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When and how gain cycles operate: Examining the temporal dynamics of gain cycles between PsyCap, work engagement and strengths use

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Abstract

This study explores when and how gain cycles between psychological capital (PsyCap), work engagement and strengths use operate within organizational contexts, grounded in Job Demands–Resources (JD-R) and Conservation of Resources (COR) theories. While existing research highlights gain cycles based on these theories, the temporal dynamics of how these relationships unfold within and across days remain underexplored. Using a daily diary methodology with two measurement points per workday over 2 weeks, results confirm positive mediated gain cycles within the same workday, with work engagement reinforcing itself through sequential pathways of strengths use and PsyCap. However, contrary to expectations, next-day analyses revealed non-significant mediated gain cycles, suggesting that gain cycles reset overnight. These findings contribute to JD-R theory by clarifying both *when* gain cycles operate (within-day enhancement vs. cross-day reset) and *how* they function through specific mediated pathways rather than simple direct effects. Practical implications emphasize enabling the behavioural (strengths use) and psychological (PsyCap) mechanisms that employees use to shape their own engagement.

KEYWORDS

COR theory, diary study, feedback loop, gain cycles, JD-R theory

Practitioner points

- The use of one's strengths and psychological capital are central mechanisms that employees, leaders and organizations can leverage to foster well-being. Organizations should systematically create opportunities for this positive cycle to unfold, for instance, through strengths-based feedback in daily check-ins, aligning tasks with individual talents and leadership training that focuses on empowering employees' sense of self-efficacy, optimism, resilience and hope.
- Maintaining consistently high levels of engagement may not yield the intended effects. Positive gain cycles operate powerfully within a single day but do not automatically carry over. Organizations should encourage sustainable engagement patterns rather than pushing for maximum engagement every day.

The Job Demands-Resources theory (JD-R theory; Bakker et al., 2023; Demerouti et al., 2001) has emerged as one of the most influential frameworks for understanding employee well-being and performance. Research has extensively validated JD-R theory's core premises about how resources and demands affect employee well-being (Bakker & Demerouti, 2017; Crawford et al., 2010; Lesener et al., 2019; Schaufeli & Taris, 2014). Recent theoretical developments emphasize the cyclic nature of the health processes, that is not only resources and demands affecting employee well-being but also vice versa—employee well-being affecting resources and demands (Bakker et al., 2023; Guthier et al., 2020; Lesener et al., 2019). Drawing from Conservation of Resources theory (COR theory; Hobfoll, 1989; Hobfoll et al., 2018), updated JD-R theory suggests that employees can initiate gain cycles between proactive behaviours, resources and work engagement. When employees actively modify their work environment according to their needs, they generate resources and become more engaged. This increased engagement motivates continued proactive behaviours, creating a self-reinforcing cycle of proactive behaviour, resource building and sustained work engagement (Bakker et al., 2023). Importantly, these gain cycles are theorized to operate dynamically at the within-person level, where employees experience daily fluctuations in their resources, engagement levels and proactive behaviours that create ongoing patterns of mutual reinforcement throughout their work experiences (Bakker et al., 2023; Sonnentag & Meier, 2024).

Despite growing theoretical interest in gain cycles, empirical research on gain cycles remains limited (Sonnentag & Meier, 2024). The first gap addressed in this research concerns understanding how gain cycles operate as self-reinforcing feedback loops rather than simple bivariate links between variables. While JD-R theory's propositions suggest that engaged employees proactively enhance their work environment, which generates resources that maintain engagement, resulting in a dynamic, self-reinforcing feedback loop (Bakker et al., 2023), empirical evidence for complete loops where work engagement fuels itself remains limited and fragmented. Previous studies have provided pieces of this puzzle through various mediation pathways. Research demonstrates that work engagement can mediate relationships from job resources to proactive behaviours (Lin et al., 2024; Salanova & Schaufeli, 2008), that personal resources can enhance engagement through proactive behaviours like job crafting (García-Merino et al., 2023; Park & Ha, 2025), and that resource constructs can indirectly influence future states via work engagement (Weigl et al., 2010). Additionally, studies show that proactive behaviours connect to engagement through resources (Meijerink et al., 2020; van Woerkom et al., 2016). However, these studies examine segments of the feedback loop, leaving open *how* work engagement precisely fuels its own continuation through the interplay of specific proactive behaviours and resources.

The second gap targeted in this research relates to the temporal dynamics of these gain cycles. While the first gap addresses how the feedback loop operates, this second gap focuses on its sustainability over time. The prevailing assumption in much existing research has been the linear enhancement of

employee outcomes through increased resources, well-being, and proactive behaviour. This perspective, however, overlooks the fundamental COR principle that resource investment comes at a cost and that resources have a finite nature (Hobfoll, 2002; Hobfoll et al., 2018). Recent evidence suggests that resource dynamics may operate differently *within* versus *across* days, with immediate gains potentially coming at the cost of next-day losses (ten Brummelhuis et al., 2025). *Within* single workdays, COR theory's resource investment principle suggests that having access to resources enables immediate investment in proactive behaviours, leading to further resource gains (Hobfoll et al., 2018). Multiple daily diary studies support this pattern, showing that personal resources relate positively to engagement and proactive behaviours within the same day (e.g. Kühnel et al., 2012; Simbula, 2010; Xanthopoulou et al., 2009, 2012).

Across consecutive workdays, however, different processes may emerge. When employees invest heavily in resource-building activities on one day, they may experience depletion or natural regulatory mechanisms that cause a return toward baseline levels the following day (Sonnentag et al., 2022). These patterns may reflect adaptive responses where human functioning maintains equilibrium through compensatory adjustments after periods of high activation (Quinn et al., 2012). Some studies have documented these different patterns for same-day versus next-day relationships, with positive effects within days but neutral or negative effects across days (Fredrickson et al., 2020; Vahle-Hinz et al., 2019). Examining this temporal boundary is key to understanding when work engagement fuels its own continuation.

To capture these dynamic, fluctuating processes, a within-person level of analysis is essential (Bakker et al., 2023; Sonnentag & Meier, 2024). The majority of previous research studied gain cycles as a between-person phenomenon, investigating the consequences of possessing higher levels of one resource compared to other individuals (Sonnentag & Meier, 2024). However, well-being, resources and proactive behaviours have been shown to fluctuate within individuals over time (Sheng et al., 2019; Sonnentag et al., 2021). Therefore, more recent studies examined relationships of the gain cycle at the within-level (e.g. Bakker et al., 2019; Bakker & Oerlemans, 2019; Kooij et al., 2020; Lopper et al., 2023; Petrou et al., 2012, 2017). Yet a critical gap exists in understanding how mediated pathways operate differently within the same day versus across consecutive days. A within-person daily approach differentiating between same-day and next-day effects could explain how peaks and lows in the gain cycle influence each other within and across days.

Furthermore, to understand this loop, the selection of appropriate variables is crucial. Sonnentag and Meier (2024) propose that, when investigating gain cycles, two key features should be considered: the included variables should be both influential and malleable. Following these criteria, this research examines three constructs that are particularly well-suited for investigating gain cycles: psychological capital (PsyCap) as a resource, strengths use as a proactive behaviour, and work engagement as an indicator of well-being. PsyCap refers to an individual's positive psychological state, characterized by self-efficacy, optimism, hope and resilience (Luthans et al., 2007). Strengths use involves individuals leveraging their unique strengths in their daily tasks (Bakker & van Woerkom, 2018; van Woerkom et al., 2016). Work engagement characterizes a positive, fulfilling work-related state of vigour, dedication and absorption (Bakker et al., 2014, 2023). All three variables have been theoretically conceptualized and empirically shown to be both influential and malleable (e.g. Alessandri et al., 2018; Bakker et al., 2014, 2019, 2023; Luthans et al., 2007).

Against this background, this study aims to advance JD-R theory by examining a mediated gain cycle between work engagement, strengths use, and PsyCap fuelling back to work engagement, with a specific focus on contrasting its operation within the same workday and across consecutive workdays. In doing so, this study makes two primary contributions to JD-R and COR theory. First, I move beyond fragmented, unidirectional links to provide an empirical test of a complete daily gain cycle as a mediated feedback loop. By doing so, I clarify the behavioural and psychological mechanisms through which employees can actively sustain their positive states within a single workday. Second, by differentiating same-day from next-day mediated effects, I respond to calls for more nuanced temporal analyses in JD-R and COR theory research (Bakker et al., 2023; Sonnentag & Meier, 2024). This temporal perspective reveals whether cross-day patterns represent natural regulatory processes that maintain sustainable functioning, providing insights into the dynamic, within-person nature of gain cycles and

their temporal boundaries. These contributions have important practical implications for organizations, suggesting that organizations should move beyond simply trying to maximize employee engagement every day. Instead, they should focus on promoting sustainable work habits that allow for both high-performance periods and the necessary time for employees to recharge.

THEORETICAL BACKGROUND

Gain cycles in COR and JD-R theory

The main tenet of COR theory posits that resources are essential to individuals' well-being, and stress emerges from the potential or actual loss of these resources, or when investments in resources do not result in proportional gains (Hobfoll, 1989; Hobfoll et al., 2018). Resources are broadly defined as those objects, states, conditions and other things that individuals value (Halbesleben et al., 2014; Hobfoll, 1989). They are expected to fluctuate over time, forming cycles of loss and gain: individuals with ample resources are better positioned to acquire more, while those with fewer resources face a greater risk of losing them (Hobfoll, 1998). Importantly, COR theory emphasizes that resource investment is not without cost—individuals must expend current resources to gain future resources, and this investment process has inherent limits due to the finite nature of human resources (Hobfoll, 2002; Hobfoll et al., 2018).

The idea of dynamic loss and gain cycles has been integrated into the JD-R theory. The central idea of JD-R theory is that employee health is characterized by two independent processes: the health impairment process, which is triggered by job demands leading to strain and potential health problems, and the motivational process, where job resources foster work engagement, leading to enhanced well-being and performance (Bakker et al., 2023; Demerouti et al., 2001). The initial conceptualization and empirical investigation of these two processes were undertaken in a sequential order from job resources to work engagement and job demands to strain. However, as the JD-R theory developed, it became evident that these processes could be more accurately conceptualized as loss and gain cycles, in which there is no clear demarcation between a beginning and an end (Bakker et al., 2023; Guthier et al., 2020; Lesener et al., 2019). With regard to the gain cycle, it is assumed that highly engaged employees take proactive steps to tailor their work environments to their needs, which in turn generates resources that foster sustained work engagement. Thus, in this framework, work engagement, resources, and proactive behaviours are interdependent (Bakker et al., 2023).

Beneficial same-day gain cycles

Drawing from COR theory and JD-R theory, positive relationships between resources, proactive behaviours, and work engagement are expected to manifest within days (Bakker, 2015; Bakker et al., 2023). COR theory's principle of resource investment suggests that when individuals have access to resources on a given day, they readily invest these to gain additional resources, leading to immediate positive outcomes (Hobfoll et al., 2018). JD-R theory further proposes that these investment processes create gain cycles that unfold within workdays as employees proactively engage with their work environment (Bakker et al., 2023; Bakker & Demerouti, 2017).

Applied to the study variables, a specific mediated pathway is expected where on days when employees feel more engaged than usual, they are more prone to use their strengths, which in turn builds PsyCap, ultimately reinforcing engagement within the same workday. This sequential pathway reflects the temporal unfolding of motivational processes throughout a workday, where initial engagement provides the motivational energy for proactive behaviour, which then generates psychological resources that sustain continued engagement (Bakker et al., 2023; Bakker & Demerouti, 2017).

The first link in this proposed chain is from work engagement to proactive behaviour in the form of strengths use. According to JD-R theory's propositions, engaged employees are intrinsically motivated

to maintain their engagement and begin to proactively enhance their jobs (Bakker et al., 2023). Work engagement, characterized by vigour, dedication, and absorption (Schaufeli et al., 2006), provides the motivational and energetic foundation for proactive behaviours. Engaged employees naturally seek opportunities for growth and improvement, and among various proactive behaviours, strengths use represents a particularly accessible form of job enhancement because it allows employees to leverage their existing capabilities (Bakker & van Woerkom, 2018). From a COR perspective, engaged employees possess sufficient motivational resources to invest in proactive behaviours that may yield future resource gains (Hobfoll et al., 2018). Strengths use represents a relatively low-risk, high-reward investment because it builds on existing capabilities rather than requiring the development of entirely new skills (van Woerkom et al., 2016). Daily diary studies support this reasoning, showing that engagement fluctuations within individuals predict same-day strengths use behaviours (Bakker et al., 2019; Moore et al., 2024).

Second, this act of using one's strengths is expected to build personal resources like PsyCap. When employees actively apply their strengths, they engage in activities where they are naturally competent, leading to immediate success experiences that may enhance their PsyCap (Bakker & van Woerkom, 2018; Bandura, 1997; Dubreuil et al., 2014; van Woerkom et al., 2016). Specifically, successful strengths application can build self-efficacy through mastery experiences, which Bandura (1997) identifies as the most powerful source of efficacy beliefs. As employees witness their strengths producing positive outcomes, their confidence in handling future challenges increases. Simultaneously, these positive experiences foster optimism by creating favourable attributions about future success when leveraging strengths (Dubreuil et al., 2014). Hope is enhanced as employees discover new pathways (waypower) to achieve goals through their strengths while experiencing increased motivation (willpower) to pursue these goals (Luthans & Youssef-Morgan, 2017). Finally, resilience develops as employees build a repository of successful coping strategies based on their strengths, providing them with confidence to overcome future adversities (Luthans & Youssef-Morgan, 2017). Research supports this proposed strengths-use-to-resources pathway, showing that daily strengths use predicts feelings of being inspired, meaningfulness and goal attainment (Ilies et al., 2024; Moore et al., 2024). The immediacy of this relationship within days reflects the direct nature of mastery experiences in building psychological resources (Bandura, 1997).

Finally, this newly generated PsyCap is expected to enhance work engagement. When employees experience high levels of PsyCap, they approach their work with confidence and optimism, immediately contributing to their vigour and dedication (Alessandri et al., 2018). The motivational component of PsyCap helps maintain engagement throughout the workday by providing the psychological resources needed to stay focused and energized (Xanthopoulou et al., 2009). Diary studies support this notion, showing that daily fluctuations in (personal) resources relate to engagement on the same day (Kühnel et al., 2012; Simbula, 2010; Xanthopoulou et al., 2009, 2012). Based on the theoretical rationale outlined above, the following feedback loop is proposed:

> **Hypothesis 1.** Within workdays, work engagement will have a positive indirect effect on same-day work engagement through the sequential mediation of increased strengths use and PsyCap.

Negative next-day gain cycles

While positive mediated feedback loops are expected within a workday, their cross-day relationships may be more complex. COR theory's core principle that resource investment comes at a cost becomes particularly relevant when examining relationships across consecutive days (Hobfoll, 1998; ten Brummelhuis et al., 2025). COR theory emphasizes that resources are finite and that continuous investment without adequate replenishment leads to resource loss spirals (Hobfoll et al., 2018). Therefore, negative cross-day relationships can be understood as adaptive mechanisms that protect individuals from overinvestment and ensure long-term resource sustainability. Applied to daily work contexts, this suggests that the intensive resource investment required for high engagement, proactive

strengths use and PsyCap building within one day triggers conservation processes that temporarily reduce these investments the next day, allowing for resource replenishment and preventing exhaustion.

Recent empirical evidence supports this adaptive interpretation of cross-day patterns. Ten Brummelhuis et al. (2025) demonstrate that while performance peaks on days with high resource investment, it significantly drops the next day. Their research shows that working intensively reduces sleep duration, which then impairs psychological resources like resilience the next morning. When applied to the relationships between PsyCap, strengths use and work engagement, this suggests that high levels of gain cycles might be beneficial on a given day but trigger adaptive conservation responses the next day.

Highly engaged employees are at greater risk of setting unrealistic goals and targeting a higher workload, potentially beneficial at first but then hindering their ability to restore personal resource reserves and recover fully from their significant daily work investments (Nerstad et al., 2019; Shimazu et al., 2016). Specifically, engaged employees tend to work longer hours (van Beek et al., 2011), risking lower personal resources the next morning (ten Brummelhuis et al., 2025). Therefore, a day of high work engagement may be followed by a day of reduced work engagement as it depletes the cognitive and motivational resources needed for complex proactive behaviours such as strengths use. According to COR theory's investment principle, this depletion temporarily reduces the capacity for resource-intensive behaviours like strengths identification and application the following day. The cognitive effort and emotional energy expended during peak engagement may create a need for conservation that manifests as reduced proactive behaviour. Concurrently, human functioning operates on a principle of homeostasis, striving to maintain a stable equilibrium (Quinn et al., 2012). A day of peak activation represents a significant deviation from this baseline. The negative next-day effect can therefore be seen as a regulatory process that pulls the system back toward a sustainable, average level of functioning, that is a return to the personal mean after a day of unusually high investment.

A day of reduced strengths use, in turn, limits the mastery experiences and competence satisfaction that normally build PsyCap throughout the day. When employees engage less in strengths-based activities due to conservation processes, they miss opportunities for the success experiences and need satisfaction that typically enhance self-efficacy, optimism, hope and resilience (Ilies et al., 2024; Moore et al., 2024). This reduction in PsyCap building may represent an adaptive trade-off where immediate resource conservation takes priority over resource generation. Finally, this diminished PsyCap provides a less motivational foundation for work engagement, completing a negative mediated pathway. Lower PsyCap offers reduced motivational energy for sustained work engagement. This creates a conservation-focused state where employees operate at moderate rather than peak levels, allowing for sustainable functioning and resource restoration (Luthans & Youssef-Morgan, 2017).

> **Hypothesis 2.** Across workdays, work engagement will have a negative indirect effect on next-day work engagement through the sequential mediation of reduced next-day strengths use and PsyCap.

METHOD

Procedure and sample

A daily diary study was conducted over a period of two working weeks (10 working days) with two measurement points per day: one during participants' lunch break (midday assessment) and one at the end of their workday (end-of-day assessment). Participants were recruited through Prolific Academic, an online research platform, which has been found to provide diverse and high-quality data for repeated measures data collection (Palan & Schitter, 2018; Stanton et al., 2022). To be eligible for participation, the following criteria had to be met: (1) full-time employment with a regular five-day work week (Monday to Friday), (2) no shift work, (3) minimum age of 18 years, (4) German language proficiency at a native speaker level, (5) residency in Germany, Austria or Switzerland, and (6) availability to participate during the study period

in November 2024. After giving their informed consent, the study was initiated with an initial survey collecting demographic information and baseline measures. Following this, daily surveys were administered over 10 working days. Each day, two surveys were distributed: a midday assessment during lunch break and an end-of-day assessment at the completion of the workday. The daily surveys started by asking participants if they had worked that day. If they had, they next received questions regarding their PsyCap, strengths use and work engagement. At the end, surveys included control questions about exceptional work or private events, work location (office or other) and number of meetings. Additionally, multiple attention checks and questions about response quality were incorporated throughout all surveys. Survey reminders were sent through the Prolific messaging system. Compensation of £1.25 was provided for completing the initial survey and £.55 for each daily survey. Additionally, a bonus payment of £.50 was awarded to participants who completed at least 8 out of 10 of both daily surveys. Ethical approval for the study was granted by the German Association for Experimental Economic Research e.V.

Initially, 160 participants were recruited for the study. Before initiating the daily diary measurements, 23 participants who did not meet the screening criteria and 4 participants who failed at least one attention check in the initial survey were excluded. After the completion of the daily diary measurements, 11 participants were excluded because they did not participate in at least two consecutive measurement points. Additionally, two participants were removed due to suspicious response patterns (standard deviation across items smaller than .1 combined with outliers in dependent variables across at least two time points). The final sample at the between-person level therefore consisted of 120 participants. Of the potential 2400 daily survey responses (two surveys per day over 10 days for 120 participants), 2005 responses were initially collected (83.54% response rate). After removing responses that failed the first attention check, 1993 daily responses remained. Following the removal of responses that failed the second attention check, 1942 responses remained. Furthermore, I removed the daily answers of participants that indicated they did not work on that given day. The final dataset therefore consisted of 1871 daily observations nested within 120 participants.

In the final sample, the average age was 34.78 years ($SD = 8.05$; range: 20–65 years). The sample consisted of 63.33% male participants, 35.83% female participants and .84% diverse gender participants. Regarding educational background, the majority of participants held higher education degrees: 35.83% had completed a Master's degree, 29.17% held a Bachelor's degree and .02% had completed a doctorate. Additionally, 14.17% had completed vocational training, 15.00% had completed secondary education and 5.83% had completed middle school. In terms of work characteristics, participants reported an average of 40.92 working hours per week ($SD = 4.55$; range: 30–60 hours). Approximately one-third of the participants held leadership positions.

Measures

All constructs were assessed in German, with items taken from validated scales. If necessary, I used back-translation to create German versions of the scales (Brislin, 1970). To ensure precise temporal measurement and minimize retrospective bias, specific time frames were used as reference points in the daily surveys. In the midday assessments, all items were framed with reference to 'this morning', while the end-of-workday assessments used 'this afternoon' as the temporal reference point (see e.g. Wehrt et al., 2022). This approach was applied across all daily measures to capture distinct temporal experiences within each workday. All daily items were answered on a 7-point rating scale ranging from 1 (*not true at all*) to 7 (*very true*).

Strengths use

Strengths use was assessed using four items adapted from the Strengths Use Scale used in prior diary studies (Bakker et al., 2019, p. 201; van Woerkom et al., 2016). A sample item is 'This morning/afternoon, I used my talents at work'.

PsyCap

As in previous diary studies (Kuonath et al., 2021; Martinez-Corts et al., 2015; Merolla et al., 2021), PsyCap was measured using two items for each of its four components, which were modified for the daily context using validated scales. Two items each from Schwarzer and Jerusalem's (1999) German General Self-Efficacy Scale, the German version (Glaesmer et al., 2008) of the Life Orientation Test-Revised (Scheier et al., 1994), the German version (Reschke et al., 2005) of the Hope Scale by Snyder et al. (1997), and the German version (Schumacher et al., 2005) of the Resilience Scale by Wagnild and Young (1993) were used to measure PsyCap's four facets. A sample item reads 'This morning/afternoon, I felt confident that I could deal efficiently with unexpected events'.

Work engagement

Day-level work engagement was measured using the German version (Lincke et al., 2021) of the 3-item short-form Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2006), adapted to a daily basis (e.g. 'This morning/afternoon, I was enthusiastic about my job.'). Adapting the trait version of the UWES for day-specific assessment has also been done in prior daily diary studies (Bakker et al., 2019; Breevaart et al., 2012; Gerpott et al., 2022).

Workday variables

Daily surveys included questions about exceptional work or private events, work location and number of meetings. As these workday variables showed no significant effects on the dependent variable at within- or between-person levels (all $ps > .05$), they were not included as covariates in the main DSEM analyses.

Analytical procedure

The main analyses were conducted using the Mplus 8.11 program (Muthén & Muthén, 2017), while the R software was used for data preparations. Because the daily measurements were nested within individuals, the data followed a multilevel structure. Therefore, I specified intraclass correlations (ICCs), showing the amount of variance attributed to within-person versus between-person variation. Based on van Alphen et al.'s (2022) recommendations, I then performed multilevel confirmatory factor analyses (MCFA) in order to conduct reliability estimates and test for construct validity.

To investigate the dynamics between PsyCap, strengths use and work engagement, I used dynamic structural equation models (DSEM; Asparouhov et al., 2018; McNeish & Hamaker, 2020) incorporating Bayesian estimation with Markov Chain Monte Carlo (MCMC) procedures. DSEM was chosen for its ability to handle intensive longitudinal data while accounting for both within-person dynamics and between-person differences through a multilevel framework. DSEM was preferred over alternative approaches such as the random intercept cross-lagged panel model (RI-CLPM) because it is specifically designed for intensive longitudinal data with many time points, as in the present study (10 workdays × two measurement occasions per day). DSEM allows for the modelling of complex mediation pathways with random slopes, while RI-CLPM is typically used for panel data with fewer measurement occasions (McNeish & Hamaker, 2020). The models were estimated using Bayesian methods with noninformative priors. I used two MCMC chains with a minimum of 20,000 iterations. Model convergence was assessed using the posterior scale reduction factor (PSR), trace plots and autocorrelation plots. PSR values lower than 1.10 indicated sufficient convergence (McNeish & Hamaker, 2020). Parameters were considered statistically significant if the 95% credible interval (95% CI) did not contain zero.

A critical aspect of the DSEM approach involved the proper decomposition of variance into within-person and between-person components through latent centring procedures incorporated into Mplus

(McNeish & Hamaker, 2020). For all variables that are not explicitly specified as within- or between-level, Mplus automatically uses latent person-mean centring. Latent centring offers several key advantages over manual centring or non-centring approaches: it automatically handles missing data and unbalanced designs common in intensive longitudinal studies, ensures precise separation of within-person and between-person variance components without the need for person-mean calculations that can introduce measurement error, and provides more accurate standard errors by properly accounting for the uncertainty in the centring process (Asparouhov et al., 2018; McNeish & Hamaker, 2020).

To test the proposed relationships, I developed two distinct mediation models that capture the feedback loop from work engagement via strengths use and PsyCap back to work engagement. One model capturing the relationships between the three study variables for both same- and next-day relationships would have resulted in a large number of random effects that can lead to convergence problems (Asparouhov & Muthén, 2024). To test the same-day mediation of Hypothesis 1, I examined whether morning work engagement feeds back to afternoon work engagement via increased morning strengths use and increased afternoon PsyCap. To test the next-day mediation of Hypothesis 2, I tested the same relationship but changed the starting point to the previous day, that is tested whether morning work engagement on day $t-1$ leads to reduced afternoon work engagement on day t through its impact on morning strengths use on day t and afternoon PsyCap on day t. Cross-day analyses were restricted to consecutive working days and excluded weekend transitions. This approach ensured that next-day effects reflected immediate temporal relationships between consecutive workdays rather than cross-weekend recovery patterns. Morning work engagement ($t-1$) was selected as the starting point for next-day analyses because morning levels represent employees' consolidated state after overnight recovery, providing a theoretically appropriate baseline for examining cross-day resource dynamics while avoiding confounding with same-day fluctuation effects. To ensure the robustness of these findings, I also tested an alternative specification using afternoon work engagement ($t-1$) as the starting point for next-day analyses. This alternative model yielded similar effects.

Each mediation model was specified as a two-level random coefficient model following recommendations by McNeish and Hamaker (2020) for intensive longitudinal data. At the within-person level, the models included random slopes, allowing the strength of the hypothesized pathways to vary across individuals. This specification acknowledges that individuals may differ in how their daily fluctuations in PsyCap, strengths use and work engagement influence each other. At the between-person level, although not the main purpose of this paper, I also modelled the same mediation pathways. These represent the average mediation effects across all individuals to allow for comparisons of the relationships at the within- and between-person levels. The means of the random effects at the between-person level reflect the typical within-person effects, while the between-person structural paths capture how stable individual differences in the predictor relate to stable differences in the outcome. Additionally, variances and covariances of the random effects were modelled at the between-person level to capture individual differences in the strength and direction of these temporal processes. The within-person residual variances were specified as latent variables and allowed to vary at the between-person level, following McNeish and Hamaker's (2020) recommendations for handling potential heteroscedasticity in intensive longitudinal data. All models included autoregressive effects at both levels to control for temporal stability in each construct. Indirect effects were computed using the MODEL CONSTRAINT command in Mplus, calculating the product of the relevant path coefficients for both within-person and between-person indirect effects.

RESULTS

Preliminary analyses

Table 1 contains descriptive statistics, reliability coefficients, ICCs, while Table 2 contains correlations at the day and person level. The ICCs, ranging between .51 and .61, indicated substantial variation attributed to within-person effects. Before performing the Bayesian DSEM models, I evaluated the measurement

TABLE 1 Descriptive statistics, intraclass correlations and reliabilities.

	M	*SD*	ICC	ω_w	ω_b
Morning strengths use	5.07	.94	.54	.91	.86
Afternoon strengths use	5.01	.99	.61	.88	.87
Morning PsyCap	4.98	.73	.51	.98	.82
Afternoon PsyCap	4.97	.75	.57	.97	.81
Morning work engagement	4.06	1.11	.56	.86	.81
Afternoon work engagement	3.99	1.09	.58	.85	.80

Abbreviations: ICC, intraclass correlation coefficient; PsyCap, psychological capital; ω_b, between-person reliability; ω_w, within-person reliability.

model with a MCFA. Following previous daily diary studies with more than one measurement point per day, I performed the MCFA separately for the midday and afternoon measurements (e.g. Moore et al., 2024; Wehrt et al., 2022). A three-factor model consisting of a second-order factor for daily PsyCap with four first-order factors, one factor for strengths use and one factor for work engagement demonstrated good fit (midday: $\chi^2 = 319.25$ (155), scaling correction factor = 1.91, CFI = .97, TLI = .96, RMSEA = .03, SRMR-within = .03, SRMR-between = .09; afternoon: $\chi^2 = 313.23$ (155), scaling correction factor = 1.27, CFI = .97, TLI = .96, RMSEA = .03, SRMR-within = .03, SRMR-between = .08). I compared the fit of this model to a more parsimonious model with PsyCap as a first-order factor, one for strengths use and one for work engagement. The test revealed that the second-order factor model fitted the data significantly better than the first-order factor model (morning: $\Delta\chi^2 = 166.00$ (16), $p < .001$; afternoon: $\Delta\chi^2 = 108.33$ (16), $p < .001$). Furthermore, this model fitted the data better than a one-factor model with all items loading on one factor (morning: $\Delta\chi^2 = 1606.41$ (24), $p < .001$; afternoon: $\Delta\chi^2 = 1025.47$ (24), $p < .001$).

Hypotheses testing

Model convergence evaluation revealed PSR values near 1 (PSRs between 1.010 and 1.042), no significant autocorrelations in parameter autocorrelation plots, and good mixing from the models' trace plots.

Table 3 summarizes the estimates and 95% credible intervals (CI) of the same-day model. At the within-person level, all autoregressive effects were positive and significant, demonstrating stability within each construct across the workday. Morning PsyCap significantly predicted afternoon PsyCap ($b = .230$, 95% CI [.161, .301]), morning work engagement predicted afternoon work engagement ($b = .152$, 95% CI [.096, .208]), and morning strengths use predicted afternoon strengths use ($b = .279$, 95% CI [.215, .344]).

The direct pathway effects within the same day were all significant and positive. Morning work engagement predicted morning strengths use ($b = .459$, 95% CI [.388, .535]), indicating that on days when employees felt more engaged than usual in the morning, they were significantly more likely to use their strengths during the morning hours. Morning strengths use, in turn, significantly predicted afternoon PsyCap ($b = .123$, 95% CI [.042, .203]), showing that when employees used their strengths more than usual in the morning, they experienced higher PsyCap in the afternoon. Finally, afternoon PsyCap significantly predicted afternoon work engagement ($b = .709$, 95% CI [.594, .825]), demonstrating that higher PsyCap in the afternoon was associated with substantially higher afternoon engagement. Furthermore, in line with the first hypothesis, the same-day model revealed a positive, significant indirect effect from morning work engagement to afternoon work engagement through morning strengths use and afternoon PsyCap ($b = .039$, 95% CI [.013, .069]). This indicates that on days when employees experienced higher morning engagement, they were more likely to use their strengths, which enhanced their PsyCap, ultimately leading to higher afternoon engagement.

Table 4 summarizes the estimates and 95% credible intervals (CI) of the next-day model. The within-person autoregressive effects within the same day remained similar to the same-day model, with

TABLE 2 Correlations between study variables.

		1	2	3	4	5	6	7	8	9	10	11	12
1	Morning work engagement		.99***	.93***	.93***	.63***	.62***	.52***	.51***	.60***	.59***	.51***	.52***
2	Morning work engagement lagged	−.08*		.92***	.92***	.62***	.62***	.51***	.51***	.59***	.60***	.51***	.51***
3	Afternoon work engagement	.37***	.02		.99***	.54***	.53***	.52***	.51***	.54***	.53***	.54***	.54***
4	Afternoon work engagement lagged	.13***	.36***	.10**		.54***	.54***	.52***	.52***	.54***	.54***	.54***	.55***
5	Morning strengths use	.62***	−.07*	.27***	.03		.99***	.92***	.92***	.79***	.77***	.76***	.77***
6	Morning strengths use lagged	−.05	.61***	.01	.26***	−.05		.92***	.91***	.79***	.79***	.76***	.77***
7	Afternoon strengths use	.21***	−.02	.57***	.01	.34***	.06		.99***	.70***	.68***	.77***	.77***
8	Afternoon strengths use lagged	.01	.22***	.05	.57***	.05	.34***	.02		.69***	.67***	.76***	.77***
9	Morning PsyCap	.64***	−.10**	.29***	.06	.61***	−.05	.24***	.05		.99***	.93***	.93***
10	Morning PsyCap lagged	−.13**	.65***	−.03	.29***	−.10**	.61***	.00	.24***	−.12**		.91***	.92***
11	Afternoon PsyCap	.32***	−.02	.60***	−.03	.36***	.03	.59***	−.06	.39***	−.02		.99***
12	Afternoon PsyCap lagged	.06	.32***	.04	.59***	.04	.37***	.02	.60***	.11**	.39***	−.02	

Note: Correlations below the diagonal refer to the within-person level ($n = 1871$); correlations above the diagonal refer to the between-person level ($N = 120$).

Abbreviation: PsyCap, psychological capital.

*$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 3 Estimates and 95% credible intervals for the same-day mediation model.

	Estimate	95% CI lower	95% CI upper
Autoregressive effects within			
Morning PsyCap t → Afternoon PsyCap t	**.230**	.161	.301
Morning work engagement t → Afternoon work engagement t	**.152**	.096	.208
Morning strengths use t → Afternoon strengths use t	**.279**	.215	.344
Direct paths within			
Morning work engagement t → Morning strengths use t	**.459**	.388	.535
Morning strengths use t → Afternoon PsyCap t	**.123**	.042	.203
Afternoon PsyCap t → Afternoon work engagement t	**.709**	.594	.825
Indirect path within			
Morning work engagement t → Morning strengths use t → Afternoon PsyCap t → Afternoon work engagement t	**.039**	.013	.069
Autoregressive effects between			
Morning PsyCap t → Afternoon PsyCap t	**.943**	.829	1.039
Morning work engagement t → Afternoon work engagement t	**.995**	.953	1.040
Morning strengths use t → Afternoon strengths use t	**1.038**	.997	1.085
Direct paths between			
Morning work engagement t → Morning strengths use t	**.494**	.357	.631
Morning strengths use t → Afternoon PsyCap t	**.103**	.032	.192
Afternoon PsyCap t → Afternoon work engagement t	.001	−.088	.083
Indirect path between			
Morning work engagement t → Morning strengths use t → Afternoon PsyCap t → Afternoon work engagement t	.000	−.006	.005

Note: In bolded values, the 95% credible interval (95% CI) does not contain zero.

Abbreviation: PsyCap, psychological capital.

significant positive effects for all constructs (PsyCap: $b = .215$, 95% CI [.148, .284]; work engagement: $b = .148$, 95% CI [.091, .204]; strengths use: $b = .289$, 95% CI [.224, .355]). However, the cross-day autoregressive effects did not reach significance, neither for the morning measurements (PsyCap: $b = -.044$, 95% CI [−.126, .040]; work engagement: $b = -.023$, 95% CI [−.098, .046]; strengths use: $b = .015$, 95% CI [−.033, .072]) nor the afternoon measurements (PsyCap: $b = -.032$, 95% CI [−.106, .043]; work engagement: $b = .034$, 95% CI [−.009, .090]; strengths use: $b = .009$, 95% CI [−.042, .064]).

The cross-lagged direct effects at the within-person level revealed no significant effect from previous morning work engagement to next-day morning strengths use ($b = -.026$, 95% CI [−.077, .021]). However, the same-day relationships within the next-day model remained positive and significant: morning strengths use positively predicted afternoon PsyCap ($b = .156$, 95% CI [.080, .229]), and afternoon PsyCap positively predicted afternoon work engagement ($b = .717$, 95% CI [.608, .830]). Contrary to the second hypothesis, the next-day indirect within-person effect from previous afternoon work engagement to next afternoon work engagement via next-day strengths use and PsyCap was not significant (indirect effect = −.003, 95% CI [−.010, .002], see Table 4). This near-zero effect indicates that the positive mediation pathway observed within days neither carries over to the next day nor reverses. Figure 1 displays the results at the within-person level for both the same-day and the next-day model.

Additional between-person analyses

While the theoretical focus was on daily fluctuations within individuals, I also explored between-person relationships to examine whether employees who consistently differ from others in their average levels

TABLE 4 Estimates and 95% credible intervals for the next-day mediation model.

	Estimate	95% CI lower	95% CI upper
Autoregressive effects within			
Morning PsyCap t → Afternoon PsyCap t	**.215**	.148	.284
Morning work engagement t → Afternoon work engagement t	**.148**	.091	.204
Morning strengths use t → Afternoon strengths use t	**.289**	.224	.355
Morning PsyCap t − 1 → Morning PsyCap t	−.044	−.126	.040
Morning work engagement t − 1 → Morning work engagement t	−.023	−.098	.046
Morning strengths use t − 1 → Morning strengths use t	.015	−.033	.072
Afternoon PsyCap t − 1 → Afternoon PsyCap t	−.032	−.106	.043
Afternoon work engagement t − 1 → Afternoon work engagement t	.034	−.009	.090
Afternoon strengths use t − 1 → Afternoon strengths use t	.009	−.042	.064
Direct paths within			
Morning work engagement t − 1 → Morning strengths use t	−.026	−.077	.021
Morning strengths use t → Afternoon PsyCap t	**.156**	.080	.229
Afternoon PsyCap t → Afternoon work engagement t	**.717**	.608	.830
Indirect path within			
Morning work engagement t − 1 → Morning strengths use t → Afternoon PsyCap t → Afternoon work engagement t	−.003	−.010	.002
Autoregressive effects between			
Morning PsyCap t → Afternoon PsyCap t	.165	−.036	.346
Morning work engagement t → Afternoon work engagement t	**.272**	.157	.376
Morning strengths use t → Afternoon strengths use t	.208	−.010	.363
Morning PsyCap t − 1 → Morning PsyCap t	**1.025**	.950	1.116
Morning work engagement t − 1 → Morning work engagement t	**1.004**	.944	1.080
Morning strengths use t − 1 → Morning strengths use t	**.977**	.897	1.054
Afternoon PsyCap t − 1 → Afternoon PsyCap t	**.852**	.694	1.060
Afternoon work engagement t − 1 → Afternoon work engagement t	**.763**	.655	.878
Afternoon strengths use t − 1 → Afternoon strengths use t	**.810**	.665	1.016
Direct paths between			
Morning work engagement t → Morning strengths use t	.045	−.022	.102
Morning strengths use t → Afternoon PsyCap t	.000	−.067	.073
Afternoon PsyCap t → Afternoon work engagement t	−.014	−.100	.070
Indirect path between			
Morning work engagement t − 1 → Morning strengths use t → Afternoon PsyCap t → Afternoon work engagement t	.000	.000	.000

Note: In bolded values, the 95% credible interval (95% CI) does not contain zero.

Abbreviation: PsyCap, psychological capital.

of work engagement, PsyCap and strengths use show corresponding differences in gain cycles. At the between-person level of the same-day model, the autoregressive effects showed high stability within the same day (all $b > .94$, CIs excluding 0, see Table 3), indicating that individuals who had higher levels of

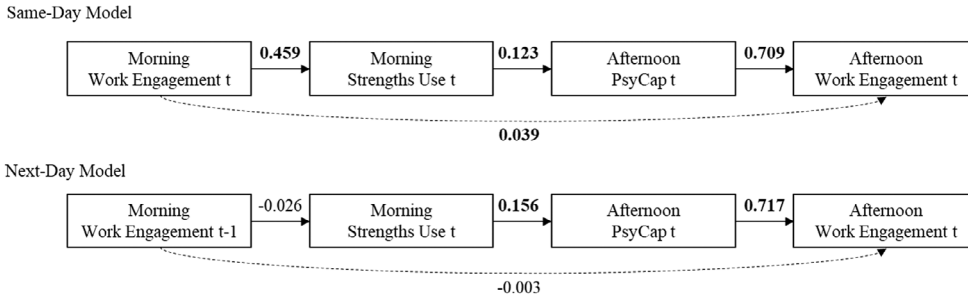

FIGURE 1 Path diagrams showing within-person mediation effects of the hypothesized same-day and next-day models. Values represent unstandardized regression coefficients. In bolded values, the 95% credible interval (95% CI) does not contain zero. Solid arrows indicate direct effects within the mediation pathway. Dashed curved arrows represent indirect effects from morning work engagement to afternoon work engagement through the sequential mediation of strengths use and psychological capital (PsyCap).

these constructs compared to others in the morning also had higher levels than others in the afternoon. The direct effects of morning work engagement on morning strengths use ($b = .494$, 95% CI [.357, .631]) and of morning strengths use on afternoon PsyCap ($b = .103$, 95% CI [.032, .192]) were significant, whereas afternoon PsyCap did not predict afternoon work engagement at the between-person level ($b = .001$, 95% CI [−.088, .083]). The indirect mediation pathway was not significant ($b = .000$, 95% CI [−.006, .005]), suggesting that the mediation process operates primarily at the within-person level.

At the between-person level of the next-day model, the within-day autoregressive effects showed mixed patterns: morning to afternoon work engagement was significant ($b = .272$, 95% CI [.157, .376]), while morning to afternoon PsyCap ($b = .165$, 95% CI [−.036, .346]) and morning to afternoon strengths use ($b = .208$, 95% CI [−.010, .363]) were not significant as their confidence intervals included zero. Cross-day autoregressive effects showed significant stability (morning PsyCap: $b = 1.025$, 95% CI [.950, 1.116]; morning work engagement: $b = 1.004$, 95% CI [.944, 1.080]; morning strengths use: $b = .977$, 95% CI [.897, 1.054]; afternoon PsyCap: $b = .852$, 95% CI [.694, 1.060]; afternoon work engagement: $b = .763$, 95% CI [.655, .878]; afternoon strengths use: $b = .810$, 95% CI [.665, 1.016]). Regarding the direct pathways, some between-person effects differed from the same-day model: previous morning work engagement to next-day morning strengths use was non-significant ($b = .045$, 95% CI [−.022, .102]), morning strengths use to afternoon PsyCap was non-significant ($b = .000$, 95% CI [−.067, .073]), and afternoon PsyCap to afternoon work engagement was also non-significant ($b = -.014$, 95% CI [−.100, .070]). Consequently, the between-person indirect mediation pathway was not significant ($b = .000$, 95% CI [.000, .000]).

It should be noted that some between-person effects varied in significance across the two models (e.g. morning strengths use to afternoon PsyCap was significant in the same-day model but not in the next-day model). This variation likely reflects differences in sample composition and model complexity, as the next-day model necessarily uses a smaller subset of observations requiring consecutive day data, which may affect the precision of between-person parameter estimates.

DISCUSSION

This study investigated gain cycles proposed by JD-R and COR theory to test the idea of feedback loops from work engagement via strengths use and PsyCap back to work engagement within and across days. In line with the same-day hypothesis, analyses of within-day relationships revealed a positive mediated gain cycle between these variables. On days when employees experienced higher morning engagement than usual, they were more likely to use their strengths during the morning hours, which enhanced their afternoon PsyCap, ultimately leading to higher afternoon work engagement. However, the pattern was different for the next-day hypothesis. Contrary to the hypothesized negative mediated pathway across

days, results revealed no significant indirect effect from previous day work engagement on this day's work engagement via strengths use and PsyCap. These findings suggest that on days when employees are more engaged, they also use more of their strengths and experience higher PsyCap, ultimately fuelling their work engagement. However, this does not necessarily transfer to the next day, as this positive cycle appears to reset each morning, with the mediated feedback loop operating primarily as a same-day phenomenon. These findings provide several important insights into the nature of gain cycles in organizational settings, contributing to both JD-R and COR theories.

Theoretical implications

First, this study advances JD-R and COR theory by refining our understanding of *how* gain cycles operate. It empirically validates a complete, mediated gain cycle at the daily, within-person level. While JD-R theory posits that work engagement can fuel a self-reinforcing loop through proactive behaviours and resource generation (Bakker et al., 2023), empirical tests have often focused on fragmented, bivariate links rather than the entire feedback mechanism. By modelling a sequential mediation pathway, the findings demonstrate that this gain cycle operates robustly within a single workday. Therefore, this study clarifies *how* positive states are actively maintained throughout the day, shifting the perspective from a static interplay of variables to a dynamic, self-sustaining process. Specifically, higher morning engagement predicted greater strengths use, which in turn fostered higher afternoon PsyCap, ultimately leading back to increased afternoon engagement. The results align with previous within-day diary studies on certain components of the gain cycle (e.g. Kühnel et al., 2012; Simbula, 2010; Xanthopoulou et al., 2009, 2012) and, beyond these mainly bivariate relationships, provide direct, fine-grained evidence for the behavioural (strengths use) and psychological (PsyCap) mechanisms that underpin the motivational process of JD-R theory (Bakker et al., 2023).

Second, extending beyond validation of established theoretical predictions, this study refines our understanding of *when* gain cycles operate. While the positive feedback loop was strong within the same day, it did not carry over to the next. Contrary to the second hypothesis of a negative next-day mediation, the indirect effect across days was non-significant. This suggests that the positive, self-reinforcing dynamic is primarily a *same-day phenomenon* that appears to reset overnight. This finding challenges the simple assumption that resource gains accumulate linearly across days. Instead, it aligns with theories of homeostasis and recovery (Sonnentag et al., 2022), suggesting that natural regulatory processes restore an equilibrium. Rather than leading to resource depletion or a 'hangover effect', a day of high engagement seems to be a self-contained event. For JD-R and COR theories, this implies that while gain cycles are powerful, their sustainability may depend on this daily reset mechanism, which prevents both detrimental spirals of over-investment and unrealistic, continuous upward spirals. This addresses calls for more nuanced temporal analyses (Bakker et al., 2023) by showing that the 'off' switch for these cycles is as important as the 'on' switch. The findings indicate that what is beneficial within a day might not necessarily translate to positive outcomes across days, pointing to potential limitations in how we conceptualize resource dynamics and advancing theoretical development in several important ways. Several mechanisms may contribute to explaining why gain cycles do not continue across days. First, sleep and recovery processes during nonwork hours may normalize psychological and physiological activation levels. According to the effort-recovery model (Meijman & Mulder, 1998), the absence of work demands during sleep allows strain symptoms to return to prestressor levels, potentially interrupting the momentum of within-day resource dynamics (Sonnentag et al., 2022). This biological recovery process may restore employees to a relatively consistent baseline each morning, regardless of the previous day's engagement levels. Second, work-nonwork boundaries create natural discontinuities in psychological processes. The transition between work and nonwork domains involves shifts in attention, physical environment and social context that may disrupt the continuity of work-related resource states (Sonnentag et al., 2022). Evening activities, family responsibilities and leisure pursuits redirect cognitive and emotional resources away from work-related concerns, potentially

limiting the connection between one day's experiences and the next day's initial states. Third, the non-significant cross-day effects may reflect adaptive self-regulation mechanisms that maintain sustainable functioning over time. Rather than allowing continuous escalation or decline, overnight processes may serve a homeostatic function that prevents both excessive resource investment and prolonged depletion, ensuring employees can maintain consistent performance levels across multiple days (Hobfoll et al., 2018; Quinn et al., 2012).

This contribution helps resolve some contradictions in previous research, where some studies found positive effects of resource accumulation while others identified potential drawbacks and diverging patterns of same-day and next-day relationships (Fredrickson et al., 2020; Kuonath et al., 2017; Shimazu et al., 2016; Vahle-Hinz et al., 2019; Xanthopoulou et al., 2009). It indicates that different processes operate at different temporal scales, with immediate resource investment showing different effects than sustained high activation. This raises the question if gain cycles within and across days even out to a 'net zero' equation over time (ten Brummelhuis et al., 2025), that is if long-term well-being profits more from maintaining consistent moderate levels of gain cycles or by alternating between periods of high engagement and recovery. To address these questions, future research would benefit from combining daily diary methods with longitudinal designs (Dormann & Griffin, 2015). Such multi-wave designs could help capture both the immediate dynamics of resource fluctuations and their cumulative effects over time, providing a more complete picture of how resource cycles unfold across different temporal scales.

In sum, the present findings contribute to both JD-R and COR theories by providing a more nuanced understanding of gain cycles and their boundaries. Regarding the boundaries of gain cycles, the findings challenge the implicit assumption that gain cycles operate uniformly across different resources and behaviours. The asymmetric temporal patterns observed for strengths use versus psychological resources suggest that theories could more explicitly address how different components of gain cycles may follow distinct temporal patterns. This could involve differentiating between behavioural strategies and psychological states in terms of their recovery demands and sustainability across time. While the fundamental propositions about resource investment leading to gains remain supported, the theories could be extended to specify that these relationships may operate differently across various time frames. These suggested refinements aim to enhance rather than alter existing theoretical frameworks, acknowledging the robust empirical support for many of their core propositions while adding nuance to better capture the temporal complexity of resource dynamics. Future research examining these proposed refinements across different contexts and time frames would be valuable for further theoretical development.

Limitations and future research

Several limitations of this study should be noted. First, while the incorporated daily diary approach captured within-person fluctuations, the two-week timeframe is not sufficient to observe potential long-term effects. Importantly, this temporal limitation prevents conclusions about whether the observed daily reset patterns might accumulate into longer-term gain or loss spirals. I deliberately focused on daily gain cycles rather than spirals to first establish whether the fundamental feedback loop operates as theorized within controlled temporal boundaries. Following Lindsley et al. (1995) and Salanova et al. (2010), gain cycles refer to single feedback loops or short-term reciprocal relationships that do not necessarily lead to continuous upward development, whereas gain spirals describe continuous upward development where reciprocal relationships between constructs lead to progressive reinforcement over multiple time points with increasing intensity. This study demonstrates robust gain cycles within one workday that can be understood as building blocks or sub-processes within potentially broader gain spirals (Salanova et al., 2010). However, the design cannot capture the second characteristic (self-reinforcing mechanisms that lead to continuous upward development over extended periods).

Based on my findings, the relationship between daily cycles and potential spirals is likely complex. While I observed positive gain cycles within days, the non-significant cross-day mediation suggests that cycles reset rather than accumulate. This reset pattern might actually serve a protective function against both gain and loss spirals. If daily cycles continuously accumulated without reset, they could potentially lead to unsustainable upward spirals that might eventually result in resource depletion or burnout. Similarly, the reset mechanism may prevent downward spirals by providing daily opportunities for recovery and renewed resource investment. However, I would expect that the overall pattern of daily cycles over extended periods could still influence spiral development. If employees consistently experience positive daily gain cycles with effective overnight reset, this might gradually build confidence and resource reserves, potentially leading to gradual gain spirals. Conversely, if employees frequently experience disrupted cycles, failed reset mechanisms, or consistently low engagement, this could accumulate into loss spirals over time. The key difference is that spirals would emerge from the cumulative pattern of multiple cycles rather than from direct carry-over effects between consecutive days.

Second, methodological considerations related to potential ceiling effects and regression to the mean should be noted. The sample indicated somewhat high mean values of around four to five on a scale from one to seven. Therefore, ceiling effects might have influenced the findings through regression to the mean, potentially restricting the range of possible values in the upper range of the scales. Additionally, the non-significant cross-day mediation could potentially be explained by natural regression to personal means rather than theoretically meaningful reset mechanisms. When employees experience higher engagement than their personal average on one day, they may naturally return to their typical levels the next day. However, several indicators suggest these statistical artefacts are unlikely to fully account for the findings. Despite the relatively high baseline values, the analyses revealed substantial within-person variance as indicated by ICC values. This demonstrates that participants used a meaningful range of the scale even at higher baseline levels. Additionally, if ceiling effects or regression to the mean were driving the results, one would expect to see attenuated relationships within days as well. The robust same-day positive mediated effects alongside non-significant cross-day effects suggest that different processes operate at different temporal scales rather than simple statistical artefacts. Nevertheless, future research could employ experimental manipulations or designs with greater variance in baseline levels to more definitively rule out regression to the mean explanations.

Third, the temporal measurement design presents limitations for testing sequential mediation pathways. While employing two measurement points per day was a crucial feature of this study that allowed capturing the significant within-day dynamics of these constructs, the mediation pathway required measuring some variables simultaneously (morning engagement with morning strengths use; afternoon PsyCap with afternoon engagement). This simultaneous measurement may inflate correlations through common method bias, as variables measured at the same time point tend to correlate more strongly due to shared measurement occasions, mood effects, or response patterns (Podsakoff et al., 2012). This methodological artefact may partly explain why the immediate, synchronous links between different constructs appeared stronger in the data than the carry-over effect of a single construct over a few hours. However, the observation that an employee's state can change significantly within hours confirms the necessity of using intensive longitudinal designs with multiple measurements per day. Ideally, sequential mediation pathways that theoretically unfold through four distinct stages should be measured at four separate time points to ensure proper temporal separation and reduce method bias (Maxwell & Cole, 2007). Such a design would not only minimize common method bias but also allow for a more precise mapping of the temporal unfolding of the gain cycle, providing a clearer picture of the speed and sequence of these dynamic processes.

Fourth, the focus on three specific constructs (PsyCap, strengths use and work engagement) necessarily limited the scope of the investigation. Other important resources (e.g. job resources such as social support), behaviours (e.g. job crafting, capitalizing) and well-being indicators (e.g. physical health) might show different patterns of relationships. Future research should examine whether similar patterns emerge with other variables relevant to gain cycles.

Practical implications

The patterns of relationships identified in this study suggest several practical implications for both employees and organizations. While traditional approaches often emphasize maximizing engagement, the findings on how and when gain cycles operate call for a more nuanced approach.

For individual employees, the findings offer strategies for sustaining positive work experiences within workdays and highlight the importance of proactively managing daily experiences. The results show that work engagement is not just an outcome, but an active process that can be sustained throughout the day. Specifically, the path from engagement to strengths use emerged as a powerful starting point for the positive cycle. Employees can therefore see the deliberate application of their talents as a direct investment in their own PsyCap and energy for the rest of the day. Practically, employees might develop personal strategies for morning engagement activation, such as identifying meaningful aspects of upcoming work, connecting with personal strengths or establishing energizing routines. The 'daily reset' implies that a less productive day is not a sign of failure or a predictor of a downward spiral. This knowledge can reduce pressure and allow for a more resilient and sustainable approach to long-term performance.

For team leaders and organizations, that play an important role in shaping proactive behaviours, resources and engagement (Bakker et al., 2023), understanding this mediated process suggests targeting the pathways rather than the outcomes, that is focusing on creating conditions that facilitate strengths use and PsyCap development. This includes helping employees identify their unique strengths, providing opportunities to apply these strengths in meaningful work, and recognizing how strengths application builds confidence and psychological resources. Managers can design work assignments that allow employees to leverage their strengths, particularly during periods when they show natural engagement. The findings suggest this is a key mechanism to translate morning engagement into positive states in the afternoon. However, the temporal findings also suggest that performance expectations should acknowledge natural daily variations as healthy rather than problematic. Organizations might implement work policies that support natural activation cycles, such as flexible scheduling or designated low-intensity periods. Well-being initiatives could focus on teaching employees how to manage their resources across different time frames, moving beyond simple engagement maximization. Success in implementing these practices likely depends on creating organizational cultures that recognize and value sustainable resource management over short-term maximization of engagement.

CONCLUSION

This study contributes to the understanding of gain cycles in organizational settings by highlighting how work engagement fuels itself through mediated pathways and revealing the temporal boundaries within which these cycles operate. While same-day analyses confirmed the presence of mediated gain cycles, where work engagement enhances itself through sequential pathways of strengths use and PsyCap building, next-day findings revealed that these positive cycles reset overnight rather than accumulating across days, challenging assumptions about linear resource accumulation over time. These findings refine JD-R and COR theories in two important ways. First, they provide empirical validation of complete feedback loops rather than fragmented bivariate relationships, demonstrating the specific mechanisms through which engaged employees actively sustain their positive states. Second, they reveal that gain cycles operate within distinct temporal boundaries, with natural daily reset mechanisms that may serve protective functions for sustainable functioning. Future research should explore how daily gain cycles relate to longer-term spiral development, investigate the mechanisms underlying daily reset patterns and examine whether similar mediated pathways emerge with other resources and proactive behaviours. Overall, this study underscores the importance of understanding both how gain cycles operate through specific pathways and when they are most effective.

AUTHOR CONTRIBUTIONS

Rebekka Kuhlmann: Conceptualization; investigation; writing – original draft; methodology; validation; visualization; writing – review and editing; software; formal analysis; project administration; data curation.

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CONFLICT OF INTEREST STATEMENT

The author declares no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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