The Impact of Remote Work Arrangement on Employee Productivity in the Oil and Gas Industry of Nigeria. A case study of Mobil Producing Nigeria Unlimited, Nigeria.

Chapter 1: Introduction

1.1 Background to the Study

The outbreak of the COVID-19 pandemic forced many organizations to implement measures that ensured business continuity by deploying remote and hybrid work models. Remote work models have offered employees the flexibility to execute official duties outside primary office locations. Post the COVID-19 pandemic, many organizations continue to operate the remote work model as a new standard practice (Anakpo and Mishi, 2021)

The concept of Remote work commonly dubbed as “telecommuting” represents “the use of information and communications technologies for work that is performed outside the employer's premises" (Miele & Trapani, 2020). Remote working has been employed for a long time before the COVID-19 pandemic with its first instance dating back to 1970 with the report documenting the potential cost reduction from decreased staff movement (Golden et al., 2008).

Organizations globally are continually enabling remote work for several reasons, remote work practices have benefited employees via reduced commuting times, and more autonomy in exciting work roles, while ensuring organizations enjoy access to a great pool of resources spread across locations, extended operational hours, less operational cost (Soroui, 2021). It is also worth noting that there have been some disadvantages to remote working models, employees are exposed to isolation due to a lack of networking, and employers face the challenge of abuse of autonomy as employees might engage in non-official activities during a business day (Olorunfemi, 2013).

The oil and gas industry plays a pivotal role in global energy production, making it crucial for organizations within this sector to maintain a high level of employee productivity. However, the demanding nature of the industry often leads to long working hours, erratic schedules, and high levels of stress, this negatively impacts employee well-being, job satisfaction, and ultimately,

productivity. Matli's (2020) study shows that depression is closely related to employee productivity.

1.2 Statement of the Research Problem

There have been various studies that provide insights into employee productivity and remote work in Western and Middle east countries. Kurdy, Al-Malkawi and Rizwan (2023) explored the impact of remote working on employee productivity during COVID-19 in the UAE, Carroll and Conboy (2020) argue a need for more reflective 'normalization' of work practices and the role technology plays in the new "normal",

Studies have also shown that geographical context matters in the applicability of theories and arguments relating to work-life as the institutional pressures at a national level have an impact (Dulk et al., 2013). There are few studies investigating the relationship between remote work and employee productivity in the Oil and Gas industry in Nigeria. This study intends to explore the relationship between remote work and employee productivity using Mobil Producing Nigeria Unlimited as a case study.

1.3 Aim and Objectives of the Study

The aim of this study is to examine the impact of remote work arrangements on employee productivity in the Nigerian oil and gas industry.

Objectives:

I. Assess the relationship between remote work arrangements and employee productivity.
II. Examine the influence of work-life balance on employee productivity in remote work settings.
III. Evaluate the effectiveness of communication and collaboration tools in remote work environments and their impact on productivity.
IV. Investigate the role of technology infrastructure and managerial support in facilitating remote work and its effect on employee productivity.

1.4 Research Questions

This study would provide answers to the following questions in the context of the Nigerian Oil and Gas industry

I. How does the implementation of remote work arrangements impact employee productivity?
II. What is the relationship between work-life balance and employee productivity in remote work settings?
III. How effective are communication and collaboration tools in remote work environments, and how do they influence employee productivity?
IV. What is the role of technology infrastructure and managerial support in facilitating remote work arrangements and their impact on employee productivity?

1.5 Statement of Hypotheses

$H_{01:}$ There is a positive relationship between remote work arrangements and employee productivity in the oil and gas industry.

$H_{02:}$ A better work-life balance in remote work settings positively affects employee productivity in the oil and gas industry.

$H_{03:}$ The effectiveness of communication and collaboration tools in remote work environments positively impacts employee productivity in the oil and gas industry.

$H_{04:}$ The availability and reliability of technology infrastructure supporting remote work have a positive effect on employee productivity in the oil and gas industry.

$H_{05:}$ Managerial support and leadership in facilitating remote work arrangements positively influence employee productivity in the oil and gas industry.

1.6 Significance of the study

This study is of great significance to employers and the academic body. This research will be of particular benefit to Human Resource Managers, Personnel productivity managers and Academics. It will avail organizations an insight into the effect of remote work on their employee's productivity, providing them a basis to re-strategize on working models. It will also assist in reviewing the method of appraisals and employee performance.

Employees will benefit from this study as it will help the employees understand the effect of their work models on their productivity, work-life balance.

For students and researchers, this study provides another body of literature and the data collected from the research can be utilized to broaden the scope of this research.

1.7 Scope of the study

This study aims to investigate the relationship between the dimensions of remote work (work-life balance, communication and collaboration, technology infrastructure, managerial support, and well-being) and employee productivity; however, the scope of this study will be limited to Mobil Producing Nigeria Unlimited, Nigeria. Mobil Producing Nigeria Unlimited is the subject of this case study due to the nature of the organization as a major player in the Oil and Gas Industry in Nigeria and its global operating standards. The estimated duration of the research is three (3) months spanning May through September 2023.

1.8 Limitations of the study

This study is limited to the staff of Mobil Producing Nigeria Unlimited, Nigeria, hence the response to the questionnaire will be limited to the employees of the organization. Also, there is an issue of anticipated respondents' refusal to respond to questionnaires which pose another limitation to the study.

Chapter 2: Literature Review

2.1 Remote Working Arrangement Defined

Remote working also known as telecommuting is a model of work process where the employees operate outside the traditional office location, this location can vary from employees' homes to any workspace where the employee can execute the job roles assigned to them. Allen, Golden and Shockley (2015) explained telecommuting as a work practice whereby employees substitute some or all their committed work hours to work away from the office location, oftentimes home and communicating with others through the aid of technology. Since 1970, remote work's evolution and growth have been intertwined with advancements in technology and changes in the economy.

Globally organizations are now challenged to entertain more flexible thoughts into building the "office of the future" with remote working offering organizations a viable option in the management of working hours, and employee performance (Onyemaechi, Chinyere and Emmanuel, 2018). According to Ogechi and Nweke (2019), Nigerian organizations in the oil and gas sector are currently changing organizational culture and programs and initiating measures designed to reduce work-life conflict and improve staff effectiveness at work and other roles.

2.2 Employee Productivity Defined

Employee productivity is generally understood as the ability of an employee to take input (instructions, direct, requirements, etc.) and turn them into output. Effectively, it's the measure of how employees produce input and turn it into output, in each period. Olayisade and Awolusi (2021) defined productivity as effectiveness of factors of production in generating desired outcomes efficiently and successful organizations are characterized by a high level of productivity. Hanaysha (2016), stated that One of the key issues that most organizations face nowadays is the need to improve employee productivity.

2.3 Dimensions of Remote Work Arrangement or Telecommuting

The dimensions of remote work under review for this study includes:

2.3.1 Work-life balance

Work-life balance exists as there is a need for any employee to balance their personal and work life. According to Clark (2000), Work-family balance is a situation where there is minimal role

conflict in pursuing satisfaction and good function at work and home. Many authors have attempted a definition for work-life balance, these definitions (and conceptualizations) can be categorized in terms of two key dimensions, namely (1) role engagement in multiple roles in work and nonwork life and (2) minimal conflict between work and nonwork roles.

2.3.2 Communication and Collaboration

Yang et al. (2021) states that evaluating the effectiveness of remote communication tools and virtual teamwork platforms, such as video conferencing and project management software, provides insights into their influence on employee productivity. Remote work by design eliminates in-person communication and understanding the dynamics of collaboration and communication in remote work settings is crucial for optimizing productivity.

2.3.3 Technology Infrastructure

The development, availability and deployment of the necessary technological infrastructure plays an integral part on seamless remote work experiences and optimizing productivity. Many organizations had to scramble to provide them with the necessary tools for their full-time work in the virtual environment (Hung, Cheng, Hou, & Chen, 2021). Assessing aspects such as internet connectivity, hardware, software will provide insights into the infrastructure's effectiveness in supporting remote work.

2.3.4 Managerial support

Effective managerial support can foster employee engagement, motivation, and a sense of belonging, ultimately impacting productivity in remote work settings. Exploring the role of managers in facilitating and managing remote work arrangements, Biggs, Brough and Barbour (2014) recognized managerial support as one of the influential psychological health at work. Since remote work has distinctively reduced in-person interactions, managers need to implement behaviors that would show consideration, role modeling.

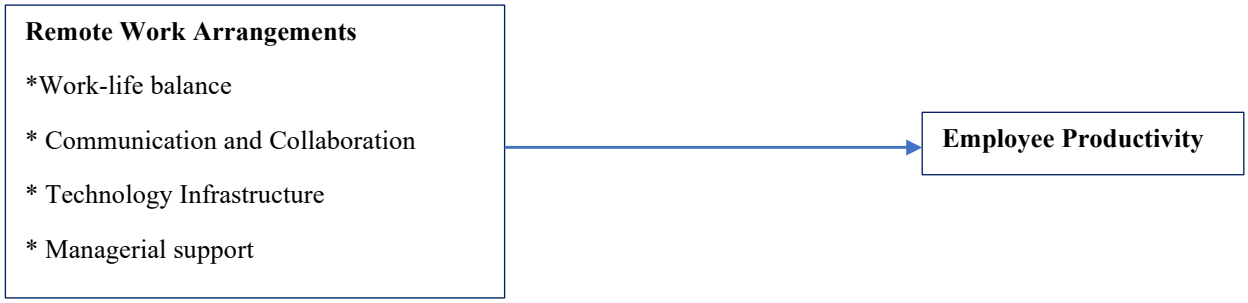

Figure 2.1 Conceptual Framwork

2.4 Theoretical Framework

Two theoretical framework perspectives are in view for this study based on the literature review of published works on remote work. The Socio-Technical System Theory and the Spill-Over Theory which would be discussed below

Socio-Technical System Theory examines the two major relationships (1) the nature of interactions between social and technical factors in defining the degree of success of a system, (2) the goodness of fit between the social and technical factors of an organization formally termed Joint optimization (Trist, 1981). This theory originated in the 1950s at Tavistock Institute in London. The principle of Joint optimization references a process of achieving an optimum state in the interest of the overall system. This can be related to remote work – the appropriate use of technology in the work model that allows for enhanced employee productivity and work-life balance while ensuring that organization and job roles are accomplished.

The Spill-Over theory was propounded by Edwards and Rothbard (2000) with its base assumption of affective positive and instrumental spillover. It explains that there is a similarity between what occurs in work and non-work environments, hence a spillover between both spheres of systems. The theory posits a spill-over between work and non-work is more than a cause-and-effect relationship and that there is a transmission of experience which can be a positive or negative spill.

2.5 Empirical Review

Empirical research on the impact of remote work arrangements on employee productivity in the oil and gas industry has indicated various findings. Several studies have shown a positive relationship between remote work and productivity, highlighting benefits such as increased focus, reduced commuting time, and flexibility (Dulk et al., 2013), (Kurdy, Al-Malkawi and Rizwan, 2023). While others have highlighted challenges related to communication and collaboration (Olorunfemi, 2013), (Anakpo and Mishi, 2021). Further research is needed to explore specific contextual factors that influences the relationship between remote work and productivity.

Chapter 3: Research Methodology

3.1 Research Design

Qualitative research employing a structured questionnaire will be used to explore the relationship between the independent variable (remote work) and the dependent variable employee performance in the Nigerian Oil and Gas industry. This method of research will provide a chance to investigate and gather information from the planned study population.

3.2 Population of the Study

The population for a study is a subset of the target population available(employees) for the study. The accessible population of this study is 1084 staff of Mobil Producing Nigeria Unlimited, Nigeria.

3.3 Sample Size

A representative sample covering a proportional size of the population will determine using Taro Yamane's formula for determining the sample size of the study.

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

Where:

n is the required sample size from the population under study.

N is the whole population that is under study

e is the precision or sampling error

Using the formula, the sample size for this study is 292 using a population size of 1084 at 95% confidence and error limit of 0.05.

3.4 Sampling Technique

The sample for this study will be randomly selected and representative of the population using probability sampling methods- a simple random sample technique. This will reduce the risk of sampling bias and enhances both internal and external validity.

3.5 Method of Data Collection

Primary data will be used for this study to ensure that an unbiased analysis is done which will in turn inform the recommendation of this study. The data to be used will be collected from respondents in the target population.

The data will be collected via administered questionnaires that will be provided to respondents chosen at random at Mobil Producing Nigeria Unlimited, Nigeria. Prior to dissemination of the questionnaire, ethical considerations will be clearly stated, respondents will be assured of the confidentiality and security of their response, in turn, respondents will be required to provide honest answers to the questionnaire. The questionnaire will include the following statement "By returning the questionnaire fully answered, your consent is implied in this instance and all answers will be analyzed solely for the purpose of this study".

The instructions for filling the questionnaire will be provided to respondents.

A pilot survey will be conducted using one-tenth of the sample size to test the validity and reliability of each questionnaire item (question).

Data for analysis will collect through the questionnaire using a Likert scale with 1 denoting "strongly disagree" and 5 denoting "strongly agree"

3.6 Validity of Research Instrument

The research instrument of this study will be presented to the supervisor for review, vetting and validation. Seasoned professional and published academics will be consulted alongside and appropriate corrections will be made as needed

3.7 Reliability of Research Instrument

The Cronbach alpha test will be used with a benchmark value of 0.7 along with a test and re-test using the results from the pilot test before the dissemination of the main survey.

3.8 Operationalization of Variables

The variables of this study will be operationalized through validated scales, surveys, and objective measurements to ensure accurate data collection and analysis. Productivity may be assessed using metrics such as task completion rates. Work-life balance can be measured through validated scales that capture the level of integration between work and personal life.

Communication effectiveness can be evaluated through surveys. Technology infrastructure can be assessed based on factors ease, speed and accessibility . Managerial support can be gauged using employee surveys or interviews

3.9 Method of Data Analysis

The result will be analyzed using bivariate analysis. Spearman rank order Correlation Coefficient statistical analysis at a 95% confidence interval will be utilized in analyzing the hypothesis and determining the correlation between variables using the Statistical Package for Social Sciences (SPSS). The significance level of 0.05 will be adopted as a criterion for the probability of either accepting or rejecting the hypotheses ($p > 0.05$, accept; $p < 0.05$, reject)

$$Rh_0 = 1 - \frac{\sum \quad d^2}{n(n^2 - 1)}$$

Rh_0 - Spearman Rank Order Correlation,

d – difference,

n – number of samples ranked.

3.10 Statement of Ethics

The study does not include any groups that could raise ethical concerns. Steps will be put in place to ensure the respondents' informed consent; voluntary participation will be requested of respondents. A participant concern sheet will also be attached to each questionnaire to aid participants' comprehension.

3.11Timeline

The table below outlines the timeline for the completion of the research work with clearly stated durations of each scope.

TASK	START	END
Chapter 1	Monday, July 3, 2023	Monday, July 24, 2023
Chapter 2	Monday, July 24, 2023	Monday, August 14, 2023
Chapter 3	Monday, August 14, 2023	Monday, August 28, 2023

Chapter 4	Monday, August 28, 2023	Monday, September 18, 2023
Chapter 5	Monday, August 28, 2023	Sunday, September 10, 2023
Final Vetting and Submission	Monday, September 11, 2023	

References

Allen, T.D., Golden, T.D. and Shockley, K.M. (2015) "How Effective Is Telecommuting? Assessing the Status of Our Scientific Findings," *Psychological Science in the Public Interest*, 16(2), pp. 40–68. Available at: https://doi.org/10.1177/1529100615593273.

Anakpo, G. and Mishi, S. (2021) "Business response to COVID-19 impact: Effectiveness analysis in South Africa," Suider-Afrikaanse Tydskrif Vir Entrepreneurskap En Kleinsake, 13(1). Available at: https://doi.org/10.4102/sajesbm.v13i1.397.

Biggs, A.J., Brough, P. and Barbour, J.P. (2014) "Exposure to extraorganizational stressors: Impact on mental health and organizational perceptions for police officers.," International Journal of Stress Management, 21(3), pp. 255–282. Available at: https://doi.org/10.1037/a0037297.

Carroll, N. and Conboy, K. (2020) "Normalising the 'new normal': Changing tech-driven work practices under pandemic time pressure," International Journal of Information Management, 55, p. 102186. Available at: https://doi.org/10.1016/j.ijinfomgt.2020.102186

Clark, S.B. (2000) "Work/Family Border Theory: A New Theory of Work/Family Balance," Human Relations, 53(6), pp. 750–751. Available at: https://doi.org/10.1177/0018726700536001. "Cyberspace and Cyberethics" (2007) in Springer eBooks, pp. 283–321. Available at: https://doi.org/10.1007/978-0-387-22466-4_11.

Dulk, L.D. et al. (2013) "National context in work-life research: A multi-level cross-national analysis of the adoption of workplace work-life arrangements in Europe," European Management Journal, 31(5), pp. 478–494. Available at: https://doi.org/10.1016/j.emj.2013.04.010.

Edwards, J.R. and Rothbard, N.P. (2000) "Mechanisms Linking Work and Family: Clarifying the Relationship between Work and Family Constructs," Academy of Management Review, 25(1), p. 178. Available at: https://doi.org/10.2307/259269.

Golden, T.D., Veiga, J.F. and Dino, R.N. (2008) "The impact of professional isolation on teleworker job performance and turnover intentions: Does time spent teleworking, interacting face-to-face, or having access to communication-enhancing technology matter?" Journal of Applied Psychology, 93(6), pp. 1412–1421. Available at: https://doi.org/10.1037/a0012722.

Hanaysha, J. (2016) "Improving employee productivity through work engagement: Evidence from higher education sector," Management Science Letters, pp. 61–70. Available at: https://doi.org/10.5267/j.msl.2015.11.006.

International Journal of Southern Economic Light" (2020) International Journal of Southern Economic Light [Preprint]. Available at: https://doi.org/10.36713/epra2712.

Hung, S.W., Cheng, M.J., Hou, C.E. and Chen, N.R., 2021. Inclusion in global virtual teams: Exploring non-spatial proximity and knowledge sharing on innovation. Journal of Business Research, 128, pp.599-610.

Jang, D.S., Zippay, A. and Park, R. (2012) "Family Roles as Moderators of the Relationship Between Schedule Flexibility and Stress," Journal of Marriage and Family, 74(4), pp. 897–912. Available at: https://doi.org/10.1111/j.1741-3737.2012.00984.x.

Kurdy, D.M., Al-Malkawi, H.-A.N. and Rizwan, S. (2023) "The impact of remote working on employee productivity during COVID-19 in the UAE: the moderating role of job level," Journal of Business and Socio-economic Development [Preprint]. Available at: https://doi.org/10.1108/jbsed-09-2022-0104.

Matli, W. (2020) "The changing work landscape as a result of the Covid-19 pandemic: insights from remote workers life situations in South Africa," International Journal of Sociology and Social Policy, 40(9/10), pp. 1237–1256. Available at: https://doi.org/10.1108/ijssp-08-2020-0386.

Miele, F. and Fialho, L.M.F. (2020) "Digital technologies and power dynamics in the organization: A conceptual review of remote working and wearable technologies at work," Sociology Compass, 14(6). Available at: https://doi.org/10.1111/soc4.12795.

Ogechi, E. and Nwaeke, L. (2019) "Assessment of Work-Life Balance and Employees Job Performance in Oil Servicing Companies in the Niger Delta Region of Nigeria," IIARD International Journal of Economics and Business Management, 5(2489–0065), pp. 33–42. Available: https://www.iiardjournals.org/get/IJEBM/VOL.%205%20NO.%203%202019/Assessment%20of%20work.pdf.

Olayisade, A. and Awolusi, O.D. (2021) "The Effect of Leadership Styles on Employee's Productivity in the Nigerian Oil and Gas Industry," Information Management and Business Review, 13(1(I)), pp. 47–64. Available at: https://doi.org/10.22610/imbr.v13i1(i).3194.

Olorunfemi, A.A. (2013) "Telecommuting to Improve Quality-of-Worklife of Women Workers in Lagos State Tertiary Institutions," Journal of Studies in Education, 3(2), p. 222. Available at: https://doi.org/10.5296/jse.v3i2.3410.

Onyemaechi, U., Chinyere, U.C. and Emmanuel, U. (2018) "Impact of Telecommuting on Employees' Performance," Journal of Economics and Management Sciences, p. p54. Available at: https://doi.org/10.30560/jems.v1n3p54.

Sonnentag, S. (2015) "Wellbeing and Burnout in the Workplace: Organizational Causes and Consequences," in Elsevier eBooks, pp. 537–540. Available at: https://doi.org/10.1016/b978-0-08-097086-8.73021-2.

Soroui, S.T. (2021) "Understanding the drivers and implications of remote work from the local perspective: An exploratory study into the dis/reembedding dynamics," Technology in Society, 64, p. 101328. Available at: https://doi.org/10.1016/j.techsoc.2020.101328.

Trist, E.L. (1981) The Evolution of Socio-technical Systems: A Conceptual Framework and an Action Research Program. Ontario Quality of Working Life Centre.

Yang, L. et al. (2021) “The effects of remote work on collaboration among information workers,”Nature Human Behaviour, 6(1), pp. 43–54. Available at https://doi.org/10.1038/s41562-021-01196-4.

Appendix 1: Questionnaire

Instructions: Please tick the option that best explains your response to the questions.

Note: *The information supplied on this questionnaire is confidential and will be used solely for the purpose of actualizing this project*

Note: ***By returning the questionnaire fully answered, your consent is implied in this instance and all answers will be analyzed solely for the purpose of this study***

S/N	**Question**	***Strongly Disagree***	***Disagree***	***Neutral***	***Agree***	***Strongly Disagree***
1	You have a set routine when you work remotely					
2	Remote work brings many distractions reducing your ability to execute your task					
3	You take more frequent breaks when you remotely than when you work in the office.					
4	You enjoy working remotely.					
5	You work more autonomously when you work remotely					
6	There is a perceived better work-life balance when you remotely					
7	You are less productive working from Working from home					
8	You enjoy better satisfaction on your job when you work in the office.					
9	You are less burnt-out and stressed when you are working remotely.					
10	Remote work reduces your performance					
11	Remote work reduces your team's overall performance					
12	Remote work offers the same level of communication with your supervisor and teams when compared to work in the office					
13	It is easier to disengage from work when you work remotely					