



TEAMWORK DYNAMICS WITHIN ORGANISATIONS PRACTICING REMOTE WORK IN NIGERIA

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ABSTRACT: *Purpose - This study examines how teamwork dynamics and employee engagement influence remote work effectiveness within organizations practicing remote and hybrid work arrangements in Nigeria. Research Design and Method - The study adopted a descriptive survey research design and collected primary data through a structured questionnaire titled "Teamwork Dynamics Within Organizations Practicing Remote Work in Nigeria (TDWOPRWN)". A convenience sampling technique was used to distribute 500 questionnaires to employees working remotely or in hybrid arrangements across different organizations. After screening for completeness and consistency, 454 valid responses were retained for analysis. The data were analysed using frequency counts, percentages, mean, standard deviation, reliability and validity diagnostics, and robust ordinary least squares regression with robust standard errors at the 0.05 level of significance. Result - The results show that teamwork dynamics have a negative and statistically significant relationship with remote work effectiveness in the Nigerian context, while employee engagement has a positive and statistically significant effect. Employee engagement also significantly moderates the relationship between teamwork dynamics and remote work effectiveness, suggesting that the benefits of remote work depend less on enforced teamwork and more on how actively employees are engaged, supported, and motivated. Recommendation - It is recommended that organizations should invest in and adopt tools that enhance communication, project management, and knowledge sharing among remote teams. Managers/employers of labour should emphasize clear goal setting, regular check-ins, and providing guidance and support while allowing team members the autonomy to manage their work effectively. Originality/value - This research explores a notable gap in the literature concerning teamwork dynamics, employee engagement, and remote work effectiveness in Nigeria. It contributes theoretical, methodological, and practical insights for human resource practitioners, employers, policymakers, and stakeholders engaged in remote work practices within organizations globally, especially in Nigeria.*

KEYWORDS: Remote Work, Team work, Work arrangement, Organizational performance.



INTRODUCTION

In recent times, the surge in remote work's popularity across diverse job sectors can be attributed to technological progress and a growing emphasis on achieving work-life balance (Krajčák, et. al, 2023). The COVID-19 pandemic has also made remote work even more common as an alternative to the usual working method. Because of this, remote work has become one of the most talked-about topics recently. However, this change has brought new challenges for companies and leaders who need to figure out how to manage their remote workers, especially in areas like communication, teamwork, and ensuring employees are doing well. (Krajčák, et. al, 2023; Abbasi, 2023)

In today's dynamic work environment, the shift to remote, flexible, and hybrid work arrangements has blurred traditional employment boundaries. This transformation offers employees greater autonomy in balancing work and personal lives (Minbaeva, 2021). However, it also introduces challenges in managing teamwork dynamics. HR practitioners are examining how remote work impacts these dynamics, but much of the current discussion lacks critical depth (Altman et al., 2021). Understanding this impact requires examining factors such as communication, team cohesion, trust, and accountability. While public attention focuses on how digital technologies shape the future of work, academic research in Human Resource Management (HRM) is lagging behind. The rise of remote work and digital tools has introduced legal and ethical concerns (ILO, 2021; Tursunbayeva et al., 2021). It is crucial to deepen our understanding of these issues, especially their effects on teamwork in remote or hybrid work settings. The theme "Teamwork Dynamics within Organizations Practicing Remote Work in Nigeria" aims to explore the complexities of team interactions and offer insights into the evolving nature of work.

The typical Nigerian workplace has many factors impacting the teamwork dynamics. This includes diverse elements like age, gender, religion, ethnic background, previous work experience and exposure, ownership structure, leadership style, Location, industry dynamics, and organizational culture. (Olu-Ogunleye et al., 2022; Tamunomiebi & Chika, 2020). All these factors notwithstanding, the workers were largely in the same location or clustered together in multiple locations. Many initiatives and strategies coupled with appropriate policies and culture modelling by leadership had to be put in place to ensure optimum teamwork. Teamwork is essential to foster collaboration, knowledge transfer, information sharing, and minimize errors. With employees onsite, achieving teamwork was a daunting task. (Oyefusi, 2022). With increasing demands on productivity by stakeholders, including Management, customers, regulators, colleagues, etc, the need for teamwork is even more crucial. Technologies like the telephone and collaborative tools like Slack, Google, and Zoom have provided platforms for virtual collaboration. Remote work requires access to electricity, a conducive workstation, and minimal distractions to ensure focus. (Ilag, 2021; Hubbard & Bailey, 2018).

In response to the global COVID-19 pandemic, Nigeria witnessed a significant shift in organizational work dynamics. This led to a sudden surge in the adoption of remote work, particularly among individuals with limited prior experience in this work mode. Many companies and organizations in Nigeria grappled with the challenges of accommodating a remote workforce, a shift for which they were often ill-prepared (Neely, 2020). No doubt, the new normal has shaped our work arrangements in Nigeria, which have been observed to improve work-life balance; however, Remote work often creates physical and temporal barriers that can hinder effective communication, collaboration, and coordination among team



members. The need to study teamwork dynamics in firms in a developing country like Nigeria is more important even now. How do the factors that affect teamwork onsite apply to offsite interactions? Are there other mediating variables that come into play? These are some of the questions this study seeks to answer.

THEORETICAL FRAMEWORK

Social Exchange Theory

Social Exchange Theory, rooted in the works of Homans (1958) and Blau (1964), explores the link between employee attitudes and behaviors beyond formal contracts. Homans viewed social behavior through rewards and punishments, while Blau focused on rewards and costs, both emphasizing that social exchanges rely on reciprocation. These interactions shape employees' attitudes based on their perception of how they are treated by employers. This theory is fundamental in understanding various organizational behaviors, including support, job performance, relationships, commitment, and leadership (Muldoon et al., 2018). Flexible work arrangements are seen as organizational support, positively influencing employees' perceptions and fostering loyalty and commitment (Casimir et al., 2014). Effective teamwork in remote settings relies on trust, empathy, and recognizing each member's contributions (Heeter, 2015).

Sungu et al. (2019) suggest that employers engage in social exchanges to boost employees' commitment and performance. Social Exchange Theory also aligns with displaced aggression theory, in which employees may redirect frustration from managers to peers (Mackey et al., 2018). It highlights the importance of Employee-Organization Relationships (EORs), where strong EORs lead to long-term engagement and positive behaviors (Wang et al., 2019). Understanding these dynamics is crucial in navigating the complexities of teamwork within organizations practicing remote work. From the assumptions of social exchange theory, this study asserts that:

H_2 : Employee engagement is positively associated with remote work effectiveness.

H_3 : Employee engagement positively moderates the relationship between teamwork dynamics and remote work effectiveness.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), introduced by Davis in 1989, explores how users adopt new technologies (Davis, 1989). It examines the role of "external variables" in shaping perceived usefulness and ease of use, which, in turn, influence users' intentions and actual use of technology (Granić & Marangunić, 2019; Lazim et al., 2021). Over time, TAM has adapted to various research contexts (Abbad, 2021; Alam et al., 2020).

TAM suggests that users adopt technology if they perceive it as beneficial to their work (usefulness) and easy to use (ease of use). The ease of use directly affects perceived usefulness, which shapes users' behavioral intentions and usage patterns (Sukendro et al., 2020). The model includes four key variables: perceived usefulness, perceived ease of use, behavioral intention, and actual usage behavior. Higher perceived benefits and ease of use lead to a greater intention to use the technology.



In remote teamwork, TAM provides a useful explanatory lens because users are more likely to adopt technology when it improves collaboration and offers a smooth work experience (Granić & Marangunić, 2019; Sukendro et al., 2020). However, this study does not directly measure TAM's core constructs—perceived usefulness, perceived ease of use, behavioural intention, and actual usage behaviour. Therefore, TAM is used cautiously as a contextual theoretical support rather than as a directly tested technology-acceptance model.

H_1 : Teamwork dynamics are positively associated with remote work effectiveness.

Organizational adaptation Theory

Organizational Adaptation Theory suggests that businesses must adapt to changing market conditions and environmental factors to remain successful and ensure employee well-being. This theory emphasizes the need for organizations to adapt to their environment for survival, ideally anticipating changes before they become necessary (Boin et al., 2015). The theory is closely linked to remote work and the preferences of the Millennial generation. According to Deloitte's 2016 Millennial Survey, this generation values work-life balance, including flexible and remote work options (Jenkins, 2018). Organizations have adapted to meet this demand, offering more flexibility to attract and retain Millennial employees. The COVID-19 pandemic further highlighted the need for adaptation, as companies had to shift to remote work to maintain operations while adhering to health guidelines. Failure to adapt led to organizational setbacks. This theory is relevant as it underscores how adapting to remote work can enhance employee satisfaction and organizational resilience.

Table 1: Operationalization of Variables

S/N	Variable	Measurement	Used By
1.	Dependent Remote work effectiveness	The extent to which employees are able to complete assigned responsibilities efficiently and productively while working remotely or within hybrid work arrangements, including timeliness, task completion, communication flow, and perceived productivity.	(Abbasi, 2023; Wang et al., 2021)
2.	Independent Teamwork dynamics	The quality and effectiveness of teamwork within organizations, including communication among team members, collaboration on tasks, problem-solving abilities, coordination, trust, and overall team performance.	(Oyefusi, 2022; Tarricone & Luca, 2002)
3.	Moderating variable Employee engagement	The degree of employees' cognitive, emotional, and behavioural involvement in their work, including commitment, feedback seeking, willingness to collaborate, motivation, and sustained attention to assigned tasks in remote work settings.	(Heeter, 2015; Sungu et al., 2019; Turner & Turner, 2020)

Source: Authors' Computation 2024



Empirical Review

Teamwork is a collaborative process in which employees work together to achieve outstanding results by sharing knowledge and skills. The synergy between teams fosters a collaborative work environment, encouraging every employee to actively contribute, participate in decision-making, and engage in problem-solving to accomplish organizational goals (Oyefusi, 2022; Tarricone & Luca, 2002). Team dynamics play a crucial role in shaping the success and effectiveness of an organization. In today's fast-paced and complex business environment, the ability of teams to collaborate, communicate, and innovate is essential for achieving organizational goals. (Magana et al., 2023).

Team dynamics in remote settings require a deep understanding of organizational diversity (Oyefusi, 2022). Diversity includes demographic factors, job-related attributes, attitudes, and values. It is categorized into non-psychological attributes, like age and gender, and psychological attributes, such as cognitive abilities and beliefs (Thomas, 2018). While earlier studies focused on non-psychological diversity, recent research highlights the impact of psychological diversity on team creativity and performance (Woehr et al., 2013). The varying importance of values among team members further illustrates the complexity of diversity in remote teams (Oyefusi, 2022; Wang, 2018).

Nwokolo and Onuoha (2023) conducted a survey on remote work and workers' satisfaction in deposit money banks in Rivers State, aiming to explore the relationship between remote work and employee satisfaction. The study involved 187 bank employees, with 127 selected through simple random sampling. Data were gathered using questionnaires and analyzed with the Spearman Rank Order Correlation to examine the link between remote work (work from home, work flexibility) and satisfaction (affective and cognitive). The study found a significant positive relationship between remote work and satisfaction, highlighting its importance for employee well-being. However, the limited sample size and omission of teamwork as a variable may affect the study's comprehensiveness.

Even (2020) conducted a study on best practices to avoid social and organizational isolation among teleworkers. Using a qualitative systematic literature review, data were extracted from 20 articles through two cycles of thematic coding in Excel. The findings revealed that isolation is more severe for high-frequency teleworkers, leading to negative job outcomes and fears of career stagnation. The study concluded that social and organizational isolation can be reduced through best practices such as face-to-face interactions, inclusion in information exchange, and leadership training. Limitations included a narrow database selection, a small sample size of 20 articles, rapid execution, and the use of Excel for coding rather than more advanced platforms.

RESEARCH DESIGN AND METHODOLOGY

Robust ordinary least squares were used to evaluate the relationship between teamwork dynamics, employee engagement, and remote work effectiveness. Robust ordinary least squares is an estimation technique that measures the relationship between explanatory and response variables while producing standard errors that are less sensitive to heteroscedasticity, outliers, and non-normality (Hair et al., 2019; Field, 2018).



$$Y_i = \alpha_0 X_1 + \pi_i X_2 + \psi_i X_3 + \tau_i X_4 + \dots + \omega_k X_K \varepsilon_i \quad Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i \dots\dots\dots (1)$$

$(Y_i)X_1, X_2, X_3, X_4, X_k, \pi_i, \psi_i, \tau_i, \alpha_0) \varepsilon_i$) Equation (1) depicts the dependent variable (Y_i), the independent variable (X_i), the intercept (β_0), the slope coefficient (β_1), and the error term (ε_i), which captures other factors outside the model that may influence the relationship between the response and explanatory variables. The subscript i represents individual respondents.

$$Y_i = \alpha_0 X_1 + \pi_i X_2 + \psi_i X_3 + \tau_i X_4 + \dots + \omega_k X_K \varepsilon_i, \sim N(0, \sigma^2), 1 \leq i \leq n \text{RWE}_i = \beta_0 + \beta_1 \text{TWD}_i + \beta_2 \text{EE}_i + \beta_3 (\text{TWD}_i \times \text{EE}_i) + \varepsilon_i \dots\dots\dots (2)$$

The empirical model is grounded in social exchange theory and supported by the remote work and technology-use literature. The model does not claim to estimate a full TAM framework because the study did not directly collect measures of perceived usefulness, perceived ease of use, behavioural intention, or actual technology usage.

$RM_i = \alpha_0 + \omega_i \text{TW}_1 + \delta_i \text{EMG}_2 + \varphi_i (\text{TW} * \text{EMG})_3 + \varepsilon_i \varepsilon_i, \sim N(0, \sigma^2), 1 \leq i \leq n$ In Equation (2), RWE represents remote work effectiveness, TWD represents teamwork dynamics, EE represents employee engagement, and $\text{TWD} \times \text{EE}$ represents the interaction term used to test the moderating role of employee engagement.

$\omega_i, \delta_i, \varphi_i \varphi_i (\text{TW} * \text{EMG})_3$). The slope coefficients β_1, β_2 , and β_3 measure the relationship between the predictors and the response variable. Specifically, β_3 captures whether employee engagement strengthens or weakens the relationship between teamwork dynamics and remote work effectiveness. Ordinary least squares assumptions considered in the analysis include linearity, absence of severe multicollinearity, absence of serial correlation, and control for heteroscedasticity through robust standard errors.

DATA ANALYSIS AND PRESENTATION

Demographic Information

Demographic data provide insights into specific population subsets at a specific time, requiring careful examination and analysis. The demographic information of the sampled population is displayed in Table 2. Table 2 presents the demographic analysis of the 454 valid respondents retained after data screening. Millennials (26–41 years old) constitute the largest age group, accounting for 68.7% of the sample. Most respondents had a B.Sc./HND degree (55.94%) or a Master's degree (42.74%). Married individuals make up the largest marital status category (57.3%). In terms of gender, male respondents accounted for 59.9%, while female respondents accounted for 40.1%. In addition, the majority of respondents are fully employed (87.7%), with a smaller proportion self-employed (4%), and the smallest proportion retired (0.4%). Hybrid work mode is the preferred option (77.1%), followed by remote work (15.4%) and full-on-site work (7.5%). Respondents with 1–10 years of experience make up the majority of the sample. The top industries represented are others (25.99%), financial services (14.54%), professional services (12.78%), and manufacturing (7.49%), indicating diversity in industries among respondents. Small and medium-sized organizations are well represented in the survey, with 38.8% and 23.8% of respondents, respectively, compared to large organisations (37.4%). Christianity is the dominant religious affiliation among respondents (93.8%) compared to Islam (6.2%).

**Table 2: Respondent demographics**

Description	Frequency	Percentage
Age Categories		
Below 26 (Generation Z)	18	4
26-41 (Millennials)	312	68.7
42-57 (Generation X)	112	24.7
58 and above (Baby Boomers)	12	2.6
Level of Education		
B.Sc/HND	254	55.94
Masters	194	42.74
Ph.D	6	1.32
Marital Status		
Single	184	40.5
Married	260	57.3
Divorced	4	0.9
Widowed	6	1.3
Gender		
Male	272	59.9
Female	182	40.1
Religion Affiliation		
Islam	28	6.2
Christianity	426	93.8
Traditional	-	-
Employment Status		
Full time	398	87.7
Part time	16	3.5
Self employed	18	4
Retired	2	0.4
Unemployed	18	4
Years of Experience		
Less than 1 year	4	0.9
1-5 years	148	32.6
6-10 years	154	33.9
More than 10 years	146	32.2
Over 30 years	2	0.4
Work mode preference		
Remote Work	70	15.4
Hybrid Work	350	77.1
Full Onsite	34	7.5
Industry		
Agriculture	12	2.64



Commerce	10	2.20
Construction	24	5.29
Education	16	3.52
Financial services	66	14.54
Professional services	58	12.78
FMCG	20	4.41
Manufacturing	34	7.49
Distribution/E-Commerce	4	0.88
Health services	16	3.52
Hospitality	18	3.96
Mining (coal; other mining)	4	0.88
Mechanical and electrical engineering	4	0.88
Oil and Gas	20	4.41
Energy	10	2.20
Postal and telecommunications services	10	2.20
Public service	8	1.76
Utilities	2	0.44
Others	118	25.99
Organization Size		
Small (1-50 employees)	176	38.8
Medium (51-200 employees)	108	23.8
Large (More than 200 employees)	170	37.4
	454	100

Source: *Field Work*

Descriptive statistics

It is important to analyze the properties of a dataset before performing any subsequent analysis. This provides valuable insights into the variables in the dataset. Table 3 presents data on remote work, employee engagement, and team dynamics. This dataset includes responses from 454 individuals to questions about both dependent and independent factors. The results show that team dynamics has the greatest mean value ($M=2.71$) when compared to remote work ($M=2.08$) and employee engagement ($M=1.917$). This suggests that most respondents recognized the importance of team dynamics in their organizational environment. In terms of outliers, remote work and employee engagement are leptokurtic, indicating a substantial amount of outliers; team dynamics, on the other hand, is approximately mesokurtic and closer to normal kurtosis. All three variables have positive skewness, indicating right-skewed distributions rather than left-skewed distributions. As a result, remote work, employee engagement, and teamwork dynamics exhibit varying degrees of asymmetry. To address issues arising from outliers and asymmetries, the Shapiro-Wilk test was used to assess the normality of the data. The Shapiro-Wilk test indicated that all variables tested were non-normally distributed. This divergence from normalcy is mitigated by using the robust Ordinary Least Squares approach in EViews 10. The robust Ordinary Least Squares technique is a variation of least squares that uses robust standard errors to manage non-normality and outliers in a dataset. The appendix contains visual representations of normality and P-P plots.

**Table 3: Descriptive statistics**

	Remote work	Employee engagement	Team dynamics
Mean	2.081183	1.917181	2.718062
Median	2.000000	1.800000	2.857143
Maximum	5.000000	5.000000	5.000000
Minimum	1.000000	1.000000	1.000000
Std. Dev.	0.854073	0.943347	0.927902
Skewness	0.946317	1.154510	0.142327
Kurtosis	4.111671	4.253956	2.962802
Shapiro wilk(prob)	0.0000	0.0000	0.0000
Observations	454	454	454

Authors' computation (2024)

Measurement Validity and Reliability Assessment

This section evaluates the validity and reliability of the measurement items for the study constructs. The analysis includes internal consistency reliability, sampling adequacy, convergent validity, discriminant validity, and multicollinearity diagnostics. Reliability is assessed through Cronbach's alpha. Sampling adequacy is measured using the Kaiser-Meyer-Olkin (KMO) test. Convergent validity is evaluated through Average Variance Extracted (AVE) and factor loadings. Discriminant validity is assessed using the Pearson correlation coefficient among constructs, while model specification and multicollinearity concerns are assessed using the Variance Inflation Factor (VIF). The minimum thresholds adopted are 0.50 for AVE, 0.70 for Cronbach's alpha and KMO, and below 4 for VIF. This section is therefore reported as a measurement validity and reliability assessment, not as structural equation modelling, since SEM would require a dedicated SEM package such as AMOS, SmartPLS, LISREL, or Mplus and the reporting of model-fit indices.

The metrics for Cronbach's alpha, KMO, and average variance extracted (AVE) are within established thresholds for validity and reliability. Remote work has a Cronbach's alpha of 0.787, AVE of 0.578, and KMO of 0.819. Teamwork dynamics has a Cronbach's alpha of 0.857, AVE of 0.564, KMO of 0.882, correlation coefficient of 0.3516, and VIF of 1.549. Employee engagement has a Cronbach's alpha of 0.865, AVE of 0.807, KMO of 0.848, correlation coefficient of 0.5588, and VIF of 1.549. The factor loadings for remote work, teamwork dynamics, and employee engagement exceed the acceptable threshold of 0.40, confirming acceptable construct validity. The low VIF values indicate the absence of severe multicollinearity. The analysis was performed using SPSS for reliability and validity diagnostics, with median imputation used to address missing data issues.

Table 4: Measurement Validity and Reliability Assessment

Constructs	Items	Factor loadings	Cronbach alpha	A.V.E.	K.M.O	CORR	VIF
Remote work			.787	.578	.819	1.000	
	RW1	.749					
	RW2	.673					
	RW3	.739					
	RW4	.815					



	RW5	.814					
	RW6	.727					
	RW7	.973					
Teamwork dynamics			.857	.564	.882	.3516	1.549
	TW1	.850					
	TW2	.822					
	TW3	.827					
	TW4	.847					
	TW5	.763					
	TW6	.798					
Employee engagement			.865	.807	.848	.5588	1.549
	EM1	.735					
	EM2	.786					
	EM3	.856					
	EM4	.838					
	EM5	.822					

Source: Authors' Construct (2024)

Hypothesis Testing

Three hypotheses were tested using robust ordinary least squares to evaluate the relationship between teamwork dynamics, employee engagement, and remote work effectiveness. The results for all hypotheses are presented in Table 5. For H₁, the results show that teamwork dynamics have a negative and statistically significant relationship with remote work effectiveness in Nigeria ($B = -0.011$, $p = 0.0011$). Thus, a one-unit increase in teamwork dynamics is associated with a 0.011 unit decrease in remote work effectiveness, holding employee engagement and the interaction term constant. Furthermore, 31% of the changes in remote work effectiveness are explained by teamwork dynamics, employee engagement, and their interaction. Remote teams face obstacles such as distrust, isolation, and communication difficulties. These challenges may reduce team efficiency and affect remote work effectiveness. Communication breaches are among the main obstacles to productive cooperation among remote teams (Balenger et al., 2021). Our findings deviate from a plethora of literature that envisages that teamwork improves remote work effectiveness (Ilag, 2021; Cossu, 2021; Oyefusi, 2022; Ferguson, 2024; Valenduc et al., 2023). Thus, in the Nigerian work environment, the assumptions often associated with technology-enabled collaboration should be interpreted cautiously. Since this study did not directly measure TAM constructs, it cannot verify or reject TAM itself; rather, it shows that teamwork dynamics alone do not positively predict remote work effectiveness in the sampled Nigerian workplace context.

For Hypothesis 2, the result affirmed that employee engagement has a positive and significant effect on remote work effectiveness ($B = 0.41$, $p = 0.000$). A one-unit increase in employee engagement is associated with a 0.41 unit increase in remote work effectiveness. This exemplifies that employee engagement improves remote work efficiency in Nigeria. Engaged employees provide feedback, facilitate communication between colleagues and supervisors, share knowledge and skills, and show a strong desire to stay updated on project developments. Our findings are consistent with the literature, which has shown that employee engagement



enhances remote work performance (Ozceluk & Bersade, 2018; Suh & Lee, 2022; Gibson, 2022; Liu & Wang, 2022).

The moderation analysis indicates that employee engagement significantly moderates the relationship between teamwork dynamics and remote work effectiveness ($B = 0.021814$, $p = 0.0000$). Thus, a one-unit increase in employee engagement is associated with a 0.021814 unit increase in the marginal relationship between teamwork dynamics and remote work effectiveness. Employee engagement strengthens the relationship between teamwork dynamics and remote work effectiveness. According to social exchange theory, engaged employees are more willing to share knowledge and skills with colleagues and collaborate to achieve company goals, enabling remote work efficacy. Employee engagement positively moderates the relationship between teamwork and remote work at low (1, 2, and 3), medium (2, 4, and 6), and high (3, 6, and 9) levels of engagement, as depicted by the modagraph (simple slope) in Figure 1. The graph indicates that while remote work efficiency is beneficial, it is not particularly high at low levels of employee engagement. Lower engagement among remote employees is associated with lower commitment to teamwork. In remote work environments, highly engaged employees' cooperative efforts and active engagement lead to increased productivity. This indicates that as employee engagement rises, the relationship between teamwork dynamics and the effectiveness of remote work increases. Furthermore, the model is well specified ($F\text{-stat} = 68.53836$), free from autocorrelation (Durbin-Watson = 2.042498), and highly statistically significant ($\text{Prob}(F\text{-stat}) = 0.0000$), with model predictive power of 31.36% (Adjusted R-squared = 0.309046).

The results of the ordinary least squares using robust standard errors are generated using EVIEWS 10. This method yields a more accurate standard error and improves the model's significance. This method increases the model's statistical significance and yields more reliable standard errors. EVIEWS 10 specifically enables accurate model specification tests, efficient handling of outliers and asymmetries, and robust standard error estimation to account for heteroscedasticity.

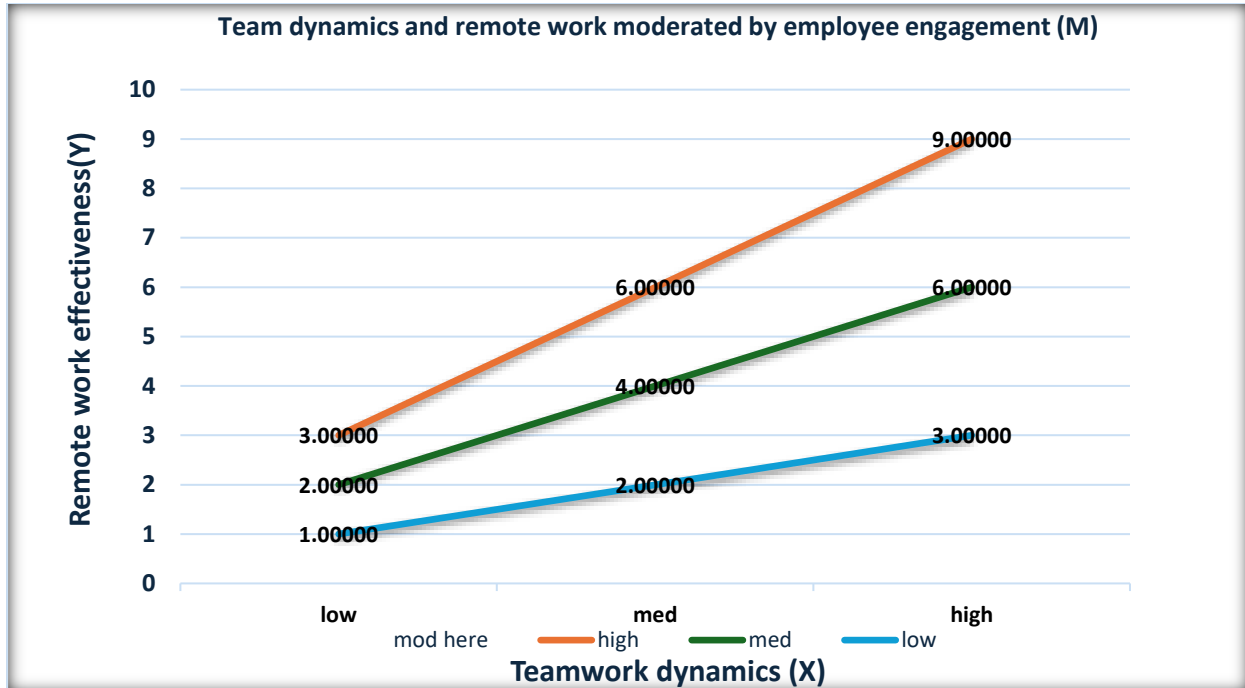
Table 5: Robust Ordinary Least Square (ROLS)

Dependent variable: Remote work effectiveness				
	Coefficient	Std error	T-Statistics	Probability
Employee engagement	0.415502	0.005316	78.88187	0.0000
Teamwork dynamics	- 0.011232	0.002726	-8.719359	0.0011
Team*employee	0.021814	0.001509	16.41214	0.0000
C	1.221088	0.007976	153.0872	0.0000
Model summary				
R-square	Adj-R squared	F-stat	Durbin-Watson	Prob(F-stats)
0.313622	0.309046	68.53836	2.042498	0.0000

Authors' computation (2024)



Figure 1: Moderating Effect of Employee Engagement on Teamwork Dynamics-Remote Work Effectiveness nexus in low, medium and high levels of employee engagement (Simple slopes)



Source: Authors' construct (2024)

Summary of Hypothesis

The first hypothesis was rejected as the relationship between teamwork dynamics and remote work effectiveness is negative and significant ($B = -0.011$, $p = 0.0011$). In contrast, the second hypothesis is accepted as the results indicated a positive and significant relationship between employee engagement and remote work effectiveness ($B = 0.41$, $p = 0.000$). In addition, the results of the third hypothesis corroborate that employee engagement positively and significantly moderates the relationship between teamwork dynamics and remote work effectiveness, thereby validating the acceptance of the third hypothesis.

Table 6: Summary of hypotheses

Hypothesis	Coefficient	Probability	Remark
Hypothesis 1	-0.011	0.0011	Reject hypothesis 1
Hypothesis 2	0.41	0.000	Accept hypothesis 2
Hypothesis 3	0.02	0.0000	Accept hypothesis 3

Source: Authors' Computation (2024)



DISCUSSION OF RESULTS

Teamwork dynamics and remote work effectiveness

This study aims to unveil the relationship between teamwork dynamics and remote work effectiveness. The findings reveal a negative relationship between team dynamics and remote work effectiveness. Effective teamwork and cooperation are essential, as are the tools available for coordinating efforts among team members. The use of communication technologies for remote work and collaborative initiatives necessitates an evaluation of different training methodologies and team dynamics (Popovici & Popovici, 2020). The lack of opportunities for team members to observe peers and engage in social learning, along with less efficient communication than in-person interactions, may prompt a re-evaluation of the costs and benefits of collaboration (Adisa, Ogbonna, & Adekoya, 2023).

The findings indicate that these challenges are more pronounced in simpler tasks that do not require extensive creative problem-solving. While collaboration can yield advantages, the trade-offs concerning time, accuracy, and efficiency must be considered, as coordination incurs costs. In Nigeria, virtual teams face challenges such as interpersonal conflicts, difficulties with team acceptance, employee scheduling issues, diminished monitoring, workplace diversity concerns, and significant apprehension toward technology (Odubiyi & Oke, 2016). The complexity of teamwork dynamics in both professional and collaborative contexts may hinder the effectiveness of remote work (Yasseri, 2023).

Employee engagement and remote work effectiveness

Our findings confirmed a significant positive relationship between employee engagement and remote work effectiveness. Engaged remote workers often go above and beyond the goals set for them. Also, when a project goes off course, engaged employees usually have a plan to review and improve subsequent projects, thereby increasing productivity. Highly engaged remote workers are more open about their professional goals, recommend people for open positions, and stay with the company longer. Highly engaged workers are more efficient when working remotely, which increases their job satisfaction and enhances their collaboration, creativity, trust, and productivity. Engaged employees are likely to communicate better with their teammates, which is an essential determinant of remote work efficiency. They also demonstrate better communication with colleagues and managers, fostering a culture of trust essential for successful remote work. In general, motivated workers are better able to adjust to evolving remote work settings and technological advancements. These findings align with those of Gigauri (2020), Stein et al. (2021), Willis Towers Watson (2020), Slack et al. (2020), and Turner & Turner (2020). However, our study contrasts the findings of Gartner et al. (2024), Blumberga and Tarina (2021), and Hickman and Robinson (2020), who believed that employee engagement does not improve remote work effectiveness. Our findings differ from these studies due to the differences in sample, context, organizational structure, and technological underdevelopment that are peculiar to the Nigerian work environment.

Teamwork dynamics, employee engagement, and remote effectiveness.

Our findings corroborate that employee engagement moderates the relationship between teamwork dynamics and remote work effectiveness. Employee engagement is characterized by improved communication, trust, psychological safety, motivation, and organizational citizenship behavior. These aid higher-quality work, coordination, information distribution, and



productivity in remote work environments (Pass & Rigdway, 2022). Highly engaged remote workers experience a more harmonious work-life balance, which boosts their effectiveness (Gigauri, 2020). At low levels of employee engagement, employees show low enthusiasm for teamwork projects, which affects their productivity when working remotely (Harter, 2020). At a medium level of employee engagement, employees show more enthusiasm, leading to improved teamwork, collaboration and creativity in their remote tasks (Beliddo, 2021; Willis Towers Watson, 2016). At high levels of employee engagement, workers are highly result-driven and committed to fulfilling organizational objectives and targets. This makes them highly efficient in their remote jobs (Savchenko, 2021; Turner & Turner, 2020). This supports the assumptions of social exchange theory that employee engagement is an important factor in remote work productivity.

Theoretical implications

The analysis reveals that the Nigerian work environment presents complexities that qualify the predictive power of the Technology Acceptance Model (TAM) regarding the relationship between teamwork dynamics and remote work efficiency. Since the study did not measure TAM's core constructs, the findings should not be interpreted as a direct test of TAM. Rather, the results suggest that technology-enabled collaboration, by itself, may be insufficient to improve remote work effectiveness where coordination costs, infrastructural constraints, weak feedback systems, and uneven employee engagement are present. Factors such as motivation, autonomy, social networks, corporate support, and incentives play crucial roles in determining the effectiveness of remote work.

In remote work settings, self-determination, competence, and relatedness emerge as significant contributors. Organizations must cultivate loyalty and camaraderie among remote employees by leveraging technology to meet their needs rather than hindering them. Establishing evaluation and recognition forums can boost competency and foster a sense of belonging.

Moreover, social exchange theory is identified as a critical predictor of success in the Nigerian context, where employee engagement directly influences the effectiveness of remote work. Active engagement is vital for organizational success, necessitating regular feedback systems to acknowledge employees' contributions. Implementing targeted recognition campaigns can enhance feelings of relevance and inclusion, while opportunities for professional growth reinforce reciprocity in the employer-employee relationship.

This study enhances the theoretical literature on team dynamics and remote work effectiveness, emphasizing the need to consider contextual factors, especially in emerging economies like Nigeria. It qualifies the direct application of Western-centered theories, such as TAM, by highlighting the socio-cultural, infrastructural, and organizational influences that shape remote work effectiveness in less developed countries.

Practical implications

From this study's findings, it is apparent that teamwork dynamics in Nigeria cannot improve remote work if employees are not actively engaged in their tasks. For remote workers, engagement will determine their effectiveness. Lack of face-to-face communications, distractions in the remote work environment, poor organizational structure, poor communications, and poor feedback affect the efficiency of remote workers. In Nigeria, poor power supply and unreliable network are also major issues that contribute to inefficiency in



remote work. Hence, organizations and managers should ensure that technical and structural issues within the organization that can hinder remote work efficiency are resolved. Most importantly, organizations should invest in employee engagement initiatives that can foster easy communication, training, support, and create a platform that can help remote work productivity. More so, different organizational measures should be put in place to reward productive employees. In other words, incentives for work performance should be implemented by managers and the management to motivate remote workers.

CONCLUSION

Our findings demonstrate that the Nigerian work environment is unique and influenced by contextual factors. These factors play an important role in shaping team dynamics and their impact on remote work. This indicates that Western-centric theories require careful contextualisation before being applied to the diversity of remote work settings in Nigerian industry. As a result, team dynamics in Nigeria have a negative relationship with remote work effectiveness, while employee engagement is positively correlated with it. In Nigeria, employee engagement, rather than teamwork alone, increases the effectiveness of remote work. The study included a variety of statistical tests, including descriptive statistics, measurement validity and reliability assessment, and robust ordinary least squares regression. Three hypotheses were evaluated, and all were statistically significant. Organizations should concentrate on ways to encourage remote employees to be more involved in their work. Teamwork is insufficient to ensure remote job performance if remote employees are not strongly engaged. Employee engagement is key to maximising remote work efficiency. The greater the engagement, the greater the remote work proficiency.

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APPENDIX 1: Normality and P-P plots

