

Physical Work Environment (Ergonomics) and Workers' Productivity in Selected Small and Medium Scale Enterprises in Umuahia, Abia State, Nigeria

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Abstract: The purpose of this study is to empirically examine the relationship between physical work environment and worker's productivity of selected small and medium scale enterprises. Two objectives and hypotheses each were formulated for the study. Data was acquired through the administration of a structured questionnaire that highlighted some of the factors related to influence of the workplace on employee productivity. This was administered to one hundred and twenty (120) workers randomly selected from a population of One Hundred (100) SMEs in Umuahia Abia state. One hundred and sixteen (116) workers responded. Respondents were from various categories ranging from frontline production, marketing, sales and administrative personnel. The data was analyzed using descriptive and inferential statistics. The results of the study reveal that there was a statistically significant correlation between physical environment/ ergonomics of the workplace and productivity of small- scale enterprises with the value equal to $r(116) = .296, p < .005$. Similarly, there was a statistically significant positive correlation between social interaction in the workplace and productivity with the value equal to $r(116) = .663, p < .05$. Based on the findings, it was concluded from the study that the two variables tested have relative noteworthy impacts on the productivity of workers in the State. The study recommends that if possible, changes should be included into the design and layout to adjust the location to suit different types of personnel.

Keywords: Physical work environment, Ergonomics, Productivity.

INTRODUCTION

Organizations are researching methods to use the work environment to enhance employee performance and well-being, rather than viewing it as an incidental background (Davis, Leach & Clegg, 2011). Employee reactions to the physical environment have been recognised since the Hawthorne tests, but the practical and theoretical attention paid to the environment has expanded dramatically in recent years (Davis *et al.*, 2011; Elsbach & Pratt, 2007). Because the nature of work and the environments in which it is conducted have changed considerably, improved theory and new frameworks are needed to explain the effects of the physical work environment on employees (Kim, Candido, Thomas & de Dear, 2016; Oldham & Hackman, 2010). Job design, for example, is currently defined as "encapsulating the processes and results of how labour is structured, organised, experienced, and enacted" (Grant, Fried, & Juillerat, 2011), emphasising the importance of the physical work environment.

Some companies, for example, are creating their offices to mimic cityscapes, with major thoroughfares, a town square, and a variety of zones to encourage employees to walk around the building and share information (Zax, 2013). Other companies, on the other hand, have worked to make the workplace a more fun environment by integrating games and relaxation rooms (Baldry & Hallier, 2010). Companies are also recognising the importance of balancing

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collaboration spaces with quiet or private locations where employees may focus and concentrate. Employees are the heart and soul of any company. Among all the assets of any organisation, they are the most valuable and crucial asset (Ganesh, 2015). Yesufu (2000) takes a different approach, stating that labour is widely viewed as the most dynamic of all the variables used in wealth development, with the ability to revitalise and serve as a catalyst for all other resources.

Production equipment is easier to influence because it follows your instructions and requires no further incentives, whereas employees are more complex and require a combination of elements to affect their performance, including both physical and psychological factors. Human beings have a tremendously complex psychological make-up. Managers cannot directly influence their employees' inner states, but they can establish a work environment that supports quality performance. Most managers, particularly in Nigeria, believe that salary, or how much money they receive from the company, influences employees to work better. Many managers and supervisors, according to Onwuka (2002), have the erroneous belief that an employee's job performance is linked to the amount of the employee's pay package. It is crucial to note, however, that while money may inspire some individuals, the effect does not endure long, necessitating the use of order-type motivators. According to Onwuka (2002), wage increases and performance bonuses in many cases have a relatively limited short-term impact. Employee performance at such establishments is influenced by how the physical work environment is structured. The physical work environment at the target firms does not appear to be ergonomically structured, which may have an impact on employee performance. According to Akinyele (2010), many businesses confine employee productivity enhancement to skill acquisition. The type of work environment in which people work impacts how successful such businesses are. He goes on to say that 80 percent of productivity issues are caused by the workplace environment. Employee well-being is ensured by a conducive work environment, which allows people to give their all to their jobs, perhaps leading to increased productivity. A major challenge of this Research is to ascertain the extent to which the physical workplace environment has influenced productivity of the worker in the private sector of the Nigerian economy using some small-scale firms.

Research Problem

The working environment, particularly in Nigeria, is dangerous and hazardous. Poorly constructed workstations, inadequate furniture, a lack of ventilation, incorrect lighting, excessive noise, insufficient fire safety precautions, and a lack of protective equipment are all common occurrences. People working in such an atmosphere, according to Chandrasekar (2011), are prone to occupational sickness, which has an impact on their performance. Focused organisations go to tremendous lengths to ensure that their employees have the necessary skills and knowledge to operate machines in order to improve performance, but little appears to be done to ensure that the workstation suits the employees, and performance may be harmed as a result of this conduct.

Businesses are set up to achieve certain goals and objectives which can only be achieved when the work environment allows it. Organizations need to step outside of their traditional roles of just creating a place of employment for people to creating a work environment where people enjoy what they do, have a sense of pride and fulfillment in what they do. This study is designed to examine the impact of the physical work environment on workers' productivity in selected small and medium scale enterprises.

Aim and objectives of the study

The aim of this study is to examine the relationship between physical work environment and worker's productivity of selected small and medium scale enterprises. The specific objectives are to:

1. Determine the relationship between workplace location and employee delivery
2. Examine the relationship between workplace ergonomics and employee delivery

Research Hypotheses

H₀₁: There is no significant relationship between workplace location and employee delivery of selected small and medium scale enterprises in Umuahia Abia State.

H₀₂: There is no significant relationship between workplace ergonomics and employee delivery of selected small and medium scale enterprises in Umuahia Abia State.

Operational framework

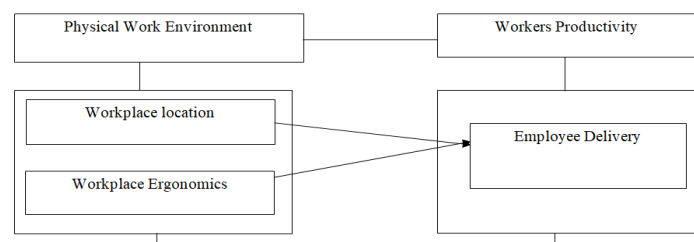


Fig 1.1: Operational Framework of physical work environment and worker's productivity
Source: Research Desk; as adapted from Ngozi *et al.*, (2018)

Review of Related Literature

Theoretical Framework

This research is based on Elton Mayo's Human Relations Theory. Human beings and their needs are seen as crucial in developing organisational commitment and high production, according to the notion. Participation aids management in integrating workers with the organisation, according to human relations theory. Managers and employees can work together to achieve a common goal and increase commitment and happiness. According to the notion, managers expect a variety of benefits from participative management. These include a pleasant working atmosphere, increased commitment and motivation, a manageable workload, improved flexibility in managing resources to achieve goals, and higher job satisfaction (McGregor, 1960). This theory applies to this research since it discusses incorporating human components into organisational processes and procedures.

Physical Work Environment

The nature and arrangement of all the material objects and stimuli that people encounter at work, including elements such as building design, room size and shape, furnishings, and equipment, as well as ambient conditions such as sound, lighting, and air quality, are all part of the physical work environment (Davis *et al.*, 2011; Kim & de Dear, 2012; Newsham, Brand, Donnelly, Veitch, Aries & Charles, 2009). The physical work environment is an important aspect of organisational life that has an impact on employee perceptions of themselves, co-workers, and the organisation. Indeed, even minor environmental cues have an impact on one's self-perception and conduct (Alter, 2013; Caza, Tiedens & Lee, 2011). Knight and Baer (2014) discovered that using stand-up desks rather than standard seated desks resulted in higher knowledge elaboration, increased arousal, decreased idea territoriality, and improved team performance (Aries, Veitch & Newsham, 2010; Zhong & House, 2012). Most study has concentrated on individual components of the environment, such as privacy, lighting, or noise, because there is no generic framework for thoroughly defining employees' reactions (judgments, emotions, cognitive functioning) to their work environment (for reviews, see Davis *et al.*, 2011; Elsbach & Pratt, 2007; Zhong & House, 2012).

Furthermore, research has mostly focused on the correlations between environmental variables and outcomes, with no underlying theory to explain why or how effects arise (Davis *et al.*, 2011). As a result, reviewers frequently point out that existing empirical findings are inconsistent, at times contradictory, and insufficient to guide practise (Elsbach & Pratt, 2007; Morgeson, Dierdorff, & Hmurovic, 2010). To summarise, empirical research has demonstrated the importance of discrete aspects of the physical work environment (e.g., furnishings or workspace layout), but it is difficult to make a reliable connection between changes in the environment and changes in employee behaviour without a comprehensive understanding of the different ways in which employees think about and respond to their environment.

Workplace Location

Physical workplace location could affect employee performance in two ways: the location of the workplace along with the surrounding environment -culture, geography, country, city, the neighborhood. Relocating the workplace for the employees can be expensive and cumbersome solution hence a second factor, which is, how far employees take to get to work is considered. Commuting distances have an impact on both staff loyalty and productivity. Studies made by Xerox Services and the VU University in Netherlands have also found that commute time is strongly associated with employee engagement and productivity (Abdul-Rahaman Elshafei, 2017).

Dresden (2015) in their review of office concept as; office location, design, layout and usage on employees' health status and satisfaction found these factors to be significant in increasing employee convenience at work as they boost morale and job satisfaction.

Workplace Ergonomics

Ergonomics is a branch of science concerned with the study of interactions between humans and other components of a system. It improves human well-being and total system performance by using theory, concepts, data, and methodologies to design (International Ergonomics Association) (IEA, 2000). Instead than physically pushing the workes odLJ to fit the job, ergonomics attempts to build the workplace to match the demands and physical capabilities of employees (Ghosh *et al.*, 2011). Ergonomic considerations that can lead to job satisfaction might come from a variety of workplace difficulties. According to the International Energy Agency (IEA), Ergonomics (or human factors) is a scientific discipline concerned with the understanding of human-system interactions, as well as a profession that applies theory, principles, data, and methods to design in order to optimise human well-being and overall system performance. In 2003, the Health and Safety Executive (HSE) of the United Kingdom defined Ergonomics as the scientific study of human labour.

Worker's Productivity

The need to increase employee productivity is one of the most pressing issues confronting most businesses today. Employee productivity is a measurement of a worker's or a group of workers' efficiency. In reality, productivity is a factor that has a direct impact on a company's earnings (Sels *et al.*, 2006). Productivity can be measured in terms of an employee's output over a set period of time. Typically, a worker's productivity is measured in comparison to a national average of employees doing similar work. It can also be measured in terms of how many units of a product or service an employee handles in a given period of time. Employee productivity has become an important goal for businesses because the success of a company is largely dependent on the productivity of its personnel (Cato & Gordon, 2009; Sharma & Sharma, 2014).

Many studies have concentrated on one or two methods of measuring productivity, and because there are so many diverse methodologies, comparing the results can be difficult (Nollman, 2013). Overall, there is a lack of a standardised and effective way to measure production. Employee productivity, according to Sharma and Sharma (2014), is determined by the amount of time an employee is physically present at his or her job, as well as the extent to which he or she is "mentally present" or efficiently functioning during that time. Increasing staff productivity has always been one of the most essential goals for many businesses. This is because higher levels of employee productivity bring a variety of benefits to both the company and its employees. Higher productivity, for example, contributes to favourable economic growth, high profitability, and improved social advancement (Sharma & Sharma, 2014). Employee performance is usually measured in terms of results. It can, however, be viewed in terms of conduct. The organization's performance standards are used to evaluate employee performance. When evaluating performance, a variety of factors can be considered, including productivity, efficiency, effectiveness, quality, and profitability.

Empirical Review

Ushie, Agba, and Ogabohand are three names for the same person. In Cross River State, Nigeria, Okorie (2015) investigated the impact of work environment on employee engagement in agro-based sectors. Participants in the study were from the state's two major agriculture industries. One thousand one hundred and ninety-four (1194) people were chosen for the study on purpose. A four-point Likert scale questionnaire was used to get information from participants. Pearson Product Moment Correlation was used to examine the data (r). Employee commitment and, as a result, performance are positively connected with work environment factors such as constant communication flow, reasonable workload, electricity availability, and a work environment devoid of known hazards, according to the findings. Management of agro-based companies in Cross River State should build and support positive work conditions in their firms, according to the report.

In their study, Ogunyemi, Akinlaja, Adesoye, Abayomi, Rasaan, and Omolade (2015) looked at how the work environment, or organisational culture, affects employees' job performance. The study used an ex-post facto research design. 500 people were chosen using proportional stratified and simple random selection approaches from three oil firms in River State, Nigeria (Agip = 150, Schlumberger = 185, Nigerian Agip exploration = 165). Data was collected using two standardised self-report questionnaires. Multiple regression and t-test statistics were used to evaluate two hypotheses. The results demonstrated, among other things, that the two predictor factors (work environment and organisational culture) predicted the criterion variable both together and separately (job performance). A number of recommendations were made based on the findings of this study, including: Employers of labour should provide a favourable work environment for employees to improve their job performance, as well as a favourable corporate culture to boost worker productivity.

Renne (2015) investigated the link between physical environment and academic performance in a Malaysian PHEI (Private Higher Education Institution). A total of 250 samples were acquired among academicians from various Private Colleges and Universities in the Subang Jaya area using a created questionnaire, with only 183 completed. Physical environment variables such as building aesthetics, furniture arrangement, facilities, and ventilation are regarded crucial, according to the findings and debate, but facilities helping staff are also important, contributing 41 percent to employee performance.

In Nigeria, Nnamani and Ajagu (2014) investigated the impact of environmental factors on organisational performance. Juhel Company Ltd. Emene, Enugu in Enugu Metropolis was studied. The study contained a population of 1,152 people, from which Taro Yamane picked a sample size of 297 with a 5% error and a 95% level of confidence. A systematic questionnaire was used to collect data. The total number of copies returned was 275. Tables and percentages were used to analyse the data. Using Pearson's correlation coefficients and z-test statistical methods, two hypotheses were investigated. According to the findings, there was an unsafe and unpleasant work environment, as well as low motivation, a lack of innovation, significant cultural interference, and a lack of organisational interpretation.

METHODOLOGY

The research design employed for the research project is the Descriptive Qualitative approach. Three methods employed to collect primary data; Structured and open-ended questionnaires, interviews and observations. Secondary data was collected from trade associations, specified journals, Newspapers and published articles. The population comprised of 100 small-scale enterprises that are owner-managed and have between 5-50 employees as full-time workers. Hundred (100) firms were chosen for the study. These firms span across Bakeries, Hair and beauty salons, Barbing salons, Pharmacy shops, Chemists, Restaurants, Provision stores, and Supermarkets, Carwash outlets, Fashion designers, Woodwork and furniture, Agricultural processing firms. Descriptive statistical tools of Ratios, Proportions, Percentages, Means, Medians, Modes, Ranges, Mean Deviation, Standard Deviation and Coefficient of Variation were employed. Descriptive analysis was also used to address the stated problem, questions and hypothesis, to present the personal profiles and demography of respondents in the form of frequency and percentage tables. Statistical Packages for Social Scientists (SPSS) was used for Inferential Statistics to measure the relationship between variables and to assess if there was a relationship between physical work environment impacts on the productivity of employees.

Data Analysis and Results

In this section, we present and analyze empirical data which has been collected through questionnaire survey.

**Test of Hypotheses
Correlation of workplace location and productivity**

Variable		Productivity
Productivity	Pearson Correlation Sig. (2-tailed)	1
Workplace Location	Pearson Correlation Sig. (2-tailed)	.296** .003
	N	116
* Correlation is significant at 0.05 level (2 tailed)		

Pearson correlation test was carried out to determine relationship that exists between the physical environment/ergonomics of the workplace and productivity. The results shows that there was a statistically significant positive correlation between Workplace Location and productivity of small- scale enterprises, $r(116) = .296, p < .05$.

4.3.1.2 Regression of Workplace Location and productivity

A simple linear regression test was used to establish how the Workplace Location affected the productivity of small- scale enterprises. The model summary results presented in the Table above indicate that Workplace Location explained 8.7% of the variability of small- scale enterprises ($R^2 = .087, F(1,99) = 9.48, p < .05$) and the strength of the relationship was weak ($r = .296$).

Regression of Workplace Location and Productivity

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Sig. F Change
					R Square Change	F Change	df1	df2	
1	.296 ^a	.087	.078	.33155	.087	9.484	1	99	.003
ANOVA ^a									
Model		Sum of Squares	df	Mean Square	F			Sig.	
1	Regression	1.043	1	1.043	9.484			.003 ^b	
	Residual	10.883	99	.110					
	Total	11.925	100						

Coefficients					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.967	.216		9.123	.000
1 physical environment/ ergonomics	.228	.074	.296	3.080	.003

* $p < .05$

As shown in Table above the linear regression ANOVA showed that physical environment/ergonomics of the workplace statistically significantly predicted the productivity of small- scale enterprises $F = 9.48, p < .05$.

The regression coefficient findings as indicated in the Table above revealed that physical environment/ergonomics of the workplace predicted the productivity of small- scale enterprises ($\beta=.228, p<0.5$). This implies that one unit increase of physical environment/ergonomics of the workplace would lead to an increase of 0.228 units of the productivity of small- scale enterprises. Based on the coefficients results, the general form of model equation established is as follows:

$$PSE = 1.97 + 0.228.$$

Whereby PSE= Productivity of small-scale enterprises.

Correlation of Ergonomics and Productivity

Variable		Productivity
Productivity	Pearson Correlation Sig. (2-tailed)	1
Ergonomics	Pearson Correlation Sig. (2-tailed)	.663** .001
	N	116
* Correlation is significant at 0.05 level (2 tailed)		

Pearson correlation test was carried out to determine relationship between Ergonomics and productivity. The results in the table above shows that there was a statistically significant positive correlation between Ergonomics and productivity, $r(116) = .663, p < .05$.

Regression of Ergonomics and productivity

A simple linear regression test was used to establish how Ergonomics and productivity. The model summary results presented in the Table indicate that Ergonomics explained 8.7% of the variability of worker productivity ($R^2=.440, F=8.332, p<.05$) and the strength of the relationship was strong ($r=.663$).

Regression of Ergonomics and productivity

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.663 ^a	.440	.431	.37617	.1	8.332	1	99	.003
ANOVA ^a									
Model		Sum of Squares	df	Mean Square	F	Sig.			
1	Regression	3.023	1	1.043	8.332	.003 ^b			
	Residual	12.762	99	.110					
	Total	15.785	100						
Coefficients									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.			
		B	Std. Error	Beta					
	(Constant)	.782	.236		3.309	.001			
	1 social interaction	.230	.054	.266	4.272	.000			

* $p < .05$

As shown in Table 4.3.2.2, the linear regression ANOVA showed that Ergonomics statistically significantly predicted the worker productivity $F=8.33, p<.05$.

The regression coefficient findings as indicated in the Table revealed that Ergonomics predicted the worker productivity ($\beta=.230, p<0.5$). This implies that one unit increase of Ergonomics would lead to an increase of 0.230 units of the worker productivity. Based on the coefficients results, the general form of model equation established is as follows:

$$WP = 0.782 + 0.230$$

DISCUSSION AND CONCLUSION

The study found that workplace location in the workplace has effect on the productivity of employees. The investigated factors were distance to the residence, work time and stress especially so for employees who work in either marketing or sales departments whose jobs entail going out to sell the products or look for more clients. A large percentage of workers agreed that design and aesthetics, furniture, well-lighted workplace and workplace temperature motivate workers to perform well. Based on the response of respondents the study revealed that there was a statistically significant correlation between workplace location and productivity of small- scale enterprises. Although the responses of the respondents based on the model summary results presented in Table 1 indicate that the strength of the relationship between workplace location and employee performance was weak, which indicate that the workplace location of the workplace is not too essential to employees' performance. Again, ergonomics do have an impact on the productivity of employees. Many of the respondents agreed that safety in the workplace, bullying in the workplace, salaries and wages, cooperation and harmonious working relations is a key issue that affect employee productivity in the workplace. In addition, happiness in the workplace seems a priority to achieving greater employee performance. Based on the hypotheses result, the study revealed, that there was a statistically significant positive correlation between ergonomics and productivity. The model summary results presented in Table 2 indicate that the strength of the relationship between ergonomics and employee performance was strong.

RECOMMENDATIONS

The researcher therefore recommends that;

- i. If possible, changes should be included into the design and layout to adjust the location to suit different types of personnel.
- ii. Firms should consider employee health while locating machines, as this reduces the risk of injury and lowers the workers' error rate.
- iii. Employers of labor need to create friendly and enabling environment, provide the necessary job aids and apply effective supervision in the workplace. These will enhance the morale of the workers and promote the achievement of the desired goals and objectives of their businesses.

Suggestions for Further Studies

The main aim of the study was to examine the impact of the physical work environment on the productivity of the workers in Umuahia abia State Nigeria. However, the study proposes that similar study might be conducted in other organizations to determine the applicability of the research findings in different circumstances. Furthermore, additional research can be conducted utilizing organizations from other geographical zones, and research can also be conducted using large population variables and other techniques.

REFERENCES

- Basit, A., Sebastian, V., & Hassan, Z. (2017). Impact of leadership style on employee performance (A Case study on a private organization in Malaysia). *International Journal of Accounting & Business Management*, 5(2), 112-130.
- Akinyele, S. T. (2010). The influence of work environment on workers' productivity: A case of selected oil and gas industry in Lagos, Nigeria, *African Journal of Business Management*, 4(3), 299-307.
- Alter, S. (2013). Work system theory: overview of core concepts, extensions, and challenges for the future. *Journal of the Association for Information Systems*, 72.
- Aries, M. B., Veitch, J. A., & Newsham, G. R. (2010). Windows, view, and office characteristics predict physical and psychological discomfort. *Journal of environmental psychology*, 30(4), 533-541.
- Baldry C., & Hallier, J. (2010). Welcome to the house of fun: Work space and social identity. *Economic and Industrial Democracy*, 31, 150-172. doi:10.1177/0143831 X09351215
- Cato, S. T., & Gordon, J. (2009). Relationship of the strategic vision alignment to employee productivity and student enrolment. *Research in Higher Education Journal*, 7, 1-20.
- Caza, B. B., Tiedens, L., & Lee, F. (2011). Power becomes you: The effects of implicit and explicit power on the self. *Organizational Behavior and Human Decision Processes*, 114(1), 15-24.
- Chandrasekar, K. (2011). Workplace environment and its impact on organisational performance in public sector organisations. *International journal of enterprise computing and business systems*, 1(1), 1-19.
- Davis, M. C., Leach, D. J., & Clegg, C. W. (2011). The physical environment of the office: Contemporary and emerging issues. In Hodgkinson, G. P., & Ford, J. K. (Eds.), *International review of industrial and organizational psychology 2011* (pp. 193–237). Wiley Blackwell. <https://doi.org/10.1002/9781119992592.ch6>
- Elsbach, K. D., & Pratt, M. G. (2007). 4 the physical environment in organizations. *Academy of Management Annals*, 1(1), 181-224.
- Ganesh, S. (2015). Work Environment And its Effect on Job Satisfaction in Cooperative Sugar Factories in Maharashtra, India. *Abhinav International Monthly Refereed Journal of Research in Management & Technology*, 4(5), 21-31.

- Grant, A. M., Fried, Y., & Juillerat, T. (2011). Work matters: Job design in classic and contemporary perspectives. In Zedeck, S. (Ed.), *APA handbook of industrial and organizational psychology, Vol. 1. Building and developing the organization* (pp. 417–453). American Psychological Association. <https://doi.org/10.1037/12169-013>
- Kim, J., & De Dear, R. (2012). Nonlinear relationships between individual IEQ factors and overall workspace satisfaction. *Building and Environment, 49*, 33-40.
- Kim, J., Candido, C., Thomas, L., & de Dear, R. (2016). Desk ownership in the workplace: The effect of non-territorial working on employee workplace satisfaction, perceived productivity and health. *Building and Environment, 103*, 203-214.
- Knight, A. P., & Baer, M. (2014). Get up, stand up: The effects of a non-sedentary workspace on information elaboration and group performance. *Social Psychological and Personality Science, 5*(8), 910-917.
- McGregor, D. (1960). Theory X and theory Y. *Organization theory, 358*(374), 5.
- Morgeson, F. P., Dierdorff, E. C., & Hmurovic, J. L. (2010). Work design in situ: Understanding the role of occupational and organizational context. *Journal of Organizational Behavior, 31*(2-3), 351-360.
- Newsham, G., Brand, J., Donnelly, C., Veitch, J., Aries, M., & Charles, K. (2009). Linking indoor environment conditions to job satisfaction: a field study. *Building Research & Information, 37*(2), 129-147.
- Nnamani, E., & Ajagu, H. E. (2014). Environmental factors and organizational performance in Nigeria (A Study of Juhel Company). *World Engineering & Applied Sciences Journal, 5*(3), 75-84.
- Nollman, M. R. (2013). Sustainability Initiatives in the Workplace and Employee Productivity (Master Thesis), Southern Illinois University Carbondale.
- Ogunyemi, A. O., Akinlaja, S. O., Adesoye, E., Akindele-Oscar, A., Azeez, R. O., & Omolade, M. A. (2015). Organisational variables & effective performance of employees in oil & gas section: an empirical investigation. *International journal of psychological studies, 7*(1), 23.
- Oldham, G. R., & Hackman, J. R. (2010). Not what it was and not what it will be: The future of job design research. *Journal of organizational behavior, 31*(2-3), 463-479.
- Sels, L., De Winne, S., Delmotte, J., Maes, J., Faems, D., & Forrier, A. (2006). Linking HRM and small business performance: An examination of the impact of HRM intensity on the productivity and financial performance of small businesses. *small business economics, 26*(1), 83-101.
- Sharma, M. S., & Sharma, M. V. (2014). Employee Engagement to Enhance Productivity in Current Scenario. *International Journal of Commerce, Business and Management, 3*(4), 595-604.
- Yesufu T. M. (2000). *The human factor in national development*. Ibadan: Spectrum Books Limited.
- Zax, D. (2013). Falling For the Job. *Time Magazine*.
- Zhong, C. B., & House, J. (2012). Hawthorne revisited: Organizational implications of the physical work environment. *Research in Organizational Behavior, 32*, 3-22.