RES MILITARIS
REVUE EUROPEENNE D ETUDES EUROPEAN JOURNAL OF MILITARY STUDIES
Social Science Journal

Employee Efficiency and Ergonomics Skills: An Investigational Assessment

Tanuj Chawla, Alka Rai
Faculty of Commerce and Management, Rama University, Mandhana, Kanpur, U.P India

Abstract:
The research examined the impact of ergonomics on worker productivity by assessing the extent of ergonomics knowledge in Indian organizations, evaluating the barriers to ergonomic implementation, and analyzing the most effective practices and methodologies used by different organizations across industries. Although ergonomics design and its application are being seen as important by academics in India, there is still a lack of expertise in this area. This may be seen in the limited extent to which it has been adopted. The research used an exploratory methodology by conducting an evaluation of the literature. Various obstacles have impeded the effective adoption of ergonomics in the country. These include a lack of awareness, inadequate research, personnel issues, limited resources, technological advancements, and a disconnect in communication and integration between employees and equipment designers. In addition, this study identified several effective strategies and approaches used by different organizations in various industries. These include, but are not limited to, incorporating the human element into work design, implementing different levels of ergonomics maturity (reactive, preventive, proactive, and advanced), and ensuring a high-quality workspace through factors such as office design, furniture and spatial arrangements, lighting and heating arrangements, and noise control. Those working in the area of ergonomics should increase their efforts in conducting appropriate research, organizing conferences and seminars, and promoting media awareness about the need of incorporating ergonomics into our everyday activities. It is advisable for organizations to provide orientation and training to workers on ergonomics. This will help employees understand the advantages of ergonomics and enable them to adapt to the organization's designs. Finally, it is important to include the employee/human factor into the ergonomics design process by collecting comprehensive anthropomorphic data. This data may help bridge the communication gap between workers and ergonomic architects.

Keywords: worker productivity, Understanding ergonomics, designing ergonomics, Obstacles, Applying techniques and procedures

1.0 Introduction

Employees are crucial assets for any type of organisation, including the venture corporations. The overall quality of an organization's output heavily relies on the competence and skills of its employees. The positive and innovative contributions made by workers may provide a significant competitive advantage to a company by enhancing the quality of its production. In order to succeed in today's highly competitive economy, management must make strategic choices to enhance the performance of its human resources (Gabčanová, 2011:4). One choice is to create a work system that matches the task to the employee, instead than making the person fit the job (Computer/Electronic Accommodations Programme, 2012). The term used to describe this creative management strategy choice is ergonomics, sometimes referred to as human factors. Ergonomics is the use of scientific principles to utilise human data in order to build a workstation, work centre, or working environment that promotes a conducive and comfortable work environment for individual employees. The purpose of this is to enhance the welfare,

security, and productivity of employees by adapting the surroundings to their needs, rather than expecting them to adapt to the environment (Ergo Squad, 2012). Additionally, it enhances the efficiency of workflow inside an organisation. For instance, many companies such as Lagos State University (LASU) often purchase furniture fittings of a standardised size, without taking into consideration the particular anthropometric data of each person in the business. This may have detrimental consequences on some workers who occasionally need to modify their seating posture in order to alleviate tension.

Exemplis Corp (2014) states that an employee's productivity is hindered by physical discomfort. Any discomfort caused by workplace amenities, such as furniture fittings, noise levels, workstations, lighting, and temperature, may have a negative impact on employee productivity, both in the short and long term. Exemplis Corp. (2014) discovered a research from 2009 which demonstrates that an ergonomic workplace layout enhances employee motivation and improves performance. Exemplis Corp. (2014) also promotes the involvement of employees in the decision-making process when it comes to replacing workplace furniture or making any necessary physical ambient adjustments. The absence of ergonomic inputs in a working environment might result in the occurrence of musculoskeletal diseases (MSDs) among employees in a business. According to Obi (2015:53), this condition has been identified as the most widespread safety concern in the Indian agricultural industry. This has the potential to significantly decrease the effectiveness and productivity of personnel. According to Asante (2012), corporate organisations and enterprises, such as those in the construction and oil and gas industries, have recently redesigned their offices and fields to accommodate new models that promote a more dynamic and adaptable work environment. Asante (2012:12) emphasised that prominent scholars have advocated for office ergonomics as a crucial factor in enabling people to achieve optimal performance in the workplace. The quality of the office environment significantly affects employee motivation and subsequent performance (Ergo Squad, 2012).

Ergonomics, also known as Human Factor architecture, extends outside the office setting, as recognised by the Chartered Institute of Ergonomics and Human Factors (2017). Additionally, it facilitates the development of technology that improves the management of highly congested airspace regions worldwide, all while preserving an outstanding safety track record. Ergonomics, also known as human factors, ensures that technological advancements can be effectively utilised by human pilots. This involves utilising accurate sensing and visualisation tools provided by engineering innovations, as well as designing interior lights and safety information to facilitate safe passenger evacuation from aircraft. These designs are informed by research conducted in the field of ergonomics (Chartered Institute of Ergonomics and Human Factors, 2017).

This study conducted a review of research publications to discover the practices and methodologies that construction and oil and gas companies have used with Employee Ergonomics.

3. The Issue Explanation

Renowned scholars such as Obi (2015:59) have observed a significant degree of vulnerability to health risks among workers in India, indicating the lack of popularity in implementing ergonomic design and inputs in the country's working environment. Therefore, it is imperative to prioritise the development of ergonomics in all areas of the Indian economy, as emphasised by Adaramola (2013:1103). Although ergonomics awareness is seen as important by an increasing number of researchers in India, the overall level of awareness remains low (Ismaila, 2010:733; Oladeinde, Ekejindu, Omoregie, & Aguh, 2015:6). As a result, decision makers and workers in

Indian businesses are now unable to access the advantages of ergonomic designs and their execution. This phenomenon is seen in the limited extent to which it has been embraced in academic and research settings, such as Lagos State University, which is intended to educate the community about its design, execution, and benefits. This study critically examines previous research to evaluate the effectiveness of ergonomic design and inputs in enhancing employee performance, particularly in India. The research approach used is exploratory.

2.1. The Research's Goals

- To determine the extent to which knowledge of ergonomics design and inputs might enhance staff efficiency for development companies.
- To determine the obstacles that impedes the use of ergonomics as a planning tool for enhancing worker productivity throughout project companies.
- In order to discern the many techniques and approaches used by various businesses, such as those in the construction and oil and gas sectors, in the development of technology and design for the workplace.

3. Literature Review

This research conducted a comprehensive evaluation of pertinent research, focusing on the notion of ergonomics awareness, worker productivity, and the significant results related to these two factors in India.

3.1 Theoretically grounded framework

Ergonomics, as defined by the Occupational Safety and Health Academy (OSHA) in 2017, refers to the process of designing workplaces, work procedures, and job flow in a way that aligns with the talents and capacities of people. It also entails a design that minimises risk factors that might lead to typical work-related injuries and illnesses, such as sprains, strains, and cumulative trauma disorders (CTDs). These are typical occupational safety concerns that arise due to prolonged physical and mental stress experienced by workers over a period of time (Grainger, Forest, & Hamilton, 2013). For instance, when work environments are designed in a way that forces workers to maintain uncomfortable postures for a significant amount of time, it may lead to increased exertion, weariness, and pain for the employee. These disorders have the potential to harm several components of the body, including muscles, tendons, ligaments, nerves, and blood vessels. Musculoskeletal disorders (MSDs) are the term used to describe such injuries (Occupational Safety and Health Academy, 2017).

Ismaila (2010:731) embraced the notion of ergonomics as defined by the International Ergonomics Association (IEA) (2000). Ergonomics is a scientific discipline that focuses on the interaction between humans and other elements of a system. It is also a profession that uses theory, principles, data, and methods to design in order to improve human well-being and overall system performance. An analysis of this notion reveals that one of the primary goals of ergonomics is to enhance employee productivity in the workplace.

Ergonomics is a comprehensive approach that considers various factors such as physical, cognitive, social, organisational, environmental, and other relevant aspects. These factors are taken into account to improve the design and evaluation of tasks, jobs, products, environments, and systems. The goal is to ensure that they are compatible with the needs, abilities, and limitations of employees (International Ergonomics Association, 2017). This novel notion also demonstrates that ergonomics extends beyond enhancing the well-being of individual employees and encompasses enhancing the overall performance of the organisation. This idea also included a more comprehensive and inclusive use of

constructs that delineate the potential areas of expertise within the field of ergonomics. The areas of expertise include Physical Ergonomics, Employee/Cognitive Ergonomics, and Organisational Ergonomics. The information is shown in tables 1 and 2. Table 1 displays the specific field of expertise in ergonomics as determined by IEA (2017), while table 2 presents other areas of specialisation recognised by Asante (2012:8). The research asserts that the domains listed in table 2 are included within the domains listed in table 1. The purpose of the two tables is to provide the perspectives of various schools of thinking on the topic. The field of physical ergonomics specifically deals with office ergonomics and engineering mental health, whereas macro ergonomics is included under Organisation ergonomics.

According to Mathis and Jackson's (2009:25), productivity is linked to the amount and quality of output, the promptness of production, being present at work, and the effectiveness and productivity of accomplished tasks.

Aguinis (2009:42) defines performance as just including the actions shown by workers, without any consideration of the outcomes resulting from these activities. According to Thao and Hwang (2011:14), performance is defined as the actions and behaviours of workers, rather than the actual results or consequences of their job. According to Thao and Hwang (2011:16), perceived employee performance refers to an employee's overall perception about their conduct and contributions to the success of the business. Employee performance may be assessed based on three elements that contribute to one person or team doing better than others: declarative knowledge, procedural knowledge, and motivation (Thao & Hwang, 2011:17).

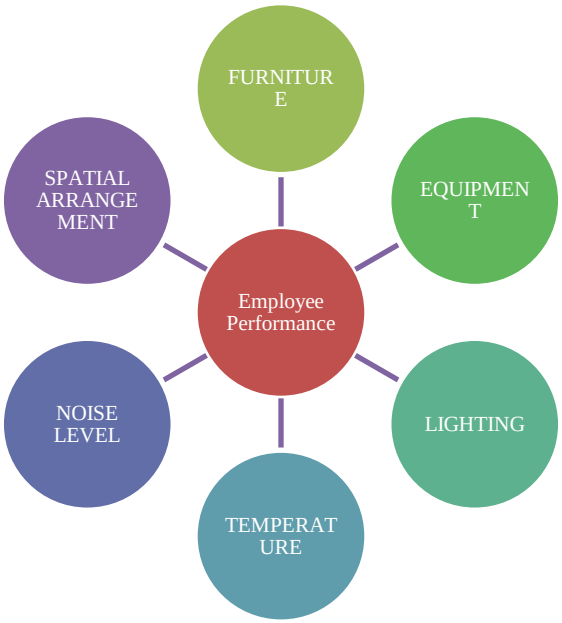
Thao and Hwang (2011:21) described employee performance as the proficient and efficient accomplishment of assigned tasks, according to predetermined criteria, while making optimal use of available resources in a dynamic context. Therefore, this research asserts that employee performance is a subjective concept that need a benchmark for evaluating employee productivity.

O'Neil (2011:22) states in his essay "Office Ergonomic Standards; Layperson's Guide" that furniture created using ergonomic principles may enhance performance and decrease workplace injuries (Asante, 2012:60). Gutnick (2007) said that a survey conducted by The National Safety Council in the USA found that, on an average weekday, one million workers would be absent from work as a result of job-related stress. Taiwo (2009:305) asserts that around 86% of productivity issues are attributed to work settings. The work environment significantly impacts employee performance. The work environment in which people function has a significant impact on the success of organizations.

While factors like praise, recognition, remuneration, and financial rewards do influence employee performance, research has shown that the working environment is also a crucial factor in determining an individual's level of performance. The amount of employee engagement in the workplace directly affects their incentive to perform. The office environment significantly impacts workers in several ways, including their health and safety, mistake rate, degree of creativity, cooperation with colleagues, absenteeism, and job tenure (Asante, 2012:42).

Asante (2012:25) illustrated his own conceptual perspective on the correlation between ergonomics design and employee performance, as seen in Figure 1. His conceptual framework delineates the workplace characteristics that are thought to have an influence on employee performance. The variables, such as noise level and temperature, are independent factors that have a direct influence on employee performance, which is the dependent variable. Asante's (2012) study, similar to previous studies in the area of ergonomics, validated that inadequacies in ergonomics design and input factors had diverse negative impacts on employee performance.

Figure 1: Philosophical Framework.



According to the little literature evaluated, this research posits that there is a notable and favourable correlation between ergonomics and employee performance. However, considering the correlation between these two factors, the main enquiry is: to what extent has the implementation of ergonomic design and understanding of input methods contributed to enhancing worker efficiency in India?

4. India's Appreciation of Ergonomics

In a research performed by Ismaila (2010:731), the focus was on Ergonomics Awareness in India, a developing nation that has just established an ergonomics society. Ismaila (2010:732) argues that it is crucial to determine the extent of knowledge of ergonomics in the nation, considering the advantages associated with the topic and the Ergonomics Society of India. His research findings indicated a significant lack of knowledge about ergonomics. This may be attributed to the fact that the majority of Indians, regardless of their background or educational qualifications, were not familiar with the advantages that may be obtained from ergonomics. These benefits extend not only to the job but also to the everyday activities of individuals.

Ismaila's (2010:734) findings align with the results of the majority of scholars in India who have studied the same subject. In their research titled "Awareness and Knowledge of Ergonomics among Medical Laboratory Scientists in India," Oladeinde, Ekejindu, Omoregie, and Aguh (2015:16) found that the study participants had a low level of awareness and knowledge of ergonomics and the benefits of its proper implementation. Their research also found that affiliation, area of specialisation, post qualification experience, and educational qualification of the study participants did not have a significant impact on the degree of awareness. Therefore, Oladeinde et. al. (2015:17) and Momodu, Edosomwan and Edosomwan (2014:10) have recommended that the Ergonomics Society of India should actively promote regular ergonomic education and raise knowledge about the practice of ergonomics among employers and workers. Additionally, an examination of many research papers (e.g. Adeyemi, 2009:251; Adeyemi, 2010:4; Asaolu & Itsekor, 2014:24; Dunmade, Adegoke, & Agboola, 2014:32; Ikonne, 2014:82) on the knowledge of ergonomics in prominent academic settings reveals a consistent pattern.

However, it is expected that an academic setting would be sufficiently enlightened to strongly support research results that enhance the alignment of occupations with the skills and abilities of its workers, rather than fitting staff to the job. The research conducted by various scholars such as Adeyemi (2009:251), Adeyemi (2010:4), Asaolu and Itsekor (2014:24), Dunmade, Adegoke and Agboola (2014:32), and Ikonne (2014:82) on the application of ergonomics in academic environments revealed that the participants from the chosen institutions experience a range of ergonomic issues. These problems have resulted in tension, stress, headaches, and other forms of pain due to the lack of awareness about ergonomics in the institutions surveyed by the researchers. An analysis of the results from Adeyemi's studies conducted in 2009 (page 250), 2010 (page 3), and Asaolu and Itsekor's study in 2014 (page 22) reveals that the researcher used the same setting for a duration of five years and obtained almost identical results, indicating little progress over the study time. This indicates that, despite publishing her results three times, the degree of knowledge among the management decision makers at the sampled institution (Covenant University Library, Sango Otta, Ogun State, India) was low. Therefore, according to Adeyemi (2010:4), it is recommended that Indian library institutions include ergonomic considerations into their curriculum. This would involve formally teaching the notion to library practitioners in order to raise awareness of developing worldwide norms.

According to Omoneye's (2016:42) research, there is a lack of substantial correlation between ergonomic risks and performance. However, the study did discover that when the amount of stress decreases via the use of ergonomics inputs and design, employee performance increases. The latter aligns with the findings of previous studies about the correlation between the two factors.

After examining the literature mentioned above, it is evident that there is a lack of emphasis on ergonomic development and comprehension in India. Therefore, many workers in India exert additional effort to make up for the badly designed workstations at their job, which leads to an unknown level of stress. This occurs in order to achieve the performance expectations set by their employers.

5. Human factors as well as factors that prevent the implementation of ergonomics

Several obstacles hinder the use of ergonomics as a strategic instrument for enhancing employee performance in businesses. According to Pinder (2015), they may be categorized as financial, organizational, personal, and knowledge-based. Financial constraints and demands within a company, particularly its commercial plan, might result in a reluctance to allocate funds towards implementing ergonomic practices, especially if the apparent financial gain is little or insignificant. Organizational constraints, such as the need to meet deadlines and financial limitations, might hinder the use of ergonomics in work design. Nevertheless, in the majority of projects, several experts and organizational units are responsible for executing tasks.

This dynamic necessitates the negotiation of compromises between people and teams with divergent objectives. Consequently, ergonomics concerns may be seen as less significant compared to other factors. Individual top managers' dedication to seeing the benefit of ergonomic practices is crucial in their effective implementation. Many organizational leaders and senior managers lack particular understanding of ergonomics, which hinders their ability to recognise situations when implementing ergonomic practices might enhance organizational efficiency. They may also lack knowledge on how to get specialized guidance if it is not readily accessible to them.

Research has shown that awareness is crucial in creating the most secure and healthiest work environment feasible for workers. However, many construction businesses still do not prioritise

the topic of ergonomics (Ahankoob & Charehzehi, 2013:39). Chung and Shorrock (2011) investigated the deficiency in research on ergonomics and the implementation of its discoveries.
It has been determined that numerous study publications are not relevant to the concerns of ergonomic practitioners. Additionally, several studies that are considered relevant are lacking in scientific value. The abundance of irrelevant studies has obscured the relevant ones, making it challenging to access pertinent journal articles. This, in turn, has resulted in limited applicability of findings and hindered the utilisation of ergonomics. The lack of awareness regarding the benefits of ergonomics to organisations and individual productivity has further contributed to this issue. This study aligns with previous research conducted by Adeyemi (2009:251), Adeyemi (2010:4), Asaolu and Itsekor (2014:24), Dunmade, Adegoke and Agboola (2014:32), Ikonne (2014:83), and Ismaila (2010:733). These studies have all identified a lack of awareness of ergonomics and a lack of familiarity with the benefits that ergonomics can provide. This lack of awareness and familiarity is not only detrimental to organisations, but also to the daily activities of employees.
According to Neumann, Ekman, and Winkel (2009:535), implementing ergonomics in small and medium scale enterprises in Nigeria may be challenging due to the significant investment of resources required. These companies may not have the necessary means to adapt or create their own ergonomic designs that align with their daily operations. This aligns with the findings of Tasiu's research (2016:52), which noted limitations in resources, technological advancements, and the absence of practical recommendations in ergonomics assessment reports. Neumann, et al. (2009) also found that personnel considerations are significant, as employees may be resistant to changing roles or making lifestyle adjustments to accommodate ergonomic designs. Additionally, organisations may be unwilling to establish an ergonomics structure or design, which could result in the loss of key staff members.
Dubblestyne (as cited in Tasiu, 2016) identified multiple obstacles to the implementation of ergonomics. These include employees not being involved in the design process, communication gaps, employers lacking understanding of the term "ergonomics" and considering it as pseudo-science or time study, and the failure to consider ergonomics during the work design phase. Additional obstacles, as identified by Tasiu (2016:55), include economic limitations, technological advancements that may lead to work displacement, absence of practical suggestions in ergonomic assessment studies, inadequate resources, financing, and training, maintenance issues, and unaddressed psychological factors.

6. Human Ergonomics Strategies and Techniques in Organizations

Corporate ergonomics is a branch of ergonomics that focuses on adjusting the workplace to suit the worker (Khedkar & Pawar, 2015:456). Multiple organizations in different sectors have created various techniques and approaches to integrate cognitive ergonomics throughout time. The goal is to enhance productivity by enhancing the welfare of employees. Incorporating the human aspect into work design has been a well-established method of integrating ergonomics in car businesses. According to Bradley's research (as reported in Khedkar & Pawar, 2015:456), the ergonomic process used at Ford has effectively modified the engineering process to include human components into work design. This has resulted in a reduction of ergonomic risks associated with the employment. There is a direct relationship between reducing ergonomic risk and improving the quality of goods. The research also found that the implementation of a new car assembly line resulted in less re-work of the workstations and a general decrease in worker absence and injury.

Oil rig employees have described their job in such atmosphere as "working in extreme environmental conditions" and "having a varied schedule." The primary ergonomic factors contributing to these disorders were found as unfavourable working conditions, extended work hours, irregular schedules, and physically demanding tasks, resulting in work-related musculoskeletal problems (Khedkar & Pawar, 2015:456). According to their account, the workers experienced profound fatigue at the end of the workday and believed that the workload exceeded their capabilities. According to Mallon's (2010) research, firms experience several stages of development in order to address work-related musculoskeletal problems. The maturity stages are categorised as reactive, preventative, proactive, and advanced. Reactive ergonomics is used in response to an issue that has already happened, such as using a risk assessment report to propose strategies for reducing the likelihood of similar mistakes recurring. Preventive ergonomics is used when an individual is first placed in a position. A Physical Demand Analysis of the job is conducted to ensure that only persons who meet the necessary requirements are employed. Additionally, training is provided to promote healthy work behaviour, safe work habits, and skills. Proactive ergonomics refers to the technique of strategically incorporating ergonomic considerations into the early stages of work design. Advanced ergonomics utilises the knowledge gained from risk assessments, root cause analyses, and identification of difficulties and concerns to enhance future designs using advanced engineering and job design techniques (Humantech Inc., 2012; Medical Device Usability, 2016).

According to Shruti's study (2012:1994), improving employee attitude and productivity can be achieved by focusing on workspace quality, which includes factors such as office design, furniture and spatial arrangements, lighting and heating arrangements, and noise level. The study findings indicated that 90% of workers recognised a correlation between workplace quality and employees' attitude and productivity. The research also found that factors such as workplace design, furniture and spatial arrangements, lighting and heating arrangements, and noise level had a beneficial impact on productivity. In addition, Asante's research (2012:72) also found that deficiencies in ergonomics at Petroleum House, such as insufficient office lighting, the usage of non-ergonomic furniture, excessive noise levels, and a dangerous work environment, negatively affect workers' performance.

7. Conclusions and summary

The assessments of research mentioned above clearly indicate that there is a poor level of knowledge about ergonomics in the nation. This might be attributed to the lack of familiarity among employers in India regarding the advantages that can be gained by using ergonomics in their workers' everyday activities. The reviews indicated that the effective implementation of ergonomics in India has been impeded by various factors, including lack of awareness, inadequate relevant research, organizational practices, resource limitations, advances in technology, communication and integration gaps between employees and ergonomics designers, personnel considerations, and insufficient designed understanding and instruction. Finally, the review identified several best practices and methods used by different organizations in various industries to address employee ergonomics. These include integrating the human element into work design, considering different levels of ergonomics maturity (reactive, preventive, proactive, and advanced), and ensuring a high-quality workspace through factors such as office design, furniture and spatial arrangements, lighting and heating arrangements, and noise level.

Ergonomics researchers and practitioners in the country should increase their efforts in conducting studies on the correlation between ergonomic awareness and employee performance. They should also organize conferences and seminars, as well as promote media coverage, to

emphasize the importance of incorporating ergonomics into our daily activities. Organizations' should educate and train personnel on ergonomics to ensure they understand the advantages of ergonomics and can adapt to the organization's ergonomic designs. Finally, it is essential to include the employee/human factor into the process of ergonomics design. This will effectively address the communication gap between workers and ergonomics architects.

References

[1]. Adaramola, A. A. (2013). Ergonomics practice in Nigeria today. SAGE Journal 57(1): 1103-1103.

[2]. Adeyemi, A. O. (2009). Case study of ergonomics awareness among library staff of two universities in South-Western Nigeria. Ife Psychologia 17(1): 243-253.

[3]. Adeyemi, A. O. (2010). ICT facilities: Ergonomic effects on academic library staff. Library Philosophy and Practice E-journal 12(3): 1-5

[4]. Aguinis, H. (2009). Performance management. 2nd ed. Upper Saddle River, New Jersey: Pearson Education Inc..

[5]. Ahankoob, A.; Charehzehi, A. (2013). Mitigating ergonomic injuries in construction industry. IOSR Journal of Mechanical and Civil Engineering 6(2): 36-42

[6]. Asante, K. (2012). The impact of office ergonomics on employee performance: A case study of the Ghana National Petroleum Corporation (GNPC). Kumasi: Kwame Nkrumah University of Science and Technology Repository.

[7]. Asaolu, A. O.; Itsekor, V. (2014). Ergonomic computer workstation considerations for library staff. International Journal of Academic Library and Information Science 3(2): 22-26.

[8]. Computer/Electronic Accommodations Program (2012). Workplace ergonomics reference guide. Available at: http://cap.mil/Documents/CAP_Ergo_Guide.pdf. Accessed 15 December 2017.

[9]. Dunmade, E. O.; Adegoke, J. F.; Agboola, A. A. (2014). Assessment of regonomics hazards and techno-stress among workers of Obafemi Awolowo University (OAU). Australian Journal of Business and Management Research 4(1): 27-34.

[10]. Ergo Squad (2012). Importance of ergonomics. Available at: http://adapt-uk.com/importance-of-ergonomics.html. Accessed 2 July 2017.

[11]. Exemplis Corp. (2014). Ergonomics and employee productivity. Available at: http://www.sitonit.net/content/dam/ exemplis/downloadslisting/white_papers/straight_talk_ergonomics_140123.pdf. Accessed 12 july 2017.

[12]. Gabčanová, I. (2011). The employees: The most important asset in an organisation. Human Resources Management & Ergonomics V(1): 1-12.

[13]. Golden, L. (2011). The effects of working and firm performance: A research synthesis paper. Geneva: International Labour Office

[14]. Grainger, L.; Forest, I. L.; Hamilton, A. (2013). Cumulative trauma disorder. Available at: http://www.safetyandhealthmagazine.com/articles/cumulative-trauma-disorder. Accessed 14 June 2017.

[15]. Gutnick, L. (2007). A workplace design that reduces employee stress and increases employee productivity using environmentally responsible materials. Available at: http://commons.emich.edu/cgi/viewcontent.cgi?article =1150&context=theses. Accessed 31 May 2017.

[16]. Heskett, J. (2006). How important Is quality of labor? And how is it achieved? Available at: http://hbswk.hbs.edu/item/how-important-is-quality-of-labor-and-how-is-it-achieved. Accessed 25 May 2017.

[17]. Humantech Inc. (2012). Ergonomics maturity curve self-assessment. Available at: http://www.humantech.com/special/ Program%20Self%20Assessment%204%20quads.pdf. Accessed 8 August 2017.

[18]. Ikonne, C. N. (2014). Influence of workstation and work posture ergonomics on job satisfaction of librarians in the federal and state university libraries in Southern Nigeria. IOSR Journal Of Humanities And Social Science 19(9): 78-84.

[19]. International Ergonomics Association (2017). Definition and domains of ergonomics. Available at: http://www.iea.cc/whats/. Accessed 29 May 2017.

[20]. International Labour Organization (2011). A skilled workforce for strong, sustainable and balanced growth: A G20 training strategy. Available at: https://www.oecd.org/g20/summits/toronto/G20-Skills-Strategy.pdf. Accessed 29 May 2017.

[21]. Ismaila, S. O. (2010). A study on ergonomics awareness in Nigeria. Australian Journal of Basic and Applied Sciences 4(5): 731-734.

[22]. Khedkar, E. B.; Pawar, P. Y. (2015). Review of literature on organizational ergonomics. International Journal of Advanced Research in Computer Science and Management Studies 5(4): 454-458.
[23]. Mallon, J. (2010). Ergonomiics: What's real and what's not. Ohio: Penton Business Media Inc. Mathis, R. L.; Jackson, J. H. (2009). Human resource management. Mason, OH, USA: South-Western Cengage Learning..
[24]. Medical Device Usability (2016). Proactive ergonomics, reactive ergonomics and medical device manufacture. Available at: http://medical-device-usability.com/blog/proactive-ergonomics-reactive-ergonomics-andmedical-device-manufacture/. Accessed 8 August 2017.
[25]. Momodu, B., Edosomwan, J.; Edosomwan, T. O. (2014). Evaluation of ergonomics deficiencies in Nigerian computer workstations. Journal of Ergonomics, S(4): 8-10.
[26]. Neumann, W. P., Ekman, M.; Winkel, J. (2009). Integrating ergonomics into production system development: The Volvo powertrain case. Applied Ergonomics 40(3): 527-537.
[27]. O'Neil, M. (2011). Office ergonomic standards: A layperson's guide. Available at: http://www.knoll.com/research/ downloads/WP_ErgoStandards.pdf. Accessed 29 May 2017.
[28]. Obi, O. F. (2015). The role of ergonomics in sustainable agricultural development in Nigeria. African Journal Online 27(1): 50-62.
[29]. Occupational Safety and Health Academy (2017). Introduction to ergonomics: OSHA study guide. Available at: https://www.oshatrain.org/courses/studyguides/711studyguide.pdf. Accessed 15 May 2017
[30]. Oladeinde, B. H.; Ekejindu, I. M.
[31]. Available at: https://www.researchgate.net/ publication/297590003_Awareness_and_Knowledge_of_Ergon. Accessed 31 May 2017.
[32]. Omoneye, O. (2016). Effect of ergonomic hazards on job performance of auditors in Nigeria. American Journal of Industrial and Business Management 6(2): 33-44.
[33]. Pinder, A. D. J. (2015). Literature review: Barriers to the application of ergonomics/human factors in engineering design. London, Health and Safety Laboratory: 1-33.
[34]. Taiwo, A. S. (2010). The influence of work environment on employee performance: A case of selected oil and gas industry in Lagos, Nigeria. African Journal of Business Management 4(3): 299-307.
[35]. Tasiu, M., 2016. Assessment of ergonomic adaptability practices among selected construction craftsmen in Abuja. [Online].
[36]. Thao, L. T. T.; Hwang, C. J. (2011). Factors affecting employee performance: Evidence from Petrovietnam Engineering Consultancy. Available at: http://ir.meiho.edu.tw/ir/bitstream /2/FACTORS+AFFECTING+EMPLOYEE+PERFORMANCE.pdf. Accessed 22 May 2023.