Leadership matters in crisis-induced digital transformation: how to lead service employees effectively during the COVID-19 pandemic

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Abstract

Purpose – The COVID-19 pandemic has, besides the health concerns, caused an unprecedented social and economic crisis that has particularly hit service industries hard. Due to extensive safety measures, many service employees have to work remotely to keep service businesses running. With limited literature on leadership and virtual work in the service context, this paper aims to report on leadership effectiveness regarding employees’ work performance in virtual settings brought on by the COVID-19 pandemic.

Design/methodology/approach – Drawing on the input–process–outcome (IPO) framework, this research investigates the effectiveness of leadership on service employees’ work performance mediated by work-related tension, autonomy, and group cohesiveness. Furthermore, this study explores moderating effects of the service provider’s digital maturity. To test the derived model, the authors collected survey data from 206 service employees who, due to the COVID-19 pandemic, unexpectedly had to transform to a virtual work environment. The authors analyzed the data using partial least squares structural equation modeling (PLS-SEM).

Findings – The results indicated that it took task- and relation-oriented leadership behavior to maintain service employees’ work performance in a virtual environment during crisis situations. Further, results indicated mediating effects of service employees’ individual job autonomy and team cohesiveness; surprisingly, work-related tension did not impact employees’ work performance. Results offered service businesses guidance on how to effectively lead in times of crisis when service employees predominantly work in virtual environments.

Originality/value – This is the first empirical study to show how leadership affects service employees’ work performance in a virtual work environment during crisis times. Thus, the study contributes to the scarce literature on the impact of leadership in service firms that have to operate in such a setting.

Keywords Crisis, COVID-19, Leadership, Service employee, Remote work, Team cohesiveness, Autonomy, Job tension, Work performance, Virtual teams, Virtual work environment, Digital transformation

Paper type Research paper

Introduction

The COVID-19 pandemic has caused an unprecedented global crisis that especially hit many service industries hard (Suneson, 2020). Notably, this unforeseen global pandemic has disrupted markets and service ecosystems, impacting the service sector (McKinsey, 2020) and the way service businesses operate (Finsterwalder and Kuppelwieser, 2020, in press;
Kabadayi et al., 2020, in press) in different ways. On the one hand, firms providing essential services, such as health care, logistics, and food retailing, remained operative but have had to incorporate appropriate security measures to protect employees and customers. On the other hand, and different to former economic and other crises, many service providers, such as hairdressers, airlines, and hotels, could no longer provide their services at all due to lockdown measures, while others, such as financial services, consulting, media, and education, unexpectedly had to adapt and start operating in new ways (Tuzovic and Kabadayi, 2020, in press). These service providers as well as some essential service providers’ back-office operations had to transform quickly to create a virtual work environment and keep their businesses running (Carnevale and Hatak, 2020). A virtual work environment is characterized by work arrangements where employees are dispersed in various ways (e.g. geographically) and interact within and outside their company through technology (Huang et al., 2010). While highly transformational contexts, such as digital transformation, already pose challenges to leaders (Bolden and O’Regan, 2016; Vial, 2019), the pandemic-induced and forced transformation caught service providers totally unprepared, thereby aggravating the challenges to lead a service business and its employees (Carnevale and Hatak, 2020). As leadership and the degree of a service provider’s digitalization are decisive in such situations, this study develops and empirically tests a conceptual model to investigate the leaders’ impact in service firms, while also exploring the moderating effect of digital maturity. Hence, we hypothesize that leaders need to enable and manage service employees in a crisis-induced virtual work environment to maintain high work performance among them. Specifically, we aim to contribute to service literature by examining three critical issues.

First, considering that literature on leadership in virtual work environments and in service contexts during crises is scarce, we investigate the effectiveness of seemingly opposing leadership behaviors, i.e. task- and relation-oriented leadership behavior, regarding service employees’ work performance in a virtual environment to which they are unaccustomed during the crisis caused by COVID-19.

Second, based on the input–process–outcome (IPO) framework (Dulebohn and Hoch, 2017), we build a conceptual model and examine the mediating effect of affective and behavioral process variables, i.e. of individual work and teamwork tension and individual job autonomy and team cohesiveness, respectively. This is specifically interesting as the sudden switch to a virtual work environment due to the COVID-19 pandemic, often accompanied by additional family duties, poses challenges to employees (Tuzovic and Kabadayi, 2020, in press) on individual and team levels.

Third, considering the scant literature on digital transformation and leadership (Uhl-Bien and Arena, 2018), we explore the moderating effect of service firms’ digital maturity on the impact of enabling and managing leadership behavior on service employees’ work performance. As the COVID-19 pandemic is often referred to as a major digital transformation driver (Iansiti and Richards, 2020), we expect leadership effectiveness to have differential effects based on the service provider’s digital maturity.

The literature and conceptual background
Our literature review emphasizes that, in the limited body of leadership research in the service context, most studies have been conducted in nonvirtual work environments and noncrisis situations (e.g. Wieseke et al., 2011; Benlian, 2014; Herhausen et al., 2017). Consistent with Liao’s (2017) statement that the processes and behaviors associated with leading virtual teams to date have been insufficiently investigated, we find barely any work on virtual team leadership in the service context. Only a few researchers have addressed this topic, studying, for instance, work satisfaction (Mihhailova et al., 2011), antecedents and consequences of
team efficacy (Schepers et al., 2011), and different forms of leadership (Muganda and Pillay, 2013) in virtual teams. At the same time, there is a research gap regarding effective leadership of service employees in crisis situations. Stoker et al. (2019) provided an exception for studying leadership in manufacturing and financial institutions following the 2008 financial crisis, detecting increased directive leadership but no change in participative leadership behaviors. These findings could underpin the relevance of task-oriented behaviors in crisis situations, yet they do not give any indication of their effectiveness. Finally, we found no research on leading service employees working in a virtual environment during a crisis (see Figure 1). Therefore, based on the call to investigate leadership contexts in which employees fear extreme consequences (Hannah et al., 2009), we aim to provide an understanding of leadership in service firms affected by a crisis and unexpectedly having to transform to virtual work arrangements. Similar to Stoker et al. (2019), who contrasted directive and participative leadership, we follow a dichotomy of task- and relation-oriented leadership behaviors to examine two seemingly opposing types of leadership behavior.

We build our research on the IPO framework, which provides a useful theoretical foundation for identifying key input, team members and team emergent states, processes, moderators, and outcomes relevant to both virtual team and individual effectiveness (Dulebohn and Hoch, 2017).

**Input**

Liao (2017) emphasized that in virtual work environments task- and relation-oriented leadership behaviors are key input factors in overcoming the challenges associated with virtual work environments, such as employees’ difficulties in systematically understanding how tasks should be done collectively. While task-oriented leadership behavior, also referred to as “initiating structure,” focuses on attaining organizational objectives by clarifying each task’s goals and monitoring work processes (Judge et al., 2004), relation-oriented leadership

<table>
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**Figure 1.**

Existing research on leadership in the service context
behavior, also named “consideration,” focuses on enhancing collaborative interaction among organizational members and establishing a supportive climate (Battilana et al., 2010). Both meta-categories include behaviors specifically relevant in virtual work environments, such as specifying team structures (task-oriented) or facilitating team building and member interactions (relation-oriented) (Liao, 2017).

Process
In virtual work environments, leadership can influence individual- and team-related process factors, which mediate the relationship between input and output (Liao, 2017). We concentrate on the affective (i.e. individual work and teamwork tension) and behavioral (i.e. autonomy and team cohesiveness) process factors since service employees exposed to the COVID-19 pandemic are likely to be emotionally affected in their working and living conditions, i.e. in terms of perceived insecurity or tension and could show behavioral changes in how they perform individually or in a team.

Outcome
The final component of the IPO model, output, is typically represented by the extent to which employees achieve performance targets (Dulebohn and Hoch, 2017). However, in situations where individuals have to adapt to changing conditions, proactivity can be more important than proficient and predictable performance (Griffin et al., 2010); hence, self-motivated work behaviors as performance outputs are particularly interesting. Therefore, we use an activity-based understanding of performance indicated by service employees’ work intensity.

Hypotheses
Task- and relation-oriented leadership behaviors are considered appropriate to enhance individual as well as team outcome variables in virtual work environments (Liao, 2017). Nevertheless, leaders face the challenge of influencing and motivating geographically dispersed employees (Cascio and Montealegre, 2016). Hence, to enable flexibility, leaders in a virtual work environment should focus specifically on enhancing the self-management abilities of their employees (Carte et al., 2006). Further, in a virtual work environment coordinating employees synchronically in already challenging conditions is bound to be exacerbated because of employees’ varying working times, caused, e.g. by homeschooling tasks or the absence of childcare, as is evident during the COVID-19 crisis. Employees can lack clarity in their tasks and the means of accomplishing them (Liao, 2017). Therefore, leaders should step in to manage the virtual team because they know the goals, resources, and processes of the entire team best (Liao, 2017). The different challenges associated with the virtual context, particularly in times of crisis, require leaders to simultaneously exhibit task- and relation-oriented leadership behaviors (e.g. structuring tasks and enabling employees). Hence, referring to the Digital Leadership Framework (Weber et al., 2019), we focus on enabling leadership behavior (ELB) as a relation-oriented leadership behavior and on managing leadership behavior (MLB) as a task-oriented leadership behavior (see Figure 2).

The impact of an enabling leadership behavior on individual and team processes
Leaders who enable a supportive and open climate among team members contribute to the members’ convergence around the team and increase bonding among team members, which are central aspects of group cohesion (Post, 2015). Extant research shows that a supportive leader positively influences group cohesiveness (Wendt et al., 2009), which is defined as “team members’ attraction and commitment to their team, team members, and the team’s task” (LePine et al., 2008, p. 290). Further, a leader who fosters participative decision-making
Leadership in crisis-induced digital transformation

Figure 2. Conceptual framework
increases employees’ degree of job autonomy (Cheong et al., 2016; Mertens and Recker, 2020). Here, job autonomy refers to the degree of independence employees experience in their work schedules and in their decisions on how to perform the work (Hackman and Oldham, 1976). According to Chiniara and Bentein (2016), leaders should support employees’ need for autonomy by enabling them to take initiative, learn from mistakes, and handle difficult situations in their own way. We assume that this particularly holds true for service employees who unexpectedly have to work spatially distant from one another in a virtual context. Hence, we hypotheses:

H1. An ELB is positively related to (a) individual job autonomy and (b) team cohesiveness.

A recent meta-analysis revealed that a high level of relation-oriented leadership behavior acts as a protective factor, showing that such leadership relates negatively to undesired states of mental health like burnout or stress (Montano et al., 2017). Yee et al. (2013) found the same mitigating relationship in the context of service employees. Hence, we assume that leaders who provide their employees with flexibility regarding when and how they perform their work, establish an open error culture, and foster teamwork buffering individual tensions as well as tensions within the team. Such job tension reflects how much the job, job evaluations, and achieving performance goals contribute to individual-level stress (Jaworski and MacInnis, 1989). We assume that the presented findings specifically prevail in a virtual working context such as the unexpected and insecure crisis setting induced by the COVID-19 pandemic. Therefore, we hypotheses:

H2. An ELB is negatively related to (a) individual work tension and (b) teamwork tension.

The impact of a managing leadership behavior on individual and team processes
Stoker et al. (2019) showed an increase in task-oriented (specifically directive) leadership in response to the 2008 financial crisis. However, extant leadership studies have revealed that leaders who focus strongly on structuring tasks and controlling work outcomes decrease employees’ self-perception in a team and weaken positive attitudes toward other team members (Tjosvold and Tjosvold, 1991). Similarly, Wendt et al. (2009) found a significant negative relationship between directive leadership and group cohesion. Further, leader behavior, such as clarifying objectives and specifying means of accomplishing objectives, undermine employees’ self-directed action and proactive behavior (Martin et al., 2013), which indicate reduced employees’ job autonomy. Such leadership behaviors might be especially counterproductive for service employees working in an unfamiliar and crisis-induced virtual environment that prevents them from developing self-reliance at work, on both individual and team levels. We therefore hypotheses:

H3. An MLB is negatively related to (a) individual job autonomy and (b) team cohesiveness.

Diebig et al. (2016) showed that when leaders display high performance expectations that strongly focus on achieving challenging goals, employees experience higher stress levels because achieving such goals takes special effort and energy. Hence, in times of crisis, which per se are characterized by increased uncertainty, stress, and threats of job loss (Tuzovic and Tabadayi, 2020, in press), service employees whose leaders continuously control and monitor them are likely to perceive higher levels of work tension due to fear of not being able to meet requirements and accomplish their tasks properly. This could bring about a more competitive and less team-oriented working climate. Hence, we expect:

H4. An MLB is positively related to (a) individual work tension and (b) teamwork tension.
The impact of individual and team processes on individual work performance

A rich body of research (e.g., Zaccaro, 1991) has identified a positive relationship between group cohesiveness and performance, showing that a cohesive team induces conformity, improves coordination between team members, and increases adherence to group norms, thus enabling team members to enhance their own performance orientation (Man and Lam, 2003). Further, particularly under challenging crisis-induced working conditions, autonomy allows employees’ greater flexibility and control of their work, which motivates them to try out and master new tasks (Morgeson et al., 2005). Hence, autonomy increases work performance by motivating employees to increase their work effort (Nesheim et al., 2017). We therefore hypotheses:

\[ H5. \] (a) Individual job autonomy and (b) team cohesiveness are positively related to individual work performance.

Cheong et al. (2016) as well as Lusch and Serpkenci (1990) showed that job tension reduces employees’ work role performance. Also, a recent meta-analysis showed that work stress, which included job tension, is negatively related to individual task performance (Gilboa et al., 2008). Moreover, Savelsbergh et al. (2012) assumed that tensions in teams, such as ambiguity, conflict, and/or overload, impair the team’s problem-solving and coordination competencies and also diminish team members’ motivation to invest in achieving objectives. These tensions could have even greater impact in virtual environments where team coordination per se is more difficult than in physical collocation. Thus, we hypotheses:

\[ H6. \] (a) Individual work and (b) teamwork tension are negatively related to individual work performance.

The IPO framework specifically mentions potential moderating influences of context-related variables (Dulebohn and Hoch, 2017). Organizations require strong leaders at the helm when they encounter a turbulent business environment such as digital transformation (Kane et al., 2019). Since digital maturity indicates a company’s status in accomplishing digital transformation, we suppose a moderating impact of this context factor on leadership effectiveness in handling unpredicted virtual work environments. We therefore define digital maturity in line with Kane et al. (2017) as the degree to which an organization has transformed its digital processes, digital talent engagement, and digital business models.

The methodological approach

The research context and sample

To test our conceptual model, we collected data from service firms’ employees in Germany that mainly offer nonessential services (e.g. media, insurance, consulting, and education). The data collection proceeded during major lockdown, April to May 2020, when service firms rapidly had to change to virtual work environments. We distributed a survey link via professional networks and associations, gaining a final sample of 206 service employees mostly working in virtual work settings due to the COVID-19 pandemic. The service employees’ sample comprised 149 (72%) women and 57 men (28%), with an average age of 40 years (ranging from 19 to 65). The majority of participants were living in a two- or more-person household (76%) and predominantly working remotely (89%).

Measures

Our study used measures as validated in prior research. Explicitly referring to the current COVID-19–induced work context in our survey, we measured all constructs on seven-point Likert scales, except the moderating variable and some control variables. To measure ELB,
we used Weber et al.’s (2019) six-item scale containing items such as “As a leader, she/he enables non hierarchical teamwork” and added an item to account for the specific virtual work environment context, “As a leader, she/he enables virtual teamwork.” To measure MLB, we used the six-item scale validated by Weber et al. (2019). A sample item was “As a leader, she/he effectively pre-structures tasks.” We measured individual job autonomy using Singh’s (1993) five-item scale and team cohesiveness using Podsakoff et al.’s (1993) three-item scale. We based individual job tension measurement on the latter two items of Jaworski and MacInnis’s (1989) three-item scale. To measure teamwork tension, we adapted Jaworski and MacInnis’s (1989) scale and used two items: “I experience tension when interacting with my colleagues” and “I experience tension between myself and my colleagues.” As the crisis context is challenging to employees, they necessarily spend more effort and energy on work task fulfillment. Hence, we assessed individual work performance using Brown and Leigh’s (1996) five-item scale of work intensity. The single item for digital maturity was measured on a ten-point Likert scale as developed by Kane et al. (2017). Further, we controlled for age, gender, work-related uncertainty (using the first three items of Colquitt et al.’s (2012) four-item scale), digital expertise (based on the expertise scale of Mishra et al. (1993), which we adapted to expertise with digital tools in a work context and included a further item), and family-work conflict (Frone et al., 1992). We considered the latter control variable to be especially relevant in accounting for the specific COVID-19 pandemic context because mostly all members of one household were forced to work and live together in their homes. Finally, we checked for the scales’ reliability and validity using different criteria (e.g. Cronbach’s alpha, average variance extracted [AVE], and heterotrait–monotrait [HTMT] ratio). All the criteria fulfilled the common thresholds and were used for further calculation (Hair et al., 2014, 2017).

**The analysis and results**

We assessed our conceptual model using partial least squares structural equation modeling (PLS-SEM). All data were calculated with SmartPLS 3.0 software (Ringle et al., 2015). To test our hypotheses, we ran the PLS algorithm, followed by the bootstrapping procedure using 5,000 samples. We evaluated significance on a ten percent probability level.

The results given in Table 1 indicate significant positive effects of ELB on individual job autonomy ($\beta = 0.789, p < 0.01$) and team cohesiveness ($\beta = 0.327, p < 0.01$) as well as a significant negative effect on teamwork tension ($\beta = -0.257, p < 0.05$), thus supporting $H_{1a}$, $H_{1b}$, and $H_{2b}$. However, the effect of ELB on individual work tension was not significant; hence, $H_{2a}$ is not supported. While MLB significantly reduced individual job autonomy ($\beta = -0.262, p < 0.01$) as hypothesized ($H_{3a}$), we found a positive effect of MLB on team cohesiveness ($\beta = 0.172, p < 0.1$), thus contradicting $H_{3b}$. Moreover, we cannot confirm a positive effect of MLB on either individual work or teamwork tension as hypothesized in $H_{4a}$ and $H_{4b}$.

Further, employees’ tension on either the individual or team level did not significantly impact their work performance; therefore, we cannot confirm $H_{6a}$ and $H_{6b}$. However, work performance is significantly influenced by individual job autonomy ($\beta = 0.174, p < 0.05$) and team cohesiveness ($\beta = 0.375, p < 0.01$), which supports $H_{5a}$ and $H_{5b}$.

To explore the moderating effect digital maturity has on how leadership behavior relates to service employees’ work performance in a virtual work environment during times of crisis, we conducted a multigroup analysis (MGA) (low digital maturity = scores between 1 and 5 and high digital maturity = scores between 6 and 10). While we did not find digital maturity having a moderating effect on the relationship between ELB and respective process variables, we did find it having a significant effect on the relationship between MLB and individual job autonomy ($\Delta$ path coefficients = 0.208, $p < 0.1$).
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**Note(s):** $^{1}$p < 0.10, *p < 0.05, **p < 0.01, $\beta$ represents standard path coefficients; $^{1}$female = 1, male = 0

Table 1. Results of structural model evaluation

Leadership in crisis-induced digital transformation
General discussion

Theoretical implications

Although research examining the role of leadership behavior in the context of planned organizational change exists (e.g., Battilana et al., 2010; Oreg and Berson, 2019; Sverdlik et al., 2020, in press), no leadership, change management, and service literature studies deal with effective leadership behavior in a rapid and unpredictable organizational transformation like the crisis situation of the COVID-19 pandemic. Hence, this study offers several theoretical contributions to the scarce literature on leadership effectiveness in service firms during a crisis and in virtual work environments. First, this paper reveals that ELB and MLB represent different resources which are both crucial in supporting service employees with task fulfillment while working virtually in times of crisis. Thereby, we supplement Stoker et al.’s (2019) finding by showing that a both-and rather than an either-or approach could be particularly effective in a crisis-induced virtual work environment.

Second, building on the IPO framework (Liao, 2017), we developed insight in affective and behavioral process variables’ mechanisms in a virtual work environment during an unexpected, far-reaching pandemic. The results indicate that ELB positively influences both affective and behavioral process variables. However, we found no significant ELB effect on individual work tension. A possible reason could be that individual service employees take less responsibility for achieving performance goals when leadership behavior focuses on enabling teamwork in flexible working conditions, which does not affect individual work tension.

Further, counter to our hypotheses, we found that MLB is not universally negative. Although MLB decreases autonomy, we revealed a positive relationship to team cohesiveness. It seems that MLB that strongly focuses on coordinating tasks, clarifying expectations, and establishing well-defined patterns for team members is very important in crisis-induced virtual work environments, where virtual team structures are usually not well-established. Moreover, many service employees are overwhelmed by new technology-based working methods (Pfeiffer, 2020) and family responsibilities (Bennett, 2020). These factors trigger feelings of high uncertainty and stress among service employees. Therefore, we assume that MLB provides virtual teams with required structure and thus reinforces team cohesiveness. Nevertheless, we identified an ambivalent pattern for MLB and therefore complement service research by offering a dialectical perspective on leadership behavior’s impact on process variables and in turn on employees’ performance. On this matter, we found only the behavioral process variables (i.e. autonomy and team cohesiveness) to be positively related to employees’ work performance, whereas the affective process variables (i.e. individual work and teamwork tension) showed no effects. We expected tension to be relevant in impairing individual work performance. However, due to fear of negative consequences of diminished performance in crisis times, service employees might compensate for such a potential decrease in performance caused by perceived work tension. The analyses of our control variables support this assumption since we found a significant positive effect of employees’ work-related uncertainty on work tension but no diminishing effect on individual work performance.

Third, in line with Martins et al.’s (2004) call to examine moderating variables such as the organizational context, we found MLB’s negative impact on autonomy to be weaker for service firms with higher levels of digital maturity. Digitally mature service firms already have established digital working processes, implemented workplace innovation, and cultivated digitally minded organizational cultures (Kane et al., 2017). Hence, MLB might be perceived as less directive and less restrictive. Providing insight on the suitability of different leadership behaviors for service firms in varying states of digitalization, we thus contribute to scarce research on leadership in digital transformation.
Managerial implications

Regardless of how severely a crisis disrupts a service firm, ultimately appropriate leadership behaviors are decisive in maintaining employees’ work performance and steering them through uncertain times. In such crisis times, appropriate leadership does not entail deciding between MLB and ELB; rather, it requires a balance between the two. We have shown that both behaviors contribute in distinct ways to favorable outcomes regarding employees’ work performance, thereby becoming complementary. Managers leading teams through a crisis should take this into account by:

1. Engaging in task-oriented behavior that provides guidance and sets a clear direction which will help improve teamwork in a rapidly emerging virtual work environment;
2. Granting their employees the necessary autonomy and support, enabling them to adapt to difficult crisis-induced circumstances individually in ways that work best for each individual.

Finally, our results also provide evidence that more digitally mature service firms are better able to maintain high performance levels among employees in times of crisis. This underscores the relevance of investing in digitalization and building digital capabilities throughout the company (Kane et al., 2017). Managers could use our findings to drive planned or ongoing digital transformation initiatives in their service firms, equipping their teams with the necessary technological infrastructure and know-how to sustainably foster their firm’s resilience and their work systems’ adaptability, also for future crises.

Limitations and future research

This study’s limitations indicate several directions for future research. First, we used a cross-sectional design with service employees as a single data source. This shortcoming could be addressed by using secondary data or another person’s assessment of work performance (Podsakoff et al., 2012). Further, a longitudinal study could reveal the impact of leadership on service employee’s performance during the COVID-19 crisis over time. Second, our sample largely contains female respondents, which potentially limits our results’ generalizability to male employees. Also, with a third of our respondents living in a family household, the females in our sample could be particularly influenced by the crisis due to additional strain resulting from the combination of remote work and, e.g. homeschooling. Finally, we collected the data from service employees who were able to continue their profession remotely from home. Investigating workers in other service sectors, affected differently by the crisis, could also provide valuable insights. Future studies could therefore examine employees forced into compulsory leave by lockdown measures, e.g. investigating their emotional and behavioral response, such as their situational subjective well-being or job-related countermeasures. Further, investigating employees in essential service industries such as health care, food retail or logistics, who are not able to work remotely and, in many cases, were burdened with long hours of overtime would be profitable. Future research studies could address this area, specifically focusing on work overload and exhaustion of those working in the front line of the pandemic.

References


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