

Analysis of the Influence of Hybrid and Remote Work Systems on Employee Performance and Productivity in Start-Ups: Work-Life Balance as a Mediating Variable

Chelsea Vanessa^{✉1}, Liestyaningrum Rahmadhani Wisnu Putri²

^{1,2,3} Program Studi Manajemen, STIE Wiyatamandala

Abstract

The post-pandemic paradigm shift in work arrangements has driven the massive adoption of hybrid and remote work systems in start-up companies; however, their impact on employee performance and productivity has not been comprehensively examined considering the mediating role of work-life balance. This study aims to analyze the influence of hybrid and remote work systems on work-life balance, performance, and productivity of start-up employees, as well as to examine the role of work-life balance as a mediating variable. A quantitative survey method was employed with 300 start-up employee respondents in Indonesia, analyzed using multiple linear regression and the Sobel Test. The results indicate that both hybrid and remote work systems have a significant positive effect on work-life balance, employee performance, and productivity. The hybrid system demonstrates a more dominant influence on work-life balance and productivity, while the remote system is more prominent in affecting individual performance. Work-life balance is proven to significantly mediate all relational pathways, with the strongest mediation effect found on the hybrid system's pathway to productivity ($T = 4.308$; $p = 0.000$). These findings imply that optimizing work-life balance is a key strategy in maximizing the impact of flexible work systems on start-up employee performance.

Keywords: *Hybrid, Remote, Produktivitas, Kinerja, Start-Up, Work-Life Balance*

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✉ Corresponding author :

Email Address : chelseavnssa@gmail.com

INTRODUCTION

The transformation of the workplace accelerated by the COVID-19 pandemic has fundamentally reshaped organizational landscapes, particularly regarding work arrangements in terms of time and location. Hybrid and remote working systems, which were initially perceived as alternative work models, have now evolved into a new norm within modern business ecosystems, especially among start-up companies. This phenomenon does not merely represent a shift from office-based work to home-based work; rather, it introduces more complex organizational dynamics involving employee productivity, individual performance, and the balance between professional and personal life. Recent studies indicate that flexible work systems generate multidimensional and uneven impacts across individuals and organizational types. Research by Prithwiraj Choudhury and colleagues highlighted that remote work flexibility may improve employee autonomy and efficiency, although its outcomes are strongly influenced by organizational context and managerial practices. Start-up companies possess distinctive characteristics compared to conventional organizations, including relatively flat organizational structures, dynamic work cultures, high innovation demands, and limited human and technological resources. Within this context, implementing hybrid and remote working systems may create unique organizational

challenges. According to studies conducted by Mina Beigi and colleagues, flexible work arrangements in start-ups can simultaneously promote agility while increasing coordination complexity and communication barriers. On one hand, workplace flexibility is considered beneficial for enhancing employee autonomy and reducing operational costs. On the other hand, reduced face-to-face interaction, weakened cross-functional coordination, and blurred boundaries between work and personal life may negatively affect employee performance and contribute to burnout symptoms (Allen et al., 2021). These issues become increasingly critical considering that start-up employees are predominantly young professionals who are highly vulnerable to work-related pressure while simultaneously expecting greater flexibility and well-being from their organizations. Work-life balance has emerged as a crucial variable linking flexible work systems to employee performance outcomes. Employees' inability to manage boundaries between professional responsibilities and personal life within hybrid and remote work settings frequently results in reduced motivation, job dissatisfaction, emotional exhaustion, and lower organizational commitment (Wheatley et al., 2021). Conversely, employees who maintain a healthy work-life balance tend to demonstrate higher performance levels, stronger engagement, and greater organizational loyalty (Alamanda et al., 2023). Therefore, work-life balance should not merely be viewed as an outcome of flexible work arrangements but also as a mediating mechanism that influences the relationship between work systems and employee performance. Although studies concerning remote and hybrid work have expanded significantly at the global level, research specifically focusing on start-up ecosystems in developing countries, including Indonesia, remains limited. Most existing literature emphasizes large corporations or public institutions, making the generalizability of findings to start-up environments questionable due to their distinct operational dynamics (Angreani et al., 2025). This research gap provides a strong rationale for conducting a more contextualized investigation targeting start-up employees.

Theoretically, this study is grounded in the Job Demands-Resources Model developed by Arnold Bakker and Evangelia Demerouti, which posits that the balance between job demands and job resources significantly determines employee engagement and burnout levels. In hybrid and remote work contexts, flexibility may function as a job resource that enhances employee performance; however, it may also become a job demand when poorly managed (Bakker & Vries, 2021). Furthermore, Border Theory introduced by Sue Campbell Clark is relevant in explaining how individuals navigate the boundaries between work and family domains in environments lacking clear physical separation (Charalampous et al., 2019). Based on these issues and theoretical foundations, this study is designed with three primary objectives: (1) to analyze the influence of hybrid and remote working systems on the performance and productivity of start-up employees; (2) to examine the effect of hybrid and remote working systems on employees' work-life balance; and (3) to investigate the mediating role of work-life balance in the relationship between hybrid and remote working systems and employee performance and productivity. The findings of this study are expected to contribute theoretically to the development of human resource management literature while also offering practical recommendations for start-up managers in designing equitable and sustainable flexible work policies.

METHODOLOGY

This study was designed using a quantitative approach with a descriptive-causal survey method aimed at measuring and analyzing the causal relationships among variables in a structured and measurable manner. This approach was selected because it enables systematic hypothesis testing through standardized measurement instruments and inferential statistical analysis (Creswell & Creswell, 2023). The variables examined in this study consisted of hybrid work systems (X1) and remote work systems (X2) as independent variables, work-

life balance (M) as the mediating variable, and employee performance (Y1) as well as employee productivity (Y2) as dependent variables.

The population of this research comprised employees working in start-up companies in Indonesia that actively implement hybrid and remote working systems. The sampling process employed a purposive sampling technique with the criterion that respondents must have worked under flexible working arrangements for at least six months. Based on the Slovin formula calculation with a 5% margin of error, the required sample size was determined to be 300 respondents. This number was considered representative and adequate for multivariate statistical analysis requirements (Hair & Alamer, 2022).

Research data were collected through a questionnaire instrument developed using a five-point Likert scale ranging from “strongly disagree” to “strongly agree.” The instrument consisted of 20 statement items distributed across five variables: hybrid work system (X1) with 4 items (P1–P4), remote work system (X2) with 4 items (P5–P8), work-life balance (M) with 4 items (P9–P12), employee performance (Y1) with 4 items (P13–P16), and employee productivity (Y2) with 4 items (P17–P20).

Prior to data collection, the instrument underwent validity and reliability testing. Validity testing was conducted using Pearson Product-Moment Correlation with an r-table value of 0.1133 (N = 300, df = 298). Reliability testing was performed using Cronbach’s Alpha coefficient. All questionnaire items were declared valid because the calculated r-values exceeded the r-table value. Furthermore, all variables demonstrated satisfactory reliability since the Cronbach’s Alpha values were above the acceptable threshold of 0.70, specifically: X1 = 0.863, X2 = 0.857, M = 0.870, Y1 = 0.864, and Y2 = 0.869.

The data analysis process was conducted in several stages. First, classical assumption tests were performed, including the normality test using the One-Sample Kolmogorov–Smirnov Test, the multicollinearity test using Tolerance and Variance Inflation Factor (VIF) values, and the heteroscedasticity test using Scatterplot analysis. Second, hypothesis testing was conducted using multiple linear regression analysis to examine the direct effects among variables. Third, the mediating role of work-life balance was tested using the Sobel Test, which allows precise measurement of the significance of indirect effects. All statistical analyses were carried out using the IBM SPSS Statistics software package. This stepwise analytical approach was chosen because it accommodates the complexity of mediation models within a coherent and systematic analytical framework (Hayes, 2017).

RESULTS AND DISCUSSION

Validity and Reliability Test

The initial stage of instrument testing was conducted through validity and reliability tests on all measurement indicators. The r-table value used as the acceptance limit was set at 0.1133 with a sample size of N = 300 (df = 298). All statement items in the five variables were declared valid because the *Pearson Correlation* or r-calculated value for each indicator exceeded the r-table value. A summary of the validity and reliability test results is presented in Table 1 below.

Table 1. Summary of Validity and Reliability Test Results

Variables	Indicat or	R-Count	R- Table	Res ults	Cronbach's Alpha
X1 – Hybrid System	P1–P4	0.844– 0.862	0.1133	Val id	0.863

Variables	Indicator	R-Count	R-Table	Results	Cronbach's Alpha
X2 - Remote System	P5-P8	0.806-0.856	0.1133	Valid	0.857
M - Work-Life Balance	P9-P12	0.806-0.898	0.1133	Valid	0.870
Y1 - Employee Performance	P13-P16	0.818-0.879	0.1133	Valid	0.864
Y2 - Employee Productivity	P17-P20	0.809-0.894	0.1133	Valid	0.869

(Source: Researcher's processed results. 2026)

Cronbach's Alpha values are above the threshold of 0.70, so all variables are declared reliable and suitable for use as data collection instruments in this study.

Classical Assumption Test

Before conducting the hypothesis testing, a series of classical assumption tests were first conducted, including normality, multicollinearity, and heteroscedasticity tests. The normality test using the *One-Sample Kolmogorov-Smirnov Test* produced an *Asymp. Sig.* value of 0.055 for Residual 1 and 0.200 for Residual 2. Since both values exceeded the 0.05 significance level, the residual distribution was declared normal. The results of the multicollinearity test in Table 2 indicate that there were no symptoms of multicollinearity in the regression model used.

Table 2. Multicollinearity Test Results

Variables	Tolerance		Tolerance	
	Y1	IF Y1	Y2	IF Y2
X2 - Remote System	0.752	1,329	0.752	1,329
X1 - Hybrid System	0.648	1,544	0.648	1,544
M - Work-Life Balance	0.686	1,458	0.686	1,458

(Source: Researcher's processed results. 2026)

Table 2 shows that all *Tolerance values* are > 0.10 and *Variance Inflation Factor (VIF)* values are < 10 , thus the model is declared free from multicollinearity problems. Meanwhile, the results of the heteroscedasticity test using *Scatterplot* show that the data points are randomly distributed above and below zero on the Y-axis without forming a specific pattern, indicating that heteroscedasticity does not occur in both regression models.

Multiple Linear Regression Test

Hypothesis testing was conducted using multiple linear regression analysis to measure the influence of independent variables on the dependent variable simultaneously and partially. Table 3 presents the results of the regression analysis for the first model with the dependent variable *work-life balance (M)*, which tests the influence of *hybrid (X1)* and *remote (X2)* work systems on the mediator.

Table 3. Regression Results - Effect of X1 and X2 on M (Work-Life Balance)

Variables	Std. Error	Beta	t	Sig.	R ²
(Constant)	5,005	0.883	-	5,669	<0.001
X1 - Hybrid System	0.436	0.060	0.436	7,266	<0.001

Variables		Std. Error	Beta	t	Sig.	R ²
X2 - Remote System	0.215	0.063	0.205	3,427	<0.001	

(Source: Researcher's processed results. 2026)

hybrid work system has a positive and significant effect on *work-life balance* with a coefficient of B = 0.436 (p < 0.001), as does the *remote work system* with B = 0.215 (p < 0.001). The R² value of 0.314 indicates that both work system variables together are able to explain 31.4% of the variation in employee *work-life balance*. Furthermore, Table 4 displays the results of multiple regression for the second and third models, namely the simultaneous influence of X1, X2, and M on performance (Y1) and productivity (Y2).

Table 4. Regression Results - Effect of X1, X2, and M on Y1 and Y2

Variables	(Y1)	Sig. (Y1)	(Y2)	Sig. (Y2)
(Constant)	1,454	0.116	1,385	0.116
X2 - Remote System	0.412	<0.001	0.237	<0.001
X1 - Hybrid System	0.325	<0.001	0.356	<0.001
M - Work-Life Balance	0.160	0.012	0.321	<0.001
R²	0.437		0.473	

(Source: Researcher's processed results. 2026)

Table 4 shows that *remote work systems* are the strongest predictor of employee performance (B = 0.412, p < 0.001), while *hybrid work systems* contribute more to productivity (B = 0.356, p < 0.001). The *work-life balance* variable also has a positive and significant effect on performance (B = 0.160, p = 0.012) and productivity (B = 0.321, p < 0.001). The R² value of 0.437 for model Y1 and R² = 0.473 for model Y2 indicates the model's ability to explain variation in both dependent variables.

Mediation Test (Sobel Test)

To verify the role of *work-life balance* as a mediating variable, a *Sobel test* was conducted on four mediation paths. Complete results are presented in Table 5.

Table 5. Summary of Sobel Test Results

Mediation Path	B	SE a	SE b	T-Statistic	P-Value	Conclusion
X1 → M → Y1	0.436	0.136	0.063	2,397	0.016	Significant
X2 → M → Y1	0.215	0.136	0.063	2,037	0.041	Significant
X1 → M → Y2	0.436	0.136	0.063	4,308	0,000	Significant
X2 → M → Y2	0.215	0.136	0.063	2,877	0.004	Significant

(Source: Researcher's processed results. 2026)

Based on Table 5, all four tested mediation paths produced a *T- statistic value* > 1.96 with a *p- value* < 0.05, so that *work-life balance* was statistically proven to mediate the relationship between *hybrid* and *remote work systems on employee performance and productivity*. The strongest mediation effect was found in the *hybrid* work system path on productivity through *work-life balance* ($T = 4.308$; $p = 0.000$), which indicates that work schedule flexibility in the *hybrid model* significantly improves work-life balance which in turn boosts *start-up employee productivity output* more substantially than other mediation paths.

Hybrid and Remote Work Systems on the Work-Life Balance of Start-Up Employees

The first research problem formulation focuses on the extent to which *hybrid* and *remote work systems* affect the *work-life balance of start-up employees*. Based on the results of multiple linear regression analysis, it was found that the *hybrid work system* (X1) has a positive and significant effect on *work-life balance* (M) with a coefficient of $B = 0.436$ and a significance value of $p < 0.001$. The *remote work system* (X2) was also proven to have a positive and significant effect with $B = 0.215$ ($p < 0.001$). Simultaneously, both variables were able to explain 31.4% of the variation in employee *work-life balance* ($R^2 = 0.314$). This finding explicitly concludes that the better the implementation of flexible work systems, both *hybrid* and *remote*, the better the balance between employees' professional and personal lives will be. This finding is fully in line with the results of research by Mahesti & Firmansyah (2025) which proved that the *hybrid work system* has a significant positive effect on the *work-life balance* and productivity of *start-up employees*. The study confirms that the flexibility inherent in the *hybrid model*, a combination of working from the office and working from home, can provide dual benefits for employees because they can adjust their work rhythm to suit their personal needs without sacrificing organizational demands. This flexibility can be theoretically explained through the *Job Demands-Resources (JD-R) Model*, where flexibility in work time and location functions as a *job resource* that strengthens employees' capacity to cope with work demands while maintaining personal health (Bonifacio et al., 2025).

Furthermore, it is worth noting that the coefficient of influence of the *hybrid system* (0.436) is substantially greater than that of the *remote system* (0.215) on *work-life balance*. This difference has an important meaning: the *hybrid model* that maintains face-to-face interactions at a certain frequency has proven to be more effective in supporting work-life balance than the fully *remote condition*. This can be linked to the findings of Walz et al. (2024) who identified that the fully *remote work environment* risks creating interference between the domains of work and home life (*work-to-home interference* and *home-to-work interference*), which ultimately increases *workplace loneliness* and suppresses employee psychological well-being. This condition of social isolation in pure *remote* is what causes the coefficient of influence that is lower on *work-life balance compared to the hybrid model* that still maintains space for periodic social collaboration.

These findings also reinforce the argument of Sahara & Abdurohim (2025) who stated that a flexible work environment provides a sense of autonomy and trust to Generation Z employees in *start-up companies*, which in turn boosts work morale and organizational loyalty. The autonomy employees feel in managing their work time directly contributes to their ability to manage the boundaries between work and personal life, a condition that is at the heart of the concept of *work-life balance* itself. Thus, this study confirms and extends previous findings in the specific context of the *start-up ecosystem* in Indonesia.

Further investigation into these findings needs to be linked to the unique characteristics of employees who dominate the *start-up ecosystem*, namely Generation Z. This generational group is known to have a strong preference for work flexibility and professional-life balance as fundamental requirements in choosing and remaining in an organization. Fikri et al. (2026) proved that *work-life balance* is the variable with the most dominant influence on job satisfaction of Generation Z employees ($\beta = 0.726$), surpassing financial variables and work stress. This finding implicitly indicates that the quality of *work-life balance* perceived by young employees

is not merely a subjective preference, but an objective determinant that directly shapes their work attitudes and behaviors. In the context of this study, the high influence of the *hybrid system* on *work-life balance* ($\beta = 0.436$) can be interpreted as evidence that *start-up employees* respond positively to a work model that gives them control over their work time and location. When employees feel they have autonomy in managing their schedules, stress stemming from conflicts between work demands and personal responsibilities can be significantly minimized.

This condition is emphasized by Aura & Hutahaean (2025) who found that Generation Z employees who successfully manage the balance between work and personal life tend to show consistently higher levels of satisfaction and productivity. Furthermore, the managerial implications of this finding encourage *start-up companies* to not only offer work flexibility as a recruitment attraction, but also build a policy infrastructure that actively protects the boundaries between work time and personal time of employees, to ensure that the benefits of *work-life balance* can be felt in a real and sustainable manner by all levels of employees (Sahara & Abdurohim, 2025).

Hybrid and Remote Work Systems on Start-Up Employee Performance and Productivity

The second research question relates to the direct influence of *hybrid* and *remote work systems* on employee performance (Y1) and productivity (Y2). Multiple regression results revealed that in the employee performance model, the *remote work system* was a stronger predictor ($B = 0.412$, $p < 0.001$) than the *hybrid system* ($B = 0.325$, $p < 0.001$), with $R^2 = 0.437$, indicating the model's ability to explain 43.7% of the performance variation. Meanwhile, in the productivity model, the *hybrid system* appeared more dominant ($B = 0.356$, $p < 0.001$) than *remote* ($B = 0.237$, $p < 0.001$), with $R^2 = 0.473$. This interesting pattern indicates that the *remote system* is superior in boosting individual employee performance, while the *hybrid system* is more effective in increasing overall productivity. This phenomenon can be interpreted through the logic that *remote work* provides a distraction-free environment that optimizes individual focus and task completion, thereby improving personal performance. In contrast, a *hybrid system* that combines face-to-face collaborative sessions with independent work at home has proven to be more effective in boosting collective productivity output, as coordination and *knowledge sharing* between employees run more smoothly.

This finding aligns with the research findings of Indri et al. (2026) which demonstrated that *work-life balance*, along with work environment variables, has a positive and significant impact on the performance of Generation Z employees in Jakarta. This study confirms that flexibility in work arrangements is a crucial determinant in shaping the performance of the younger generation that dominates today's *start-up workforce*. Furthermore, Ragazza et al. (2026) in the context of technology companies found that *work-life balance* significantly impacts the performance of Generation Z employees, both directly and indirectly, further reinforcing the importance of work-life balance as a predictor of performance in the technology-based corporate ecosystem.

Suryawijaya & Putri (2025) add a critical dimension to this discussion. Their research found that while *virtual office* or work-from-home systems offer flexibility, their implementation can actually create a paradox in the form of increased work pressure, workload, and disruption to *work-life balance*, ultimately leading to *digital fatigue* and reducing employee productivity and loyalty. These findings serve as a reminder that work flexibility is not a stand-alone solution; without supportive organizational policies such as *output-based performance management and the right to disconnect*, the benefits of flexible work systems can be significantly diminished. What differentiates *start-up companies* that successfully optimize flexible work systems from those that do not lies in the quality of the accompanying managerial policies.

An additional perspective that enriches this discussion comes from Sahara & Abdurohim (2025) who found that flexible work environments in *start-up companies* significantly increase the work motivation of Generation Z employees through the mechanism of providing

autonomy and organizational trust. This increased work motivation logically correlates with increased performance and productivity, as motivated employees tend to invest greater cognitive and emotional energy in completing their tasks. In this context, *hybrid and remote work systems serve not only as a mere logistical arrangement, but also as an organizational signal that conveys management's trust in employees, an element highly valued by the younger generation that dominates the start-up workforce* .

Furthermore, Hendrily & Puspita's (2026) research in the context of millennial employees found that job satisfaction is the most dominant variable influencing employee performance (Adjusted $R^2 = 0.726$). Although the generations studied are different, this finding is relevant because job satisfaction and *work-life balance* are closely related and influence each other. Employees who perceive work system flexibility as a form of organizational appreciation for their personal needs tend to develop higher job satisfaction, which then sequentially drives improved performance. This causal chain illustrates that the positive impact of *hybrid and remote work systems on start-up employee performance* is layered and non-linear, involving a series of psychological and organizational variables that interact dynamically.

Therefore, a comprehensive understanding of these dynamics is a prerequisite for *start-up management* in designing work policies that are truly effective and oriented towards improving long-term performance (Indri et al., 2026). Theoretically, the findings of the positive influence of work systems on performance and productivity confirm the main proposition of *the JD-R Model* that *job resources* in the form of work flexibility can reduce the negative impact of *job demands* while increasing *work engagement* , which leads to optimal performance (Bonifacio et al., 2025). In other words, this study not only confirms existing theory but also provides contextual empirical evidence that the relationship between flexible work systems and employee performance in the Indonesian *start-up ecosystem* is positive and statistically significant.

The Role of Work-Life Balance as a Mediating Variable between Hybrid and Remote Work Systems and Employee Performance and Productivity

The third and most crucial research question is whether *work-life balance* significantly mediates the relationship between *hybrid and remote work systems* and the performance and productivity of *start-up employees* . Testing using *the Sobel Test* on four mediation paths yielded consistent and convincing findings: all mediation paths were statistically significant. In the mediation path *hybrid system* → *work-life balance* → employee performance (X1-M-Y1), the T-statistic value was obtained = 2.397 with $p = 0.016 < 0.05$, which confirms that *work-life balance* significantly mediates the effect of the *hybrid system* on performance. The mediation path *remote system* → *work-life balance* → performance (X2-M-Y1) was also significant with $T = 2.037$ and $p = 0.041$. Even stronger, the mediation path *hybrid system* → *work-life balance* → productivity (X1-M-Y2) yielded $T = 4.308$ with $p = 0.000$, the strongest mediation effect in the overall model. The final path, mediation *remote system* → *work-life balance* → productivity (X2-M-Y2) was also proven significant with $T = 2.877$ and $p = 0.004$.

This pattern of findings has profound theoretical implications. The strongest mediation effect was found in the *hybrid system's path* to productivity through *work-life balance* ($T = 4.308$), indicating that the primary mechanism through which *hybrid systems improve start-up employee productivity* is through improved work-life balance. In other words, the flexibility of the *hybrid model* does not directly boost productivity; rather, it must first be perceived as an improvement in work-life balance by employees, which then psychologically boosts energy and motivation to produce higher work output . This finding directly strengthens and integrates the research findings of Ragazza et al. (2026), which found that *work-life balance* significantly influences the performance of Generation Z employees, both directly and through the mechanism of work stress as a partial mediator. Although the mediator variables used are different, these two studies coherently demonstrate that *work-life balance is a pivotal variable*

that transmits the impact of work arrangements on employee performance in technology and innovation-based corporate ecosystems.

Fikri et al. (2026) added a complementary perspective, where *work-life balance* was proven to be the variable with the most dominant influence on job satisfaction of Generation Z employees ($\beta = 0.726$), far surpassing financial variables and work stress. The high influence of *work-life balance* in this study further confirms its position as a central variable in the work ecosystem of the younger generation. When associated with the mediation findings in this study, it can be formulated that *work-life balance* not only acts as an antecedent of job satisfaction, but also as a mediating mechanism that actively converts the potential of flexible work systems into measurable performance and productivity. Aura & Hutahaeon (2025) in the context of Generation Z employees in *start-ups* in Bekasi City also confirmed that employees who are able to manage the balance between work and personal life tend to have higher job satisfaction and productivity. This finding is further strengthened when associated with the specific context of work pressure experienced by employees in a dynamic *start-up environment*. Ragazza et al. (2026) proved that work stress partially mediates the relationship between *work-life balance* and the performance of Generation Z employees in a technology company. This means that when *work-life balance* is optimally maintained, employee stress levels can be reduced, which in turn creates room for more consistent and sustainable performance improvements. This hierarchical mediation pattern illustrates that *work-life balance* does not operate in isolation but interacts with other psychological variables to shape employee performance holistically.

Furthermore, Bonifacio et al. (2025) found that effective boundary management significantly strengthened *work-life balance*, while *spillover* effects between work and personal life negatively shaped it. The implication of this finding in the context of the current research is that a *hybrid work system* that structurally helps employees create clearer boundaries between work time and personal time is proven to be more effective in activating the mediating mechanisms of *work-life balance* towards increased productivity than a *remote system* that has the potential to blur these boundaries chronologically and psychologically (Walz et al., 2024). This finding aligns with the mediation logic in this study: a flexible work system facilitates a good *work-life balance*, and this maintained *work-life balance condition then drives sustainable performance and productivity improvements*.

From a theoretical modification perspective, this study contributes to expanding the *JD-R Model* by integrating *work-life balance* as an explicit mediating variable in the causal chain between *job resources* (flexible work systems) and organizational *outcomes* (performance and productivity). Conventional *JD-R models* tend to position *work engagement* as the primary mediator, but this study empirically demonstrates that in the *start-up context* with its dynamic and intensive work characteristics, *work-life balance* plays an equally important role, and in some cases, even more dominant (Sahara & Abdurohim, 2025). This modified theoretical understanding provides a relevant conceptual contribution to the development of human resource management literature in the post-pandemic work era (Mahesti & Firmansyah, 2025). Overall, this discussion confirms three mutually reinforcing empirical conclusions: first, *hybrid and remote work systems* significantly improve *start-up employees' work-life balance*, with *hybrid* having a greater impact; second, both work systems have a positive and significant effect on performance and productivity, with different dominance patterns for each *outcome*; and third, *work-life balance* has been consistently shown to mediate all pathways of the relationship between flexible work systems and employee performance, making it a strategic variable that should be prioritized in human resource management policies in Indonesian *start-up companies* (Walz et al., 2024).

strengthening of the mediating role of *work-life balance* can also be examined through the lens of the negative impacts that arise when this balance is disturbed. Suryawijaya & Putri (2025) firmly identified that poor *work-life balance* is the most dominant predictor of *digital fatigue* in a virtual work environment ($\beta = 0.778$), which ultimately creates a simultaneous

decline in employee productivity, motivation, and loyalty. This finding indirectly confirms the mediation mechanism discovered in this study: when flexible work systems successfully improve *work-life balance*, the risk of *digital fatigue* can be suppressed, thereby protecting employee performance and productivity from gradual but destructive erosion. This dimension is increasingly relevant considering the characteristics of *the start-up work environment* which tends to have high work intensity, tight deadlines, and constant innovation pressure. In such conditions, *work-life balance* acts as a psychological buffer that allows employees to restore energy and maintain their cognitive capacity from one work cycle to the next.

Walz et al. (2024) strengthen this argument by showing that job support in a *remote context* can moderate the negative impact of work demands on employee well-being, which parallelly illustrates the protective function of *work-life balance* in this research model. Thus, the mediation findings in this study not only have statistical significance but also have high practical relevance for *start-up* leaders in designing targeted policy interventions to maintain sustainable employee performance amidst the ever-evolving dynamics of flexible work (Fikri et al., 2026; Ragazza et al., 2026).

CONCLUSION

This study comprehensively examined the influence of hybrid and remote working systems on the performance and productivity of start-up employees, with work-life balance serving as a mediating variable. Based on data analysis involving 300 respondents using multiple linear regression and the Sobel Test, three major conclusions were identified, reflecting the core findings of this research. First, both hybrid and remote working systems were found to have a positive and significant effect on employees' work-life balance. However, the hybrid working system demonstrated a stronger contribution ($B = 0.436$) compared to the remote working system ($B = 0.215$). This finding indicates that a flexible work arrangement combining face-to-face interaction and independent working practices represents a more effective approach in supporting employees' work-life balance than a fully remote working environment.

Second, both working systems partially exerted positive and significant effects on employee performance and productivity. The remote working system showed a stronger influence on individual employee performance ($B = 0.412$), whereas the hybrid working system was more dominant in enhancing employee productivity ($B = 0.356$). These results suggest that each work model possesses distinct comparative advantages across different dimensions of organizational performance. Third, work-life balance consistently and significantly mediated all relationships between flexible working systems and employee performance as well as productivity. The strongest mediating effect was identified in the relationship between the hybrid working system and employee productivity through work-life balance ($T = 4.308$; $p = 0.000$). This finding confirms that work-life balance should not merely be viewed as an antecedent of job satisfaction, but rather as a strategic transmission mechanism that transforms the potential benefits of flexible working systems into measurable and sustainable organizational performance within the start-up ecosystem.

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