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Exploring the Antecedents of Social Media Fatigue in the Context of Interactive Behaviours

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Abstract: The pervasive integration of social media into daily life has been accompanied by a growing sense of exhaustion and disengagement among users, a phenomenon widely recognized as social media fatigue. While existing research has extensively explored causes such as information overload and privacy concerns, there remains a scarcity of studies that systematically investigate the specific role of interactive behaviours in driving this fatigue. To address this gap, this study develops and tests a multi-dimensional framework integrating Uses and Gratifications Theory, the Technology Acceptance Model, and Social Network Analysis to examine how factors at the individual, platform, and social levels contribute to fatigue. Data were collected via an online survey from 150 active Chinese social media users. The results from regression analysis reveal that cross-platform social media usage, system feature overload, and social network density are significant positive predictors of social media fatigue. Conversely, the quality of social interactions exhibits a significant negative relationship with fatigue, suggesting that meaningful engagement can serve as a buffer. However, the frequency of using instant messaging platforms and participation in group interactions did not show a significant direct effect. These findings offer a nuanced understanding of the mechanisms behind social media fatigue, shifting the focus from mere usage volume to the nature and structure of interactions. The study provides valuable empirical evidence for platform designers and policymakers aiming to mitigate user burnout by optimizing interface simplicity, managing cross-platform cognitive load, and fostering higher-quality digital communication environments.

Keywords: social media fatigue; interactive behaviours; cross-platform usage; interaction quality; system feature overload; social network density

1. Introduction

The landscape of human interaction and information consumption has been profoundly reshaped by the rapid proliferation of social media platforms. Over the past decade, these platforms have transitioned from simple communication tools into essential components of everyday life, deeply embedded in the routines of billions worldwide. This development is especially notable in China, which hosts one of the world's most active and expansive digital populations. According to the 52nd Statistical Report on China's Internet Development released by the China Internet Network Information Center (CNNIC), the number of Chinese Internet users reached 1.079 billion as of June 2023. Among them, 1.047 billion individuals used instant messaging applications, representing 97.1% of all users and highlighting the central role of real-time interaction in the digital

era. Platforms such as WeChat, Douyin, Xiaohongshu, and Weibo have expanded well beyond their early functions as tools for casual communication. They now serve as major channels for information dissemination, essential instruments for commercial outreach, and primary arenas for constructing and exhibiting personal and collective identities [1]

Yet, this deep convergence between social life and digital platforms has also produced a set of psychological and social challenges that complicate the optimistic vision of a seamlessly connected world. A growing proportion of users report experiencing exhaustion, decreased satisfaction, and general weariness associated with social media use-a condition widely referred to in academic research as social media fatigue [2,3]. The initial excitement surrounding digital connectivity has gradually been tempered by the persistent demands created by continuous information exchange. The concept of social media fatigue, originally proposed in early theoretical discussions and subsequently expanded by later studies, has evolved into a recognized psychological state marked by feelings of tiredness, irritation, and declining motivation to engage. These symptoms arise from multiple facets of interacting on social platforms [4-6]. As suggested in foundational media theory, digital media can function as extensions of human sensory and social systems; when such extensions become excessively demanding, users may experience a sense of overload that results in disengagement rather than connection [7].

The effects of social media fatigue extend far beyond momentary irritation. For individual users, it has been linked to increased stress, heightened anxiety, and lower levels of subjective well-being [8]. Research also indicates that prolonged fatigue can trigger emotional exhaustion and increase the likelihood of reducing or discontinuing use [9]. These behavioural outcomes present challenges for platform operators because declining engagement threatens long-term platform sustainability. On a broader level, social media fatigue reflects a paradox within digital sociality: users who feel overwhelmed by the expectations of maintaining expansive online networks may ultimately withdraw from interactions they once valued. Prior research describes this dynamic as the burden created by extensive social networks [10]. Consequently, identifying the mechanisms that trigger fatigue is an increasingly important focus across fields such as public health, platform design, and social behaviour research.

Existing studies have identified numerous antecedents to social media fatigue, which can be grouped into individual-, platform-, and social-level factors. At the individual level, psychological stressors such as privacy concerns, pressures related to managing self-presentation, and tendencies toward social comparison have been shown to contribute significantly. The fear of missing out (FoMO) further drives compulsive checking behaviours, which intensify cognitive strain and accelerate fatigue [11].

At the platform level, the design and functional structure of social media systems serve as key sources of fatigue. Information overload remains a primary issue, as users are inundated with a volume of content-including repetitive algorithmic recommendations, ambiguous posts, and disinformation-that exceeds cognitive processing capacity. The growing complexity of interaction features, such as an expanding array of buttons for liking, sharing, commenting, bookmarking, and sending real-time reactions, can also increase cognitive load and contribute to interaction fatigue [12-15].

At the social level, broader network dynamics and social expectations play an important role. Social anxiety and perceived competition, often triggered by passive exposure to others' highly curated online activities, can negatively impact subjective well-being. Users may also feel obligated to comply with social role expectations, such as promptly replying to messages or reciprocating digital gestures, adding to their psychological burden. The density of an individual's online social network has similarly been identified as a source of pressure, as tightly connected networks can generate a sense of unavoidable social obligation [16-18].

Despite these contributions, a significant gap remains in the literature. Much existing research treats social media usage as a largely uniform activity, often focusing on general

exposure, content consumption, or broadcasting behaviours. Comparatively fewer studies have offered systematic examinations that isolate interactive behaviour itself-the dyadic and group exchanges, reciprocal communication, and multidirectional interactions that constitute the core of social media engagement. The interactive experience on digital platforms is inherently multidimensional, encompassing perceived communication quality, behavioural challenges associated with managing interactions across multiple platforms simultaneously, the usability and complexity of platform-provided features, and the structural characteristics of users' online networks. The extent to which these components individually and collectively contribute to fatigue remains insufficiently understood. For example, common metrics such as daily screen time or usage frequency do not capture the qualitative characteristics of the interactions taking place within that time. Similarly, the cognitive and emotional consequences of digital multitasking-now a normative behaviour, particularly among younger users-require deeper empirical assessment within the context of fatigue formation.

This study addresses this gap by constructing and empirically testing a comprehensive theoretical model that explains the antecedents of social media fatigue specifically through the lens of interactive behaviour. To provide a multi-layered explanation, the study integrates three established theoretical perspectives:

1) Uses and Gratifications Theory (UGT) at the individual level, which explains how users actively select media to satisfy personal needs. This perspective supports the argument that cross-platform usage, undertaken to maximize gratification, may inadvertently lead to cognitive overload and resource depletion [19].

2) The Technology Acceptance Model (TAM) at the platform level, which highlights perceived ease of use as a critical determinant of user acceptance. When interactive features become overly complex or abundant, they may violate this principle and contribute to frustration and fatigue [20].

3) Social Network Analysis (SNA) at the social level, which provides a quantitative framework for examining social structures. Network density, in particular, is used to assess how tightly interconnected online communities may impose relational demands that contribute to user exhaustion [21].

By synthesizing these perspectives, the study offers an integrated model explaining how fatigue emerges from the interaction of user motivations (UGT), technological affordances (TAM), and social structure (SNA).

Accordingly, the central aim of this research is to examine how specific interactive behaviours on social media contribute to user fatigue. This goal is pursued through the following research questions:

RQ1: How does cross-platform social media usage behaviour influence the level of social media fatigue?

RQ2: To what extent do platform-level factors-specifically system feature overload related to interaction-predict social media fatigue?

RQ3: How do social-level factors, namely interaction quality and social network density, correlate with social media fatigue?

The findings will enrich the literature by advancing an interaction-focused framework that links micro-level behaviours, meso-level platform design, and macro-level social structures. Practically, the results can guide platform developers, user experience designers, and policymakers in identifying interaction-related pain points and creating less fatiguing digital environments through simplified interfaces, better cross-platform management tools, and features that promote higher-quality communication. For users and mental health professionals, improved understanding of these mechanisms may support more effective digital literacy and self-regulation strategies.

2. Literature Review and Theoretical Framework

This section reviews the core concept of social media fatigue and its established antecedents to build the theoretical foundation for the study. It subsequently integrates three theoretical perspectives-UGT, TAM, and SNA-to develop a comprehensive analytical framework and derive testable hypotheses concerning how interactive behaviours contribute to fatigue.

2.1. Defining Social Media Fatigue

The term *social media fatigue* first appeared in public discussion in the early 2000s when observers noted that users were becoming overwhelmed by the rapid rise and diffusion of social networking platforms. The concept gradually entered academic inquiry as researchers began examining its nature and implications. Early definitions often emphasized causative factors such as information overload. Later academic discussions shifted toward highlighting users' subjective experiences and behavioural responses.

For example, prior studies have described social media fatigue as a multifaceted, user-specific emotional state that can involve tiredness, annoyance, disappointment, guardedness, and diminishing interest or motivation, triggered by different aspects of interacting on social networks. Other research framed it as feelings of boredom, weariness, and tiredness associated with social media use, often reflected through reduced time spent on platforms, declining usage frequency, and weakened enthusiasm [22]. Additional perspectives further stressed the role of overwhelming online information, defining fatigue as the exhaustion caused by facing excessive digital content.

Synthesizing these viewpoints, this study defines social media fatigue as a collection of adverse emotional reactions resulting from interactive engagements on social media platforms. These reactions may include weariness, burnout, frustration, or diminished interest in communication, which can ultimately lead to reduced participation or complete withdrawal.

2.2. A Multi-Level Perspective on Antecedents of Fatigue

Existing research demonstrates that social media fatigue results from interacting factors at the individual, platform, and social levels rather than a single cause.

2.2.1. Individual-Level Antecedents

At the individual level, psychological stressors, personal traits, and usage behaviours all contribute significantly.

Privacy Concerns: Users' anxieties about how platforms collect, store, or misuse personal information have long been recognized as substantial stressors that can elevate fatigue levels.

Impression Management: The continuous pressure to maintain a favourable self-image online has been shown to correlate positively with fatigue, as the effort required to curate profiles, posts, and responses can become taxing.

FoMO: Earlier studies identify fear of missing out (FoMO) as a critical psychological stressor. The anxiety associated with missing rewarding experiences motivates compulsive checking behaviours, which intensify mental load and exacerbate fatigue.

Social Comparison: Viewing others' carefully curated online content can trigger upward comparisons, feelings of envy, or resentment. These emotions can accumulate over time, ultimately contributing to burnout.

Regarding personal traits, previous research notes that certain personality characteristics-especially those associated with emotional instability-exhibit strong explanatory power for social media fatigue [23]. Excessive platform use further reinforces this outcome, as prolonged online interaction elevates stress and depletes users' self-regulatory resources, thereby intensifying fatigue [24].

2.2.2. Platform-Level Antecedents

The design, structure, and operational logic of social media platforms directly contribute to user fatigue.

Information Overload: The volume of online content and the repetitive or ambiguous nature of algorithmic recommendations can exceed users' cognitive processing capabilities [25]. This effect became especially evident during global public health emergencies, when heavy exposure to unverified messages significantly increased fatigue [26].

System Feature Overload: As platforms add more interactive functions-such as multiple reaction buttons, threaded comment hierarchies, bullet comments, short videos, and ephemeral stories-users must expend greater effort navigating the interface. This rising complexity increases cognitive load and often triggers frustration or emotional fatigue [27].

2.2.3. Social-Level Antecedents

Broader social expectations and network structures also shape the experience of fatigue.

Social Pressure and Expectations: Users frequently feel obligated to conform to implicit online norms, such as promptly replying to messages, reciprocating likes, or maintaining conversational presence. These obligations generate psychological pressure and elevate fatigue [28].

Cyberbullying and Social Anxiety: Negative interactions-including hostile comments or cyberbullying-have been shown to trigger social anxiety, reducing users' willingness to remain active on platforms [29].

Role Conflict: When users navigate multiple social identities within a single online environment, they may experience role conflict, which increases cognitive demand and stress.

Although existing studies provide valuable insights into the causes of social media fatigue, most focus on information consumption or self-presentation behaviours. Research specifically examining the interactive behaviours that fundamentally define social media remains limited. The next section introduces an integrated framework designed to address this gap.

2.3. *An Integrated Theoretical Framework and Hypothesis Development*

To systematically examine how interactive behaviours influence fatigue, this study integrates the perspectives of UGT, TAM, and SNA into a cohesive analytical framework.

2.3.1. Individual Level

UGT argues that users actively choose media to satisfy personal psychological and social needs. In social media contexts, individuals engage in various interactive behaviours to meet needs related to communication, connection, information, and entertainment.

Cross-Platform Social Media Usage: According to UGT, users may engage with different platforms to fulfil different needs. However, the modern pattern of using multiple platforms simultaneously-posting, commenting, or reacting across several apps-creates a state of digital multitasking. This behaviour fragments attention, increases the complexity of managing multiple social contexts, and demands significant cognitive resources. Prior findings indicate that cross-platform behaviour increases information load and contributes to cognitive overload, eventually leading to burnout [30].

H1: Cross-platform social media usage is positively correlated with social media fatigue.

Interaction Quality: UGT also highlights the importance of satisfying social integration and affective needs. High-quality interactions-marked by meaningful

communication, emotional resonance, and timely responses-help fulfil these needs and provide psychological support [31]. In contrast, low-quality or superficial interactions may cause frustration and contribute to fatigue.

H2: Interaction quality is negatively correlated with social media fatigue.

2.3.2. Platform Level

TAM explains user acceptance of information systems based on perceived usefulness and ease of use. Perceived ease of use is particularly important for ensuring sustainable engagement without frustration.

System Feature Overload: When platforms introduce increasingly complex interaction functions-such as diverse reaction options, elaborate comment structures, or time-limited posting tools-the interface may no longer feel intuitive or effortless to navigate. These conditions violate the principle of ease of use and can increase users' cognitive load. Previous discussions indicate that excessive feature complexity may heighten psychological fatigue [32].

H3: System feature overload is positively correlated with social media fatigue.

2.3.3. Social Level

SNA provides methods for analysing social structures by examining how individuals' positions within networks affect their experiences.

Social Network Density: This key SNA metric measures the proportion of actual ties within a network relative to the maximum possible number of ties. A high-density network suggests stronger group cohesion and more visible social norms. Users embedded in such networks may feel obligated to participate actively, respond to interactions, and maintain visibility to avoid social repercussions. These pressures increase cognitive load and contribute to fatigue.

H4: Social network density is positively correlated with social media fatigue.

3. Research Methodology

This section outlines the methodological procedures adopted to empirically evaluate the proposed research model. It includes descriptions of the research design, data collection processes, measurement instruments, and data analysis techniques, ensuring methodological transparency and replicability.

3.1. Research Design

A quantitative research strategy with a cross-sectional survey design was adopted to gather data at a single point in time, which is suitable for examining relationships among variables within the conceptual framework. The study follows a positivist philosophical stance, which asserts that social phenomena can be objectively measured and analyzed through observable data [33]. Consistent with this orientation, the research relied on statistical techniques to evaluate predefined hypotheses. A deductive reasoning approach was applied, whereby hypotheses derived from existing theoretical foundations-such as UGT, TAM, and SNA-were tested using empirical evidence obtained from the sampled population [34].

3.2. Data Collection

3.2.1. Survey Instrument and Measures

Data were obtained using an online questionnaire, an approach appropriate for efficiently collecting large-scale information from geographically dispersed participants [35]. The questionnaire consisted of two main sections. The first section gathered demographic details such as gender, age, occupation, and patterns of social media use,

including preferred platforms, interaction frequency, duration of use, and primary motivations. The second section measured the constructs included in the research model.

All constructs were measured using multi-item statements rated on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The measurement items were adapted from established scales to ensure content validity. The operational definitions of key constructs are summarized as follows:

1) **Social Media Fatigue (Dependent Variable):** Measured using items adapted from prior conceptualizations in the fatigue literature, capturing perceived exhaustion, reduced enthusiasm, and psychological stress associated with prolonged platform use. A sample item is: "Using social media for a long time makes me feel psychologically stressed."

2) **Cross-Platform Social Media Usage (Independent Variable):** This construct assessed the extent of users' simultaneous engagement across multiple platforms. Scale items were developed based on existing discussions of cross-platform behavioral patterns informed by UGT and related research.

3) **Interaction Quality (Independent Variable):** This construct reflected the perceived depth, meaningfulness, and gratification derived from online interactions. Scale items were informed by earlier conceptualizations of interaction-related gratifications.

4) **System Feature Overload (Independent Variable):** This construct captured the perceived complexity, redundancy, and overwhelming nature of platform features. The operationalization references previous descriptions of functionality overload and user burden.

5) **Social Network Density (Independent Variable):** This scale assessed the perceived volume, closeness, and frequency of interactions within users' online networks, aligned with core ideas in SNA. A sample item is: "I feel that I have too many friends/followers on social media."

Before distributing the questionnaire widely, a pilot test involving ten respondents was conducted to examine clarity, comprehension, and face validity. Minor wording adjustments were made based on participant feedback.

3.2.2. Sampling and Data Collection Procedure

The target population consisted of active Chinese social media users. Data collection occurred over a three-week period from April 27 to May 17, 2024. The questionnaire was developed and disseminated through the Chinese survey platform WJX.cn. A simple random sampling approach was implemented through link distribution on the WeChat platform, inviting voluntary participation.

A total of 157 responses were received. Data screening procedures were then applied to ensure quality. Responses that failed attention-check questions, contained substantial missing information, or were completed in less than 30 seconds were removed. After this screening process, 150 valid responses remained, yielding an effective response rate of 95.6%.

3.3. Data Analysis Method

Data analysis was conducted using IBM SPSS Statistics Version 27.0. The analytical process consisted of the following steps:

1) **Descriptive Statistics:** Means, standard deviations, and frequency distributions were computed to summarize sample characteristics and provide an overview of the primary variables.

2) **Reliability and Validity Assessment:** Internal consistency was assessed using Cronbach's alpha, with values above 0.7 considered acceptable for multi-item scales [36]. Construct validity was evaluated through factor analysis. The Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were

applied to confirm sampling adequacy and the suitability of the dataset for factor extraction.

3) **Hypothesis Testing:** Pearson correlation analysis was initially conducted to explore bivariate associations between the independent variables and the dependent variable. Multiple linear regression analysis was then performed to test the proposed hypotheses. This approach enabled the simultaneous examination of the predictive effects of cross-platform usage, interaction quality, system feature overload, and social network density on social media fatigue, while controlling for the influence of other predictors.

3.4. Ethical Considerations

The study adhered to established ethical standards throughout all stages of the research. Ethical approval was secured from the university's Research Ethics Subcommittee prior to data collection. Participants were presented with an information sheet explaining the study's purpose, procedures, and their rights, and electronic consent was obtained before the questionnaire began. No personally identifiable information was collected. All data were anonymized and stored on encrypted servers with access limited exclusively to the researcher and supervisor, in accordance with relevant data protection regulations.

4. Results

This section presents the empirical findings of the study, structured into three parts: descriptive statistics of the sample, reliability and validity assessments of the measurement scales, and the results of the hypothesis testing.

4.1. Descriptive Statistics

The final sample consisted of 150 valid responses from Chinese social media users. The demographic and usage characteristics are summarized in Table 1 below.

Table 1. Demographic and Social Media Usage Profile of Respondents (N=150).

Characteristic	Category	Percentage (%)	Frequency (N)
Gender	Male	48.7%	73
Gender	Female	51.3%	77
Age	Under 18	2.0%	3
Age	18-30	77.3%	116
Age	Over 30	20.7%	31
Occupation	Student	62.7%	94
Occupation	Office Worker	29.3%	44
Occupation	Freelancer	2.0%	3
Occupation	Retiree	5.3%	8
Occupation	Other	0.7%	1
Frequently Used Platforms	WeChat	94.7%	142
Frequently Used Platforms	TikTok (Douyin)	80.0%	120
Frequently Used Platforms	Xiaohongshu	71.3%	107
Frequently Used Platforms	Weibo	56.0%	84
Frequently Used Platforms	Bilibili	48.7%	73
Frequently Used Platforms	Zhihu	16.7%	25
Interaction Frequency	Every few minutes	21.3%	32
Interaction Frequency	Multiple times per hour	65.3%	98
Interaction Frequency	Once per hour	8.7%	13

Interaction Frequency	A few times per day or less	4.7%	7
Primary Purpose of Interaction	Keep in touch with family/friends	86.7%	130
Primary Purpose of Interaction	Seek entertainment	82.0%	123
Primary Purpose of Interaction	Track news and current events	72.7%	109
Primary Purpose of Interaction	Share personal posts/photos	56.7%	85
Primary Purpose of Interaction	Build a network of relationships	50.7%	76
Primary Purpose of Interaction	Join interest-based groups	36.0%	54
Primary Purpose of Interaction	Seek/provide social support	17.3%	26

*Respondents could select multiple options for these questions.

As shown in Table 1, the sample was relatively balanced in gender and predominantly consisted of young users aged 18-30, with students being the largest occupational group. WeChat was the near-universal platform of choice, and the primary purposes for interaction were maintaining social connections and entertainment.

4.2. Reliability and Validity

The reliability of the measurement scales was assessed using Cronbach's alpha. The Cronbach's alpha values for all constructs exceeded the recommended threshold of 0.7, indicating good internal consistency. The results are shown in Table 2.

Table 2. Descriptive Statistics and Reliability of Constructs.

Construct	Mean	Standard Deviation	Cronbach's Alpha
Independent Variables	-	-	-
Cross-Platform Social Media Usage	3.69	0.96	0.843
Interaction Quality	2.14	0.87	0.774
System Feature Overload	3.72	0.99	0.724
Social Network Density	2.98	0.93	0.781
Dependent Variable	-	-	-
Social Media Fatigue	3.57	0.91	0.895

For validity assessment, the KMO measure was 0.867, and Bartlett's test of sphericity was significant ($p < 0.001$), confirming the data's suitability for factor analysis. A Pearson correlation analysis was conducted to examine the bivariate relationships between the variables. The correlation matrix is shown in Table 3. The results indicated that Cross-Platform Usage, System Feature Overload, and Social Network Density were positively correlated with Social Media Fatigue, while Interaction Quality was negatively correlated. The variable 'Group Interaction' showed a negligible correlation ($r = 0.001$) and was therefore excluded from subsequent regression analysis.

Table 3. Pearson Correlation Matrix of Variables.

	A	**B**	**C**	**D**	**F**
G. Social Media Fatigue	0.479**	-0.515**	0.387**	0.482**	0.279**

*A=Cross-Platform Usage, C=Instant Messaging Platforms Usage, F=Social Network Density, G=Social Media Fatigue. ** $p < 0.01$.

4.3. Hypothesis Testing

A multiple linear regression analysis was performed to test the hypotheses H1 through H4. Social Media Fatigue was entered as the dependent variable, with Cross-Platform Usage, Interaction Quality, System Feature Overload, and Social Network Density as independent variables. The regression model was statistically significant (F = 16.900, p = 0.000), explaining 37.0% of the variance in Social Media Fatigue (R² = 0.370, Adjusted R² = 0.348). The detailed results of the regression analysis are presented in Table 4.

Table 4. Multiple Regression Analysis Results.

Predictor Variable	Standardized Coefficient (β)	t-value	p-value	Hypothesis Support
(Constant)	-	-	0.000	-
H1: Cross-Platform Usage	0.248	2.799	0.006	Supported
H2: Interaction Quality	-0.314	-3.439	0.001	Supported
H3: System Feature Overload	0.156	1.947	0.053	Partially Supported
H4: Social Network Density	0.248	2.799	0.006	Supported

As shown in Table 4, H1 was supported. Cross-Platform Social Media Usage had a significant positive effect on Social Media Fatigue (*β* = 0.248, *p* = 0.006). H2 was supported. Interaction Quality had a significant negative effect on Social Media Fatigue (*β* = -0.314, *p* = 0.001). H3 was partially supported. The positive effect of System Feature Overload on Social Media Fatigue approached, but did not strictly meet, the conventional threshold for statistical significance (*β* = 0.156, *p* = 0.053). Following Andrade's interpretation, this can be considered indicative of a potential relationship, albeit a marginally significant one. H4 was supported. Social Network Density had a significant positive effect on Social Media Fatigue (*β* = 0.248, *p* = 0.006). In summary, the regression results provide strong support for H1, H2, and H4, and partial support for H3 [37].

5. Discussion

5.1. Interpretation of Key Findings

The regression analysis confirmed three of the four primary hypotheses and provided partial support for the fourth, revealing a multi-layered mechanism underlying social media fatigue.

5.1.1. Individual-Level Drivers: The Double-Edged Sword of Interaction

At the individual level, the results strongly support propositions derived from UGT. The confirmation of H1 indicates that cross-platform social media usage is a significant positive predictor of fatigue. Users pursuing diverse gratifications across multiple platforms inadvertently expose themselves to cognitive overload and attentional fragmentation [30]. The simultaneous management of different social contexts, adherence to varying platform norms, and handling of continuous notifications from multiple

sources generates a state of "digital multitasking" that is mentally taxing. This finding extends previous observations by linking cross-platform use directly to the emotional and cognitive exhaustion characteristic of social media fatigue.

Conversely, the strong support for H2 highlights the importance of interaction quality. The negative relationship between interaction quality and fatigue suggests that the nature of interactions is as influential as their frequency or reach. Superficial, unfulfilling, or frustrating exchanges fail to satisfy the social integration and affective needs that motivate platform use [31]. Consequently, interaction can shift from being a source of support to a source of stress and weariness. This nuance indicates that fatigue is determined not merely by the quantity of social obligations but also by the perceived value and meaningfulness of interactions.

5.1.2. Platform-Level Driver: The Burden of Complexity

The effect of system feature overload (H3) was marginally significant (p = 0.053). Although this does not meet the conventional p < 0.05 threshold, it indicates a trend worth discussing. It suggests that the proliferation of complex interactive features-such as diverse reaction options, nested comment threads, and ephemeral content formats-can act as a technostressor. Consistent with TAM, low perceived ease of use can obstruct a positive user experience [20]. When navigating platform features requires disproportionate effort relative to perceived benefits, it contributes to frustration and fatigue [15]. The marginal significance may reflect users' adaptation to complex interfaces or a partial mediation effect through cognitive overload.

5.1.3. Social-Level Driver: The Weight of the Network

Support for H4 confirms social network density as a significant social-level predictor of fatigue. Dense networks, where many connections are interconnected, create a cohesive social environment with implicit norms and high participation expectations [21]. Users in such networks may experience heightened obligations to respond, contribute to group discussions, and maintain an active presence to avoid social sanctions or missed opportunities. This continuous low-level pressure constitutes a substantial cognitive and emotional burden, directly contributing to fatigue.

5.2. Theoretical and Practical Implications

5.2.1. Theoretical Implications

The study contributes to theory by developing and validating an integrated, interaction-centric framework for understanding social media fatigue. By combining UGT, TAM, and SNA, it demonstrates that fatigue emerges from the interplay of user behaviour, platform design, and social structure, while being moderated by the quality of interaction itself. This multi-level perspective offers a holistic and nuanced explanation surpassing models that focus on a single dimension.

Additionally, the research shifts scholarly attention from passive content consumption and self-presentation to the interactive core of social media. By identifying cross-platform usage and interaction quality as key determinants, it enriches the theoretical vocabulary for understanding user disengagement and psychological strain within contemporary multi-platform social media ecosystems.

5.2.2. Practical Implications

The findings provide actionable insights for multiple stakeholders:
1) **Platform Designers and Developers:** The study encourages a shift from feature proliferation toward simplification and intelligent integration. Streamlining core interactions, providing unified dashboards for cross-platform management, and designing features that promote deeper, meaningful conversations can reduce user fatigue.

2) **Social Media Users:** The results highlight potential sources of fatigue. Users may benefit from conducting digital audits, reducing network density, limiting simultaneous platform use, and prioritizing meaningful interactions over numerous shallow ones to preserve mental well-being.

3) **Educators and Mental Health Professionals:** Insights can inform digital literacy programs and mental health interventions. By recognizing the fatigue-inducing patterns of social media interactions, interventions can help users-particularly younger populations-develop healthier usage habits.

5.3. Limitations and Future Research

Despite its contributions, this study has limitations that suggest directions for future research. First, the cross-sectional design limits causal inferences; longitudinal studies tracking behaviours and fatigue over time would provide stronger evidence. Second, the sample predominantly included young Chinese users, which may constrain the generalizability of findings. Future studies should adopt more diverse, representative samples. Third, reliance on self-reported measures introduces potential biases such as common method variance; objective behavioural data, such as platform usage logs, could complement subjective reports. Fourth, the marginal significance of system feature overload (H3) indicates the need for refined measures or larger samples to clarify its role.

Finally, the exclusion of group interactions and the non-significant effect of instant messaging usage suggest that the dynamics of specific platform types and interaction contexts are complex. Future research could explore moderating variables, such as personality traits or cultural factors, to better understand the relationship between interactive behaviours and social media fatigue.

6. Conclusion, Limitations, and Future Research

This study successfully developed and empirically tested a multi-dimensional framework to investigate the antecedents of social media fatigue, with a specific focus on interactive behaviours. The findings demonstrate that factors operating at the individual, platform, and social levels collectively contribute to user exhaustion. Specifically, cross-platform social media usage and high social network density were identified as significant positive drivers of fatigue, while high-quality interactions served as a critical buffer against it. System feature overload showed a marginally significant positive relationship, indicating its potential role as a contributing stressor. These results underscore that social media fatigue is not merely a function of information consumption but is profoundly shaped by the nature, complexity, and structural context of users' interactive engagements. The study provides valuable, empirically grounded insights for platform designers seeking to mitigate user burnout through simplified interfaces and features that promote meaningful communication, and offers users a framework for understanding and managing their digital well-being.

Notwithstanding these contributions, several limitations must be acknowledged. The study's cross-sectional design precludes definitive causal inferences. The sample, though adequate for analysis, was predominantly composed of young Chinese students, which may affect the generalizability of the findings to other demographic or cultural groups. Furthermore, the reliance on self-reported data is susceptible to biases, such as common method variance.

Future research should address these limitations through longitudinal or experimental designs to establish causality. Studies with more diverse and larger samples, encompassing different age groups, occupations, and cultural backgrounds, are essential to validate and extend the current findings. Researchers should also seek to triangulate self-report data with objective behavioural metrics to enhance validity. Finally, the marginally significant effect of system feature overload warrants further investigation with refined measures, and future models could explore the role of potential moderating

variables, such as personality traits, to provide a more nuanced understanding of the phenomenon.

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