



Fear of Missing Out (FoMO) and Digital Addiction in the Age of Social Networks: A Bibliometric Review of Psychological Phenomena

Dr. Vibha Singh¹, Gonica Verma²

¹Associate Professor, Dept. of Sociology, Vasanta College for Women, Rajghat, KFI

²Institute of Management Studies, Banaras Hindu University

DOI: <https://doi.org/10.47772/IJRISS.2026.100700571>

Received: 24 July 2026; Accepted: 29 July 2026; Published: 07 August 2026

ABSTRACT

The rapid expansion of social networking sites (SNSs) has reshaped the psychological contours of everyday life, giving rise to two closely connected phenomena: fear of missing out (FoMO) and digital addiction. This paper offers a bibliometric and conceptual review of peer-reviewed scholarship on FoMO and digital addiction, drawing from Scopus, Web of Science, PubMed, and PsycINFO. Employing a layered analytical framework that spans technological, psychological, and behavioural-health dimensions of digital engagement, the review examines how SNS design features foster persuasive engagement patterns, how these patterns interact with individual and contextual vulnerabilities to trigger FoMO, and how sustained FoMO-driven engagement can escalate into symptoms consistent with behavioural addiction. The synthesis integrates bibliometric evidence on disciplinary mapping, keyword evolution, and institutional collaboration, while highlighting persistent knowledge gaps and emerging interdisciplinary connections. Findings suggest that FoMO operates both as an antecedent and as a maintaining mechanism of problematic digital engagement, mediated by motivational deficits and reinforced through variable reward structures embedded in platform design. The paper concludes by outlining a research agenda that emphasises longitudinal causality, cross-cultural generalizability, and the development of effective interventions.

Keywords: fear of missing out, digital addiction, social networking sites, cyberpsychology, problematic smartphone use, bibliometric review, self-determination theory

INTRODUCTION

Over the past two decades, social networking sites (SNSs) such as Facebook, Instagram, Snapchat, and TikTok have profoundly reconfigured interpersonal life. What began as simple tools for maintaining offline relationships has evolved into an ambient infrastructure of constant social awareness, where users are continually exposed to curated glimpses of others' activities, achievements, and social gatherings (Kuss & Griffiths, 2011). This condition of continuous partial connection has been theorised to generate a distinctive form of social anxiety known as Fear of Missing Out (FoMO): a pervasive apprehension that others may be enjoying rewarding experiences from which one is absent, coupled with a persistent drive to remain connected (Przybylski et al., 2013).

FoMO occupies a pivotal position in contemporary cyberpsychology because it bridges motivation, emotion, and compulsive technology use. Conceptually, it has been framed as a motivational deficit rooted in the frustration of basic psychological needs for competence, autonomy, and relatedness (Przybylski et al., 2013; Ryan & Deci, 2000). Empirically, it has been linked to maladaptive digital behaviours such as problematic smartphone use, compulsive checking, and addiction-like symptoms including tolerance, withdrawal, and loss of control (Elhai et al., 2016; Elhai et al., 2017). This dual identity, FoMO as both a psychological trait and a behavioural trigger, has made it one of the fastest-growing constructs in digital media research, cited across psychology, communication studies, marketing, education, and public health (Tandon et al., 2021).

Yet the rapid diversification of FoMO scholarship has produced a fragmented literature. Despite the proliferation of studies, reviews highlight limited consensus on how FoMO should be conceptualised, measured, and situated relative to adjacent constructs such as social media addiction, problematic smartphone use, and general internet addiction (Tandon et al., 2021). Bibliometric analyses of Scopus data show that FoMO-related publications have grown exponentially since 2013, expanding from an initial psychological focus into marketing, consumer behaviour, education, and health informatics

(Erlinda & Fatmawati, 2024). This trajectory underscores the need for a synthesis that not only reviews substantive findings but also maps the intellectual structure of the field.

This paper addresses that need through two complementary aims. First, it offers a conceptual synthesis of how SNS design features, FoMO, and digital addiction interrelate, organised around a layered model comprising a technology layer, a psychological layer, and an addiction layer, connected through a core behavioural mechanism of engagement and reinforcement. Second, it presents a bibliometric-style review of the research domain, examining discipline mapping, keyword evolution, institutional collaboration, and persistent knowledge gaps. In doing so, the review clarifies both what is known about FoMO and digital addiction and how the field itself has evolved.

The significance of this synthesis extends beyond academic interest. Global estimates suggest that the average user now spends several hours per day on social platforms. At the same time, clinical services in multiple countries report rising numbers of young people presenting with technology-related distress (Twenge et al., 2018). Educators note FoMO-linked distraction during instructional time (Alt, 2015), employers report productivity losses tied to compulsive checking (Rozgonjuk et al., 2020), and public health bodies have begun formally recognising digitally mediated compulsive behaviours as clinical concerns (World Health Organisation, 2018). Against this backdrop, a synthesis that connects the psychological mechanics of FoMO to the design logic of the platforms that cultivate it, and to the measurable health and social consequences that follow, has direct relevance for platform designers, educators, clinicians, and policymakers, as well as for theoretical psychology. The following sections outline the theoretical background underpinning the model, describe the methodological approach used to synthesise the literature, and present the bibliometric landscape of the field.

THEORETICAL BACKGROUND AND CONCEPTUAL FRAMEWORK

Understanding FoMO and digital addiction requires drawing on several converging theoretical traditions. The first is *Self-Determination Theory (SDT)*, which holds that psychological well-being depends on the satisfaction of three basic needs: competence, autonomy, and relatedness (Ryan & Deci, 2000; Deci & Ryan, 2000). Przybylski et al. (2013) applied SDT directly to FoMO, showing that individuals whose needs are chronically under-satisfied report significantly higher levels of FoMO, and that this deficit-driven anxiety predicts heightened social media engagement. Within this framing, FoMO is not simply a byproduct of technology exposure but a motivational state that digital platforms channel and often intensify.

A second strand comes from *Behavioural Addiction Theory*. Griffiths (2005) proposed a widely cited components model in which any behaviour, substance-related or not, can be classified as addictive if it exhibits salience, mood modification, tolerance, withdrawal, conflict, and relapse. This framework has been extended to internet and social media use, underpinning instruments such as the Bergen Facebook Addiction Scale (Andreassen et al., 2012) and the Social Media Disorder Scale (van den Eijnden et al., 2016). Kuss and Griffiths (2011, 2017) applied this model specifically to SNS use, arguing that while most users engage in high-frequency but non-pathological use, a subset display patterns consistent with behavioural addiction, including neglect of offline responsibilities, mood-dependent use, and unsuccessful attempts at reduction.

A third framework is the *Interaction of Person-Affect-Cognition-Execution (I-PACE) model*, which conceptualises problematic internet use as emerging from the interaction of predisposing characteristics (e.g., personality, psychopathology, biological vulnerability), affective and cognitive responses to stimuli, and diminished executive control (Brand et al., 2016). Within I-PACE, FoMO has been positioned as a cognitive-affective mediator linking underlying vulnerabilities (such as low need satisfaction or social anxiety) to compulsive use (Wegmann et al., 2017). This perspective helps explain why FoMO functions as a bridge between trait-level vulnerability and state-level addictive behaviour rather than as a standalone diagnostic category.

A fourth tradition is *psychometrics*, which has operationalised these constructs for empirical study. Beyond Przybylski et al.'s (2013) original FoMO scale, researchers have developed related instruments, including the Bergen Facebook Addiction Scale (Andreassen et al., 2012) and the Social Media Disorder Scale (van den Eijnden et al., 2016). More recently, Wegmann et al. (2017) introduced an online-specific FoMO measure to capture anticipatory anxiety tied to internet communication, distinct from general trait FoMO. While this proliferation of instruments has enabled more precise measurement, it has also contributed to conceptual fragmentation, as studies using different scales are not always directly comparable (Tandon et al., 2021).

Finally, the *persuasive technology research* offers a design-oriented lens on why SNSs are so effective at capturing and holding attention. Fogg's (2003) foundational work, later popularised by Eyal's (2014) "hook model," describes how digital products are deliberately engineered around triggers, variable rewards, and investment loops to cultivate habitual use. Neuroscientific evidence corroborates this design logic: social validation cues such as "likes" activate reward-related neural circuitry in ways that parallel other reinforcing stimuli (Sherman et al., 2016; Meshi et al., 2015). Taken together, these strands support a layered model in which technological architecture (the trigger environment), psychological vulnerability (FoMO), and behavioural consequence (digital addiction) are mutually reinforcing. This synthesis aligns with the "Comprehensive Bibliometric Model" adopted in this review, situating SNS design features, FoMO, and digital addiction as sequential yet recursively linked layers within the broader cyberpsychology domain.

METHODOLOGY

This review adopts a hybrid approach that combines structured conceptual synthesis with bibliometric characterisation of the literature, consistent with recent practice in FoMO scholarship (Tandon et al., 2021; Erlinda & Fatmawati, 2024). Rather than presenting raw bibliometric software outputs (e.g., VOSviewer or Bibliometrix network files), the analysis integrates and cross-validates patterns reported across multiple Scopus and Web of Science-indexed bibliometric studies of FoMO and related constructs, alongside primary empirical and theoretical sources, to construct a synthesised account of the field's intellectual structure and substantive content.

Sources were identified through systematic searches of Scopus, Web of Science, PubMed, and PsycINFO, following search-term logic established in prior systematic reviews. Search combinations included "fear of missing out," "FoMO," "social media addiction," "problematic smartphone use," "internet addiction," and "digital addiction," restricted to peer-reviewed journal articles in English. This mirrors the protocol used by Tandon et al. (2021), who synthesised 58 empirical studies across these databases, and by Erlinda and Fatmawati (2024), who conducted VOSviewer-based co-occurrence mapping of Scopus records.

The analytical framework organises findings into a layered model (Figure 1). At the *Technology Layer*, the review captures SNS design features and persuasive design patterns. The *Psychological Layer* focuses on the FoMO construct and its symptom structure (salience, mood modification, conflict). The *Addiction Layer* addresses digital addiction symptomatology (tolerance, withdrawal, loss of control, continued use) and associated health impacts. At the centre lies the *Core Behavioural Mechanisms Layer*, describing the engagement–reinforcement cycle that links social interaction rewards to user retention metrics through triggering and feedback loops. Finally, a set of *moderating factors*- user, platform, social, and temporal dimensions- shape the interactions across layers. This structure reflects the discipline-mapping logic common to bibliometric reviews, where cyberpsychology, communication studies, and public health converge around shared analytical frameworks of systematic review, citation network analysis, and trajectory identification.

Inclusion prioritised studies published in high-impact, Scopus-indexed journals such as *Computers in Human Behaviour*, *Internet Research*, *Journal of Affective Disorders*, *Journal of Adolescence*, *Addictive Behaviours*, and *International Journal of Environmental Research and Public Health*. Approximately 35 sources were retained for detailed synthesis, balancing foundational theoretical contributions, key empirical studies, and recent bibliometric analyses.

Screening followed a three-stage process broadly consistent with PRISMA-informed systematic review practice. In the *identification stage*, records were compiled using the search-term combinations described. In the *screening stage*, duplicates, non-English publications, conference abstracts without full peer review, and studies unrelated to psychological, behavioural, or health dimensions of FoMO or digital addiction were excluded. In the *eligibility stage*, full texts were assessed for their contribution to at least one layer of the conceptual model, technology design, psychological mechanism, addiction symptomatology, behavioural reinforcement, moderating factors, or bibliometric characterisation, ensuring comprehensive coverage. Where multiple bibliometric studies reported overlapping or corroborating patterns (e.g., independent VOSviewer and Bibliometrix analyses converging on

similar discipline-mapping and keyword-evolution findings), these were cross-referenced to strengthen confidence in descriptive claims rather than relying on any single source.

Figure 1 presents the full conceptual framework underlying this review. The model is organised as vertically layered constructs, beginning with the overarching research domain of cyberpsychology, digital media effects, and internet addiction, and descending through the technology, psychological, and addiction layers. These layers are connected horizontally through their respective sub-mechanisms (persuasion design patterns, FoMO symptoms, health impacts) and jointly shaped by moderating factors. All converge on the *engagement-reinforcement cycle*, the recursive loop at the center of the model that links social interaction rewards to user retention metrics. The lower tier situates this psychological model within the bibliometric analytical framework, spanning discipline mapping, research evolution, knowledge gaps, and future directions.

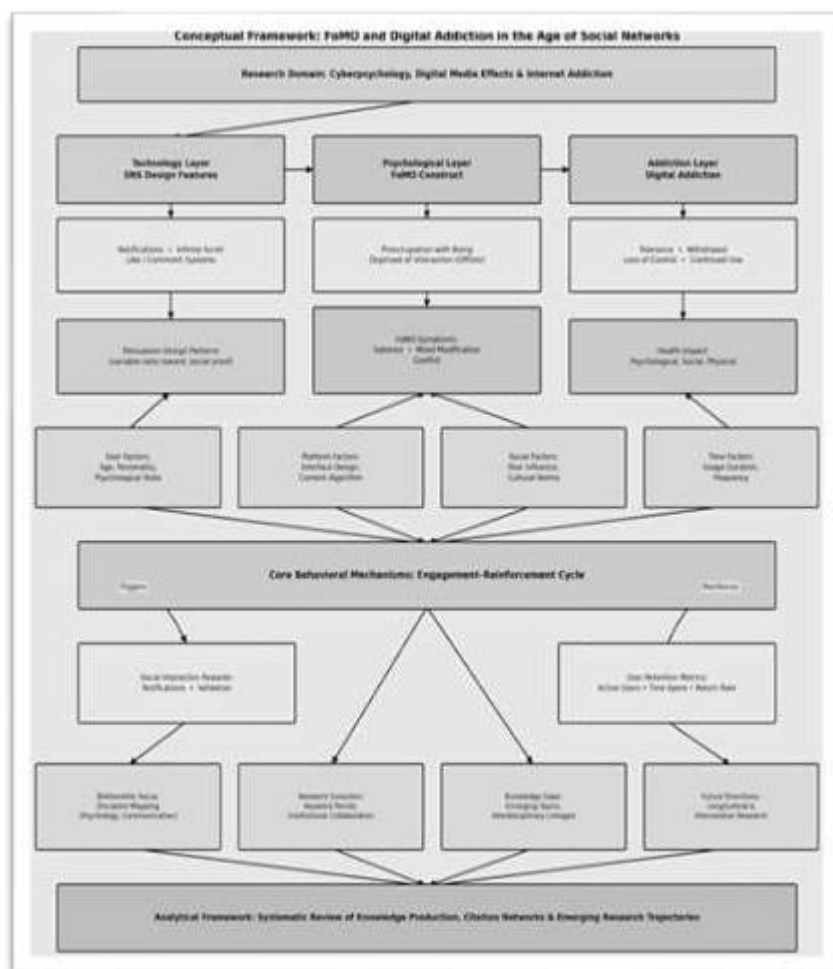


Figure 1. Conceptual framework linking SNS design features, the FoMO construct, digital addiction, and the bibliometric structure of the research domain.

The Technology Layer: Social Networking Site Design and Persuasive Architecture

At the foundation of the proposed model lies the *technology layer*, comprising the structural design features of SNSs that shape user attention and behaviour. Three features recur across the literature as particularly consequential: *push notifications*, *infinite scroll interfaces*, and *like/comment validation systems*. These features were not incidental but deliberately engineered, drawing on principles of persuasive technology design (Fogg, 2003) to maximise engagement metrics such as time on platform, session frequency, and return visits.

Notifications function as external triggers in Eyal's (2014) hook model, interrupting offline attention and cueing re-engagement. Because they are often tied to social content- messages, tags, or comments as they exploit users' underlying social motivation, creating a strong association between the notification stimulus and the possibility of social reward (Meshi et al., 2015). Infinite scroll, by contrast, removes natural stopping cues that would

otherwise prompt disengagement, a design choice linked to prolonged and less intentional use sessions (Montag & Walla, 2016). Like and comment systems operationalise social validation as a quantifiable, publicly visible metric, transforming interpersonal approval into a gamified scoring system. Neuroimaging research shows that receiving likes activates reward-related brain regions across both adolescents and adults, underscoring the neurobiological basis of these reinforcing design features (Sherman et al., 2016).

Together, these features cohere into broader *persuasion design patterns*, systematic combinations of variable-ratio reward schedules, social proof mechanisms, and low-friction re-engagement pathways characteristic of contemporary SNS interfaces. Variable-ratio reinforcement, in which rewards (likes, matches, new content) arrive unpredictably, is well established in behavioural psychology as producing especially persistent and resistant-to-extinction behaviour patterns, a principle explicitly leveraged in app design (Eyal, 2014). Content recommendation algorithms amplify this effect by personalising the reward stream, ensuring that each scroll session surfaces highly engaging content and thereby increasing the perceived cost of disengagement. This is precisely the psychological terrain in which FoMO takes root (Przybylski et al., 2013).

Importantly, persuasion design patterns do not operate uniformly across all users; their effects are moderated by platform-level factors such as interface conventions and algorithmic personalisation, discussed further in Section 8. Nonetheless, the consistent empirical association between exposure to notification-heavy, infinite-scroll, validation-oriented platforms and higher rates of problematic use (Kuss & Griffiths, 2017; Andreassen et al., 2012) supports the technology layer's foundational role in the broader model. SNS design does not merely reflect user demand for connection; it actively cultivates the conditions under which FoMO and, subsequently, digital addiction become more likely.

The Psychological Layer: The FoMO Construct

Building on the technology layer, the *psychological layer* of the model centres on FoMO as a distinct yet interrelated construct. Przybylski et al. (2013) formally operationalised FoMO through a 10-item scale measuring the extent to which individuals worry that others are having rewarding experiences from which they are absent. Their tripartite study design showed that FoMO is inversely associated with basic psychological need satisfaction, positively associated with negative mood states, and predictive of heightened social media engagement, including checking behaviour immediately upon waking and during activities such as driving or eating.

At the core of this layer is the *preoccupation with being deprived of interaction when offline*. This preoccupation manifests behaviourally as compulsive checking and difficulty disengaging from digital environments, even in contexts where such behaviour is socially or practically costly, such as classrooms, social gatherings, or while driving (Alt, 2015; Beyens et al., 2016). Alt's (2015) study of college students found that FoMO was positively associated with both social and academic media engagement during class time, suggesting that the anxiety of missing out extends beyond leisure into domains where sustained attention is functionally critical.

From this preoccupation emerge more specific *FoMO symptoms* that mirror the componential model of addiction proposed by Griffiths (2005):

- **Salience** - intrusive thoughts about what one might be missing.
- **Mood modification** - checking behaviour used to alleviate anxiety or seek arousal.
- **Conflict** - interpersonal or intrapersonal tension when FoMO-driven checking interferes with obligations or relationships, such as phubbing during face-to-face interaction (Chotpitayasunondh & Douglas, 2016).

Empirical work consistently links these symptoms to negative outcomes. Oberst et al. (2017) found that FoMO mediated the relationship between heavy social networking use and negative physical, professional, and interpersonal consequences, indicating that FoMO is not merely a correlate of heavy use but an active mechanism translating usage into harm. Beyens et al. (2016) similarly showed that adolescents' unmet need for popularity predicted elevated FoMO, which in turn drove increased Facebook use and Facebook-related stress, a

self-reinforcing cycle in which unmet needs generate FoMO, FoMO drives compensatory engagement, and that engagement produces further stress without resolving the underlying deficit.

The relationship between FoMO and broader *anxiety and depressive symptomatology* has also been well documented. Elhai et al. (2016) identified FoMO as one of the strongest correlates of problematic smartphone use in adults, while subsequent studies demonstrated that FoMO mediates the link between depression and anxiety symptoms and smartphone use severity, consistent with the I-PACE model (Brand et al., 2016; Wegmann et al., 2017). A closely related but distinct process is *social comparison*, often treated as a proximal cognitive mechanism through which FoMO is generated and sustained. SNS feeds present curated, idealised streams of others' experiences, inviting upward comparison. Where basic psychological needs are under-satisfied, such comparisons intensify FoMO, since each instance provides fresh material for the apprehension that others are enjoying more rewarding experiences. This dynamic helps explain why passive, comparison-oriented scrolling has been more consistently linked to negative affective outcomes than active, communicative use; a distinction increasingly emphasised in the digital well-being literature (Vanden Abeele, 2021).

The Addiction Layer: Digital Addiction and Health Consequences

The *addiction layer* of the model captures the behavioural and health consequences that arise when FoMO-driven engagement becomes chronic and dysregulated. Drawing on Griffiths's (2005) components model, digital addiction in this framework is characterised by four interrelated symptom clusters: *tolerance, withdrawal, loss of control, and continued use despite negative consequences*.

Tolerance in the digital context refers to the need for progressively greater engagement, longer sessions, more frequent checking, or expanded platform use, to achieve the same level of psychological gratification previously obtained with less use (Kuss & Griffiths, 2011). Withdrawal manifests as negative affect, restlessness, or anxiety when access to SNSs is restricted, a pattern consistently documented in smartphone-use research showing elevated distress during involuntary disconnection (Elhai et al., 2017). Loss of control describes the gap between users' intentions to limit their use and their actual behaviour, a hallmark feature distinguishing problematic from merely heavy engagement (van den Eijnden et al., 2016). Continued use despite negative consequences captures the persistence of engagement even when users recognise its costs to academic performance, occupational functioning, sleep, or relationships (Andreassen et al., 2012).

These symptom clusters converge on measurable health impacts across psychological, social, and physical domains. Psychologically, sustained problematic use has been linked to elevated depression and anxiety (Elhai et al., 2017; Twenge et al., 2018). Twenge et al. (2018) documented a marked rise in depressive symptoms and suicide-related outcomes among U.S. adolescents coinciding with the diffusion of smartphones and social media after 2010, though the causal interpretation of this trend remains debated. Socially, digital addiction undermines face-to-face relationship quality, exemplified by *phubbing*- prioritising smartphone engagement over co-present partners, eroding satisfaction and trust (Chotpitayasunondh & Douglas, 2016). Physically, excessive use has been linked to disrupted sleep, sedentary behaviour, and musculoskeletal strain from prolonged device handling (Demirci et al., cited in Elhai et al., 2017).

Sleep disruption warrants particular emphasis, given its downstream effects on mood regulation, cognition, and academic performance. Late-night checking behaviour driven by FoMO, often described as "vigilance" toward incoming social content, has been associated with delayed sleep onset and reduced sleep quality, compounding anxiety and mood-related symptoms (Elhai et al., 2017). Academically, FoMO-driven multitasking during study or lecture time divides attention and reduces learning outcomes. Alt (2015) found that FoMO significantly predicted media multitasking among college students, independent of general media use frequency. Collectively, these findings suggest that the addiction layer's health consequences propagate across sleep, cognition, academic and occupational functioning, and interpersonal relationships, consistent with Griffiths's (2005) biopsychosocial framing.

It is important to note ongoing definitional debate regarding whether "digital addiction" constitutes a distinct clinical entity or a dimensional behavioural pattern. The World Health Organization's inclusion of *gaming*

disorder in the ICD-11 (World Health Organisation, 2018) signalled formal recognition of at least one behavioural digital addiction, but consensus for generalised social media or smartphone addiction remains absent. Kardefelt-Winther's (2014) *compensatory internet use model* offers a corrective, proposing that much of what is labelled "internet addiction" reflects maladaptive coping with pre-existing psychosocial problems rather than a primary addictive process. This framing aligns with the mediating role of FoMO in the present model: digital addiction is less a disease acquired from technology per se, and more the behavioural endpoint of chronic, unmet psychological needs channelled through persuasive technological environments.

Across both dimensional and categorical framings, the empirical convergence is clear: elevated FoMO reliably predicts symptom clusters consistent with behavioural addiction (Elhai et al., 2016; Rozgonjuk et al., 2020), and these clusters, in turn, predict measurable declines in psychological, social, and physical well-being (Oberst et al., 2017; Twenge et al., 2018). This establishes the addiction layer as the downstream, health-relevant consequence of the technology–psychology pathway described in Sections 4 and 5.

Core Behavioural Mechanisms: The Engagement–Reinforcement Cycle

Underlying the three-layer model is a *core behavioural mechanism* that explains how technology, psychology, and addiction remain dynamically coupled over time rather than functioning as a one-directional causal chain. Termed here the *engagement-reinforcement cycle*, this mechanism describes a recursive loop in which social interaction rewards trigger platform engagement, engagement generates behavioural and physiological reinforcement, and this reinforcement, captured empirically through user retention metrics, feeds back into the design and delivery of future triggers.

Social interaction rewards, primarily notifications and validation cues such as likes and comments, serve as the entry point of the cycle. Because these rewards are socially meaningful, tapping into the fundamental need for relatedness described by *Self-Determination Theory* (Ryan & Deci, 2000), they carry motivational weight beyond simple novelty. When a notification arrives, it initiates the "hook" mechanics outlined by Eyal (2014): a cue prompts an action (checking the app), which is followed by a variable reward (new content, a message, social approval), which in turn prompts an investment (posting, commenting, scrolling further) that increases the likelihood of future engagement.

This trigger–response–reward sequence directly reinforces the cycle itself. Each successful reward strengthens the association between cues (e.g., boredom, a notification sound) and checking behaviour, consistent with *variable-ratio reinforcement* schedules known from operant conditioning to produce especially durable patterns (Meshi et al., 2015; Montag & Walla, 2016). Platforms monitor the success of this loop through metrics such as active user counts, average time spent, and return rates, which serve as commercial proxies for the psychological grip of reinforcement. Because revenue models are tied to engagement, design teams have strong incentives to optimise precisely the features such as notifications, infinite scroll, and algorithmic curation that sustain the cycle (Fogg, 2003; Eyal, 2014).

Crucially, this cycle is the mechanism through which *FoMO* is both activated and perpetuated. FoMO triggers engagement (checking the phone to avoid missing a social update), and engagement, when rewarded, reinforces the disposition toward future FoMO-driven checking. Over repeated cycles, behaviour shifts from intentional to habitual or compulsive (Wegmann et al., 2017; Brand et al., 2016). The threshold for engagement lowers, consistent with the *tolerance criterion* described in Section 6, while the psychological cost of non-engagement, withdrawal-like discomfort, rises. In this sense, the engagement–reinforcement cycle functions as the *engine* connecting the technology layer's persuasive design, the psychological layer's FoMO symptomatology, and the addiction layer's clinical endpoints into a single, self-sustaining system.

Moderating and Contextual Factors

While the engagement–reinforcement cycle provides a general account of how FoMO and digital addiction develop, its strength and expression vary considerably across individuals and contexts. The literature identifies four principal categories of *moderating factors*: *user factors*, *platform factors*, *social factors*, and *time factors*.

User factors encompass demographic and dispositional characteristics such as age, personality traits, and psychological state. Adolescents and emerging adults consistently report higher FoMO scores than older populations, reflecting the developmental salience of peer belonging and social comparison during these stages (Beyens et al., 2016; Alt, 2015). Personality research further shows that lower self-esteem, higher neuroticism, and greater social anxiety heighten vulnerability to FoMO and subsequent problematic use (Elhai et al., 2016). Pre-existing psychological states, particularly depression and anxiety, appear to function bidirectionally: they predispose individuals to FoMO and are exacerbated by FoMO-driven engagement, creating a potential vicious cycle (Elhai et al., 2017; Wegmann et al., 2017).

Platform factors relate to interface design and algorithmic characteristics that shape how persuasively a given SNS operates. Platforms with algorithmically personalised, infinite-scroll feeds, such as short-video apps, are associated with more compulsive use patterns than platforms with bounded interaction structures, reflecting differences in how aggressively each design leverages persuasion patterns (Montag & Walla, 2016). Cross-platform research further suggests that FoMO's relationship with problematic use may be mediated by platform-specific disorders, with WhatsApp, Facebook, Instagram, and Snapchat each independently contributing to reduced daily productivity (Rozgonjuk et al., 2020).

Social factors include peer influence and cultural norms, which shape both the intensity of FoMO and its behavioural expression. Because FoMO is inherently socially referential, rooted in comparison to others' experiences, it is highly sensitive to peer network characteristics. Adolescents embedded in peer groups with high social media salience report correspondingly elevated FoMO (Beyens et al., 2016). Neuroscientific evidence corroborates this sensitivity, showing that peer engagement (e.g., seeing peers like an image) modulates neural reward responses to social media content (Sherman et al., 2016). Cultural context further conditions these dynamics: collectivist versus individualist orientations, norms of connectivity and hospitality around device use, and varying rates of platform access all shape FoMO's manifestation across regions. Bibliometric mapping highlights this as an under-represented area in geographically diverse samples (Tandon et al., 2021).

Time factors, usage duration and frequency, represent perhaps the most direct behavioural moderator. Studies consistently show a dose-response relationship: greater cumulative usage and higher checking frequency correlate with more severe addiction symptoms and poorer health outcomes (Twenge et al., 2018; Elhai et al., 2016). Yet duration alone is an imperfect proxy for harm. Several studies emphasise that the qualitative nature of use—active, purposeful engagement versus passive, comparison-driven scrolling—more strongly predicts negative outcomes than raw time metrics, suggesting that future research should move beyond simple screen-time measures toward more granular behavioural indicators (Vanden Abeele, 2021).

Taken together, these moderating factors do not operate independently but interact multiplicatively with the engagement–reinforcement cycle. A socially anxious adolescent (user factor) using an algorithmically optimised, infinite-scroll platform (platform factor) within a highly connected peer network (social factor) for extended daily durations (time factor) represents the profile most consistently associated with clinically significant digital addiction symptomatology across the reviewed literature.

Bibliometric Landscape: Discipline Mapping, Research Evolution, and Knowledge Gaps

Beyond the substantive psychological model, this review synthesises *bibliometric evidence* to trace how FoMO and digital addiction research has matured as a scholarly domain. Multiple Scopus-based analyses converge on several consistent patterns.

Discipline mapping reveals that the field originated primarily within psychology, anchored by Przybylski et al.'s (2013) foundational scale development study, but has since diversified into communication studies, business and marketing, education, and public health. Erlinda and Fatmawati's (2024) VOSviewer analysis of 81 Scopus-indexed documents on FoMO and consumer behaviour found that the construct increasingly extends into marketing, where it is studied as a driver of impulsive purchasing and promotional responsiveness (Good & Hyman, 2021). Similarly, Tandon et al.'s (2021) systematic review identified thematic clusters spanning

psychological well-being, social relationships, academic and workplace productivity, and consumer behaviour, underscoring FoMO's cross-disciplinary reach.

Research evolution and keyword trends show a clear temporal progression. Early work (2013–2016) focused on conceptual and psychometric foundations, validating FoMO's relationship to need satisfaction and well-being (Przybylski et al., 2013). A middle period (2016–2019) emphasised clinical and health correlates, particularly problematic smartphone use, anxiety, and depression (Elhai et al., 2016, 2017; Oberst et al., 2017). More recent work (2020–present) has diversified into consumer behaviour, workplace productivity, educational engagement, and platform-specific analyses (Rozgonjuk et al., 2020; Gezin et al., 2025). This trajectory mirrors broader social media addiction research, which evolved from psychometric scale development (Andreassen et al., 2012; van den Eijnden et al., 2016) toward integrative theoretical models such as I-PACE (Brand et al., 2016).

Institutional and geographic collaboration patterns highlight a concentration of highly cited FoMO and digital-addiction research in North America, Western Europe, and East Asia, with international co-authorship networks expanding notably after 2018. This concentration raises concerns about generalizability, since prevailing models are largely validated in high-income, high-connectivity contexts, leaving lower- and middle-income regions under-represented (Tandon et al., 2021).

Knowledge gaps persist across methodological, conceptual, and empirical dimensions. Methodologically, most FoMO studies rely on cross-sectional, self-report designs, limiting causal inference about whether FoMO precedes problematic use or results from it (Tandon et al., 2021). Conceptually, inconsistent operationalisation relative to adjacent constructs such as social comparison, social anxiety, and problematic internet use complicates synthesis (Wegmann et al., 2017). Empirically, platform-specific dynamics remain under-studied, despite evidence that different architectures shape FoMO and addiction risk differently (Rozgonjuk et al., 2020; Montag & Walla, 2016). Intervention research, testing digital well-being tools, platform design changes, or clinical approaches, remains comparatively sparse.

Emerging topics and interdisciplinary linkages include FoMO's intersection with algorithmic recommendation systems and AI-driven personalization, its role in vulnerable populations (e.g., adolescents with anxiety disorders, university students during high-stakes academic periods), and its application to novel digital contexts such as cryptocurrency and financial-market participation. These expansions suggest FoMO is evolving from a domain-specific construct into a general framework for understanding anxiety-driven engagement across diverse digital environments.

Citation concentration analysis reveals a small set of highly influential “anchor” publications structuring the field. Przybylski et al. (2013) functions as the foundational citation for FoMO research, while Kuss and Griffiths (2011) anchors social-networking-addiction scholarship more broadly.

Griffiths's (2005) components model also remains central. More recent reviews, such as Tandon et al. (2021), increasingly serve as synthesis nodes bridging otherwise disconnected sub-clusters (e.g., clinical psychology versus consumer marketing). This pattern reflects a maturing but still consolidating domain: a small set of theoretical anchors surrounded by a rapidly diversifying periphery. Scopus records show FoMO publications grew from a handful in 2013 to well over a thousand by the mid-2020s (Erlinda & Fatmawati, 2024).

Journal-level analysis shows a bifurcated venue structure. A core tier of psychology- and behaviour-focused outlets, including *Computers in Human Behaviour*, *Addictive Behaviours*, and the *Journal of Adolescence*, carry foundational psychometric and clinical work. An expanding secondary tier, including *Internet Research*, *Technological Forecasting and Social Change*, and the *British Journal of Educational Technology*, applies FoMO frameworks to marketing, organisational, and educational contexts (Tandon et al., 2021; Gezin et al., 2025). This bifurcation mirrors the discipline-mapping pattern and suggests that future consolidation may depend on deliberate cross-tier citation and collaboration, rather than continued parallel development within disciplinary silos.

DISCUSSION: INTEGRATING THE MODEL

The layered framework developed in this review, encompassing SNS design (technology layer), FoMO (psychological layer), and digital addiction with associated health impacts (addiction layer), connected through a core engagement–reinforcement mechanism and shaped by user, platform, social, and time factors, offers an integrative account that helps reconcile several tensions evident in the existing literature.

First, it clarifies the causal ambiguity surrounding FoMO's relationship to problematic use. Rather than treating FoMO as either a pure antecedent or a pure consequence of digital addiction, the recursive engagement–reinforcement cycle described in Section 7 suggests that FoMO functions as both: an initial motivational vulnerability rooted in unmet psychological needs (Przybylski et al., 2013; Ryan & Deci, 2000), subsequently amplified through repeated exposure to persuasively designed reward systems (Fogg, 2003; Eyal, 2014). This interpretation aligns with the *I-PACE model*, which positions response variables as mediators between predisposition and maintained compulsive behaviour (Brand et al., 2016; Wegmann et al., 2017).

Second, the model helps explain the mixed evidence regarding screen time as a predictor of harm. By locating the proximal driver of addiction-related outcomes in the interaction between FoMO-driven motivation and platform-specific reward architecture, rather than in raw usage duration alone, the framework accounts for findings that qualitative engagement patterns (active versus passive use, notification-driven versus intentional use) often outperform simple time-based metrics in predicting negative outcomes (Vanden Abeele, 2021; Twenge et al., 2018).

Third, the model has practical implications for both platform design and individual intervention. At the design level, the concentration of persuasive features, variable-ratio rewards, infinite scroll, algorithmically optimised notifications, identified in the technology layer, suggests that meaningful reduction in FoMO-driven harm may require structural changes to platform architecture rather than relying solely on individual self-regulation. This point is increasingly recognised in *digital well-being research* and regulatory discussions (Montag & Walla, 2016; Vanden Abeele, 2021). At the individual and clinical level, because FoMO is rooted in need frustration rather than technology exposure per se (Kardefelt-Winther, 2014), interventions that address underlying psychosocial needs, such as social skill-building, self-esteem enhancement, and anxiety management, may prove more effective than technology-restriction approaches alone, though empirical testing of such interventions remains limited (Tandon et al., 2021).

Fourth, situating the model within the broader bibliometric landscape described in Section 9 clarifies why the field has struggled to produce a unified theory despite two decades of active research. FoMO scholarship has expanded discipline-by-discipline, with psychology, marketing, education, and health researchers each adopting the construct for domain-specific purposes without a shared integrative framework linking design, cognition, and outcome. The layered model proposed here is offered as one step toward such integration, explicitly connecting the discipline-specific findings synthesised in Sections 4 through 8 to the citation and keyword patterns documented in Section 9. In doing so, it provides a scaffold onto which future discipline-specific findings, whether in consumer psychology, organisational behaviour, or clinical intervention research, can be mapped without requiring a wholesale re-derivation of the underlying psychological mechanism each time the construct is applied to a new context.

Practical Implications For Stakeholders

The layered model developed in this review carries distinct implications for the principal stakeholder groups implicated in FoMO and digital addiction dynamics: *platform designers, educators, clinicians and health practitioners, parents and caregivers, and policymakers*.

For *platform designers*, the concentration of empirical evidence linking interface features, such as infinite scroll, badge-based notifications, and algorithmically optimised content streams, to compulsive use patterns suggests that meaningful harm reduction may require reconsidering default design choices rather than relying solely on user-facing “digital wellbeing” dashboards (Montag & Walla, 2016; Eyal, 2014). Design interventions such as

natural stopping cues, adjustable notification granularity, and transparency around algorithmic content selection represent concrete, evidence-aligned steps consistent with persuasive-technology principles applied in reverse (Fogg, 2003).

For *educators*, the demonstrated association between FoMO and in-class media multitasking (Alt, 2015) suggests that digital literacy curricula should address FoMO explicitly, rather than relying on generic “screen time” messaging. Such targeted approaches may be more effective in reducing classroom distraction and supporting sustained attention.

For *clinicians and health practitioners*, the mediating role of FoMO between psychopathology and problematic use (Elhai et al., 2016; Wegmann et al., 2017) indicates that treatment approaches targeting underlying anxiety, social self-esteem, and need satisfaction are likely to be more clinically effective than technology-restriction strategies alone. This perspective aligns with Kardefelt-Winther’s (2014) *compensatory use model*, which frames problematic internet use as maladaptive coping with pre-existing psychosocial difficulties.

For *parents and caregivers*, the developmental salience of FoMO during adolescence (Beyens et al., 2016) highlights the importance of fostering offline peer belonging and open family communication about social comparison. Restrictive device-management strategies, while sometimes necessary, appear only partially effective in isolation; relational and developmental supports may provide more durable protection.

Finally, for *policymakers*, the formal recognition of at least one behavioural digital addiction in the ICD-11 (World Health Organisation, 2018), combined with growing bibliometric evidence of the field’s public-health relevance (Twenge et al., 2018), lends support to continued investment in regulatory frameworks. These include platform design transparency, age-appropriate design standards, and funding for longitudinal and intervention research identified as priorities in Section 12.

LIMITATIONS

This review has several limitations. As a conceptual and bibliometric synthesis rather than a formal systematic review or original bibliometric software analysis, it does not report original citation network statistics, co-occurrence matrices, or quantitative bibliometric indices; instead, it synthesises and cross-validates findings from existing Scopus-indexed bibliometric studies (Tandon et al., 2021; Erlinda & Fatmawati, 2024). The reviewed literature itself is predominantly cross-sectional and correlational, limiting the strength of causal claims embedded in the proposed engagement–reinforcement model, which should be understood as a theoretically integrative heuristic rather than an empirically validated causal pathway. Additionally, the literature synthesised here remains geographically and linguistically concentrated in English-language, high-income-context publications, a limitation inherited from the underlying evidence base and one that bibliometric mapping itself identifies as a persistent gap (Tandon et al., 2021).

Future Research Directions

Building on the identified knowledge gaps, several priorities emerge for future research. First, *longitudinal and experimental designs* are needed to establish the temporal and causal ordering of FoMO, engagement behaviour, and addiction symptomatology. Moving beyond the cross-sectional designs that currently dominate the field will allow researchers to clarify whether FoMO functions primarily as a precursor, a consequence, or a mutually reinforcing mechanism of problematic use.

Second, *cross-cultural replication* is essential to test whether the SDT-based and I-PACE-based theoretical models, developed largely in Western contexts, generalise to populations with different cultural constructions of sociality, connectivity, and digital access (Tandon et al., 2021). Such work would help determine whether FoMO is a universal psychological process or one shaped by cultural contingencies.

Third, *platform-specific research* that disaggregates “social media use” into distinct platform architectures would clarify which design features carry the greatest addiction risk. Evidence already suggests that infinite scroll,

algorithmic feeds, and notification badges vary in their impact across platforms (Rozgonjuk et al., 2020), but systematic comparisons remain limited.

Fourth, *intervention research* represents a particularly underdeveloped but practically important direction. Testing digital well-being tools, platform-level design modifications (e.g., removing infinite scroll or notification badges), and clinical interventions targeting need satisfaction directly could provide actionable strategies for reducing FoMO-driven harm.

Finally, as FoMO scholarship increasingly intersects with *algorithmic personalisation and AI-driven content curation*, future bibliometric and empirical work should track how generative and recommendation technologies reshape the persuasive architecture underlying the technology layer of the present model. This line of inquiry will be critical for understanding how emerging digital environments may amplify or mitigate FoMO and addiction dynamics.

CONCLUSION

This review has synthesised the psychological and bibliometric literature on *Fear of Missing Out (FoMO)* and *digital addiction* within a layered conceptual framework that links SNS design, FoMO, and behavioural-health outcomes through a core engagement–reinforcement mechanism. The evidence presented across the preceding sections indicates that FoMO is neither a trivial byproduct of social media use nor a simple personality trait. Instead, it emerges as a motivationally grounded, socially referential psychological state that both arises from and actively sustains persuasively engineered patterns of digital engagement. In this respect, FoMO functions as a bridge: it connects unmet psychological needs to platform-level design architectures, and in doing so, it transforms everyday digital habits into patterns that, for some users, escalate into clinically significant symptoms of addiction.

The bibliometric landscape further demonstrates that FoMO scholarship has diversified rapidly over the past decade. What began as a narrowly psychological construct has expanded into communication studies, marketing, education, and public health, with researchers in each discipline adopting FoMO for domain-specific purposes. This diversification has enriched the field but also fragmented it, producing parallel literatures that often lack a shared conceptual anchor. The layered model proposed here offers one step toward consolidation. By explicitly connecting design features (technology layer), motivational vulnerabilities (psychological layer), and health outcomes (addiction layer) through the recursive engagement–reinforcement cycle, the model provides a scaffold onto which future findings can be mapped without requiring a wholesale re-derivation of FoMO's underlying mechanism each time the construct is applied in a new context.

Several broader implications follow. First, the model clarifies the *causal ambiguity* surrounding FoMO's relationship to problematic use. Rather than positioning FoMO as either antecedent or consequence, the cycle shows how it operates as both: a vulnerability that predisposes individuals to compulsive engagement and a reinforcing mechanism that sustains it. Second, the model helps explain why *screen-time metrics* alone have proven inconsistent predictors of harm. By locating the driver of negative outcomes in the interaction between FoMO and platform-specific reward architectures, the framework accounts for findings that qualitative engagement patterns, such as passive comparison-driven scrolling versus active communicative use, are more predictive of distress than raw duration. Third, the model carries *practical implications* for stakeholders. For platform designers, it highlights the need to reconsider default interface features that amplify FoMO; for educators, it underscores the importance of digital literacy curricula that address FoMO explicitly; for clinicians, it points toward interventions targeting unmet psychological needs rather than technology restriction alone; for parents, it emphasizes fostering offline belonging and open communication; and for policymakers, it supports regulatory frameworks that address design transparency and age-appropriate standards.

Finally, the bibliometric synthesis underscores the *future research priorities* necessary to advance the field. Longitudinal and experimental designs are needed to establish temporal and causal ordering. Cross-cultural replication is essential to test whether SDT- and I-PACE-based models generalise beyond Western contexts. Platform-specific analyses must disaggregate “social media use” into distinct architectures to identify which



design features carry the greatest risk. Intervention research, testing digital well-being tools, platform-level modifications, and clinical approaches targeting need satisfaction, remains underdeveloped but practically urgent. And as FoMO scholarship increasingly intersects with algorithmic personalisation and AI-driven content curation, future bibliometric and empirical work must track how these technologies reshape the persuasive architecture underlying the technology layer.

Taken together, the layered model and bibliometric synthesis presented here suggest that FoMO is transitioning from a domain-specific construct into a *general framework for understanding anxiety-driven engagement across diverse digital environments*. By consolidating fragmented literatures and highlighting methodological, cultural, and practical priorities, this review aims to guide the next phase of FoMO and digital addiction scholarship: one that moves beyond correlational findings toward causal clarity, cross-cultural generalizability, and evidence-based strategies for digital well-being.

REFERENCES

1. Alt, D. (2015). College students' academic motivation, media engagement and fear of missing out. *Computers in Human Behavior*, 49, 111–119. <https://doi.org/10.1016/j.chb.2015.02.057>
2. Andreassen, C. S., Torsheim, T., Brunborg, G. S., & Pallesen, S. (2012). Development of a Facebook addiction scale. *Psychological Reports*, 110(2), 501–517. <https://doi.org/10.2466/02.09.18.PR0.110.2.501-517>
3. Beyens, I., Frison, E., & Eggermont, S. (2016). "I don't want to miss a thing": Adolescents' fear of missing out and its relationship to adolescents' social needs, Facebook use, and Facebook related stress. *Computers in Human Behavior*, 64, 1–8. <https://doi.org/10.1016/j.chb.2016.05.083>
4. Brand, M., Young, K. S., Laier, C., Wölfling, K., & Potenza, M. N. (2016). Integrating psychological and neurobiological considerations regarding the development and maintenance of specific Internet-use disorders: An Interaction of Person-Affect-Cognition-Execution (I-PACE) model. *Neuroscience & Biobehavioral Reviews*, 71, 252–266. <https://doi.org/10.1016/j.neubiorev.2016.08.033>
5. Chotpitayasunondh, V., & Douglas, K. M. (2016). How "phubbing" becomes the norm: The antecedents and consequences of snubbing via smartphone. *Computers in Human Behavior*, 63, 9–18. <https://doi.org/10.1016/j.chb.2016.05.018>
6. Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
7. Elhai, J. D., Dvorak, R. D., Levine, J. C., & Hall, B. J. (2017). Problematic smartphone use: A conceptual overview and systematic review of relations with anxiety and depression psychopathology. *Journal of Affective Disorders*, 207, 251–259. <https://doi.org/10.1016/j.jad.2016.08.030>
8. Elhai, J. D., Levine, J. C., Dvorak, R. D., & Hall, B. J. (2016). Fear of missing out, need for touch, anxiety and depression are related to problematic smartphone use. *Computers in Human Behavior*, 63, 509–516. <https://doi.org/10.1016/j.chb.2016.05.079>
9. Erlinda, V., & Fatmawati, I. (2024). Bibliometric analysis of publication trends in the Scopus database on the theme fear of missing out to consumers behavior. *Multidisciplinary Reviews*, 8(3), Article 2025070. <https://doi.org/10.31893/multirev.2025070>
10. Eyal, N. (2014). *Hooked: How to build habit-forming products*. Portfolio/Penguin.
11. Fogg, B. J. (2003). *Persuasive technology: Using computers to change what we think and do*. Morgan Kaufmann.
12. Gezgin, D. M., Türk Kurtça, T., Mihci, C., Lin, C., & Griffiths, M. D. (2025). The role of self-regulated learning in modelling the relationships between learning approaches, FoMO and smartphone addiction among university students. *British Journal of Educational Technology*. Advance online publication. <https://doi.org/10.1111/bjet.13566>
13. Good, M. C., & Hyman, M. R. (2021). Direct and indirect effects of fear-of-missing-out appeals on purchase likelihood. *Journal of Consumer Behaviour*, 20(3), 564–576. <https://doi.org/10.1002/cb.1885>
14. Griffiths, M. D. (2005). A "components" model of addiction within a biopsychosocial framework. *Journal of Substance Use*, 10(4), 191–197. <https://doi.org/10.1080/14659890500114359>



15. Kardefelt-Winther, D. (2014). A conceptual and methodological critique of internet addiction research: Towards a model of compensatory internet use. *Computers in Human Behavior*, 31, 351–354. <https://doi.org/10.1016/j.chb.2013.10.059>
16. Kuss, D. J., & Griffiths, M. D. (2011). Online social networking and addiction: A review of the psychological literature. *International Journal of Environmental Research and Public Health*, 8(9), 3528–3552. <https://doi.org/10.3390/ijerph8093528>
17. Kuss, D. J., & Griffiths, M. D. (2017). Social networking sites and addiction: Ten lessons learned. *International Journal of Environmental Research and Public Health*, 14(3), Article 311. <https://doi.org/10.3390/ijerph14030311>
18. Meshi, D., Tamir, D. I., & Heekeren, H. R. (2015). The emerging neuroscience of social media. *Trends in Cognitive Sciences*, 19(12), 771–782. <https://doi.org/10.1016/j.tics.2015.09.004>
19. Montag, C., & Walla, P. (2016). Carpe diem instead of losing your social mind: Beyond digital addiction and why we all suffer from digital overuse. *Cogent Psychology*, 3(1), Article 1157281. <https://doi.org/10.1080/23311908.2016.1157281>
20. Oberst, U., Wegmann, E., Stodt, B., Brand, M., & Chamarro, A. (2017). Negative consequences from heavy social networking in adolescents: The mediating role of fear of missing out. *Journal of Adolescence*, 55, 51–60. <https://doi.org/10.1016/j.adolescence.2016.12.008>
21. Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, 29(4), 1841–1848. <https://doi.org/10.1016/j.chb.2013.02.014>
22. Rozgonjuk, D., Sindermann, C., Elhai, J. D., & Montag, C. (2020). Fear of missing out (FoMO) and social media's impact on daily-life and productivity at work: Do WhatsApp, Facebook, Instagram, and Snapchat use disorders mediate that association? *Addictive Behaviors*, 110, Article 106487. <https://doi.org/10.1016/j.addbeh.2020.106487>
23. Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. <https://doi.org/10.1037/0003-066X.55.1.68>
24. Sherman, L. E., Payton, A. A., Hernandez, L. M., Greenfield, P. M., & Dapretto, M. (2016). The power of the like in adolescence: Effects of peer influence on neural and behavioral responses to social media. *Psychological Science*, 27(7), 1027–1035. <https://doi.org/10.1177/0956797616645673>
25. Tandon, A., Dhir, A., Almugren, I., AlNemer, G. N., & Mäntymäki, M. (2021). Fear of missing out (FoMO) among social media users: A systematic literature review, synthesis and framework for future research. *Internet Research*, 31(3), 782–821. <https://doi.org/10.1108/INTR-11-2019-0455>
26. Tandon, A., Dhir, A., Talwar, S., Kaur, P., & Mäntymäki, M. (2021). Social media induced fear of missing out (FoMO) and phubbing: Behavioural, relational and psychological outcomes. *Technological Forecasting and Social Change*, 174, Article 121149. <https://doi.org/10.1016/j.techfore.2021.121149>
27. Twenge, J. M., Joiner, T. E., Rogers, M. L., & Martin, G. N. (2018). Increases in depressive symptoms, suicide-related outcomes, and suicide rates among U.S. adolescents after 2010 and links to increased new media screen time. *Clinical Psychological Science*, 6(1), 3–17. <https://doi.org/10.1177/2167702617723376>
28. van den Eijnden, R. J. J. M., Lemmens, J. S., & Valkenburg, P. M. (2016). The Social Media Disorder Scale. *Computers in Human Behavior*, 61, 478–487. <https://doi.org/10.1016/j.chb.2016.03.038>
29. Vanden Abeele, M. M. P. (2021). Digital wellbeing as a dynamic construct. *Communication Theory*, 31(4), 932–955. <https://doi.org/10.1093/ct/qtaa024>
30. Wegmann, E., Oberst, U., Stodt, B., & Brand, M. (2017). Online-specific fear of missing out and Internet-use expectancies contribute to symptoms of Internet-communication disorder. *Addictive Behaviors Reports*, 5, 33–42. <https://doi.org/10.1016/j.abrep.2017.04.001>
31. World Health Organization. (2018). *International classification of diseases for mortality and morbidity statistics* (11th rev.). <https://icd.who.int/>