Antecedents for Cyberloafing – A Literature Review

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Abstract. The private use of the Internet via desktop and smartphones during working time, also known as cyberloafing, has become a common practice at many workplaces. While critical voices expect performance losses through such behavior, their opponents perceive of the interruptions created by cyberloafing as an opportunity to recover and continue working with increased productivity afterwards. Given the growing body of research on Internet-related employees' opportunism, this paper presents a systematic literature review of 69 studies to identify the factors behind cyberloafing. The classification includes personality traits as well as antecedents related to the job, organization and personal life. The paper concludes with a clear picture of the kind of circumstances which tend to increase cyberloafing and which factors statistically do not seem to have any impact on the abuse of Internet during working time.

Keywords: Cyberloafing, Cyberslacing, Not-work-related computing, Internet addiction.

1 Introduction

Today, most organizations are connected to the Internet to support their routines: to complete electronic payments, to communicate with customers by providing online support, to research new product ideas, to craft and monitor their own brand on Social Media or to collaborate on projects with people all over the world. Despite many ways to boost business efficiency, in many cases the Internet at workplaces is also used by employees for private matters [1-2]. This unproductive use of the Internet during working time is often referred to as cyberloafing, cyberslacking or non-work-related computing. These terms are used as synonyms to signify the abuse of the Internet during working time [3]. Almost 90% of employees misuse the company's Internet access to send and receive private e-mails or visiting news websites [4]. Also shopping (65%), visiting sport websites (60%) and booking vacations (50%) are reasons for employees to go online during work [4]. Furthermore, browsing through Social Media is quite

popular and justified by taking mental breaks (34%), connecting with friends and family (27%) and supporting professional connections (24%) [5].

People spend more than one hour per day during eight hours of working time on the Internet [6-7]. As a result, employees continuously interrupt their work which has been found to be more disruptive than external factors [8]. Moreover, for companies the private use of the Internet by employees during working time results in higher expenses [9]. The costs of cyberloafing are at an estimated 85 billion dollars per year for all US companies [7].

Since the boundary between private and business life is continuously more blurry for many people [10], the issue of cyberloafing gains more and more relevance. Employees often require more flexibility at their jobs [11]. On the one hand, people with flexible working conditions, meaning their work is not fixed to certain hours or locations, show higher levels of engagement, stronger organizational commitment and higher job satisfaction [12]. On the other hand, this flexibility implies the use of the Internet for private issues at workplaces.

So far, companies' reactions to cyberloafing are ambiguous. While some companies ban private use of the Internet during working time (e.g. FedEx) [13], others have not taken any actions.

Considering the complexity attached to the concept of cyberloafing, the antecedents of this behavior must be better understood. This study aims to summarize the main factors that drive cyberloafing by conducting a systematic literature review. In terms of research contribution, our paper provides an initial attempt to synthesize existing research findings on the phenomenon. For industry leaders, our work offers a holistic view hinting at how to manage employees in the digital age.

2   Review Method

The literature review follows the guidelines from von Brocke et al. [14] and Webster et al. [15]. Studies were searched using the keyword "cyberloafing" on different scientific databases: Google Scholar (1520); JSTOR (33); ScienceDirect (80); ProQuest (123); InfoTrac (23); ACM Digital Library (2); IEEE Xplore (5); Taylor and Francis (35); Emerald (31) and SAGE journals (24). Synonyms like "cyberslacking" and "non-work-related computing" were also considered during the search process, however no additional unique results were yielded.

After reviewing the titles and abstracts, a total of 231 papers were identified and analyzed in more detail. Out of these, only peer-reviewed papers published in English and with a clear focus on the empirical study of cyberloafing were selected. Since browsing Social Media websites is one of the main reasons for taking a mental break at work [5], the publications' timeframe was set to 2003-2017. This starting point corresponds with the emergence of Social Media websites such as LinkedIn and MySpace, founded in 2002 and 2003 respectively. The selected 145 papers then underwent a full-text review. Finally, a total of 69 studies that investigated the antecedents of cyberloafing were selected as a baseline for further analysis. All studies in the final sample were published between 2004 and 2017 and employ quantitative

surveys as the main method. Employees from both private and public sectors took part in the studies. Geographically, the majority of samples originate in the US (50%), Asia (33%) and Turkey (15%). This could be explained by the fact that the work-life balance in these regions is very low, as OECD studies show [16]. Methodologically, 26 studies (37%) apply hierarchical regression for data analysis, and 44 studies adopted different empirical methods such as multiple regression analysis. The results of the analysis are summarized in the following chapter.

3   Results

3.1   Theoretical foundations

Nearly one half of the studies in our sample have a strong theoretical background. In particular, theory of planned behavior, general deterrence theory and social learning theory often serve as conceptual foundation to discover drivers of cyberloafing (Table 1). In some cases, more than one theory was applied. In 26% of the studies the research framework is not rooted in a particular theory and the hypotheses are mainly formed on the basis of past research.

Table 1. Overview of approached theories

N=69	PBT	GDT	SLT	RCT	ET	TAT	SET	BT	RT	Other	No theory
Number of papers	15 (22%)	12 (17%)	7 (10%)	6 (9%)	5 (7%)	5 (7%)	3 (4%)	3 (4%)	3 (4%)	14 (20%)	18 (26%)

Note: PBT = Planned behavior theory; GDT = General deterrence theory; SLT = Social learning theory; RCT = Rational choice theory; ET = Equity theory; TAT = Trait activation theory; SET = Social exchange theory; BT = Bonder theory; RT = Role theory

The theory of planned behavior states that subjective norms, attitude towards behavior, and perceived behavioral control lead to a deviancy like cyberloafing [17]. In contrast, social learning theory assumes that learning is a cognitive process which happens through the observation of existing norms in groups as well as through rewarding actions or punishing their consequences [18]. In the context of cyberloafing, this means that existing company norms and policies influence employees' behavior. In line with this, general deterrence theory claims individuals can be detained from undesirable acts by using countermeasures like strong disincentives and sanctions [19].

Among others, rational choice theory [20], equity theory [21], trait activation theory [22], social exchange theory [23], border theory [24-25] and role theory [26] were adopted to explain causes of cyberloafing.
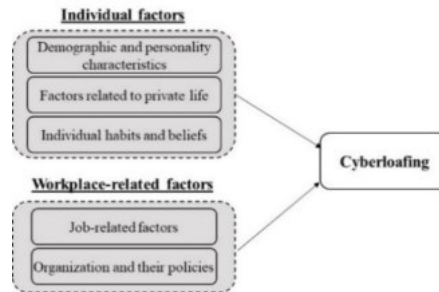
Figure 1. Summary of the antecedents of cyberloafing

Our systematic literature review uncovers several antecedents that underlie individual cyberloafing, as tested and shown by prior research. Considering 83 different original factors, we categorize dominant antecedents into two groups: individual factors and workplace-related factors.

3.2 Individual factors

With regard to individual factors of cyberloafing we distinguish between (1) the demographic and personality characteristics of employees, (2) factors related to their private life, as well as (3) their beliefs and habits with regard to cyberloafing.

Demographic and personality characteristics

Using Internet access for personal purposes while pretending to do legitimate work is linked to a number of different demographic characteristics and personality traits, as presented in Table 2.

Table 2. Demographic and personality characteristics as antecedents of cyberloafing

Demographic and personality characteristics	Significant positive relationship to cyberloafing	No significant relationship to cyberloafing	Significant negative relationship to cyberloafing
Gender (0=male; 1=female)		[4], [28-37]	[6], [38-50]
Age	[28]	[4], [31], [33-34], [36], [41], [43], [46], [51]	[6], [29], [37-38], [42], [44-45], [50], [52-53]
Relationship status (single=1, other=0)	[30], [38]	[54]	
Education	[38-39], [53]	[6], [36], [42], [46], [54], [55]	
Internet skills and computer experiences	[6], [39]	[4], [36], [43-44]	[41]

Demographic and personality characteristics	Significant positive relationship to cyberloafing	No significant relationship to cyberloafing	Significant negative relationship to cyberloafing
Big five personality traits			
- Openness		[38], [45], [56]	
- Conscientiousness		[51], [56], [57]	[38], [45-46], [52], [58], [59]
- Extraversion	[32], [38], [45], [47], [61]	[56]	
- Agreeableness		[38], [45], [51], [56], [57]	[59]
- Neuroticism	[38], [57]	[47], [57]	
Emotional intelligence and honesty		[51], [62]	[36], [45-46], [56], [63], [66]
Self-regulation		[58]	[35], [51], [62]

Previous studies deliver ample evidence that younger [6], [29], [37-38], [42], [44-45], [50], [52-53] and more extroverted people [32], [38], [45], [47], [61], males [6], [38-50], and experienced Internet users [6], [39] tend to cyberloaf more during their working time. Further, a number of studies show that singles are apt to completing job-unrelated tasks at their workplaces [30], [38]. A potential reason for singles to cyberloaf is the search for potential spouses on social networking sites [65]. Additionally, some studies show that high education level [38-39], [53] can be positively related to cyberloafing.

In contrast, high emotional intelligence [36], [45-46], [56], [63], [66], honesty [56], [63], [66], self-regulation [35], [51], [62], conscientiousness [38], [45-46], [52], [58], [59] and agreeableness [59] are personal characteristics which are negatively related to cyberloafing and thus rather contribute to compliant behavior at the workplace.

Factors related to private life

A number of studies manifest that factors related to employees' private life can be linked to cyberloafing (Table 3). For instance, a number of studies show people with many private obligations are apt to engaging in job-unrelated tasks at their workplaces [66-68]. A potential reason might be that people with a high level of private demand tend to use the Internet during working time to organize private matters [65]. Furthermore, previous research ties interruptions during sleep and exhaustion to cyberloafing behavior [47], [69]. One explanation is that sleep interruptions during the night could reduce the intrinsic motivation to work, which in turn leads to more cyberloafing [69].

Table 3. Factors related to private life as antecedents of cyberloafing

Factors related to private life	Significant positive relationship to cyberloafing	No significant relationship to cyberloafing	Significant negative relationship to cyberloafing
Bed time and exhaustion	[47], [69]		
Private demands hours	[66-68]	[70-71]	

Individual habits and beliefs

Interestingly, some employees show a positive attitude towards cyberslacking and perceive of Internet breaks to be useful [4], [61], [72-73] and appropriate [27], [41], [65-66], [70], [72], [74]. Moreover, the power of habituation effect is revealed: those who have integrated cyberloafing into their working routine [27], [33], [35-36], [40], [41-43], [49], [51], [72], [75] practice it more often. In line with social learning theory [18] and theory of planned behavior [17], this witnesses the importance of preventing measures at the initial stage to be able to avert occasional undesirable actions from establishing. The results for individual habits and beliefs as antecedents for cyberloafing are presented in Table 4.

Table 4. Individual habits and beliefs as antecedents of cyberloafing

Individual habits and beliefs	Significant positive relationship to cyberloafing	No significant relationship to cyberloafing	Significant negative relationship to cyberloafing
Personal habits of cyberloafing	[27], [33], [35-36], [40], [41-43], [49], [51], [72], [75]	[4], [29], [31]	
Self-efficacy		[33], [54], [58], [62]	
Normative beliefs and subjective norms	[27], [41], [65-66], [70], [72], [74]	[4], [61]	
Perceived usefulness of cyberloafing	[4], [61], [72-73]		
Procrastination	[76], [65-66]	[57-58]	

3.3 Workplace-related factors

Workplace-related factors of cyberloafing combine reasons attributed to (1) the nature of the job itself, including characteristics the employee doing it, as well as (2) the factors related to the organization and its policies.

Job-related factors

As a subcategory, job-related factors rooted in the nature of the position itself and the function of an employee designated for it are identified from previous work (Table 5).

Table 5. Job-related factors as antecedents of cyberloafing

Job-related factors	Significant positive relationship to cyberloafing	No significant relationship to cyberloafing	Significant negative relationship to cyberloafing
Tenure		[33], [43-44], [51], [77]	
Organizational position	[30], [38], [42], [46], [54-55], [66]	[36], [51], [67]	
Salary/income	[34], [42]	[6], [28], [51], [77]	
Stress and number of working hours	[43], [68], [78-79]	[32], [42], [47], [55], [64]	
Proximity of supervisor	[33], [55]	[38], [67]	[37]
Boredom	[6], [51], [64], [71]		
Meaningfulness of work		[45]	[33], [38], [42], [66-67], [77]
Creativity of work	[6], [66], [80]		
Internet work utility	[6], [42]		
Job satisfaction	[27], [33], [81]	[6], [32], [36], [42], [47], [55], [80]	[41]
Withdrawal behaviors	[80], [82-83]	[30]	

We find that employees in high positions [30], [38], [42], [46], [54-55], [66], with higher income [34], [42] and higher levels of stress [43], [68], [78-79] tend to cyberloaf on the Internet more. In light of cyberloafing as an opportunity to refresh oneself during work, there may be higher need for mental breaks through cyberloafing in jobs that require creativity [6], [66], [80]. Furthermore, studies show that boredom at work [6], [51], [64], [71], the ability to use the Internet to improve the job [6], [42] and the ability

to hide cyberloafing at work [83] can provoke cyberloafing. Consequently, those who perceive of their work to be meaningful will engage in cyberloafing significantly less [33], [38], [42], [66-67], [77].

Yet, the links between the level of job satisfaction and cyberloafing behavior remain unclear. Some studies suggest that people tend to cyberloaf [27], [33], [81], if they are satisfied with their jobs. This could be explained also as people which can use the Internet for private matters during working hours are more satisfied with their work. Others disagree this positive correlation and believe employees only substitute their disliked labor with other activities including surfing the Internet [41].

Organizations and their policies

Another cluster of factors contains organizational features, norms and policies (Table 6).

Table 6. Organizational factors as antecedents of cyberloafing

Organizational factors	Significant positive relationship to cyberloafing	No significant relationship to cyberloafing	Significant negative relationship to cyberloafing
Organizational size		[77]	[29], [41], [55]
Norms	[4], [33], [63], [74], [80], [82-83]		
Monitoring and external control		[4], [37], [41], [77]	[29], [31], [36], [44], [52], [73], [84]
Internet usage policies		[41], [55]	[36], [38], [42], [45], [52], [66], [85]
Sanctions		[44], [73]	[27], [37], [43], [63], [85]
Internet access	[38]	[67]	
Organizational justice		[31], [35], [42], [46], [86-87]	[50], [59], [88-89]
Performance appraisal and career advancement		[54]	[90]

It is evident from the research that open access to social network sites [38] and norms which allow Internet use for all purposes [4], [33], [63], [74], [80], [82-83] are significantly associated with cyberloafing.

Furthermore, the bigger the organization [29], [41], [55] and the more thoroughly the monitoring of employees [29], [31], [36], [44], [52], [73], [84], the less likely the Internet is abused during working time. In addition, Internet usage policies [36], [38],

[42], [45], [52], [66], [85] and potential sanctions [27], [37], [43], [63], [85] prevent staff to deviate from actual tasks. These findings are in line with general deterrence theory [19] claiming that awareness of sanctions may decrease a punishable behavior. Furthermore, employees are likely to reduce their opportunistic behavior if they observe peers being penalized [27]. Finally, objective performance ratings, wider perspectives of career opportunities [90] and high levels of organizational justice [50], [59], [88-89] are shown to restrain cyberloafing.

4   Discussion

The aim of this systematic literature review was to investigate the current state of research on the factors behind cyberloafing. A total of 69 papers were analyzed to explore factors associated with this behavior. Our review suggests that theory of planned behavior and general deterrence theory are the most frequently applied theoretical concepts for studying the phenomenon. While theory of planned behavior is mainly focused on determinants from employees' side, like subjective norms, individual attitude, and perceived behavioral control leading to cyberloafing, general deterrence theory is taking the employer perspective with studies centered around preventing measures, policies and sanctions as the main restraining mechanisms. To provide a better overview of factors associated with cyberloafing, two groups of determinants were proposed: individual and workplace-related determinants.

The cluster of individual factors associates cyberslacking with individual characteristics and skills, including gender, age, personality traits, computer skills, sleep quality, relationship status as well as personal attitudes towards cyberloafing. The analysis suggests that younger [6], [29], [37-38], [42], [44-45], [50], [52-53], extraverted people [32], [38], [45], [47], [60] with good computer skills [6], [39] are more likely to abuse access to the Internet for non-work related matters. The second group contains workplace-related determinants like the employee's position within the company, salary and job satisfaction as well as organizational policies on Internet abuse during work time. Employees in higher positions [30], [38], [42], [46], [66], [54-55], their education [38-39], [53], income [34], [42] and levels of stress [43], [68], [81-82] correlate with a higher rate of cyberloafing. Restriction of Internet access [36], [38], [42], [45], [52], [66], [85] and sanctions [27], [37], [43], [63], [85] for non-compliant behavior are shown to be significant measures against cyberloafing.

The literature review illustrates the complexity and multifaceted nature of the cyberloafing phenomenon. On one hand, the given collection of antecedents delineates a typical employee who is inclined to factors which can be (at least partially) influenced by their employer through the number of working hours or the physical proximity between employee and supervisor. On the other hand, our analysis reveals a number of non-workplace-related factors which companies can control less and only influence to a limited extent. Our results are in line with the social trend of work-life-blending [93], which means that the boundaries between work and life are increasingly softened which has employees mix their professional and private interests. Especially employees who need to spend much time at work [43], [68], [78-79] use cyberloafing as a way to follow

up on private matters during working time [29]. Furthermore, our findings identify that young people [6], [29], [37-38], [42], [44-45], [50], [52-53] and employees of small companies [29], [41], [55] tend to cyberloaf more. These results are also conform to work-life-blending trends. Especially young people (the so-called Generation Y) and employees of start-up companies do not draw clear lines between work and private life [94].

Although organizations have an interest in reducing cyberloafing, as the employees' productivity could be influenced in a negative way [95], we have found enough confounding evidence that the breaks taken to cyberloaf are helpful in providing inspiration for creative work [6], [66], [80], increasing job satisfaction [27], [33], [81] and reducing work-related stress [92].

Our results further imply that the antecedents of cyberloafing have many different business specificities, and the strategies of handling cyberslacing depend heavily on the corporate culture and governance of the respective company.

5   Conclusion, limitations and future research

Cyberloafing at the workplace has become common in the digital age. Summarizing extant research, this paper provides a structured review of current literature on cyberloafing with a special focus on its antecedents. However, empirical results remain scattered. This paper addresses this gap by conducting a systematic literature review and providing a comprehensive summary of existing findings on the factors behind cyberloafing. Furthermore, this study extends IS research by presenting a number of practical implications for corporations, their management and employees. We reveal an array of conflictual findings that exist in the literature, which calls for a more thorough exploration into the reasons of these diverging insights.

The current study is subject to a number of limitations. First, the papers included in our sample were found through keyword search, followed by a subsequent exclusion. Second, we acknowledge possible interdependences of factors in our classification which is mainly attributed to the heterogeneity of the studies summarized. For example, age could be a confounding variable in the correlation between a) computer skills and cyberloafing and b) relationships status and cyberloafing. This is because younger generations have better digital literacy and are not likely to have founded own families yet. Therefore, our framework compiles and recaps previous research without delivering a strong causal model. Third, we treated cyberloafing as a unified construct without analyzing its multiple facets like type of activity or time of occurrence. Recognizing these limitations, our research serves as point of departure for future investigations in this area. For instance, future research could take into account the organizational culture and the corresponding work-life-blending, industry type (e.g. construction vs. IT sector), type of tasks (e.g. creative vs. routine jobs) and types of employment (full time, part time, casual, fixed term, apprentices and trainees). Moreover, intercultural comparisons between Western and Eastern countries would be interesting.

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