

The Impact of Digital Leadership on Work-Family Conflict

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Abstract. Drawing on conservation of resources theory, this study examines the link between digital leadership and employees' work-family conflict in digital workplaces. Digital tools have made work more flexible, but they have also made after-hours contact easier and more frequent, which can drain employees' time, attention, and emotional resources. To explain this tension, the study tests a model in which work connectivity behavior after-hours transmits the effect of digital leadership on work-family conflict, while segmentation preference shapes the strength of that effect. Using cross-sectional survey data from 300 employees in Chinese enterprises, the analysis shows that digital leadership is associated with lower work-family conflict. This relationship operates partly because digital leadership reduces after-hours work connectivity. The results further indicate that the positive association between after-hours connectivity and work-family conflict is stronger among employees with a high preference for keeping work and family roles separate. These findings broaden research on the well-being consequences of digital leadership and offer practical guidance for managing digital work boundaries.

Keywords: Digital leadership, Work-family conflict, Work connectivity behavior after-hours, Segmentation preference, Conservation of Resources theory

1. Introduction

The expansion of remote and hybrid work after the pandemic has made the boundary between work and family less stable than before [1]. For many knowledge workers, work no longer ends when they leave the office. They may still answer messages, process tasks, or join virtual meetings through information and communication technologies during non-working time, a pattern described as work connectivity behavior after-hours [2]. This connectivity gives organizations speed and flexibility, yet it also brings a cost. Prior evidence links repeated after-hours connectivity with burnout, lower family satisfaction, and stronger turnover intentions [3]. In other words, the same tools that promise efficiency may also carry work pressure into family life. This contradiction has become a practical and theoretical problem in digital work settings [4].

This change also alters what leadership means. Digital technologies and communication platforms have reshaped how leaders assign tasks, coordinate teams, and monitor progress [5]. Leadership practices designed for co-located workplaces do not always fit virtual collaboration, continuous online communication, and digitally mediated supervision [6]. Employees now depend heavily on digital platforms, so organizations need leaders who can use these tools to make

workflows clearer rather than more fragmented [7]. Digital leadership can be understood as a technology-mediated influence process and an organizational capability that supports digital transformation, while also shaping employee attitudes, behaviors, and performance [5]. Still, its role in employees' work-family balance has not been examined in a sufficiently integrated way. In particular, little is known about whether digital leadership can reduce work-family conflict, through what mechanism this effect occurs, and under what boundary conditions it becomes stronger or weaker.

Most existing digital leadership research has concentrated on organizational innovation, digital transformation, employee creativity, and job performance [8, 9]. A smaller but growing stream has begun to ask how digital leadership affects employees' psychological states and well-being. This question matters because digital technologies do not have one single effect. They can improve flexibility and task efficiency, but they can also encourage employees to stay reachable after work, which weakens recovery and increases resource depletion. In such a context, leaders are expected not only to improve performance but also to help employees manage the pressure created by digitally integrated work. Although work-family conflict in digital workplaces has received increasing attention, the protective role of digital leadership remains underdeveloped.

This study therefore uses conservation of resources theory to explain digital leadership as a conditional resource [10]. Leaders with strong digital capabilities can offer technical support, clearer digital routines, and better task prioritization. These resources help employees finish work during regular hours instead of spending personal time compensating for unclear instructions, inefficient platforms, or delayed communication. When unnecessary after-hours connectivity is reduced, employees are better able to preserve their limited personal resources. On this basis, digital leadership may ease the spillover of work pressure into family life.

2. Hypotheses development

2.1. Digital leadership and work-family conflict

Work-family conflict occurs when the demands of work and family roles are incompatible in terms of time, strain, or behavior [11]. In the digital era, information and communication tools make this conflict more likely because they weaken the temporal and spatial separation between the two domains [12]. Yet digitalization does not automatically intensify work-family conflict. From the perspective of conservation of resources theory, leadership is an important contextual resource because it helps employees obtain, protect, and allocate time, energy, and psychological capacity [13]. Digital leadership may therefore reduce, rather than increase, the strain employees experience between work and family.

Digital leadership refers to leaders' ability to use digital tools to coordinate work, improve communication, and support employees in technology-rich work environments [7, 14]. Leaders with stronger digital leadership are more likely to design efficient workflows, clarify priorities, and remove unnecessary technological complexity and communication overload [9]. These practices allow employees to complete tasks within formal working hours and retain more resources for family responsibilities. Conservation of resources theory suggests that employees with sufficient situational resources are less likely to fall into resource loss spirals that lead to stress and inter-role conflict [10]. Digital leaders can also provide flexibility, technical help, and timely feedback, which increases employees' sense of control over work demands and reduces the transfer of work strain into family life [8].

By contrast, weak digital leadership may leave employees facing unclear digital expectations, inefficient communication, and excessive work demands. They then have to spend extra time and energy after work to handle unfinished tasks or resolve avoidable problems [15]. Such continuous resource consumption makes it easier for work demands to interfere with family responsibilities.

2.2. Digital leadership and work connectivity behavior after-hours

Digital leadership also reflects a leader's capacity to promote digital transformation and guide the use of technology [16]. Conservation of resources theory assumes that individuals try to acquire and protect valuable resources so they can meet work demands [10]. In this sense, digital leadership can be treated as a conditional resource in digital work contexts [17]. Digital leaders can use technology to provide employees with knowledge, information, and task-related support [18]. When employees receive timely technical assistance and clear task guidance during regular working hours, their efficiency and self-efficacy are likely to improve. They have less need to rely on defensive strategies such as using non-work time to finish daytime tasks [19]. Effective digital leadership can also establish communication norms that reduce duplicated messages and information overload. As a result, employees are less likely to experience the kind of resource loss spiral that pushes them to remain online after work [13].

2.3. Work connectivity behavior after-hours and work-family conflict

Conservation of resources theory argues that people must allocate limited resources across different life roles [19]. After-hours work connectivity disrupts this allocation because time and attention that could be used for family activities are redirected to work [20]. Once employees spend personal time completing work tasks, they may have insufficient time for family responsibilities such as helping children with homework or doing household chores. The conflict is not only about time. Resource depletion and the anticipation of further resource loss can both create stress, especially for individuals with fewer remaining resources [10]. Thus, after-hours connectivity may make employees feel that work pressure is entering family time and weakening their ability to perform household roles [12, 21]. A simple example is an unexpected online meeting during a family trip. Even if the meeting is short, it can interrupt shared activities and leave the employee emotionally unavailable afterward.

2.4. The mediating role of work connectivity behavior after-hours

The above arguments suggest that work connectivity behavior after-hours explains how digital leadership relates to work-family conflict. Digital leadership should not be viewed only as another source of work pressure. When it is effective, it becomes a resource that helps employees use digital technologies more efficiently [7, 14].

From the resource gain perspective of conservation of resources theory, leaders with strong digital leadership provide practical technical support and clearer communication routines [13]. These instrumental resources make regular working hours more productive and reduce the need for off-duty work used to protect job performance or finish delayed tasks [15]. Lower after-hours connectivity then protects employees' limited personal resources. Because after-hours work connectivity consumes cognitive and attentional resources, its reduction leaves employees with more time and energy for family obligations [22]. In this way, digital leadership may prevent work

from encroaching on family life and reduce the resource loss process that usually produces work-family conflict [10].

2.5. The moderating role of segmentation preference

Segmentation preference captures the extent to which individuals want work and family to remain separate [23]. This preference influences how employees allocate resources across the two domains during non-working hours. Prior boundary research suggests that employees with a stronger segmentation preference treat work and family as distinct spheres and are less willing to deal with work issues at home [24]. Boundary theory also shows that role transitions are easier for some employees than for others, depending on how they organize and protect role boundaries [25]. For this reason, segmentation preference may strengthen the relationship between after-hours connectivity and work-family conflict.

Employees high in segmentation preference want work and family to interfere with each other as little as possible and tend to restrict the transfer of resources between the two domains [26]. For them, a clear boundary is not a minor preference but a way to protect psychological resources. When they face after-hours work connectivity, they may read it not simply as a loss of time but as an intrusion into their boundary resources and private sphere. Work entering the family domain directly violates their preferred resource allocation pattern and may produce stronger stress and frustration than it does for employees who are comfortable integrating roles. Employees low in segmentation preference are usually more tolerant of boundary blurring and may experience less resource drain from after-hours contact. Therefore, the harmful effect of after-hours connectivity on the family role should be stronger when employees have a high desire for separation.

Based on the above theoretical reasoning, the hypotheses illustrated in Figure 1 are put forward:

H1: Digital leadership is negatively related to work-family conflict.

H2: Digital leadership is negatively related to work connectivity behavior after-hours.

H3: Work connectivity behavior after-hours is positively related to work-family conflict.

H4: Work connectivity behavior after-hours mediates the relationship between digital leadership and work-family conflict.

H5: Segmentation preference moderates the relationship between work connectivity behavior after-hours and work-family conflict positively.

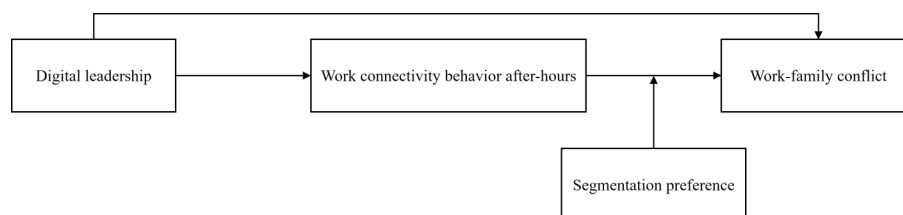


Figure 1. Proposed theoretical model

3. Method

3.1. Sample and procedures

This research recruited volunteers through the Credamo platform in January 2026. Before the formal questionnaire was distributed, a pilot test with 30 employees was conducted to check item clarity and logical consistency. In the formal survey, 330 questionnaires were distributed. After incomplete, straight-lined, and logically inconsistent responses were removed, 300 valid questionnaires

remained, yielding an effective response rate of 90.91%. Male respondents accounted for 39%. The average age was 32.36 years, and the average job tenure was 6.38 years. Most respondents (88.33%) held a bachelor's degree or above.

3.2. Measures

All variables were measured with a 5-point Likert scale. Digital leadership, work-family conflict, and segmentation preference were rated from strongly disagree to strongly agree. After-hours work connectivity behavior was rated from never to very frequently. All measures were completed by employees.

Digital Leadership (DL): The scale developed by [8] was used, consisting of 6 items. An example item is "My supervisor keeps up-to-date with digital knowledge".

Work Connective Behavior After-hours (WCBA): This scale, used in the research by [27], contains 3 items. One representative statement is "I contacted people related to my work (e.g., superiors or colleagues) through communication tools due to work matters".

Work-Family Conflict (WFC): This scale developed by [28] consists of 5 items. A typical scale item is "Work demands interfere with my family life".

Segmentation Preference (SP): This scale, developed by [24], contains 4 items. For instance, the item goes "When at home, I do not want to be disturbed by work-related matters."

Control Variables: This study controlled for employees' gender, age, education and work experience to exclude the potential effects of these demographic variables on the research results.

4. Results

4.1. Confirmatory factor analyses

A confirmatory factor analysis was conducted for the four latent variables, and the results are reported in Table 1. The four-factor model showed the best fit ($\chi^2=210.98$, $df=129$, $RMSEA=0.046$, $SRMR=0.038$, $CFI=0.974$, $TLI=0.969$), with the fit indices meeting the recommended criteria. Relative to this model, the three-factor, two-factor, and one-factor alternatives showed markedly poorer fit: $\Delta\chi^2=218.151$, $\Delta\chi^2=686.704$, and $\Delta\chi^2=919.832$, respectively, all significant at $p<0.001$. These findings support the discriminant validity of the four constructs and indicate that the proposed measurement structure is statistically acceptable.

Table 1. Confirmatory factor analysis

Model	χ^2	df	$\Delta\chi^2$ (Δdf)	RMSEA	SRMR	CFI	TLI
4	210.98	129	—	0.046	0.038	0.974	0.969
3	429.131	132	218.151(3)	0.087	0.071	0.905	0.89
2	897.684	134	686.704(5)	0.138	0.119	0.757	0.722
1	1130.812	135	919.832(6)	0.157	0.115	0.683	0.641

Notes: Model 1: DL+WCBA+WFC+SP; Model 2: DL+WCBA, WFC+SP; Model 3: DL+WCBA, WFC, SP; Model 4: DL, WCBA, WFC, SP

4.2. Descriptive statistics

Table 2 reports the descriptive statistics and correlations for the focal variables, providing the basis for the subsequent hypothesis tests.

Table 2: Descriptive statistics and inter-correlations for the focal variables

	Mean	SD	1	2	3	4	5	6	7
1. Digital Leadership	4.0094	0.66597	(0.864)						
2. Work Connective Behavior After-hours	3.27	0.88174	-.357**	(0.873)					
3. Work-Family Conflict	2.4247	1.04561	-.520**	.638**	(0.932)				
4. Segmentation Preference	4.3958	0.55788	-.377**	.355**	.422**	(0.752)			
5. Gender	1.61	0.489	-.242**	.354**	.366**	.311**			
6. Age	32.36	8.28	-0.096	0.009	-0.075	0.003	0.042		
7. Education	2.03	0.516	0.012	0.012	0.031	0.076	0.078	-.179**	
8. Work Experience	6.38	5.789	-0.039	-0.008	-0.088	-0.023	-0.045	.771**	-.179**

Notes: N=300. The values within parentheses on the diagonal represent the internal consistency coefficients of the variables in this research. Gender coded as 1=male, 2=female. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

4.3. Hypothesis testing

The hypotheses were tested with hierarchical regression analysis, as shown in Table 3. After the demographic variables were controlled, Model 1 shows that digital leadership was significantly and negatively related to work connective behavior after-hours ($b = -0.386$, $p < 0.001$), supporting H2. Model 3 shows that work connective behavior after-hours was positively related to work-family conflict ($b = 0.567$, $p < 0.001$). This indicates that employees who engage in more work-related communication during non-work time report higher work-family conflict; therefore, H3 is supported.

Models 2 and 3 also show that digital leadership had a significant negative association with work-family conflict ($b = -0.739$, $p < 0.001$), supporting H1. After work connective behavior after-hours was included, the negative effect of digital leadership on work-family conflict became weaker but remained significant ($b = -0.520$, $p < 0.001$). This pattern suggests a mediating role of work connective behavior after-hours. The bootstrap test further confirmed the mediation effect, with an indirect effect of -0.219 and a 95% bootstrap confidence interval of $[-0.312, -0.138]$, supporting H4.

Model 5 further controlled for demographic variables, work connective behavior after-hours, and segmentation preference. The interaction between work connective behavior after-hours and segmentation preference was positively related to work-family conflict ($b = 0.369$, $p < 0.001$).

A simple slope analysis using the PROCESS macro was then conducted to interpret the moderation effect. When segmentation preference was low, the positive effect of work connective behavior after-hours on work-family conflict was weaker ($b = 0.357$, $p < 0.001$). When segmentation preference was high, the effect became stronger ($b = 0.687$, $p < 0.001$). The difference was -0.114 ($SE = 0.037$, 95% CI $[-0.198, -0.053]$), and the confidence interval did not include zero. Figure 2 presents this moderation pattern. Thus, H5 was supported.

Table 3. Hierarchical regression analysis

Category	Work Connectivity Behavior After-hours		Work-Family Conflict		
	Model 1	Model 2	Model 3	Model 4	Model 5
Gender	0.521***	0.554***	0.259**	0.260**	0.245*
Age	-0.007	-0.018	-0.014	-0.009	-0.010
Education	-0.0199	-0.014	-0.003	0.340	-0.550
Work Experience	0.007	0.003	-0.001	-0.04	0.001
Digital Leadership	-0.386***	-0.739***	-0.520***		
Work Connective Behavior After-hours			0.567***	0.623***	0.591***
Segmentation Preference				0.372***	0.616***
Work Connective Behavior After-hours × Segmentation Preference					0.369***
R ²	0.205	0.349	0.531	0.471	0.511
F	15.198***	31.541***	55.273***	43.412***	43.569***

Notes: * p < 0.05, ** p < 0.01, *** p < 0.001.

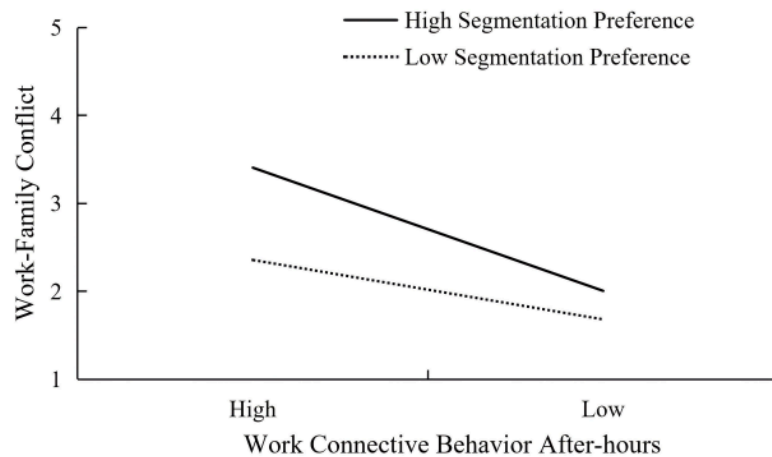


Figure 2. The moderating effect of Segmentation Preference

5. Conclusion

Based on conservation of resources theory, this study examined how digital leadership is connected to work-family conflict. The results show that digital leadership is negatively associated with work-family conflict and that work connectivity behavior after-hours partly explains this relationship. The findings also show that segmentation preference strengthens the positive relationship between after-hours connectivity and work-family conflict. In practical terms, digital leadership appears to reduce

unnecessary off-duty work engagement, helping employees protect personal resources and easing tension between work and family roles.

The study offers both theoretical and practical implications. Theoretically, it applies conservation of resources theory to the digital leadership and work-family literature by showing that digital leadership can operate as a conditional resource that slows resource loss linked to persistent after-hours connectivity [13]. This responds to calls for more attention to leadership interventions in digital work-life boundary management [12]. The study also identifies work connectivity behavior after-hours as an explanatory mechanism and segmentation preference as an important boundary condition, which extends the nomological network of digital leadership's well-being outcomes. Practically, organizations should develop managers' digital leadership capabilities. Training should help managers simplify digital workflows, clarify communication expectations, and reduce information overload during working hours. Managers may also need to manage boundaries differently across employees: those with high segmentation preference may benefit from stronger offline protection and more flexible scheduling, whereas employees who prefer integration may value greater autonomy [24]. Such practices can help organizations maintain digital agility without overlooking employee well-being in hybrid work contexts.

This research also has limitations. First, the cross-sectional design cannot support strong causal claims; future studies could use experience sampling or longitudinal designs to examine changes in after-hours connectivity and work-family conflict over time [21]. Second, the data were collected through self-reports, so common method bias may exist. Multi-source data would improve robustness. Third, the sample focuses on knowledge workers in particular contexts. Future research could test whether the findings hold across industries, cultures, and remote or on-site work arrangements. Finally, later studies may examine additional mechanisms, such as psychological detachment or technostress, and other boundary conditions, such as organizational offline policies or team norms [4]. These extensions would provide a fuller account of how digital leadership shapes work-family balance.

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