Management Research F

Exploring the Role of Workplace Meetings in Modern Work Arrangements

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Exploring the Role of Workplace Meetings in Modern Work Arrangements

Abstract

Purpose: We aim to better understand the relationship between the number of meetings an employee participates in (i.e. meeting load) and both employee engagement and burnout measures, across three work arrangements common today: remote-only, in-person-only, and hybrid.

Methodology: We draw from the Conservation of Resources theory to hypothesize the relationships between meeting load and both work outcomes. We conduct a structural equation model based on panel survey data from 1,137 respondents to analyze our hypotheses.

Findings: We find that relative to the hybrid work arrangement, engagement is lower in the in-person only arrangement and burnout is higher in the remote-only arrangement. Also, meeting load is positively related to burnout. As to the interaction effects, meeting load in the on-site work arrangement situation relates positively to both engagement and burnout.

Practical implications: Our findings provide valuable practical insight as organizations are debating what work arrangement to offer and how to best organize employees for coordination and communication in an increasingly complex and distributed working environment.

Originality: The COVID-19 pandemic created a seismic shift in the way people work: it released an avalanche of workplace meetings; it normalized hybrid work arrangements; and it heightened attention on work outcomes. This study lies at the intersection of these three important trends.

Keywords: Meeting load; Hybrid work; Employee engagement; Burnout; Conservation of resources theory

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1. Introduction

Ever since attempts were first made to understand how much time employees spend in workplace meetings (Rogelberg *et al.*, 2007), the number of meetings (or meeting load) has consistently shown an upward trend.[1] The reason meetings are used so much is because they are flexible tools for accomplishing collaborative tasks (Allen, Beck, *et al.*, 2014). In addition to serving important organizational functions, a meeting has been described as "an event that mirrors and impacts the broader workplace system" (Johnson and Mabry, 2022, p. 381) and to "have a profound impact on individual workplace attitudes" (Lehmann-Willenbrock *et al.*, 2016, p. 1295). In this regard, prior findings are seemingly contradictory, as (virtual) meeting participation relates to work outcomes that are both positive (e.g., employee engagement or control over work) as well as negative (e.g., fatigue or burnout) (Lehmann-Willenbrock *et al.*, 2016; Romney *et al.*, 2024; Standaert *et al.*, 2023).

The attention to positive and negative work outcomes has intensified recently, not only due to the increase in meetings since the COVID-19 pandemic (Allen and Lehmann-Willenbrock, 2023) but also because of changes in workplace arrangements (Newman *et al.*, 2022). Until recently, the default work arrangement for most employees was to work full time from the office, but the pandemic changed this paradigm. Lockdown and social-distancing measures required a sudden and almost complete switch to remote work for most office workers, also referred to as work-from-home (WFH) (Reed and Allen, 2021). Moreover, while remote work is associated with positive outcomes regarding well-being[2] when it is voluntary (Allen *et al.*, 2015), it was forced upon employees during the pandemic (Becker *et al.*, 2022). As a result,

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[1] For more information, see https://blog.lucidmeetings.com/blog/how-many-meetings-are-there-per-day-in-2022
[2] Well-being refers to an "optimal psychological functioning and experience" (Ryan and Deci, 2001, p. 142).

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levels of stress and burnout rose (Shockley, Clark, *et al.*, 2021), and employees quit their jobs

with greater frequency than ever before, referred to as the "great resignation."[3]

With well-being considerations becoming key in attracting and retaining employees

(Bennett *et al.*, 2021), the work arrangement is an important consideration in the "new world of

work" (Zamani and Spanaki, 2023). The pandemic allowed organizations and employees to

experience the advantages of remote work, primarily in terms of time and cost savings related to

commuting for employees and office space costs for organizations. Moreover, several studies

showed that employees were as productive in WFH arrangements as they were in the in-office

arrangement before the pandemic (Microsoft Research, 2021). Nevertheless, issues that have

been associated with remote work include employee feelings of loneliness (Becker *et al.*, 2022)

and lower levels of social connectedness and group belonging (Blanchard, 2021).

In the post-pandemic age, the majority of organizations considers hybrid work to be the

"new normal" (Newman *et al.*, 2022), the goal of which is to obtain the best of both worlds:

providing employees the opportunity to do individual, focused work while remote and participate

in sensory-rich exchanges and collaborations with colleagues while in the office (Bloom *et al.*,

2022). Recent research also indicates that hybrid work is the most prominent work arrangement

among employees that are offered flexibility, with 43% choosing to work hybrid, versus 35%

fully remote and 24% full-time from the office.[4] Given these important shifts, we set out to

address the research question: *"How do workplace meetings, work arrangements, and their*

interactions relate to employee engagement and burnout?" We draw from the Conservation of

Resources (COR) theory (Hobfoll, 1989, 2001) to develop our hypotheses. To test our

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[3] In the US alone, 47 million people quit their job in 2021 (Source: https://www.cnbc.com/2022/06/21/beyonce-break-my-soul-is-an-ode-to-the-great-resignation.html).

[4] Source: https://www.pewresearch.org/fact-tank/2023/03/30/about-a-third-of-us-workers-who-can-work-from-home-do-so-all-the-time/

hypotheses, we run a structural equation model based on data provided by 1,137 panel survey respondents.

This study helps to unravel seemingly contradictory relationships that abound in the new world of work (Kokshagina and Schneider, 2022). Indeed, prior research relating meeting load to both positive and negative work outcomes has separately examined meetings in different modalities (i.e. face-to-face and virtual meetings), but has not considered potential distinct roles of meetings across work arrangements. We also contribute to the literature on work arrangements, by highlighting the implications of meeting participation beyond the meeting context itself (Lehmann-Willenbrock *et al.*, 2016). This is also the first study, to our best knowledge, to compare work outcomes across these three work arrangements. As such, we contribute to the larger questions around the lasting implications of the pandemic in terms of productivity and well-being (Becker *et al.*, 2022). A theoretical contribution of this paper relates to further validation of the notion that resource-based theories can be used to explain contradictory findings related to (virtual) meeting load (Allen *et al.*, 2012; Standaert *et al.*, 2023). Finally, our findings are also of importance to managers and leaders in organizations, as they are seeking guidance to successfully navigate human resource mamagement in a world of work that is at a turning point.

2. Theory and hypotheses development

In this section, we develop a number of hypotheses drawing upon the Conservation of Resources (COR) theory (Hobfoll, 1989, 2001). At the basis of this theory lies the argument that people are motivated to retain, protect, and grow their resources (Hobfoll, 1989). Resources are conceptualized broadly in the theory, namely as "anything perceived by the individual to help attain his or her goals" (Halbesleben *et al.*, 2014, p. 1338). Resources can include a physical or

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digital object, a condition, a personal characteristic or skill, time, energy, cognitive effort, emotional labor, status, or money (Halbesleben *et al.*, 2014; Hobfoll and Freedy, 1993). Furthermore, the theory considers the interaction of resources that exist at several levels: individual, group, organization, and society (Hobfoll, 2001). The attainment of goals then can also be expressed in terms of obtaining (more) valued resources.

Central to COR theory is the notion that resource gains are associated with positive outcomes (Hobfoll, 1989), such as improved employee engagement, job performance, and overall employee well-being (Lee *et al.*, 2020; Wright and Cropanzano, 1998). In contrast, the threat or actual loss of resources, a lower-than-expected return on resource investment, and the perception of having a shortage of valuable resources are associated with negative outcomes, such as stress or burnout (Hobfoll, 2001; Hobfoll and Freedy, 1993). Moreover, the theory argues that the avoidance of loss is primary to obtaining gains, referred to as the "primacy of loss" (Hobfoll and Freedy, 1993).

In the context of meetings and work arrangements, the abstract notion of resources to be leveraged can be interpreted as time, information, energy, or relationships and the desired outputs (i.e., goals) are primarily functional (e.g., making decisions, solving a problem) or social (e.g., getting buy-in, gaining status), but may in the longer run also involve for instance getting a raise or making promotion.

2.1 Meeting load and work outcomes

Our first two hypotheses relate meeting load to employee engagement and burnout. The Meeting Science literature shows that meeting processes relate to both positive and negative well-being outcomes (Allen *et al.*, 2016; Lehmann-Willenbrock *et al.*, 2016; Luong and Rogelberg, 2005;

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O'Neill and Allen, 2012), hence they have the potential to both supply resources and drain them (Allen *et al.*, 2012). Before the COVID-19 pandemic, studies did not consider meeting modality, working under the assumption that the large majority of meetings were taking place face-to-face and that modality could therefore be ignored. Since then, an important debate arose on the relationship between virtual meeting participation and negative well-being outcomes (e.g., fatigue), as employees experienced increased levels of exhaustion at the end of a working day filled with (back-to-back) virtual meetings (Bennett *et al.*, 2021; Fosslien and West, 2020). However, Standaert et al. (2023) found that virtual meeting load was also related to positive well-being (i.e. influence on work).

Prior work on meeting load pointed out that the number of meetings plays a bigger role than the total number of hours spent in meetings (Luong and Rogelberg, 2005; Standaert *et al.*, 2023). Considering the same amount of time spent in a single meeting versus multiple ones, it becomes clear that more resources are likely to be spent in multiple meetings (e.g., cognitive resources because of switching subjects), but the potential for resource gain is also larger in multiple meetings (e.g., develop relationships with different colleagues). The two work outcomes that we study in this paper (i.e. employee engagement and burnout) "are considered pertinent in the context of occupational stress management studies" (Srivastava *et al.*, 2015, p. 356).

Employee engagement refers to "a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption" (Schaufeli *et al.*, 2002, p. 74). Such engagement is associated with high levels of physical, cognitive, and emotional resources that result in employee commitment and performance (Schaufeli *et al.*, 2003). Prior research has identified meetings as a potential powerful vehicle for increasing engagement, because of the access to resources in the form of information, knowledge, and relationships, which empower

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employees to feel cognitively capable to engage in their role (Allen *et al.*, 2012, 2016). Meetings

can also be crucial for identifying and reducing work-related difficulties and uncertainties,

helping employees obtain their work-related goals (Scott *et al.*, 2015). Moreover, meetings are

an important place for participating in teamwork and for voicing opinions, which are directly

related to the development of employee engagement (Allen and Rogelberg, 2013).

Meetings also have a sense-making, social, and symbolic role (Schwartzman, 1989; Scott

et al., 2015). They are an important component of the general workplace experience, as they

display organizational culture and values (Lehmann-Willenbrock *et al.*, 2016). On a related note,

employees can find meaning in the work they do through meetings, as it is a vehicle to obtain

recognition for work contributions, and they offer an arena to develop and enact status,

leadership, and authority (Standaert *et al.*, 2016). Finally, informal interaction before, during, or

after the meetings is where a lot of influencing and negotiating happens (Rogelberg *et al.*, 2007),

which may also help employees accomplish their work-related goals and improve engagement

(Allen and Rogelberg, 2013). Hence, important resources to support work activities can be

gained through both the functional and non-functional role of meetings (Adisa *et al.*, 2023). In

keeping with prior research and COR theory, we argue that meetings can be associated with a

resource gain that facilitates employee engagement, and formulate the hypothesis:

Hypothesis 1: Meeting load relates positively to employee engagement.

Turning now to the more negative potential outcomes of meeting load, burnout refers to feelings

of emotional exhaustion and depersonalization (Maslach and Jackson, 1981). COR theory is

widely used to explain burnout and stress, caused by (perceived) resource losses (Halbesleben,

2006; Hobfoll and Freedy, 1993). The main finite resource that is invariably consumed in

meetings is participants' time (Allen *et al.*, 2012). In addition, cognitive resources are used in meetings, which can vary depending on the participant's role in the meeting (Nyquist *et al.*, 2018). Furthermore, since meetings are scheduled at a specific time, they may interrupt ongoing work activities and lead to cognitive "switching costs" (Luong and Rogelberg, 2005; Rogelberg *et al.*, 2014), potentially competing for resources (time and energy) needed to accomplish other work-related tasks (Johnson and Mabry, 2022). As to emotional resources, when meetings are not properly prepared or conducted, they are associated with frustration and time needed to recover (Allen *et al.*, 2022). Also, prior research has attributed emotional exhaustion in meetings to emotional labor in the form of surface acting (Nyquist *et al.*, 2018). This involves "expressing inauthentic emotions in meetings" (Shanock *et al.*, 2013, p. 457), primarily interpreted as masking negative feelings and emotions by faking positivity (Johnson and Mabry, 2022). In summary, meetings have been denoted as "stressors" that may deplete rather than supply collective resources from participants (Scott *et al.*, 2015). In keeping with COR theory, we therefore hypothesize:

> *Hypothesis 2: Meeting load relates positively to burnout.*

2.2 Work arrangements and work outcomes

Prior work has highlighted the advantages and success factors of remote work (or tele-work or tele-commuting) (Allen *et al.*, 2015), indicating that the relationship between the extent of remote working and positive outcomes is not necessarily positive (Golden, 2006; Golden and Veiga, 2005). More specifically, there may be an optimum balance of remote work and working from the office (Biron and Van Veldhoven, 2016), which is today popularized using the concept of hybrid work (Newman *et al.*, 2022). However, many prior studies did not distinguish full-time

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remote from hybrid work (Allen *et al.*, 2015). As we do so in this study, we consider three common work arrangements of today: remote only, in person only, and hybrid. Since hybrid is a combination of remote and on-site, we decided it was most insightful to posit hypotheses relative to the hybrid setting. In fact, we will argue that the hybrid work arrangement offers the best of both worlds in terms of employee engagement and burnout.

As to employee engagement, we associate hybrid work with voluntary decisions about when to work, and from where, and therefore to offer the highest level of flexibility, autonomy, and control (Allen *et al.*, 2015; Biron and Van Veldhoven, 2016). These have been associated with resources such as energy, drive, enthusiasm, and positive job-related emotions (Adisa *et al.*, 2023). Because of a reciprocal relationship (Felstead and Henseke, 2017; Saks, 2006), hybrid work can also be associated with dedication and commitment to work, in terms of longer working hours, performing beyond expectations, and identifying with organizational values (Bloom *et al.*, 2022). Therefore, relative to the in-person-only arrangement, hybrid work can be expected to provide more resources that drive employee engagement (Golden, 2006). In contrast, remote-only work has been associated with less social interaction with colleagues, resulting in smaller or less strong social networks, which can be associated with reduced levels of knowledge transfer and information sharing (Allen *et al.*, 2015; Woo *et al.*, 2023). The latter are, in turn, important for facilitating work activities, especially those related to collaboration and innovation (Tong *et al.*, 2013). Also, communication in the remote-only setting is technology-mediated by definition (Allen *et al.*, 2015), which can be problematic for ambiguous situations that involve various opinions and emotions (Daft and Lengel, 1986), thus inhibiting engagement of remote employees (Golden *et al.*, 2008). Hence, the remote-only arrangement provides fewer resources

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that relate to positive emotions, behaviors, and thoughts towards the job, which are indicative of employee engagement (Schaufeli *et al.*, 2002). Accordingly, we formulate the hypotheses:

Hypothesis 3a: Relative to the hybrid work arrangement, employee engagement is lower for remote-only.

Hypothesis 3b: Relative to the hybrid work arrangement, employee engagement is lower for in-person-only.

As to burnout, we similarly argue that hybrid work is likely to be preferred over in-person-only, as well as over remote-only. Relative to in-person-only, hybrid can be argued as being better in terms of burnout because of the elements discussed above (i.e. autonomy, flexibility, control), as these factors are also associated with lower levels of stress (Allen *et al.*, 2015). Also, in-person only has been associated with cognitive and emotional resource depletion (Golden, 2006), because of workplace interruptions and distractions. Furthermore, both employees working remote-only or in-person are more likely to experience emotional exhaustion due to presenteeism, which refers to feeling pressure to be (virtually) present at work (Adisa *et al.*, 2023). Furthermore, work-to-family conflict is more likely in a remote-only arrangement than in a hybrid setting (Golden *et al.*, 2006) and competing resource demands are a source of stress (Hobfoll and Freedy, 1993). Moreover, the extent of remote work can be related to issues with psychological safety, including professional isolation, anxiety, and loneliness (Golden *et al.*, 2008). Finally, when working remotely, employees may not have an appropriate work environment, for instance in terms of internet connection (Golden *et al.*, 2008) or physical office space (Microsoft Research, 2021). All of these deplete (emotional) resources, hence we hypothesize:

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Hypothesis 4a: Relative to the hybrid work arrangement, burnout is higher for remote-only.

Hypothesis 4b: Relative to the hybrid work arrangement, burnout is higher for in-person-only.

2.3 Interaction between meeting load and work arrangements

As no prior research has compared the role of meetings across work arrangements, we will draw from the literature that considers various meeting modalities to develop our hypotheses on the interactions between the two. In so doing, one can safely make the assumption that in the remote-only setting, meetings are virtual in nature (Fuchs and Reichel, 2023). Also, employees in a hybrid work arrangement can be assumed to participate in a mix of virtual and face-to-face meetings (Reed and Allen, 2022). For employees that work in-person only, the share of face-to-face meetings is likely to be the highest, yet in the post-pandemic age a certain share of virtual meetings is likely to remain part of the mix (Standaert *et al.*, 2022). Hence, the assumption we make to develop our hypotheses is that the relative share of virtual (versus face-to-face) meetings decreases (versus increases) going from remote-only, to hybrid, to in-person-only work arrangements.[5]

As to employee engagement, we expect that the larger the share of face-to-face meetings is (assumed to be), the stronger the relationship between meeting load and employee engagement, through the resources that can be acquired. Indeed, face-to-face meetings are more effective for achieving meeting objectives and therefore work outcomes (Standaert *et al.*, 2022). Moreover, because of the high level of social presence in face-to-face meetings, participants are more likely to be absorbed in work-related interaction that comes with beneficial resource

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[5] Meetings can also be held in a hybrid modality, mixing in-person with virtual interaction, yet participants individually experience one main modality: virtual or face-to-face. Therefore, we do not specifically consider hybrid meetings in developing our assumptions underlying the hypotheses.

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generation (Standaert *et al.*, 2016). Instead, virtual meetings have been associated with a lack of

attention and interest for the discussion, and instead with more multi-tasking (Cao *et al.*, 2021;

Shockley, Gabriel, *et al.*, 2021), and such disengagement behavior depletes (cognitive)

resources. In addition to the functional superiority of face-to-face meetings, prior research also

indicates they are preferred over virtual interaction for resource acquisition related to sense-

making, establishing a common frame of reference, identifying with organizational culture, and

building group cohesion (Bergmann *et al.*, 2022; Blanchard and McBride, 2020; Golden *et al.*,

2008), which can all be positively related to employee engagement.

Based on the above assumption of how the mix of face-to-face and virtual meeting

modalities vary across work arrangements, the relationship between meeting load and employee

engagement is expected to be less strong for remote-only employees (having only virtual

meetings). The relationship is additionally expected to be stronger for in-person-only employees

(having relatively most face-to-face meetings) than for hybrid workers participating in meetings

with a balanced mix of modalities. Hence, we formulate the following hypotheses:

Hypothesis 5a: Working remote-only negatively moderates the relationship between

meeting load and employee engagement such that meetings impact the engagement of remote-

only working employees less strongly than for hybrid working employees.

Hypothesis 5b: Working in-person-only positively moderates the relationship between

meeting load and employee engagement such that meetings impact the engagement of in-person

working employees more strongly than for hybrid working employees.

As to burnout, we expect that the larger the share of virtual meetings is (assumed to be),

the stronger the relationship between meeting load and burnout, through resource depletion.

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Indeed, virtual meetings have been associated with cognitive load and the notion that non-verbal overload and self-view deplete mental resources (Bailenson, 2021; Riedl, 2022). Also, relative to face-to-face meetings, virtual meetings may involve "additional efforts and hassle, especially in terms of technological set-up" (Standaert *et al.*, 2023, p. 8), including issues due to internet bandwidth, technical equipment (e.g., camera or microphone), or software use (e.g., screen-sharing) (Bennett *et al.*, 2021; Hacker *et al.*, 2020). These challenges may be even worsened when alternating between video-conferencing platforms (Standaert *et al.*, 2023). Such stress-inducing issues are largely absent in face-to-face meetings (Microsoft Research, 2021).

Based on the above assumption of the mix of face-to-face and virtual modalities across work arrangements, the relationship between meeting load and burnout is expected to be stronger for remote-only employees (having only virtual meetings). The relationship is expected to be less strong for in-person-only employees (having relatively most face-to-face meetings) than for hybrid workers participating in meetings with a balanced mix of modalities. Hence, we formulate the following hypotheses:

Hypothesis 6a: Working remote-only positively moderates the relationship between meeting load and burnout such that meetings impact the experienced burnout of remote-only working employees more strongly than for hybrid working employees.
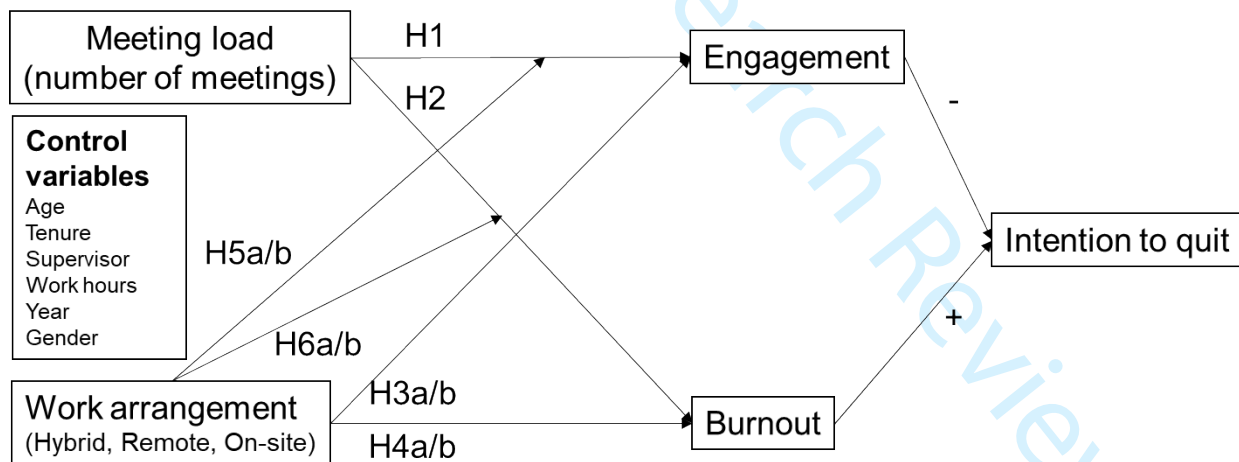
Hypothesis 6b: Working in-person-only negatively moderates the relationship between meeting load and burnout such that meetings impact the experienced burnout of in-person-only working employees less strongly than for hybrid working employees.

2.4 Work outcomes and intention to quit

Employee engagement and burnout are important work outcomes because they strongly relate to employees' intentions and behaviors (Maslach and Jackson, 1981; Saks, 2006). Similar to prior research, we relate resources (in our study related to meeting participation and work arrangement) to both employee engagement and burnout, and in turn relate these outcomes to intention to quit (Schaufeli and Bakker, 2004). Leveraging COR theory, prior research has established that employee engagement is associated with trustful, reciprocal relationships and therefore negatively relates to intention to quit (Halbesleben and Wheeler, 2008; Saks, 2006). Prior research has similarly shown that burnout positively relates to intention to quit (Lapointe *et al.*, 2011; Wright and Cropanzano, 1998). In this paper, we also seek to confirm these relationships.

The overall research model that displays our hypothesized relationships is shown in Figure I.

Figure I. Research model

3   Method

3.1 Data collection

The data was collected via Amazon Mechanical Turk (MTurk),[6] which has been used in similar

research before (Allen, Lehmann-Willenbrock, *et al.*, 2014; Blanchard *et al.*, 2022). We did not

impose any stratified sampling strategy. The survey was only available for people who had an

Amazon account, were in the United States, were 18 years of age or older, had a hit approval rate

of 99% or higher (meaning they are more likely to complete their MTurk tasks), and had

completed more than 500 tasks on MTurk before. Respondents were paid a small amount upon

completion of the survey. The data collection was conducted in two waves, in May 2021 and

June 2022, and a total sample of 1,669 responses was obtained. After eliminating responses

because of missing values, too-short response times, or suspicious repetitive behavior (Curran,

2016), 1,137 useful responses remained.

3.2 Measures

Validated scales from existing literature were employed to measure the constructs employee

engagement, burnout, and the intention to quit. Details on the employed scales and the

assessment of construct validity can be found in Appendices A and B, respectively.

Employee engagement is the degree to which employees view their work in a positive and

fulfilling way (Allen and Rogelberg, 2013). Employee engagement was captured via a modified

version of the nine-item Utrecht Work Engagement Scale (UWES-9) (Schaufeli *et al.*, 2003)

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[6] MTurk is a crowdsourcing website with which crowdworkers can be hired to complete tasks, such as completing a survey. For a discussion of both the benefits and the drawbacks of this online data collection method we refer the reader to (Aguinis *et al.*, 2021).

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with seven-point Likert-type scales (1 = Strongly disagree to 7 = Strongly agree). These nine

items fall into three categories (vigor, dedication, absorption) that contribute to the overall

employee engagement construct. A composite score was calculated based on the nine items and

used for analysis. Sample statements from the UWES-9 include "*At my work, I feel bursting with*

energy," "*I am immersed in my work,*" and "*I am proud of the work that I do.*"

Burnout is characterized as an extended response to chronic stress and is often captured in the

workplace setting (Maslach and Jackson, 1981). Burnout was measured based on the Maslach

Burnout Inventory (MBI-22) (Maslach and Jackson, 1981), employing the two subscales

emotional exhaustion and depersonalization. Survey participants were asked to read each

statement and indicate if/how often they were feeling correspondingly about their job (1 = Never

to 7 = Every day). A composite score was calculated based on the fourteen items for the two

subscales emotional exhaustion and depersonalization. Sample statements include "*I feel*

emotionally drained from my work," "*In my work, I deal with emotional problems very calmly,*"

and "*I've become more callous toward people since I took this job.*"

Intention to quit assesses whether the participant is thinking about quitting their job. The

intention to quit was measured with a three-item scale with a seven-point Likert-type answering

scale (1 = Strongly disagree to 7 = Strongly agree) derived from previous turnover intention

scales (Michaels and Spector, 1982; Price and Bluedorn, 1979). A composite score was created

and used for analysis. The three items include "*I may look for another job soon,*" "*I often think of*

quitting my present job," and "*I intend to stay in my present job*" (reversed).

Meeting load and Work arrangement: Meeting load was incorporated as a continuous variable (number of meetings per week). The question for work arrangement was "What is your current work situation?" and three answer options were provided: "completely remote"; "hybrid (some remote, some on-site)"; and "completely on-site work." For the analysis, this variable was turned into two binary variables, with the hybrid work arrangement serving as the reference category. The binary variable "remote-only" takes value 1 for all respondents who declared their work to take place fully remotely and value 0 for everyone else. The binary variable "in-person-only" takes value 1 for all respondents who declared their work to take place fully on-site.

Control variables: In order to better identify the impact of our main variables of interest (meeting load and work arrangement) on employee engagement and burnout, we incorporate demographic and job-related control variables into the analysis. We consider age (in years), gender, the number of years in the current job, the average working hours per week, and whether a respondent has a supervisory function in their job (binary). Including these control variables is in keeping with prior research on workplace meetings (Shockley, Gabriel, *et al.*, 2021; Standaert *et al.*, 2023) and work arrangements (Haider and Anwar, 2022). Moreover, we account for a potential time effect on engagement and burnout because data was collected in 2021 and 2022. The effect is accounted for by incorporating a binary variable that captures the effect of the year 2022.

Table 1 contains the descriptive summaries of the variables of interest to our study.

Table 1. Descriptive statistics of the main and control (independent) variables

Continuous variables	Mean	Standard deviation	Min	Max
Meeting load (Number of meetings per week)	10.88	7.81	4	47
Age	38.26	11.56	20	76
Years in current job	7.37	6.27	0	52
Working hours per week	37.27	12.38	5	84
Categorical variables	**Categories**	**Frequencies**	**Percentage**	
Work arrangement	Hybrid	367	32.3	
	Onsite	345	30.3	
	Remote	425	37.4	
Gender	Female	532	46.8	
	Male	605	53.2	
Supervisory function	No	388	34.1	
	Yes	749	65.9	
Year	2021	542	47.7	
	2022	595	52.3	

As a first step to analyze our research model (see Figure I), we carried out a confirmatory factor

analysis to examine the validity of the measurement model for the constructs employee

engagement, burnout, and intention to quit (χ^2 (296) = 2419.69, RMSEA = 0.079, CFI = 0.904,

SRMR = 0.091). The detailed assessment of construct validity for the CFA, presented in

Appendix B, shows that the proposed constructs are valid and that the measurement model has a

satisfying fit. Table 2 displays the correlation matrix for the multi-item constructs and the

continuous variables in our model. The values of 0.93, 0.97 and 0.69 on the diagonal indicate the

construct reliabilities for employee engagement, burnout, and the intention to quit, respectively.

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Table 2. Correlations and construct reliabilities (on the diagonal),

Significance Level: ***< 0.001; ** < 0.01

	Employee engagement	Burnout	Intention to quit	Meeting load	Respondent's age	Years in current job
Employee engagement	**0.93**					
Burnout	-0.00	**0.97**				
Intention to quit	-0.09**	0.78***	**0.69**			
Meeting load	0.05*	0.23***	0.19***			
Respondents' age	-0.02	-0.27***	-0.25***	-0.05*		
Experience in current job	0.05*	-0.06*	-0.10***	-0.03	0.51***	
Working hours per week	0.01	-0.10***	-0.08***	-0.05	0.00	0.04

4   Results

To test our research model, we use a linear structural equation model (SEM). Relying on 1,137

observations, we obtain an identified and stable model.[7] As employee engagement and burnout

are related work outcomes (Schaufeli and Bakker, 2004), we allow the error terms of the two

constructs to be correlated. The estimation results for the structural model parts in the SEM are

presented for employee engagement and burnout in Table 4 and for intention to quit in Table 5.

For each construct, we report the estimates of three models: (1) only including the control

variables (first column); (2) model 1 extended with the main effects meeting load and work

arrangement (second column); (3) model 2 extended with interaction effects between meeting

load and work arrangement (third column).

In Table 3, we report a set of model diagnostics for the three structural models. Next to

the χ^2 goodness-of-fit statistic, which might be strongly impacted by our large sample size and

model complexity, we report the RMSEA and the CFI for the three models. We conclude that

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[7] We used the software program Stata for the estimation of the SEM.

our model shows a satisfactory model fit with RMSEAs below 0.07 and a CFI of 0.90. When

extending the simple model only containing the control variables (1) with the meeting load and

work arrangement (2), the p-value of the $\Delta \chi^2$ indicates a significant increase in model fit. For

the model including the interaction effects (3), the increase in model fit compared to the

extended model is not statistically significant.

Table 3: Goodness-of-fit statistics for structural model

Structural model diagnostics			
	1. Control variables	2. Main effects	3. Interaction effects
χ^2 (d.f.), p-value	2689 (441), p=0.00	2795 (513), p=0.00	2827 (561), p=0.00
$\Delta \chi^2$ (d.f.) p-value		116 (72) p=0.00	32 (48) p=0.96
Root Mean Squared Error of Approximation with confidence interval (RMSEA)	0.067 (0.065; 0.069)	0.063 (0.060; 0.065)	0.060 (0.057; 0.062)
Comparative Fit Index (CFI)	0.90	0.90	0.90

As shown in Table 4, the control variables explain 8.1% of the variance in employee engagement

and 18.5% of the variance in burnout. Among the control variables, the indicator of having a

supervisory role and the time effect[8] both have a significant and positive relationship with both

employee engagement and burnout. In addition, age (negative), experience (positive), and

working hours per week (negative) have a significant relationship with burnout. The sign of the

latter is surprising, but can be explained by some respondents reporting very low working hours.

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[8] In addition to controlling for the time effect in the main analysis, we checked the robustness of our results by running separate models with two split samples according to the year. We found that none of the coefficients showed opposite directions in a significant way.

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Table 4: Table entries denote standardized coefficients and standard errors in parentheses (significance: *** < 0.01, ** < 0.05, * < 0.1); the last two rows contain the equationwise and overall model R²

	Employee engagement			Burnout		
	1. Control variables	2. Main effects	3. Interaction effects	1. Control variables	2. Main effects	3. Interaction effects
Age	-0.005 (0.035)	-0.004 (0.035)	-0.005 (0.035)	**-0.243*** (0.032)**	**-0.242*** (0.031)**	**-0.243*** (0.031)**
Experience in current job	0.052 (0.035)	0.052 (0.035)	0.056 (0.035)	**0.097*** (0.032)**	**0.101*** (0.031)**	**0.105*** (0.031)**
Working hours per week	0.017 (0.030)	0.023 (0.030)	0.024 (0.030)	**-0.077*** (0. 028)**	**-0.053* (0.027)**	**-0.052* (0.027)**
Female	-0.035 (0.030)	-0.030 (0.030)	-0.030 (0.030)	-0.040 (0.028)	-0.027 (0.027)	-0.027 (0.027)
Supervisory function	**0.164*** (0.030)**	**0.163*** (0.030)**	**0.160*** (0.030)**	**0.072** (0. 027)**	**0.064** (0.027)**	**0.062** (0.027)**
Year 2022	**0.178*** (0.030)**	**0.183*** (0.031)**	**0.180*** (0.030)**	**0.296*** (0.027)**	**0.289*** (0.027)**	**0.287*** (0.027)**
Meeting load (meetings per week)		0.013 (0.030)	-0.055 (0.060)		**0.158*** (0.027)**	0.079 (0.054)
Remote-only vs hybrid work		0.035 (0.035)	0.015 (0.062)		**0.151*** (0.031)**	**0.112** (0.056)**
In-person-only vs hybrid work		-0.026 (0.035)	**-0.121** (0.059)**		0.040 (0.031)	-0.055 (0.053)
Remote-only* Meeting load			0.031 (0.072)			0.057 (0.065)
In-person-only* Meeting load			**0.132** (0.066)**			**0.133** (0.059)**
Equationwise R²	0.081	0.085	0.088	0.185	0.229	0.232
Overall model R²	0.246	0.289	0.294	0.246	0.289	0.294

Upon incorporating the variables of interest in the second model (i.e. meeting load and work

arrangement), we observe an increase in the explained variance for both dependent variables (to

8.5% and 22.9%, respectively). Meeting load is positively associated with burnout, and the effect

is statistically highly significant (supporting H2). While the sign for employee engagement is

positive, it is not statistically significantly different from zero (no support for H1). Information

on the work arrangement (remote, hybrid, or on-site) is included by means of the two binary

variables: remote-only and in-person-only. The hybrid work situation is chosen as the reference

category (hence, no separate dummy variable is included), and estimated effects for variables

remote-only and in-person-only have to be interpreted in comparison to a hybrid working

situation. Compared to a hybrid working situation, working remote-only is positively and

statistically significantly associated with burnout (supporting H4a), but not with employee

engagement (no support for H3a). Comparing in-person-only working with a hybrid work

arrangement, no significant relationships are found for employee engagement (no support for

H3b) or burnout (no support for H4b).

Incorporating the interaction effects (between meeting load and work arrangement) in the

third model, we observe a further, albeit small, increase in explained variance for the dependent

variables (to 8.8% and 23.2% respectively). In this model, we do find that in-person-only work

relates negatively to employee engagement (supporting H3b). However, we find no evidence that

a remote-only work arrangement significantly affects how meeting load is related to engagement

or burnout (no support for H5a and H6a), as both interaction effects are rather small and not

statistically significant. On the contrary, working in-person-only significantly moderates the link

between the number of meetings and both work outcomes, employee engagement (supporting

H5b) and burnout (opposite to what was hypothesized in H6b). An increase in the number of

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meetings in an in-person-only work arrangement is associated with a substantially stronger increase in the reported degree of employee engagement and burnout than in a hybrid work arrangement.

The overall effect of meeting load on engagement in an in-person-only work arrangement can be calculated as follows "-0.121 + (0.132 - 0.055) * number of meetings" = "-0.121 + 0.077 * number of meetings," so the marginal effect of the number of additional meetings is equal to 0.077 * number of meetings. If meeting load changes with one additional meeting per day or five meetings per week, we thus observe an increase on the engagement score of 0.077 * 5 = 0.385. The total effect of meetings in an in-person-only work arrangement on the reported degree of burnout can be obtained via "-0.055 + (0.079 + 0.133) * number of meetings" = "-0.055 + 0.212 * number of meetings." If we now calculate the effect of five additional meetings per week, we observe an increase on the burnout score of 0.212 * 5 = 1.06.

The parameter estimates for the main effect of meeting load in the last columns of Table 4 indicate the estimated effect of meetings on the work outcomes for hybrid work arrangements. In both cases, we cannot reject that the effect is equal to zero. Instead, for the in-person-only work arrangement, we find the effects of meeting load on both engagement ($\beta = 0.10$, $p < 0.05$) and burnout ($\beta = 0.23$, $p < 0.01$) to be statistically different from zero. For the remote-only work arrangement, the effect of meeting load on engagement is not statistically significantly different from zero ($\beta = -0.02$, $p = 0.634$), whereas meeting load does significantly affect the reported burnout ($\beta = 0.14$, $p < 0.01$).[9]

Figure II further explores the observed interaction effects of the three work arrangements on the work outcomes as a function of the weekly number of meetings. In these graphs, the fixed

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[9] These results are not displayed in Table 4 but are available from the authors upon request.

values for the continuous variables correspond to the respective sample means of the variables

(see Table 1). Therefore, the profile assumed is a 38-year-old woman with a supervisory function

and job experience of 7.4 years who worked 37.3 hours per week in 2022. The graph on the left

shows that for an increasing number of meetings, engagement increases for the in-person-only

working arrangement, while it decreases for the hybrid and remote-only working arrangements.

Moreover, the graph on the right illustrates the increase in burnout for an increasing number of

meetings for all three work arrangements. It shows that burnout increases substantially faster for

employees with an in-person-only work arrangement than for the remote-only or hybrid work

arrangements.

Figure II. Predicted employee engagement (left) and burnout (right) as a function of the

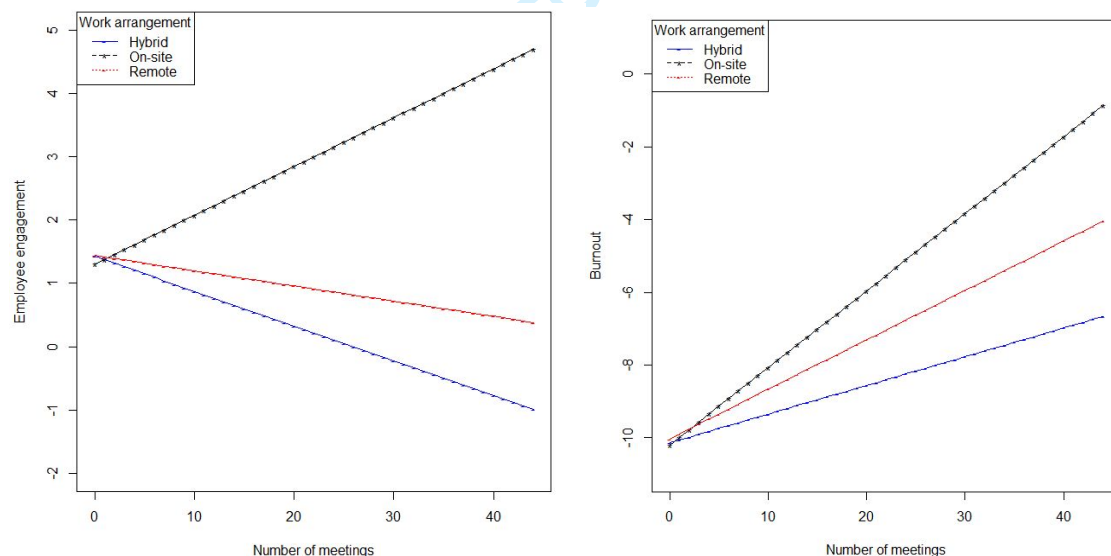**number of meetings per week, moderated by work arrangement**

Table 5 shows the estimated coefficients for the relationship between employee engagement,

burnout, and the intention to quit. The two constructs explain 61% of the variation in the

intention to quit. Coefficients for both constructs are statistically highly significant and signs are

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as expected: while engagement relates negatively to the intention to quit, burnout is positively

related to the reported intention to quit.

Table 5. Estimated standardized coefficients with standard errors in parentheses

Significance: * < 0.01, ** < 0.05, * < 0.1**

	Intention to quit		
	Control variables	Main effects	Interaction effects
Employee engagement	-0.091***	-0.091***	-0.092***
	(0.024	(0.024)	(0.024)
Burnout	0.786***	0.787***	0.787***
	(0.016)	(0.016)	(0.016)
Equationwise R²	0.615	0.615	0.615
Overall model R²	0.246	0.289	0.294

5   Discussion

The research question we set out to address was: *"How do workplace meetings, work*

arrangements, and their interactions relate to employee engagement and burnout?"

Consistent with prior research that revealed a seemingly contradictory impact of meeting

load, we observe that "meetings appear to be both resource-draining and resource-supplying

activities in the workplace" (Allen *et al.*, 2012, p. 405). As to supplying resources resulting in

employee engagement, our analysis does not provide support for an overall relationship, but we

do find that meeting load has a positive relationship with engagement for in-person-only

employees. This is consistent with prior research that explained how workplace meetings provide

employees with access to resources that are essential to perform their job (Allen *et al.*, 2012).

This study extends prior research by indicating that face-to-face meetings are instrumental for

facilitating work engagement, more so than virtual meetings.

In terms of meetings as draining resources resulting in burnout, we find a general

relationship as hypothesized and consistent with prior research (Luong and Rogelberg, 2005).

Our analysis also shows that the relationship is moderated by work arrangement. Consistent with

the emerging research on video-conferencing fatigue (Fosslien and West, 2020; Riedl, 2022), we

had argued that participating in virtual meetings in the remote-only setting would deplete

relatively more resources. Hence, we had hypothesized that the relationship would be stronger

for the remote-only setting (i.e. relatively more virtual meetings relates to more self-reported

burnout). However, we found the opposite: Meeting load in the in-person-only situation was

more strongly related to burnout, suggesting that face-to-face meetings may be relatively more

resource draining.

What, then, could explain this intriguing observation? A first possible explanation

involves emotional labor in the form of surface or deep acting (Riforgiate *et al.*, 2022), for which

the jury is still out regarding whether this phenomenon occurs more in face-to-face or virtual

meetings (Reed and Allen, 2022). Prior research has pointed out that a lack of non-verbal cues

can induce a sense of anonymity, which is in turn associated with depersonalization, status

equalization, and a lowered inhibition to speak up (Tyran *et al.*, 1992). This effect aligns with the

notion that surface acting may be more prevalent in face-to-face meetings. Alternatively, it is

possible that virtual meetings are not as cognitively taxing and emotionally exhausting as they

are commonly portrayed to be in academia and popular press. Indeed, most research so far on the

phenomenon studied virtual meetings in a crisis situation, which involves high levels of

uncertainty and stress and may therefore not be generalizable. On a related note, it is possible

that video-conferencing fatigue is actually just screen fatigue, because of the extensive

technology use during the workday. Finally, an aspect of virtual meetings that is positive in

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terms of resource generation is related to providing remote-only employees an opportunity to

connect with others and feel less socially isolated (Abelsen *et al.*, 2023; Scott *et al.*, 2015).

We had also hypothesized that resource acquisitions or drains varied across the three

common work arrangements of today, and we had advanced the idea that hybrid work may offer

the best of both worlds. Our findings reveal on the one hand that burnout is higher for the

remote-only setting and that engagement is lower for the in-person-only arrangement. The

conclusion that therefore hybrid work is indeed the optimal arrangement may not be surprising,

as it is consistent with prior research that indicated non-linear relationships between the extent of

remote work and work outcomes (Golden, 2006; Golden and Veiga, 2005), but it still adds to the

emerging empirical evidence and this based on a concurrent comparison of work outcomes

across all three arrangements. Indeed, in a recent randomized control trial, the hybrid working

group (two days a week WFH) was found to be more productive, showed higher levels of work

satisfaction, and had lower levels of turnover (Bloom *et al.*, 2022). Finally, it is important to note

that our SEM confirmed earlier found relationships between intention to quit and both employee

engagement and burnout. This further highlights the importance, validity, and reliability of this

study.

5.1 Theoretical implications

This study provides further evidence for the usefulness of COR theory in the setting of virtual

and remote work and in explaining both resource gains and losses related to meeting

participation (Allen *et al.*, 2012; Standaert *et al.*, 2023). The pandemic provided a chance for

critical reflection upon meeting practices, including how to choose the modality effectively

(Standaert *et al.*, 2022) and how to ensure every participant feels included (Standaert and

Thunus, 2022). Our study highlights the significance of meetings as resources that should be

thoughtfully managed, as they are powerful vehicles to gain, or avoid losing, resources at individual, group, and organizational levels (Hobfoll, 2001). Consistent with the primacy of loss avoidance (Hobfoll and Freedy, 1993), one could cope with the fear of resource loss by canceling meetings (Laker *et al.*, 2022). This, however, would also result in foregoing the resource gains possible through meetings. Also, meetings are part of a broader context and are often inter-connected (Schwartzman, 1989; Thunus, 2023). Therefore, it is our hope that our insights, combined with some of the future research outlined below, can advance our understanding of how meetings can become resource "gain spirals" rather than "loss chains" (Hobfoll and Freedy, 1993).

The notion of "hybrid work" was ushered in by the COVID-19 pandemic and, unlike in prior research (Allen *et al.*, 2015; Bailey and Kurland, 2002), this notion recognizes an arrangement that is distinct from the two extremes (i.e. fully remote and fully on-site). Our study highlights that a hybrid arrangement is preferable over fully remote work in the post-pandemic age. Hence, this study contributes to the body of knowledge because while there is recent work that compares remote-only with in-person-only arrangements (Gibbs *et al.*, 2021) or hybrid with in-person-only (Bloom *et al.*, 2022), the three common work arrangements of today have not been compared at the same time. Moreover, such comparison studies largely focus on productivity rather than individual work outcomes. Our findings indicate that hybrid work seems to offer the best of both worlds, which may be an intuitive finding, but our empirical validation is still novel. Also, the COVID-19 pandemic episode caused a critical reflection on work arrangements and our research highlights that an explicit distinction between the three work arrangements can be purposeful and generative for refining our insights.

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5.2 Practical implications

This paper also provides timely and valuable insight for managers with meetings, engagement, burnout, and turnover emerging as key human resource topics coming out of the pandemic (Microsoft Research, 2021; Newman *et al.*, 2022). It is hard to overestimate the relevance of studying meetings, not just because of the significant managerial time spent in them (Rogelberg *et al.*, 2007), but also because it has been identified as a distinct facet of job satisfaction (Rogelberg *et al.*, 2010). In particular, our findings about the simultaneously positive and negative outcomes of meeting load support prior assertions of employees having a love/hate relationship with meetings (Lehmann-Willenbrock *et al.*, 2016).

Consistent with the resource-depletion mechanism in meetings, some organizations have decided to impose "meeting-free" days (Laker *et al.*, 2022) or even to declare "calendar bankruptcy" (i.e. removing all (recurring) meetings and installing a cooling-off period) (Elliott *et al.*, 2022). However, we recommend a more balanced approach to maximize resource gains and minimize losses, namely adopting a more deliberate process of scheduling and preparing meetings as good stewards of each other's time (Rogelberg and Kreamer, 2019). In keeping with prior research, we believe the following can help rendering meetings into resource gains: to focus on ensuring relevance of the meeting, creating a safe space for voicing opinions, and encourage pre-meeting small talk in meetings (Allen, Lehmann-Willenbrock, *et al.*, 2014; Allen and Rogelberg, 2013; Johnson and Mabry, 2022). Instead, a seemingly simple, but impactful suggestion to reduce resource depletion is to avoid back-to-back meetings by regularly taking breaks (Allen *et al.*, 2022; Bennett *et al.*, 2021).

5.3 Limitations and future research

A first limitation of our study relates to our cross-sectional design, which does not allow for inferring causality. Moreover, we cannot exclude reverse causality – for instance employee engagement driving meeting load. Also, the SEM in our study relies on the assumption of a linear relationship between meeting load and work outcomes and we recognize this might be a restrictive assumption. Furthermore, our sample shows a good variety in terms of age, gender, seniority, and work experience. However, all respondents lived in the USA, which may limit the generalizability of our findings to other country settings with differences in working culture or legal framework.

Also, for the development of our hypotheses, assumptions were made about the mix of meeting modalities (face-to-face and virtual) across work arrangements. In future research, it could be valuable to include a variable that captures the modality mix of the respondent. Another important avenue for further inquiry lies in explaining our unexpected finding that meeting load is related to more burnout in the in-person-only versus hybrid work arrangement. In doing so, we encourage researchers to consider a "variety of explanatory mechanisms at the level of the individual, the meeting, or the work context" (Standaert *et al.*, 2023, p. 7). Finally, future research could attempt to obtain more fine-grained insight by examining the resource gains and losses related to a single, specific meeting (Allen and Rogelberg, 2013).

We hope that our research can provide a stepping stone in further understanding, managing, and balancing employee productivity and well-being in the modern work arrangements.

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Appendices

Appendix A: Scales of employee engagement, burnout, and intention to quit

Employee Engagement	Please indicate your level of agreement with the following statements.	Strongly Disagree =1 Disagree =2 Somewhat Disagree = 3 Neutral=4 Somewhat Agree = 5 Agree= 6 Strongly Agree=7
Employee_Engagement_1	When I get up in the morning, I feel like going to work.	
Employee_Engagement_2	I feel happy when I am working intensely.	
Employee_Engagement_3	At my work, I feel bursting with energy.	
Employee_Engagement_4	At my job I feel strong and vigorous.	
Employee_Engagement_5	I am immersed in my work.	
Employee_Engagement_6	My job inspires me.	
Employee_Engagement_7	I am enthusiastic about my job.	
Employee_Engagement_8	I am proud of the work that I do.	
Employee_Engagement_9	I get carried away when I am working	

Burnout	Please select how often the following statements reflect how you feel.	Never= 1 A few times a year= 2 Once a month or less= 3 A few times a month=4 Once a week= 5 A few times a week= 6 Every day= 7
Emotional exhaustion		
Burnout _1	I feel emotionally drained from my work.	
Burnout _2	I feel used up at the end of the workday.	
Burnout _3	I feel fatigued when I get up in the morning and have to face another day on the job.	
Burnout _6	Working with people all day is really a strain for me.	
Burnout _8	I feel burned out from my work.	

Burnout _13	I feel frustrated by my job.	
Burnout _14	I feel I'm working too hard on my job.	
Burnout _16	Working with people directly puts too much stress on me.	
Burnout _20	I feel like I'm at the end of my rope.	
Depersonalization		
Burnout _5	I feel I treat some customers as if they were impersonal objects.	
Burnout _10	I've become more callous toward people since I took this job.	
Burnout _11	I worry that this job is hardening me emotionally.	
Burnout _15	I don't really care what happens to some customers.	
Burnout _22	I feel customers blame me for some of their problems.	

Intention to Quit	Please read each statement and indicate your agreement.	Strongly Disagree =1 Disagree =2 Somewhat Disagree = 3 Neutral=4 Somewhat Agree = 5 Agree= 6 Strongly Agree=7
Intent_to_quit_1	I may look for another job soon	
Intent_to_quit_2	I often think of quitting my present job	
Intent_to_quit_3[10]	I intent to stay in my present job	

Appendix B: Validity assessment

Table B.1 contains the standardized factor loadings of the single items on the constructs as well as

the average variance extracted, and construct reliabilities. Identification in the CFA is obtained by

fixing the variances of the three constructs to one. Note that in the estimated measurement model

all cross-loadings are constrained to zero.

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[10] For the estimation of the model we reverse the coding of this item to align the ordering of the categories with the previous two items.

	Burnout	Employee engagement	Intention to quit
Emotional exhaustion			
Burnout_1	0.77		
Burnout_2	0.80		
Burnout_3	0.82		
Burnout_6	0.84		
Burnout_8	0.83		
Burnout_13	0.77		
Burnout_14	0.72		
Burnout_16	0.84		
Burnout_20	0.83		
Depersonalization			
Burnout_5	0.75		
Burnout_10	0.79		
Burnout_11	0.81		
Burnout_15	0.77		
Burnout_22	0.75		
Employee engagement			
Employee_engagement_1		0.76	
Employee_engagement_2		0.78	
Employee_engagement_3		0.75	
Employee_engagement_4		0.77	
Employee_engagement_5		0.69	
Employee_engagement_6		0.83	
Employee_engagement_7		0.85	
Employee_engagement_8		0.78	
Employee_engagement_9		0.64	
Intention to quit			
Intent_to_quit_1			0.81
Intent_to_quit_2			0.87
Intent_to_quit_3_rev			0.19
Average variance extracted	62.88%	58.30%	48.30%
Construct reliability	0.97	0.93	0.69

Table B.1: Standardized factor loadings, average variance extracted, and reliabilities for constructs

Standardized factor loadings of the single item measures on their respective constructs are well above the recommended minimum value of 0.5 (Chin, 1998) and statistically significant, indicating that there is a strong correlation between the single items and the corresponding constructs (convergent validity). The third indicator of the intention to quit falls below the recommended threshold, however, we decide to keep this indicator in order to avoid identification problems for the construct.

Values for the average variance extracted (AVE) are 62.88%, 58.20%, and 48.30% for burnout, employee engagement, and the intention to quit, respectively. These AVE values are adequate (above 50%) except for the intention to quit, where it is slightly below 50%.

In order to test discriminant validity of the constructs, we compare the AVE values with the squared correlation estimates between the constructs (Table B.2, above diagonal). With the exception of the intention to quit, all constructs display higher average variance-extracted than squared correlations with the other constructs. There appears to be some overlap in the information extracted from the single items reflecting the intention to quit and the observed variables reflecting the degree of burnout.

	Burnout	Employee engagement	Intention to quit
Burnout	1	0.00	0.60
Employee engagement	-0.01	1	0.01
Intention to quit	0.78***	-0.09**	1

Table B.2: Construct correlation matrix, Significance Level : ** = .01, *= .001, values below the diagonal are correlation estimates among constructs, diagonal elements are construct variances, and values above the diagonal are squared correlations**

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