



Digital Well-Being and Human Behaviour in the Age of Social Media and Algorithmic Technologies

Clara Vandenholt

Faculty of Humanities, Rosenfeld University, Germany

Submission: 26.03.2026. Accepted: 12.07.2026. Publication: 09.09.2026

Abstract

The rapid expansion of social media, smartphones, algorithmic recommendation systems, and digitally mediated communication has fundamentally transformed patterns of human behaviour and everyday life. Digital technologies provide unprecedented opportunities for communication, education, entertainment, professional networking, and access to information, yet their intensive and poorly regulated use has generated growing concerns about digital well-being. Digital well-being refers broadly to the capacity of individuals and communities to use digital technologies in ways that support psychological, social, cognitive, and physical well-being while minimizing harmful consequences. This research paper examines the relationship between digital well-being and human behaviour in an environment increasingly shaped by social media platforms and algorithmic technologies. It explores how personalized content, notifications, social comparison, online self-presentation, engagement-oriented platform design, and algorithmic recommendations influence attention, emotions, sleep, productivity, interpersonal relationships, and patterns of technology use. The paper also examines both positive and negative dimensions of digital engagement. Digital platforms can strengthen social connection, facilitate access to knowledge, create opportunities for self-expression, and support marginalized communities. At the same time, excessive or problematic use may contribute to distraction, compulsive engagement, social comparison, reduced sleep quality, information overload, and difficulties in maintaining boundaries between online and offline life. Particular attention is given to algorithmic technologies because they increasingly determine what users see, how information is prioritized, and which behaviours are encouraged through personalized digital environments. The paper argues that digital well-being cannot be understood solely as a matter of individual self-control. It is also shaped by platform architecture, business models, social norms, digital literacy, socioeconomic circumstances, and regulatory environments. Sustainable digital well-being therefore requires a combination of individual awareness, responsible technology design, education, organizational policies, and appropriate governance. The paper concludes that future research should adopt interdisciplinary and human-centered approaches capable of examining the complex interaction between digital technologies and human behaviour.



Keywords: Digital Well-Being, Human Behaviour, Social Media, Algorithmic Technologies, Digital Health, Psychological Well-Being, Screen Time, Social Comparison, Digital Literacy, Technology Use

1. Introduction

Digital technologies have become deeply integrated into contemporary human life. Smartphones, social networking platforms, video-sharing services, messaging applications, online communities, streaming platforms, search engines, and algorithmic recommendation systems influence how people communicate, consume information, work, learn, shop, and maintain relationships. The expansion of these technologies has generated considerable social benefits, but it has also created new questions concerning human well-being.

The concept of **digital well-being** has emerged in response to these developments. It concerns how interactions with digital technologies affect people's psychological, cognitive, social, and physical functioning. Rather than defining technology use as inherently beneficial or harmful, digital well-being emphasizes the quality, purpose, context, and consequences of digital engagement.

Social media represents a particularly important environment in which digital well-being is negotiated. Platforms allow individuals to communicate with friends and family, participate in communities, express opinions, share creative work, and access information. For individuals who experience geographical or social isolation, online communication can provide meaningful opportunities for connection.

However, social media platforms are not neutral communication environments. Their interfaces and recommendation systems are designed to organize large quantities of content and influence what users encounter. Algorithms may personalize content based on previous interactions, preferences, engagement patterns, and inferred interests. Consequently, users do not necessarily experience the same digital environment.

This personalization can improve relevance and convenience. At the same time, it may encourage prolonged engagement, reinforce existing preferences, and expose users to emotionally stimulating or repetitive content.

Notifications, infinite scrolling, personalized recommendations, social feedback mechanisms, and other platform features can influence behavioural patterns. Users may repeatedly check their devices even when they initially intended to spend only a short amount of time online.

The consequences of such patterns are complex. Digital technologies can support social connection and knowledge acquisition, while excessive or poorly regulated use can interfere with sleep, concentration, productivity, and offline relationships.

Therefore, understanding digital well-being requires moving beyond simple measures such as total screen time. The same amount of digital engagement may have very different consequences depending on whether it involves meaningful social interaction, educational activity, professional work, entertainment, passive scrolling, or stressful online experiences.



This paper examines digital well-being from a human-science perspective, focusing on the interaction between social media, algorithmic technologies, and human behaviour.

2. Conceptualizing Digital Well-Being

Digital well-being can be understood as a multidimensional condition in which individuals are able to use digital technologies in ways that support their broader quality of life.

It includes several dimensions.

Psychological Dimension

This involves emotional regulation, stress, mood, self-esteem, and the ability to maintain healthy boundaries around technology.

Cognitive Dimension

This concerns attention, concentration, information processing, learning, and the ability to manage digital distractions.

Social Dimension

This includes the quality of online relationships, interpersonal communication, social belonging, and the relationship between online and offline social life.

Physical Dimension

Digital behaviour can influence sleep, physical activity, posture, sedentary behaviour, and other aspects of physical functioning.

Behavioural Dimension

This includes the ability to regulate technology use, manage notifications, resist unwanted digital distractions, and establish appropriate boundaries.

These dimensions interact rather than functioning independently.

3. Social Media and the Transformation of Human Behaviour

Social media has transformed communication from predominantly interpersonal and geographically constrained interactions into large-scale networked communication.

Individuals can communicate simultaneously with small groups, large communities, or global audiences.

This transformation has affected several behavioural processes.

3.1 Self-Presentation

Social media enables individuals to construct and manage digital identities.

Users can select photographs, descriptions, opinions, achievements, and experiences that they wish to present publicly.

This can facilitate self-expression and identity exploration.

However, persistent self-presentation may also encourage individuals to compare their lives with carefully selected representations of other people's experiences.

4. Social Comparison and Digital Well-Being



Social comparison is a natural psychological process in which individuals evaluate themselves in relation to others.

Social media can intensify opportunities for comparison because users are continuously exposed to information about other people's appearance, achievements, lifestyles, relationships, careers, and experiences.

Importantly, online content often represents selected and edited aspects of life rather than complete realities.

Frequent exposure to idealized representations may contribute to dissatisfaction or unrealistic expectations among some users.

At the same time, social comparison is not always negative. Individuals can also obtain inspiration, motivation, information, and social support through online communities.

The consequences therefore depend on the type of comparison, individual characteristics, and context.

5. Algorithmic Recommendation Systems

One of the defining features of contemporary digital environments is algorithmic personalization.

Platforms increasingly use machine learning systems to determine which content is recommended to individual users.

A simplified process can be represented as:

User Behaviour → Data Collection → Algorithmic Analysis → Personalized Recommendation → User Response → Further Data Collection

This creates a feedback loop.

As users interact with content, platforms collect additional behavioural signals. These signals can influence subsequent recommendations.

Consequently, digital environments continuously adapt to user behaviour.

This personalization can make online experiences more relevant, but it can also create highly engaging information environments that influence attention and behaviour.

6. The Attention Economy

Many digital platforms operate within an environment in which human attention is a valuable resource.

Platform design may therefore prioritize features that increase engagement, including notifications, recommendations, short-form content, autoplay, and continuous content feeds.

The result is an environment in which users may encounter frequent stimuli competing for attention.

From a digital well-being perspective, the issue is not simply how much time individuals spend online but whether technology use remains aligned with their intentions and broader goals.



7. Notifications and Behavioural Reinforcement

Notifications can interrupt activities and redirect attention toward digital platforms.

A message, social interaction, recommendation, or application alert can create a reason to check a device.

Repeated checking may gradually become habitual.

Behavioural reinforcement can occur when checking a device occasionally produces rewarding experiences such as social recognition, entertaining content, or useful information.

Over time, this pattern may contribute to habitual technology engagement.

Healthy digital behaviour therefore involves developing awareness of when technology use is intentional and when it becomes automatic.

8. Digital Well-Being and Mental Health

The relationship between digital technology use and mental health is complex.

Research should avoid assuming that social media use automatically causes negative psychological outcomes.

Some individuals may experience stress, social comparison, cyberbullying, or problematic usage patterns. Others may benefit from online communities, emotional support, identity exploration, and social connection.

The quality and context of digital engagement therefore matter considerably.

For example, active communication with supportive friends may have different consequences from prolonged passive consumption of distressing content.

Future research should consequently examine specific patterns of digital behaviour rather than relying exclusively on broad measures of screen time.

9. Sleep and Digital Behaviour

Digital technology can influence sleep through multiple mechanisms.

Late-night device use may delay bedtime, while notifications can interrupt sleep.

Social media engagement can also encourage users to remain online longer than intended.

In addition, emotionally stimulating content may make it more difficult to disengage from digital activity before sleep.

Digital well-being strategies may therefore include establishing technology-free periods before bedtime, reducing unnecessary notifications, and creating environmental boundaries around device use.

10. Digital Technology and Attention

Contemporary digital environments provide continuous opportunities for distraction.

Switching between applications, responding to notifications, watching short-form content, and browsing multiple information sources may fragment attention.



This does not mean that digital multitasking always produces negative outcomes. Certain tasks can be effectively managed across multiple digital environments.

However, persistent interruption can make sustained concentration more difficult.

Digital well-being therefore requires consideration of not only how much people use technology but also how technology structures their attention.

11. Positive Contributions of Digital Technology

Digital technologies provide numerous opportunities for improving well-being.

Social Connection

People can maintain relationships across geographical distances.

Access to Information

Digital platforms provide rapid access to educational, scientific, cultural, and health information.

Community Building

Individuals with shared interests can create online communities.

Self-Expression

Digital media provides opportunities for creativity and identity expression.

Professional Opportunities

Online platforms can support employment, entrepreneurship, networking, and professional development.

Education

Digital tools can facilitate flexible learning and access to educational resources.

These benefits demonstrate that digital well-being should not be interpreted as minimizing technology use. The goal is **healthy and meaningful technology use**.

12. Negative Behavioural Consequences

Several potential negative behavioural patterns deserve attention.

12.1 Problematic Use

Some individuals may experience difficulty controlling their technology use despite negative consequences.

12.2 Reduced Productivity

Frequent digital interruptions can interfere with work and study.

12.3 Social Comparison

Continuous exposure to idealized representations can affect self-evaluation.

12.4 Information Overload

Large quantities of digital information can make it difficult to identify reliable and relevant content.

12.5 Online Conflict

Social media can facilitate harassment, hostility, and interpersonal conflict.



12.6 Reduced Offline Engagement

Excessive digital engagement may sometimes compete with physical activity and face-to-face interaction.

13. Digital Literacy and Human Agency

Digital well-being requires more than technological restrictions.

Individuals need the ability to understand how digital platforms operate.

Digital literacy includes:

- evaluating online information;
- recognizing algorithmic personalization;
- understanding privacy risks;
- identifying persuasive design;
- managing digital boundaries;
- recognizing misinformation; and
- critically evaluating recommendations.

Greater awareness can increase human agency.

When users understand that algorithms influence what they see, they may become more capable of actively managing their digital environments.

14. Platform Design and Responsibility

Responsibility for digital well-being does not rest entirely with individuals.

Technology companies also influence behavioural outcomes through platform design.

Design decisions involving notifications, recommendation systems, interface structures, privacy settings, and content ranking can affect user behaviour.

Human-centered design should therefore consider not only engagement but also user well-being.

Potential design approaches include:

- clearer notification controls;
 - transparent recommendation mechanisms;
 - meaningful privacy settings;
 - user-controlled feeds;
 - reminders for prolonged usage;
 - improved reporting mechanisms; and
 - tools that encourage intentional engagement.
-

15. Algorithmic Bias and Digital Well-Being

Algorithmic systems can reproduce or amplify biases contained in their data or design.

If recommendation systems repeatedly promote particular forms of content, users may receive narrower information environments.



This can influence perceptions of social norms, political ideas, lifestyles, or cultural identities. From a well-being perspective, algorithmic diversity and transparency are therefore important. Users should ideally have meaningful control over the types of information environments they experience.

16. Digital Well-Being in Education

Students are among the groups most affected by digital transformation.

Digital technologies can support learning through online courses, educational videos, collaborative tools, and AI-powered learning systems.

However, constant digital connectivity can also create distractions.

Educational institutions should therefore consider digital well-being as part of broader student development.

Rather than simply prohibiting devices, educational policies can teach students how to manage attention, evaluate information, establish boundaries, and use digital technologies productively.

17. Digital Well-Being in the Workplace

Remote work and digital collaboration have expanded significantly.

Digital tools allow employees to work flexibly and communicate across geographical boundaries.

However, constant connectivity can blur the boundary between work and personal life.

Employees may feel pressure to respond to messages outside working hours.

Organizations can promote digital well-being through clear communication expectations, meeting policies, notification practices, and respect for non-working periods.

18. Strategies for Improving Digital Well-Being

Improving digital well-being requires action at multiple levels.

Individual Level

Individuals can establish technology boundaries, manage notifications, schedule periods of focused work, and monitor whether digital behaviour aligns with personal goals.

Family Level

Families can establish shared expectations regarding device use, sleep, and online behaviour.

Educational Level

Schools and universities can integrate digital literacy and healthy technology-use practices into education.

Organizational Level

Employers can develop policies that reduce unnecessary digital interruptions and support work-life boundaries.

Platform Level

Technology companies can incorporate well-being considerations into product design.



Policy Level

Governments and regulators can establish appropriate frameworks for privacy, platform accountability, consumer protection, and algorithmic transparency.

19. Future Research Directions

Future research on digital well-being should move beyond simple measurements of screen time.

Researchers should examine **what people do online, why they do it, and what consequences result.**

Important areas include:

Algorithmic Personalization

How do personalized recommendations influence attention, emotions, preferences, and behaviour over extended periods?

Generative AI and Digital Well-Being

How will AI-generated content and conversational systems affect attention, learning, social relationships, and psychological well-being?

Digital Inequality

How do socioeconomic differences influence access to healthy and beneficial digital environments?

Children and Adolescents

What forms of digital engagement support healthy development, and which patterns may increase vulnerability?

Human–AI Relationships

How might increasingly personalized AI assistants change social behaviour and emotional interaction?

Platform Governance

Which forms of algorithmic transparency and user control most effectively support digital autonomy?

20. Conclusion

Digital well-being has become an important human-science issue as social media and algorithmic technologies increasingly shape everyday behaviour. Digital technologies offer substantial benefits, including social connection, education, professional opportunities, information access, creativity, and community participation. However, the same technologies can also contribute to distraction, problematic engagement, social comparison, information overload, sleep disruption, and weakened boundaries between digital and offline life.

The growing role of algorithmic recommendation systems makes the issue more complex. Users increasingly experience personalized information environments shaped by their previous behaviour and platform objectives. This means that digital well-being is not simply a matter of



individual self-control. It is also influenced by technological design, economic incentives, social norms, digital literacy, and governance.

A balanced approach should therefore avoid both technological optimism and technological pessimism. The objective should not be to eliminate digital technology from everyday life but to create conditions in which technology supports human goals rather than undermining them. Future digital well-being research should adopt interdisciplinary approaches combining psychology, sociology, communication studies, education, computer science, public policy, and human–computer interaction. Such research can help identify how digital technologies affect human behaviour across different populations and contexts.

Ultimately, digital well-being depends on creating a healthier relationship between **people, platforms, algorithms, and information**. Responsible technology design, stronger digital literacy, meaningful user control, and evidence-based governance can help ensure that the digital environment contributes to human flourishing rather than merely maximizing engagement.

References

1. Dienlin, T., & Johannes, N. (2022). The impact of digital technology use on well-being: A review of research. *Current Opinion in Psychology*, 45, 101321.
2. Orben, A., & Przybylski, A. K. (2019). The association between adolescent well-being and digital technology use. *Nature Human Behaviour*, 3, 173–182.
3. Przybylski, A. K., & Weinstein, N. (2017). A large-scale test of the Goldilocks hypothesis: Quantifying the relations between digital-screen use and the mental well-being of adolescents. *Psychological Science*, 28(2), 204–215.
4. Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D. S., Lin, N., et al. (2013). Facebook use predicts declines in subjective well-being in young adults. *PLOS ONE*, 8(8), e69841.
5. Verduyn, P., Ybarra, O., Résibois, M., Jonides, J., & Kross, E. (2017). Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues and Policy Review*, 11(1), 274–302.
6. Burke, M., Marlow, C., & Lento, T. (2010). Social network activity and social well-being. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 1909–1912.
7. Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *CyberPsychology & Behavior*, 9(5), 584–590.
8. Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook “friends”: Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, 12(4), 1143–1168.
9. boyd, d. (2014). *It's Complicated: The Social Lives of Networked Teens*. Yale University Press.



10. Turkle, S. (2011). *Alone Together: Why We Expect More from Technology and Less from Each Other*. Basic Books.
11. Alter, A. (2017). *Irresistible: The Rise of Addictive Technology and the Business of Keeping Us Hooked*. Penguin Press.
12. Zuboff, S. (2019). *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power*. PublicAffairs.
13. Eyal, N. (2014). *Hooked: How to Build Habit-Forming Products*. Portfolio.
14. 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), 1157281.
15. Montag, C., Wegmann, E., Sariyska, R., Demetrovics, Z., & Brand, M. (2021). How to overcome taxonomical problems in the study of Internet use disorders and what to do with “smartphone addiction”? *Journal of Behavioral Addictions*, 9(4), 908–914.
16. Billieux, J., Maurage, P., Lopez-Fernandez, O., Kuss, D. J., & Griffiths, M. D. (2015). Can disordered mobile phone use be considered a behavioral addiction? An update on current evidence and a comprehensive model for future research. *Current Addiction Reports*, 2, 156–162.
17. Twenge, J. M., Martin, G. N., & Campbell, W. K. (2018). Decreases in psychological well-being among American adolescents after 2012 and links to screen time during the rise of smartphone technology. *Emotion*, 18(6), 765–780.
18. Nesi, J. (2020). The impact of social media on youth mental health: Challenges and opportunities. *North Carolina Medical Journal*, 81(2), 116–121.
19. Meier, A., & Reinecke, L. (2021). Computer-mediated communication, social media, and mental health: A conceptual and empirical review. *Current Opinion in Psychology*, 45, 101298.
20. Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7(2), 117–140.
21. Fogg, B. J. (2003). *Persuasive Technology: Using Computers to Change What We Think and Do*. Morgan Kaufmann.
22. Epley, N., Waytz, A., & Cacioppo, J. T. (2007). On seeing human: A three-factor theory of anthropomorphism. *Psychological Review*, 114(4), 864–886.
23. Rahwan, I., Cebrian, M., Obradovich, N., Bongard, J., Bonnefon, J.-F., Breazeal, C., et al. (2019). Machine behaviour. *Nature*, 568, 477–486.
24. Shneiderman, B. (2020). Human-centered artificial intelligence: Reliable, safe & trustworthy. *International Journal of Human–Computer Interaction*, 36(6), 495–504.
25. Amershi, S., Weld, D., Vorvoreanu, M., Fournery, A., Nushi, B., Collisson, P., et al. (2019). Guidelines for human-AI interaction. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*, 1–13.