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# Leading in times of crisis and remote work: perceived consideration leadership behavior and its effect on follower work engagement

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Based on the job-demands resources theory, we examine whether leadership behavior affects followers' work engagement in the context of remote work during times of crisis, and how this effect can be explained. We focus on consideration leadership and its impact on followers' engagement under conditions of enforced remote work during the COVID-19 pandemic. Therein, we examine the role of optimism as a potential mediator. To better understand how the impact of consideration leadership behavior unfolds during crises, we examine whether being new to remote work and feeling personally impacted by COVID-19 amplified the proposed relationship between consideration leadership and followers' engagement. A sample of 729 German employees participated in a three-wave study across 6 weeks in May and June 2020. Longitudinal structural equation modeling uncovered direct positive effects of consideration leadership on changes in followers' work engagement in the second time lag (T2 to T3), while optimism did not mediate this effect. Multigroup comparisons revealed that employees who worked from home were particularly responsive to consideration leadership. No moderating effects were found for whether the COVID-19 pandemic personally impacted employees. The discussion highlights the critical role of leadership in followers' motivation and wellbeing in times of crisis and remote work.

## KEYWORDS

COVID-19, crisis, work engagement, optimism, remote work, consideration, leadership, pandemic

## 1 Introduction

Over the past years, the prevalence of working from home has witnessed a surge, particularly driven by the health risks associated with the COVID-19 pandemic during 2020 and 2021. While some employees had worked in home office arrangements before the pandemic, enabled through technological advancements and a growing emphasis on the work-family interface (Cascio and Montealegre, 2016), the COVID-19 pandemic acted as a catalyst for the widespread adoption of telework: In Germany, for example, the percentage of employees working from home increased from 17% before the pandemic to 44% during the onset of the pandemic (Emmler and Kohlrausch, 2021). Now that remote work has

become a norm rather than the exception, many organizations and employees have come to appreciate the benefits, such as flexibility and reduced commuting time, as reflected in the fact that opportunities to work from home are continuously being offered or even expanded in the post-pandemic era (Shifrin and Michel, 2022).

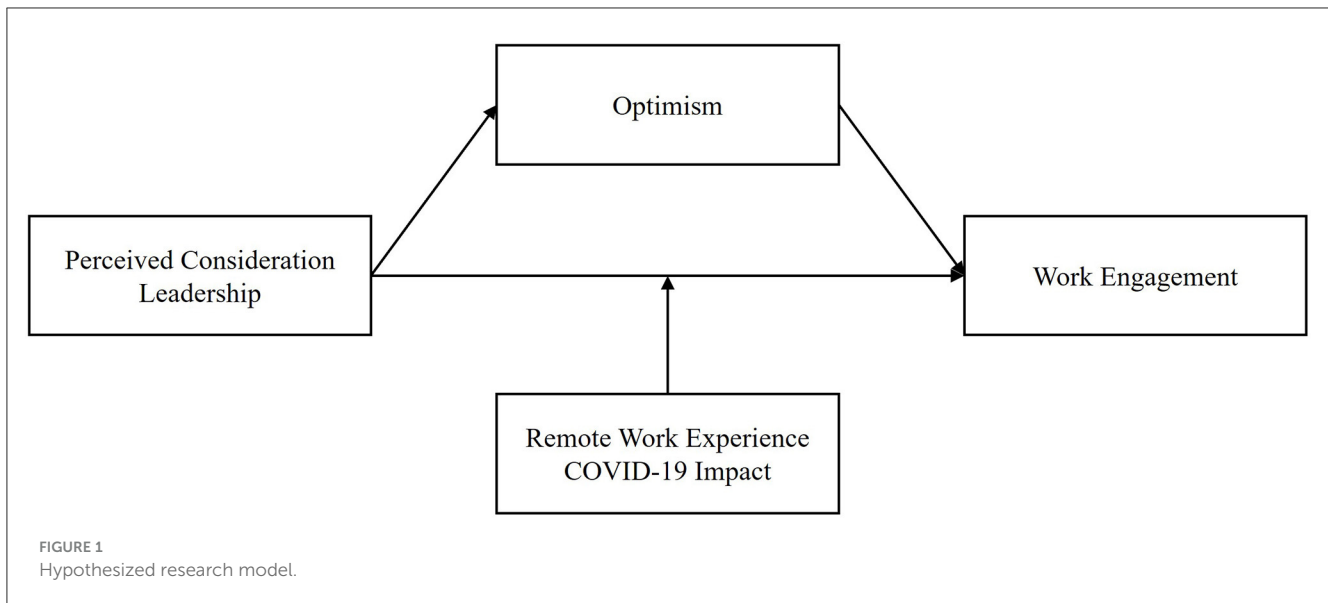
However, the initial transition to remote work due to COVID-19 occurred during a period of disruption, placing employees and leaders in a situation characterized by the simultaneous presence of numerous demands, such as the loss of working routines and increased loneliness (Wood et al., 2021)—factors that might have jointly accounted for decreasing levels of work engagement during the beginning of the pandemic (Syrek et al., 2022). This disruption creates the need to examine factors that are effective in fostering work engagement in the context of remote work during crises. Work engagement is critical as it is positively associated with employee performance and wellbeing (Neuber et al., 2022; Mazzetti et al., 2023). While some antecedents to work engagement, such as organizational support or job crafting have previously been studied in the COVID-19 context (Mäkikangas et al., 2022), fewer studies focused on the effects of leadership. Nonetheless, leadership has long been recognized as a job resource according to the job demands-resources theory (JD-R Theory; Demerouti et al., 2001), demonstrated by many studies published before the pandemic (Lesener et al., 2020; Tao et al., 2022). Against this backdrop, leadership was likely a vital resource to support employees during COVID-19 (Rudolph et al., 2021). The literature proposes two overarching approaches to effective leadership during crises and remote work, one recommending an agentic, task-oriented leadership style and the other a communal, relationship-oriented approach (Demerouti and Bakker, 2022). While both styles are generally considered important, in periods of heightened insecurity and isolation such as the COVID-19 pandemic, relationship-oriented behaviors, which we operationalize through consideration leadership, might become particularly relevant to satisfy employees' increased need for leadership (Bartsch et al., 2021; Eichenauer et al., 2022; Bell et al., 2023).

In terms of explanatory mechanisms, the pandemic's uncertain trajectory and ongoing restrictions necessitate a focus on psychological constructs that enable adaptive responses by employees. Here, personal resources emerge as a critical mechanism, as conceptualized in the most recent JD-R model (Demerouti and Bakker, 2022; Bakker et al., 2023). Where future outcomes are uncertain and constantly evolving, optimism stands out as a key personal resource (Scheier and Carver, 1992). It entails a positive, forward-looking attitude that might help employees maintain their motivation and engagement in the face of adversity (Hobfoll, 2002). Such optimistic outlook can be encouraged by consideration leadership (Kim and Choi, 2023). Take, for instance, the increased challenges encountered by employees with children during the pandemic, balancing remote work and childcare. A leader who seems approachable, shows understanding, and focuses on making the work experience more pleasant (Fleishman, 1973) contributes to alleviating these challenges, perhaps by offering flexible work schedules or support

for home-based work. Such practical measures by leaders may not only address immediate logistic concerns but also positively impact employees' perspective toward the future, thereby enhancing employee engagement.

The objective of the current study is to investigate the role of perceived consideration leadership behavior as a job resource for sustaining employee engagement in the context of enforced remote work and impact of COVID-19. To better understand the link between leadership and work engagement, we shed light on optimism as a potential mechanism. By doing so, we acknowledge the importance of personal resources as an antecedent to work engagement, which should be positively influenced by available job resources such as leadership, in line with JD-R theory (Demerouti and Bakker, 2022; Bakker et al., 2023) and previous research (Mäkikangas et al., 2022). In addition, we take a closer look at the remote work situation in which individuals find themselves, as we expect differentiated effects depending on whether employees had prior experience with remote work before the pandemic, were new to remote work, or continued to work at their usual workplace. Based on the boosting hypothesis of the JD-R theory, namely that increased job demands enhance the positive effects of available resources (Demerouti and Bakker, 2022), we argue that leadership should particularly affect individuals who are new to remote work. Likewise, we examine whether feeling impacted by COVID-19, for example, in terms of threatened health and social isolation, amplifies the proposed relationships between consideration leadership behavior and work engagement.

Our study contributes to research in three ways. First, it adds to the literature that explores the role of leadership during crises and remote work [see, for example, Bell et al. (2023) for an overview of virtual leadership and Riggio and Newstead (2023) for an overview of crisis leadership], whereby we focus on the importance of consideration leadership as relationship-oriented leadership behavior in a longitudinal study design. Second, while most hitherto studies have merely contrasted "employees working remotely" and "employees working on-site" (for an exception see, for example, Schulze et al., 2024) this study goes beyond the methodological status quo by examining the effects of leadership on different groups of followers, including those who were new to remote work during COVID-19. This differentiation, together with the examination of the COVID-19 impact as a proxy for crisis perception, enables us to disentangle the distinct effects of leadership on employee engagement across different contexts, thus contributing to contingency theories of leadership. Third, we add to research on the interplay between work-related resources such as leadership and personal resources in times of crises and remote work (Demerouti and Bakker, 2022; Bakker et al., 2023) by examining whether optimism as a personal resource does account for the effects of leadership on work engagement. This examination offers a refined understanding of the role of personal resources as explanatory mechanisms linking job resources and engagement. Together, we contribute to existing research on leadership in context, leadership in times of crises and remote work, and employee wellbeing. Our study model is shown in Figure 1.



## 2 Theory

### 2.1 Work engagement in crisis and remote work

We use the JD-R theory as a framework to study employees' work engagement during crisis and remote work (Demerouti et al., 2001; Demerouti and Bakker, 2022; Zacher and Rudolph, 2022). JD-R theory identifies two broad categories of job characteristics: job demands and job resources. While job demands refer to aspects of an occupation that require psychological or physical effort (e.g., work pressure, conflicts), job resources such as autonomy and supervisor support enable an individual's motivation and functioning at work and foster personal development (Bakker, 2011). The presence of job demands and resources initiates two processes: the health impairment process and the motivational process. In the health impairment process, job demands deplete employees' resources, leading to strain and negative health outcomes. In the motivational process, job resources are positively associated with work engagement, which ultimately leads to improved performance (Bakker et al., 2023). The more recent JD-R framework also includes personal resources, which evidently explain the relationship between various job resources (e.g., social support, supervisory coaching) and work engagement (Xanthopoulou et al., 2007) in the motivational process.

Work engagement is described as a positive affective-motivational state in which individuals are enthusiastic about their work activities while experiencing vigor, dedication, and absorption (Schaufeli et al., 2002). Vigor refers to feeling highly energetic and remaining mentally resilient in the face of difficulties. Dedication refers to a feeling of enthusiasm, significance, pride, and inspiration at work. Absorption refers to being happily immersed and concentrated in one's work (Schaufeli et al., 2006). Previous research generally finds support for both processes as suggested in the JD-R, including the positive link between leadership as a job resource and work engagement, as suggested in the present study (Lesener et al., 2019, 2020).

The JD-R theory further states that job resources particularly gain importance when employees face increased demands (Bakker et al., 2007), which is referred to as the boosting hypothesis (Bakker et al., 2023). Prior research has demonstrated that job demands amplify the motivating effects of job resources (Bakker et al., 2007; Tadić et al., 2015; Breevaart and Bakker, 2018). For example, with a sample of teachers, Bakker et al. (2007) found that high levels of pupil misbehavior amplified the relationships between job resources (e.g., job control and supervisor support) and work engagement. Consistently, Breevaart and Bakker (2018) found that transformational leadership was particularly effective on days characterized by high challenge and hindrance demands. Following this logic, in a recent extension of the JD-R theory, Demerouti and Bakker (2022) propose that during crises such as COVID-19, employees face increased levels of job demands, thereby increasing the role of job resources. Similarly, Hobfoll (2002) argues that resource gains acquire saliency when individuals are faced with resource loss. Thus, in times of crises and remote work, an increase in work-related resources is essential for organizations and leaders to create conditions in which individuals remain satisfied and engaged in their work (Zacher and Rudolph, 2022).

In line with this rationale, we assume that the context of crisis and enforced remote work led to altered demands that increased employees' need for leadership. From a leadership perspective, crises have been defined as "events that are perceived by leaders and organizational stakeholders as unexpected, highly salient, and potentially disruptive" (Wu et al., 2021, p. 2). Crises are unanticipated and uncommon, meaning that organizations and leaders have little to no prior experience in managing such situations. Salience refers to the perceived impact and sense of urgency in terms of crisis responses. For example, the first months of COVID-19 were characterized by high ambiguity and led to sudden changes in people's lives and the loss of usual working routines (Brooks et al., 2020; Wood et al., 2021). Individuals in many occupations had to adjust their work as they were forced to work from home (Kniffin et al., 2021) with increasing role demands such as work-family conflict (Galanti et al., 2021).

While empirical work on the effects of remote work is generally inconclusive (Charalampous et al., 2018), during the pandemic, the shift happened on a large scale, unexpectedly, and with no time to prepare for a smooth transition. Finally, according to Wu et al. (2021), crises are potentially disruptive, giving rise to conflicting demands and placing leaders and employees in emotionally charged situations. However, if leaders are vigilant of their employees' concerns and needs, they might be able to buffer the negative consequences and maintain followers' engagement (Demerouti and Bakker, 2022). Accordingly, empirical evidence suggests that emotional awareness and management are critical leadership skills during such times (Wittmer and Hopkins, 2022). Therefore, we understand consideration leadership as a key resource in the context of leading remotely during a crisis.

## 2.2 Effective leadership behaviors in crisis and remote work

The crucial role of leadership behaviors for follower motivation and wellbeing has been recognized since the Ohio state studies of the 1950s, which identified two behaviors that established the behavior paradigm of leadership research (DeRue et al., 2011) and remain relevant for understanding leadership to this day: consideration leadership and initiating structure leadership (Fleishman, 1973). *Consideration leadership* is the degree to which leaders seem friendly and approachable, show concern for their employees' needs, express their support, and focus on making work a pleasant experience. Considerate leaders strive to build mutual trust and relationships with their followers and are committed to ensuring that followers feel comfortable around them. In contrast, leaders who *initiate structure* concentrate on the tasks at hand, clarify responsibilities and expectations, and provide clear directions to their followers. In other words, they are mainly oriented toward goal attainment. While the two concepts have become less prominent after the introduction of newer concepts, such as transformational leadership, a meta-analytic investigation indicated that the two concepts are related to work-relevant outcomes such as satisfaction, motivation, and performance (Judge et al., 2004). The meta-analysis showed that consideration leadership accounted for more than two times as much variance in employee outcomes (an  $R^2$  of 0.23) compared to initiating structure leadership, which had an  $R^2$  of 0.08.

In leadership research, various constructs with overlapping behaviors entail aspects of relationship-oriented leadership (DeRue et al., 2011), including consideration leadership (Fleishman, 1973) empowering leadership (Srivastava et al., 2006), transformational leadership (Bass, 1985) supportive leadership (House, 1971), and health-oriented leadership (Franke and Felfe, 2011). Based on a functional perspective of leadership, leaders are those who guide employees through difficult situations at work and ensure that their socio-emotional needs are met (Wu et al., 2021). Leaders who display relationship-oriented behaviors foster employee motivation and wellbeing because they foster personal resources such as self-efficacy and optimism (Xanthopoulou et al., 2012) and nurture employees' need for relatedness, one of the three basic needs according to self-determination theory (Ryan and Deci, 2000).

Against this backdrop, it is conceivable that in conditions of enforced remote work and crisis, due to social distancing measures as well as ambiguity and uncertainty in terms of the development of the crisis, individuals were in increased need of relationship-oriented leadership behaviors. Accordingly, using qualitative measures, Eichenauer et al. (2022) found that communal leader behaviors were more important to employees than agentic behaviors during COVID-19. Moreover, using open-ended questions, Wittmer and Hopkins (2022) identify demonstrating empathy and compassion, ensuring mutual understanding, and providing support and resources for people to work collaboratively as some of the main leadership challenges while leading during crisis and remote work.

While various leadership styles have previously been studied in crises and remote work, such as transformational leadership (Sommer et al., 2016) and health-oriented leadership (Klebe et al., 2021), we argue that consideration leadership most comprehensively and reliably represents the relationship-oriented behaviors that are needed in times of remote work and crisis such as COVID-19. For example, out of the four components of transformational leadership, namely idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass, 1985), only the latter refers to behaviors that are explicitly relationship-oriented, while an overall measure of transformational leadership is rather classified as change-oriented (DeRue et al., 2011). In terms of the differentiation and relative impact of leadership styles, Piccolo et al. (2012) suggest that the two-factor model of consideration leadership and initiating structure leadership has incremental validity when controlling for the effects of other behaviors such as transformational leadership. Moreover, the authors found that consideration leadership and transformational leadership are among the most important predictors of employee job satisfaction and leadership effectiveness, with each incrementally contributing to the focal outcomes.

On this basis, we hypothesize:

Hypothesis 1 (H1): *Consideration leadership is positively related to work engagement over time.*

## 2.3 The mediating role of optimism

Based on JD-R theory, a path through which consideration leadership may foster employees' work engagement in times of remote work and crisis is through enhancing their personal resources (Xanthopoulou et al., 2007). Personal resources are defined as developable cognitive-affective aspects that foster goal attainment, including positive beliefs about oneself (e.g., self-efficacy) and the world [e.g., optimism, hope; van den Heuvel et al. (2010)]. Moreover, personal resources have been described as aspects associated with individuals' perceptions of their ability to successfully control and impact their environment, particularly in times of adversity (Hobfoll et al., 2003). Consequently, leaders and organizations are generally advised to put effort into strengthening employees' personal resources in times of crisis (Zacher and Rudolph, 2022).

In the present study, we focus on optimism, which is the belief that positive things will happen (Scheier and Carver,

1992). Optimism is considered one of the core components of individual adaptability (Hobfoll, 2002). Among several resilience factors, optimism proved to be the sole predictor of stress-related growth across seven time points during the COVID-19 pandemic (Schäfer et al., 2023). Furthermore, optimism is the target in training programs to foster employee resilience (Görizt et al., in press). While some studies suggest that optimism is a trait (ten Brummelhuis and Bakker, 2012), we follow the rationale of studies that have shown optimism to be malleable and fluctuate within individuals contingent on external factors (Luthans et al., 2006; Tims and Xanthopoulou, 2011). Similarly, Carver et al. (2010) suggest that optimism can temporarily shift downward regardless of individuals' dispositions. Thus, optimism is an important personal resource in times of insecurity, but it is precisely in those times that it is endangered.

We postulate that during times of remote work and crisis, leaders may enhance employees' optimism by displaying consideration leadership behaviors such as showing support and concern for employees' needs. The conservation of resources theory (Hobfoll, 2002) explains why this association is plausible: Resources tend to accumulate, entailing that employees in resource-rich environments (e.g., support, feedback) are more likely to develop further resources such as optimism. Moreover, optimism might help employees view threatening events such as COVID-19 in a more positive light and cope better with situational demands, as suggested by the transactional model of stress and coping (Lazarus and Folkman, 1984), ultimately helping employees to remain energetic and enthusiastic about their work.

Indeed, prior studies have found evidence for the links between job resources (e.g., supervisory coaching), personal resources, and work engagement (Xanthopoulou et al., 2007, 2009; Bakker et al., 2008; Mazzetti et al., 2023). In addition, there is more specific evidence regarding the mediating role of optimism in the relationship between various leadership styles and work engagement. For example, Tims and Xanthopoulou (2011) found that transformational leaders enhance their followers' daily work engagement through daily optimism. Moreover, using a cross-lagged design, Li et al. (2018) found that optimism (as part of psychological capital) partially mediates between transformational leadership and work engagement. Similar findings exist for the relationship between authentic leadership and work engagement (Du Plessis and Boshoff, 2018) as well as empowering leadership and work engagement (Gyu Park et al., 2017). This leads us to formulate our next hypothesis:

**Hypothesis 2 (H2):** *The relationship between consideration leadership and work engagement is mediated by optimism.*

We have postulated that remote work and crisis are contextual factors that amplify the effects of leadership; however, we have not yet included actual context-specific variables in the model. Our study is set during the initial phases of COVID-19. Although COVID-19 was a global-scale crisis that impacted most individuals, there have been differences in how people interpreted and reacted to the crisis (Morgeson et al., 2015), which might also affect the dynamics between leadership and employee engagement.

Hobfoll (1989) definition of resources as "those objects, personal characteristics, conditions, or energies that are valued by the individual" (p. 516), implies that there might be individual

differences in determining the resources that employees value. Inceoglu et al. (2018), in their review on leadership and wellbeing, state that future research should choose moderator variables according to the context in which the study takes place. In response to this call, we identified personal COVID-19 impact and remote work situation as factors that should moderate the effects of leadership in our study.

## 2.4 The moderating role of working from home

One prominent adjustment that many individuals had to deal with in the initial phases of COVID-19 was the change to work-from-home arrangements. Compared to prior flexible work arrangements, remote work during the pandemic involved a higher share of working from home and was mostly not a free choice (Syrek et al., 2022). Nonetheless, it is important to consider that not everyone was impacted by the public health measures to the same extent: individuals who were impacted by the pandemic can be divided into those who worked from home with prior experience with working remotely, those who worked from home but were not used to it, and those who kept working at their regular workplace. Most prior studies conducted during COVID-19 differentiated between individuals who worked from home and worked on-site. For example, Lundqvist et al. (2022) found that there were few differences between both groups, with supportive leadership being effective for employees' wellbeing regardless of the workplace.

In contrast, we argue that employees who abruptly had to shift to working from home without having prior experience faced higher demands and threats to their resources (e.g., due to disrupted work routines, lower levels of social support, and improvised office environment) than the other two groups. This group, therefore, had a heightened need for leadership support, as indicated by the boost hypothesis within the JD-R theory (Bakker et al., 2023). For example, a diary study by Wood and colleagues (2021) has demonstrated that divergence from usual work and loneliness (as two factors associated with homeworking) were negatively related to wellbeing. Most employees, but particularly those who shifted to homeworking arrangements, had to develop new skills and competencies to cope with the changes in their everyday work in the context of the pandemic (Syrek et al., 2022). Becker et al. (2022) did not find the degree of working from home during the pandemic to be associated with perceived social support; however, they did not take into account whether an employee was new to remote work. Employees who had previous experience with working from home might have already developed resources that helped them navigate through the challenges of working from home. Based on this rationale, we hypothesize:

**Hypothesis 3 (H3):** *Experience with working from home moderates the positive relationship between consideration leadership and work engagement, such that the relationship is stronger for employees who have not had previous experience with remote work than for employees with previous experience with remote work or employees working on-site.*

## 2.5 The moderating role of COVID-19 impact

In line with the boost hypothesis in JD-R theory (Bakker et al., 2023) and earlier research (Klebe et al., 2021) we suggest that leadership is particularly needed in times of crisis due to increased demands. However, not everyone may be impacted by a crisis to the same extent, leading to variations in COVID-19 impact (Lin et al., 2021). For example, it is conceivable that in some branches such as hospitality (Jung et al., 2021), the impact of COVID-19 was felt more strongly than in other branches (Hoffmann et al., 2022), whereby it should be noted that the economic downturn is only one of several factors that might lead to perceptions of uncertainty and crisis (Lin et al., 2021). Other critical consequences of COVID-19 that reflect its personal impact include health anxiety and fear of COVID-19 (Mertens et al., 2020), own COVID-19 infection or infection in one's household (Kleimeier et al., 2023), social isolation and loneliness (Buecker and Horstmann, 2021) and difficulties in partnerships (Overall et al., 2021). On this basis, we define COVID-19 impact as the extent to which individuals felt personally affected by the pandemic, including adverse effects on partnerships, social contact, finances, and health. In terms of crisis perceptions and leadership during COVID-19, so far, the findings of one study indicate that health-oriented leadership mitigated employee exhaustion, especially in cases when the COVID-19 pandemic was experienced as a crisis (Klebe et al., 2021). Yet the effects of crisis perceptions on the relationship of leadership and positive wellbeing outcomes remain unexplored.

To address this, we examine whether differences in COVID-19 impact perceptions have a moderating effect on the wellbeing effects of leadership. Precisely, we expect that individuals who experience high levels of COVID-19 impact have a stronger need for consideration leadership. Thus, we hypothesize:

Hypothesis 4 (H4): *Perceived COVID-19 impact moderates the positive relationship between consideration leadership and work engagement such that the relationship is stronger for employees with a high perceived COVID-19 impact.*

## 3 Materials and methods

### 3.1 Research context

Our study focuses on the impact of leadership during the COVID-19 crisis, treating both the crisis and the shift to remote work as situational variables. The data was collected through a three-wave online study with a time lag of 2 weeks between each wave, commencing on May 11th, 2020 (subsequent waves on May 18th and May 25th), shortly after the first COVID-19 lockdown in Germany that ended on May 4th. We chose two-week time lags following recommendations by Dormann and Griffin (2015). We expected 2 weeks to be appropriate to examine the dynamics between leadership, personal resources, and wellbeing in a time of rapid changes and constant news on the development of COVID-19. The initial lockdown, which lasted for 7 weeks, involved various restrictions, including school closures, travel limitations, and the prohibition of larger social gatherings (Grote et al., 2021). At the same time, organizations were adapting to remote work

arrangements. Despite the easing of restrictions in May 2020, preventive measures such as social distancing and quarantine remained in effect during the period of data collection.

In this unique context, our study reflects the challenges people faced during the first wave of COVID-19 and the lockdown, coupled with limited access to leisure activities. It also portrays the early responses of organizations to the crisis, including the transition to remote work. Albeit our study is set in this specific context, our research draws parallels to organizational crises in general, as all involve high levels of risk and ambiguity, such as financial threats (Kleimeier et al., 2023) and uncertainty regarding the future.

### 3.2 Participants and procedure

Participants were recruited through a non-commercial German online panel, which consists of voluntarily registered participants who agreed to participate in studies (Göriz, 2014). Participants were awarded 10 reward points for each completed timepoint in this study, which is equivalent to one euro. Those who participated in all three time points received a total of thirty reward points. In total, 729 participants provided data at T1. Of those, all took part in T2, and 719 took part in T3. We found no patterns of systematic attrition. About half of the participants were women (51.7%). The participants were on average 49.8 years old ( $SD = 10.7$ ) and had a mean job tenure of 7.82 years ( $SD = 8.45$ ) with their supervisor. Of these, 380 (52.1%) worked in their regular workplace, 174 (23.9%) worked from home with which they had prior experience, and 175 (24.0%) worked from home with no prior experience. Most participants were employed full-time (72.6%). In terms of educational level, 33.6% of participants reported holding a university degree, and 36% indicated having intermediate secondary school/high school diplomas. Forty-nine percent were married, with 26.5% having children.

### 3.3 Measures

We used a full panel design and measured the predictor, mediator, and outcome variables at all three measurement points (Taris and Kompier, 2014). Experience with working from home and demographics were assessed at Time 1. On all measurement points, participants were asked to refer to their current experience with their supervisor.

#### 3.3.1 Consideration leadership

We measured employee perceptions of consideration leadership with four items of the shortened version of the Leadership Behavior Description Questionnaire (LBDQ; Form XII, Stogdill, 1963). All items were translated into German. An example item is "My leader is friendly and approachable." The items were rated on a 1 (*never*) to 5 (*always*) Likert scale. Cronbach's Alpha ranged between 0.88 and 0.89.

### 3.3.2 Work engagement

We used six items from the German Version of the Utrecht Work Engagement Scale (UWES 9; [Schaufeli et al., 2006](#)). Example items are “At my work, I feel bursting with energy” (vigor), “I am enthusiastic about my job” (dedication), and “I am immersed in my work” (absorption), with response options ranging from 1 (never) to 6 (always). In line with [Schaufeli et al. \(2006\)](#), we computed a mean score for engagement as a composite. Cronbach's Alpha ranged between 0.94 and 0.95.

### 3.3.3 Optimism

We measured optimism with six items from the Life Orientation Test [LOT; German version by [Glaesmer et al. \(2008\)](#), based on [Scheier and Carver \(1985\)](#)]. Items were adapted to represent the current state of optimism ([Kluemper et al., 2009](#)). An example item is: “Currently, I'm optimistic about my future.” Response options ranged from 1 (*disagree*) to 5 (*agree*). Cronbach's Alpha ranged between 0.81 and 0.82.

### 3.3.4 COVID-19 impact

We assess COVID-19 impact as a formative construct, with a scale of four items that we developed to examine the perceived impact of COVID-19 on individuals' lives. The items were: “I or a family member is infected,” “I am experiencing financial difficulties,” “My relationship with my partner is suffering,” and “My social contacts are impaired.” According to [MacKenzie et al. \(2005\)](#), formative measurement models comprise individual items that define their meaning and explain changes in the overall construct. However, as opposed to reflective constructs, those items do not necessarily cover a common theme or share the same antecedents and consequences. Consistently, we argue that health concerns related to COVID-19, financial threat, social isolation, and difficulties with relationships at home give meaning to the COVID-19 impact construct. All items were rated on a 7-point Likert scale, ranging from 1 (true exactly) to 7 (not true at all). We did not interpret internal consistency for COVID-19 impact since this is not recommended for formative measures ([Howell et al., 2007](#)).

### 3.3.5 Experience with working from home

We measured participants' experience with working from home using two items. First, participants were asked where they currently worked, with three response options: Solely at my regular workplace, partially from home, and solely from home. In cases where participants chose one of the latter two options, a follow-up item measured whether they had worked from home before the pandemic, with response options ranging from 1 (never) to 5 (always). For the analysis, participants were divided into three groups: Home office with prior experience (23.9%), home office without prior experience (24%), and work at the regular workplace (52.1%).

### 3.3.6 Demographics

Demographics such as sex, age, job tenure, weekly work hours, and education were assessed with one item each.

### 3.3.7 Controls

Age and sex were employed as control variables as suggested by previous research on work engagement ([Douglas and Roberts, 2020](#); [Rožman et al., 2021](#)). Moreover, initiating structure leadership was a control variable so the results would not reflect an overall measure of positive leadership. Like consideration leadership, we measured initiating structure with five items of the shortened version of the Leadership Behavior Description Questionnaire (LBDQ; Form XII, [Stogdill, 1963](#)). An example item is “My leader lets group members know what is expected of them” Cronbach's Alpha ranged between 0.83 and 0.85.

### 3.3.8 Additional variables

We assessed the frequency of leader-follower interaction using a single item: “How often have you been in contact with your direct leader in the last 2 weeks?” The answer ranged from 1 = not at all to 5 = several times a day. The participants were instructed to refer to any type of interaction, including virtual and face-to-face interactions.

## 3.4 Data analysis

All analyses were conducted using Mplus Version 7 ([Muthén and Muthén, 1998–2012](#)). As a first step, we performed confirmatory factor analyses and measurement equivalence analyses to examine the appropriateness of our measurement model. Model fit was satisfactory for comparative fit index (CFI) values above 0.90, root mean square error of approximation (RMSEA) values below 0.08, and standardized root mean square residual (SRMR) values below 0.09 ([Browne and Cudeck, 1993](#); [Hu and Bentler, 1999](#)).

In the next step, we tested for configural invariance (fixing factor structure across time), weak invariance (constraining factor loadings to be equal across time), and strong invariance (constraining factor loadings and intercepts to be equal across time) to assess the equivalence of our focal constructs across the three measurement points ([Little, 2013](#)). Following prior recommendations ([Chen, 2007](#)) changes of CFI > -0.010, changes smaller than 0.015 in RMSEA, and changes smaller than 0.030 in SRMR were considered as cutoff values to establish measurement invariance.

We employed structural equation modeling (SEM) to examine both the direct, mediated, and moderated lagged effects of consideration leadership on work engagement. We used the CLPM approach since we were mainly interested in examining the between-person effects, for example, whether employees who perceive their leaders to demonstrate high consideration leadership experience a subsequent increase in optimism and work engagement in comparison to employees who perceived their leaders to demonstrate low consideration leadership ([Orth et al.,](#)

TABLE 1 Means, standard deviations, and correlations among model variables.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Sex	1.48	0.50																
2. Age	49.83	10.67	0.05															
3. T1 consideration	3.46	0.95	−0.01	−0.01														
4. T2 consideration	3.49	0.94	−0.01	0.01	0.78													
5. T3 consideration	3.48	0.95	0.00	0.04	0.80	0.79												
6. T1 initiating structure	3.49	0.84	0.00	0.04	0.53	0.45	0.45											
7. T2 initiating structure	3.46	0.83	0.00	0.08	0.48	0.54	0.46	0.73										
8. T3 initiating structure	3.47	0.82	0.03	0.06	0.44	0.44	0.53	0.73	0.76									
9. T1 engagement	4.36	1.34	0.03	0.07	0.41	0.45	0.41	0.36	0.36	0.36								
10. T2 engagement	4.39	1.33	0.00	0.07	0.39	0.47	0.42	0.32	0.39	0.36	0.84							
11. T3 engagement	4.40	1.40	0.04	0.09	0.39	0.47	0.49	0.31	0.36	0.39	0.83	0.87						
12. T1 optimism	3.55	0.77	0.02	0.06	0.41	0.36	0.33	0.24	0.23	0.18	0.45	0.45	0.45					
13. T2 optimism	3.61	0.76	−0.01	0.06	0.35	0.39	0.34	0.21	0.26	0.19	0.41	0.47	0.47	0.77				
14. T3 optimism	3.65	0.79	0.03	0.05	0.34	0.35	0.37	0.21	0.21	0.25	0.41	0.45	0.52	0.72	0.78			
15. T1 COVID-19 impact	2.19	0.78	−0.01	−0.09	−0.04	−0.04	0.01	0.04	0.06	0.06	0.07	0.05	0.04	−0.19	−0.21	−0.20		
16. T2 COVID-19 impact	2.16	0.75	0.03	−0.12	−0.02	−0.01	0.02	0.06	0.08	0.08	0.05	0.08	0.05	−0.19	−0.23	−0.23	0.74	
17. T3 COVID-19 impact	2.11	0.76	0.02	−0.14	−0.03	−0.05	−0.01	0.04	0.06	0.05	0.04	0.04	0.03	−0.20	−0.24	−0.25	0.73	0.73

*N* = 719–729 (pairwise deletion). Categories for sex: 1 = male, 2 = female. All correlations  $|0.07\text{--}0.90|$  were significant at  $p < 0.05$ ; correlations  $\geq |0.12|$  were significant at  $p < 0.01$ .



TABLE 2 Results of measurement invariance tests for consideration, optimism, and engagement.

Invariance test	$\chi^2$ (df)	CFI	RMSEA (90% CI)	SRMR	$\Delta\chi^2$	$\Delta$ CFI	$\Delta$ RMSEA	$\Delta$ SRMR
Configural	2303.359 (861)	0.957	0.048 (0.046–0.050)	0.046	-	-	-	-
Weak	2391.812 (885)	0.955	0.048 (0.046–0.051)	0.050	88.453 (24)	0.002	<0.001	0.004
Strong	2402.576 (907)	0.955	0.048 (0.045–0.050)	0.050	10.764 (22)	<0.001	<0.001	<0.001

N = 729. CFI, comparative fit index; RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual;  $\Delta$ , change.

2021). To test the mediating effect of optimism, we used a three-wave autoregressive mediation model with latent variables (Stride et al., 2015). To calculate the indirect effect, we used 10,000 bootstrap samples, as recommended by Podsakoff et al. (2003). Due to convergence issues that appeared when including the moderator in the autoregressive mediation model with latent variables, we opted for a model with reduced complexity to assess the moderating effect of COVID-19 impact. In this model, the COVID-19 impact was modeled to affect the direct effects of consideration leadership on work engagement (Stride et al., 2015). Finally, the impact of the remote work situation was tested using multigroup analyses (Muthén and Muthén, 1998–2012).

## 4 Results

Descriptive statistics and correlations are in Table 1.

### 4.1 Measurement model and measurement invariance

We ran confirmatory factor analyses (CFA) to examine the measurement quality of our study variables. First, we tested the three-factor model with consideration leadership, optimism, and work engagement. Due to its formative nature, COVID-19 impact was not included in the CFA. The CFA initially yielded an unsatisfactory fit to the T1 data ( $\chi^2 = 664.140$ ,  $df = 87$ ,  $p < 0.001$ , CFI = 0.929, RMSEA = 0.095, and SRMR = 0.047). The modification indices suggested that model fit would be improved if error terms of the first two items of consideration leadership were allowed to correlate. This can be justified by the fact that both focus on enhancing the pleasantness of being part of a group. After including correlations between the two items, the model showed satisfactory results for T1 ( $\chi^2 = 449.586$ ,  $df = 86$ ,  $p < 0.001$ , CFI = 0.955, RMSEA = 0.076, and SRMR = 0.049) and mediocre results for T2 ( $\chi^2 = 514.705$ ,  $df = 86$ ,  $p < 0.001$ , CFI = 0.950, RMSEA = 0.083, and SRMR = 0.051), and T3 ( $\chi^2 = 563.194$ ,  $df = 86$ ,  $p < 0.001$ , CFI = 0.948, RMSEA = 0.087, and SRMR = 0.053). We note that the RMSEA values for T2 and T3 are slightly over the suggested cutoff value of 0.08. However, since the model fit of the theoretical three-factor structure fits the data better than an alternative model in which all factors load on one factor (at T1:  $\chi^2 = 3051.781$ ,  $df = 90$ ,  $p < 0.001$ , CFI = 0.580, RMSEA = 0.212, and SRMR = 0.147), we conclude that our measurements are sufficiently distinct from each other and refrain from modifying the model. The results of the measurement invariance testing (T1–T3) are in Table 2. Identical items were allowed to correlate with each

other across time. The change in fit indices was below 0.005 for CFI, RMSEA, and SRMR, indicating that the measurements of the focal variables were invariant over time.

## 4.2 Hypothesis tests

### 4.2.1 Consideration leadership as a predictor of time-lagged work engagement

For all measurement points, we controlled for levels of engagement at the prior time point so that the results represent changes in work engagement from T1 to T2 and from T2 to T3. Furthermore, we controlled for the effects of initiating structure to test the incremental validity of consideration leadership behavior. Moreover, age and sex were employed as control variables. The structural model fit the data well ( $\chi^2 = 3034.558$ ,  $df = 1005$ ,  $p < 0.001$ , CFI = 0.939, RMSEA = 0.053, SRMR = 0.056 with control variables,  $\chi^2 = 1807.844$ ,  $df = 395$ ,  $p < 0.001$ , CFI = 0.945, RMSEA = 0.070, SRMR = 0.055 without control variables). Table 3 reports the direct effects. Overall, including control variables did not change the pattern of the results, although sex had a small significant effect on work engagement in T3. A test of a reversed model, in which engagement predicted consideration leadership did not yield a better model fit ( $\chi^2 = 1863.312$ ,  $df = 395$ ,  $p < 0.001$ , CFI = 0.943, RMSEA = 0.071, SRMR = 0.058 without control variables) supporting our hypothesized direction of effects. Yet the analysis revealed that engagement had a significant effect on consideration leadership in the first time lag ( $B = 0.13$ ,  $SE = 0.02$ ,  $p < 0.01$ ) as well as the second time lag ( $B = 0.06$ ,  $SE = 0.03$ ,  $p < 0.05$ ), indicating the possibility of reciprocal effects (see additional analyses section for further exploration). Contrary to our hypotheses, consideration leadership at T1 failed to be significantly related to employee work engagement at T2 ( $B = 0.05$ ,  $SE = 0.04$ , n.s.). However, the relationship reached statistical significance in the second time lag ( $B = 0.08$ ,  $SE = 0.04$ ,  $p < 0.05$ ). Thus, H1 is partially supported.

### 4.2.2 Optimism as a mediator of the effect of consideration leadership on work engagement

As initiating structure leadership did not predict work engagement in the previous analysis, and the results with control variables did not differ substantially from a model without controlling for initiating structure leadership, we report the results of the three-wave autoregressive mediation model without control variables. The parameter estimates are in Figure 2. The structural model fit is good ( $\chi^2 = 2943.552$ ,  $df = 928$ ,  $p < 0.001$ , CFI = 0.946, RMSEA = 0.055, SRMR = 0.072). The results indicate that

TABLE 3 Parameter estimates of the direct effects of consideration leadership on work engagement.

Predictor	<i>B</i>	<i>SE</i>	<i>p</i>	95% CI [LL; UL]	$\beta$
<b>Outcome variable: T2 work engagement</b>					
T1 consideration leadership	0.05 (0.05)	0.04 (0.03)	0.15 (0.07)	[-0.018; 0.124] ([-0.003; 0.100])	0.05 (0.04)
T1 work engagement	0.87 (0.87)	0.02 (0.02)	<0.01 (<0.01)	[0.821; 0.915] ([0.821; 0.913])	0.86 (0.86)
T1 initiating structure leadership	-0.01	0.05	0.82	[-0.115; 0.091]	-0.01
Age	0.00	0.00	0.20	[-0.002; 0.006]	0.02
Sex	-0.05	0.04	0.26	[-0.137; 0.036]	-0.02
<b>Outcome variable: T3 work engagement</b>					
T2 consideration leadership	0.08 (0.08)	0.04 (0.03)	0.02 (<0.01)	[0.016; 0.152] ([0.025; 0.127])	0.07 (0.07)
T2 work engagement	0.90 (0.90)	0.02 (0.02)	0.00 (0.00)	[0.851; 0.941] ([0.852; 0.941])	0.87 (0.87)
T2 initiating structure leadership	-0.02	0.05	0.73	[-0.112; 0.078]	-0.01
Age	0.00	0.00	0.20	[-0.001; 0.006]	0.02
Sex	0.09	0.04	0.03	[0.008; 0.173]	0.04

*N* = 729. Parentheses depict the estimates of the model without control variables. *B*, unstandardized estimate; *SE*, standard error; *CI*, confidence interval; *LL*, lower limit; *UL*, upper limit;  $\beta$ , standardized estimate.

consideration leadership at T1 does not contribute to optimism in T2 ( $\beta = 0.003$ , *n.s.*), while optimism in T2 does predict work engagement in T3 ( $\beta = 0.07$ ,  $p < 0.01$ ). The bootstrapped unstandardized indirect effect is not significant ( $B = 0.002$ ), revealing that optimism does not mediate the relationship between consideration leadership and work engagement. Notably, optimism is positively related to work engagement across the two waves (T1 → T2:  $\beta = 0.09$ ,  $p < 0.01$ , T2 → T3:  $\beta = 0.07$ ,  $p < 0.01$ ), and consideration leadership at T2 does predict optimism at T3 ( $\beta = 0.06$ ,  $p < 0.05$ ).

#### 4.2.3 Remote work experience as a moderator resulting in group differences in the effects of consideration leadership and work engagement

An analysis of group differences was performed to compare the effects of consideration leadership on the work engagement of employees who worked remotely with prior experience, without prior experience, and employees working on-site. Here, we report the results of the analysis with control variables, as results substantially differed compared to a model without control variables. The model fits the data well ( $\chi^2 = 5807.705$ , *df* = 3073,  $p < 0.001$ , *CFI* = 0.92, *RMSEA* = 0.061, *SRMR* = 0.073). The parameter estimates to predict T3 work engagement are in Table 4. As we found no group differences for the effects of consideration leadership in T1 on work engagement in T2, the parameters of the first time lag are not included in the table. Consistently with the analysis of direct effects, work engagement in T2 was not predicted by consideration leadership in T1 across all groups. However, we found group differences regarding the effects of consideration leadership in T2 on work engagement in T3. The results indicated that consideration leadership in T2 predicted work engagement in T2, but only for employees who worked remotely

with experience ( $B = 0.14$ ,  $SE = 0.07$ ,  $p < 0.05$ ) and without experience ( $B = 0.19$ ,  $SE = 0.08$ ,  $p < 0.05$ ) and not for employees who worked on-site ( $B = 0.05$ ,  $SE = 0.06$ , *n.s.*). Thus, H3 is partially supported.

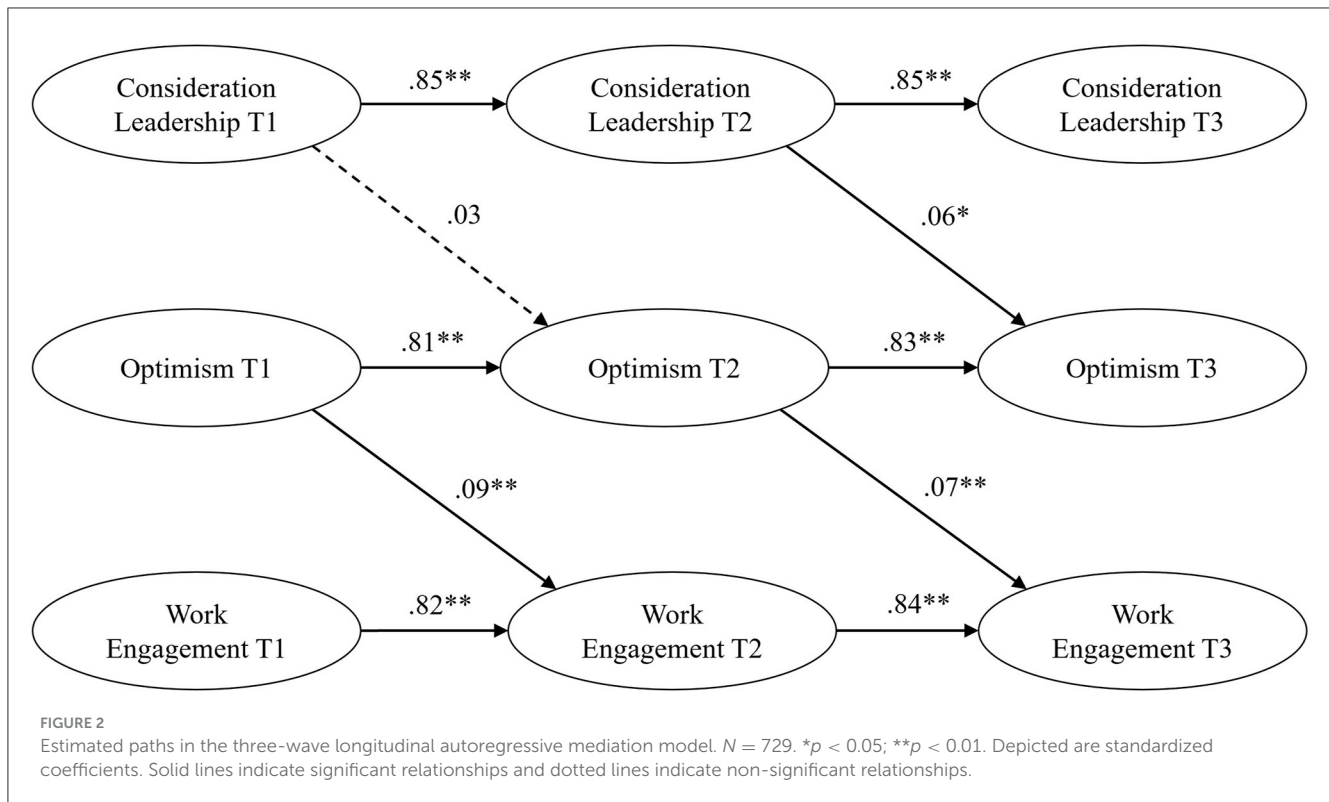
#### 4.2.4 COVID-19 impact as a moderator on the effects of consideration leadership and work engagement

The moderation results are in Table 5. The interactions between T1 COVID-19 impact and T1 consideration leadership ( $B = 0.01$ ,  $SE = 0.03$ , *n.s.*) as well as T2 COVID-19 impact and T2 consideration leadership ( $B = 0.00$ ,  $SE = 0.03$ , *n.s.*) were not significant. Moreover, COVID-19 impact did not predict work engagement (T1 → T2,  $B = -0.01$ ,  $SE = 0.03$ , *n.s.*; T2 → T3,  $B = -0.02$ ,  $SE = 0.03$ , *n.s.*). Thus, we reject H4.

#### 4.2.5 Additional analyses

##### 4.2.5.1 Reciprocal relationships between consideration and engagement

We conducted further analyses to explore the possibility of a reciprocal relationship between consideration and engagement, following initial findings suggesting such a relationship. The reciprocal model yielded a good fit to the data ( $\chi^2 = 1882.649$ , *df* = 395,  $p < 0.001$ , *CFI* = 0.942, *RMSEA* = 0.072, *SRMR* = 0.056). Consistent with the analysis of direct effects, consideration leadership predicted engagement in the second ( $B = 0.07$ ,  $SE = 0.03$ ,  $p < 0.05$ ), but not in the first time lag ( $B = 0.44$ ,  $SE = 0.03$ , *n.s.*). Moreover, engagement predicted consideration in the first time lag ( $B = 0.13$ ,  $SE = 0.02$ ,  $p < 0.001$ ), but not the second time lag ( $B = 0.05$ ,  $SE = 0.03$ , *n.s.*).



When comparing models, larger values of CFI and lower values of RMSEA suggest a better model fit (Kline, 2011). An additional criterion that is used for the comparison of competing models is the Akaike Information Criterion (AIC), whereby a lower AIC value indicates that a model is more parsimonious and superior. A comparison of the criteria reveals that our initial direct model (AIC = 49783.727, CFI = 0.945, RMSEA = 0.070) has a lower AIC value, larger CFI value and lower RMSEA value than the reverse (AIC = 49839.195, CFI = 0.943, RMSEA = 0.071) and reciprocal models (AIC = 49858.532, CFI = 0.942, RMSEA = 0.072). We conclude that the direct model is the more parsimonious and superior model compared to the reverse and reciprocal model, although all three models fit well.

#### 4.2.5.2 Interaction frequency as a control variable

To ensure robustness, we re-analyzed the data to include interaction frequency as a control variable. The analysis was based on the premise that variations in leadership exposure could also influence work engagement levels, providing a possible explanation of why consideration leadership in T1 failed to influence work engagement in T2. The descriptive statistics revealed that there were no major changes in mean interaction frequencies over time (T1 mean = 3.15, SD = 1.17; T2 mean = 3.09, SD = 1.2; T3 mean = 3.07, SD = 1.17). On average, the participants had contact with their leader a few times per day. The inclusion of interaction frequency as a control variable in the direct model did not change the relationship between consideration leadership and work engagement, indicating that the primary findings are robust to variations of interaction frequency.

#### 4.2.5.3 COVID-19 impact as a moderator on the effects of consideration leadership on optimism

As a moderating effect of COVID-19 impact on the path between consideration leadership and optimism is plausible, we additionally tested whether such an effect exists. The interactions between T1 COVID-19 impact and T1 optimism ( $B = -0.001$ ,  $SE = 0.03$ , n.s.) as well as T2 COVID-19 impact and T2 optimism ( $B = -0.02$ ,  $SE = 0.03$ , n.s.) were not significant. Therefore, a moderator effect on this path cannot be confirmed. However, T1 COVID-19 impact predicted T2 optimism (T1 → T2,  $B = -0.04$ ,  $SE = 0.02$ ,  $p < 0.05$ ; T2 → T3,  $B = 0.006$ ,  $SE = 0.02$ , n.s.).

## 5 Discussion

This study aimed to understand the interplay between leadership as a job resource, optimism as a personal resource, and work engagement in the context of remote work and crisis. Using JD-R theory, we predicted a positive effect of consideration leadership behavior on work engagement mediated by followers' optimism. Furthermore, we hypothesized that the remote work situation and personal COVID-19 impact would heighten the effects of leadership. The three-wave longitudinal study design enabled us to examine the hypothesized temporal precedence in our models, which is one of the conditions for establishing causality. Moreover, we were able to assess whether the relationship between consideration leadership and engagement was stable across the two time periods. Our findings partially support the idea that consideration leadership enhances work engagement over time, consistent with the JD-R Theory (Demerouti et al., 2001) and supported by meta-analytic findings (Lesener et al., 2020).

TABLE 4 Parameter estimates in the group analysis.

Predictor	Remote without experience			Remote with experience			Regular workplace		
	B	SE	p	B	SE	p	B	SE	p
<b>Outcome variable: T3 work engagement</b>									
T2 consideration leadership	0.19	0.08	0.02	0.14	0.07	0.03	0.05	0.06	0.36
T2 work engagement	0.90	0.05	<0.001	0.88	0.04	0.00	0.89	0.03	<0.01
T2 initiating structure	-0.16	0.10	0.10	-0.04	0.099	0.72	0.01	0.08	0.91
Age	0.01	0.00	0.86	0.01	0.00	0.12	0.00	0.00	0.20
Sex	-0.04	0.09	0.69	0.13	0.08	0.11	0.08	0.06	0.17

N = 729; B, unstandardized estimate; SE, standard error.

Specifically, consideration leadership predicted subsequent work engagement in the second, but not the first time lag. Contrary to prepositions of JDR-Theory, optimism did not mediate the effects of consideration leadership, but optimism was significantly associated with subsequent levels of work engagement in both time lags. Moreover, the analysis of group differences regarding the work situation revealed that in the second time lag, consideration leadership significantly predicted work engagement of those who worked from home (with and without prior experience), but not of those who continued to work at their regular workplace, highlighting that working from home represented an additional demand for many employees in the initial phases of COVID-19. Contrary to the boosting hypothesis of JD-R Theory (Demerouti and Bakker, 2022), in our study, the perceived personal impact of COVID-19 as a demand did not amplify the effects of leadership.

### 5.1 Theoretical implications

Our findings have implications for theory development on leadership and work engagement during crises and remote work: First, we made inconsistent observations regarding the effectiveness of leadership as a resource in times of remote work and COVID-19, underscoring the value of incorporating a temporal dimension in organizational and leadership research (Avey et al., 2008; Bluedorn and Jaussi, 2008). Notably, while the direction of findings was consistent across the time periods studied, consideration leadership's effect was found to be significant in the later time period of the two periods examined but failed to reach statistical significance in the first period. To shed light on this observation, we propose that consideration leadership as a resource may have been initially substituted by other resources during the COVID-19 pandemic, in line with the preposition that resources might substitute each other to cope with demands (Hobfoll et al., 1990; Demerouti and Bakker, 2022). In the early stages of the pandemic, employees may have relied more heavily on other social resources such as family and colleagues to address the immediate challenges posed by the health crisis. For example, Soncini et al. (2023) found that perceived family and colleague support promoted teachers' work engagement during the first wave of the pandemic. Consequently, the direct influence of consideration leadership as a resource may have been temporarily substituted by such unmeasured factors during the first time period. However, as the situation gradually calmed down, leadership might have gained weight as a supportive resource for employees in dealing with ongoing uncertainties and emotional wellbeing. This suggests that the role and impact of leadership as a resource might evolve over time and may be contingent on the availability and effectiveness of other resources during a prolonged crisis. Additionally, our findings indicate that consideration leadership and work engagement might have a reciprocal relationship, challenging the unidirectional view of leadership effects that were assumed in our study and other studies (Haslam et al., 2024). In light of these insights, we suggest that future research might benefit from taking a process view on the crisis (Wu et al., 2021), considering the dynamic interplay of resources, and their changing relevance over time to understand the complex

TABLE 5 Parameter estimates in the moderation model.

Predictor	<i>B</i>	<i>SE</i>	<i>p</i>	95% CI [LL; UL]
<b>Outcome variable: T2 work engagement</b>				
T1 consideration leadership	0.06	0.03	0.048	[0.001; 0.127]
T1 work engagement	0.87	0.02	<0.01	[0.818; 0.912]
T1 COVID-19 impact	−0.01	0.03	0.83	[−0.072; 0.045]
T1 COVID-19 impact × T1 consideration leadership	0.01	0.03	0.86	[−0.057; 0.068]
<b>Outcome variable: T3 work engagement</b>				
T2 consideration leadership	0.09	0.04	0.02	[0.016; 0.153]
T2 work engagement	0.90	0.02	<0.01	[0.854; 0.945]
T2 COVID-19 impact	−0.02	0.03	0.43	[−0.070; 0.030]
T2 COVID-19 impact × T2 consideration leadership	0.00	0.03	0.95	[−0.064; 0.068]

*N* = 729. *B*, unstandardized estimate; *SE*, standard error; *CI*, confidence interval; *LL*, lower limit; *UL*, upper limit.

relationship between leadership and employee wellbeing during extraordinary times. Second, our study provides insights into the role of optimism as a personal resource. Contrary to our expectations grounded in JD-R Theory (Bakker et al., 2023), optimism did not emerge as a significant explanatory factor in the relationship between consideration leadership and work engagement. One explanation could be the possibility of optimism to fluctuate and be influenced by leadership behaviors across shorter time lags (e.g., day-level), as suggested by Tims and Xanthopoulou (2011). Noteworthy, however, is that optimism exerted a consistent independent influence on work engagement, demonstrating its essential role in maintaining wellbeing during remote work and crises. In addition, our findings challenge previous studies that assumed optimism to have a dynamic nature (Luthans et al., 2006; Tims and Xanthopoulou, 2011), revealing that optimism remained largely stable across the three measurement points. This observation may be partially attributed to our measurement of optimism using the Life-Orientation Scale, wherein optimism is conceptualized as an abstract belief about favorable future outcomes (Scheier and Carver, 1985), raising questions about its adequacy in assessing changes in optimism over time. However, like prior studies (Tims and Xanthopoulou, 2011), we transformed the scale to a state version, which should alleviate this concern. In sum, our results underscore the need to delve into how organizations can foster optimism among their employees and to further investigate the nature of optimism in times of remote work and crises.

Third, our study illustrates the importance of distinguishing between individuals who transitioned to remote work and those who continued working at their regular workplace when investigating employee experiences during crisis and remote work. While consideration leadership affected engagement in one of the two periods, the multi-group analysis revealed that this was only the case for the two remote work groups (i.e., with and without prior experience). However, contrary to our expectations based on the boost hypothesis in JD-R, there was no notable difference between employees with prior experience with remote work and those who did not have prior experience. Yet the results indicate

that place of work determined whether consideration leadership style was effective, an idea that resonates with contingency theories of leadership (House, 1971; Fiedler, 1978) and the increasing interest in organizational research that captures and considers a wider range of contextual factors (Oc, 2018). The finding that perceived consideration leadership was more effective when individuals worked remotely than on-site should be taken up in research conducted during less crisis-ridden times. As working from home is likely to stay and even expand in the post-pandemic era (Shifrin and Michel, 2022), this finding could prove to be of importance for companies to implement into action. Further research on leadership during crises can benefit from capturing as detailed a picture of the situation as possible by taking distinct situational factors into account. For our study, this meant considering whether people had shifted to remote work or worked on-site. In future studies, including different contextual conditions (e.g., socioeconomic status, occupation) may offer new insights, depending on the timing of the data collection and the background against which the study is conducted.

Finally, we did not find a moderating effect of personal COVID-19 impact in our study, which challenges the propositions of JD-R theory in times of crisis (Demerouti and Bakker, 2022). Specifically, the boost hypothesis describes that resources should have an impact on work engagement especially when demands are high, which we did not find regarding COVID-19 impact. One issue here could have been our *ad hoc* formative measure of perceived COVID-19 impact, which is going to be taken up in the limitations. However, there could also be an explanation tapping on theory, namely that employee-oriented leadership as a resource was not suited to mitigate the COVID-19 impact. This idea corresponds to the matching hypothesis (de Jonge and Dormann, 2003), according to which the effectiveness of resources in improving employee wellbeing or protecting employees from experiencing strain is contingent upon their alignment with the specific demands or stressors employees face. For example, a cross-sectional study by Ji et al. (2023) indicated that resources from the work and home domains were associated with employee health and wellbeing during COVID-19 when they matched with work

and home demands, respectively. In our study, we understood personal COVID-19's impact as a demand comprising health concerns, financial threats, social isolation, and difficulties with relationships at home. Consideration leadership involves support and a focus on the personal wellbeing of the employee, which is generally associated with indicators of employee wellbeing (Judge et al., 2004). Yet it may not be sufficient to mitigate the complexities introduced by a global crisis, which extended beyond the workplace, creating personal and home demands. Further studies might investigate which demand-leadership combinations are effective in fostering wellbeing, thereby contributing to an understanding of how specific resources can support employees in challenging situations.

## 5.2 Limitations and future research

Despite the strengths regarding the longitudinal research design and timely assessment of focal research variables in the early stages of the COVID-19 pandemic, this study has limitations: First, we relied on data from employees in an online panel. We compared different groups of remote and non-remote workers during COVID-19, and notably, these groups were equally reflected in our sample and were diverse in age, sex, and educational level. Online panel data is as appropriate as other samples of convenience (Walter et al., 2019), if not more appropriate (Göritz et al., 2021). However, in our sample, some segments of the German working population might be underrepresented, such as nurses or other groups who were more strongly impacted by the pandemic. Indeed, the perceived COVID-19 impact was relatively low across the three measurement points, raising concerns about the generalizability of our findings to other groups of employees. Thus, future research may consider more focused investigations and different samples to shed light on the dynamics of leadership within various demographic groups.

Second, we used self-reported questionnaires to capture individuals' experiences, which introduces concerns such as common-method bias (MacKenzie et al., 2005). Although we employed a longitudinal design with three measurement points aiming to mitigate some of the concerns associated with self-reported data, future research should take data from other sources into account (e.g., spouse or leader).

Third, we had no access to pre-crisis data, which would have been beneficial to study the effects after the onset of the crisis. We acknowledge that controlling for baseline levels of leadership and engagement would increase the informative value of the study. However, the present study was planned to study the effects of crisis and remote work during COVID-19, which is why we specifically selected all measures and introduced a formative measure of perceived COVID-19 impact. In addition, the unpredictable nature of the crisis led to our selection of two-week time lags, which were likely too short to observe major changes and shifts in individual experiences. In further research, care should be taken to select more suitable time lags to better capture the effects of crises.

Fourth, we use a self-developed formative measure of perceived COVID-19 impact. In research, there is an ongoing discourse centered around the use of formative measures. While some

scholars encourage their use (Diamantopoulos et al., 2008), others argue that formative measures have several potential shortcomings, such as issues regarding their internal consistency, identification, and construct validity. Opting for a formative approach, we aimed to measure different facets to capture the personal impact of COVID-19 on individuals. While our scale was developed based on prior research on the effects of COVID-19 and thus has face validity, we recognize that it is not an empirically validated scale.

Fifth, our study used a cross-lagged panel model (CLPM) to assess the hypothesized effects of perceived consideration leadership on optimism and work engagement controlling for autoregressive effects, focusing on between-person relationships and relative changes in the constructs. However, future research could benefit from exploring alternative methods such as the random intercept cross-lagged panel model (RI-CLPM), which extends the traditional CLPM by allowing for a more detailed examination of individual trajectories (Orth et al., 2021). Using the RI-CLPM, future research could examine whether within-person deviations from their usual level of perceived consideration leadership predicts subsequent levels of optimism and work engagement, which could also bring new insights.

Finally, our study revealed a strong correlation between consideration leadership and initiating structure leadership, raising questions about a potential overlap (Fischer and Sitkin, 2023). While consideration leadership and initiating structure leadership are mildly correlated in general (Judge et al., 2004), the strong correlation at hand might have been due to the fact that we did not study leader behavior as such, but perceptions of leader behavior as experienced by the followers (Behrendt et al., 2017). These perceptions of behaviors are likely to contain evaluative components and are tinged by a halo effect. Acknowledging that incremental validity might be an issue here, we controlled for the effects of initiating structure in our analyses. The results show that the effects of consideration leadership do not change substantially when initiating structure leadership is included. We therefore conclude that the high correlation is not a critical problem, and consideration leadership has an effect independent of initiating structure. Nevertheless, in line with Fischer and Sitkin (2023), we also suggest that future research can benefit from shifting the focus on the examination of displayed leadership styles, which could be examined using experience sampling methods.

## 6 Conclusion

This study contributes to a better understanding of the relationships between consideration leadership, optimism, and work engagement in the context of remote work in times of crisis. The findings show that the impact of consideration leadership changes over time; in the study at hand, consideration leadership predicted work engagement in the second time lag, but not significantly in the first time lag. Moreover, optimism did not mediate the relationship between consideration leadership and work engagement, but consistently predicts work engagement independently, emphasizing its essential role as a personal resource. Contextual work variables play a role, in that consideration leadership was more effective if individuals worked remotely than on-site. Overall, this research provides insights into navigating

leadership during crisis and remote work, highlighting the importance of a temporal perspective and taking contextual variables into account.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

Ethical approval was not required for the study involving humans in accordance with the local legislation and institutional requirements. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

## Author contributions

DS: Data curation, Formal analysis, Visualization, Writing – original draft, Writing – review & editing, Methodology. SO: Conceptualization, Investigation, Methodology, Resources,

Writing – review & editing. AS: Conceptualization, Investigation, Methodology, Writing – review & editing, Validation. AG: Conceptualization, Data curation, Methodology, Resources, Writing – review & editing.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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