

Factors Influencing WeChat Users' Regret Emotion and Coping Strategy Selection: A Postprint Based on SEM and fsQCA

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Abstract

[Purpose/Significance] With the rapid popularization and continuous penetration of social media applications, numerous users are confronted with excessive use issues that interfere with their normal study, work, and daily life, triggering negative emotions such as anxiety, fatigue, and regret. Examining the antecedents of user regret emotions and the selection of coping strategies holds significant implications for social media service providers to alleviate users' negative emotions, enhance user loyalty, and promote healthy social media usage.

[Method/Process] This study takes WeChat users as research subjects and constructs a model examining the antecedents of regret emotions and coping strategies in the context of WeChat overuse from the perspectives of social overload, information overload, and system feature overload, while considering the influences of user switching costs and self-emotion management. A combined approach of Structural Equation Modeling (SEM) and fuzzy-set Qualitative Comparative Analysis (fsQCA) is employed for analysis.

[Results/Conclusions] WeChat users' level of involvement positively influences their perception of social overload, information overload, and system feature overload, as well as their switching costs, thereby exacerbating users' regret emotions; The stronger users' regret emotions and the higher the switching costs they face, the more inclined they are to adopt emotion-focused coping strategies, followed by problem-focused coping strategies; Higher levels of self-emotion management among WeChat users increase the likelihood of adopting appropriate coping strategies to alleviate regret emotions; The qualitative comparative analysis reveals two antecedent configurations that trigger WeChat users' regret emotions, four antecedent configurations that trigger the selection of problem-focused coping strategies, and one antecedent configuration that triggers emotion-focused coping strategies.

Full Text

Preamble

Antecedents and Coping Strategies of WeChat Users' Regret: A Study Based on SEM and fsQCA

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Abstract: [Purpose/Significance] With the rapid popularization and continuous penetration of social media applications, numerous users face problems of overuse that disrupt their normal study, work, and daily lives, triggering negative emotions such as anxiety, fatigue, and regret. Exploring the factors that influence user regret and the selection of coping strategies is of great significance for social media service providers to alleviate users' negative emotions, enhance user loyalty, and promote healthy social media usage. [Method/Process] Taking WeChat users as the research object and drawing upon perspectives of social overload, information overload, and system function overload, this study incorporates the influences of user switching costs and self-emotion management to construct a model of factors influencing regret over WeChat overuse and corresponding coping strategies. The analysis employs a combination of Structural Equation Modeling (SEM) and fuzzy-set Qualitative Comparative Analysis (fsQCA). [Results/Conclusions] (1) WeChat user involvement positively influences users' perceptions of social overload, information overload, and system function overload, as well as their switching costs, thereby intensifying user regret; (2) The stronger the user's regret and the higher the switching costs they face, the more likely they are to adopt emotion-focused coping strategies, followed by problem-focused coping strategies; (3) The higher the level of self-emotion management among WeChat users, the more likely they are to adopt appropriate coping strategies to alleviate their regret; (4) Qualitative comparative analysis reveals two antecedent configurations that trigger WeChat user regret, four antecedent configurations that trigger problem-focused coping strategies, and one antecedent configuration that triggers emotion-focused coping.

Keywords: social media; perceived overload; regret; coping strategies

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In recent years, with the excessive proliferation of social media, users suffer from information overload while sharing enjoyable experiences. Negative emotions such as fatigue, exhaustion, and regret have spread among social media users, causing an increasing number to shift from active to passive usage. Kantar's 2015 "China Social Media Impact Report" revealed that 46% of social media users merely browse information without commenting or interacting, while only

6% participate in group discussions [1].

To encourage active usage, social media service providers have introduced various features such as games, group chats, themed forums, and lifestyle e-commerce channels [2]. However, as services and functions multiply, users spend more time and energy on social media, generating vast amounts of accumulated information that increases their information processing burden. When this exceeds users' limited information processing capacity, they perceive information overload [3-4]. Additionally, the growing number of friend connections and social requests in social media intensifies users' perception of social overload [5-6]; frequent version upgrades and new function adaptations also increase users' perception of system function overload [4,7]. The stronger the perception of overload, the more likely users are to shift from excitement and pleasure to fatigue [8-9], and even trigger emotional exhaustion [10-11] and regret [6,12].

When social media users experience emotional exhaustion, their intention to discontinue use strengthens [10-11], potentially leading to discontinuance behaviors to alleviate negative emotions [13]. Current research on negative emotions triggered by social media overload has primarily focused on fatigue [7-9] and exhaustion [10,12,14], with fewer studies examining social media regret. As a comprehensive information service platform integrating information exchange, news entertainment, office collaboration, and e-commerce, WeChat's user scale, functions, and influence far exceed other social media platforms. Therefore, WeChat users are more likely than users of other platforms to experience overload perceptions and negative emotions. However, constrained by switching costs, even when negative emotions are triggered, most users do not simply choose to discontinue or abandon WeChat. Instead, they may adopt diversified coping strategies such as ignoring friend messages, blocking Moments, lurking, leaving groups, or disabling certain functions, or they may employ emotion-focused strategies like seeking social support, venting emotions, and self-blame. The possible reason for these behavioral differences lies in users' varying levels of self-emotion management—generally, users with high self-emotion management are more likely to accurately parse emotional information and employ appropriate strategies to reduce the adverse effects of negative emotions [15].

Based on this background, this study examines the influencing factors of WeChat user regret and strategic coping responses. Using the stressor-strain-outcome framework, it investigates the antecedents of WeChat user regret from an overload (stressor) perspective, and then explores coping behavior selection from a coping strategy (outcome) perspective. Considering that multiple equivalent paths may exist in triggering WeChat user regret and coping strategy selection, while traditional quantitative research cannot explain the complex causal relationships of interdependence among multiple antecedent conditions [16], this study introduces Qualitative Comparative Analysis (QCA) based on structural equation modeling.

2 Theoretical Analysis and Research Hypotheses

2.1 WeChat User Involvement and Overload Perception

Social media has become an indispensable social tool in daily life, while massive information processing and social demands continuously consume users' limited attention [12], easily generating overload perceptions that increase their physical and mental burden [17]. In the social media context, overload emphasizes users' perception of a media usage environment that exceeds individual processing capacity during social media use [12]. Social network user overload is mainly divided into social overload, information overload, and system function overload. Social overload refers to the social burden users gradually perceive from investing substantial time and energy to maintain social relationships and handle excessive social demands. Information overload reflects users' perception that the vast amount of information generated by social media exceeds their information processing capacity. System function overload reflects users' perception that the functions and services provided by social media exceed their actual needs [7]. Social media user involvement refers to the connection users perceive between themselves and social media activities based on intrinsic needs, values, and interests, manifested as attention and participation in social media [18]. User involvement can be measured by dimensions such as time and energy invested, usage frequency, and number of friends. Social media user involvement is an important factor influencing overload perception [14].

First, as a social media platform whose user scale far exceeds domestic and foreign counterparts, WeChat users with longer usage time and higher access frequency are more likely to establish social relationships with more people, resulting in larger friend networks. The growth in friend quantity also increases the likelihood of social interaction and receipt of more social support requests [19-20], such as requests for likes, forwards, comments, and votes from WeChat friends, leading to social overload perception. Social support requests from infrequently contacted or unfamiliar people particularly become a social burden, intensifying social overload perception [21]. Second, to cope with growing social requests and information processing demands, social media users often need to spend considerable time and energy, which conflicts with their limited information processing capacity, making information overload perception more frequent [7]. WeChat's massive accumulated chat records and Moments updates make it difficult for users to check and process information promptly, and the proliferation of low-value information makes it challenging to identify useful content, further intensifying information overload perception. Third, as WeChat users continuously access social media, they experience more functions and receive more service push notifications, unconsciously extending WeChat usage time and creating more opportunities to encounter additional functional services. This cyclical process may intensify system function overload perception. As WeChat software iterates and upgrades, its functions become increasingly complex—from initial chat, group chat, and Moments features to WeChat Pay, stickers, Official Accounts, mini-games, WeChat Sports, WeChat Reading, and

lifestyle e-commerce mini-programs (such as ride-hailing, food ordering, ticket booking, etc.) [22]—all of which overwhelm users and deepen system function overload perception. Therefore, we propose the following hypotheses:

H1a: The higher the degree of WeChat user involvement, the stronger the perception of social overload.

H1b: The higher the degree of WeChat user involvement, the stronger the perception of information overload.

H1c: The higher the degree of WeChat user involvement, the stronger the perception of system function overload.

2.2 WeChat User Perceived Overload and Regret

From a “counterfactual thinking” perspective, regret refers to the negative emotion people feel when they realize that making a different choice would have led to a better current state [23]. Counterfactual thinking is the primary cognitive process underlying regret, representing hypothetical thinking about past outcomes that is contrary to actual results [24], including upward and downward comparative thinking. People more frequently employ upward counterfactual thinking in daily life [25], which typically triggers negative emotions such as guilt, self-blame, regret, and remorse, subsequently affecting normal cognitive and behavioral activities [26].

The human brain can only maintain approximately 150 stable social relationships; beyond this number, relationships remain superficial [27]. However, most people’s WeChat contact lists far exceed this figure in real life. As social networks expand and social norm pressures increase, WeChat users frequently face excessive social support requests, which may intensify social overload perception and trigger negative emotional experiences. When expected outcomes are not what users desire, they are more likely to experience negative emotions [28]. Browsing friend information and Moments, replying to messages, and handling other friend requests consume substantial time and energy, disrupting original work or study plans [21] and leading to regret [6]. WeChat users may think, “If I hadn’t added so many WeChat friends or joined various unnecessary groups, I could have avoided many unnecessary social requests and troubles.” Such upward counterfactual thinking is likely to trigger user regret. Additionally, when users realize they have wasted considerable time and energy without gain or relaxation, they are likely to engage in upward comparison again. Repeated upward counterfactual thinking may intensify user regret. Therefore, we propose:

H2: The higher the social overload perceived by WeChat users, the stronger their regret.

As WeChat contacts increase, chat records and Moments updates continuously grow, while users’ information processing capacity remains limited [29]. Without actively setting Moments and Official Account permissions, users passively

receive large amounts of useless and complex information daily, such as check-in pictures, micro-business advertisements, and various voting links, leaving them overwhelmed and drowning in information. Excessive information causes confusion and makes effective selection difficult [30]. From a self-management perspective, social media information overload creates pressure and burden for users [31]. WeChat information overload often places users in a state of pressure and lack of self-control, and the stress and burden of information processing may trigger upward counterfactual thinking, leading to regret and efforts to restore control. Therefore, we propose:

H3: The higher the information overload perceived by users, the stronger their regret.

Although scholars have studied the impact of regret on user behavior [6], few have examined the influence of switching costs on regret from the perspective of regret antecedents. Cognitive appraisal theory posits that emotion is a psychological state resulting from cognitive evaluation of a specific event. When making switching decisions, customers typically evaluate perceived switching costs based on their own cognition, which may trigger emotional responses [35]. In the social network context, WeChat users involuntarily conduct comprehensive evaluations of various costs involved in switching to other social media. When evaluation results indicate that switching costs are too high to bear, users may have to continue using WeChat and endure the troubles caused by information overload, function overload, and social overload, greatly increasing the probability of repeated upward counterfactual thinking about overuse and intensifying regret. Therefore, we propose:

H4: The higher the system function overload perceived by users, the stronger their regret.

H5: The higher the degree of WeChat user involvement, the higher the switching costs.

2.3 WeChat User Switching Costs, Regret, and Coping Strategies

Switching costs refer to the various costs users must bear when switching from current services, products, or platforms to alternatives [33]. In the WeChat usage context, switching costs are viewed as various costs users must incur when abandoning WeChat and switching to alternative social media, including relationship switching costs, procedural switching costs, sunk costs, and risk costs. Relationship switching costs refer to potentially losing contact with some friends and the originally built WeChat social circle and personal image when switching to other social media. Procedural switching costs refer to the time and effort invested in migrating existing social relationships and becoming proficient with new social media. Sunk costs mainly refer to the unrecoverable time and energy WeChat users have spent to become proficient and build/maintain their WeChat social networks. Risk costs refer to the uncertainty risk perception of new social media service experiences after switching, i.e., the risk perception

that switching does not guarantee better experiences.

As users spend more time and energy on WeChat, the breadth and depth of their WeChat social networks further strengthen, and they may use more WeChat functions. Consequently, when considering switching to other social media, users feel stronger switching barriers, manifested as the feeling of being “locked in” to relationships based on economic, social, and psychological costs [34]. Therefore, we propose:

H6: The higher the switching costs for WeChat users, the stronger their regret.

Coping originates from psychology, referring to individuals’ cognitive and behavioral efforts to handle stressful situations involving important, potentially negative consequences [36]. When facing stress, individuals may adopt problem-focused coping and emotion-focused coping strategies to help reduce psychological tension [37]. The former refers to efforts to change or avoid contact with stress sources causing negative emotions; the latter refers to transforming one’s view of experienced events or emotions to soothe oneself and reduce stress. Coping theory has been widely applied in individual behavior research under different stress conditions, with scholars exploring more specific coping behaviors under these two dimensions.

P.R.E. Crocker and T.R. Graham found that athletes facing competition pressure typically engage in behaviors such as taking action, seeking instrumental social support, planning solutions, suppressing competitive activities, and increasing effort from a problem-focused coping perspective, while potentially seeking emotional social support, using humor, venting emotions, self-blaming, and positive thinking to relieve stress from an emotion-focused coping perspective [38]. S. Yi and H. Baumgartner found that consumers experiencing negative emotions simultaneously adopt certain behaviors from both problem-focused and emotion-focused coping strategies, with the former mainly including planning solutions, brave confrontation, and spiritual sustenance, and the latter including seeking social support, self-control, behavioral disengagement, positive reinterpretation, and calm acceptance [39]. Li Xu et al. empirically analyzed that social media users experiencing cognitive load adopt behaviors such as ignoring, exiting, lurking, and blocking to cope with usage fatigue [40]; while J.R. Baker et al., using MySpace as an example, found that social networking site users facing stress adopt problem-focused coping strategies such as planning solutions and instrumental support seeking, and emotion-focused coping strategies such as affirmative reconstruction, emotional support seeking, venting, and self-blame to relieve pressure [41].

This study examines coping strategies as a set of measures users adopt to cope with regret triggered by perceived overload during WeChat usage. Combining the WeChat daily usage context and drawing on relevant research [38,40-41], this paper posits that problem-focused coping strategies mainly include lurking, ignoring, blocking, and exiting behaviors, while emotion-focused coping strategies include seeking social support, venting emotions, and self-blame.

From the perspective of overload perception, the deeper the WeChat user involvement, the more likely user regret becomes. To relieve overload pressure and soothe their regret, users may abandon WeChat and switch to other social media. However, higher WeChat user involvement also means higher switching costs. Under the constraint of switching costs, users who experience regret may not easily switch to other social media applications but may instead tend to adopt various strategic usage behaviors. Specifically, constrained by switching costs, to alleviate their regret, users may adopt problem-focused coping strategies such as lurking, ignoring, blocking, and exiting—that is, they can selectively focus on useful information without creating content [42]; they can ignore friend messages and unused functions [43]; they can actively ignore and block certain WeChat groups [40]; or they can avoid direct contact with stress sources causing regret by leaving groups, unfollowing, or disabling Moments. While adopting problem-focused coping strategies, WeChat users may also communicate with friends about WeChat overuse troubles to gain understanding and support; they may feel guilty for wasting time and energy on WeChat; or they may vent regret through verbal hints or recalling positive social experiences. Therefore, we propose:

H7a: Switching costs have a significant positive effect on problem-focused coping.

H7b: Switching costs have a significant positive effect on emotion-focused coping.

H8a: Regret has a significant positive effect on problem-focused coping.

H8b: Regret has a significant positive effect on emotion-focused coping.

2.5 The Moderating Role of Self-Emotion Management

Self-emotion management reflects how individuals perceive and manage their own emotions and control, guide, and correct their behavior according to their own or others' emotional information [44]. Self-emotion management has potential influences on emotional reactions and coping behaviors during WeChat usage. First, self-emotion management helps WeChat users effectively identify negative emotions and their sources. C.I.C. Farh et al. [45] found that employees with higher self-emotion management can more accurately identify negative emotions caused by work stress. When WeChat users face regret caused by overload and switching costs, individuals with higher self-emotion management can better understand their current negative emotional state and further clarify the specific stress sources causing negative emotions. Second, high self-emotion management enables WeChat users to accurately process emotional information and employ appropriate strategies to manage negative emotions. People with strong self-emotion management can reduce over-excitement and are adept at handling the adverse effects of negative emotions [15,46], recovering more quickly from negative emotions [47]. In the WeChat usage context, users with higher self-emotion management have clearer understanding and awareness of regret; when

experiencing regret of equal intensity, users with high self-emotion management are more likely than those with low emotion management to choose problem-focused and emotion-focused coping strategies to alleviate negative emotional disturbances. Therefore, we propose:

H9a: Self-emotion management positively moderates the effect of regret on problem-focused coping; that is, WeChat users with higher self-emotion management are more likely to adopt problem-focused strategies when experiencing regret from WeChat usage.

H9b: Self-emotion management positively moderates the effect of regret on emotion-focused coping; that is, WeChat users with higher self-emotion management are more likely to adopt emotion-focused strategies when experiencing regret from WeChat usage.

In summary, this study constructs a research model of factors influencing WeChat user regret and coping strategies, as shown in Figure 1 [Figure 1: see original paper].

3 Research Methods

3.1 Questionnaire Design

To ensure content validity, this study adopted established scales from domestic and international literature as much as possible, making appropriate modifications based on the WeChat usage context to form an initial questionnaire. A five-point Likert scale was used to assess respondents' agreement with measurement items (1 = strongly disagree, 5 = strongly agree). Before the formal survey, a pretest was conducted. Through CITC analysis of the initial scale, items with CITC values less than 0.3 whose deletion would increase the latent variable's alpha value were removed or modified, resulting in the final questionnaire. Variables and measurement items are shown in Table 1.

3.2 Sample and Data Collection

This study employed street interception surveys with on-site questionnaire distribution and collection to obtain sample data. The survey was conducted from April 19 to May 1, 2019. A total of 500 questionnaires were distributed, and 361 were collected. After removing 58 questionnaires with excessively short completion times or identical answers, 303 valid questionnaires remained, yielding a valid response rate of 60.6%. The valid sample size met the requirements for structural equation modeling and fsQCA analysis. Respondents' demographic characteristics and WeChat usage patterns are detailed in Table 2.

4 Quantitative Analysis Based on Structural Equation Modeling

Structural Equation Modeling (SEM) is a commonly used statistical method for establishing, estimating, and testing causal models with multiple dependent variables. It can examine relationships between latent and observed variables and among latent variables themselves, handle multiple dependent variables simultaneously, and allow both independent and dependent variables to contain measurement errors [48]. Since the proposed model includes only latent variables and multiple latent variables serve as dependent variables, SEM is appropriate for this research.

4.1 Reliability and Validity Tests

This study first used SmartPLS 2.0 for reliability and validity analysis. Cronbach' s alpha coefficients and Composite Reliability (CR) were used to assess reliability. As shown in Table 3 , except for the variables of ignoring (0.683), blocking (0.689), and lurking (0.696) whose Cronbach' s alpha coefficients were slightly below 0.7, all other variables had Cronbach' s alpha coefficients and CR values above 0.7, indicating good reliability. Convergent validity was assessed using Average Variance Extracted (AVE). Table 3 shows all variables' AVE values were above 0.5, indicating good convergent validity. For discriminant validity, the square root of each latent variable' s AVE was compared with its correlations with other latent variables. Table 4 shows that the square root of each variable' s AVE was greater than its correlation coefficients with other latent variables, demonstrating good discriminant validity.

4.2 Hypothesis Testing

This study used SmartPLS 2.0 for structural equation model testing, with results shown in Figure 2 [Figure 2: see original paper]. The results indicate that all hypotheses except H4 were supported. The R^2 values for regret, problem-focused coping, and emotion-focused coping were 47.1%, 38.3%, and 42.4%, respectively, indicating good predictive power of the model.

WeChat user involvement had significant positive effects on social overload ($\beta = 0.71$, $t = 19.52$), information overload ($\beta = 0.38$, $t = 5.76$), system function overload ($\beta = 0.71$, $t = 20.83$), and switching costs ($\beta = 0.49$, $t = 8.38$), supporting H1a, H1b, H1c, and H5. Social overload ($\beta = 0.36$, $t = 4.64$), information overload ($\beta = 0.25$, $t = 4.67$), and switching costs ($\beta = 0.21$, $t = 2.71$) had significant positive effects on regret, supporting H2, H3, and H6. System function overload ($\beta = 0.02$, $t = 0.21$) had no significant effect on regret, so H4 was not supported. Switching costs had significant positive effects on both problem-focused coping ($\beta = 0.46$, $t = 6.34$) and emotion-focused coping ($\beta = 0.43$, $t = 5.65$), supporting H7a and H7b. Additionally, regret had significant positive effects on problem-focused coping ($\beta = 0.24$, $t = 3.22$) and emotion-focused coping ($\beta = 0.31$, $t = 4.30$), supporting H8a and H8b.

4.3 The Moderating Effect of Self-Emotion Management

To verify whether self-emotion management moderates the relationship between regret and problem-focused/emotion-focused coping, this study used hierarchical regression analysis. First, regret and self-emotion management variables were mean-centered. Then, problem-focused coping and emotion-focused coping served as dependent variables in separate hierarchical regressions with regret and self-emotion management as independent variables. In the first layer, regret and self-emotion management were entered; in the second layer, the interaction term between regret and self-emotion management was added. Results are shown in Table 5.

The interaction term between regret and self-emotion management had a regression coefficient of 0.135 for problem-focused coping ($P < 0.05$), indicating that self-emotion management positively moderates the relationship between regret and problem-focused coping, supporting H9a. The interaction term had a coefficient of 0.158 for emotion-focused coping ($P < 0.1$), indicating that self-emotion management positively moderates the relationship between regret and emotion-focused coping, supporting H9b. The moderating effect diagrams (Figures 3 [Figure 3: see original paper] and 4 [Figure 4: see original paper]) clearly show that when experiencing regret of equal intensity during WeChat usage, users with high self-emotion management are more likely than those with low self-emotion management to adopt both problem-focused and emotion-focused coping strategies to alleviate negative emotional distress.

5 Fuzzy-set Qualitative Comparative Analysis (fsQCA)

Traditional regression analysis assumes independent effects of independent variables, emphasizing the marginal “net effect” of independent variables on dependent variables while controlling for other factors, but cannot analyze complex causal relationships formed by interdependence among multiple antecedent conditions [49]. This study involves complex causal relationships among WeChat user involvement, three types of perceived overload, switching costs, regret, and coping strategies. Therefore, fuzzy-set Qualitative Comparative Analysis (fsQCA) is employed to address this issue. The fsQCA method adopts a holistic analytical perspective, believing that independent variables work interdependently without multicollinearity concerns. It treats research objects as configurations of different combinations of multiple antecedent variables and, based on set theory, analyzes the interdependence, configurational equivalence, and causal asymmetry among condition variables to reveal complex causal relationships resulting from interdependence among multiple independent variables [16]. Applying fsQCA facilitates in-depth exploration of the multiple concurrent causes and complex mechanisms of WeChat user regret and coping strategy selection from a configurational perspective.

5.1 Data Calibration

For fsQCA analysis, sample data were first calibrated. Variable averages were calculated, and following C.C. Ragin' s [50] recommendation of using the 5th, 95th, and 50th percentiles as thresholds, sample data were calibrated. After calibration, necessity condition analysis was conducted. When the outcome variables were regret, problem-focused coping, and emotion-focused coping, the consistency levels of single antecedent conditions did not exceed 0.9, indicating no necessary conditions [50]. Therefore, this study needed to combine multiple antecedent conditions for sufficiency analysis.

5.2 fsQCA Results Analysis

For fsQCA analysis, following P.C. Fiss' s [51] recommendation, this study set the consistency threshold at 0.8. Referring to Du Yunzhou et al. [16], the PRI (Proportional Reduction in Inconsistency) consistency threshold was set at 0.70, and the case frequency threshold at 2, retaining at least 80% of the sample. The final configuration results are shown in Tables 6 and 7, where and indicate presence of a condition; and indicate absence; blank indicates the condition can be either present or absent; and are core conditions; and are peripheral conditions. Configurations with the same core conditions were grouped, revealing two antecedent configurations triggering WeChat user regret, four triggering problem-focused coping, and one triggering emotion-focused coping.

5.2.1 fsQCA Analysis with Regret as Outcome Table 6 shows the overall consistency level for the regret-triggering model is 0.923, with all configuration consistencies above 0.9 and overall coverage of 0.796, indicating excellent explanatory power. Two configuration patterns trigger WeChat user regret:

- (1) **Pattern 1:** Configuration R1 comprises “WeChat user involvement • social overload • function overload,” with high WeChat user involvement, high social overload, and high function overload as core conditions. This result corroborates SEM findings that high WeChat user involvement intensifies social overload and system function overload perceptions, with the combination triggering user regret.
- (2) **Pattern 2:** This pattern includes two sub-patterns (R2a and R2b), with high social overload, high information overload, and high switching costs as core conditions. Sub-pattern R2a has the configuration “WeChat user involvement • social overload • information overload • switching costs,” with high WeChat user involvement as a peripheral condition. Sub-pattern R2b has the configuration “social overload • information overload • function overload • switching costs,” with high function overload as a peripheral condition. When WeChat users perceive high social overload, information overload, and switching costs, either deepened involvement (R2a) or high function overload perception (R2b) will trigger user regret, consistent with SEM results.

5.2.2 fsQCA Analysis with Problem-Focused Coping as Outcome Table 7 shows four patterns with seven antecedent configurations when problem-focused coping is the outcome variable. The overall model consistency is 0.917, with all configuration consistencies above 0.9 and overall coverage of 0.853, indicating ideal explanatory power.

- (1) **Pattern 1:** This pattern includes three sub-patterns (P1a, P1b, and P1c), with high information overload and high switching costs as core conditions. Sub-pattern P1a has low function overload as a peripheral condition: “information overload · ~function overload · switching costs.” Sub-pattern P1b has high WeChat user involvement as a peripheral condition: “WeChat user involvement · information overload · switching costs.” Sub-pattern P1c has high self-emotion management as a peripheral condition: “information overload · switching costs · self-emotion management.” This pattern indicates that users facing high information overload, constrained by high switching costs, either due to satisfaction with and attachment to WeChat’s main functions (P1a), or due to high self-emotion management’s cognitive and regulatory effects (P1c) enabling more rational analysis of their emotional state, or due to deep involvement’s restraining effect (P1b), are unwilling to abandon WeChat and instead more actively adopt problem-focused coping behaviors such as blocking, ignoring, lurking, and exiting.
- (2) **Pattern 2:** This pattern has two sub-patterns (P2a and P2b), with high information overload, high regret, and high self-emotion management as core conditions. Sub-pattern P2a has low function overload as a peripheral condition: “information overload · ~function overload · regret · self-emotion management.” Sub-pattern P2b has high WeChat user involvement as a peripheral condition: “WeChat user involvement · information overload · regret · self-emotion management.” This pattern shows that when WeChat users simultaneously experience high information overload, strong regret, and high self-emotion management, they will trigger problem-focused coping behaviors regardless of low function overload perception or high WeChat involvement.
- (3) **Pattern 3:** Configuration P3 is “~WeChat user involvement · social overload · information overload · function overload · regret,” indicating that low WeChat user involvement, high information overload, and high regret are core conditions, with high social overload and high function overload as peripheral conditions. This configuration shows that the key configurational conditions triggering problem-focused coping are overload perceptions and regret intensity—even with low WeChat user involvement, users will adopt problem-focused coping strategies.
- (4) **Pattern 4:** Configuration P4 is “WeChat user involvement · social overload · function overload · switching costs · regret,” indicating that high social overload, high switching costs, and high regret are core conditions, with high WeChat user involvement and high function overload as pe-

ripheral conditions. This result further corroborates SEM findings on the promoting effects of regret and switching costs on problem-focused coping.

5.2.3 fsQCA Analysis with Emotion-Focused Coping as Outcome Table 7 shows that when emotion-focused coping is the outcome variable, the overall model consistency is 0.931, with all configuration consistencies above 0.9 and overall coverage of 0.724, indicating strong explanatory power. The configuration triggering emotion-focused coping includes two sub-patterns (E1a and E1b), both with high WeChat user involvement, high social overload, and high regret as core conditions. Sub-pattern E1a has high function overload as a peripheral condition: “WeChat user involvement $\cdot$ social overload $\cdot$ function overload $\cdot$ regret.” Sub-pattern E1b has high information overload and high switching costs as peripheral conditions: “WeChat user involvement $\cdot$ social overload $\cdot$ information overload $\cdot$ switching costs $\cdot$ regret.” This pattern indicates that high WeChat user involvement may intensify perceptions of social overload, information overload, and function overload, triggering user regret. Additionally, constrained by high switching costs, users must continue using WeChat, further strengthening regret. Therefore, users meeting the conditions of high WeChat user involvement, high social overload, and high regret, when facing either high information overload perception or high function overload or high switching costs, will trigger emotion-focused coping behaviors.

6 Research Conclusions and Implications

6.1 Research Conclusions

This study examined WeChat users’ regret triggers and coping strategies based on the “stressor-strain-outcome” framework. Using SEM, it revealed antecedents and outcome variables of WeChat user regret and their mechanisms, confirming the moderating role of self-emotion management between regret and both coping strategies. Using QCA, it examined antecedent configurations triggering regret and coping behaviors, corroborating SEM results.

SEM results indicate:

- (1) Compared with its effects on information overload and switching costs, WeChat user involvement has stronger positive effects on social overload and system function overload. This may be because deeper involvement leads to broader social networks and more functions used, intensifying social and system function overload perceptions. In this survey, 71.9% of WeChat users had more than 150 friends, with 36.6% exceeding 300 friends—far exceeding the 150-person limit for stable social relationships [27]. Additionally, 62.1% of users had four or more types of WeChat friends (classmates, colleagues, relatives, friends, shared interests), increasing social burden. Moreover, 71.6% of users regularly used more than four functions, with 7.6% regularly using more than ten functions, potentially intensifying system function overload perception.

- (2) Among regret' s antecedents, social overload has a stronger positive effect on regret than information overload and switching costs, while system function overload' s effect on regret is not significant. X. Cao and J. Sun [12] also found that social overload has a greater positive impact on regret in their study of social media discontinuance intention, consistent with this study. This may be because: first, users with broader friend networks must invest more social effort to maintain relationships; second, most WeChat friends are weak ties or even strangers in offline life, and users may be less willing to invest social effort in these unstable online relationships but are compelled by social norms to expend considerable time and energy on unwilling social activities, triggering upward counterfactual thinking and regret. System function overload' s non-significant effect may be because WeChat' s functions and user interface have been optimized through multiple iterations, making functions relatively easy to use and master. Additionally, survey respondents were highly educated (74.3% with bachelor' s degrees or higher) with strong IT skills, so mastering WeChat functions did not require excessive time or effort.
- (3) Switching costs have significant positive effects on both problem-focused and emotion-focused coping, with similar effect strengths. Generally, the simplest way for users to reduce WeChat overload' s negative impacts is to discontinue or abandon WeChat for other social media. However, users must consider the time and relationship costs already invested and the uncertainty risks of new social media experiences. Therefore, when facing high switching costs, users will not easily abandon WeChat but will consider simultaneously adopting problem-focused and emotion-focused coping strategies to overcome or reduce WeChat overload' s negative impacts.
- (4) Regret has significant positive effects on both problem-focused and emotion-focused coping, with a stronger effect on emotion-focused coping. This may be because although users can adopt problem-focused strategies like ignoring, blocking, lurking, or exiting to avoid contact with stress sources causing regret, they must continue using WeChat, making it impossible to completely avoid negative impacts and sometimes leaving them feeling helpless, forcing them to attempt to control or change their emotional feelings. By adopting emotion-focused strategies such as seeking emotional support, venting, and self-blame, users can positively reinterpret their current stress situation, thereby changing negative cognition with less behavioral effort to counteract regret experiences.
- (5) Self-emotion management positively moderates the relationships between regret and both coping strategies. Users with high self-emotion management have stronger awareness and understanding of their emotions, better understanding the sources and potential impacts of regret. Therefore, when facing regret, high self-emotion management users are more likely to adopt effective measures: on one hand, using problem-focused coping

to reduce direct contact with stress sources; on the other hand, using emotion-focused coping to actively transform cognition and relieve regret feelings.

fsQCA results show:

- (1) Two antecedent configuration patterns trigger WeChat user regret. One pattern has high WeChat user involvement, high social overload, and high function overload as core conditions (R1). The other has high social overload, high information overload, and high switching costs as core conditions, with either high WeChat user involvement (R2a) or high function overload (R2b) as peripheral conditions. High social overload appears as a core condition in both patterns, indicating it is a key factor causing user regret, consistent with SEM results. Pattern 2 shows that both information overload and switching costs play roles in regret mechanisms, also consistent with SEM analysis.
- (2) Four antecedent configuration patterns trigger problem-focused coping. Pattern 1 has high information overload and high switching costs as core conditions, with low function overload (P1a), high WeChat user involvement (P1b), or high self-emotion management (P1c) as peripheral conditions. Pattern 2 has high information overload, high regret, and high self-emotion management as core conditions, with low function overload (P2a) or high WeChat user involvement (P2b) as peripheral conditions. Pattern 3 has low WeChat user involvement, high information overload, and high regret as core conditions, with high social overload and high function overload as peripheral conditions (P3). Pattern 4 has high social overload, high switching costs, and high regret as core conditions, with high WeChat user involvement and high function overload as peripheral conditions (P4). High switching costs and high regret appear multiple times as core conditions, corroborating SEM findings on their significant positive effects on problem-focused coping. Self-emotion management's appearance as both core and peripheral conditions further confirms its moderating role.
- (3) The configuration triggering emotion-focused coping includes two sub-patterns, both with high WeChat user involvement, high social overload, and high regret as core conditions. One sub-pattern (E1a) has high function overload as a peripheral condition, while the other (E1b) has high information overload and high switching costs as peripheral conditions. Regret as a core condition corroborates SEM's direct effect of regret on emotion-focused coping, and high switching costs as a peripheral condition also confirms SEM's finding on switching costs' effect on emotion-focused coping.

6.2 Research Implications

The emergence of both emotion-focused coping behaviors (seeking emotional support, venting, self-blame) and problem-focused coping behaviors (ignoring, blocking, lurking, exiting) indicates increasing dissatisfaction with social media services. Therefore, social media operators should recognize the mechanisms behind different strategic usage behaviors. While encouraging users to actively produce high-quality content, operators should establish strict content review mechanisms for Official Accounts, focusing on identifying redundant and false information to prevent platforms from becoming carriers of shallow and vulgar content. They should reduce advertising recommendations and information push activities, utilize big data mining for precise marketing to reduce disturbance to non-target users, and thereby lessen users' information burden. Additionally, operators should strengthen the application of social attributes in real-life contexts, focusing on migrating offline relationships online, limit the number of groups users can create and join, reduce unnecessary social participation and interference, use technical means to regulate boundaries of social media user activities, restrict link forwarding and voting request activities, reduce social generalization pressure, and cautiously upgrade social media functions to allow users to enjoy services more easily and happily. Of course, social media users should also actively improve their emotion management capabilities and adopt appropriate coping behaviors for strategic WeChat usage to alleviate potential negative emotions from social media use.

This study has limitations. First, it primarily examines regret antecedents from a perceived overload perspective, and the model only explains 47.1% of regret variance, indicating other factors causing social media user regret remain to be explored. Second, social media users experience diverse emotions; this study focused on WeChat user regret mechanisms and coping strategies without comparing them with other negative emotions (such as anxiety, anger, annoyance). Future research can address these limitations.

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XU Guohu: Provided constructive suggestions on the research framework and assisted in revising the paper.

Note: Figure translations are in progress. See original paper for figures.

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