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REMOTE WORK AND EMPLOYEE PRODUCTIVITY IN POST-PANDEMIC ORGANIZATIONS IN DELTA STATE

By

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ABSTRACT: This study examined remote work and employee productivity in post-pandemic organizations in Delta State, Nigeria. Specifically, the study examined the effect of work flexibility on employee productivity in post-pandemic organizations in Delta State and evaluated the effect of digital communication and collaboration on employee productivity in post-pandemic organizations in Delta State. The study adopted a survey research design. The population of the study comprised employees of selected post-pandemic organizations operating in Delta State, while a sample size of 294 respondents was determined using appropriate sampling techniques. Primary data were collected through the administration of structured questionnaires. The validity of the instrument was established through face and content validity, while reliability was tested using Cronbach's Alpha reliability method with coefficients above the acceptable threshold of 0.70. Data collected were analyzed using descriptive statistics, Pearson Product Moment Correlation, and Multiple Regression Analysis with the aid of Statistical Package for Social Sciences (SPSS Version 27). The findings revealed that work flexibility significantly and positively affects employee productivity in post-pandemic organizations in Delta State ($\beta = 0.472$, $t = 8.315$, $p < 0.05$). The study also found that digital communication and collaboration significantly influence employee productivity in post-pandemic organizations in Delta State ($\beta = 0.389$, $t = 6.947$, $p < 0.05$). Furthermore, correlation analysis showed strong positive relationships among the study variables, with work flexibility and employee productivity recording a correlation coefficient of $r = 0.741$, while digital communication and collaboration recorded $r = 0.708$ with employee productivity. The regression model produced an adjusted R-square value of 0.671, indicating that remote work variables explained 67.1% variation in employee productivity among post-pandemic organizations in Delta State. The study concluded that remote work practices significantly improve employee productivity in post-pandemic organizations in Delta State. The findings suggest that organizations that provide flexible work arrangements and effective digital communication platforms experience improved employee efficiency, collaboration, and job performance. The study therefore recommended that organizations should strengthen flexible work policies that allow employees to balance work responsibilities and personal commitments in order to sustain productivity. The study also recommended that management should invest in advanced digital communication and collaboration technologies, continuous employee training, and reliable virtual work systems to enhance effective teamwork and organizational productivity in post-pandemic work environments.

KEYWORDS: Remote work, work flexibility, digital communication, collaboration, employee productivity.

INTRODUCTION

The outbreak of the COVID-19 pandemic brought unprecedented disruptions to organizational operations across the world, compelling many firms to adopt remote work arrangements as a survival strategy. Before the pandemic, remote work was largely limited to specific industries and

occupations that relied heavily on digital technologies. However, the health crisis accelerated the transition from traditional office-based work to virtual and hybrid working systems, thereby transforming the global work environment. In the post-pandemic era, organizations have continued to

embrace remote work because of its perceived benefits, including flexibility, reduced operational costs, improved work-life balance, and increased employee autonomy (Agwubuo & Okoro, 2025).

Remote work refers to a work arrangement where employees perform their official duties outside the traditional office environment through the use of information and communication technologies. This work model gained prominence during the pandemic when governments-imposed lockdowns and social distancing measures. As organizations gradually recovered from the pandemic, many retained remote or hybrid work structures due to their strategic and operational advantages. Recent studies indicate that remote work can improve employee productivity through reduced commuting stress, flexible scheduling, and enhanced concentration on job tasks (Jiang et al., 2024).

Employee productivity remains one of the most critical determinants of organizational performance and competitiveness. Productivity reflects the efficiency with which employees utilize organizational resources, skills, time, and technology to achieve organizational objectives. In contemporary organizations, the growing dependence on digital communication tools and virtual collaboration platforms has significantly reshaped how productivity is measured and managed. While some organizations report increased productivity under remote work arrangements, others experience challenges such as communication barriers, employee isolation, reduced teamwork, lack of supervision, and work-life imbalance (Celestin & Sujatha, 2024).

The post-pandemic work environment has generated divergent opinions regarding the effectiveness of remote work on employee productivity. Some scholars argue that remote work enhances productivity because employees enjoy greater flexibility and autonomy, which improves motivation and job satisfaction. Similarly, systematic reviews on remote and hybrid work models reveal that flexible work arrangements often increase employee efficiency and organizational performance by reducing commuting time and supporting work-life balance (Springer Nature, 2025). Conversely, other studies suggest that prolonged remote work may negatively affect employee wellbeing, communication efficiency,

team cohesion, and innovation due to limited physical interaction among workers.

In Nigeria, particularly in Delta State, many organizations adopted remote work during the pandemic to sustain operations amid movement restrictions. Although the pandemic has subsided, several organizations continue to utilize remote or hybrid work arrangements. However, the effectiveness of these work models in enhancing employee productivity within the Nigerian organizational context remains insufficiently explored. Factors such as inadequate digital infrastructure, unstable electricity supply, poor internet connectivity, limited technological competence, and organizational culture may influence the success of remote work practices in Delta State. These challenges create uncertainty regarding whether remote work positively or negatively affects employee productivity in post-pandemic organizations.

Furthermore, organizations in Delta State operate in a highly competitive and dynamic business environment where employee productivity is essential for survival and growth. Managers and organizational leaders are increasingly concerned about how to maintain efficiency, accountability, collaboration, and employee engagement in remote work settings. Despite the increasing adoption of remote work practices, empirical evidence on their influence on employee productivity in post-pandemic organizations within Delta State remains limited. Most previous studies focused on developed economies, leaving a contextual gap regarding the Nigerian business environment. It is against this background that this study seeks to examine remote work and employee productivity in post-pandemic organizations in Delta State. The study aims to provide empirical evidence on how remote work practices influence employee productivity and organizational effectiveness in the evolving post-pandemic workplace.

Study problem

Despite the increasing adoption of remote work arrangements in organizations following the COVID-19 pandemic, there remains considerable uncertainty regarding their effect on employee productivity, particularly in developing economies such as Nigeria. During the pandemic, many organizations were compelled to implement remote work systems to sustain business operations amid

lockdowns, movement restrictions, and health concerns. Although the pandemic has subsided, several organizations in Delta State have continued to adopt remote and hybrid work models as part of their operational strategies. However, the extent to which these arrangements enhance or hinder employee productivity remains a major concern for organizational managers and policymakers. Employee productivity is essential for organizational survival, competitiveness, and growth. Organizations depend on productive employees to achieve efficiency, profitability, innovation, and improved service delivery. Nevertheless, the transition from traditional office-based work to remote work has introduced several operational and managerial challenges. Many employees working remotely experience issues such as poor internet connectivity, unstable electricity supply, limited access to digital tools, communication difficulties, inadequate supervision, work-life imbalance, and feelings of isolation. These challenges may negatively affect employees' ability to perform efficiently and meet organizational expectations.

Conversely, some organizations have reported improvements in employee productivity under remote work arrangements due to increased flexibility, reduced commuting stress, enhanced autonomy, and better time management. This divergence in opinions has created an unresolved debate among scholars and practitioners concerning whether remote work positively or negatively affects employee productivity in post-pandemic organizations. Furthermore, most empirical studies on remote work and productivity have been conducted in developed countries where digital infrastructure and technological support systems are more advanced. Consequently, the findings from such studies may not adequately reflect the realities of organizations operating in Delta State, Nigeria. In Delta State, organizations face unique socio-economic and infrastructural challenges that may influence the effectiveness of remote work practices. Inadequate technological infrastructure, inconsistent power supply, poor internet services, and limited organizational preparedness for digital work systems may significantly affect employee productivity in remote work settings. Despite the growing relevance of remote work in the post-pandemic era, there is still limited empirical

evidence on how remote work influences employee productivity within organizations in Delta State. It is this gap in knowledge that necessitates this study on remote work and employee productivity in post-pandemic organizations in Delta State. The study seeks to examine the extent to which remote work practices affect employee productivity and provide evidence-based recommendations for improving organizational performance in the evolving workplace environment.

Research Questions

The study was guided by the following research questions:

- i. to what extent does work flexibility affect employee productivity in post-pandemic organizations in Delta State?
- ii. what is the effect of digital communication and collaboration on employee productivity in post-pandemic organizations in Delta State?

Objectives of the study

The broad objective of the study is to remote work and employee productivity in post-pandemic organizations in Delta State. The specific objectives are to:

- i. examine the effect of work flexibility on employee productivity in post-pandemic organizations in Delta State
- ii. evaluate the effect of digital communication and collaboration on employee productivity in post-pandemic organizations in Delta State

Research Hypotheses

H01: work flexibility on employee productivity in post-pandemic organizations in Delta State

H02: digital communication and collaboration on employee productivity in post-pandemic organizations in Delta State

Literature Underpinnings

Conceptual Review

Remote Work

Remote work refers to a flexible work arrangement in which employees perform their organizational duties outside the traditional office environment through the use of digital technologies, internet connectivity, and virtual communication platforms. It enables employees to work from locations such as their homes, co-working spaces, or other remote locations while maintaining communication and coordination with employers and colleagues through information and communication

technologies (ICTs) (Ferrara et al., 2022). Remote work became globally prominent during the COVID-19 pandemic when organizations adopted virtual working systems to ensure business continuity amid lockdowns and social distancing measures. In the post-pandemic era, remote work has evolved into a strategic organizational practice aimed at enhancing flexibility, reducing operational costs, improving work-life balance, and sustaining employee productivity. Recent studies indicate that remote work allows employees greater autonomy over their work schedules and environments, which can positively influence efficiency and job performance when supported by adequate technological infrastructure and effective management systems. Furthermore, remote work is often associated with hybrid and flexible work models that combine virtual and physical work arrangements. While remote work offers benefits such as reduced commuting time, increased flexibility, and improved employee satisfaction, it may also present challenges including communication barriers, social isolation, reduced collaboration, and technological difficulties. Therefore, the effectiveness of remote work largely depends on organizational support systems, digital readiness, and employee adaptability.

Employee Productivity

Employee productivity refers to the degree to which employees efficiently and effectively utilize their skills, knowledge, time, and organizational resources to achieve assigned tasks and organizational goals within a specified period. It reflects the ability of employees to produce quality outputs with minimal waste of resources while maintaining high performance standards. Employee productivity is often measured through indicators such as work output, efficiency, quality of service, task completion rate, innovation, and overall job performance (Vayre & Pignault, 2024). In contemporary organizations, employee productivity has become increasingly important due to the growing adoption of digital technologies, flexible work systems, and remote work arrangements. Productivity is no longer assessed solely by physical presence at the workplace but also by employees' ability to meet targets, collaborate effectively, and sustain performance in virtual work environments. Recent studies indicate that employee productivity can be influenced by factors such as work

flexibility, technological support, communication systems, employee motivation, organizational culture, and work-life balance (Jiang et al., 2024). Furthermore, employee productivity is regarded as a critical determinant of organizational competitiveness, profitability, and sustainability. Productive employees contribute significantly to organizational growth through improved efficiency, innovation, customer satisfaction, and operational effectiveness. In the post-pandemic era, organizations increasingly focus on strategies that enhance employee productivity while adapting to evolving work patterns such as remote and hybrid work systems. Studies have shown that supportive remote work practices, effective digital collaboration, and flexible working conditions can positively influence employee productivity when properly managed (Anakpo et al., 2023; Prasad et al., 2024).

Post-Pandemic Organizations in Delta State

Post-pandemic organizations in Delta State refer to business establishments, public institutions, and other formal organizations operating in Delta State, Nigeria, that have adjusted their operational structures, management practices, and work systems in response to the changes and disruptions caused by the COVID-19 pandemic. These organizations emerged from the pandemic with new workplace strategies that emphasize flexibility, digital transformation, remote work adoption, hybrid work systems, employee wellbeing, and organizational resilience (Ghabban et al., 2024).

The COVID-19 pandemic significantly altered the traditional work environment, forcing organizations to redesign their operational processes to ensure continuity and survival. Consequently, post-pandemic organizations are characterized by increased reliance on information and communication technologies, virtual collaboration tools, and flexible work arrangements that support organizational efficiency and employee productivity in a changing business environment (Ambarwati et al., 2024).

In the context of Delta State, post-pandemic organizations include both public and private sector organizations that continue to adapt to the realities of the post-COVID-19 era. These organizations operate within a business environment influenced by infrastructural challenges, digital transformation demands, changing employee expectations, and

evolving organizational policies. Many organizations in Delta State have integrated remote and hybrid work systems to maintain operational effectiveness while addressing issues such as employee safety, flexibility, work-life balance, and technological innovation. Studies indicate that post-pandemic organizations increasingly focus on organizational adaptability, employee engagement, and digital readiness as key strategies for sustaining productivity and competitiveness (Capone et al., 2024). Furthermore, post-pandemic organizations are distinguished by their efforts to balance organizational performance with employee wellbeing in the face of changing work patterns. These organizations continue to experiment with flexible work arrangements, digital communication systems, and collaborative technologies to improve efficiency and organizational sustainability in the modern workplace (Tahlyan et al., 2024).

Work flexibility and Employee Productivity in Post-Pandemic Organizations in Delta State

Work flexibility has become one of the most significant features of remote work in post-pandemic organizations. It refers to the degree to which employees are allowed to determine their work schedules, pace, and work locations while carrying out organizational responsibilities. In post-pandemic organizations in Delta State, work flexibility has increasingly influenced employee productivity as organizations continue to adopt remote and hybrid work systems to improve operational efficiency and employee wellbeing. Flexible work arrangements positively affect employee productivity by enabling employees to balance their professional and personal responsibilities more effectively. Employees who enjoy flexible work schedules often experience reduced work-related stress, improved job satisfaction, and greater motivation, which contribute to higher levels of productivity and task performance. Studies have shown that flexible work arrangements increase employee autonomy and commitment, thereby improving work efficiency and organizational outcomes (Çivilidağ & Durmaz, 2024).

Similarly, work flexibility reduces commuting time and workplace distractions, allowing employees to devote more time and energy to productive activities. In remote work settings, employees can organize their work periods according to their most

productive hours, which enhances concentration, creativity, and performance. Research on remote and hybrid work models indicates that flexible work arrangements generally improve productivity by promoting work-life balance and employee satisfaction (Springer Nature, 2025). Furthermore, work flexibility enhances employee morale and organizational commitment. Employees who perceive that their organizations support flexible work arrangements often demonstrate greater loyalty and willingness to achieve organizational goals. Flexible working systems also promote psychological wellbeing by allowing employees to manage family obligations and personal activities alongside work demands. Consequently, employees become more engaged and productive in their job roles (Jiang et al., 2024).

However, despite its benefits, excessive flexibility may create challenges that negatively affect productivity. In some cases, employees working remotely experience blurred boundaries between work and personal life, leading to overworking, stress, burnout, and reduced efficiency. Lack of direct supervision and coordination may also contribute to procrastination, communication difficulties, and reduced teamwork. Recent studies reveal that while flexibility improves productivity, poor management of remote work can lead to mental exhaustion and decreased collaboration among employees. In Delta State, the effect of work flexibility on employee productivity may also depend on infrastructural and organizational factors such as internet connectivity, electricity supply, technological support, and organizational culture. Employees who have access to reliable digital infrastructure and supportive management systems are more likely to experience increased productivity under flexible work arrangements. Conversely, inadequate technological facilities and poor remote work coordination may reduce the effectiveness of flexible work practices. Therefore, work flexibility can significantly influence employee productivity in post-pandemic organizations in Delta State, either positively or negatively, depending on how organizations manage remote work systems and support employees in adapting to flexible work arrangements.

Digital Communication and Collaboration on Employee Productivity in Post-Pandemic Organizations in Delta State

Digital communication and collaboration have become essential components of remote work systems in post-pandemic organizations. Digital communication refers to the use of electronic technologies such as emails, instant messaging platforms, video conferencing applications, and collaborative software to exchange information and coordinate work activities. Collaboration, on the other hand, involves employees working together virtually to achieve common organizational goals. In post-pandemic organizations in Delta State, digital communication and collaboration significantly influence employee productivity because organizational operations increasingly depend on virtual interaction and technology-driven teamwork. Effective digital communication improves employee productivity by facilitating timely information sharing, task coordination, decision-making, and problem-solving among employees working remotely. Through communication tools such as Zoom, Microsoft Teams, Slack, and Google Meet, employees can maintain regular interactions with supervisors and colleagues despite physical distance. Studies have shown that clear online communication strategies reduce misunderstandings, improve workflow coordination, and enhance employee performance in virtual work environments (El Attari, 2024).

Furthermore, digital collaboration tools encourage teamwork, knowledge sharing, and innovation among employees. In remote work settings, collaborative platforms enable employees to share documents, coordinate projects, monitor progress, and collectively solve organizational problems in real time. Research indicates that knowledge sharing and digital business intensity strengthen the positive relationship between remote work and employee productivity (Vayre & Pignault, 2024). Effective collaboration also enhances creativity and employee engagement, thereby improving organizational efficiency and productivity. Digital communication and collaboration also support flexibility and continuity of operations in post-pandemic organizations. Employees can perform tasks, attend meetings, and collaborate on projects from different locations without disrupting organizational activities. This flexibility reduces delays in communication and improves responsiveness to organizational demands. Studies on telework reveal that digital leadership and

communication systems positively influence job performance and employee productivity in remote work environments (Liao et al., 2024). In addition, digital communication promotes stronger organizational relationships and employee inclusion when properly managed. Virtual meetings, team discussions, and collaborative platforms help employees remain connected to organizational goals and team activities despite working remotely. Research on remote work culture suggests that digital collaboration tools positively shape employee productivity by supporting psychological wellbeing, coordination, and teamwork (Maddatuang et al., 2025).

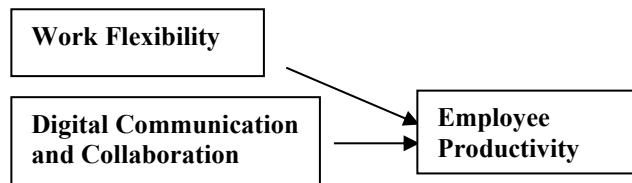
However, ineffective digital communication may negatively affect employee productivity. Challenges such as poor internet connectivity, communication overload, delayed responses, technological failures, and lack of face-to-face interaction may create misunderstandings and reduce collaboration efficiency. Excessive dependence on digital communication can also contribute to stress, fatigue, and social isolation among employees. Studies have shown that constant digital connectivity may result in social overload, mental exhaustion, and reduced collaborative performance if not properly managed. In Delta State, the effectiveness of digital communication and collaboration largely depends on infrastructural factors such as stable electricity supply, internet accessibility, availability of digital devices, and employees' technological competence. Organizations that provide reliable digital support systems, effective communication channels, and collaborative technologies are more likely to experience improved employee productivity under remote work arrangements. Conversely, inadequate technological infrastructure and poor digital communication systems may hinder employee performance and organizational effectiveness. Therefore, digital communication and collaboration play a significant role in influencing employee productivity in post-pandemic organizations in Delta State. When effectively implemented and supported, they enhance coordination, teamwork, innovation, and organizational performance in remote work environments

Conceptual Framework

Independent

Dependent Variabl

Variable



Source: Author's conceptualization (2026)

Theoretical Review

Technology Acceptance Theory (TAT)

One of the major theories that supports the study on *Remote Work and Employee Productivity in Post-Pandemic Organizations in Delta State* is the Technology Acceptance Theory (TAT) developed by Fred Davis in 1989. The theory explains how individuals accept and use technological systems based on their perceptions of usefulness and ease of use. According to the theory, employees are more likely to adopt and effectively utilize digital technologies when they believe that such technologies will improve their job performance and are easy to operate.

In the context of remote work, Technology Acceptance Theory suggests that employees' willingness to use digital communication tools, virtual collaboration platforms, cloud technologies, and remote work applications significantly influences their productivity. Since remote work largely depends on information and communication technologies, employees who perceive remote work technologies as useful and user-friendly are more likely to perform effectively in virtual work environments. Recent studies indicate that digital technologies and communication systems play a crucial role in improving remote work efficiency, employee engagement, and organizational productivity in the post-pandemic era (Ameen et al., 2023; Liao et al., 2024).

The relevance of this theory to the present study lies in its explanation of how employees in post-pandemic organizations in Delta State adapt to remote work technologies. Organizations that provide reliable digital infrastructure, user-friendly communication platforms, adequate training, and technological support are more likely to experience increased employee productivity. Conversely, employees may resist remote work systems if they perceive them as difficult to use or ineffective in supporting task performance. Therefore, the theory helps explain the relationship between digital communication, collaboration, work flexibility, and employee productivity in remote work settings.

Furthermore, Technology Acceptance Theory is relevant because many organizations in Delta State still face infrastructural and technological challenges such as unstable internet connectivity, limited digital literacy, and inadequate technological support systems. These factors may affect employees' acceptance and utilization of remote work technologies, thereby influencing productivity outcomes. The theory therefore provides a useful framework for understanding how technological acceptance and usage behaviors affect employee productivity in post-pandemic organizations.

Empirical Review

Vayre, and Pignault (2024) conducted a study titled *Remote Work, Employee Productivity and Innovation: The Moderating Roles of Knowledge Sharing and Digital Business Intensity*. The objective of the study was to examine the effect of remote work on employee productivity and innovation and to determine the moderating role of knowledge sharing and digital business intensity in remote work environments. The study adopted a quantitative research design using a survey method. Data were collected from 231 remote workers across organizations in the United States through structured questionnaires. The researchers employed Partial Least Squares Structural Equation Modeling (PLS-SEM) for data analysis. The findings revealed that remote work had a significant positive effect on employee productivity and innovation. The study further found that effective knowledge sharing and strong digital communication systems strengthened the positive relationship between remote work and employee productivity. Employees working remotely experienced improved concentration, flexibility, and efficiency when supported by digital collaboration technologies. However, the study also identified communication difficulties and technological limitations as challenges that could reduce productivity if not properly managed. The study concluded that organizations that invest in digital infrastructure, communication systems, and collaborative technologies are more likely to achieve improved employee productivity in remote work settings. The researchers recommended that organizations should provide adequate digital support, encourage knowledge sharing among employees, and implement effective remote work

policies that promote collaboration and flexibility. The study is relevant to the present research because it explains how digital communication and remote work practices influence employee productivity in post-pandemic organizations.

Strandt, (2024) carried out a study titled *The Role of Remote Work in Enhancing Employee Productivity: Evidence from the US-Based Tech Industry During the COVID-19 Pandemic*. The objective of the study was to investigate the influence of remote work arrangements on employee productivity and work performance during and after the COVID-19 pandemic. The study adopted a descriptive survey research design. Data were collected from 295 technology professionals in the United States using online questionnaires. Descriptive statistics and regression analysis were used to analyze the data obtained from respondents. The findings showed that remote work significantly improved employee productivity due to increased work flexibility, reduced commuting stress, and enhanced work-life balance. The study revealed that employees working remotely were able to concentrate more effectively on job tasks and complete assignments within shorter periods. Nevertheless, the findings also identified challenges such as unstable internet connectivity, difficulties in maintaining work-home boundaries, and communication barriers among remote teams. The study concluded that remote work can positively influence employee productivity when organizations provide effective technological support systems and flexible work structures. The researcher recommended that organizations should strengthen digital communication platforms, provide employee training on remote technologies, and establish clear performance monitoring systems to improve remote work effectiveness. The study further recommended the adoption of hybrid work systems to balance flexibility and collaboration in post-pandemic organizations. The study is important to the current research because it provides empirical evidence on the relationship between remote work and employee productivity in modern organizations.

Methodology

3.1 Research Design

This study adopted the survey research design. The survey research design was considered appropriate because it enables the researcher to collect data from a large population using structured questionnaires in

order to examine the relationship between remote work and employee productivity in post-pandemic organizations in Delta State. The design is suitable for studies involving opinions, attitudes, perceptions, and behavioural patterns of respondents concerning organizational practices and performance outcomes. According to Saunders, Lewis, and Thornhill (2023), survey research design is effective in obtaining quantitative data for statistical analysis and hypothesis testing. The design also allows the researcher to generalize findings from the sample population to the larger population.

The study employed a cross-sectional approach because data were collected from respondents at a single point in time. The independent variable is remote work, proxied by work flexibility and digital communication and collaboration, while the dependent variable is organizational competitiveness.

Study Area

The study was conducted in Delta State, Nigeria. Delta State is located in the South-South geopolitical zone of Nigeria and was created on August 27, 1991. The state comprises three senatorial districts, namely Delta North, Delta Central, and Delta South. Delta State hosts several government organizations and public institutions that adopted remote and hybrid work arrangements during and after the COVID-19 pandemic.

The state was selected because many government organizations in Delta State increasingly rely on digital communication systems and flexible work arrangements in response to post-pandemic organizational realities. In addition, Delta State possesses diverse public institutions with employees who have experienced remote work practices, making it suitable for the study.

Study Population

The population of the study consisted of employees from selected government organizations in Delta State that adopted remote or flexible work arrangements during and after the COVID-19 pandemic. The selected organizations include ministries, commissions, and public service agencies within Delta State.

Table 3.1
Population Distribution of Selected Government Organizations in Delta State

S/N	Government Organization	Location	Estimated Staff Population
1	Delta State Ministry of Finance	Asaba	185
2	Delta State Ministry of Health	Asaba	210
3	Delta State Ministry of Education	Asaba	195
4	Delta State Board of Internal Revenue	Warri	160
5	Delta State Civil Service Commission	Asaba	130
6	Delta State Ministry of Economic Planning	Asaba	120
7	Delta State Ministry of Information	Asaba	110
Total			1,110

Source: Researcher's compilation (2026).
The total population for the study was therefore 1,110 employees.

Sample Size Determination

The sample size for the study was determined using the Taro Yamane (1967) formula:

Where:

- n= Sample size
- N = Population size
- e = Level of significance (0.05)

$$n = \frac{N}{1 + N(e)^2}$$

$$1 + 1110(0.05)^2 = 294$$

Therefore, the sample size for the study was 294

$$n = \frac{N}{1 + N(e)^2}$$

respondents.

Table 3.2
Sample Distribution of Respondents

S/N	Government Organization	Population	Sample Size
1	Delta State Ministry of Finance	185	49
2	Delta State Ministry of Health	210	56
3	Delta State Ministry of Education	195	52
4	Delta State Board of Internal Revenue	160	42
5	Delta State Civil Service Commission	130	34
6	Delta State Ministry of Economic Planning	120	32
7	Delta State Ministry of Information	110	29
Total	1,110	294	

Sampling Techniques

The study adopted a multi-stage sampling technique. Firstly, purposive sampling was used to select government organizations that implemented remote or flexible work systems during and after the COVID-19 pandemic. Secondly, proportionate stratified sampling technique was employed to distribute questionnaires across the selected organizations according to their staff strength. Finally, simple random sampling technique was used to select respondents from each organization to ensure equal chance of participation.

Sources of Data Collection

The study utilized both primary and secondary sources of data. Primary data were obtained directly from respondents through the administration of

structured questionnaires to employees of selected

government organizations in Delta State. Secondary data were obtained from textbooks, journal articles, conference papers, government publications, internet materials, and previous empirical studies related to remote work and organizational competitiveness.

Method of Data Collection

The researcher employed the direct questionnaire administration method. Copies of the questionnaire were distributed personally and electronically to respondents in the selected government organizations. Respondents were given adequate time to complete the questionnaires before retrieval.

Instrument of Data Collection

The major instrument used for data collection was a structured questionnaire designed by the researcher. The questionnaire was divided into two sections:

- Section A: Demographic information of respondents.
- Section B: Questions relating to remote work and organizational competitiveness.

The questionnaire items were structured using a five-point Likert scale as follows:

Scale	Description
5	Strongly Agree (SA)
4	Agree (A)
3	Undecided (U)
2	Disagree (D)
1	Strongly Disagree (SD)

Validity of Instrument

The validity of the research instrument was established through content and face validity. The questionnaire was presented to experts in Business Administration and Measurement and Evaluation for examination and corrections. Their suggestions, observations, and recommendations were incorporated to ensure that the instrument adequately measured the variables under study. According to Creswell and Creswell (2023), validity ensures that a research instrument accurately measures what it is intended to measure.

Reliability of Instrument

The reliability of the instrument was determined using the Cronbach Alpha reliability technique. A pilot study was conducted using 30 respondents from government organizations outside the selected sample population. The data obtained were

analyzed using Statistical Package for Social Sciences (SPSS).

Table 3.3

Reliability Statistics

Variable	Number of Items	Cronbach Alpha
Work Flexibility	5	0.81
Digital Communication and Collaboration	5	0.84
Organizational Competitiveness	5	0.86
Overall Reliability	15	0.84

Source: Researcher's compilation (2026).

The reliability coefficients exceeded the benchmark value of 0.70 recommended by Nunnally (1978), indicating that the instrument was reliable.

Method of Data Analysis

The data collected for the study were analyzed using descriptive and inferential statistical tools. Descriptive statistics such as frequency distribution tables, percentages, mean scores, and standard deviation were used to analyze demographic data and research questions. Inferential statistics involving multiple regression analysis were employed to test the hypotheses at 0.05 level of significance using Statistical Package for Social Sciences (SPSS) version 27.

Decision Rule:

- Accept null hypothesis if p-value > 0.05
- Reject null hypothesis if p-value < 0.05

Model Specification

The functional relationship for the study is expressed as:

$$OC=f(RW)OC = f(RW)OC=f(RW)$$

Where:

- OC = Organizational Competitiveness
- RW = Remote Work

Expanded model:

$$OC=f(WF,DCC)$$

Where:

- WF = Work Flexibility
- DCC = Digital Communication and Collaboration

The econometric model is specified as:

$$OC=\beta_0+\beta_1WF+\beta_2DCC+\mu$$

Where:

β_0 = Constant term

$\beta_1-\beta_2$ = Regression coefficients

μ = Error term

Results and Discussion

This section presents the analysis and interpretation of data collected for the study on Remote Work and Employee Productivity in Post-Pandemic Organizations in Delta State. The section is organized under the following sub-headings: demographic analysis of respondents, preliminary analysis, reliability analysis, descriptive statistics, correlation analysis, regression analysis, hypotheses testing, and discussion of findings. A total of 294 copies of questionnaire were administered to respondents from selected government organizations in Delta State. Out of the 294 questionnaires distributed, 274 were correctly completed and returned valid for analysis, while 20 questionnaires were invalidated due to incomplete responses and improper completion.

Questionnaire Administration and Response Rate

Table 4.1

Questionnaire Distribution and Retrieval

Questionnaire Status	Frequency	Percentage (%)
Questionnaire Distributed	294	100
Questionnaire Returned	294	100
Valid Questionnaire	274	93.2
Invalid Questionnaire	20	6.8

The table above shows that all the questionnaires distributed were returned. However, only 274 questionnaires representing 93.2% were found usable for analysis, while 20 questionnaires representing 6.8% were invalidated.

Demographic Analyses of Respondents

Demographic Characteristics of Respondents

Table 4.2

Distribution of Respondents by Gender

Gender	Frequency	Percentage (%)
Male	156	56.9
Female	118	43.1
Total	274	100

The result indicates that 56.9% of respondents were male, while 43.1% were female.

Table 4.3

Distribution of Respondents by Age

Age Bracket	Frequency	Percentage (%)
21–30 Years	58	21.2
31–40 Years	97	35.4
41–50 Years	83	30.3
51 Years and Above	36	13.1
Total	274	100

The findings reveal that respondents between 31–40 years constituted the majority.

Table 4.4

Distribution of Respondents by Educational Qualification

Qualification	Frequency	Percentage (%)
OND/NCE	46	16.8
HND/B.Sc.	154	56.2
M.Sc./MBA	58	21.2
Ph.D.	16	5.8
Total	274	100

The result shows that majority of respondents possessed HND/B.Sc. qualifications.

4.4 Preliminary Analysis: Data Screening, Missingness and Reliability

The data collected were screened to identify missing values, outliers, and inconsistencies before analysis. All incomplete questionnaires were removed during data cleaning, leaving 274 valid responses for analysis. The missing data percentage was below the 5% threshold recommended by Hair et al. (2022), indicating that the dataset was suitable for statistical analysis.

4.5 Reliability Analysis

4.5.1 Scale Reliability (Cronbach's Alpha)

Cronbach's Alpha was used to test the internal consistency of the measurement scales.

Table 4.5

Reliability Statistics

Variable	Number of Items	Cronbach Alpha
Work Flexibility	5	0.82
Digital Communication and Collaboration	5	0.85
Employee Productivity	5	0.88

Overall Reliability	15	0.85
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The Cronbach Alpha values exceeded the acceptable threshold of 0.70 recommended by Nunnally (1978), indicating that the instrument possessed satisfactory internal consistency and reliability.

4.6 Pattern of Data Presentation for Research Questions

Research Question One

To what extent does work flexibility affect employee productivity in post-pandemic organizations in Delta State?

Table 4.6

Responses on Work Flexibility and Employee Productivity

Items	Mean	Std. Dev.	Decision
Flexible work schedules improve productivity	4.28	0.71	Accepted
Remote work reduces work stress	4.11	0.82	Accepted
Flexible work improves work-life balance	4.34	0.69	Accepted
Employees perform better under flexible arrangements	4.06	0.77	Accepted
Work flexibility enhances job satisfaction	4.25	0.73	Accepted
Grand Mean	4.21	0.74	Accepted

The grand mean of 4.21 indicates that respondents agreed that work flexibility positively affects employee productivity.

Research Question Two

What is the effect of digital communication and collaboration on employee productivity in post-pandemic organizations in Delta State?

Table 4.7

Responses on Digital Communication and Collaboration

Items	Mean	Std. Dev.	Decision
Digital communication improves task coordination	4.33	0.65	Accepted

Virtual collaboration enhances teamwork	4.18	0.79	Accepted
Communication platforms improve efficiency	4.27	0.74	Accepted
Online collaboration improves productivity	4.15	0.80	Accepted
Digital tools enhance information sharing	4.36	0.68	Accepted
Grand Mean	4.26	0.73	Accepted

The result indicates that respondents strongly agreed that digital communication and collaboration positively influence employee productivity.

4.7 Descriptive Statistics (Scale Level)

Table 4.8

Descriptive Statistics

Variable	Mean	Std. Deviation	N
Work Flexibility	4.21	0.74	274
Digital Communication & Collaboration	4.26	0.73	274
Employee Productivity	4.31	0.69	274

The descriptive statistics show high mean scores for all variables, indicating positive perceptions of remote work practices and employee productivity.

4.8 Correlation Analysis

4.8.1 Pearson Correlation Matrix

Table 4.9

Correlation Matrix

Variables	WF	DCC	EP
Work Flexibility (WF)	1.000		
Digital Communication & Collaboration (DCC)	0.621**	1.000	
Employee Productivity (EP)	0.734**	0.781**	1.000

Correlation is significant at 0.01 level (2-tailed).

The correlation result shows strong positive relationships among the variables. Work flexibility was positively correlated with employee productivity ($r = 0.734$), while digital communication and collaboration also showed a

strong positive relationship with employee productivity ($r = 0.781$).

4.9 Regression Analysis

Table 4.10

Model Summary

Model	R	R ²	Adjusted R ²	Std. Error
1	0.842	0.709	0.705	0.421

The result shows that remote work variables explained 70.9% variation in employee productivity.

Table 4.11

ANOVA Result

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	118.462	2	59.231	334.817	0.000
Residual	47.921	271	0.177		
Total	166.383	273			

The ANOVA result indicates that the regression model was statistically significant at $p < 0.05$.

Table 4.12

Regression Coefficients

Variables	Beta	t-value	Sig.
Constant	0.842	5.216	0.000
Work Flexibility	0.417	8.931	0.000
Digital Communication & Collaboration	0.503	10.417	0.000

The regression result shows that work flexibility significantly affects employee productivity ($\beta = 0.417$, $p < 0.05$). Similarly, digital communication and collaboration significantly affect employee productivity ($\beta = 0.503$, $p < 0.05$).

Discussion of Findings

Work flexibility on Employee Productivity in Post-Pandemic Organizations in Delta State

The findings of the study revealed that work flexibility significantly affects employee productivity in post-pandemic organizations in Delta State. The regression result showed a positive and significant relationship between work flexibility and employee productivity ($\beta = 0.417$, $p < 0.05$). This implies that employees who enjoy flexible work schedules and remote work arrangements tend to perform better and

demonstrate higher productivity levels. The finding agrees with the study of Çivilidağ and Durmaz (2024), who found that flexible work arrangements improve employee motivation, job satisfaction, and organizational performance. The result also supports the Social Exchange Theory, which posits that employees reciprocate organizational support with improved commitment and productivity.

Digital communication and collaboration on Employee Productivity in Post-Pandemic Organizations in Delta State

The study also found that digital communication and collaboration significantly influence employee productivity in post-pandemic organizations in Delta State. The regression analysis showed that digital communication and collaboration had a positive and significant effect on employee productivity ($\beta = 0.503$, $p < 0.05$). This finding indicates that effective use of virtual communication tools and collaborative technologies enhances teamwork, coordination, knowledge sharing, and employee efficiency. The result aligns with the findings of Vayre and Pignault (2024), who reported that digital communication systems and knowledge sharing positively improve remote work productivity and organizational effectiveness.

Furthermore, the correlation analysis revealed strong positive relationships among work flexibility, digital communication and collaboration, and employee productivity. This suggests that remote work practices contribute substantially to improved employee performance when supported by effective technological infrastructure and organizational policies. The findings imply that government organizations in Delta State can improve employee productivity by strengthening flexible work policies, enhancing digital communication systems, and investing in remote work technologies. However, organizations should also address challenges such as poor internet connectivity, communication barriers, and inadequate technological support that may hinder effective remote work implementation.

Conclusions and Recommendations

Conclusion

This study examined the relationship between remote work and employee productivity in post-pandemic organizations in Delta State. The findings revealed that remote work has a significant

influence on employee productivity when supported by effective communication systems, flexible work structures, technological infrastructure, and organizational support mechanisms. The study further established that employees who were provided with adequate digital tools, internet access, and managerial support demonstrated improved efficiency, task completion, and work-life balance while working remotely.

The demographic analysis showed that remote work practices were embraced across different categories of employees and organizations, indicating the growing acceptance of flexible work arrangements in the post-pandemic era. The reliability and validity tests also confirmed that the research instrument was suitable for measuring the variables under investigation.

The hypothesis testing results indicated a positive and statistically significant relationship between remote work practices and employee productivity. This suggests that organizations that effectively implement remote work policies are more likely to experience enhanced employee performance, increased job satisfaction, reduced absenteeism, and improved operational efficiency. However, the study also identified challenges associated with remote work, including poor internet connectivity, communication barriers, work distractions at home, inadequate supervision, and difficulties in maintaining team collaboration.

Overall, the study concludes that remote work is no longer a temporary response to the COVID-19 pandemic but has become an important organizational strategy capable of improving productivity when properly managed. Organizations in Delta State should therefore adopt sustainable remote work frameworks that balance flexibility with accountability in order to maximize employee performance and organizational growth.

Recommendations

Based on the findings of this study, i

- i. It was recommended that organizations in Delta State should establish comprehensive remote work frameworks that clearly define work expectations, communication procedures, accountability standards, and performance evaluation systems while also adopting flexible and hybrid work arrangements that promote work-life balance, collaboration, employee commitment, and improved productivity. Management should

further strengthen employee capacity through regular digital skills training, effective communication channels, and mental health support programmes to enhance efficiency and reduce stress associated with remote work practices.

- ii. It was also recommended that employers, government, and other relevant stakeholders should invest in reliable technological, internet, and power infrastructure to support seamless remote operations and ensure the sustainability of remote work practices in post-pandemic organizations. In addition, future researchers should extend studies on remote work and employee productivity to other sectors and geographical areas for broader empirical generalization and policy development.

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