Stress and Employee Productivity in Selected Manufacturing Firms in South-East Nigeria

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Abstract: This work examined the effect of stress on employee productivity in selected manufacturing firms in South-East Nigeria. It became necessary following a high rate of stress witnessed in the manufacturing industry in the region. The Person-environment (PE) Fit theory was employed as the theoretical framework. The population of the study consisted of 2187 employees of fifteen selected manufacturing firms. The statistical formula devised by Borg and Gall (1973) was employed to determine the sample size of 427. The data generated were analyzed using descriptive statistics, correlation and multiple regression analysis at a 5% level of significance. The results showed that work-family interaction exerts a significant negative influence on employee productivity. Organizational climate has a significant positive effect on employee productivity, while role ambiguity has a significant positive influence on employee productivity. The study, therefore, concluded that workplace stress has a significant negative effect on employee productivity in manufacturing firms in South-East Nigeria. The study among other things recommended that management should encourage employees to spend time with their family and that they should be allowed to go home at a reasonable time to meet their family in other to avoid work family-related stress.

Keywords: Work-Family Interaction, Organizational Climate, Role Ambiguity and Employee Productivity

I. INTRODUCTION

Many employees in the course of discharging their duties in organizations experience one form of stress or the other. This is why Imtiaz and Ahmad (2009) opine that stress is a worldwide experience in the lives of many employees. Similarly, Michie (2002) posits that stress is inevitable in a work environment. Some of the underlying theories and underpinning concepts behind stress are now settled and accepted; others are still being researched and debated. Stress is changing to a common phenomenon among employers and employees. Employees experience and feel stressed continuously and therefore the reactions of stress at the workplace are not a separate aspect. But considering stress more positively leads to higher productivity and improved performance, whereas, negative stress leads to many problems in the organization. Hence, it is pertinent for organizations to take cognizance of the stress level of their employees and make an attempt to help them overcome it (Syed, Muhammad, Aftab Qadir & Shabana, 2013).

Performance is an important concept for the very survival of all organizations, therefore, anything that could undermine performance is frowned at and measures put in place to avoid it. Stress is one of those factors that inhibit performance, hence, needs to be taken note of and handled properly. To achieve this organizational objective, all the factors which influence stress needs to be properly identified and measured (Kamalakumati & Ambika, 2013). That is, the welfare of employees needs to be top priority of organizations, because employees serve as assets to organizations. But when they are stressed, undesirable circumstances such as increased absenteeism; low productivity, low motivation and usually legal financial damages may ensue which eventually affect the employee work behaviour and leads them towards a counter-productive work behaviour.

Performance of an employee is a point of concern for most organizations, irrespective of the factors and conditions therein. Consequently, the employees are considered to be very important assets for their organizations (Qureshi & Ramay, 2006). Good performance of the employees leads to a good organizational performance, thus ultimately making an organization more successful and effective and vice versa (Armstrong & Baron, 2007). However, their stress level impacts on their performance and productivity. Stress is an unavoidable consequence of modern living. It is a condition of strain that has a direct bearing on emotions, thought process and physical conditions of a person (Jayashree, 2010). It is much more common in employees at lower levels of workplace hierarchies, where they have less control over their work situation (Beheshtifar & Nazarian, 2013).

Stress can be considered as an unpleasant emotional situation that we experience when requirements (work-related or not) cannot be counter-balanced with our ability to resolve them. This results in emotional changes as a reaction to this danger. It stems from the relationship between a person and his environment, and it appears as pressure that is subjective because the same stress can affect one person but not another. When an employee can manage the pressures of the job and the possibility to complete a task is substantial, then stress can work as a motivating factor (Halkos & Dimitrios, 2008).

Employers of labour in Nigeria do not protect their workers from stress arising outside and within the workplace (Adetayo, Ajani & Olabisi, 2014). It is a real problem that organizations, as well as their workers have been facing for some time, because employers of labour seem not to be adhering to the international labour organization's protocol which posits that employers of labour should initiate a stress management policy. It is against this backdrop that this study seeks to examine the effect of stress on employee productivity of manufacturing firms in South-east Nigeria.
Statement of the Problem

Many establishments, specifically manufacturing firms’ in the world are observing a shocking increase in the negative effects of stress on employee productivity (Henry & Evans, 2008). Most organizations, to accomplish higher productivity, end up saddling employees with an overload of work to meet deadlines, and this might have psychological and physical effects on the employees which may result in something contrary to what these organizations want to achieve. Work stress arises from stressors in the workplace. These stressors are demanding and unreasonable situations associated with the organization itself. They include high levels of organizational politics, demanding organizational cultures and poor leadership styles which can create friction; heighten dysfunctional competition between individuals and increased stress (Ivancevich, Konapske & Matteson, 2006). Lack of performance feedback, inadequate career development, workplace violence, sexual harassment and inequality in remuneration and incentives have also been cited as some of the causes of the increase in stress among employees (McShane, 2008). Some of these issues were observed in the firms studied, hence, the need to ascertain the effect of stress on employee productivity in those firms.

Objectives of the Study

The major objective of the study is to examine the effect of stress on employee productivity, while the specific objectives include to:

1. Ascertain the effect of work-family interaction on employee productivity.
2. Assess the effect of organizational climate on employee productivity.
3. Determine the influence of role ambiguity on employee productivity.

II. REVIEW OF RELATED LITERATURE

Stress

The term stress has been defined by many scholars. Stress represents a situation where a person is under pressure and does not have sufficient ability to cope with it. Jayashree (2010) perceive stress as a physical or emotional factor that causes bodily or mental tension, and maybe a factor in disease causation. According to Ekienabor (2016), for years stress was described and defined in terms of external, usually, physical forces acting on an individual. Later, it was suggested that the individual's perception of, and response to stimuli or events were a very important factor in determining how that individual might react, and whether or not an event will be considered stressful. These authors further contend that most researchers acknowledged that both external and internal factors affect stress. They view stress as a response to external or internal processes, which reach levels that strain physical and psychological capacities beyond their limits.

Olagunju (2010) defines stress as a chronic complex emotional state with apprehension and is characteristic of various nervous and mental disorders. In essence, stress is a manifest response of an individual to defiling the basic needs of life in an environment of competing needs. It is a person's psychological and physiological response to the perception of demand and challenge. Work-related stress is a pattern of physiological, emotional, cognitive and behavioural reactions to some extreme taxing aspects of work content, work organization and work environment (Topper, 2007).

Kazmi, Amjad and Khan (2008) opine that stress is a change in one’s physical or mental state, in other words, disturbance or imbalance from a normal state. Stress is caused by disturbing events in a work environment, social environment, and in routine life (work, family and social life) and also caused by emotional, psychological, mental and physical illness. Moreover, "Stress comes from any situation or circumstance that requires behavioural adjustment. Usman and Muhammad (2010) argue that stress is not the internal attitude of a person or his surroundings; rather it is the interaction between them.

Alam, Gouhar and Shafiqur (2015) posit that stress is any demand on an individual caused by physical, emotional or mental factors that require coping behaviour. Sun and Chiou (2011) describe it as a negative emotional experience accompanied by predictable biochemical, physiological, cognitive and behavioural changes that are directed either toward altering the events or accommodating its effects. Ayodele (2014) on his part opines that stress “is a wide collection of physical and psychological symptoms that results from difficulties experienced by an individual while attempting to adapt to an environment”. This means the potential for stress exists when an environmental situation presents a demand threatening to exceed a person's capabilities and resources. Job stress could be regarded as an accumulation of stressful factors and job-related situations that most people agree it is stressful. For example, one of the job related stressful situations is when an employee or worker is exposed to high pressures or demands in the work environment from one side and has a limited time to satisfy such needs from the other side (Syed, Muhammad, Aftab Qadir & Shabana, 2013).

Productivity

The term productivity was applied for the first time by François Quesnay, the mathematician and economist who was an adherent of physiocracy school. He believes that the authority of any government relies on increasing productivity in the agriculture sector by proposing the economic table. Productivity entails maximization of the use of resources, human force and schemes scientifically to decrease expenses and increase employees, managers and consumer satisfaction. Other definitions consider human force productivity as appropriately maximizing utilization of human force towards goals of the organization with the lowest time and minimum
Consider several forms of counter-productive behaviour that are known to result from prolonged stress. Productivity refers to the real output per unit of labour. It is a powerful driver of international capital flows. Its levels seem to be the highest in the United States as compared to the Euro area, because of higher employment rates in the U.S. (Skoczylas & Tissot, 2005).

Meneze (2006) defines productivity as the employee’s ability to produce goods and or services according to the expected standards set by the employers, or beyond the expected standards. It is calculated by comparing the total amount of output to the total amount of input used to produce the output (Bojke, 2012). It is the measure of how efficiently and effectively resources (inputs) are brought together and utilized for the production of goods and services (outputs) of the quality needed by society in the long term (Amah, 2006). This implies that productivity is a combination of performance and economic use of resources. High productivity indicates that resources are efficiently and effectively utilized and waste is minimized in the organization.

Productivity balances the efforts between different economic, social, technical and environmental objectives (Amah, 2006). High productivity provides more profit for investors and promotes the development of the enterprise. Productivity measurement indicates areas for possible improvements and shows how well improvement efforts are faring. It helps in the analysis of efficiency and effectiveness. Amah (2006) notes that productivity is measured in terms of outputs per labour hour. However, this measurement does not ensure that the firm will make money. To test whether productivity has increased, the following questions should be asked: “Has the action taken increased output or has it decreased inventory? Has the action taken decreased operational expense? This would then lead to a new definition which is: Productivity is all the actions that bring a company closer to its goals.

**Theoretical Framework**

This study is anchored on the Person-Environment (PE) Fit Theory. Person-Environment (PE)account of the stress process stems from the early works and theories of Lewin (1935) and Murray (1938). The basic premise of the person-environment (PE) fit theory is that stress arises from a misfit between person and environment – not from the two components separately, but as the factors of each relate to one another. When individuals perceive that their work environments are not good, or do not fit well with the needs, wants, and desires that they would like fulfilled from work, the discrepancies create diverse strains, which are then hypothesized to affect workers’ health and wellbeing. Environmental demands here include job requirements, role expectations, and group and organizational norms. Countering these demands are the individual’s abilities represented through aptitudes, skills, training, time and energy the person uses to meet the demands. The idea is that the larger the discrepancy between person and environment, the greater the likelihood that strain, and a need for coping, will arise.

**Empirical Review**

Several academic studies have examined the relationship between stress and employee productivity. For instance, Okeke, Ojan and Oboreh (2016) examined the effect of stress on employee productivity in the Nigerian banking industry. The study adopted a survey research method. The population of study constituted five selected banks in Awka metropolis. Purposive sampling method was used to select a total of 250 employees. The data used were generated using a 5-point Likert scale questionnaire and were analyzed using simple percentage analysis while the hypotheses formulated were tested using chi-square statistical technique. The study revealed that stress relation with workforce marital status, education, and working experience was negative. However, the study found out that stress among employees does enhance their job performance in a positive manner (r = 0.348, sig. value=.000). This gives the indication that as employee stress increases, their job performance also tends to increase and vice versa.

Makoni and Mutanana (2016) carried out a study to examine different effective techniques of managing stress as perceived by workers in Rock Chemicals Fillers (Private) Limited; a Manufacturing Company in Zimbabwe. The research was a case study. It adopted both qualitative and quantitative research methods with the target population being employees at the manufacturing company and a sample of 35 participants were selected using the convenience sampling technique. Questionnaire and an interview guide constituted the research instruments. Findings showed that workers concurred with the concept of counselling, body exercise and sport as techniques for managing stress at the workplace.

Ekienabor (2016) investigated the impact of job stress on employee productivity and commitment among academic staff
of Nigerian universities. The scope of the study was centred on all universities in Nigeria. A field study was conducted with questionnaire as the primary data collection instrument. Data were analyzed using chi-square. The results showed an impact of job stress on the productivity of employees. Also, there is an impact of job stress on employees' commitment. A higher level of stress without managerial concern for solution results in reduced employee performance, staking of organizational reputation and loss of skilled employees.

Muhammad, Nazir, Riaz, Murtaza, Khan and Firdous, (2016) examined the impact of job stress on employee job satisfaction using Nursing Sector of DHQ Hospital of Okara. A descriptive research design was adopted. The study used quantitative research and data were collected through a survey (questionnaire). The sample size consisted of 100 nurses of DHQ Hospital of Okara. Data were analyzed using regression and correlation analysis. The result showed that there was a positive relationship between job stress and employee job satisfaction that is shown by positive values.

Xhevdet (2015) examined the impact of stress on teachers' productivity as an important factor in the increase in educational quality. In the correlation study, 80 teachers were randomly selected from Tirana. The study found stress as a very dangerous potential risk of people. As it is known, stress is one of the most inflectional factors of a lot of different problems and disease, but also a factor which determines the success or failure of an organization. As a very negative factor, it is responsible for workers' passivity at work, and as a consequence diminishes their performance and productivity. Factors such as demands, check, relationship, change, role and support are potential factors for stress at work.

Qadoos, Ayesha, Tayyab, Toqeer and Hafiz (2015) examined the influence of job stress on employee performance in Pakistan. Data were collected through questionnaire distributed among the customers of telecommunication service providers in Pakistan. The said copies of self-administered questionnaire were distributed and 200 were completed and received given a response rate of 80%. Non-probability sampling techniques were used for the selection of the sample. Pearson product moment correlation and regression analysis were used in data analysis. The finding showed that there is a positive moderate relationship existing between job stress and employees performance.

Alkubaisi, (2015) examined the stress effect of stress on work performance using quantitative field study on Qatari banking Sector. The cross-sectional method was adopted and inferential statistics, Spearman Correlation was used in testing hypotheses A sample (n=124) was randomly selected from the Qatari Banking Sector and various statistical analyses were performed on this data. The analysis has shown that the unclear role given to the employees and the workload has a direct relationship with work stress. One of the main findings is that work stress has a negative impact on employee performance. Also, the employees' level of stress perception is influenced by their job title. The findings of this study confirm that poor working conditions, role ambiguity, workload, and family problems act as a full mediating variable in the relationship between stress and job performance in the Qatari banking sector sample.

Summary and Gap in Knowledge

Most of the studies carried out were outside Nigeria and the region where the present study is carried out. Similarly, there is a time gap as no study to the best knowledge of the researcher has been carried out in the year 2020. The earliest work carried out in manufacturing firms here was in 2017, and many things may have changed since then, which may have invalidated the earlier findings. These were the lacunas that were discovered, that this present study intends to fill.

III. METHODOLOGY

This study adopted a survey research design based on the nature of the data collection procedure and the instrument for data collection. The study was carried out in South-East Nigeria which is one of the six geo-political zones in Nigeria, consisting of five states (Abia, Anambra, Ebonyi, Enugu and Imo). Three manufacturing firms from the industrial hub of each state in the region were selected for the study. The population of the study comprises of two thousand one hundred and eighty-seven (2187) management staff, senior staff and junior staff of the fifteen manufacturing firms selected. The statistical formula devised by Borg and Gall (1973) was employed to obtain a sample size of 427 for this study. Data were sourced from primary sources. The major instrument used in this study is the questionnaire. The researcher used face and content validity in this study. Reliability of the questionnaire was done by Cronbach Alpha and the reliability statistics obtained was .897. The study employed Multiple Regression Analysis (MRA) method to determine the effect of stress on employee productivity and hypotheses were tested @ 5% level of significance. The regression model is represented as:

\[ Y = \alpha + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_nX_n + \epsilon \]

Where:

- \( Y \) = Employee Productivity (EP)
- \( \alpha \) = Constant Term
- \( \beta \) = Beta coefficients
- \( X_1 \) = Work-family interaction(WFI)
- \( X_2 \) = Organizational Climate (OC)
- \( X_3 \) = Role Ambiguity(RA)
- \( \epsilon \) = Error Term

A total of four hundred and twenty-seven copies of questionnaires were distributed to the respondents, out of which four hundred were properly filled and found relevant for the study. Twenty copies of the questionnaires were not properly filled and seven copies got missing. Therefore, the analysis in this section was based on the four hundred relevant copies.
IV. RESULTS

Descriptive Analysis

This section presents descriptive statistics on stress and employee productivity. The analysis aims to examine the performance of the stress variables in relation to employee productivity. The analysis of the individual characteristics of these variables is presented in the table below:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Productivity</td>
<td>20.26</td>
<td>3.332</td>
</tr>
<tr>
<td>Role ambiguity</td>
<td>17.86</td>
<td>4.245</td>
</tr>
<tr>
<td>Organizational climate</td>
<td>17.89</td>
<td>3.751</td>
</tr>
<tr>
<td>Work-family interaction</td>
<td>18.74</td>
<td>4.070</td>
</tr>
</tbody>
</table>

Table 1: Descriptive Characteristics of the Variables

Source: Author’s Compilation from SPSS Version 21.0

Table 2 above shows the extent of association between the dependent and independent variables used in the study. Role ambiguity has a correlation coefficient of 0.654 with a probability value of 0.005. This implies that role ambiguity has a positive strong effect on employee productivity in manufacturing firms South-East Nigeria. The correlation between organizational climate and employee productivity shows the value of 0.039, which indicates that organizational climate has a positive weak effect on employee productivity. Work-family interaction recorded a correlation coefficient of -0.394 with employee productivity which shows that Work-family interaction has a negative moderate effect on employee productivity.

Correlation Analysis

Here, the Pearson correlation was employed to measure the strength and relationship between dependent and independent variables. The Pearson correlation coefficient is a measure of the strength of a linear association between two variables and is denoted by r. Table 2 below shows a summary of the correlation coefficient.

Table 2: Correlation Matrix

Table 3 shows that R² which measures the strength of the effect of an independent variable on the dependent variable have the value of 0.690. This implies that 69% of the variation in employee productivity is explained by variations in role ambiguity, work-family interaction and organizational climate. This was supported by adjusted R² of 0.504.

To check for autocorrelation in the model, Durbin-Watson statistics were employed. Durbin-Watson statistics of 1.879 in table 3 shows that the variables in the model are not auto-correlated and that the model is reliable for predictions.

Table 4: ANOVA Result

Source: Author’s Compilation from SPSS Version 21.0

The F-statistics value of 4.272 in table 4 with F-statistics probability of 0.002 shows that the independent variables have...
a significant effect on the dependent. This shows that work-family interaction, work-family interaction, organizational climate and role ambiguity can collectively explain the variations in employee productivity in the selected organizations.

Table 5: Coefficients of the Model

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients B</th>
<th>Unstandardized Coefficients Std. Error</th>
<th>Standardized Coefficients Beta</th>
<th>T</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>18.311</td>
<td>123</td>
<td>.043</td>
<td>-158</td>
<td>.000</td>
</tr>
<tr>
<td>Role ambiguity</td>
<td></td>
<td></td>
<td></td>
<td>8.632</td>
<td>.004</td>
</tr>
<tr>
<td>Organizational climate</td>
<td></td>
<td></td>
<td></td>
<td>2.870</td>
<td>.212</td>
</tr>
<tr>
<td>Work-family interaction</td>
<td>-.159</td>
<td></td>
<td>.053</td>
<td>-194</td>
<td>.003</td>
</tr>
</tbody>
</table>

In testing this hypothesis, the t-statistics and probability value in table 4.7 is used. Role ambiguity has a t-statistics of 2.870 and a probability value of 0.004 which is statistically significant. Therefore, we reject the null hypothesis and accept the alternative hypotheses which state that Role ambiguity has a significant influence on employee productivity.

V. DISCUSSION OF FINDINGS

This work examined the effect of stress on employee productivity in selected manufacturing firms in South-East Nigeria. A total of fifteen manufacturing firms were studied. The hypotheses formulated were tested using multiple regression analysis. At the end of the analysis, the following were discovered. The result shows that work-family interaction has a negative correlation with employee productivity. This finding is consistent with that of Affum-Osei, Agyekum, Addo and Asante (2014) whose study showed that there was a negative correlation between job stress and productivity. The study reveals that role ambiguity has a significant influence on employee productivity. This finding disagrees with the findings of Asia, Hadia and Sabita (2014) that revealed that there is substantial evidence that role ambiguity can provoke stress. Lack of direction can prove stressful, especially for people who are low in their tolerance for such ambiguity. VanDickand Thompson (2011) indicate that role ambiguity is detrimental to employee productivity. Finally, the study found that organizational climate has no significant effect on employee productivity. This study disagrees with the findings of Yee and Ananthalakshmi (2017) whose study found that all the selected organizational climate dimensions in their research have a positive and significant impact on employee productivity. Similarly, Arakal and Sebastian (2013) study found that organizational climate is an important predictor of organizational performance. A very good organizational climate gives employees a good atmosphere to work on. Employees are able to put in their best performance in a good climate.

VI. CONCLUSION

It is understandable that in every organization, a certain percentage of the working population suffers from job-related stress but stress should not be taken as an individual problem. If organizational management considers stress as an individual problem and not management problem, then they maybe faced with issues of loss of productivity due to absenteeism, quitting of jobs, the total cost of work-related accidents and low quality work. Therefore, organizations need to handle stress positively to increase employee productivity. Based on the empirical analysis, the study, therefore, concludes that workplace stress has a significant negative effect on employee productivity in manufacturing firms in South-East Nigeria.

VII. RECOMMENDATIONS

Based on the findings of this study, it is recommended that:
1. Management should encourage employees to spend time with their family and they should be allowed to go home at a reasonable time to meet their family in other to avoid work family-related stress

2. The management of the studied firms needs to establish a policy that will have good role clarity plans, which can relieve the employees from the future role ambiguity.

3. A conducive organizational climate needs to be created for its employee by the management of the studied firms in other to create a positive perception and consider it to be matching with their personal objectives and so, they can demonstrate positive attitudes towards colleagues and the organization

REFERENCES


