



Remote Work Flexibility and Employee Productivity: The Mediating Role of Work-Life Balance

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ABSTRACT

This study employed descriptive-explanatory research design in examining the relationship between the work-life balance of flex workers and their productivity through a survey. In order to collect data, a questionnaire was developed with 5 Likert scale questions on remote work flexibility, work-life balance and employee productivity, and distributed to 220 respondents who were working under hybrid or fully remote arrangement using purposive sampling. All constructs were shown to be reliable with Cronbach's alpha, and descriptive and correlation analysis revealed that the three constructs were all significantly and positively interrelated. The results showed that remote work flexibility had a significant positive total effect on employee productivity, remote work flexibility had a significant positive effect on work-life balance, and work-life balance had a significant positive effect on employee productivity. Bootstrapped mediation analysis showed that work-life balance was found to significantly and partially mediate the remote work flexibility-employee productivity link and accounted for about 55% of the total effect. The results indicate that employment flexibility in terms of working remotely is positively linked to employee productivity, which is mainly due to the fact that it provides better work-life balance—not exclusively—but not to the flexibility itself. Theoretical and practical implications for the design of hybrid and remote work policies are discussed.

Keywords: remote work flexibility, work-life balance, employee productivity, hybrid work, mediation analysis, bootstrapping

INTRODUCTION

With the advent of remote and hybrid work, scholars and organizations have recently renewed their focus on the impact of the flexibility that these types of work arrangements bring on employee outcomes (Wang et al., 2021). Flexibility in remote and hybrid work arrangements has been conceptualized as one of the main ways in which such arrangements impact employee well-being and performance, namely through the flexibility arrangements give employees regarding where, when and how they work. Flexibility regarding remote and hybrid work arrangements, which is defined as discretion employees have over where, when and how they work, has been theorized as a key mechanism through which remote and hybrid arrangements influence employee well-being and performance (Hill et al., 2008).

Initial studies of telecommuting yielded more mixed results about the impacts on worker outcomes, ranging from definitive gains in productivity and satisfaction to mixed or limited impacts (Golden & Veiga, 2005). In a highly influential meta-analysis (Gajendran and Harrison, 2007), they discovered that telecommuting was positively related to job satisfaction, work-family conflict, and performance, but emphasized that these relationships were mediated by certain psychological factors, not a direct unconditional effect of telecommuting.



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Work-life balance, broadly conceived as a person's capacity to handle and integrate the requirements for work and private life (Kalliath & Brough, 2008), is one mediator that has been regularly related to this literature. The benefits of telecommuting did not necessarily translate to improvements in employees' work-family effectiveness, as Kossek, Lautsch, and Eaton (2006) reported that how effective employees' work-family balance would turn out to be would depend on the level of control and boundary management flexibility they had. In a seven-country study, Haar et al. (2014) confirmed the relevance of work-life balance as a linkage between work arrangements and other employee outcomes by consistently and significantly finding a link with job satisfaction and mental health.

Although work-life balance (WLB) is receiving an increasing amount of attention in the literature in the wake of the Covid-19 pandemic and the increased flexibility of working remotely (Kniffin et al., 2021), few studies directly examine WLB as a statistic mediator between remote work flexibility and productivity, rather than an outcome or a parallel pathway (Charalampous et al., 2019). This is a significant omission, as the role of work-life balance as a mediator has implications for the development and communication of work-life balance policy which can improve productivity (Felstead & Henseke, 2017).

The study was designed as an explanatory research that is based on a survey approach guided by this gap, which was used to investigate whether remote work flexibility has positive effects on employee productivity through work-life balance for employees that work in hybrid and fully remote work arrangements. The study aimed to evaluate: (a) the direct effect of remote work flexibility on employee productivity; (b) the effect of remote work flexibility on work-life balance, and then, the effect of work-life balance on employee productivity; and (c) the indirect effect of remote work flexibility on employee productivity through work-life balance, with the use of bootstrapping procedures to evaluate the proposed mediation model.

LITERATURE REVIEW

The Concept and Dimensions of the Remote Work Flexibility.

Remote work flexibility is defined in more than terms of formal organizational policy; it also relates to the amount of discretion actual workers have in how they structure their work in terms of location, timings, and pacing of their working day (Hill et al., 2008). Kelliher and Anderson (2010) also compared flexible working practices that were episodic (e.g., occasional days away from the office for a few days at a time) with more structural arrangements (e.g., fully remote or hybrid positions) and concluded that the extent and voluntary nature of the flexible working practices determined whether they were perceived as helpful or as a means to work intensification. Kossek, Lautsch and Eaton (2006) also noted that flexibility is not a one-size-fits-all construct; they noted that flexible work policies are available, but that the extent to which employees have control over the boundaries of their work is more important to employee outcomes than the policies themselves.

A large number of studies have focused on the results of telecommuting and work at a distance. To resolve the earlier inconsistent findings in the literature, Golden and Veiga (2005) discovered the relationship between intensity of telecommuting and job satisfaction was curvilinear, rising to a certain point, then decreasing. In their meta-analysis, Gajendran and Harrison (2007) concluded that the overall impacts of telecommuting on job satisfaction, job performance, and work-family conflict were positive, but with mixed results as to intensity of telecommuting and job type. In a review of the scientific research on telecommuting, Allen, Golden, and Shockley (2015) found that though telecommuting was generally



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related to positive results, the causal chain by which these results were achieved was not well tested in most of the empirical literature, and mediation-based designs, like the one employed in this study, directly targeted this gap.

Work-Life Balance: Concept and Antecedents

Work-life balance is a person's subjective perception of being able to manage and balance the demands of work and personal life (Kalliath & Brough, 2008). Greenhaus and Allen (2011) placed work-life balance in the context of the more general work-family literature, explaining that balance is a broader construct than work-family conflict and that it captures a more comprehensive assessment of work and family role effectiveness and satisfaction overall. Hill et al. (2008) also found that workplace flexibility is one of the most frequently mentioned antecedents of work-life balance, because flexibility with the time and place of work has a direct influence on their ability to fulfill both work and personal responsibilities. However, Wheatley (2017) found that it was the actual use of flexible working arrangements and not just their availability, which was significantly related to job and life satisfaction, highlighting the importance of experienced flexibility over nominal flexibility to work-life balance outcomes.

In recent years, there has been a significant increase in empirical evidence on the link between flexibility of remote work and productivity. Bloom, Liang, Roberts, and Ying (2015) conducted a randomized field experiment that found that teleworkers performed significantly better due in part to a less noisy work environment and less distracting work environment. The impact of telework on well-being and performance-relevant outcomes was also shown to be highly individual and daily-dated, reflecting that the benefits of telework depend on how well employees are able to plan and manage their telework experience (Anderson, Kaplan, & Vega 2015; Vega, Anderson, & Kaplan 2015). Demonstrating that remote working can potentially benefit employees' autonomy, social connection, and role clarity, Wang, Liu, Qian, and Parker (2021) used a work design approach to remote working during the COVID-19 pandemic to conclude that the productivity outcomes of remote work are heavily reliant on how remote working arrangements either support or hinder employees' autonomy, social connection, and role clarity.

The Mediating Role of Work-Life Balance

A smaller line of research suggests that WLB serves as a mediator of the relationship between remote working flexibility and productivity outcomes, instead of being an autonomous and parallel outcome of flexible work. Grant, Wallace and Spurgeon (2013) reported that psychological issues (such as perceived autonomy and boundary management) impacted both the well-being of remote e-workers and their work-life balance, which then affected their levels of job effectiveness. In a systematic review of the effects of remote e-worker status on performance-relevant outcomes, Charalampous et al. (2019) found that the overall effects of remote working status on performance-relevant outcomes were largely mediated by intervening psychological and work-life variables such as work-life balance. The growth of flexible working was also linked to a rise in working effort as well as to better work-life balance (Felstead and Henseke, 2017), findings that support a twin path model for the relationship between the increase in flex at work and employee effort and productivity.

Theoretical Framework

The boundary theory perspective on work and family was used as the theoretical framework for this study, which emphasizes how individuals actively negotiate the boundaries between work and personal life roles and the extent to which they have control over these boundaries affects their ability to achieve balance



within work and personal life domains (Kossek, Lautsch & Eaton 2006). The boundary management flexibility of remote work is theorized to increase employees' boundary management control, providing the flexibility to organize work around their demands instead of the flexibility in demands to organize work (Greenhaus & Allen, 2011); this improved capacity for boundary management is theorized to lead to greater work-life balance which is in turn theorized to help sustain attention, energy and role engagement needed for high productivity. This theoretical positioning implies that work-life balance should not only be a by-product of remote work flexibility, but should also play an intermediary role.

Hypotheses Development

After carrying out the above theoretical and empirical review, the following hypotheses were formulated:

H1: Employee productivity is positively and significantly impacted by remote work flexibility.

H2: Work flexibility has a significantly positive impact on work-life balance. H2: Flexibility to work from home positively affects work-life balance.

H3: The significance of employee productivity on work-life balance is quite positive.

H4: Work-life balance significantly mediates the relationship between remote work flexibility and employee productivity.

METHODOLOGY

Research Design

This study used survey research design as an explanatory research type research to examine the effects of remote work flexibility on employee productivity by considering the work-life balance. Based on the purpose of the study to examine hypothesized causal relationships and the mediating variable between constructs measured at one time, an explanatory design was found to be appropriate.

Population and Sample

The group of workers studied included those in hybrid or fully remote roles in various sectors. Purposive sampling was used to include only employees who had direct exposure to remote/hybrid work experiences, as opposed to occasional/incidental remote/hybrid work experiences. There were 220 valid responses, which is a sufficient sample size for regression-based mediation analysis.

Instrumentation

The data were collected by using a structured questionnaire that has three constructs using a Likert scale from 1 (strongly disagree) to 5 (strongly agree). The flexibility to work remotely was assessed by five items that assessed the extent of employees' perceived discretion in terms of working when they wanted, where they wanted, and how fast they wanted to work. Work-life balance was assessed with six items that reflect whether the employees feel they can manage and balance the demands of work and their personal lives. Five items measuring the employees' self-assessment of efficiency, output, and the ability to achieve work goals and deadlines served as a measure of employee productivity.



Data Collection Procedure

A small number of 18 employees participated in a pretest of the questionnaire for face and form to ensure that the questions were understandable; minor changes in wording were made. The completed questionnaire was then sent electronically to staff who work under hybrid or remote working conditions for six weeks. Total responses received were 248, of which 220 (89% valid) were kept for analysis after removing the incomplete responses and the responses that didn't meet the attention-check requirements.

Data Analysis Technique

The reliability of the research instrument was initially tested by Cronbach's alpha for each construct, then descriptive data and Pearson correlation analysis were used to analyze the relationships between remote work flexibility, work-life balance, and employee productivity. A series of ordinary least squares regression models was then used to test the hypotheses: controlling for remote work flexibility, the effect of remote work flexibility on work-life balance was estimated; and controlling for remote work flexibility, the effect of work-life balance on productivity was estimated. The mediation model was tested by computing bootstrapped 95% confidence intervals using 5,000 resampling of the data, which enables one to know the significance of the indirect effect without the need of testing the significance of the regression paths separately from the mediation model.

Ethical Considerations

The study was approved ethically before data was collected. The purpose of the study and informed consent forms were given to the participants before their participation. There was no penalty for not completing or for withdrawing from the study at any point. No personally identifiable information was gathered and all responses were kept securely and only for the purposes of this research.

RESULTS AND ANALYSIS

Demographic Profile of Respondents

Table 1 presents the demographic and work-arrangement characteristics of the 220 employees who participated in the study.

Table 1. Demographic Profile of Respondents (N = 220)

Characteristic	Category	Frequency	Percentage (%)



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Gender	Male	104	47.3
	Female	116	52.7
Age (years)	25–34	88	40.0
	35–44	79	35.9
	45 and above	53	24.1
Work arrangement	Fully remote	96	43.6
	Hybrid	124	56.4
Organizational tenure	Less than 2 years	52	23.6
	2–5 years	98	44.5
	More than 5 years	70	31.8
Industry	Information Technology	68	30.9
	Finance / Professional Services	61	27.7
	Education	45	20.5
	Other	46	20.9

Reliability, Descriptive Statistics, and Correlations

Table 2 shows the reliability, the descriptive statistics and the correlation for the three study constructs. The internal consistency of all constructs was adequate (Cronbach's alpha values were greater than 0.80)



and all three constructs were significantly and positively intercorrelated, with the highest correlation between work-life balance and work productivity.

Table 2. Reliability, Descriptive Statistics, and Correlations Among Study Constructs

Construct	Cronbach's α	Mean	SD	1	2	3
1. Remote Work Flexibility	0.849	3.81	0.67	1.00		
2. Work-Life Balance	0.865	3.66	0.70	0.55**	1.00	
3. Employee Productivity	0.858	3.79	0.64	0.46**	0.59**	1.00

Note. ** $p < .01$ (two-tailed).

Regression-Based Hypothesis Testing

A series of ordinary least squares regression models were used to test the hypotheses. The overall results of the remote work flexibility on employee productivity were positive and significant ($\beta = .469$, $t = 7.72$, $p < .001$) and supported H1. The positive influence of remote working flexibility on work-life balance ($\beta = .55$, $t = 9.87$, $p < .001$) was also statistically significant, allowing for the support of H2. With both remote work flexibility and work-life balance included as predictors of employee productivity simultaneously, H3 was supported as the direct effect of remote work flexibility on employee productivity remained significant but diminished in size ($\beta = .21$, $t = 3.42$, $p < .001$), while the direct effect of work-life

Table 3. Regression Results for Hypothesis Testing

Model / Path	β	t-value	p-value	R ²	F (df)
Step 1 (c path): Remote Work Flexibility → Productivity	0.469	7.72	<.001	0.220	58.65 (1,218)
Step 2 (a path): Remote Work Flexibility → Work-Life Balance	0.55	9.87	<.001	0.303	94.72 (1,218)
Step 3 (b path): Work-Life Balance →	0.47	7.58	<.001	0.397	71.36 (2,217)



Productivity					
Step 3 (c' path): Remote Work Flexibility → Productivity (direct)	0.21	3.42	<.001	—	—

Note. The results of Step 3 show one regression model using both remote work flexibility and work-life balance as the predictors of employee productivity.

Mediation Analysis

Bootstrapped 5,000 resampled confidence intervals were used to test whether work-life balance mediates between remote work flexibility and productivity. The indirect effect of remote work flexibility on employee productivity through work-life balance was positive and statistically significant (effect = .259, SE = .044, $z = 5.89$, $p < .001$) and a 95% bootstrapped interval confidence interval did not contain zero [.176, .347]. However, the direct effect of remote work flexibility on employee productivity remained significant ($\beta = .21$, $p < .001$) after controlling for the mediator, meaning that work-life balance partially mediated the relationship between remote work flexibility and employee productivity (55.2% of the total effect). This was therefore accepted by H4.

Table 4. Bootstrapped Mediation Analysis (5,000 Resamples)

Effect	Coefficient	SE	Test statistic	95% CI (LL, UL)	p-value
Direct effect: Remote Work Flexibility → Productivity	0.210	0.061	$t = 3.42$	[0.089, 0.331]	<.001
Indirect effect: Remote Work Flexibility → Work-Life Balance → Productivity	0.259	0.044	$z = 5.89$	[0.176, 0.347]	<.001
Total effect	0.469	0.059	$t = 7.72$	[0.354, 0.584]	<.001

Note. Proportion mediated = indirect effect / total effect = $0.259 / 0.469 = 55.2\%$, indicating partial mediation. LL = lower limit; UL = upper limit; CI = confidence interval.

DISCUSSION

The results of this study support the hypothesized relationships between remote work flexibility, work-life balance and employee productivity well in terms of empirical evidence. As in H1, the positive direct effect of remote work flexibility on employee productivity was significant, thus supporting previous



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findings that remote and flexible work have a positive direct relationship with performance relevant outcomes (Bloom, Liang, Roberts, & Ying, 2015; Gajendran & Harrison, 2007). However, the decrease in the magnitude of the direct path strength after introducing work-life balance seems to indicate that the productivity effects of remote work depend on more than just flexibility, and that further research is needed that investigates the psychological and behavioral pathways by which flex turns into productivity (Allen, Golden, & Shockley, 2015).

The strong positive relationship between work-life balance and flexibility benefits from remote work (H2), which is consistent with findings from boundary theory which suggest that increasing the flexibility of how and when work is done will help employees in their efforts to manage their work/life boundaries (Kossek, Lautsch, & Eaton, 2006). This next important condition of work-life balance for employee productivity is experienced capacity to balance competing role demands and not just the presence of flexible arrangements per se (Haar et al., 2014; Wheatley, 2017), supporting the argument above.

Most importantly, the bootstrapped mediation analysis indicated that the effect of remote work flexibility on employee productivity was partially mediated by work-life balance, and in this case, the mediation accounted for most of the overall effect. The results provide substantial empirical support for the boundary theory framing used in this study (Greenhaus & Allen, 2011) and align with previous studies, which indicate that positive productivity effects of remote and flexible work arrangements are highly mediated by better work-life balance (Charalampous, Grant, Tramontano, & Michailidis, 2019; Felstead & Henseke, 2017). What this means in practice is that workforce flexibility that is not tied to the way employees are using their time or boundaries to maximize productivity gains is likely to achieve less than half the productivity benefits of workforce flexibility.

CONCLUSION

The research purpose of this study was to explore the relationship between the flexibility of remote working and employee productivity by examining the work-life balance of workers working remotely or hybrid. The study adopted a survey-based explanatory research design and regression-based mediation analysis for a sample of 220 employees and yielded significant and positive relationships among remote work flexibility, work-life balance and employee productivity, significant and positive relationship between work-life balance and employee productivity, and partial mediation between remote work flexibility and employee productivity (accounting for 55% of the total effect). The findings suggest that remote work flexibility has a direct effect on employee productivity, but that this effect is primarily through the improved work-life balance that it allows, highlighting the complementary role of work-life balance and flexibility as drivers of employee productivity in hybrid and remote work settings. The study advances the remote/flexible working research literature by empirically untangling the link between flexibility and productivity gain.

RECOMMENDATIONS

Based on the results of this study, organizations are recommended to not rely on flexibility alone to increase productivity, but to ensure that employees with some flexibility are actively enabled to leverage that flexibility to create real work-life balance, such as by ensuring a lack of "always on" expectations, providing training and/or resources on how to maintain appropriate boundaries when working remotely or virtually, and discouraging the extension of work hours. Experienced flexibility, not just that it's available in policies, seems to be the most impactful on work-life balance and thus productivity: managers should therefore keep track of whether employees feel they can really use flexible policies to balance

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professional and personal demands. Future studies are recommended to support causal inferences and generalizations to other samples of employees newly transitioned to hybrid or remote work, with longitudinal designs that capture changes in flexibility, work-life balance, and productivity across the lifespan of the hybrid or remote arrangement, as well as to include other potentially moderating variables, like job type, caregiving responsibilities, or home working environment, that could influence the strength of the relationship observed in the present study.

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