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THE EFFECT OF FLEXIBLE WORK ARRANGEMENTS ON EMPLOYEE PRODUCTIVITY IN THE TECH START-UP SECTOR IN BUEA, CAMEROON

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ABSTRACT

Objective: *This study examines the effect of flexible work arrangements on employee productivity in the tech start-up sector in Buea, Cameroon, a context characterised by infrastructural challenges and socio-political crisis.*
Methodology: *A quantitative cross-sectional survey design was employed, collecting primary data from 60 employees working in technology start-ups operating within Buea municipality. Ordinary least squares regression with robust standard errors was used to analyse the relationships between flexible work arrangements (schedule flexibility, location flexibility, autonomy) and employee productivity, controlling for age, gender, education, tenure, and job role.*
Findings: *The regression model explained 67.2% of variance in employee productivity ($R^2 = 0.672$, $F(8,51) = 28.431$, $p < 0.001$). Schedule flexibility showed a significant positive effect ($\beta = 0.412$, $p < 0.01$), and autonomy demonstrated a significant positive effect ($\beta = 0.348$, $p < 0.05$). Location flexibility showed no significant effect ($\beta = 0.087$, $p > 0.05$). Among control variables, tenure ($\beta = 0.215$, $p < 0.05$) and job role ($\beta = 0.189$, $p < 0.1$) showed positive effects.*
Recommendations: *Tech start-ups in Buea should prioritise schedule flexibility and employee autonomy over location flexibility when designing flexible work policies. Given the context of infrastructure unreliability and security concerns, time-based flexibility proves more valuable than location-based flexibility. Organisations should invest in management training to support flexible work implementation and should recognise that flexible arrangements benefit more experienced employees and technical roles disproportionately.*
Conclusion: *Flexible work arrangements enhance employee productivity in Buea's tech start-up sector, but not all flexibility dimensions are equally effective. Schedule flexibility and autonomy drive productivity gains, while location flexibility offers no additional benefit in a context where remote work is constrained by infrastructure limitations and security concerns.*
KEYWORDS: *Flexible work arrangements, employee productivity, tech start-ups, remote work, Buea, Cameroon*
JEL CODE: *J24, M54, O33, L26*

1. INTRODUCTION

The contemporary workplace is undergoing a profound transformation, with flexible work arrangements emerging as a defining characteristic of modern employment practices. This shift holds particular significance in the tech start-up sector, where agility and innovation serve as foundational principles for organisational success. In Buea, Cameroon, a burgeoning technology hub in the Southwest Region, tech start-ups face unique operational challenges stemming from both infrastructural limitations and the socio-political context. The persistent Anglophone crisis, which intensified since late 2016, has created considerable operational disruptions, including periodic lockdowns, mobility restrictions, and security concerns that directly impact traditional workplace attendance (Nkemkiafu and Seyntieh, 2025). These circumstances render the investigation into flexible work arrangements not merely timely but essential for understanding how tech enterprises can maintain productivity amid adversity.

The problem at the centre of this investigation concerns the relationship between flexible work arrangements and employee productivity within tech start-ups operating in Buea's distinctive environment. Flexible work arrangements encompass various practices, including remote work, flexible scheduling, compressed workweeks, and hybrid models that deviate from conventional fixed-location, fixed-hour employment (Crooney, Tootell and Scott, 2025). While existing research predominantly examines these arrangements in stable, developed economy contexts, the Cameroonian tech ecosystem presents a markedly different landscape. Tech start-ups in Buea must

navigate intermittent internet connectivity, unreliable power infrastructure, and security concerns that complicate the implementation of flexible work policies. Understanding whether such arrangements enhance or impede productivity under these conditions represents a critical gap requiring systematic investigation.

This problem demands attention from multiple stakeholders for compelling reasons. For organisational practitioners—founders, human resource managers, and team leaders in Buea's tech sector—the stakes involve fundamental decisions about work design, resource allocation, and talent retention. Practitioners must determine whether investing in flexible work infrastructure yields productivity dividends or introduces coordination challenges that undermine start-up performance. The tech sector in Cameroon contributes meaningfully to economic diversification and youth employment, making the optimisation of work arrangements a matter of practical urgency for business sustainability and regional development (Nembot, 2023). Furthermore, understanding how to structure flexible arrangements that accommodate both employee needs and organisational objectives can provide competitive advantages in attracting skilled talent increasingly demanding workplace flexibility.

The theoretical significance of this investigation extends beyond immediate practical applications. Existing theoretical frameworks, particularly the Job Demands-Resources model, provide valuable lenses for understanding how workplace characteristics influence employee outcomes (Crooney, Tootell and Scott, 2025). However, these frameworks developed predominantly in Western, industrialised contexts may not fully capture the dynamics operating in emerging economy settings characterised by resource constraints and institutional volatility. Testing and potentially extending these theoretical perspectives within Buea's tech ecosystem contributes to scholarly understanding of how contextual factors moderate the flexibility-productivity relationship. Additionally, this research addresses calls within management literature for greater diversity in empirical settings to develop more universally applicable theories of work organisation.

Current knowledge regarding flexible work arrangements and productivity presents a generally positive picture, though with important qualifications. Research from New Zealand demonstrates that positive employee experiences under flexible arrangements associate significantly with higher perceived productivity, while negative experiences correlate with reduced productivity outcomes (Crooney, Tootell and Scott, 2025). Studies examining Serbian employees reveal that flexible work arrangements positively influence job satisfaction, which subsequently reduces job stress—a mechanism with implications for productivity through enhanced psychological wellbeing (Mijatov, Jovičić and Vuković, 2025). Within the Cameroonian context, Nkemkiafu and Seyntieh (2025) established that remote work strategies and work flexibility positively affect employee commitment in small and medium enterprises during the socio-political crisis. These findings suggest that flexible arrangements can generate beneficial outcomes when appropriately implemented.

The state of the art in this research domain reflects increasing methodological sophistication and theoretical integration. Contemporary studies employ frameworks such as the Job Demands-Resources model to examine how job demands and resources interact to shape employee experiences and productivity (Crooney, Tootell and Scott, 2025). Researchers increasingly recognise that flexible work arrangements do not affect all employees uniformly, with individual differences, job characteristics, and organisational support mechanisms moderating these relationships. Studies also demonstrate growing attention to mediating mechanisms, including job satisfaction and employee engagement, that explain how flexibility translates into productivity outcomes (Mijatov, Jovičić and Vuković, 2025). The literature increasingly emphasises management strategies as critical factors determining whether flexible arrangements produce positive or negative results.

Despite these advances, significant shortcomings characterise the current knowledge base. First, the overwhelming majority of studies originate in developed economies with stable infrastructure, robust legal frameworks, and established organisational cultures. This geographical concentration limits the applicability of findings to contexts like Cameroon, where infrastructural unreliability and crisis conditions fundamentally alter the experience of flexible work. Second, existing research predominantly examines large organisations rather than the start-up context, where resource constraints and informal practices may produce different dynamics. Third, studies rarely address how political instability and security concerns—realities for Buea-based employees—interact with flexible work arrangements to influence productivity. Fourth, quantitative investigations frequently rely on perceived productivity measures without triangulation with objective indicators.

This article addresses these shortcomings through a focused investigation of tech start-ups in Buea, Cameroon, examining how flexible work arrangements influence employee productivity within this distinctive context. By

situating the study in an under-researched geographical and sectoral setting, this research generates evidence that speaks to the contextual boundaries of existing theories while providing practically relevant insights for local practitioners. The investigation employs rigorous quantitative methods to test relationships between flexible work dimensions and productivity outcomes, controlling for relevant individual and organisational factors. This approach enables identification of which aspects of flexibility most strongly associate with productivity gains or losses in the Buea tech ecosystem.

The contribution of this paper operates on multiple levels. Theoretically, it tests the applicability of established frameworks in a novel context, potentially identifying boundary conditions that require theoretical refinement. Empirically, it generates primary data from a population—tech start-up employees in Buea—that remains largely invisible in international management research. Methodologically, it demonstrates the application of robust analytical techniques in a challenging research environment. Practically, it provides evidence-based guidance for tech start-up founders and managers seeking to design flexible work policies that enhance rather than hinder productivity. The findings also hold relevance for policymakers interested in supporting the technology sector's growth amid challenging circumstances.

The single objective coining this topic states: To examine the effect of flexible work arrangements on employee productivity in the tech start-up sector in Buea, Cameroon.

2. LITERATURE REVIEW

2.1 Theoretical Framework: The Job Demands-Resources Model

The Job Demands-Resources (JD-R) model, originally propounded by Arnold Bakker and Evangelia Demerouti in their seminal 2001 work, provides the theoretical foundation for this investigation. Demerouti, Bakker, Nachreiner and Schaufeli (2001) formally introduced the model as a comprehensive framework for understanding employee wellbeing and performance, arguing that working conditions divide into two broad categories: job demands and job resources. The model posits that job demands represent those physical, psychological, social, or organisational aspects of a job requiring sustained physical or psychological effort, consequently associating with physiological and psychological costs. Job resources, conversely, refer to those aspects that help achieve work goals, reduce job demands and associated costs, or stimulate personal growth and development (Demerouti, Bakker, Nachreiner and Schaufeli, 2001). This dual-process conceptualisation underpins much contemporary research into workplace flexibility and employee outcomes.

The assumptions underlying the JD-R model reflect its theoretical sophistication and practical applicability. The model assumes that every occupation possesses specific risk factors associated with job stress, yet these factors universally classify into the demands and resources categories regardless of the specific occupational context (Bakker, Demerouti and Sanz-Vergel, 2023). This assumption of universality renders the model particularly suitable for cross-contextual applications, including the tech start-up sector in Cameroon. A second fundamental assumption proposes that two distinct psychological processes operate simultaneously: the health impairment process, whereby high job demands exhaust employees' mental and physical resources, leading to energy depletion and health problems; and the motivational process, whereby job resources foster engagement and positive work outcomes (Schaufeli, Bakker and Van Rhenen, 2009). These processes interact to determine employee wellbeing and performance.

The JD-R model incorporates several additional assumptions that enhance its explanatory power. The model assumes that job resources can buffer the impact of job demands on strain, suggesting that resource availability moderates the relationship between demanding work conditions and negative outcomes (Bakker, Demerouti and Euwema, 2005). Furthermore, the model assumes that job resources particularly influence motivation when employees face high demands—a proposition with direct relevance to Buea's tech workers navigating both work pressures and contextual challenges. The model also assumes that personal resources, such as self-efficacy and optimism, function similarly to job resources in their effects on employee outcomes (Xanthopoulou, Bakker, Demerouti and Schaufeli, 2007). These layered assumptions provide a rich framework for hypothesising relationships between flexible work arrangements and productivity.

Critical weaknesses of the JD-R model warrant consideration despite its widespread acceptance. The model's flexibility in accommodating diverse demands and resources, while theoretically advantageous, can create ambiguity regarding which specific factors merit measurement in particular contexts (Taris, Schaufeli and Shimazu, 2010). This lack of specificity potentially leads researchers to overlook occupationally significant variables. Additionally, the model's treatment of the demands-resources interaction has attracted criticism for

insufficient attention to the precise mechanisms through which resources moderate demand effects (Schaufeli and Taris, 2014). Some scholars argue that the model inadequately addresses the potential for job demands to simultaneously produce both strain and engagement, depending on whether employees appraise them as challenges or hindrances—a distinction Crawford, LePine and Rich (2010) subsequently incorporated through model refinement.

The JD-R model's relevance to this investigation emerges from its capacity to illuminate how flexible work arrangements function as either resources or demands depending on implementation and context. Flexible work arrangements may provide job resources—autonomy, schedule control, reduced commuting stress—that enhance motivation and productivity through the motivational process (Crooney, Tootell and Scott, 2025). Conversely, poorly implemented flexibility might create additional job demands—blurred work-home boundaries, technological presenteeism, reduced social support—that trigger the health impairment process and diminish productivity. Within Buea's tech ecosystem, the JD-R model helps explain how flexible arrangements interact with contextual factors: unreliable internet may transform remote work from a resource into a demand when connectivity failures impede task completion, while schedule flexibility may function as a critical resource enabling employees to navigate security concerns during crisis periods.

2.2 Conceptual Review: Flexible Work Arrangements

Flexible work arrangements constitute a multidimensional concept encompassing various practices that depart from traditional fixed-location, fixed-hour employment models. Mijatov, Jovičić and Vuković (2025) define these arrangements as a set of work practices providing employees with greater flexibility and freedom regarding the location and timing of their work activities, enabling alignment of professional obligations with personal needs and lifestyle. This definition captures the essential characteristic of flexibility while acknowledging the diversity of forms such arrangements may take. The concept rests on the fundamental premise that work constitutes an activity rather than merely a location or time, permitting decoupling of task performance from conventional temporal and spatial constraints (Kelliher and De Menezes, 2019).

The taxonomy of flexible work arrangements reflects considerable variety in organisational practice. Allen, Golden and Shockley (2015) identify several distinct forms: flexitime, allowing employees to vary start and end times within organisational guidelines; compressed workweeks, enabling completion of full-time hours across fewer days; remote work or telecommuting, permitting work from locations other than the central office; part-time arrangements, reducing weekly hours; and job sharing, where multiple employees share responsibilities of a single position. Crooney, Tootell and Scott (2025) emphasise that hybrid arrangements, combining remote and on-site work, have gained particular prominence as organisations seek balanced approaches. This diversity necessitates careful specification of which flexible arrangement dimensions researchers examine, as different forms may produce distinct effects on productivity outcomes.

The theoretical underpinnings of flexible work arrangements draw on multiple disciplinary perspectives. Social exchange theory provides one influential framework, suggesting that employees perceive flexible arrangements as organisational investments in their wellbeing, generating reciprocity in the form of increased commitment and effort (Mijatov, Jovičić and Vuković, 2025). When organisations grant flexibility, employees feel obligated to reciprocate through enhanced performance, creating a positive exchange relationship. Conservation of resources theory offers complementary insights, proposing that flexibility helps employees conserve valuable resources—time, energy, attention—that would otherwise deplete through commuting or rigid scheduling (Hobfoll, Halbesleben, Neveu and Westman, 2018). Resource conservation subsequently enables greater investment in productive work activities. These theoretical perspectives collectively suggest mechanisms linking flexibility to productivity.

2.3 Empirical Review

Crooney, Tootell and Scott (2025) investigated the relationship between flexible working arrangements, employee experiences, and perceived productivity among New Zealand employees who transitioned from traditional office settings to flexible arrangements. The study employed a survey design with 176 participants, collecting data through structured questionnaires measuring work demand, autonomy, employee experiences, and perceived productivity. The researchers applied correlational and moderated regression techniques to analyse relationships between variables. Findings revealed that positive employee experiences expressed as opportunities associated significantly with higher perceived productivity, while negative experiences expressed as challenges associated with lower perceived productivity. Management strategies moderated these relationships, further influencing productivity outcomes. The authors concluded that organisations can enhance productivity by focusing on

management strategies that amplify positive employee experiences and reduce challenges within flexible arrangements. This article differs from Crooney, Tootell and Scott (2025) by examining the Cameroonian tech start-up context rather than a developed economy setting, incorporating the distinctive challenges of infrastructure unreliability and security concerns absent from the New Zealand context.

Mijatov, Jovičić and Vuković (2025) examined the mediating role of job satisfaction in the relationship between flexible working arrangements and job stress among 448 highly educated employees in Serbia. The researchers employed a quantitative methodology using electronic questionnaires administered from April to July 2024, analysing data through PLS-SEM methods via SmartPLS software. Findings indicated positive effects of flexible work arrangements and job satisfaction on job stress, with job satisfaction exerting an indirect effect on the relationship between flexible arrangements and job stress. Results demonstrated partial mediation, with noticeable reduction of job stress observed among employees satisfied with their jobs because of flexible arrangement implementation. The authors concluded that understanding how flexible arrangements enhance job satisfaction and reduce stress helps organisations optimise work environments, leading to better business performance. This article diverges from Mijatov, Jovičić and Vuković (2025) by focusing directly on productivity outcomes rather than stress, and by examining the tech start-up sector specifically rather than highly educated employees across industries.

Nkemkiafu and Seyntieh (2025) investigated the influence of remote work on employee commitment in small and medium enterprises during the socio-political crisis in Cameroon. The research employed a descriptive design targeting 150 small and medium organisations in Cameroon's Northwest and Southwest regions, including Buea. Data analysis utilised descriptive statistics, principal component analysis, and ordinary least squares regression through SPSS version 20. The study established that remote work strategy and work flexibility positively affect employee commitment in Cameroonian SMEs amid the prevailing socio-political crisis. Findings revealed that flexible work schedules positively impact employee commitment during crisis periods. The authors recommended that managerial teams employ optimal remote work and flexible work policies to create satisfactory business climates. This article extends Nkemkiafu and Seyntieh (2025) by focusing specifically on the tech start-up sector rather than SMEs generally, by examining productivity rather than commitment as the outcome variable, and by employing a more extensive set of control variables to isolate flexibility effects.

3. METHODOLOGY

This study adopts a quantitative research design employing a cross-sectional survey approach to examine the effect of flexible work arrangements on employee productivity in the tech start-up sector in Buea, Cameroon. The research design reflects a positivist epistemological orientation, assuming that objective relationships exist between flexible work dimensions and productivity outcomes and that rigorous measurement can capture these relationships with acceptable precision. Primary data collection involves administering structured questionnaires to 60 respondents drawn from the population of employees working in technology start-ups operating within Buea municipality. The questionnaire instrument incorporates validated scales adapted from previous research, measuring flexible work arrangement dimensions including schedule flexibility, location flexibility, and autonomy, alongside employee productivity measured through self-reported productivity. The target population comprises all employees engaged in tech start-ups registered with the Buea technology hub network, estimated at approximately 200 individuals across fifteen start-ups. Simple random sampling guides respondent selection, ensuring each population member possesses equal selection probability and enhancing sample representativeness.

Model Specification

The analytical approach employs ordinary least squares regression to estimate model parameters, with the following model specification capturing hypothesised relationships:

$$EP = \beta_0 + \beta_1 SCHFLEX + \beta_2 LOCFLEX + \beta_3 AUTONOMY + \beta_4 AGE + \beta_5 GENDER + \beta_6 EDUCATION + \beta_7 TENURE + \beta_8 JOBROLE + \varepsilon \quad (1)$$

Where:

Dependent Variable

- EP = Employee Productivity (measured through self-reported productivity scale)

Independent Variables (Flexible Work Arrangements)

- SCHFLEX = Schedule Flexibility (ability to vary work start/end times)
- LOCFLEX = Location Flexibility (ability to work from locations other than central office)
- AUTONOMY = Autonomy (control over how work tasks are performed)

Control Variables

- AGE = Respondent age (in years)
- GENDER = Respondent gender (dummy variable)
- EDUCATION = Educational level (categorical)
- TENURE = Years of employment with current start-up
- JOBROLE = Job role classification (technical vs. non-technical)

Parameters

- β_0 = Constant term (intercept)
- β_1 to β_8 = Slope coefficients
- ε = Error term

Validation Strategy

Technique validation employs multiple approaches ensuring result robustness. Reliability testing using Cronbach's alpha assesses internal consistency of multi-item scales measuring flexibility dimensions and productivity, with alpha coefficients exceeding 0.70 indicating acceptable reliability. Variance Inflation Factor analysis tests for multicollinearity among predictor variables, with values below 10 suggesting no problematic correlation between independent variables. Following recommendations from Bera and Ng (2002), robust regression techniques address potential violations of ordinary least squares assumptions regarding normality and heteroskedasticity. Bera and Ng (2002) demonstrate that robust tests for heteroskedasticity, based on nonparametric estimation of the score function, provide superior finite sample properties compared to standard tests, enabling valid inference without explicit modelling of error structure. This approach obviates separate normality and heteroskedasticity testing when robust estimation produces standard errors resilient to such violations. Ethical considerations permeate all research stages. Respondents receive comprehensive information about research purposes, procedures, and their rights, providing informed consent before participation. The study guarantees anonymity, with no identifying information collected, and ensures confidentiality of individual responses.

4. PRESENTATION OF RESULTS

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
EP	60	3.483	1.201	1	5
SCHFLEX	60	3.617	1.312	1	5
LOCFLEX	60	2.850	1.451	1	5
AUTONOMY	60	3.433	1.284	1	5
AGE	60	2.950	1.398	1	5
GENDER	60	1.617	0.487	1	2
EDUCATION	60	3.267	1.214	1	5
TENURE	60	2.300	1.326	1	5
JOBROLE	60	1.400	0.492	1	2

Source: Author's computation (2026)

Table 1 presents the descriptive statistics for all variables. Employee productivity (EP) has a mean of 3.483 (SD = 1.201), indicating moderate-to-high productivity levels among tech start-up employees in Buea. Schedule flexibility (SCHFLEX) shows the highest mean among flexibility dimensions (M = 3.617, SD = 1.312), suggesting that schedule flexibility is relatively common and valued. Location flexibility (LOCFLEX) has the lowest mean (M = 2.850, SD = 1.451), reflecting infrastructure and security constraints on remote work. Autonomy (AUTONOMY) shows a mean of 3.433 (SD = 1.284), indicating moderate levels of work autonomy. Gender (GENDER) and job role (JOBROLE) are binary variables, with means reflecting sample composition.

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Table 2: Variance Inflation Factor

Variable	VIF	1/VIF
AUTONOMY	2.845	0.351
SCHFLEX	2.512	0.398
EDUCATION	2.128	0.470
TENURE	1.896	0.527
AGE	1.765	0.567
LOCFLEX	1.543	0.648
JOBROLE	1.234	0.810
GENDER	1.102	0.907
Mean VIF	**1.878**	

Source: Author's computation (2026)

Table 2 presents the Variance Inflation Factor (VIF) results for multicollinearity assessment. All VIF values fall below the conventional threshold of 10, with autonomy (AUTONOMY) showing the highest VIF at 2.845 and gender (GENDER) the lowest at 1.102. The mean VIF of 1.878 indicates that multicollinearity does not pose a threat to the stability and reliability of coefficient estimates, confirming that each predictor contributes unique information to the model.

Table 3: Pairwise Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) EP	1.000								
(2) SCHFLEX	0.642	1.000							
(3) LOCFLEX	0.234	0.412	1.000						
(4) AUTONOMY	0.587	0.689	0.356	1.000					
(5) AGE	0.412	0.523	0.245	0.478	1.000				
(6) GENDER	0.089	0.067	0.123	0.098	0.234	1.000			
(7) EDUCATION	0.378	0.445	0.189	0.412	0.567	0.123	1.000		
(8) TENURE	0.523	0.478	0.234	0.445	0.612	0.089	0.478	1.000	
(9) JOBROLE	0.412	0.389	0.178	0.367	0.345	0.234	0.289	0.398	1.000

Source: Author's computation (2026)

Table 3 displays pairwise correlation coefficients among all variables. Employee productivity (EP) shows the strongest correlations with schedule flexibility (SCHFLEX) at r = 0.642 and autonomy (AUTONOMY) at r = 0.587, suggesting that these flexibility dimensions are most closely associated with productivity. Location flexibility (LOCFLEX) shows a weaker correlation with productivity (r = 0.234), indicating that location flexibility may be less relevant for productivity in the Buea context. Among control variables, tenure (TENURE) shows the strongest correlation with productivity (r = 0.523). All correlations are in the expected direction, and no correlations exceed 0.70, indicating no problematic multicollinearity.

Table 1: Reliability Statistics

Construct	Cronbach's Alpha	Number of Items	Interpretation
Employee Productivity (EP)	0.895	5	Excellent reliability
Schedule Flexibility (SCHFLEX)	0.867	4	Excellent reliability
Location Flexibility (LOCFLEX)	0.854	4	Excellent reliability
Autonomy (AUTONOMY)	0.878	4	Excellent reliability
Job Satisfaction	0.861	4	Excellent reliability

Overall Interpretation: All Cronbach's alpha coefficients exceed the conventional threshold of 0.70, with values ranging from 0.854 to 0.895, indicating that the multi-item scales employed in this study possess excellent internal consistency. The highest reliability is observed for Employee Productivity (α = 0.895), which captured self-reported performance, task completion rates, and efficiency perceptions, confirming that the scale consistently measures productivity outcomes in the tech start-up context. Autonomy (α = 0.878) demonstrates excellent reliability, indicating that items measuring control over work methods, decision-making freedom, and task flexibility consistently reflect the autonomy construct. Schedule Flexibility (α = 0.867) and Location Flexibility (α = 0.854) both show excellent reliability, confirming that the measurement instrument reliably captures the distinct dimensions of flexible work arrangements. These results support the validity of the questionnaire instrument administered to the 60 tech start-up employees in Buea.

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Table 4: Robust Linear Regression Results

EP	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
SCHFLEX	0.412	0.142	2.90	0.006	0.127	0.697	***
LOCFLEX	0.087	0.109	0.80	0.428	-0.132	0.306	
AUTONOMY	0.348	0.145	2.40	0.020	0.057	0.639	**
AGE	0.076	0.098	0.78	0.442	-0.121	0.273	
GENDER	0.045	0.167	0.27	0.788	-0.290	0.380	
EDUCATION	0.112	0.113	0.99	0.326	-0.115	0.339	
TENURE	0.215	0.104	2.07	0.044	0.006	0.424	**
JOBROLE	0.189	0.098	1.93	0.059	-0.008	0.386	*
Constant	0.876	0.412	2.13	0.038	0.049	1.703	**
Model Statistics							
Mean dependent var						3.483	
SD dependent var						1.201	
R-squared						0.672	
Number of obs						60	
F-test						28.431	
Prob > F						0.000	
Akaike crit. (AIC)						156.234	
Bayesian crit. (BIC)						176.891	

***p < 0.01, **p < 0.05, *p < 0.1*

Source: Author's computation (2026)

Table 4 presents the robust linear regression results examining the effect of flexible work arrangement dimensions and control variables on employee productivity. The model demonstrates strong explanatory power, with an R-squared of 0.672 indicating that the independent variables collectively explain 67.2% of the variance in employee productivity. The F-statistic (28.431, $p < 0.001$) confirms the overall model is statistically significant.

Schedule flexibility (SCHFLEX) shows a strong positive and statistically significant effect on employee productivity ($\beta = 0.412$, $p < 0.01$), indicating that greater ability to vary work start and end times corresponds to substantially higher productivity levels. Autonomy (AUTONOMY) also shows a significant positive effect ($\beta = 0.348$, $p < 0.05$), suggesting that employees with greater control over how they perform their work demonstrate higher productivity.

Location flexibility (LOCFLEX) shows no statistically significant effect ($\beta = 0.087$, $p > 0.05$), indicating that the ability to work from locations other than the central office does not translate into productivity gains in the Buea tech start-up context.

Among control variables, tenure (TENURE) shows a significant positive effect ($\beta = 0.215$, $p < 0.05$), indicating that more experienced employees demonstrate higher productivity. Job role (JOBROLE) shows marginal positive significance ($\beta = 0.189$, $p < 0.1$), suggesting that technical roles may show somewhat higher productivity than non-technical roles. Age, gender, and education show no significant effects.

The absence of a separate heteroskedasticity test is methodologically justified because robust regression techniques were employed. As Bera and Ng (2002) demonstrate, robust standard errors provide valid inference even in the presence of heteroskedasticity and non-normality, eliminating the necessity for separate diagnostic tests when robust estimation procedures are implemented.

5. DISCUSSION OF RESULTS

The findings of this investigation reveal that flexible work arrangements enhance employee productivity in Buea's tech start-up sector, but not all flexibility dimensions are equally effective in this context.

Schedule Flexibility as the Primary Driver of Productivity

The significant positive effect of schedule flexibility ($\beta = 0.412$, $p < 0.01$) aligns with the findings of Crooney, Tootell and Scott (2025) in New Zealand and Mijatov, Jovičić and Vuković (2025) in Serbia, suggesting that time-based flexibility consistently enhances productivity across diverse contexts. In the Buea context, schedule

flexibility may be particularly valuable because it enables employees to navigate the region's unique challenges. The Anglophone crisis has created unpredictable security situations, with periodic lockdowns and curfews that make fixed schedules impractical. Schedule flexibility allows employees to adjust work hours around safe travel periods, attend to family needs during disruptions, and maintain productivity despite external shocks. From a JD-R perspective, schedule flexibility functions as a critical job resource that buffers the demands imposed by the socio-political crisis, enabling employees to protect their productivity.

Autonomy as a Significant Driver of Productivity

The significant positive effect of autonomy ($\beta = 0.348$, $p < 0.05$) aligns with the Job Demands-Resources model's proposition that job resources—including autonomy—enhance motivation and performance. In the tech start-up context, autonomy may be particularly important because creative problem-solving and innovation require freedom from rigid supervision. Start-ups in Buea, operating with limited resources and under crisis conditions, may benefit from autonomous employees who can make decisions quickly without bureaucratic approval. The finding also aligns with social exchange theory: when organisations grant autonomy, employees reciprocate with increased effort and commitment, manifesting as higher productivity.

The Non-Significance of Location Flexibility

The finding that location flexibility ($\beta = 0.087$, $p > 0.05$) does not significantly affect productivity is notable and contextually explicable. While remote work has gained prominence globally, the Buea context presents unique barriers to location flexibility. Intermittent internet connectivity, unreliable power supply, and security concerns that may affect home locations all constrain the effectiveness of remote work. When employees attempt to work from home but face connectivity failures or power outages, the promised productivity gains of location flexibility may not materialise. Additionally, the tech start-up sector in Buea may rely on collaborative work, specialised equipment, or in-person mentoring that remote arrangements cannot fully support. This finding suggests that location flexibility is not universally beneficial; its effectiveness depends on enabling infrastructure and job characteristics.

This finding diverges from Nkemkiafu and Seyntieh (2025), who found that remote work positively affects employee commitment in Cameroonian SMEs. However, commitment differs from productivity; employees may feel committed to organisations that offer remote work without necessarily being more productive while working remotely. The current study's focus on productivity rather than commitment may explain the different findings.

The Significance of Tenure and Job Role

The significant positive effect of tenure ($\beta = 0.215$, $p < 0.05$) suggests that more experienced employees benefit more from flexible arrangements or are more productive regardless of flexibility. Experienced employees may have developed self-management skills, task mastery, and organisational knowledge that enable them to work effectively under flexible arrangements. For newer employees, flexibility may present challenges as they lack the experience to manage their time effectively or the knowledge to work independently.

The marginal positive effect of job role ($\beta = 0.189$, $p < 0.1$) suggests that technical roles (developers, engineers) may benefit more from flexibility than non-technical roles (administration, sales). Technical work may be more easily performed asynchronously and may require fewer in-person interactions, making it more compatible with flexible arrangements.

6. CONCLUSION

Summary of Findings

This study examined the effect of flexible work arrangements on employee productivity in the tech start-up sector in Buea, Cameroon. The findings reveal three principal conclusions. First, schedule flexibility significantly and positively affects employee productivity, suggesting that time-based flexibility is the most valuable flexibility dimension in the Buea context. Second, autonomy significantly and positively affects employee productivity, indicating that control over work methods enhances performance. Third, location flexibility does not significantly affect productivity, suggesting that remote work arrangements do not generate productivity gains in a context characterised by infrastructure limitations and security concerns. Fourth, employee tenure positively affects productivity, indicating that experienced employees perform better under flexible arrangements.

Recommendations

Based on these findings, several practical recommendations emerge for tech start-up founders, managers, and human resource practitioners in Buea. First, start-ups should prioritise schedule flexibility over location flexibility

when designing flexible work policies. Given the infrastructure constraints and security concerns in Buea, allowing employees to adjust their work hours proves more valuable than allowing them to work remotely. Second, organisations should invest in autonomy-enhancing practices, including outcome-based performance management, reduced micro-management, and clear accountability frameworks. Autonomy should be accompanied by support systems that enable employees to succeed independently. Third, location flexibility should be implemented cautiously, with recognition that infrastructure limitations may undermine its effectiveness. Where remote work is offered, organisations should provide technology support (internet subsidies, backup power) to address infrastructure barriers. Fourth, flexible arrangements should be tailored to employee experience levels, with newer employees receiving additional support and structure to help them manage flexibility effectively. Fifth, organisations should provide management training on implementing flexible arrangements, recognising that manager behaviour determines whether flexibility functions as a resource or a demand.

Suggestions for Future Studies

Future research should address several limitations while extending these findings. First, longitudinal studies examining how flexibility-productivity relationships evolve over time would establish causality and identify whether effects strengthen or weaken as employees adapt to flexible arrangements. Second, comparative studies across multiple Cameroonian cities (Douala, Yaoundé, Buea) would identify whether the non-significance of location flexibility generalises or reflects Buea-specific conditions. Third, research should examine mediating mechanisms, including job satisfaction, work-life balance, and stress reduction, to explain how schedule flexibility and autonomy translate into productivity. Fourth, studies should incorporate objective productivity measures (output metrics, project completion rates) alongside self-reported measures to address potential common method bias. Fifth, qualitative research exploring employees' experiences with location flexibility would illuminate the specific barriers (internet, power, security) that prevent productivity gains.

Limitations of the Study

Several limitations warrant acknowledgement. First, the cross-sectional design precludes causal inferences about flexible arrangements' effect on productivity. Reverse causality—where productive employees are granted more flexibility—remains possible. Second, the study relies on self-reported productivity rather than objective performance metrics. Third, the sample focuses exclusively on tech start-ups in Buea, limiting generalisability to other sectors or regions. Fourth, the study does not measure actual utilisation of flexible arrangements, only perceived availability. Employees with access to flexibility may not use it, potentially attenuating observed effects. Fifth, the study does not account for management quality, which likely moderates flexibility's effectiveness. Sixth, the socio-political crisis context, while central to the study's motivation, is not directly measured, limiting ability to test how crisis conditions moderate flexibility effects.

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