

**RESEARCH ARTICLE**

# Beyond depletion: Daily self-control motivation as an explanation of self-control failure at work

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**Summary**

The organizational self-control literature usually applies resource perspectives that explain self-control failure at work by depletion of self-control resources. However, these perspectives neglect the role of self-control motivation. On a daily level, we examine several self-control aspects (resources, motivation, demands, and effort) as predictors of a manifestation of self-control failure at work, namely, daily counterproductive work behavior toward the organization (CWB-O). Additionally, we investigate self-control effort as a mechanism predicting the depletion of self-control resources throughout the day. We analyzed data from 155 employees in a 2-week diary study with 2 daily measurement points. Multilevel path modeling showed that self-control motivation and self-control demands, but not self-control resource depletion, predicted self-control effort. There was an indirect effect from self-control motivation on CWB-O via self-control effort but no indirect effect from self-control demands on self-control resource depletion throughout the day via self-control effort. Findings suggest that self-control motivation is a crucial factor explaining self-control failure at work and cast further doubt on the idea that exerted self-control effort is the only mechanism leading to self-control resource depletion.

**KEYWORDS**

CWB-O, diary study, ego depletion, self-control, self-control demands

## 1 | INTRODUCTION

Individuals usually have the goal to perform well at work (Howard, Gagné, Morin, & Van den Broeck, 2016). Accordingly, self-control on the job often aligns with the notion to work carefully and diligently on relevant tasks (Dahm, Glomb, Manchester, & Leroy, 2015; Deng, Wu, Leung, & Guan, 2016). Therefore, controlling oneself at work is crucial because it allows to work efficiently on tasks requiring concentration and persistence (Dahm et al., 2015; Deng et al., 2016). When self-control fails, its importance becomes obvious: For instance, a business partner refuses a planned project because of a carelessly

prepared draft; a deadline crucial for getting funding renewal cannot be met because of an unfinished proposal.

To date, organizational researchers usually adopted a resource depletion perspective on self-control at work (Lian, Yam, Ferris, & Brown, 2017). This perspective explains self-control failure by the depletion of a limited self-control resource. The basic notion of this perspective is that exerting self-control requires self-control resources, and when these resources are depleted, self-control failure is the likely consequence (Johnson, Muraven, Donaldson, & Lin, 2017; Muraven & Baumeister, 2000). Despite its high face validity, resource depletion perspectives tend to disregard the role motivation may play

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for self-control failure at work (Lian et al., 2017). Traditional explanations of self-control failure solely refer to the depletion of self-control resources, whereas it is quite conceivable that self-control failure could be partly due to a lack of motivation to control oneself. When self-control motivation is lacking, individuals may exert less self-control effort. For instance, working on merely irrelevant tasks may be simply caused by a lack of motivation to work on relevant ones—instead of self-control resource depletion causing an inability to prioritize tasks correctly. Accordingly, lowered self-control motivation may decrease self-control effort and thus explain self-control failure (Inzlicht & Schmeichel, 2012; Molden, Hui, & Scholer, 2016).

Besides self-control motivation and self-control resource depletion, also external circumstances of the work situation may explain why individuals exert self-control at work. Such self-control demands (Neubach & Schmidt, 2006), for instance, in the form of distracting office environments, may urge individuals to put effort into controlling themselves at work.

Because controlling oneself at work requires focus and perseverance (Dahm et al., 2015; Deng et al., 2016), self-control failure in this realm is well reflected in behaviors such as overextending breaks, withholding effort, or keeping oneself busy with irrelevant tasks. Daily counterproductive work behavior toward the organization (CWB-O) adequately encompasses these behaviors (Dalal, Lam, Weiss, Welch, & Hulin, 2009). Thus, in this study, we view daily CWB-O as a manifestation of self-control failure at work. Thereby, we apply a broad perspective of self-control failure at work by explicitly considering daily motivation for self-control as an indirect predictor of daily CWB-O that exerts its influence via decreased self-control effort. In addition, we consider the potential impact of daily self-control demands and self-control resource depletion at the beginning of work.

In line with the propositions of Lian et al. (2017), we build on integrative self-control theory (ISCT; Kotabe & Hofmann, 2015) to investigate daily self-control failure at work. The ISCT framework explicitly considers self-control motivation, but also self-control capacity, when investigating self-control failure. In our study, we assess daily self-control motivation and consider self-control resource depletion as a proxy for state self-control capacity. Furthermore, the ISCT framework distinguishes between a person's internal processes (i.e., motivational and capacity-related processes) and external influences (i.e., external constraints to exert self-control). Accordingly, we strive to capture these internal processes, as well as external influences, to predict daily CWB-O at work through self-control effort on a day level. To be more precise, we assess self-control motivation and self-control resource depletion to understand daily motivational and capacity-related internal processes, as well as self-control demands, to examine external constraints requiring the exertion of self-control at work (Schmidt & Diestel, 2015).

We contribute to the literature in several ways. First, we go beyond resource depletion approaches by explicitly considering self-control motivation as an alternative antecedent explaining variance in daily CWB-O above and beyond self-control resource depletion. Some organizational scholars already applied motivational explanations of self-control but did so rather implicitly or without considering

self-control resource depletion as well (Lian, Brown, et al., 2014; Lian, Ferris, Morrison, & Brown, 2014). We explicitly assess self-control motivation on a daily within-person level in addition to self-control resource depletion. By modeling both self-control resource depletion and self-control motivation at the beginning of work, as indirect predictors of daily self-control failures at work (CWB-O), our study simultaneously acknowledges the potential role of resource depletion as an antecedent of self-control failure but also considers self-control motivation as an additional and alternative antecedent of self-control failure. Accordingly, our design has the advantage of attributing self-control failure to (one of) these potential causes while statistically controlling for the other. If motivation for self-control can explain why self-control failure occurs above and beyond the predictive power of depletion, this would indicate that researchers investigating self-control at work have to move toward incorporating motivational explanations of self-control at work (Lian et al., 2017).

Second, organizational scholars usually assume that external or social self-control demands elicit self-control effort, driving self-control resource depletion (Fehr, Yam, He, Chiang, & Wei, 2017; Gombert, Rivkin, & Schmidt, 2018; Lee, Kim, Bhawe, & Duffy, 2016; Prem, Kubicek, Diestel, & Korunka, 2016). However, is it unclear if self-control effort is the relevant mechanism leading to the depletion of self-control resources. Interestingly, some studies predict depletion by rather motivational variables (e.g., value incongruence and affective commitment), indicating that self-control resource depletion can be elicited without self-control actually being expended (Deng et al., 2016; Rivkin, Diestel, & Schmidt, 2018). Accordingly, alternative accounts (Kurzban, Duckworth, Kable, & Myers, 2013; Molden et al., 2016) suggest that depletion may be a motivational state. Alike, van der Linden et al. (2003) argued that mentally fatigued persons are more resistant to exert further effort. Thus, feeling depleted may be related to perceiving self-control effort as costly (Kurzban et al., 2013; Molden et al., 2016). Accordingly, when self-control demands are high, employees may feel depleted because they perceive self-control effort as burdensome—even though they are not expending any self-control effort. To summarize, it is unclear if exerting self-control effort is the mechanism driving self-control resource depletion. Consequently, we assess daily self-control demands at the end of work, daily self-control effort at the end of work, and self-control resource depletion at the beginning and the end of the workday. This allows examining whether daily self-control resource depletion processes are driven by self-control effort elicited by self-control demands.

Third, our study adds a perspective on daily CWB-O reflecting performance-related behaviors to the organizational literature on self-control. These behaviors are less visible for others and may go unnoticed on a daily basis but may have a large harmful impact on organizational performance (Berry, Carpenter, & Barratt, 2012). To date, researchers have investigated self-control failure within organizations by looking at several interpersonal behaviors, such as abusive leadership (Lin, Ma, & Johnson, 2016), social undermining (Lee et al., 2016), or interpersonal injustice behaviors (Johnson, Lanaj, & Barnes, 2014). The obvious harm of self-control failure in the social realm is undisputed. However, the salience of interpersonally harmful behaviors may conceal

that self-control penetrates daily work on a less noticeable but very essential level as well. By predicting daily CWB-O, we emphasize that self-control is crucial to protect adequate levels of performance.

In the following paragraphs, we first introduce daily self-control motivation as a predictor of daily self-control effort, which in turn is hypothesized to decrease daily CWB-O. Then, we describe how self-control resources at the beginning of the workday enable daily self-control effort but also are consumed because of daily self-control effort. After this, we turn to daily self-control demands eliciting daily self-control effort, subsequently leading to resource depletion throughout the day. Figure 1 shows our conceptual model.

## 2 | SELF-CONTROL MOTIVATION

According to the ISCT (Kotabe & Hofmann, 2015), self-control motivation is the aspiration to abstain from acting on unwanted desires, whereas self-control effort refers to the amount of self-control capacity actually mobilized in order to abstain from acting on unwanted desires. In alignment with the ISCT, we propose that self-control motivation increases actual self-control effort (Kotabe & Hofmann, 2015). There are several reasons why self-control motivation matters for self-control effort and subsequently for self-control failure.

First, individuals are motivated to stay in control and be effective (Deci & Ryan, 1985; Higgins, 1997). Thus, self-control motivation is nurtured by the aspiration to be autonomous and competent. If desires strongly interfere with goal attainment at work, motivation to control oneself may elicit self-control effort, helping to regain feelings of control. Second, individuals are motivated to control themselves because they try to prevent potentially adverse consequences of not exerting self-control at work. For instance, an employee may expect to be refused a particular career opportunity when she or he does not control her or his reoccurring desires to take long pauses (Kotabe & Hofmann, 2015). Third, individuals are motivated to exert self-control in order to experience pleasant self-conscious emotions (e.g., pride about prioritizing tasks well) and avoid unpleasant self-conscious emotions (e.g., guilt about handing in reports too late; Hofmann & Fisher, 2012).

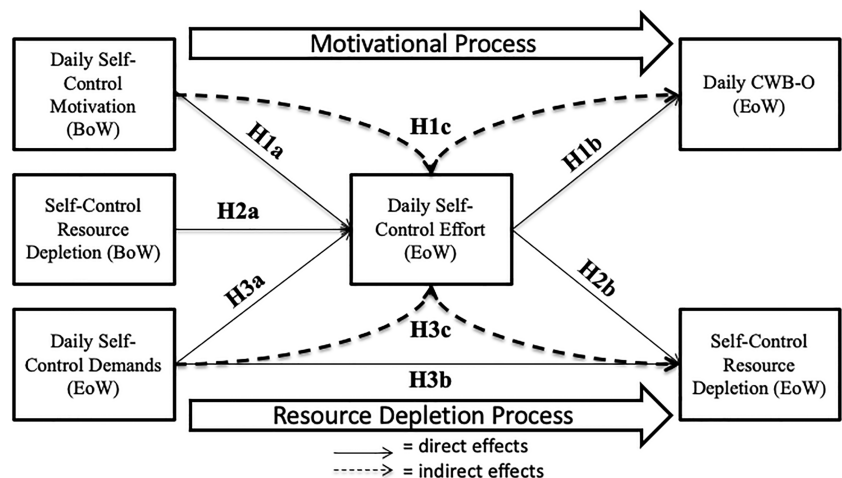
Fourth, employees have the general goal of performing well at work for several reasons, such as payment, social appreciation, or interest in the task itself (Howard et al., 2016). On some days, performing well makes it necessary for employees to abstain from acting on several desires that interfere with the efficient completion of work tasks. Examples of those interfering desires could be overextending a break, handing in a report before having checked it carefully, or procrastinating on an important task in favor of a more pleasant but irrelevant one. When such desires occur, desire-goal conflicts arise. Accordingly, ISCT proposes that desire-goal conflicts elicit self-control motivation (Kotabe & Hofmann, 2015). The stronger these conflicts are perceived, the stronger is the motivation to control desires (Fishbach, Friedman, & Kruglanski, 2003; Kotabe & Hofmann, 2015). Overall, self-control motivation is an important construct to investigate in order to gain a comprehensive understanding of self-control failure at work.

### 2.1 | Self-control motivation and self-control effort

We argue that self-control motivation increases self-control effort. Motivation describes a nonobservable force that influences the direction, allocation, and amount of effort invested in purposeful action (Diefendorff & Chandler, 2011; Kanfer, 1990). Thus, motivation conceptually intertwines with the idea of effort expenditure. Accordingly, self-control motivation can be understood as a domain-specific motivation influencing which desires are controlled and how much effort is invested in controlling specific desires (Kotabe & Hofmann, 2015). On days when individuals are highly motivated to exert self-control at work, they have a high willingness to expend large amounts of effort into abstaining from desires that harm work efficiency.

Self-control motivation is domain specific and therefore distinct from general work motivation because it is specifically related to the willingness to abstain from unwanted desires interfering with efficiency, but not to other work performance behaviors, such as developing creative ideas or working on autonomously motivating tasks.

Also, ISCT proposes that self-control motivation translates into actual self-control effort, and it describes the conditions under which self-control motivation translates into self-control effort. If a person



**FIGURE 1** Conceptual model. Abbreviations: BoW, beginning-of-work survey; EoW, end-of-work survey

perceives desires as unwanted that are important to be controlled, and if the person estimates that controlling these desires requires effort, it is likely that effort to control these desires is expended (Kotabe & Hofmann, 2015). In line with ISCT, we propose that daily self-control motivation is positively related to daily self-control effort.

**Hypothesis 1a.** Daily self-control motivation is positively related to daily self-control effort.

## 2.2 | CWB-O as a manifestation of self-control failure at work

We propose that daily CWB-O is an important manifestation of self-control failure at work. In particular, we examine overextending breaks, working less effortfully, keeping oneself busy with irrelevant tasks, and working slower than necessary as instantiations of CWB-O. Especially when these behaviors are exerted often, they negatively impact effectiveness. Because these behaviors can take place often, but unnoticed by others, they involve rather individual self-control processes as opposed to socially supported self-control processes at work, which may be facilitated by norms or social support (Duckworth, Gendler, & Gross, 2016).

Several arguments qualify these daily behaviors as manifestations of self-control failure at work. First, these daily behaviors occur when persons give in to desires. For instance, when working less effortfully, employees may give in to their desire to reduce demands at work. These behaviors can be regarded as examples of self-control failures in the work domain because they may be responses to desires conflicting with the general goal to perform well (Dalal et al., 2009; Diefendorff & Mehta, 2007).

Second, because self-control at work relates to carrying out tasks with concentration and diligence (Dahm et al., 2015; Deng et al., 2016), self-control failure becomes evident in behavior undermining effective task execution. Daily CWB-O encompasses behaviors that undermine effective task execution (Dalal et al., 2009). For instance, when breaks are taken too long, time for tasks becomes misallocated and thus undermines effective work.

Third, when a person does not exert self-control, actions with immediate advantages may be favored (Gottfredson & Hirschi, 1994; Inzlicht & Schmeichel, 2012). Accordingly, daily CWB-O offers immediate advantages at work, such as easing current task demands, enhancing rest time, and decreasing work time on aversive tasks. For instance, employees may work on irrelevant tasks, which are more interesting than relevant ones, providing an immediate advantage over the long-term goal of getting work done adequately.

ISCT proposes that self-control failure occurs when self-control effort invested to battle unwanted desires is insufficient (Kotabe & Hofmann, 2015). Thus, a specific instance of CWB-O will occur when self-control effort to tackle the specific related desire is insufficient. When individuals increase their self-control effort, CWB-O is less likely. Accordingly, we propose that daily self-control effort is negatively related to daily CWB-O.

**Hypothesis 1b.** Daily self-control effort is negatively related to daily CWB-O.

## 2.3 | Self-control effort as a mechanism linking self-control motivation to CWB-O

As argued above, daily self-control motivation should increase self-control effort, which should decrease the likelihood of daily CWB-O. In alignment with ISCT, we propose an indirect effect of daily self-control motivation on daily CWB-O via daily self-control effort.

Insufficient self-control effort can be caused by insufficient motivation to control desires (Kotabe & Hofmann, 2015). This highlights the essential function of self-control motivation to mobilize effort for self-control, preventing undesirable behaviors at work. Accordingly, organizational scholars increasingly regard self-control motivation as important for understanding self-control failure on the job (Lian, Brown, et al., 2014; Lian, Ferris, et al., 2014). Noteworthy, these scholars examine behaviors on the job, which adequately depict self-control failure in the organizational realm (e.g., organizational deviance and supervisor-directed aggression).

However, organizational research so far has not explicitly tested whether self-control effort is the mechanism responsible for connecting self-control motivation to the decrease of undesirable work behaviors manifested in self-control failures. ISCT explicitly proposes that self-control motivation increases effort, which should decrease self-control failures (Kotabe & Hofmann, 2015). Thus, we hypothesize and test explicitly that self-control motivation fosters self-control effort, which helps to prevent daily CWB-O. More specifically, we expect an indirect negative effect of daily self-control motivation on CWB-O via daily self-control effort.

**Hypothesis 1c.** There is an indirect negative effect of daily self-control motivation on CWB-O through daily self-control effort.

## 2.4 | Self-control resource depletion and self-control effort

In our study, we consider self-control resource depletion as a proxy for what Kotabe and Hofmann (2016) called state self-control capacity. ISCT explains that self-control capacity comprises nonmotivational cognitive resources. Self-control capacity can be differentiated in trait self-control and state self-control resources. Trait self-control capacity refers to the general, overall capacity of a person to exert self-control, whereas state self-control resources refer to a person's momentary capacity to exert self-control (Kotabe & Hofmann, 2016; Lian et al., 2017).

We propose that self-control resource depletion (i.e., diminished state self-control capacity) fosters withholding self-control effort. The state cognitive self-control resources, on which we focus in our study, can be used to control desires, for instance, by inhibiting desires or directing attention away from desire-eliciting stimuli. When cognitive resources are depleted, the proposed consequence

is reduced state self-control capacity. When self-control capacity is reduced, exerting self-control becomes more difficult (Kotabe & Hofmann, 2015, 2016).

Effort allocation is guided by a concern for resource conservation (Brehm & Self, 1989; Kruglanski et al., 2012). Thus, when self-control resources are depleted, self-control capacity is limited, and individuals are more reluctant to invest further resources into effortful self-control. Furthermore, when self-control resources are depleted, exerting self-control is perceived as more aversive than in situations where resources are abundant (Kotabe & Hofmann, 2016).

Accordingly, Boksem and Tops (2008) have interpreted the perception of mental fatigue as an adaptive signal for reevaluating the energetic costs and rewards of the current behavioral strategy. For instance, an employee working on an attention-demanding task and perceiving that cognitive resources are scarce may tend to favor more resource-conserving behaviors (e.g., resting and processing task-relevant information more shallowly). Therefore, when individuals perceive resources as scarce (i.e., depleted), the likelihood of abstaining from exerting self-control effort increases.

Individuals start each workday with varying levels of self-control resources (Lanaj, Johnson, & Wang, 2016). The morning level of self-control resources could be seen as a starting point for self-control failure that may unfold within the workday. Thus, we propose that individuals are likely to respond to self-control resource depletion at the beginning of the workday with reduced self-control effort because exerting effort is more aversive and behavior that helps to conserve resources appears more valuable.

**Hypothesis 2a.** Self-control resource depletion at the beginning of work is negatively related to daily self-control effort.

Working depletes self-control resources because employees are commonly motivated to fulfill at least minimum standards of performance, which requires exerting self-control effort in order to tackle desires interfering with the execution of work (Howard et al., 2016; Lian et al., 2017). According to ISCT, the exertion of self-control effort can lead to a decrease in self-control capacity. As self-control capacity results from the availability of self-control resources, lowered self-control capacity may be due to a state of depleted self-control resources (Kotabe & Hofmann, 2016). The idea that self-control effort exertion consumes self-control resources is also a fundamental tenet of the ego-depletion perspective (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Baumeister & Vohs, 2016).

Individuals do not only begin but also end their workday with varying levels of self-control resources. Thus, self-control resource levels at the end of work refer to the final state of self-control resource depletion processes that have unfolded within the workday. On some days, individuals exert more self-control effort at work than on other days, which should increase self-control resource depletion.

**Hypothesis 2b.** Daily self-control effort is positively related to self-control resource depletion throughout the workday.

## 2.5 | Self-control effort as a mechanism linking self-control demands to self-control resource depletion

In addition, self-control demands affect self-control effort and resource depletion in the organizational context. Neubach and Schmidt (2006) introduced the concept of self-control demands referring to external self-control requirements at work. Self-control demands comprise three facets, namely, impulse control (i.e., requirements to inhibit spontaneous, impulsive responses), resisting (i.e., requirements to ignore and resist distractions that are not relevant for tasks), and overcoming inner resistances (i.e., requirements to overcome situations where motivation to work on a particular task is deficient). Self-control demands vary daily (Rivkin, Diestel, & Schmidt, 2015; Sonnentag, Pundt, & Venz, 2017). For instance, on a particular day, an unpleasant but important client may place higher self-control requirements on employees, whereas on other days, clients behave friendlier, making it less effortful to cooperate efficiently.

Self-control demands represent a central aspect of the job linking work environments with the likelihood of self-control failure. Self-control demands are aspects of the environment confining behavioral options, thus increasing external demands to act in a self-controlled way. When self-control demands are high, acting upon desires has higher costs. For instance, on days when colleagues chat loudly in the adjacent office, it may be more difficult to concentrate on relevant tasks. Thus, self-control demands are environmental factors that increase the perceived need to increase self-control effort. Accordingly, field studies indicate that daily self-control demands relate to states of exhaustion or depletion (Diestel & Schmidt, 2011; Rivkin et al., 2018). Thus, we expect that self-control demands will be positively related to self-control effort.

**Hypothesis 3a.** Daily self-control demands are positively related to daily self-control effort.

Because self-control demands press employees to exert self-control effort, they may make the depletion of self-control resources more likely and more intense. Accordingly, research has indicated that daily self-control demands are related to psychological costs, such as lower work engagement, increased need for recovery, and higher depletion levels (Rivkin et al., 2018).

Furthermore, high self-control demands may increase self-control resource depletion for several additional reasons. First, heightened self-control demands foster perceptions of incapacities to adequately tackle work tasks. These perceptions may additionally foster self-control resource depletion. Second, some daily self-control demands can only be managed with a narrow range of behavioral strategies. For instance, understanding a poorly structured document either requires additional concentration or additional restructuring of the document. Thus, choosing resource-conserving behavioral strategies may not be available for certain self-control demands. Third, self-control demands may elicit or increase the salience of one's own



desires. For instance, when colleagues take a break, the desire to interrupt one's own work and join one's colleagues may become salient and more intense. Thus, we expect that self-control demands will be positively related to self-control resource depletion.

**Hypothesis 3b.** Daily self-control demands are positively related to self-control resource depletion throughout the workday.

Overall, we propose that responding to self-control demands requires increased self-control effort, which constitutes the mechanism responsible for the depletion of self-control resources (Baumeister et al., 1998; Baumeister & Vohs, 2016; Kotabe & Hofmann, 2015).

**Hypothesis 3c.** There is an indirect positive effect of daily self-control demands on self-control resource depletion throughout the day via daily self-control effort.

### 3 | METHOD

#### 3.1 | Sample and procedure

The data for this diary study were collected within a larger research project on stress and self-control at work conducted in Germany.<sup>1</sup> Study participants were recruited with the help of undergraduates students, which often is a means for increasing response rates (Demerouti & Rispens, 2014). Following suggestions for student-recruited samples (Wheeler, Shanine, Leon, & Whitman, 2014), the first two authors of this paper monitored study registration and were responsible for all communication with participants (e.g., instructing participants, sending survey links, and answering questions), ensuring the validity of our data (e.g., participants were actual employees working at least 6 h per day).

Information regarding the study was spread via an online flyer on social media websites, especially on [www.xing.de](http://www.xing.de) and [www.facebook.com](http://www.facebook.com). Additionally, students recruited participants from their social networks (e.g., organizations they formerly worked in). Participants of the study participated in a lottery and were eligible to win one of two vouchers of 50€ from a large online retailer. Recruited participants had to work at least 6 h a day. Shift workers were not eligible for study participation. The recruiting students were not aware of the specific hypotheses of the present study.

One hundred eighty-nine employees registered for the study and filled in an entrance survey in which person-level variables (e.g., demographic data) were assessed. After filling in the entrance survey, participants received three daily surveys during two regular work weeks (Monday to Friday). The first survey (beginning-of-work survey) had to be filled in shortly prior to the beginning of work, and the second survey (end-of-work survey) at the end of work. Another

survey had to be filled in prior to bedtime but was not part of the present study. Participants received all survey links via email.

Participants provided 1,354 beginning-of-work surveys and 1,325 end-of-work surveys. We excluded daily surveys from the dataset when (1) beginning-of-work surveys were filled in after 10:30 a.m. (except for cases where participants in the end-of-work surveys indicated that they started work later) and (2) when end-of-work surveys were filled in after 8:00 p.m. (except for a few cases where participants indicated another time for the end of work and the survey completion was within a 1-h range of the indicated time). Furthermore, we excluded surveys when participants reported that they were absent from work due to illness or vacation. In a next step, we matched beginning-of-work surveys with end-of-work surveys. Each participant had to provide at least two matched beginning-of-work and end-of-work surveys for 2 days in order to allow for within-person predictions. The resulting sample used for the analysis consisted of 155 participants (48.4% female), providing data from 1,051 matched days. On average, participants provided 6.78 daily records.

In this final sample, average age was 37.9 years ( $SD = 12.5$ ), and average organizational tenure was 8.8 years ( $SD = 9.1$ ). On average, participants worked 38.4 h per week ( $SD = 4.0$ ). One hundred eighteen participants (76%) had regular contact with clients, patients, or other service recipients. Forty participants (26%) held a leadership position. Sixty-eight participants (43.9%) had a university or similar degree. Indicating the generalizability of our sample, participants held a broad range of jobs and worked, for example, as accountants, architectural draftsmen, business consultants, business economists, carpenters, commercial drivers, engineers, kindergarten teachers, market researchers, medical assistants, nurturers, physiotherapists, product managers, purchasing agents, salespersons, secretaries, schoolteachers, warehousemen, and technicians. In terms of various industrial sectors (categorized according to the European NACE system), participants worked in various domains, including manufacturing (14.8%); human health and social work activities (9.0%); other service activities (9.0%); education (7.7%); public administration and defense; compulsory social security (7.1%); wholesale and retail trade; repair or motor vehicles (7.1%); or banks and private insurance (5.2%).

Several field studies on self-control failure at work relied on specific samples restricted to certain occupations or branches, which are characterized by high time pressure (e.g., academics, Dahm et al., 2015) or high emotional demands (e.g., health-care employees, Deng et al., 2016; Diestel & Schmidt, 2011). In these occupations, high self-control demands may influence how self-control failure unfold. Therefore, the variety of jobs and branches in our sample may ensure that relevant self-control aspects are captured more broadly.

We checked for selective attrition by testing whether the 155 individuals who were included in the final dataset differed from the 34 individuals who filled in the general survey but were not included in the final dataset. Analyses revealed no significant differences with respect to gender,  $\chi^2(1, N = 189) = 2.97, p = .085$ , education level (dichotomously coded: 0 = *without university degree*, 1 = *with university degree*),  $\chi^2(1, N = 189) = 2.09, p = .149$ , and family status,  $\chi^2(1, N = 189) = 0.49, p = .485$ , but significant differences in age,  $t$

<sup>1</sup>This is the first publication from this dataset.

(187) =  $-4.00$ ,  $p < .001$ , with participants in the final dataset being older ( $M = 37.9$  in the final dataset;  $M = 29.0$  in the dropout group).

### 3.2 | Measures

Surveys were administered in German. If necessary, we applied a back-translation procedure to create German versions of the scales used in the study (Brislin, 1970). If not stated otherwise, participants answered all items on a 5-point rating scale ranging from 1 (*not true at all*) to 5 (*very true*).

When designing our study, the following considerations guided our decision about when to assess which construct. First, we aimed at assessing each construct at the very time point when it could best capture the respective states and experiences. Daily self-control motivation was assessed in the morning because it was hypothesized to predict the invested self-control effort throughout the workday. Self-control resource depletion was assessed two times, first at the beginning of work referring to the initial state level of depleted self-control resources and second at the end of work referring to the end-of-work state level of depleted self-control resources. We assessed daily self-control demands at the end of work retrospectively for the whole workday because individuals may not be able to reliably anticipate upcoming self-control demands for the whole workday at the beginning of work because; for instance, unforeseen tasks may occur during the day, requiring additional self-control. Alike, we choose to measure daily self-control effort in the end-of-work survey because it may be difficult for individuals to report their daily self-control effort in advance. Even though individuals may plan to exert a lot of self-control effort on a given day, they may not do so because, for instance, tasks might be more complex and thus require more self-control effort than anticipated. Further, self-control effort was assessed at the end of work because conceptually it should result from self-control depletion at the beginning of work, from self-control demands experienced throughout the day and individuals' self-control motivation. Also, daily CWB-O was assessed in the end-of-work survey to assure that individuals can report their behavior for the whole workday.

Second, we wanted to demonstrate the role of self-control motivation for self-control effort and, in turn, decreased daily CWB-O beyond the role of self-control resource depletion. Accordingly, it was most important to temporally disentangle the assessment of daily self-control motivation and initial self-control resource depletion at the beginning of work on the one hand and daily self-control effort and daily CWB-O on the other hand.

#### 3.2.1 | Variables measured in the beginning-of-work survey

##### *Self-control resource depletion at the beginning of work*

We assessed state self-control resource depletion in the beginning-of-work survey using five items from the English state self-control

scale by Ciarocco et al. (2007) commonly used in field studies. These items correspond to German items from Bertrams et al. (2011). A sample item is "Right now, it would take a lot of effort for me to concentrate on something." The scale is commonly used in recent well-recognized organizational studies (e.g., Lanaj et al., 2016; Sayre, Grandey, & Chi, 2020). Mean Cronbach's alpha over 10 workdays was .91 (range .86 to .94).

##### *Daily self-control motivation*

To assess daily self-control motivation, we formulated nine items in the beginning-of-work survey based on the wording of the items in the self-control demands scale (Neubach & Schmidt, 2006; Schmidt & Diestel, 2015). We adjusted wording in such a way that daily motivation to control oneself prospectively for the workday was assessed. When adjusting the wording, we tried to be as parsimonious as possible, only adding the relevant words that changed the focus toward self-control motivation. For instance, the original item "My job requires me to never lose my temper" became "Today, I am motivated to never lose my temper." The logic underlying this procedure was that adding only the words carrying the relevant aspects of motivation should ensure (a) that relevant meaning changed, (b) that no superfluous meaning was added, and (c) that participants could clearly refer to their motivation to exert self-control in particular. Mean Cronbach's alpha over 10 workdays was .94 (range .89 to .97). The full list of items can be found in Appendix A.

#### 3.2.2 | Variables measured in the end-of-work survey

##### *Self-control resource depletion at the end of work*

We assessed state self-control resource depletion in the end-of-workday survey using the same five items from the state self-control scale by Ciarocco et al. (2007), as in the beginning-of-work survey. Mean Cronbach's alpha over the 10 workdays was .91 (range .86 to .95).

##### *Daily self-control demands*

To assess daily self-control demands, we used nine items of the self-control demands scale of Neubach and Schmidt (2006; Schmidt & Diestel, 2015) in the end-of-work survey. We adjusted the wording for a day-specific assessment. A sample item was "Today, even if I sometimes felt very irritated, I was not allowed to show that by any means." Mean Cronbach's alpha over the 10 workdays was .90 (range .86 to .93).

##### *Daily self-control effort*

To assess daily self-control effort, we followed a similar procedure as the one followed with the development of the self-control motivation items. We used nine items in the end-of-work survey, which were created very closely to the wording of items in the self-control

demands scale (Neubach & Schmidt, 2006; Schmidt & Diestel, 2015). We adjusted the wording in such a way that daily effort to control oneself was assessed. When adjusting the wording, we tried to be as parsimonious as possible, only adding the relevant words that changed the focus toward self-control effort. For instance, the original item "My work requires me to resist distractions" became "Today, I made a lot of effort to resist distractions." Mean Cronbach's alpha over the 10 workdays was .94 (range .90 to .97). The full list of items can be found in Appendix A.

#### Daily CWB-O

We measured participants' daily CWB-O retrospectively for the workday with four items (Dalal et al., 2009). A sample item was "Today, I worked slower than necessary." Mean Cronbach's alpha over the 10 workdays was .83 (range .74 to .87). Similarly to Fehr et al. (2017), we only used those items from the original scale (a) that we expected to substantially vary on a daily level, (b) that refer to performance-related events usually occurring within the workplace, and (c) that are relevant to a wide range of occupations.

### 3.2.3 | Control variables

#### Negative affect at the beginning of work

We controlled for negative affect at the beginning of work in all analyses in order to rule out alternative explanations for our within-person level results; first, that daily self-control effort is only due to emotion regulation processes; second, that self-control resource depletion at the end of work is only an artifact of prior emotion regulation processes; and finally, that daily CWB-O is only an emotional response to working conditions appraised as aversive (Spector & Fox, 2002). We measured state negative affect in the beginning-of-work survey using five items from the Positive and Negative Affect Schedule (Krohne, Egloff, Kohlmann, & Tausch, 1996; Watson, Clark, & Tellegen, 1988). The items were "distressed," "upset," "irritable," "nervous," and "confused." Participants responded to the items with respect to how they felt right then. As a response format, we used a 5-point Likert-type scale ranging from 1 (*not at all*) to 5 (*very much*). Mean Cronbach's alpha over the 10 workdays was .75 (range .66 to .82).

### 3.3 | Construct validity

We conducted a multilevel confirmatory factor analysis using Mplus Version 7.4 (L. K. Muthén & Muthén, 2012) to examine the construct validity of our measures. We specified a multilevel measurement model with latent variables on the between-person and within-person levels by letting the items of a particular scale (i.e., self-control resource depletion items assessed at the beginning of work) load on the relevant factor (i.e., factor for self-control resource depletion at the beginning of work) on the between-person and within-person levels (Heck & Thomas, 2017). We ran

one overall analysis for all the variables assessed in the beginning-of-work surveys (self-control resource depletion at the beginning of work, negative affect at the beginning of work, and daily self-control motivation) and the variables assessed in the end-of-work surveys (self-control resource depletion at the end of work, daily self-control effort, daily self-control demands, and daily CWB-O).

Our measurement model included 13 factors (one factor for self-control resource depletion at the beginning of work, one factor for self-control resource depletion at the end of work, one factor for negative affect at the beginning of work, one factor for daily CWB-O, and three respective higher order factors for self-control motivation, self-control demands, and self-control effort, each including three subfactors). Commonly, self-control demands comprise the three subdimensions: impulse control, resisting distractions, and overcoming inner resistances. Accordingly, each of the self-control aspects (demands, motivation, and effort) was modeled with three subfactors subsumed under one higher order factor. This model fitted the data reasonably well,  $\chi^2(1,923) = 4,828.854$ ,  $p < .001$ , comparative fit index (CFI) = 0.910, root mean square error of approximation (RMSEA) = 0.038.

To show the adequacy of our model and to justify that self-control motivation, self-control effort, and self-control demands were distinct aspects of self-control, we compared our model with several plausible alternative models: a model ignoring the differentiation into motivation, demands, and effort, thus subsuming all subfactors of the self-control aspects under one factor,  $\chi^2(1,945) = 5,788.412$ ,  $p < .001$ , CFI = 0.881, RMSEA = 0.043, Satorra-Bentler  $\chi^2(22) = 740.962$ ,  $p < .001$ , a model subsuming effort and demands under one factor,  $\chi^2(1,935) = 5,025.471$ ,  $p < .001$ , CFI = 0.904, RMSEA = 0.039, Satorra-Bentler  $\chi^2(12) = 143.001$ ,  $p < .001$ , a model subsuming effort and motivation under one factor,  $\chi^2(1,935) = 5,507.726$ ,  $p < .001$ , CFI = 0.889, RMSEA = 0.042, Satorra-Bentler  $\chi^2(12) = 561.548$ ,  $p < .001$ , and a model subsuming demands and motivation under one factor,  $\chi^2(1,935) = 5,382.171$ ,  $p < .001$ , CFI = 0.893, RMSEA = 0.041, Satorra-Bentler  $\chi^2(12) = 309.314$ ,  $p < .001$ .<sup>2</sup> Because our model was superior to all other models ignoring the differences among self-control motivation, self-control effort, and self-control demands, we conclude that these aspects of self-control are meaningful, distinct aspects.

### 3.4 | Data analysis

Because study participants repeatedly answered surveys over the course of two regular work weeks, data had a two-level structure, with days nested in persons. Considering the multilevel structure of our data, we specified one overall multilevel path model in Mplus 7.4, with variance partitioning into within-person and between-person

<sup>2</sup>When testing our 13-factor model and all the other models, we fixed residual variances of five items to zero on the between level—two from the self-control effort, two from the self-control motivation, and one from the self-control demands scale.



parts for all variables. Specifically, we modeled the same paths on the within-person and between-person levels. Thus, estimates for the within-person level refer to within-person relationships and estimates for the between-person level to between-person relationships.

Intercepts were treated as random and slopes were fixed. Hypotheses regarding the indirect effects were tested with a 1–1–1 mediation model, which means that indirect effects were specified on the within-person level (Preacher, Zyphur, & Zhang, 2010). In order to specify within-person level indirect effects, we multiplied the within-person level predictor-mediator path with the within-person level mediator-outcome path, as described by Preacher et al. (2010), using the MODEL CONSTRAINT command in Mplus. The model showed a good fit,  $\chi^2(2) = 4.999$ , CFI = 0.994, Tucker–Lewis index (TLI) = 0.917, RMSEA = 0.038.

## 4 | RESULTS

Means, standard deviations, intraclass correlation coefficients, and intercorrelations among the study variables are displayed in Table 1. All our hypotheses refer to the within-person level; thus, the results reported in this section are based on within-person estimates. We report unstandardized coefficients in our tables. Results for the direct effects are displayed in Table 2. The upper part of Table 2 displays the within-person estimates on the outcome variables relevant for this study, namely, daily self-control effort, self-control resource depletion at the end of work, and daily CWB-O. For completeness, the lower part displays the between-person effects. Results for indirect within-person effects are displayed in Table 3. Results for the within-person part of the overall model are graphically depicted in Figure 2.

Hypothesis 1a suggested that daily self-control motivation positively predicts daily self-control effort on the within-person level. In support of Hypothesis 1a, the fourth row of the left column in Table 2 shows the significant positive within-person effect of daily self-control motivation on daily self-control effort,  $\gamma = 0.258$ ,  $SE = 0.041$ ,

$p < .001$ . Hypothesis 1b suggested that daily self-control effort negatively predicts daily CWB-O on the within-person level. In support of Hypothesis 1b, the fifth row in the right column in Table 2 shows the significant negative within-person effect of daily self-control on daily CWB-O,  $\gamma = -0.144$ ,  $SE = 0.044$ ,  $p = .001$ . Hypothesis 1c suggested an indirect within-person effect of daily self-control motivation through daily self-control effort on daily CWB-O. In support of Hypothesis 1c, the first row of Table 3 shows the significant indirect within-person effect on daily self-control motivation on daily CWB-O via daily self-control effort,  $\gamma = -0.037$ ,  $SE = 0.013$ ,  $z = -2.896$ ,  $p = .004$ , 95% CI  $[-0.06, -0.01]$ .

Hypothesis 2a suggested that self-control resource depletion at the beginning of work negatively predicts daily self-control effort on the within-person level. Failing to support Hypothesis 2a, the second row of the left column in Table 2 shows that self-control resource depletion at the beginning of work was not a significant within-person predictor of daily self-control effort,  $\gamma = 0.038$ ,  $SE = 0.043$ ,  $p = .374$ . Hypothesis 2b suggested that daily self-control effort predicts an increase in self-control resource depletion throughout the day on the within-person level. Failing to support Hypothesis 2b, the fifth row in the middle column in Table 2 shows that daily self-control effort was not a significant within-person predictor of self-control resource depletion at the end of work,  $\gamma = 0.053$ ,  $SE = 0.042$ ,  $p = .198$ .

Hypothesis 3a suggested that daily self-control demands positively predict daily self-control effort on the within-person level. Supporting Hypothesis 3a, the third row in the left column of Table 2 shows the positive significant within-person effect of daily self-control demands on daily self-control effort,  $\gamma = 0.370$ ,  $SE = 0.041$ ,  $p < .001$ . Hypothesis 3b suggested that daily self-control demands predict an increase in self-control resource depletion on the within-person level throughout the day. Supporting Hypothesis 3b, the third row in the middle column in Table 2 shows the positive significant within-person effect of daily self-control demands on self-control resource depletion at the end of work,  $\gamma = 0.220$ ,  $SE = 0.048$ ,  $p < .001$ . Hypothesis 3c suggested an indirect within-person effect of

**TABLE 1** Means, standard deviations, intraclass correlations, and intercorrelations among study variables

	M	SD (bt)	SD (wi)	ICC	1	2	3	4	5	6	7
1. Negative affect (BoW)	1.33	0.33	0.36	.46		.30***	.12**	.07*	-.14**	.08**	.00
2. SC resource depletion (BoW)	1.76	0.57	0.51	.56	.56***		.24***	.04	-.23***	.02	.01
3. SC resource depletion (EoW)	2.19	0.60	0.68	.47	.59***	.82***		.23***	.01	.14***	.09*
4. Daily SC demands (EoW)	2.51	0.73	0.62	.59	.31***	.27**	.46***		.05	.37***	.00
5. Daily SC motivation (BoW)	3.59	0.73	0.53	.66	-.05	-.10	.11	.58***		.21***	-.03
6. Daily SC effort (EoW)	2.94	0.88	0.65	.65	.20**	.17*	.32***	.78***	.72***		-.13**
7. Daily CWB-O (EoW)	1.88	0.50	0.61	.40	.40***	.39***	.34***	.09	-.22*	-.01	

Note: Descriptives marked with (bt) are on the between level and with (wi) are on the within level. Intercorrelations above the diagonal refer to the within level ( $n = 1,051$ ) and below the diagonal to the between level ( $N = 155$ ).

Abbreviations: BoW, beginning-of-work survey; EoW, end-of-work survey; ICC, percentage of variance between persons; SC, self-control.

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$ .

**TABLE 2** Unstandardized coefficients from multilevel path analysis predicting self-control effort and self-control resource depletion

Predictors	Daily self-control effort (EoW)			Self-control resource depletion (EoW)			Daily CWB-O (EoW)		
	Estimate	SE	z	Estimate	SE	z	Estimate	SE	z
Within level									
Negative affect (BoW)	0.139	0.058	2.400*	0.065	0.067	0.960	0.015	0.057	0.264
SC R depletion (BoW)	0.038	0.043	0.888	0.299	0.053	5.666***	0.009	0.046	0.197
Daily SC demands (EoW)	0.370	0.041	9.020***	0.220	0.048	4.575***	0.057	0.044	1.276
Daily SC motivation (BoW)	0.258	0.041	6.273***	0.053	0.042	1.286	-0.002	0.048	-0.038
Daily SC effort (EoW)	0.348	0.026	13.232***	0.406	0.033	12.453***	-0.144	0.044	-3.273**
Residual variance							0.363	0.026	13.792***
Between level									
Intercept	-0.695	0.272	-2.560*	0.095	0.170	0.558	1.516	0.281	5.396***
Negative affect (BoW)	0.058	0.163	0.353	0.243	0.132	1.845	0.364	0.167	2.184*
SC R depletion (BoW)	0.097	0.088	1.109	0.720	0.075	9.558***	0.177	0.101	1.740
Daily SC demands (EoW)	0.606	0.122	4.960***	0.213	0.084	2.531*	0.064	0.086	0.742
Daily SC motivation (BoW)	0.520	0.117	4.463***	-0.013	0.068	-0.185	-0.170	0.093	-1.831
Daily SC effort (EoW)	0.215	0.042	5.080***	0.095	0.019	5.013***	0.007	0.087	0.075
Residual variance							0.186	0.034	5.540***

Note: N = 155; n = 1,051. Estimates are unstandardized, resulting from one overall analysis including the prediction of daily self-control effort, self-control resource depletion (EoW), and daily CWB-O in one model. It was controlled for negative affect in the beginning of work. When not controlling for negative affect, results do not change on the within level. On the between level, SC motivation and SC resource depletion (BoW) become significant predictors of daily CWB-O.

Abbreviations: BoW, beginning-of-work survey; CI, confidence interval; EoW, end-of-work survey; R, resource; SC, self-control.

\*p < .05.

\*\*p < .01.

\*\*\*p < .001.

95% CI: [-0.10, 0.13], [-0.08, 0.10], [-0.03, 0.14], [-0.10, 0.09], [-0.23, -0.06], [0.31, 0.41], [-0.07, 0.20], [0.20, 0.40], [0.13, 0.31], [-0.03, 0.14], [-0.03, 0.14], [0.34, 0.47], [-0.24, 0.43], [-0.02, 0.50], [0.57, 0.87], [0.05, 0.38], [-0.15, 0.12], [0.06, 0.13], [-1.23, -0.16], [-0.26, 0.38], [-0.08, 0.27], [0.37, 0.85], [0.29, 0.75], [0.13, 0.30]

**TABLE 3** Within-person level indirect effects via self-control effort

	Estimate	SE	z	95% CI
Daily SC motivation (BoW) → Daily SC effort (EoW) → Daily CWB-O (EoW)	−0.037	0.013	−2.896**	[−0.06, −0.01]
Daily SC motivation (BoW) → Daily SC effort (EoW) → SC resource depletion (EoW)	0.014	0.011	1.286	[−0.01, 0.04]
Daily SC demands (EoW) → Daily SC effort (EoW) → Daily CWB-O (EoW)	−0.053	0.016	−3.402**	[−0.09, −0.25]
Daily SC demands (EoW) → Daily SC effort (EoW) → SC resource depletion (EoW)	0.020	0.016	1.261	[−0.01, 0.05]
SC resource depletion (BoW) → Daily SC effort (EoW) → Daily CWB-O (EoW)	−0.005	0.007	−0.814	[−0.02, 0.01]
SC resource depletion (BoW) → Daily SC effort (EoW) → SC resource depletion (EoW)	0.002	0.003	0.767	[−0.01, 0.01]

Note: Table shows unstandardized within-person estimates.

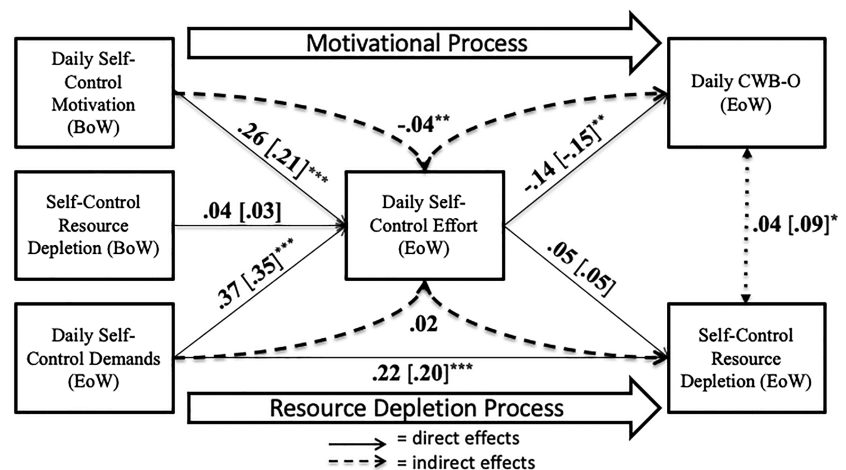
Abbreviations: BoW, beginning-of-work survey; CI, confidence interval; EoW, end-of-work survey; SC, self-control.

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$ .

**FIGURE 2** Results of the overall model. Note: Figure shows unstandardized within-person estimates. Standardized estimates are displayed in brackets. By default, outcome variables are correlated. When modeling correlations among predictors, daily self-control motivation (BoW) and self-control resource depletion (BoW) correlate,  $r = -.06$ ,  $p < .001$ . Results of the path estimates remain the same. BoW, beginning-of-work survey; EoW, end-of-work survey. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .



daily self-control demands through daily self-control effort on self-control resource depletion throughout the day. Failing to support Hypothesis 3c, the fourth row of Table 3 shows the nonsignificant indirect within-person effect of daily self-control demands on self-control resource depletion at the end of work via daily self-control effort,  $\gamma = 0.020$ ,  $SE = 0.016$ ,  $z = 1.261$ ,  $p = .207$ , 95% CI [−0.01, 0.05].

## 4.1 | Additional analyses

### 4.1.1 | Indirect effects

Based on the idea that self-control effort elicited by both self-control motivation and self-control demands may help to prevent the occurrence of CWB-O, we tested for an indirect

effect of daily self-control effort in the relationship between daily self-control demands and daily CWB-O on the within-person level. We found an indirect within-person effect of daily self-control demands on daily CWB-O through daily self-control effort,  $\gamma = -0.053$ ,  $SE = 0.016$ ,  $z = -3.402$ ,  $p = .001$ , 95% CI [−0.08, −0.02].

As organizational research often models self-control resource depletion as a predictor of self-control failure while implicitly assuming that self-control effort is the relevant linking mechanism (Johnson et al., 2017), we tested for an indirect within-person effect of self-control effort in the relationship of self-control resource depletion at the beginning of work with daily CWB-O. We did not find an indirect within-person effect of self-control resource depletion at the beginning of work on daily CWB-O via daily self-control effort,  $\gamma = -0.005$ ,  $SE = 0.007$ ,  $z = -0.814$ ,  $p = .416$ , 95% CI [−0.02, 0.01].

Further, in addition to testing for an indirect effect of daily self-control demands with self-control resource depletion at the end of work via daily self-control effort (i.e., Hypothesis 3c), we tested for a potential indirect effect of self-control resource depletion at the beginning of work with self-control resource depletion at the end of work via daily self-control effort. This may help to better understand if daily self-control effort is the relevant mechanism leading to the depletion of self-control resources at the end of work. We did not find an indirect within-person effect of self-control resource depletion at the beginning of work on self-control resource depletion at the end of work via daily self-control effort,  $\gamma = 0.002$ ,  $SE = 0.003$ ,  $z = 0.767$ ,  $p = .443$ , 95% CI  $[-0.01, 0.01]$ . For completeness, we computed all possible within-person indirect effects with self-control effort as the linking mechanism. Results are shown in Table 3.

#### 4.1.2 | Interplay of self-control resource and self-control motivation

One might argue that self-control depletion at the beginning of work goes along with decreased daily self-control motivation leading employees to exert less self-control effort. Accordingly, it could be seen as necessary to model an additional path from self-control resource depletion at the beginning of work to daily self-control motivation. Thus, we added self-control resource depletion at the beginning of work as a predictor of daily self-control motivation to our path model. Estimates were as follows: on the within-person level,  $\gamma = -0.237$ ,  $SE = 0.045$ ,  $z = -5.294$ ,  $p < .001$ , 95% CI  $[-0.33, -0.15]$ ; and on the between-person level,  $\gamma = -0.098$ ,  $SE = 0.111$ ,  $z = -0.886$ ,  $p = .376$ , 95% CI  $[-0.31, 0.12]$ . However, the results of the other path estimates of the model remained the same, and the fit of the model dropped strikingly,  $\chi^2(6) = 75.277$ ,  $CFI = 0.891$ ,  $TLI = 0.346$ ,  $RMSEA = 0.105$ . The decreased fit while core results remaining unchanged indicates that adding self-control resource depletion at the beginning of work as a new predictor for daily self-control motivation did not help to improve the model.

Further, ISCT proposes that in a specific self-control relevant situation (e.g., picking the irrelevant vs. the relevant task), available state self-control resources interact with state self-control motivation in the prediction of how much self-control effort is invested. We tried to transfer this idea to the daily context, and we tested for a possible within-person interaction effect of self-control resource depletion at the beginning of work with daily self-control motivation on daily self-control effort. For this purpose, we created person-mean-centered variables for the relevant constructs in SPSS 25 in order to eliminate between-person variance (Enders & Tofghi, 2007). We used these person-mean-centered variables to create the interaction terms of self-control resource depletion at the beginning of work and daily self-control motivation using the DEFINE command in Mplus. We added the interaction term to our study model on the within-person level. The interaction term was not significant,  $\gamma = -0.001$ ,  $SE = 0.060$ ,  $z = -0.018$ ,  $p = .985$ , 95% CI  $[-0.12, 0.12]$ .

## 5 | DISCUSSION

Our study showed that daily self-control motivation and self-control demands, but not self-control resource depletion at the beginning of work, predicted daily self-control effort. We found an indirect relationship between daily self-control motivation and daily CWB-O via daily self-control effort. Interestingly, the relationship of daily self-control demands with self-control resource depletion throughout the day was not mediated by daily self-control effort.

### 5.1 | Theoretical implications

In line with ISCT (Kotabe & Hofmann, 2015), our results support the idea that self-control motivation fosters self-control effort exertion at work. By controlling for relevant self-control aspects, namely, external demands (i.e., self-control demands), affective states (i.e., negative affect), and available resources (i.e., self-control resource depletion), we show that self-control motivation is an essential aspect to be considered within organizational research on self-control. Accordingly, the indirect effect from self-control motivation via self-control effort on CWB-O suggests that self-control effort is the mechanism that prevents the occurrence of performance-related self-control failures at work.

Our results suggest that insufficient self-control motivation, but not self-control resource depletion matters for decreased self-control effort expenditure and indirectly fosters the occurrence of daily CWB-O. Thus, explaining work-related self-control failures only by self-control resource depletion may be misleading because it obscures that other mechanisms (i.e., insufficient self-control motivation) can drive the occurrence of daily CWB-O. When depleted, one can increase self-control effort in order to compensate for resource shortages or withhold effort in order to conserve resources (Binnewies, Sonnentag, & Mojza, 2009; Boksem & Tops, 2008). Therefore, what may essentially impact the occurrence of work-related self-control failures is motivation to control oneself.

Because we modeled self-control resource depletion at the beginning of work and daily self-control motivation as parallel predictors of daily self-control effort, our results allow for the conclusion that self-control motivation predicts self-control effort above and beyond self-control resource depletion. Additionally, the negative indirect effect on daily self-control motivation via daily self-control effort on daily CWB-O substantiates a motivational perspective on self-control failures at work even further. Moreover, an indirect effect—modeled in our additional analyses—of self-control resource depletion at the beginning of work on daily CWB-O via daily self-control effort was not significant. This finding on the nonsignificant indirect effect suggests that self-control effort is not the mechanism that links self-control resource depletion to CWB-O. Rather, self-control motivation seems to be an important predictor of self-control failure above and beyond self-control resource depletion.

However, our results do not suggest abandoning resource notions altogether but moving toward a shift in perspective. As an alternative

to seeing resource shortages as the cause of self-control failure, it may be that available self-control resources influence the maximal self-control someone could exert (Wright, Mlynski, & Carbajal, 2019). Because in daily life several goals (e.g., leisure and family) compete with the general goal to perform well at work (Louro, Pieters, & Zeelenberg, 2007), it is unlikely that persons are fully motivated to exhaust their entire self-control capacity for protecting their performance at work. Thus, considering self-control motivation by incorporating it more strongly into resource or capacity notions may advance theorizing on self-control in the workplace.

Surprisingly, self-control resource depletion throughout the day did not increase when individuals reported that they exerted more self-control effort during the day. Moreover, daily self-control demands predicted daily self-control effort and self-control resource depletion at the end of work, but daily self-control effort did not relate to self-control resource depletion at the end of work; neither did self-control effort mediate the relationship between daily self-control demands and self-control depletion throughout the day. Also, an indirect effect—modeled in our additional analyses—of self-control resource depletion at the beginning of work via daily self-control effort on self-control resource depletion at the end of work was non-significant. These findings are at odds with the common proposition of the ego-depletion perspective that self-control effort consumes self-control resources (Baumeister & Vohs, 2016; Johnston et al., 2019). The opportunity cost model (Kurzban et al., 2013) may help to explain these surprising findings. Among others, this model views depletion as a motivational state not adequately reflecting actual resource levels (Inzlicht & Schmeichel, 2012; Kurzban et al., 2013; Molden et al., 2016). Underscoring the motivational nature of depletion states, several experiments showed that depletion can be counteracted by simple motivational interventions, such as watching a funny video (Tice, Baumeister, Shmueli, & Muraven, 2007), self-affirmation of core values (Schmeichel & Vohs, 2009), or thinking that self-control is beneficial for oneself (Muraven & Slessareva, 2003).

More specifically, the opportunity cost model (Kurzban et al., 2013) interprets perceptions of boredom, effort, and depletion (or fatigue) as mental representations of opportunity costs (i.e., the costs associated with being engaged in certain—and not other—possible activities). Thus, the model does not see perceptions of depletion as indicators of actual resource depletion processes. Instead, it interprets depletion perceptions as the subjectively experienced evaluation of the costs to remain controlled or to engage into further self-control activities (Hockey, 2013; Kurzban et al., 2013). For instance, Johnston et al. (2019) found in an experience-sampling study that nurses' fatigue increased throughout work shifts. However, neither effort expenditure nor work demands predicted fatigue. On the contrary, reward and control perceptions negatively predicted fatigue, supporting the idea that states such as fatigue (or depletion) mentally relate to cost-benefit analyses. In a recent review, Kool and Botvinick (2018) emphasized the potential fruitfulness of cost-benefit perspectives for understanding mental effort and related perceptions.

Our results indicate that the heightened self-control demands relate to perceptions of effort and depletion alike. High self-control demands probably increase the salience of desire-goal conflicts, causing depletion perceptions independently of actually exerting self-control effort (Milyavskaya & Inzlicht, 2017). When self-control demands are high, the salience of desires is increased. Owing to this increased salience, the subjective value of giving in to desires (e.g., pausing the work) and costs of continuing to remain sufficiently controlled (e.g., staying concentrated) change. Giving in to desires becomes more valuable, whereas remaining controlled becomes more costly. As a consequence, effort and depletion are experienced.

In line with this perspective, it may be that effort does not cause depletion. Rather, mental representations of costs and benefits relate to perceptions of effort and depletion, motivating one to allocate attention to other activities (Kurzban et al., 2013).

## 5.2 | Limitations and future directions for research

Our study is not without limitations. First, we assessed all our variables using self-report measures. Regarding self-reported CWB, researchers argued that reports may underestimate behavior frequencies, for instance, due to self-serving bias or dishonesty (Barclay & Aquino, 2011; Stewart, Bing, Davison, Woehr, & McIntyre, 2009). Quite the contrary, the meta-analytical findings Berry et al. (2012) suggest that self-reports of CWB yield higher scores than ratings from others. Specifically for other-rated CWB-O, behaviors seem to be underreported, maybe because these behaviors are less visible to others. Furthermore, we think it is unlikely that individual response tendencies affected our results regarding CWB-O in problematic ways because we modeled between-person and within-person differences separately. However, we admit that measuring self-control resource depletion via self-report is a limitation of our (and most other) field studies on self-control at work for two reasons: One problem is that it remains unclear if individuals can reliably assess their own current levels of available self-control resources. Subjective perceptions of self-control resource depletion levels may be biased by other individual factors, such as lay theories of willpower (Job, Dweck, & Walton, 2010) or sleep quantity (Johnson et al., 2014). Another problem is in the unclear nature of self-control resources, up to the general doubt about whether such a resource exists (Kanfer, Frese, & Johnson, 2017; Molden et al., 2012, 2016). Nevertheless, future studies might want to consider incorporating self-report and objective measures approximating self-control resources (e.g., physiological proxies of momentary cognitive load). This multimeasurement approach might even help to clarify questions regarding the accessibility and nature of self-control resources.

Second, some of our measures (self-control motivation, self-control demands, self-control effort, and daily CWB-O) refer to the whole workday, making the analysis of fluctuations within the day for these constructs impossible. It is conceivable that, for instance, self-control motivation decreases within the day as a response to earlier invested self-control effort and thus increases the likelihood of



CWB-O in the afternoon (Inzlicht & Schmeichel, 2012). Other studies on fatigue and flow experiences at work already showed within-day fluctuations by implementing several measurement occasions during the day (Debus, Sonnentag, Deutsch, & Nussbeck, 2014; Hülshager, 2016). Future studies on self-control failure at work could adopt such an approach.

Third, we measured the predictor daily self-control demands, the mediator daily self-control effort, and the outcome daily CWB-O concurrently at the end of work. When testing indirect effects, it is recommended to rely on longitudinal designs capturing the proposed causal sequence of variables because assessing various constructs concurrently may result in an inflation of the estimated relationship (Aguinis, Edwards, & Bradley, 2017). Notwithstanding, it appeared suboptimal to assess daily self-control demands before they are actually fully experienced, daily self-control effort before it is actually fully exerted, and daily CWB-O before it is actually shown. Further, one may question if individuals can validly report, for instance, on daily self-control demands at noon, when their occurrence partly lies in the future. Interestingly, a recent meta-analysis on within-person relationships between job stressors (including self-control demands) and reactions to these stressors showed that concurrent relationships (i.e., stressors and reactions measured simultaneously) were not stronger than predictive relationships (i.e., stressors measured prior to reactions; Pindek, Arvan, & Spector, 2019). This meta-analytic finding minimizes concerns that the timing of our measurements might have inflated the relationship between self-control demands assessed at end of work and the other variables assessed at the same time. Nevertheless, future studies should apply cross-lagged within-day designs to capture the temporal interplay of self-control aspects in greater depth.

Fourth, measuring daily self-control effort is based on the idea that effortful impulse control is at the core of successful self-control, whereas it is conceivable that on certain days, individuals perceive impulses less intensely. When perceiving impulses less intensely, successfully controlling oneself may require less self-control effort, fostering self-control success. On the contrary, perceiving impulses as urgent and intense could reinforce self-control failures. Accordingly, future research should explicitly tackle the difference between perceived impulse intensity and effortful impulse control (Milyavskaya, Berkman, & De Ridder, 2018).

### 5.3 | Practical implications

Our findings offer some practical implications. First, self-control motivation at the beginning of work plays an important role in preventing daily CWB-O. One may speculate that self-control motivation is decreased owing to sleep problems because of insufficient leisure time (Kühnel, Bledow, & Feuerhahn, 2016; Sonnentag, Niessen, & Neff, 2012). Thus, employees should try to ensure that sleep and leisure needs are sufficiently satisfied. In addition, it may also be important for employees to put particular weight on a satisfying private life (e.g., harmonic relationships as well as interesting and stimulating

activities) in order to ensure self-control motivation at work (Courtright, Gardner, Smith, McCormick, & Colbert, 2016).

Second, organizations should also acknowledge that their employees' lack of motivation to exert self-control is a driving force fostering undesirable work behavior. As predictors of self-control motivation have not yet been identified empirically, we can only speculate about influences of self-control motivation. It may be useful for organizations to understand and fulfill the needs of their employees at work (e.g., providing stimulating work, avoiding illegitimate tasks, and appreciating good work) but also to provide opportunities and time for employees to fulfill their needs in their private life (e.g., avoiding pressure for overwork and protecting employees' privacy).

Third, self-control demands elicit depletion. As perceptions of depletion are aversive, they shall be avoided in general. Even more, depletion perceptions may go along with other undesirable outcomes, such as unethical behavior (Lee et al., 2016; Lin et al., 2016), destructive voice (Mackey, Huang, & He, 2018), or decreased helping (Gabriel, Koopman, Rosen, & Johnson, 2018). Therefore, organizations should strive to create work environments and conditions minimizing the occurrence of high self-control demands wherever it is possible. For instance, implicit norms of tolerance for a plurality of working and lifestyles may help to decrease self-control demands, whereas an atmosphere of competition among coworkers may have the opposite effect. It may be feasible for organizational members to establish norms of authenticity, which fosters the direct expression of (negative) feelings without the fear of negative sanctions in any form (Grandey, Foo, Groth, & Goodwin, 2012).

### 5.4 | Conclusion

Our study shows that self-control motivation is important for understanding the occurrence of self-control failures in the context of work. Furthermore, study findings highlight self-control effort as the central mechanism connecting the nonoccurrence of self-control failures with self-control motivation, but also with self-control demands. Interestingly, self-control effort does not seem to deplete self-control resources. Instead, self-control demands at work seem to elicit perceptions of self-control resource depletion.

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## APPENDIX A

**TABLE A1** Items for measuring daily self-control motivation and daily self-control effort

Daily self-control motivation	Daily self-control effort
Today, I am motivated ...	Today, I made a lot of effort ...
... never to lose my temper.	... never to lose my temper.
... even if I sometimes feel very irritated, not to show that by any means.	... even if I sometimes felt very irritated, not to show that by any means.
... not to become impatient at work.	... not to become impatient at work.
... to deal with unattractive tasks, even when this requires of me a high amount of willpower.	... to deal with unattractive tasks, even when this required of me a high amount of willpower.
... to start off with certain tasks when this sometimes costs me a considerable amount of willpower.	... to start off with certain tasks when this sometimes cost me a considerable amount of willpower.
... to get some of my tasks done, even when I really need to force myself to do so.	... to get some of my tasks done, even when I really needed to force myself to do so.
... to not allow myself to be distracted.	... to not let myself be distracted.
... to force myself not to waste my time on unimportant things.	... to force myself not to waste my time on unimportant things.
... not to give in to any distractions.	... not to give in to any distractions.