confidence interval does not include 0, the mediating effect exists. Following Z. Liu et al. [33], we further judged mediation through three conditions: (1) significant coefficient when dependent variable (DV) regresses on independent variable (IV); (2) significant coefficient when mediator (M) regresses on IV; (3) significant coefficient for M when DV regresses on both M and IV. Partial mediation exists when the IV coefficient in (3) is smaller than in (1). We used the PROCESS plugin in SPSS 24 to analyze privacy concern's mediating role between privacy risk/privacy control and disclosure intention, with results shown in Table 6. The results show that privacy concern partially mediates both the relationship between privacy risk and disclosure intention and the relationship between privacy control and disclosure intention.

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## 7 Conclusions and Discussion

### 7.1 Conclusions

This study re-examines social media users' privacy disclosure research based on privacy calculus theory and communication privacy management theory, constructing a research model from dual rational-emotional perspectives. Rational factors include privacy risk, privacy concern, and privacy control; emotional factors include role stress, habit, and social media trust. Using online questionnaire

data and PLS-SEM for hypothesis testing, we obtain the following conclusions:

**(1) From the rational factor perspective**, based on privacy calculus theory and communication privacy management theory, privacy risk, privacy concern, and privacy control all affect social media users' privacy disclosure intention. Privacy risk negatively affects disclosure intention, consistent with Sun Xiaoling et al.' s findings [15]. When users anticipate that privacy disclosure may lead to leakage, their intention to disclose personal information decreases. Privacy concern negatively affects disclosure intention, consistent with Guo Hailing et al.' s conclusions [6]. Users' worry and concern about privacy issues reduce their willingness to disclose personal information on social media. Meanwhile, privacy risk significantly positively affects privacy concern, consistent with F. Xu et al.' s findings [16]. When users sense that disclosure brings privacy security issues, their privacy concern level increases. Privacy control positively affects disclosure intention and negatively affects privacy concern, consistent with F. Xu [16] and L. Zhao [17]. When individuals can control their privacy information and its post-disclosure visibility, their disclosure intention increases. If unable to reasonably control information posted on social media, users develop privacy concerns accompanied by negative emotions like anxiety and irritability.

**(2) From the emotional factor perspective**, social media trust, role stress, and habit all significantly affect privacy disclosure intention. Social media trust positively affects disclosure intention, consistent with Niu Jing et al.' s findings [10]. The more users trust the platform, the stronger their disclosure intention. As a positive emotion, trust reduces users' attention to privacy issues and related risk assessments, broadening their privacy boundaries. Role stress negatively affects disclosure intention, consistent with Z. Liu' s findings [33]. When users experience pressure from multiple roles on social media, their privacy disclosure intention decreases. Habit positively affects disclosure intention, consistent with S. Mouakket et al.' s findings [19]. Users with social media privacy disclosure habits show higher disclosure intention.

**(3) Privacy disclosure intention is determined not only by individual rational factors but also by emotional factors.** The two perspectives complement each other in explaining social media users' privacy disclosure intention. The rational perspective relies on users' rational thinking to analyze influencing factors, while the emotional perspective explains disclosure intention when users are in emotional (non-rational thinking) states.

## 7.2 Discussion

**7.2.1 Theoretical Contributions** Compared with existing research, this study' s innovations mainly include:

**(1) The constructed model of social media users' privacy disclosure intention incorporates both individual rational and emotional dual factors, expanding research perspectives in this field.** Previous studies mostly relied on privacy calculus theory and communication privacy manage-

ment theory. This study introduces role theory and habit theory, examining how role stress and habit affect privacy disclosure intention while exploring privacy concern' s mediating role between privacy risk/control and disclosure intention, enriching theoretical research in the social media privacy disclosure domain.

**(2) Regarding privacy calculus theory and communication privacy management theory**, this study analyzes their rational thinking processes, categorizing privacy risk, privacy control, and privacy concern as rational factors to explore how they affect disclosure intention, extending understanding of both theories. In terms of role theory, we introduce role stress into privacy disclosure research to explore its effects, expanding role theory' s application. In the privacy disclosure field, the rational-emotional classification perspective better understands disclosure intention mechanisms. Compared with previous single-level factor studies, this research more comprehensively understands privacy disclosure intention from both rational and emotional frameworks, expanding original theories in the privacy disclosure domain.

### 7.2.2 Managerial Implications From the rational factor perspective:

1. **Reduce users' privacy risk and privacy concern.** Social media users should comply with platform privacy management regulations, avoid actively leaking confidential personal information, and refrain from arbitrarily forwarding others' images or information, thereby reducing privacy risk from the source and maintaining a harmonious social media environment. Social media regulators should remind users about privacy disclosure behaviors and caution against disclosing private information. Regulators should also formulate more standardized social media privacy policies, such as specifying minimum standards for platforms to obtain privacy permissions. When users' granted privacy permissions meet these minimum standards, platforms cannot reduce basic service quality because users refuse to provide more privacy information. Clear penalties should be imposed on platforms or individuals violating relevant policies, with violations disclosed to users to regulate platform and user behaviors, reduce privacy risk, and protect users' legitimate disclosure intentions. Social media platforms should improve privacy protection technologies, strengthen internal management of user privacy information, update privacy management technologies promptly, and prevent improper human operations and illegal external intrusions to reduce privacy risk.
2. **Enhance users' privacy control capability.** Social media users should regularly check the privacy information collection permissions of frequently used platforms and cancel permissions that do not affect functional use to ensure individual privacy control. Platforms should improve and publicize their privacy management mechanisms, presenting relevant privacy management regulations through pop-up windows after users first use or update the platform to reduce privacy risk and enhance control. Users

should reasonably group their friends and set different permissions for different groups. Platforms can set basic role tags (e.g., family, friends, colleagues) to simplify grouping operations. These measures can alleviate users' increasing role stress and maintain their privacy disclosure intention.

**From the emotional factor perspective:**

1. **Enhance users' trust in social media platforms.** Platforms should strengthen privacy protection and integrity education for internal staff, warning them against abusing user privacy information for personal gain. Staff should adhere to privacy regulations and sign corresponding privacy commitments to establish a good platform brand image. Platforms should proactively sign privacy protection agreements with users and list privacy information management measures in detail to ensure users understand how platforms manage privacy, thereby gaining user trust. The government should enact and improve laws such as the Personal Information Protection Law and Data Security Law to protect users' legitimate privacy disclosure rights and regulate platform behavior through legal means, enhancing user trust.
2. **Reduce users' role stress.** Social media users' role stress originates from social overload. Users should concentrate time on processing social media messages to alleviate fatigue from inability to focus attention. They should also manage social media relationships reasonably, reducing unnecessary connections—for example, by regularly checking and cleaning friend lists and setting different privacy boundaries for different circles.
3. **Protect users with privacy disclosure habits.** The study found that individuals with social media privacy disclosure habits have strong disclosure intention. Accordingly, platforms and regulators should focus on these users, monitor their disclosure data, define disclosure levels, and remind users with high disclosure tendency and potential privacy security issues—for instance, reminding them to disable location information when disclosing privacy, narrow the visibility range of Moments posts, and use community features to release personal information while ensuring privacy security.

**7.2.3 Research Limitations** First, regarding the sample, this study primarily focused on undergraduate WeChat users. Whether the conclusions apply to other user groups requires further verification. Future research can expand the sample range to enhance model robustness. Second, regarding influencing factors, future studies can explore other factors affecting disclosure intention, such as user privacy information disclosure motivations (relationship maintenance, self-presentation, etc.). Additionally, whether different social media privacy disclosure settings (public, private, partial visibility, exclude certain people) affect users' privacy disclosure intention warrants investigation. Finally, regarding methodology, future research can employ psychological experimental methods

for cross-cultural comparisons of social media users' privacy disclosure.

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