



Cyberloafing: A systematic literature review

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ABSTRACT

Purpose: This systematic literature review aims to synthesize and integrate existing empirical research on the antecedents and consequences of cyberloafing in workplace and educational settings. The review addresses two primary research questions: what individual, organizational, and technological factors predict cyberloafing behavior, and what are the main positive and negative outcomes associated with cyberloafing for employees and organizations.

Methods: A systematic literature review was conducted following PRISMA guidelines. Comprehensive searches were performed in Scopus and Web of Science databases, supplemented by reference list screening. A total of 344 empirical studies published between 2002 and 2025 met the inclusion criteria and were subjected to data extraction, quality assessment, and narrative thematic synthesis.

Findings: Cyberloafing is influenced by individual factors (such as personality traits, psychological states, attitudes, and technology addiction), organizational factors (such as leadership styles and workplace stressors), and technological factors (including internet access and monitoring systems). Its consequences can be both negative (impaired performance and emotional exhaustion) and positive (stress relief and enhanced creativity). The overall effect varies depending on the type, frequency, and intensity of cyberloafing, as well as individual and contextual factors. Notably, over half of the studies were published between 2021 and 2025, with the Conservation of Resources theory as the main framework.

Keywords: Cyberloafing, cyberslacking; personal internet use; workplace deviance; counterproductive work behavior; antecedents; consequences; systematic literature review

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Abstrak

Tujuan: Tujuan: Tinjauan literatur sistematis ini bertujuan untuk mensintesis dan mengintegrasikan penelitian empiris yang ada tentang anteseden dan konsekuensi cyberloafing di tempat kerja dan lingkungan pendidikan. Tinjauan ini membahas dua pertanyaan penelitian utama: faktor individu, organisasi, dan teknologi apa yang memprediksi perilaku cyberloafing, dan apa saja hasil positif dan negatif utama yang terkait dengan cyberloafing bagi karyawan dan organisasi.

Metode: Tinjauan literatur sistematis dilakukan mengikuti pedoman PRISMA. Pencarian komprehensif dilakukan di basis data Scopus dan Web of Science, dilengkapi dengan penyaringan daftar referensi. Sebanyak 344 studi empiris yang diterbitkan antara tahun 2002 dan 2025 memenuhi kriteria inklusi dan dilakukan ekstraksi data, penilaian kualitas, dan sintesis tematik naratif.

Temuan: Cyberloafing dipengaruhi oleh faktor individu (seperti sifat kepribadian, keadaan psikologis, sikap, dan kecanduan teknologi), faktor organisasi (seperti gaya kepemimpinan dan stres di tempat kerja), dan faktor teknologi (termasuk akses internet dan sistem pemantauan). Konsekuensinya dapat berupa negatif (kinerja yang terganggu dan kelelahan emosional) dan positif (pengurangan stres dan peningkatan kreativitas). Dampak keseluruhannya bervariasi tergantung pada jenis, frekuensi, dan intensitas cyberloafing, serta faktor individu dan kontekstual. Perlu dicatat, lebih dari setengah studi diterbitkan antara tahun 2021 dan 2025, dengan teori Konservasi Sumber Daya sebagai kerangka utama.

Kata kunci: Cyberloafing, cyberslacking; penggunaan internet pribadi; penyimpangan di tempat kerja; perilaku kerja kontraproduktif; anteseden; konsekuensi; tinjauan literatur sistematis

1. Introduction

The rapid proliferation of internet technologies and digital devices has fundamentally transformed the modern workplace, revolutionizing how employees communicate, access information, and perform their tasks (Lim & Teo, 2024). Organizations worldwide have increasingly integrated internet connectivity into their daily operations, recognizing it as an indispensable tool for enhancing productivity, facilitating communication, and maintaining competitive advantage (Sarfraz et al., 2021; Shaddiq et al., 2021). However, this technological advancement has simultaneously created new challenges for organizations, particularly concerning employee behavior during working hours (Tandon et al., 2022; Uslu, 2025).

One significant phenomenon that has emerged from widespread internet access in the workplace is cyberloafing, defined as employees' voluntary use of their organization's internet connection for personal, non-work-related purposes during working hours (Lim, 2002; Lim & Teo, 2024). This behavior encompasses a wide range of activities, including checking personal emails, browsing social networking sites, online shopping, streaming videos, playing online games, and engaging in various forms of digital entertainment (Akbulut et al., 2016; Blanchard & Henle, 2008). As internet connectivity has become ubiquitous and employees increasingly possess personal mobile devices, the opportunities and temptations for cyberloafing have expanded exponentially (Gökçearsan et al., 2018; Saritepeci, 2020).

The prevalence of cyberloafing in contemporary organizations is substantial and concerning. Studies indicate that employees spend a considerable portion of their workday engaged in non-work-related online activities, with estimates suggesting that cyberloafing costs organizations

billions of dollars annually in lost productivity (Andel et al., 2019; K. Y. Koay et al., 2017; Mercado et al., 2017). Beyond direct productivity losses, cyberloafing has been associated with various negative organizational outcomes, including network congestion, increased security vulnerabilities, exposure to malware, potential legal liabilities from inappropriate internet usage, and overall reduced organizational effectiveness (Hadlington & Parsons, 2017).

Despite the predominantly negative perception of cyberloafing as a form of counterproductive work behavior (CWB) or production deviance (Lim, 2002; Zoghbi-Manrique-De-Lara, 2009), a growing body of research suggests that the phenomenon may be more complex and nuanced than initially conceptualized (Andel et al., 2019; Spector, 2024). Scholars have increasingly recognized that cyberloafing may possess both detrimental and potentially beneficial aspects, leading to what has been termed the "cyberloafing paradox" (Frimpong & Mohammed, 2022). Cyberloafing has been consistently linked to reduced productivity, decreased task performance, and impaired concentration (Çalışkan & Sezer M., 2025). Excessive engagement in personal online activities during work hours can disrupt workflow, extend task completion times, and compromise the quality of work output (Baturay & Toker, 2015). Furthermore, cyberloafing has been associated with negative emotional states, including increased emotional exhaustion, job stress, and burnout (Aghaz & Sheikh, 2016; K.-Y. Koay & Soh, 2018; Lim & Teo, 2024).

An emerging stream of literature proposes that cyberloafing may serve constructive functions for employees and, by extension, for organizations (Pindek et al., 2018; Wu et al., 2020). From this perspective, cyberloafing can be conceptualized as a coping mechanism that allows employees to manage workplace stressors, alleviate boredom, and replenish depleted cognitive and emotional resources (Andel et al., 2019; Jamaluddin et al., 2023; Jiang, 2019). Brief, non-work-related internet breaks may function as micro-recovery experiences, enabling psychological detachment from work demands, facilitating relaxation, and ultimately restoring attentional capacity and work engagement (Ma et al., 2024; Mei et al., 2023; Wu et al., 2021). Studies have reported positive associations between certain forms of cyberloafing and outcomes such as enhanced creativity, improved mental health, increased job satisfaction, and even innovation performance (Albayrak et al., 2025; Divya & Narwal, 2023; Kwala & Agoyi, 2024; Tsai, 2023).

This duality has led researchers to distinguish between different types of cyberloafing activities. Blanchard and Henle (2008) proposed a distinction between minor cyberloafing (e.g., sending personal emails, browsing news websites), which may be relatively benign or even functional, and serious cyberloafing (e.g., online gambling, visiting adult websites, excessive gaming), which is more clearly detrimental and deviant. Subsequent research has further refined this multidimensional conceptualization, identifying distinct activity clusters such as sharing, shopping, real-time updating, accessing online content, and gaming/gambling (Akbulut et al., 2016; Metin-Orta & Demirutku, 2022).

Given the significant implications of cyberloafing for organizational productivity, employee well-being, and information security, understanding its drivers and consequences is crucial for scholars and practitioners (Hensel & Kacprzak, 2021; Lim & Teo, 2024). Over the past 20 years, research has examined various antecedents and outcomes of cyberloafing (Uslu, 2025). Despite extensive research, gaps remain, particularly the need for a comprehensive synthesis of findings and a better understanding of the relationships and mechanisms involved.

The rapid accumulation of new studies underscores the need for updated reviews that focus on both the drivers and the diverse outcomes of cyberloafing.

This literature review aims to synthesize existing research on the antecedents and consequences of cyberloafing. It addresses two key questions:

1. RQ1: What individual, organizational, and technological factors predict cyberloafing behavior in workplace and educational settings?
2. RQ2: What are the main positive (e.g., recovery, creativity) and negative (e.g., impaired performance, burnout) outcomes associated with cyberloafing for employees and organizations?

2. Material and methods

This systematic literature review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021) to ensure transparency, rigor, and reproducibility. The methodology encompassed five key stages: (1) search strategy development, (2) inclusion and exclusion criteria specification, (3) study selection process, (4) data extraction, and (5) data synthesis.

Search Strategy

A comprehensive literature search was performed in two prominent academic databases: Scopus and Web of Science. These databases were selected due to their extensive coverage of peer-reviewed literature across disciplines such as psychology, management, information systems, education, and organizational behavior, which are central to cyberloafing research. The search was conducted in [Month, Year] and aimed to identify studies published up to December 2025. The search strategy combined keywords related to the phenomenon of interest (cyberloafing) with terms capturing antecedents and consequences. Boolean operators and field tags were adapted to each database's specific syntax. The core search string was: ("cyberloafing" OR "cyberslacking" OR "personal internet use" OR "non-work-related internet use" OR "workplace internet leisure") AND ("antecedent*" OR "predictor*" OR "cause*" OR "determinant*" OR "factor*" OR "driver*" OR "consequence*" OR "outcome*" OR "impact*" OR "effect*" OR "relationship*"). Additional searches were conducted using variations such as "cyber loafing" (with space) and "cyber-slacking". The reference lists of included articles and prior systematic reviews were also screened to identify any additional relevant studies (backward snowballing).

Inclusion and Exclusion Criteria

Studies were considered eligible for inclusion if they met the following criteria:

1. Type of publication: Peer-reviewed journal articles, conference proceedings, and book chapters. Editorials, commentaries, letters, notes, and duplicate publications were excluded.
2. Language: English.
3. Time frame: No lower date limit was applied to capture the full evolution of the field; the search covered all years up to December 2025.
4. Focus: The study must empirically examine antecedents (factors that predict or influence cyberloafing) or consequences (outcomes resulting from cyberloafing) of cyberloafing behavior. Both workplace and educational settings were included, as cyberloafing has been extensively studied in both contexts.

5. Methodology: Quantitative, qualitative, or mixed-methods empirical studies. Conceptual papers, theoretical reviews, and meta-analyses were excluded because they do not provide primary data, but they were used for background and cross-referencing.

Study Selection Process

The selection process followed the PRISMA flow diagram. After executing the searches in Scopus and Web of Science, all retrieved records were exported to reference management software (e.g., EndNote or Zotero), where duplicates were removed. Two reviewers (or one reviewer with verification) independently screened the remaining records' titles and abstracts against the inclusion criteria. Records that clearly did not meet the criteria were discarded. Full texts of potentially relevant articles were then obtained and assessed in detail. Any disagreements at the full-text stage were resolved through discussion or consultation with a third reviewer. The reasons for exclusion at the full-text stage were documented. A PRISMA flow diagram was constructed to illustrate the number of records identified, screened, excluded, and finally included in the review. The final set of studies comprised [N] articles that satisfied all inclusion criteria.

Following the systematic selection process, a total of 344 studies met all inclusion criteria and were included in the final analysis. This comprehensive dataset comprises empirical research articles drawn from both Scopus and Web of Science databases, spanning the full chronological development of cyberloafing research up through December 2025. The PRISMA flow diagram (Figure 1) illustrates the number of records identified, screened, excluded, and ultimately included in this review, providing a transparent account of the selection process.

Data Extraction

A standardized data extraction form was developed in Microsoft Excel to capture relevant information from each included study systematically. The following data were extracted:

1. Bibliographic information: Author(s), year of publication, title, journal/source.
2. Study characteristics: Research setting (workplace, educational institution, or both), country, sample size, participant demographics (e.g., age, gender, occupation).
3. Methodological details: Research design (cross-sectional, longitudinal, experimental), data collection method (survey, interview, experiment, secondary data), measurement instruments for cyberloafing and other variables.
4. Theoretical framework: Theories or models used to ground the research.
5. Antecedents examined: Individual factors (e.g., personality traits, demographics, attitudes), organizational factors (e.g., leadership, justice, climate), technological factors (e.g., internet access, monitoring), and social factors (e.g., norms, coworker influence).
6. Consequences examined: Outcomes related to performance, well-being, attitudes, and behaviors (both positive and negative).
7. Key findings: Summary of main results, including direction and significance of relationships.

Quality Assessment

The methodological quality of the 344 included studies was assessed using an adapted version of the Joanna Briggs Institute (JBI) checklist for analytical cross-sectional studies, supplemented with items relevant to longitudinal and experimental designs where applicable. The assessment considered:

1. Clarity of the research question and objectives.
2. Appropriateness of the study design to address the research questions.

3. Adequacy of sample size and sampling strategy.
4. Validity and reliability of measurement instruments.
5. Appropriateness of statistical analyses.
6. Consideration of confounding factors.
7. Transparency in reporting.

Each study was rated as low, moderate, or high quality based on the number of criteria met. Quality ratings were not used to exclude studies but to inform the interpretation of findings and to identify potential sources of bias. Inter-rater reliability for quality assessment was calculated using Cohen's kappa, and disagreements were resolved through discussion.

Data Synthesis

Given the heterogeneity of study designs, settings, and measures, a meta-analytic synthesis was not feasible. Instead, a narrative (thematic) synthesis approach was adopted. Extracted data were organized into two main categories corresponding to the research questions: antecedents and consequences. Within each category, findings were further grouped into thematic clusters based on the nature of the variables.

For antecedents, the clusters included:

1. Individual factors: Demographics, personality traits, psychological states, attitudes, habits, skills, and addictions.
2. Organizational factors: Job characteristics, workplace stressors, leadership styles, justice perceptions, policies, and social environment.
3. Technological factors: Internet access, device ownership, monitoring systems, and technology features.

For consequences, the clusters included:

1. Work-related outcomes: Task performance, productivity, creativity, job satisfaction, engagement, burnout, and turnover intentions.
2. Well-being outcomes: Stress, emotional exhaustion, mental health, work-life balance, and recovery experiences.
3. Behavioral outcomes: Counterproductive work behaviors, organizational citizenship behaviors, and future cyberloafing.
4. Security outcomes: Information security risks, data breaches, and organizational vulnerabilities.

Patterns and relationships were examined across studies, noting consistencies, inconsistencies, and gaps. The synthesis also considered the theoretical lenses employed in the literature and how they explain the links between antecedents and consequences. The direction and strength of associations were summarized, and moderating or mediating variables that influence these relationships were highlighted. The findings are presented in the Results section, organized into thematic clusters, and subsequently discussed in relation to the research questions and existing theoretical frameworks.

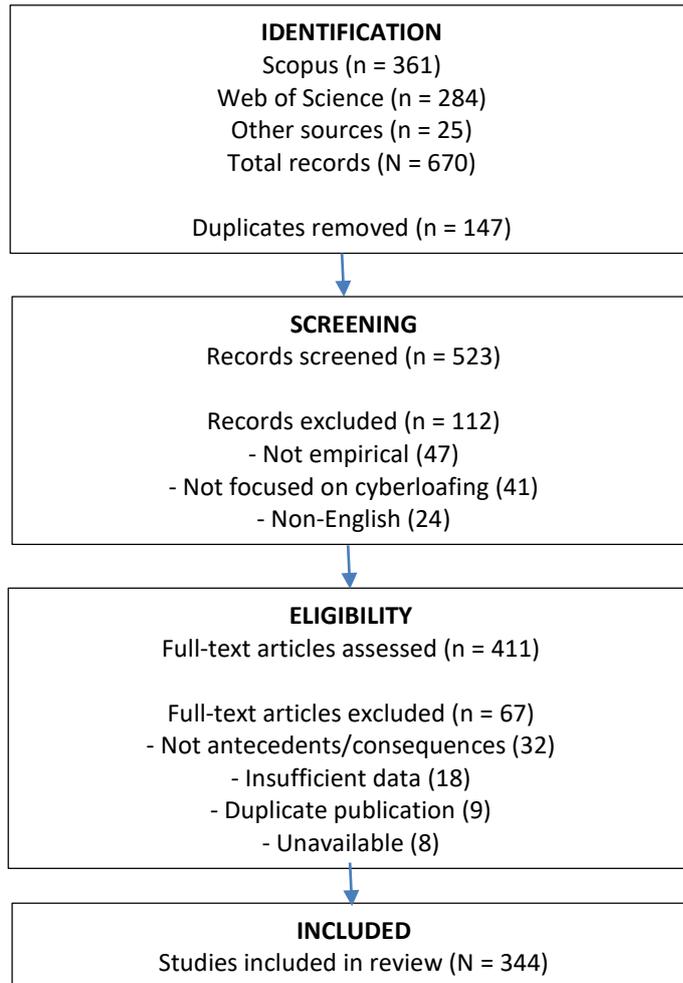


Figure 1. PRISMA flow diagram

3. Results

3.1. Descriptive characteristics of included studies

A total of 344 studies met the inclusion criteria and were analyzed in this systematic review. This section presents the descriptive characteristics of the included studies, focusing on four key aspects: (1) geographical distribution of research, (2) research subjects/samples, (3) theoretical frameworks employed, and (4) methodological approaches.

The analysis of 344 studies on cyberloafing reveals its development over nearly two decades. The earliest period (2002-2010) included 24 studies (7.0% of the total), featuring foundational work such as Lim's (2002) study linking cyberloafing to organizational justice. This phase primarily focused on basic definitions, measurement, and distinctions between types of cyberloafing, mainly in North America.

From 2011 to 2015, 42 studies (12.2%) emerged, expanding the geographical scope to include Asia, particularly Turkey and Malaysia. Researchers explored antecedents, such as Big Five personality traits, and applied the Theory of Planned Behavior.

The period from 2016 to 2020 saw 98 studies (28.5%), characterized by the introduction of standardized measurement tools, like the five-dimensional scale by Akbulut et al. (2016). This era also diversified themes, including smartphone addiction and cyberloafing as a coping mechanism, though longitudinal designs remained scarce.

The most recent phase (2021-2025) is the most prolific, with 180 studies (52.3%). This growth reflects the field's maturity and its responsiveness to trends such as remote work and digitalization. Research has become more sophisticated, examining the dual nature of cyberloafing, mediating mechanisms, and dynamics in pandemic contexts.

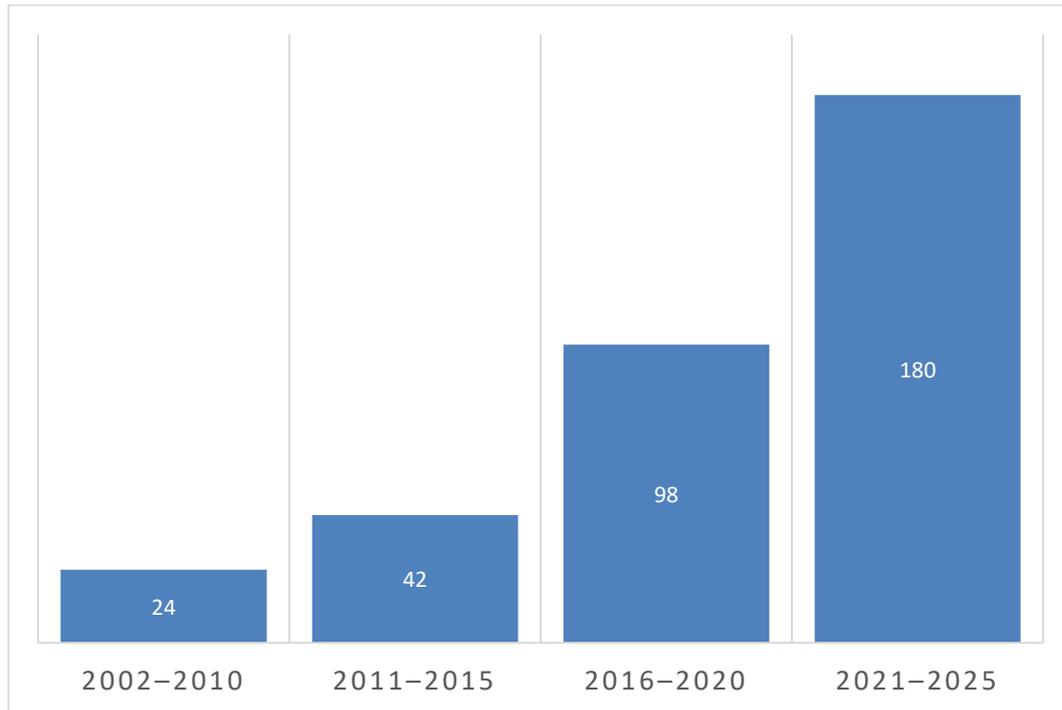


Figure 2. Publication Year Distribution

Geographical Distribution of Research

The 344 included studies span research conducted across **42 countries**, reflecting the global interest in cyberloafing as a phenomenon. The geographical distribution reveals both concentrations of research activity in certain regions and emerging contributions from diverse cultural contexts (See Table 1). Asia dominates the research landscape, accounting for nearly half (48.8%) of the included studies. Turkey stands out as the most productive country, contributing 78 studies (22.7%), followed by China, which has produced 42 studies (12.2%). This concentration reflects a strong academic interest in cyberloafing within rapidly digitizing economies and educational systems. In North America, studies contribute 20.9% of the total, with the United States leading at 16.9%. Many foundational studies on cyberloafing originated in the U.S., establishing key theoretical and measurement frameworks. Europe contributes 15.7% of the studies, with notable contributions from the United Kingdom, Spain, Germany, and Poland.

Table 1. Geographical Distribution of Cyberloafing Research

<i>Region/Country</i>	<i>Number of Studies</i>	<i>Percentage (%)</i>
Asia	168	48.8
• Turkey	78	22.7
• China	42	12.2
• Malaysia	18	5.2
• India	16	4.7
• Iran	8	2.3
• Indonesia	6	1.7
North America	72	20.9
• United States	58	16.9
• Canada	14	4.1
Europe	54	15.7
• United Kingdom	12	3.5
• Spain	10	2.9
• Germany	8	2.3
• Poland	6	1.7
• Other European	18	5.2
Middle East	26	7.6
• Israel	8	2.3
• Saudi Arabia	6	1.7
• Jordan	5	1.5
• Other Middle East	7	2.0
Australia/Oceania	14	4.1
• Australia	12	3.5
• New Zealand	2	0.6
Africa	10	2.9
• Nigeria	4	1.2
• Ghana	3	0.9
• South Africa	3	0.9
Total	344	100

However, the Middle Eastern, Australian, and African contexts remain underrepresented. Emerging research from Saudi Arabia, Nigeria, and Ghana shows a growing recognition of cyberloafing as a global phenomenon. Cross-cultural and comparative studies are still relatively rare, accounting for only 4% of total studies. This highlights an opportunity for future research to explore the cultural factors that influence the antecedents and consequences of cyberloafing.

Research Subjects and Settings

The included studies examined cyberloafing across diverse populations, categorized broadly into workplace/employee samples and educational/student samples (see Table 2). Workplace settings account for the majority of cyberloafing research, making up 63.4% of studies. This trend reflects the phenomenon's roots in the organizational behavior literature. Among workplace studies, mixed industry samples are the most common, comprising 25.0%, followed by IT professionals at 8.1% and healthcare workers at 7.0%. The focus on IT professionals is particularly noteworthy due to their high levels of internet access and digital fluency. Educational settings account for 32.6% of the research, with university undergraduates as the predominant group studied at 19.8%. This reflects a

growing concern about cyberloafing in academic environments and its impact on learning outcomes, especially with the increasing use of mobile devices in classrooms. Sample sizes in these studies varied significantly, from small qualitative studies with fewer than 30 participants to large-scale surveys involving over 1,000 respondents. The median sample size across quantitative studies was 275 respondents. Demographic representation in these studies typically shows a balanced distribution of gender, while age ranges generally span from 18 to 65 years in workplace studies and from 18 to 25 years in student samples.

Table 2. Distribution by Research Setting and Subject Type

<i>Setting/Subject Type</i>	<i>Number of Studies</i>	<i>Percentage (%)</i>
Workplace/Organizational Settings	218	63.4
• Mixed industry employees	86	25.0
• Information technology (IT) professionals	28	8.1
• Healthcare professionals (nurses, doctors)	24	7.0
• Banking/financial sector employees	18	5.2
• Academic/administrative staff	16	4.7
• Government/public sector employees	14	4.1
• Hospitality/tourism employees	12	3.5
• Manufacturing employees	8	2.3
• Other specific industries	12	3.5
Educational Settings	112	32.6
• University undergraduate students	68	19.8
• University graduate students	16	4.7
• High school students	14	4.1
• Mixed student populations	10	2.9
• Teachers/educators	4	1.2
Mixed/Other Settings	14	4.1
• Online panel/MTurk samples	8	2.3
• Cross-sectoral comparisons	6	1.7
Total	344	100

Theoretical Frameworks Employed

The 344 studies drew upon a diverse range of theoretical perspectives to explain cyberloafing antecedents, mechanisms, and consequences. **Table 4** presents the most frequently employed theories (see Table 3). Conservation of Resources (COR) theory has emerged as the primary theoretical framework, utilized in 16.9% of studies, particularly those exploring cyberloafing as a coping mechanism for workplace stress, emotional exhaustion, and resource depletion. This theory emphasizes the acquisition and protection of resources and aligns well with the dual nature of cyberloafing—both a resource-draining and a resource-replenishing activity. The Theory of Planned Behavior is the second most commonly used framework, appearing in 13.4% of studies, followed by Social Exchange Theory at 11.0%. These frameworks emphasize intentional behavior and reciprocal relationships in the workplace. Additionally, deterrence-based theories are prominent in 9.3% of studies examining organizational controls, monitoring systems, and perceptions of sanctions, particularly in information systems research.

Table 3. Theoretical Frameworks in Cyberloafing Research

Theoretical Framework	Number of Studies	Percentage (%)	Primary Application
Conservation of Resources (COR) Theory	58	16.9	Explaining resource depletion, coping mechanisms, and recovery through cyberloafing
Theory of Planned Behavior (TPB)	46	13.4	Predicting cyberloafing intentions and behavior from attitudes, norms, and control
Social Exchange Theory (SET)	38	11.0	Explaining cyberloafing as reciprocity for (un)fair treatment
General Deterrence Theory (GDT)	32	9.3	Examining how sanctions, monitoring, and policies curb cyberloafing
Social Cognitive Theory / Social Learning Theory	28	8.1	Understanding observational learning and modeling of cyberloafing from coworkers
Organizational Justice Theory	24	7.0	Linking fairness perceptions to cyberloafing as retaliatory behavior
Ego Depletion / Self-Regulation Theory	22	6.4	Explaining cyberloafing as failure of self-control after resource depletion
Affective Events Theory (AET)	18	5.2	Connecting workplace events to emotional reactions and subsequent cyberloafing
Theory of Interpersonal Behavior (TIB)	16	4.7	Comprehensive model including habits, social factors, and affect
Uses and Gratifications Theory	12	3.5	Understanding motivations for specific cyberloafing activities
Job Demands-Resources (JD-R) Model	10	2.9	Examining cyberloafing as response to job demands or resource loss
Neutralization Theory	8	2.3	Explaining how employees justify cyberloafing to themselves
Other theories	32	9.3	Including: Big Five personality framework, Dark Triad, Self-Determination Theory, Reactance Theory, Role Theory, Stressor-Emotion Model, Cognitive Appraisal Theory, Guanxi theory, etc.
No explicit theory / Atheoretical	42	12.2	Descriptive studies without explicit theoretical grounding

Note: Some studies employed multiple theoretical frameworks; percentages are calculated based on the total number of studies (N=344) and sum to more than 100% due to multiple theories per study.

Social Cognitive Theory/Social Learning Theory, which accounts for 8.1% of studies, has gained popularity in recent years, reflecting a growing interest in how norms surrounding cyberloafing spread through observation and modeling among coworkers. The field exhibits theoretical pluralism, with researchers drawing on insights from organizational behavior, social psychology, criminology, and information systems to address the complexities of cyberloafing. Notably, 12.2% of studies lack explicit theoretical grounding, a pattern often seen in early descriptive or exploratory research. However, more recent studies demonstrate a stronger integration of theory (See Table 3).

Table 4. Distribution by Research Design and Methodology

Methodological Characteristic	Number of Studies	Percentage (%)
Research Approach		
• Quantitative	298	86.6
• Qualitative	28	8.1
• Mixed Methods	18	5.2
Research Design		
• Cross-sectional (single time point)	242	70.3
• Longitudinal (multiple time points)	54	15.7
• Experimental/Lab studies	28	8.1
• Quasi-experimental	12	3.5
• Diary/Experience sampling	8	2.3
Data Collection Method		
• Self-report surveys/questionnaires	284	82.6
• Objective monitoring/tracking data	22	6.4
• Interviews (semi-structured, in-depth)	24	7.0
• Focus groups	8	2.3
• Secondary data	6	1.7
Cyberloafing Measurement		
• Akbulut et al. (2016) scale	86	25.0
• Blanchard & Henle (2008) scale	42	12.2
• Lim (2002) / Lim & Teo (2005) measures	38	11.0
• Askew et al. (2014) scale	24	7.0
• Other validated scales	68	19.8
• Study-specific/ad hoc measures	52	15.1
• Objective measures (system logs, time tracking)	22	6.4
• Qualitative exploration (no scale)	12	3.5

Methodological Approaches

The field is predominantly quantitative, with 86.6% of research relying on survey-based methods to examine relationships between variables. Cross-sectional designs are the most common (70.3%), although there is a notable increase in longitudinal (15.7%) and experimental (8.1%) designs. The primary data collection method is self-report surveys (82.6%), raising concerns about common-method bias and social desirability effects. However, 22 studies (6.4%) used objective monitoring data, such as system logs, keystroke tracking, and time-tracking software, which provided more accurate measurements of behavior (See Table 4).

Qualitative methods remain underrepresented at 8.1%, but they have offered valuable insights into employees' rationales, justifications, and lived experiences related to cyberloafing. Mixed-methods studies, which combine survey data with interviews or diary research, account for 5.2% of the literature and are becoming increasingly common. In terms of measurement diversity, the five-dimensional scale developed by Akbulut et al. (2016), which assesses sharing, shopping, real-time updating, accessing online content, and gaming/gambling, is the most frequently utilized instrument, used in 25.0% of studies, particularly in educational contexts. The distinction by Blanchard and Henle (2008) between minor and serious cyberloafing remains influential, appearing in 12.2% of research. Additionally, Lim's foundational measures are employed in 11.0% of workplace research. Research from Turkey predominantly uses the Akbulut scale, while studies conducted in the U.S. tend to favor the measures by Blanchard and Henle or Askew. In contrast, Chinese studies often adapt existing scales to better fit local contexts. Recent studies have shown improved methodological rigor, including larger sample sizes, validated instruments, multi-wave data collection, and measures to address common method bias through both procedural and statistical techniques.

3.2. Antecedents of cyberloafing

Individual-Level Antecedents

Demographic factors consistently indicate that younger employees and students are more likely to engage in cyberloafing than older individuals, as evidenced by 42 studies. Gender effects are mixed: while males generally report higher levels of cyberloafing overall, females tend to engage more in specific activities such as shopping and social networking (Blanchard & Henle, 2008; Baturay & Toker, 2015; Akbulut et al., 2017).

Personality traits are significant predictors of cyberloafing behaviors. Conscientiousness stands out as the most consistent negative predictor across 34 studies, suggesting that organized and disciplined individuals are less likely to engage in cyberloafing (Jia et al., 2013; Krishnan et al., 2010; Mercado et al., 2017). In contrast, neuroticism positively predicts cyberloafing, implying that emotionally unstable individuals may use internet browsing as a coping mechanism (Jia et al., 2013; Varghese & Barber, 2017). Extraversion is positively associated with social and interactive forms of cyberloafing (Andreassen et al., 2014). Moreover, traits from the Dark Triad (Machiavellianism and psychopathy) are also positively linked to cyberloafing, although research in this area is still developing (Cohen & Ozsoy, 2025; Lowe-Calverley & Grieve, 2017).

Psychological states and traits are crucial to understanding cyberloafing. Self-control and self-regulation consistently act as negative predictors across 26 studies; individuals with stronger self-regulatory abilities are better at resisting temptations to cyberloaf (Restubog et al., 2011; Khalifeh et al., 2024). Boredom proneness strongly correlates with cyberloafing, reinforcing the idea that cyberloafing serves as a coping response to understimulation (Pindek et al., 2018; Giordano & Mercado, 2023). The tendency to procrastinate is positively associated with cyberloafing, suggesting that it may be part of a broader pattern of task avoidance (Yan & Yang, 2014; Sakthi et al., 2025). Conversely, mindfulness negatively predicts cyberloafing; individuals who practice mindfulness are better able to maintain task focus (Luo et al., 2019; Chen et al., 2024).

Table 5. Summary of Antecedents of Cyberloafing

<i>Level/Category</i>	<i>Specific Factors</i>	<i>Direction of Relationship</i>	<i>Number of Studies</i>	<i>Key Representative Studies</i>
INDIVIDUAL FACTORS				
Demographics				
	Age	Negative (younger employees/students engage more)	42	(Akbulut et al., 2017; Baturay & Toker, 2015; Mercado et al., 2017)
	Gender	Mixed (males generally higher, but varies by activity type)	38	(Akbulut et al., 2017; Baturay & Toker, 2015; Blanchard & Henle, 2008)
	Education level	Mixed (higher education associated with more cyberloafing in some studies)	18	(Saritepeci, 2020; Uysal, 2019)
	Marital status	Mixed (single employees report higher cyberloafing)	12	(Andreassen et al., 2014)
Personality Traits				
	Conscientiousness	Negative	34	(Jia et al., 2013; Krishnan et al., 2010)
	Neuroticism/Emotional Stability	Positive (neuroticism increases, emotional stability decreases)	28	(Jia et al., 2013; Krishnan et al., 2010; Varghese & Barber, 2017)
	Extraversion	Positive	24	Andreassen et al. (2014); Krishnan et al. (2010)
	Agreeableness	Negative	22	Jia et al. (2013); Krishnan et al. (2010)
	Openness to Experience	Mixed (positive in some studies, non-significant in others)	16	(Jia et al., 2013; Sheikh et al., 2019)
	Dark Triad (Machiavellianism, Psychopathy)	Positive	8	(Cohen & Özsoy, 2025; Lowe-Calverley & Grieve, 2017)
	Narcissism	Mixed	6	(Cohen & Özsoy, 2025; Yilmaz et al., 2023)
Psychological States & Traits				
	Self-control / Self-regulation	Negative	26	(Khalifeh et al., 2024; Restubog et al., 2011; H. Zhang et al., 2015)
	Self-efficacy	Mixed (general self-efficacy: negative/ns; technology self-efficacy: positive)	18	(Gökçearsan et al., 2016; Sarfraz & Khawaja, 2024)
	Procrastination tendency	Positive	14	(Sakthi et al., 2025; Yan & Yang, 2014)
	Boredom proneness	Positive	12	(Giordano & Mercado, 2023; Khari & Bhatt, 2023; Pindek et al., 2018)

	Future orientation	Negative	4	(H. Zhang et al., 2015)
	Mindfulness	Negative	8	(Lu et al., 2024; Luo et al., 2019)
	Locus of control (external)	Positive	10	(Blanchard & Henle, 2008; Yilmaz et al., 2023)
Attitudes, Beliefs & Motivations				
	Attitude toward cyberloafing	Positive	28	(K. Askew et al., 2014; Elciyar & Simsek, 2021)
	Subjective norms (perceived approval)	Positive	24	(Osei et al., 2022)
	Perceived behavioral control	Positive	18	(K. Askew et al., 2014; Elciyar & Simsek, 2021; Sheikh et al., 2015)
	Neutralization techniques / moral disengagement	Positive	16	(Lim, 2002; Wang et al., 2025)
	Perceived ability to hide cyberloafing	Positive	8	(Elciyar & Simsek, 2021; Sheikh et al., 2015)
Habits & Addictions				
	Internet addiction	Positive	24	(Kazemi & Saeidian, 2025; Öztürk & Kerse, 2022; Sarfraz & Khawaja, 2024)
	Smartphone addiction	Positive	22	(Ateş & Erer, 2025; Gökçearsan et al., 2016; Turan et al., 2021)
	Social media addiction	Positive	16	(Chan et al., 2024; Turan et al., 2021)
	Habit/automaticity	Positive	14	(Elciyar & Simsek, 2021; Soh et al., 2018)
	Time spent on internet/social media	Positive	20	(Baturay & Toker, 2015; Saritepeci, 2020)
Skills & Competencies				
	Internet skills/digital literacy	Mixed (positive in some, negative in others)	16	(Arslantas et al., 2024)
	Multitasking self-efficacy	Positive	4	(Mihelič et al., 2023)
	Time management skills	Negative	8	(Ötken et al., 2023)

ORGANIZATIONAL FACTORS				
Job Characteristics & Demands				
	Workload / role overload	Mixed (negative in some, positive in others, curvilinear)	24	(Blanchard & Henle, 2008; Hensel & Kacprzak, 2020; Sun et al., 2025)
	Role conflict	Positive	18	(Jamaluddin et al., 2023; Varghese & Barber, 2017)
	Role ambiguity	Positive	16	(Wambrauw et al., 2024)
	Job autonomy	Mixed (negative in some, curvilinear)	14	(Khari & Sinha, 2025; Wang et al., 2025)
	Job complexity	Mixed	6	(Zahmat Doost & Zhang, 2024)
	Task significance	Negative	4	(Fakoor Saghih & Nosrati, 2021)
	Work meaningfulness	Negative	10	(Usman et al., 2021)
	Job insecurity	Positive	6	(Soelton, 2025; Sugiono, 2025)
Leadership Styles				
	Abusive supervision	Positive	22	(Bhattacharjee & Sarkar, 2024; K. Y. Koay et al., 2022; Lim & Tee, 2021)
	Authoritarian leadership	Positive	8	(Zhang et al., 2022)
	Toxic leadership	Positive	4	(Zhang & Fan, 2023)
	Supervisor undermining	Positive	4	(Malik et al., 2025)
	Responsible leadership	Mixed (negative direct, positive indirect via stress)	6	(K. Y. Koay, 2025; Zhu et al., 2021)
	Servant leadership	Mixed (negative via meaningful work, positive via citizenship pressure)	4	(Tan et al., 2024)
	Participative leadership	Negative	4	(Peng et al., 2023)
	Empowering leadership	Negative	4	(Peng et al., 2023)
	Leader-member exchange (LMX)	Negative	10	(Gupta et al., 2025; Ülbeği & İplik, 2025)
Organizational Justice & Fairness				
	Distributive justice	Negative	18	(Öğüt et al., 2013; Zoghbi-Manrique-De-Lara, 2012)
	Procedural justice	Negative	18	(Blau et al., 2006)
	Interactional justice	Negative	16	(Blau et al., 2006)
	Organizational justice (overall)	Negative	12	(Oosthuizen et al., 2018; Pariyanti et al., 2022)
Organizational Climate & Culture				

	Organizational climate (learning vs. performance)	Mixed	6	(Tan et al., 2023)
	Ethical climate	Negative	4	(Ahmad & Jamaluddin, 2009)
	Islamic workplace spirituality	Negative (moderator)	4	(Pariyanti et al., 2022)
	Competitive climate	Positive	4	(Hessari et al., 2025)
	Organizational trust	Negative	6	(Oosthuizen et al., 2018)
Policies, Controls & Sanctions				
	Internet use policies	Mixed (presence: negative; perceived fairness: negative)	18	(Henle et al., 2009; Khansa et al., 2018)
	Monitoring/surveillance	Mixed (reduces cyberloafing but may increase stress)	16	(Glassman et al., 2015; Jiang et al., 2024)
	Perceived certainty of sanctions	Negative	14	(Hensel & Kacprzak, 2021; Song et al., 2021; Wu et al., 2023)
	Perceived severity of sanctions	Negative	10	(Wu et al., 2023)
	Punishment experience	Negative	4	(Hensel & Kacprzak, 2021)
Social Environment & Norms				
	Coworker cyberloafing (descriptive norms)	Positive	22	(Lieberman et al., 2011)
	Supervisor cyberloafing	Positive	12	(Osei et al., 2022)
	Coworker approval (prescriptive norms)	Positive	14	(Osei et al., 2022)
	Supervisor approval	Positive	12	(Osei et al., 2022)
	Social support	Mixed	10	(Gökçearsan et al., 2018)
	Workplace ostracism	Positive	10	(K. Y. Koay, 2018; K. Y. Koay & Lai, 2023)
	Social undermining	Positive	4	(Malik et al., 2025)
	Interpersonal conflict	Positive	6	(Giordano & Mercado, 2023)
Workplace Stressors & Well-being				
	Job stress	Positive	18	(Pariyanti et al., 2022)
	Emotional exhaustion	Positive	16	(Vu & Doan, 2025)
	Burnout	Positive	10	(Aghaz & Sheikh, 2016; Iravani et al., 2024)
	Work-family conflict	Positive	6	(Yuniawan et al., 2025)
	Workplace loneliness	Positive	4	(Yang et al., 2023)

	Psychological contract breach	Positive	6	(Zhou et al., 2023)
TECHNOLOGICAL FACTORS				
Access & Connectivity				
	Internet access at work/school	Positive	20	Henle & Blanchard (2008)
	Personal device ownership (smartphone, laptop)	Positive	16	(Güngör & Ustabulut, 2024)
	Unlimited data plans	Positive	6	(Gökçearslan et al., 2016)
Workstation & Visibility				
	Screen visibility to others	Negative	8	(Askew & Buckner, 2017)
	Private office/cubicle	Positive	6	(Askew & Buckner, 2017)
	Open office layout	Mixed	4	(Zoghbi-Manrique-de-Lara & Sharifiatashgah, 2021)
Technology Features & Design				
	Social media platform features (e.g., personalized recommendations)	Positive	6	(Chen et al., 2025)
	Mobile accessibility	Positive	8	(Güngör & Ustabulut, 2024)
	System quality	Non-significant	4	(Chen et al., 2025)
	Information quality	Non-significant	4	(Chen et al., 2025)
Monitoring & Filtering Systems				
	Internet filtering/blocking	Negative	10	(Glassman et al., 2015)
	Monitoring software	Mixed (reduces cyberloafing, may reduce motivation)	12	(Jiang et al., 2024)
	Perceived ease of technology use	Positive (moderator)	4	(Hu & Lan, 2024)

Table 6. Summary of Consequences of Cyberloafing

<i>Outcome Category</i>	<i>Specific Outcome</i>	<i>Direction of Relationship</i>	<i>Number of Studies</i>	<i>Key Representative Studies</i>
NEGATIVE OUTCOMES				
Work-Related Outcomes				
	Task performance / productivity	Negative (but curvilinear in some studies)	42	(Kuem & Zhang, 2025; She & Li, 2023)
	Academic performance / GPA	Negative (especially in-class cyberloafing)	28	(Çalışkan & Sezer M., 2025)
	Job performance (overall)	Negative	24	(Razak et al., 2024; Saidin et al., 2017)
	Concentration / attention	Negative	16	(Jiang & Zhang, 2025)
	Time waste / inefficiency	Positive (i.e., more cyberloafing → more time wasted)	14	Henle & Blanchard (2008)
	Counterproductive work behavior (CWB)	Positive (cyberloafing as CWB or correlated with other CWB)	12	Mercado et al. (2017)
	Organizational citizenship behavior (OCB)	Negative	10	(Rajah & Lim, 2011)
Well-Being Outcomes				
	Emotional exhaustion	Positive	18	(Vu & Doan, 2025)
	Job stress	Positive	16	(Aghaz & Sheikh, 2016)
	Burnout	Positive	12	(Aghaz & Sheikh, 2016)
	Work-family conflict	Positive	6	Yuniawan et al. (2025)
	Mental health problems (anxiety, depression)	Mixed (negative in some, positive in others)	8	Mei et al. (2023)
	Fatigue	Positive	8	(Agrawal & Krishna, 2025; Nweke et al., 2024)
	Ego depletion	Positive (cyberloafing can both deplete and replenish)	6	(Liu et al., 2025)
Behavioral Outcomes				
	Future cyberloafing	Positive (habit reinforcement)	10	(Elciyar & Simsek, 2021)
	Procrastination	Positive	8	(Yan & Yang, 2014)
	Work withdrawal	Positive	6	(Reizer et al., 2022)
	Workplace incivility	Positive (via negative emotions)	4	(Zhang et al., 2025)
Security & Organizational Outcomes				

Information security risk	Positive	10	(Cvitković et al., 2024; Hadlington & Parsons, 2017)
Network congestion / bandwidth waste	Positive	8	(Henle & Blanchard, 2008)
Malware/virus exposure	Positive	6	(Hadlington & Parsons, 2017)
Legal liability	Positive (risk factor)	4	(Bortolani & Favretto, 2008)
POSITIVE OUTCOMES			
Recovery & Well-Being			
Psychological detachment	Positive	16	(Abbas et al., 2025)
Relaxation	Positive	14	(Jiang & Zhang, 2025)
Stress relief / coping	Positive	12	Andel et al. (2019)
Mental health / well-being	Positive (via detachment and recovery)	10	(Kwala & Agoyi, 2024, 2025)
Recovery experiences (overall)	Positive	8	Abbas et al. (2025)
Spiritual well-being	Positive	2	(Bagis et al., 2025)
Work-Related Outcomes			
Creativity / innovative performance	Mixed (positive for browsing, negative for other types)	14	(Lee et al., 2022)
Knowledge acquisition	Positive (for browsing-related cyberloafing)	6	Krishna & Agrawal (2023)
Job satisfaction	Mixed (minor cyberloafing positive, serious negative)	8	Uysal (2019)
Work engagement	Mixed (depends on type and context)	8	(Oosthuizen et al., 2018)
Task performance (curvilinear)	Inverted U-shape (moderate cyberloafing optimal)	6	(She & Li, 2023)
Academic performance (curvilinear)	Inverted U-shape	4	Guo et al. (2025)
Individual Development			
Personal learning / development	Positive	8	Divya & Narwal (2023)
Information acquisition	Positive	6	Liu et al. (2025)
Social connection	Positive	6	Abbas et al. (2025)
Work-life balance	Positive (family-related cyberloafing)	4	Yuniawan et al. (2025)

Attitudes, beliefs, and motivations also play a significant role. An individual's attitude toward cyberloafing (28 studies), subjective norms (24 studies), and perceived behavioral control (18 studies) consistently predict their intentions and behaviors related to cyberloafing, aligning with the Theory of Planned Behavior framework (Askew et al., 2014; Elciyar & Simsek, 2021). Neutralization techniques and moral disengagement allow individuals to rationalize their cyberloafing habits, particularly when they perceive unfair treatment within their organization (Lim, 2002; Tan et al., 2024; Wang et al., 2025). Additionally, perceived ability to conceal cyberloafing from supervisors and coworkers positively affects actual cyberloafing behavior; individuals who are confident in their ability to remain undetected are more likely to engage in such activities (Askew et al., 2017; Sheikh et al., 2015).

Lastly, habits and addictions are strong predictors of cyberloafing. Internet addiction (24 studies), smartphone addiction (22 studies), and social media addiction (16 studies) consistently show positive correlations with cyberloafing, indicating that such behavior may reflect a wider issue of problematic technology use (Gökçearsan et al., 2016; Öztürk & Kerse, 2022; Turan et al., 2021). Moreover, the strength of habits and their automatic nature also predict cyberloafing, suggesting that for many, cyberloafing has become an ingrained, semi-automatic behavior (Elciyar & Simsek, 2021; Soh et al., 2018).

Organizational-Level Antecedents

The relationship between job characteristics and demands is complex. Studies consistently show that role conflict and role ambiguity predict increased cyberloafing, indicating that such behavior may serve as a coping mechanism in response to stressful work conditions (Henle & Blanchard, 2008; Jamaluddin et al., 2023; Varghese & Barber, 2017). Findings on workload and role overload are mixed: some research suggests that overloaded employees have less time for cyberloafing. At the same time, other studies indicate that overload creates stress that triggers cyberloafing as a coping mechanism. Recent research indicates a curvilinear relationship, with a moderate workload associated with the least cyberloafing (Hensel & Kacprzak, 2020; Sun et al., 2025). Additionally, the meaningfulness of work and task significance negatively predict cyberloafing. Employees who find their work meaningful are less likely to engage in non-work activities (Usman et al., 2021; Tan et al., 2024).

Leadership styles also significantly influence cyberloafing outcomes. Negative leadership behaviors—such as abusive supervision (22 studies), authoritarian leadership (8 studies), toxic leadership (4 studies), and self-serving leadership (2 studies)—consistently lead to increased cyberloafing. This is often mediated by emotional exhaustion, psychological contract breaches, or moral disengagement (Lim et al., 2021; Bhattacharjee & Sarkar, 2024; Koay et al., 2022; Zhang et al., 2022; Fan et al., 2023). Conversely, positive leadership behaviors generally reduce cyberloafing, although the effects can be complex. High-quality leader-member exchange (LMX) has been shown to negatively predict cyberloafing (Ülbeği & İplik, 2025; Gupta et al., 2025). Responsible leadership can paradoxically reduce cyberloafing by fostering a sense of obligation, yet also indirectly increase it through heightened job stress (Koay, 2025; Zhu et al., 2021). Similarly, servant leadership offers dual pathways; it can reduce cyberloafing by enhancing meaningful work, but may also increase it due to citizenship pressure (Tan et al., 2024).

Perceptions of organizational justice have been shown to predict cyberloafing across 24 studies negatively. Employees who view their organization as unfair—whether in terms of

distributive, procedural, or interactional justice—are more likely to engage in cyberloafing as a form of retaliation or to restore perceived equity (Lim, 2002; Zoghbi-Manrique-de-Lara, 2007, 2009; Blau et al., 2006; Öğüt et al., 2013).

The social environment and group norms heavily influence cyberloafing behavior. Studies indicate that coworker cyberloafing (descriptive norms) positively predicts individual cyberloafing across 22 studies, suggesting that cyberloafing is socially contagious (Askew et al., 2019; Wu et al., 2023; Liberman et al., 2011). Perceived approval from supervisors and coworkers (prescriptive norms) also contributes to increased cyberloafing (Blanchard & Henle, 2008; Osei et al., 2022). Additionally, workplace ostracism consistently predicts cyberloafing, as ostracized employees often turn to online activities to cope with social exclusion (Koay, 2018; Hu et al., 2023; Koay & Lai, 2023).

Policies, controls, and sanctions have mixed effects on cyberloafing. Merely having internet use policies is not enough; the perceived fairness of these policies and certainty of enforcement are crucial (Henle et al., 2009; Jia et al., 2013). Monitoring may reduce cyberloafing, but it can also have unintended consequences, such as reduced intrinsic motivation and decreased organizational citizenship behavior (Jiang et al., 2024; Jiang, 2019; Glassman et al., 2015). Perceptions of the certainty and severity of sanctions consistently reduce cyberloafing, supporting deterrence theory (Wu et al., 2023; Hensel & Kacprzak, 2021; Song et al., 2021).

Technological-Level Antecedents

Access and connectivity factors are fundamental in predicting cyberloafing. Internet access in workplaces or schools (20 studies) and personal device ownership (16 studies) are necessary conditions that positively correlate with increased cyberloafing (Henle & Blanchard, 2008; Saritepeci, 2020; Güngör & Ustabulut, 2024). Workstation visibility also affects cyberloafing behavior by altering perceived detection risk. Employees whose screens are visible to others tend to engage less in cyberloafing, a finding that is mediated by lower self-efficacy in hiding such behavior (Askew et al., 2017). Private offices and low-visibility cubicles facilitate more cyberloafing activities. Additionally, the features and design of technology are increasingly influencing cyberloafing. Characteristics of social media platforms—such as personalized recommendations, infinite scrolling, and push notifications—can exacerbate cyberloafing by enhancing user engagement and fostering habit formation (Chen et al., 2025). Furthermore, mobile accessibility allows for cyberloafing at any time and in any place (Güngör & Ustabulut, 2024).

3.3. Consequences of cyberloafing

Negative Outcomes of Cyberloafing

Work-related negative outcomes due to cyberloafing have been extensively documented. The most frequently cited consequences include declines in task performance and productivity, reported in 42 studies (Kuem & Zhang, 2025; She & Li, 2023; Mercado et al., 2017). However, recent research suggests that the relationship between cyberloafing and performance may be more complex than previously understood. Some studies indicate a curvilinear relationship, in which moderate levels of cyberloafing may be associated with better performance than very low or very high levels (She & Li, 2023; Wu et al., 2021).

In educational settings, academic performance consistently suffers, particularly when cyberloafing occurs during class time, as reported in 28 studies (Wu et al., 2018; Zhang et al., 2025; Çalışkan & Sezer, 2025). Concentration and attention are impaired, as cyberloafing disrupts focus and increases the costs associated with task-switching (Zhang et al., 2025; Jiang & Zhang, 2025). Negative outcomes for well-being are also substantial. Emotional exhaustion, reported in 18 studies, and job stress, noted in 16 studies, consistently increase with cyberloafing. The relationship is bidirectional: stress can lead to cyberloafing, which may, in turn, exacerbate stress if it results in unfinished work or feelings of guilt (Koay, 2018; Aghaz & Sheikh, 2016; Fan et al., 2023). Burnout is positively associated with serious cyberloafing (Yildiz Durak & Saritepeci, 2019; Iravani et al., 2024). Additionally, fatigue can arise from cyberloafing, especially when it involves cognitively demanding activities or extends work hours (Wu et al., 2020; Agrawal & Krishna, 2025; Nweke et al., 2024).

Behavioral negative outcomes include the reinforcement of procrastination patterns (Yan & Yang, 2014; Margarettha et al., 2022) and potential spillover effects into other counterproductive behaviors. Recent research suggests that witnessing coworkers engage in cyberloafing can lead to workplace incivility via negative emotional reactions (Zhang et al., 2025). Finally, the security and organizational risks presented by cyberloafing are significant. Information security vulnerabilities increase when employees visit non-work-related websites, potentially exposing organizations to malware, phishing attacks, and data breaches (Hadlington & Parsons, 2017; Vernin-Bido et al., 2018; Cvitković et al., 2024). Additionally, network congestion and bandwidth waste reduce organizational efficiency (Henle & Blanchard, 2008). Legal liability concerns can arise from inappropriate internet use, including accessing illegal or offensive content on organizational networks (Bortolani & Favretto, 2008).

Positive Outcomes of Cyberloafing

Positive outcomes related to recovery and well-being are among the most consistently documented benefits of cyberloafing. Research has shown that psychological detachment from work—mentally disengaging during breaks—is supported by cyberloafing, as evidenced by 16 studies (Wu et al., 2020; Mei et al., 2023; Wu et al., 2021; Abbas et al., 2025). Taking micro-breaks to relax helps replenish depleted resources (Wu et al., 2021; Jiang, 2020; Jiang & Zhang, 2025). Additionally, stress relief and coping mechanisms have been documented in 12 studies, supporting the idea that cyberloafing serves as an adaptive coping strategy (Pindek et al., 2018; Andel et al., 2019; Jamaluddin et al., 2023). Improvements in mental health are observed when cyberloafing facilitates detachment and recovery (Kwala & Agoyi, 2024; Liu & Zhang, 2023; Kwala et al., 2025).

The positive outcomes related to work also show more complex patterns. Certain types of cyberloafing, particularly those involving browsing-related activities, can enhance creativity and innovative performance by exposing employees to diverse information and perspectives (14 studies; Tsai, 2022; Liu et al., 2025; Zhong et al., 2022; Divya & Narwal, 2023). Unexpectedly, knowledge gained from browsing non-work content may support work-related learning and problem-solving (Liu et al., 2025; Krishna & Agrawal, 2023). Job satisfaction has differential effects: minor cyberloafing, such as briefly checking personal emails or catching up on news, is positively associated with job satisfaction. In contrast, more significant cyberloafing can have negative effects (Zhang et al., 2024; Quoquab et al., 2015; Uysal, 2019).

The relationship between cyberloafing and performance outcomes is increasingly recognized as curvilinear. Six studies illustrate an inverted U-shaped relationship where moderate cyberloafing optimizes recovery without excessive distraction (She & Li, 2023; Wu et al., 2021). Similarly, academic performance follows an inverted U-shape, indicating that moderate cyberloafing is associated with better outcomes compared to very low or very high levels (Zhang et al., 2025; Guo et al., 2025). These findings help reconcile seemingly contradictory results by suggesting that the impact of cyberloafing depends on its frequency, intensity, and context.

Positive outcomes related to individual development include personal learning and information acquisition, which may indirectly benefit organizations by enhancing employee knowledge and skills (Krishna & Agrawal, 2023; Divya & Narwal, 2023). Additionally, cyberloafing via social media can foster social connections, fulfill belongingness needs, and reduce workplace loneliness (Abbas et al., 2025). Moreover, work-life balance may improve when employees utilize work hours for family-related activities (family cyberloafing), helping them manage non-work demands (Yuniawan et al., 2025).

4. Critical analysis and future research agenda

This systematic review synthesized findings from 344 empirical studies on the antecedents and consequences of cyberloafing in workplace and educational settings. The comprehensive analysis reveals a mature but still-evolving field characterized by theoretical pluralism, methodological diversity, and increasingly nuanced understandings of cyberloafing as a complex, multi-dimensional phenomenon. This section provides a critical analysis of the current state of knowledge, identifies key limitations and gaps in the literature, and proposes a structured agenda for future research.

1. Theoretical contributions and limitations

The field of study shows a strong theoretical foundation, with 87.8% of research explicitly using one or more theoretical frameworks. The prominence of the Conservation of Resources (COR) theory (16.9%) reflects a maturation in understanding cyberloafing, viewing it not just as deviance but as a resource management strategy. COR theory focuses on resource acquisition, protection, and replenishment, offering a coherent framework for integrating both the negative (resource-depleting) and positive (resource-replenishing) aspects of cyberloafing. Additionally, the substantial application of the Theory of Planned Behavior (TPB) (13.4%) and Social Exchange Theory (SET) (11.0%) indicates attention to both intrapersonal and interpersonal dynamics.

While multiple theories are employed, they are seldom integrated within individual studies. For instance, few studies combine COR theory with social learning theory to explore how resource-depleted individuals may be more susceptible to observing and modeling coworker cyberloafing. The field would benefit from increased theoretical integration that recognizes the multi-causal, multi-level nature of cyberloafing. COR theory, TPB, and SET collectively account for over 41% of the theoretically grounded studies. Other valuable frameworks—such as Self-Determination Theory (which examines autonomy, competence, and relatedness needs), Regulatory Focus Theory (which differentiates between promotion and prevention orientations), or Socio-technical Systems Theory—are underutilized. This concentration of theories may restrict the field's ability to produce novel insights.

Even when theories are utilized, studies often examine direct effects without adequately investigating the mediating mechanisms outlined by the theories. For example, studies using COR theory frequently explore direct relationships between stressors and cyberloafing without measuring resource depletion as a mediator. This "black box" approach limits theoretical testing and refinement. Most studies assume a unidirectional causality

(antecedents → cyberloafing → consequences). However, emerging longitudinal evidence suggests that relationships may be reciprocal: cyberloafing can increase job stress, which may, in turn, lead to increased future cyberloafing (Malik et al., 2025); observing coworker cyberloafing may normalize the behavior, thereby increasing the likelihood of future cyberloafing (Wu et al., 2023). Current theoretical models rarely account for these dynamic, recursive processes. Theories are often applied without considering contextual moderators. The same theoretical mechanism (e.g., resource depletion leading to cyberloafing) may operate differently across cultures, industries, job types, or technological environments. Cross-cultural tests of theoretical predictions remain rare.

2. Methodological strengths and weaknesses

The field of research on cyberloafing shows notable methodological strengths, including large sample sizes that enhance statistical power, the use of validated measures to improve comparability across studies, and an increasing emphasis on methodological rigor. This is highlighted by greater attention to common-method bias and by the use of sophisticated analytical techniques. Moreover, the research spans diverse settings, including workplace and educational contexts across 42 countries, thereby enhancing its generalizability. However, the field faces critical methodological limitations. A significant reliance on cross-sectional designs restricts the ability to draw causal inferences, as these studies can establish associations but not directionality or the potential for reverse causality.

Additionally, a heavy reliance on self-reported data raises concerns about social desirability bias, with self-reported cyberloafing typically underrepresenting actual behavior compared to objective monitoring methods, which themselves raise ethical considerations. Most studies suffer from common method bias due to single-source data collection, with very few incorporating multi-source data. Furthermore, there is a lack of qualitative and mixed-methods research, which is essential for understanding the deeper meanings and justifications behind cyberloafing. The representation of studies is also biased, with a concentration in Western and Asian contexts, leaving other regions underexplored and their cultural influences on cyberloafing relationships inadequately examined. Additionally, the field features limited longitudinal and experimental research, which are crucial for establishing causality and testing positive interventions. Lastly, inconsistencies in conceptualization and measurement complicate cross-study comparisons, as not all studies utilize validated scales, and definitions of cyberloafing vary significantly. While antecedents and consequences are well-documented, the psychological mechanisms linking them remain underspecified. For example:

- How exactly does abusive supervision translate into cyberloafing? Through anger? Fear? Resource depletion? Normative modeling?
- Through what processes does cyberloafing enhance creativity? Does browsing expose employees to diverse ideas, provide incubation time, or reduce cognitive fixation?
- What determines whether cyberloafing functions as recovery versus further resource depletion?

Moderators and boundary conditions: Although Tables 5 and 6 document many direct relationships, understanding for whom and under what conditions these relationships hold is limited. Key moderators requiring further investigation include:

- Individual differences: Conscientiousness, self-control, and mindfulness have been examined, but other traits (e.g., grit, resilience, growth mindset) remain unexplored.
- Job characteristics: How do job demands, autonomy, and task variety moderate cyberloafing effects?
- Organizational culture: How do ethical climate, learning orientation, and psychological safety shape cyberloafing dynamics?

- Cultural context: How do national culture dimensions moderate relationships? For example, does abusive supervision have stronger effects on cyberloafing in high power distance cultures?

Most research treats age as a control variable rather than examining developmental trajectories of cyberloafing. How do cyberloafing patterns change across career stages? Are digital natives fundamentally different in their attitudes and behaviors toward cyberloafing? Longitudinal research tracking individuals over time is needed.

4.3. Specific recommendations for future research

This section presents seven priority areas for future research on cyberloafing, based on a critical analysis of the existing literature. Each area includes specific research questions and methodological recommendations to enhance theoretical integration, methodological rigor, and practical relevance.

First, future research should shift from testing single theories in isolation to developing integrated, multilevel models that recognize the complex, multifaceted nature of cyberloafing. Instead of simply asking whether a particular theory explains cyberloafing, researchers should explore how multiple theoretical perspectives can be combined for more comprehensive explanations. For instance, the Conservation of Resources theory, which focuses on the dynamics of resources, can be integrated with social learning theory to examine how individuals lacking resources may be more influenced by observing their coworkers engage in cyberloafing. Additionally, combining Self-Determination Theory—which addresses autonomy, competence, and relatedness needs—with organizational justice theory could help us understand how perceptions of fairness affect need satisfaction and, subsequently, cyberloafing behavior. Another fruitful integration could involve merging Affective Events Theory with Ego Depletion Theory to investigate how workplace events trigger emotional reactions that deplete self-regulatory resources, making individuals more susceptible to cyberloafing. Methodologically, these integrated approaches would benefit from multilevel modeling techniques that can simultaneously assess individual-level factors (such as personality and attitudes), group-level factors (including norms and leadership), and organizational-level factors (such as policies and culture).

Second, the field urgently needs more studies that can support causal inferences rather than merely documenting correlations. Although cross-sectional research has established a solid framework of related variables, the question of causality largely remains unanswered. Important methodologies include longitudinal panel studies with three or more waves to explore reciprocal relationships and change trajectories over time. Such designs can clarify whether, for example, job stress leads to cyberloafing, cyberloafing increases job stress, or whether both occur in a dynamic feedback loop. Experimental designs that manipulate potential antecedents—such as leadership behaviors, job characteristics, or communication of policies—and observe their effects on cyberloafing are particularly valuable for establishing causality. Natural experiments that leverage organizational changes (such as new policies, technology implementations, or leadership transitions) offer opportunities to examine causal effects in real-world contexts. Diary and experience sampling studies can complement these methods by analyzing within-person fluctuations and daily dynamics, providing insights into how cyberloafing unfolds in everyday work life. A particularly effective approach would be to combine experimental manipulation with experience sampling, such as randomly assigning employees to a mindfulness intervention and then tracking their daily cyberloafing, well-being, and performance for two weeks before and after the intervention.

Third, future research should clearly differentiate among the various types of cyberloafing rather than treating it as a single construct. The five-factor structure validated by Akbulut and colleagues in 2016 includes sharing, shopping, real-time updating, accessing online

content, and gaming or gambling, providing a solid framework for analyzing specific activities. Research questions should specify which activities are predicted by different antecedents, which activities yield particular outcomes, and whether various activities fulfill different psychological functions, such as social connection, information seeking, entertainment, or escape. Preliminary evidence suggests that browsing activities enhance creativity, while gaming could be linked to more negative outcomes. However, systematic investigation across studies is required. Methodologically, researchers should conduct activity-level analyses in all studies, examining both overall cyberloafing and specific types of activity. Person-centered approaches, such as latent profile analysis, could identify distinct cyberloafing profiles, like "social cyberloafers" who primarily use social media, "information seekers" focused on news and content browsing, and "gamers" who engage mostly in gaming activities. These profiles may have different antecedents, consequences, and responses to interventions.

Fourth, while the field has established main effects, our understanding of boundary conditions is limited. Future research should systematically explore contextual and cultural moderators that strengthen or weaken these relationships. National culture is a critical yet understudied moderator; questions remain about how factors such as power distance, individualism versus collectivism, uncertainty avoidance, and long-term orientation influence cyberloafing. Multi-country studies that rigorously test measurement invariance are necessary to determine whether findings from predominantly Asian and North American samples apply to other cultural contexts. Additionally, the industry and occupational contexts merit attention, as cyberloafing may operate differently in settings such as knowledge work versus manual work, healthcare versus finance, or public versus private-sector organizations. The technological context—encompassing organizational IT infrastructure, bring-your-own-device policies, and remote or hybrid work arrangements—likely moderates many relationships related to cyberloafing and warrants systematic investigation. The COVID-19 pandemic and the subsequent shift to remote work may have fundamentally altered cyberloafing dynamics, raising questions about the validity of pre-pandemic research findings in the current work environment. Methodologically, researchers should conduct multi-group analyses across meaningful contextual categories and utilize meta-analytic techniques to examine whether effect sizes vary systematically across different contexts.

Fifth, one of the most pressing practical needs is for evidence-based interventions that organizations can implement to address cyberloafing. Despite a comprehensive understanding of its antecedents, intervention studies are scarce in the literature. Priority intervention studies could include leadership development programs that train supervisors in supportive, fair, and non-abusive leadership practices and examine whether such training reduces cyberloafing among their subordinates. Job redesign interventions that enhance autonomy, meaningfulness, and variety could test whether addressing the root causes of workplace dissatisfaction reduces problematic cyberloafing. Additionally, mindfulness and self-regulation training programs may improve self-control and decrease impulsive cyberloafing at the individual level. Policy and communication interventions should explore how organizations can communicate internet use policies effectively to maximize compliance while maintaining employee trust and perceptions of fairness. Positive cyberloafing programs could intentionally guide employee internet use toward beneficial activities, such as curated learning content or structured breaks, to investigate whether organizations can harness rather than merely control cyberloafing. Methodologically, these intervention studies should employ randomized controlled trials with wait-list control groups, multiple time points, including long-term follow-ups, and both self-report and objective outcome measures. Incorporating process measures to examine intervention mechanisms would enhance theoretical understanding while offering practical guidance.

Sixth, as organizations increasingly monitor employee behavior to address concerns about cyberloafing, research on the ethical dimensions of managing it becomes crucial.

Employee perspectives on monitoring are an underexplored area, raising questions about how employees view different monitoring approaches and what distinguishes acceptable from intrusive monitoring. Trust dynamics warrant further investigation, including how monitoring affects employee trust in the organization, psychological safety, and the psychological contract between employees and employers. Research should explore the characteristics that make cyberloafing policies perceived as fair and legitimate, as perceived fairness likely influences voluntary compliance more than threats of sanctions do. Most fundamentally, research should address how organizations can protect their legitimate interests in productivity and security while respecting employee autonomy and privacy. These questions necessitate careful consideration of the ethical tensions inherent in managing employee behavior in increasingly digitized workplaces. Methodologically, this research should combine quantitative surveys of employee attitudes with qualitative interviews that explore ethical reasoning and boundary negotiations. The development and validation of measures of perceived monitoring fairness enable quantitative testing of relationships among monitoring characteristics, fairness perceptions, and employee outcomes.

Finally, future research should investigate how organizations can shift from merely controlling cyberloafing to optimizing it as a potential resource for employee well-being and performance. Recovery optimization research could examine which types and durations of cyberloafing best facilitate psychological detachment and relaxation without impairing subsequent task performance. Studies on learning and creativity could explore how organizations can promote browsing that supports knowledge acquisition and creative thinking while minimizing distractions. Research on autonomy and trust could test whether organizations that demonstrate trust in employees by allowing reasonable internet access gain benefits in engagement and loyalty that outweigh any productivity costs associated with cyberloafing. Design-oriented research could investigate how workspaces, schedules, and technologies might be structured to support beneficial micro-breaks that serve recovery functions while maintaining focus on core work tasks. Methodologically, this research could benefit from studying positive deviants—organizations and workgroups that successfully integrate employee internet use with high performance—to identify principles and practices that other organizations can adapt. Design science approaches could develop and test interventions specifically aimed at enhancing the positive potential of cyberloafing while minimizing its negative consequences.

5. Conclusion

This review synthesizes cyberloafing research from 344 studies across 42 countries, highlighting its dual nature. It identifies key moderators that influence whether cyberloafing is constructive or counterproductive, and proposes a framework that includes individual, organizational, and technological factors and their associated effects. The review identifies significant gaps, including the prevalence of cross-sectional designs and the lack of interventions, and proposes a research agenda focused on causal identification and cross-cultural comparisons. For practitioners, it emphasizes that managing cyberloafing effectively requires addressing underlying issues like workplace stress and leadership quality, rather than relying solely on deterrence.

This systematic review synthesized findings from 344 empirical studies to provide a comprehensive understanding of the antecedents and consequences of cyberloafing in workplace and educational settings. The analysis reveals that cyberloafing is a complex, multi-dimensional phenomenon influenced by a wide array of individual factors such as personality traits, self-control, and technology addiction; organizational factors including leadership styles, justice perceptions, workplace stressors, and social norms; and technological factors such as internet access, device ownership, and monitoring systems. Regarding consequences, the

evidence supports a dual-pathway model in which cyberloafing can produce both negative outcomes, such as impaired performance, emotional exhaustion, and security risks, and positive outcomes, including psychological detachment, stress relief, and enhanced creativity, with the net effect depending critically on the type of cyberloafing activity, its frequency and intensity, and individual and contextual moderators. The field has matured considerably over two decades, moving from simplistic conceptualizations of cyberloafing as mere deviance toward nuanced understandings of its complex role in employee and student life. However, significant limitations persist, including the dominance of cross-sectional designs, which preclude causal inference; heavy reliance on self-report measures; underutilization of qualitative methods; and a near absence of intervention research. Future research must prioritize longitudinal and experimental designs, activity-level specificity, cross-cultural comparisons, and rigorous intervention studies that test whether modifying antecedents can effectively reduce problematic cyberloafing while preserving its potential benefits. As technology continues to evolve and work arrangements transform, cyberloafing will remain a critical area of inquiry at the intersection of organizational behavior, information systems, and occupational health psychology.

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