

TECHNOLOGY-INDUCES STRESS AND OFFICE MANAGERS' PERFORMANCE; A MODERATING ROLE OF ENVIRONMENTAL FACTOR IN PAINT MANUFACTURING FIRMS IN PORT HARCOURT**Gbafah Beauty Lemabari PhD****Department of Office and Information Management, Faculty of Administration and Management, Rivers State University, Port Harcourt, Nigeria***Email:beautygbafah@ust.edu.ng***ABSTRACT**

The study examined the relationship between technology-induced stress and office managers' performance: A moderating role of environmental factor in paint manufacturing firms in Port Harcourt. The explanatory cross section survey research was adopted for the study. The population of this study consisted of one hundred and ten (110) office managers of nineteen (19) registered paint manufacturing firms in Port Harcourt. A sample of one hundred and ten (110) respondents was obtained using census sampling technique. Structured questionnaire was used as instrument for data collection after face-validation. Cronbach alpha was used to test the internal consistency of the instrument. Out of 110 copies of the questionnaire administered, a total of 90 copies were retrieved. Mean and standard deviation was used for the univariate analysis while the bivariate analysis was done using Spearman rank order correlation. Multivariate analysis was done using Partial Correlation. The findings revealed that techno-induced stress have significant negative relationship on office managers' performance in paint manufacturing firms in Port Harcourt. The study recommended that management of paint manufacturing firms could provide regular hands-on ICT training for administrative heads and their assistants to enable them upgrade and update their digital skills and experiences to close the digital skills gap in the system.

Keywords: Environmental Factor, Technology-Induced Stress and Office Managers' Performance

INTRODUCTION

Office managers are faced with ICT-induced problems such as lack of privacy, computer-hacking, computer-hanging, poor network and difficulty sending/accessing e-mails, sudden computer hardware/software failure, computer illiteracy, insufficient or outdated technological skills, etc. (Ekiye., 2017). Insufficient training in the face of ceaseless technological upsurge has created skill gap and operational anxiety amongst office managers in our paint manufacturing firms (Sampson, & Miller, 2018).

The myriad of computer-related problems listed above truncates or maims the efforts of office and office managers in discharging their core duties. The late dissemination of information, poor quality delivery, poor records management and late completion of task as identified by Bright et al (2015), points to the fact that office managers in paint manufacturing firms are not performing their job effectively. The persistence of ineffectiveness in the administrative machineries of these paint manufacturing firms suggests that there are elements in the office environment that have not been addressed.

Techno-complexity refers to lack of necessary skills and expertise required for working in a place and using basic devices on the job due to constant technological upgrade. Techno-complexity also describe a situation "where employees may feel incompetent as a result of the complexity of new ICTs and may find it intimidating to learn and use new technology." One of the major causes of technology-induced stress among office managers in paint manufacturing firms is the fact that many of them (especially the older ones) do not have the basic technological skills required for operating and coping with newer versions of computer software and hardware (Nwabueze, 2014). The business environment is becoming digitalized as more sophisticated computer systems, internet

connections, social media platforms and new online learning tools continue to emerge. Office managers in paint manufacturing firms are confronted with the pressure of mastering how to manipulate the virtual environment (Nwabueze, 2014). The second dimension of technology-induced stress in this study is techno-uncertainty. It represents stress associated with sudden faults and malfunctioning of computerized devices as well as the unreliable nature of the devices. Odu (2018) identified technical breakdown as an element related to techno-uncertainty. Paint manufacturing firms workers who make use of computer systems almost on a daily basis experience a lot of job interruption as a result of technical breakdown. Technical breakdown can be defined as the failure of an electronic machine, equipment, device or network system to function as expected (Seji, 2012). Techno-overload as used in this study denotes stress arising from excessive multiple tasks expected to be completed by an individual with the assumption that they can accomplish them very fast as a result of ICT. It could be describe as when job demands get too great the person feels he or she has too much to do and too little time (Mlotshwa, 2013). Thus, multitasking is not very healthy in improving performance of office managers.

An Office manager is responsible for monitoring and reviewing systems, usually focusing on specific outcomes such as improved timescales, turnover, output, sales, etc. They may supervise or manage a team of administrators, allocating roles, recruiting and training, and issuing assignments and projects (Olali, 2017). Bedford (2015) added that office managers are in charge of customer service, report writing, budget management, database management, systems analysis, purchasing, book keeping, human resources supervision, and records management, form/template design, website maintenance, and payroll management in most public and private establishments. Within the context of this study, office managers are unit heads, however, office managers' performance refers to the extent to which personnel in charge of planning, coordinating and ensuring proper generation, circulation and preservation of data/information regarding the operations of an office or unit of an organization discharges his or her duties efficiently. Job performance of office managers is a result of the actions that have been set to achieve goals based on certain standards. This usually involves the actions or behaviour of all mental processes that are not observable (Bailey & Robert, 2003). There are several height of measuring office managers' performance, but this study focuses on work quality, timely information dissemination and task accomplishment.

Concept of Technology-induced Stress

Technology-induced stress refers to a state of arousal observed in certain employees who are heavily dependent on computers in their work (Arnetz & Wiholm, 2017). Brod in Ekiye (2017) conceptualized technology-induced stress as a modern disease of adaptation caused by an inability to cope with the new computer technologies in a healthy manner. The term of technology-induced stress was developed by Craig Brod 1984 to describe "the stress caused by an inability to cope with the demands of organizational computer usage (Tarafdard et al. 2010). Technology-induced stress is also described using other terms like: techno-induced stress, technophobia, cyberphobia, computerphobia, computer anxiety, computer stress, negative computer attitudes, and computer aversion. With the constant advancement of technology, many employees are suffering from technology-induced stress (Ahmad et al., 2009).

Basically, technology-induced stress refers to negative feelings, ideas, behaviour and attitudes employees feel in their body, such as anxiety during the time they should cope with new technologies. In recent years, some scientists (Brillhart, 2014) have focused on a new structure called technology-induced stress. Technology-induced stress addresses the direct or indirect negative effects of the use of computer-based technologies on people's attitudes, thoughts, behaviour and psychologies (Tu et al., 2011). Psychologies and behaviour that prevent the best use of computer-based ICTs, such as fear, anxiety and enmity take the form of resistance (Tu and Wang, 2011). On the other hand, Salanova et al. (2007) define the concept of technology-induced stress as anxiety, mental fatigue, scepticism and ineffectiveness resulting from the focusing on ICT

use or its future use. Many company employees are exposed to expectations of more efficiency with more complicated systems in order to adapt to rapid changes as a requirement of information age, which requires them to increase their technological knowledge and skills. For this reason, technology-induced stress refers to the technology management problem that employees encounter in their work environment (Igado, 2017). As can be understood from the above mentioned definitions, in the most basic sense, technology-induced stress is a stress phenomenon occurring before and after ICT use in work life.

The negative psychological effects associated with the introduction of ICTs, are often summarized under the term 'technology-induced stress' which has been defined by as "an inability to cope with the demands of organizational computer usage" (Tarafdar et al, 2010). Technology-induced stress also encompasses stress encountered in the use smartphones, tablets, laptop computers while video conferencing or social networking on Facebook and Twitter (Igado, 2017). The very gadgets designed to make life easier can actually cause an added dimension of stress. It is frustrating when the faxes, e-mails, and voice mails pile up; annoying when phones do not stop ringing; and infuriating when equipment breaks down. Technology-induced stress has also been suggested as a term to describe the state of cognition and cortical arousal observed in certain employees, who are heavily dependent on computers for their work (Trayambak, 2018). It is suggested that organizational re-engineering and the introduction of information technologies constitute potential stressors, challenging employees' cognitive resources.

Concept of Office Manager's Performance

In economic development and global competition, many companies are still surviving until today. Most of these companies are believed to survive due to employee performance including the performance of the office manager. However, the important issue is how to improve office managers' job performance which is related to survival and development of business and it can be sustained. Thus, performance should be considered in order to provide benefits to the company. This is because the benefits depend on individual employee performance (Yao, 2019). To understand more about the overall performance, the section below elaborates more on definition of job performance especially as it regards office managers, the purpose of performance appraisal, the performances appraisal methods and the last is the measurement for employee performance.

Conceptually, office managers' performance represents the extent to which personnel in charge of planning, coordinating and ensuring proper generation, circulation and preservation of data/information regarding the operations of an office or unit of an organization discharges his or her duties. As mentioned by Jamshidi (2011), performance refers to the characteristics of an individual's success in its work. Then, the performance usually involves the calculation of the individual output level for example, ability to dispense information just-in-time, effective record keeping and effective supervision as it concerns office and office managers which leads to sales or production, or to assess the level of success compared with the expectations of the organization (Kazemi & Abbas, 2006).

Job performance of office managers is a result of the actions that have been set to achieve goals based on certain standards. This usually involves the actions or behavior of all mental processes that are not observable. This includes problem solving, decision making, program planning, and reasoning (Bailey & Robert, 2013). Overall assessment on the performance of the employees is usually involving the performance result and work processes such as evaluating how the employees do the work and results achieved from that second process is considered as performance (Soltani & Iraj, 2009).

In the company, the word "performance" is often used among the human resources personnel, and industrial psychology and the management. Then, without taking into account the importance and the popularity, it is difficult and rarely to clearly defined (Neely, 1995). Gryn (2010), job

performances is the behaviour that can be observed and non-observable behaviour that can be assessed.

Besides, office managers' Job Performance can be defined as a concept of multidimensional that shows the way an office manager completes his task, which is focused on efficiency, the use of skills, initiatives and the resources used (Rothmann & Coetzer, 2013). Furthermore, the actions that involve the process and product (final output) also refer as the performance of the job. However, the individual process can affect the overall performances of the organization. This is because the performance of individual is not only determined by actions but also others factor such as external factor. The example of external factor are the organizational culture and economy, the availability of the resources including word processing applications like MS word, MS PowerPoint and PDF converter/optical character recognition.

Dharma (2011) stated that performance is something that is done or the products or services produced or provided by a person or group of people. The researcher also stated that job performance is a result that can be achieved by a person in executing their duties. Then, all the results were evaluated by the organization or supervisor. This is a feedback by the company or supervisor towards employees about their job performance. It's different with Shahzad, et al (2010) who stated that the performance is as a result or consequence of an activity for a period of time. Job performance is a record of the results obtained from the function of a specific job or activity during specific time period (Bernardin & Russel, 2016).

Environmental Factor, Technology-Induced Stress and Office Managers' Performance

Paint manufacturing firms exist in an environment. Thus, their operations are strictly determined by environmental factors surrounding them. Some firms are established in such environment that are not conducive for worker. So to say, there are some paint manufacturing firms that do not have good furniture, ventilation or conducive atmosphere. This makes office managers to be stressed out couple with uncertainty and overload of technology. This will surely affect their job performance negatively and the organizational goals and set objectives might not be achieved. This is in line with the postulation of Banjoko (2011) that healthy work environments will be free from problems associated with sick building syndrome, which is often due to poor ventilation or off-gassing of chemicals used during construction. The accumulation of molds and mildew may also lead to sick building.

Work environment also address the physical surroundings, differentiating between offices, warehouses, retail stores, scientific research facilities, fieldwork sites, and so forth. These work environments have their unique way of affecting output level. The physical environment can also have an impact on suitability for work; some people do not enjoy the rigid and controlled climate of a lab, for instance, or prefer working outdoors (Vernon, 2012). Concerns about conditions in different types of work environment may be an issue for some job seekers with worries about their ability to thrive in physically demanding or boring environments. Since this is the case, it goes further to mean that environmental factor moderates between technology-induced stress and office managers' performance, thus, environmental factor determine the level of office managers' performance in using and controlling technological stress. This necessitate the test of hypothesis ten stated below:

Ho₁: Environmental factor has no significant impact on the relationship between technology-induced stress and office managers' performance in paint manufacturing firms in Port Harcourt.

Theoretical Framework

This work was based on Lewin and Edwards' Person-Environment Fit Theory popularized in 1962 (Osita, 2018). Person-Environment Fit Theory of psychological stress describes the interaction between the person and environment ($P \times E$) as the key to comprehending people's cognitive, emotional and behavioural reactions such as stress. The theory assumes:

- i. A mismatch between a person and his work environment will lead to tension and uneasiness capable of hampering his level of productivity.
- ii. The second tenet of this theory is that worker's capabilities (skill sets) will determine the level of work pressure and how environmental pressure affects their output. The theorist explained that "the level of match between job demands and workers' capabilities (knowledge and skill) to meet those demands is referred to as demands-ability fit (Cummings & Worley, 2008).

This relates to the technology-induced stress as the independent variable of this study in that when there is a mismatch between the technological experience and skills of an office/office manager and the nature of technological resources in use in his work environment, he experiences some level of psychological strain. Technical failure, techno-insecurity (risk of hackers and virus attacks), and the inability of the office manager to cope with the skills upgrade required to operate and manipulate computer systems, projector, internet network, electronic media and other electronic resources are capable of subjecting him to pressure which in turn could affect his effectiveness in terms of document management, information dissemination, and supervision.

The proponent of person-environment fit theory also argued that when there is a match or equilibrium between an employee's personality, skills/competencies and the working environment (organizational culture, technology and tools), it leads to job satisfaction and optimal performance. This aspect of the theory amplifies the fact that the individual digital literacy level of an average office managers in the paint manufacturing firms can moderate the relationship between technology-induced stress and his effectiveness in the discharge of his administrative duties.

The adoption of person-environment fit theory as a major theoretical framework for this study is predicated on the fact that the theory describes how the interactions and relationship between a worker and his working environment affects the level of strain he/she experiences on the job. It also recognizes environmental factor which can moderate the relationship between technology-induced stress and office managers' performance.

METHODOLOGY

The cross-sectional explanatory survey research design was adopted for this study. The population of the study consists of one hundred and ten (110) office managers (heads of departments) of nineteen (19) registered paint manufacturing firms in Port Harcourt. The above information was obtained from Paint Manufacturers Association of Nigeria (PMAN), Rivers State Branch. The census method was adopted since the population is not large. Structured questionnaire was used as instrument for data collection. The work adopted the face and content validity Cronbach alpha was used in determining the internal consistency of the instrument. Thus, a Cronbach alpha level of 0.70. Mean and standard deviation was used for the univariate analysis while the bivariate analysis was done using Spearman rank order correlation. Multivariate analysis was done using Partial Correlation. The entire process of analysis done via SPSS. Spearman rank order correlation coefficient was computed with the formula below:

$$R = \frac{1}{n} \frac{6 \sum d^2}{n^2 - 1}$$

Where;

n = number of pairs of data

d = difference between the ranking in each set of data.

Σ = Summation

If our statistical analysis shows that the significance level is below the cut-off value we have set (which is 0.05), we reject the null hypothesis and accept the alternate hypothesis. Alternatively, if the significance level is above the cut-off value, the null hypothesis was accepted.

RESULTS**Multivariate Analysis****Environmental Factor, Technology-Induced Stress and Office Managers' Performance**

Ho₁: Environmental factor has no significant impact on the relationship between technology-induced stress and office managers' performance in paint manufacturing firms in Port Harcourt.

Correlations of Environmental Factor as a moderator to Technology-Induced Stress and Office Managers' Performance

Control Variables			Technology- Induced Stress	Office Managers' Performance	Environmental Factor
		Correlation Coefficient	1.000	.762**	.694**
	Technology- Induced Stress	Sig. (2-tailed)	.000	.000	.000
		Df	90	90	90
		Correlation Coefficient	.762**	1.000	.812**
-none ^a	Office Managers' Performance	Sig. (2-tailed)	.000	.	.000
		Df	90	90	90
		Correlation Coefficient	.694**	.812**	1.000
Environmental Factor	Environmental Factor	Sig. (2-tailed)	.000	.000	.000
		Df	90	90	90
		Correlation Coefficient	1.000	0.587**	.
	Technology- Induced Stress	Sig. (2-tailed)	.	.000	.000
		Df	90	90	90
		Correlation Coefficient	0.587**	1.000	.
	Office Managers' Performance	Sig. (2-tailed)	.000	.000	.000
		Df	90	90	90

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

Source: SPSS Output

Table 4.22 above shows r value of 0.762 at a significant level of 0.00 showing a relationship between technology-induced stress and office managers' performance. Obviously, this shows a very strong positive relationship since the significant level is less than the alpha level of 0.05. The partial relationship controlling for environmental factor, in this case is a strong positive relationship (0.694) and measurably large.

Furthermore, the significance value of 0.00 which is less than the alpha level of 0.05 implies that the manifestation of technology-induced stress in performance of office managers are significantly attributable to environmental factor as a moderating variable. This implies that the level at which technology-induced stress positively relates with office managers' performance of paint manufacturing firms in Port Harcourt is moderated by environmental factor as dominant amongst them.

Environmental Factor, Technology-Induced Stress and Office Managers' Performance

The test of hypothesis ten revealed that environmental factor moderates the relationship between technology-induced stress and office managers' performance of paint manufacturing firms in Port Harcourt. This implies that the extent to which technology-induced stress dimensions such as techno-complexity, techno-uncertainty and techno-overload relates with measures such as work quality, timely information dissemination and task accomplishment of office managers' performance is attributed to their environmental factors. This is drawn from the fact that paint manufacturing firms exist in an environment. Thus, their operations are strictly determined by environmental factors surrounding them. Some firms are established in such environment that are not conducive for worker. So to say, there are some paint manufacturing firms that do not have good furniture, ventilation or conducive atmosphere. This makes office managers to be stressed out couple with uncertainty and overload of technology. This will surely affect their job performance negatively and the organizational goals and set objectives might not be achieved. This is in line with the findings of Banjoko (2011) that healthy work environments will be free from problems associated with sick building syndrome, which is often due to poor ventilation or off-gassing of chemicals used during construction. The accumulation of molds and mildew may also lead to sick building. Vernon (2012) observed that concerns about conditions in different types of work environment may be an issue for some job seekers who worries about their ability to thrive in physically demanding or boring environments. Since this is the case, it goes further to mean that environmental factor moderates between technology-induced stress and office managers' performance, thus, environmental factor determine the level of office managers' performance in using and controlling technological stress.

CONCLUSIONS

Based on the analyses of data and discussion of findings, the study concluded that technology-induced stress has negative effect on office managers' performance in paint manufacturing firms in Port Harcourt. The study also concluded that techno-overload if well managed enhances the performance of office managers in paint manufacturing firms in Port Harcourt. It was equally concluded that the extent to which job performance of office managers' is affected (positively or negatively) by technology-induced stress is a function of their environmental factors.

RECOMMENDATIONS

Based on the findings and conclusions, the following recommendations were made:

1. Management of paint manufacturing firms in Port Harcourt could provide state of the art laptops, printers, and browsing devices for their administrators to promote regular usage and familiarization. Regular use will make them digital citizens.
2. Supervisors of every unit or department of paint manufacturing firms in Port Harcourt could have readily available experienced digital technicians to cushion the effects of technical failures and to keep the administrative process going.
3. Employees of paint manufacturing firms in Port Harcourt could ensure they handle all phone calls relating to their job in the office.
4. As a way of self-help, employees could always give in their best at work so that incessant calls and messages will not be received when in non-official hours.
5. Management of paint manufacturing firms could ensure to provide enabling work environment to enhance job performance of employees.

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