

Organizational Ergonomics Framework and Business Educators' Job Commitment in Universities in Rivers State

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Abstract

The study investigated the organisational ergonomics framework and Business Educators' job commitment in universities in Rivers State. Two research questions were answered, while two hypotheses were tested. A correlational research design was adopted for the study. The population of the study comprised 47 business educators from three universities in Rivers State. The census sampling technique was adopted due to its manageable size. Two structured instruments (OEFQ and BEJCQ) validated by experts in business education and measurement and evaluation were used for data collection. The reliability index of 0.93 and 0.76 was obtained, respectively, using Cronbach's alpha. Data were analysed using mean, standard deviation, and Pearson Product Moment Correlation (r). A post-hoc t -transformation test was also carried out to test the significance of the correlation coefficient. Findings from the study revealed a positive and significant relationship between production ergonomics, proactive ergonomics, and Business Educators job commitment in universities in Rivers State. Based on the findings, the researchers concluded that the organisational ergonomics framework is a comprehensive approach that improves workplace ergonomics and further recommended that university management should provide ergonomic tools and equipment that are adjustable and suitable to individual body sizes and capabilities that can help to prevent musculoskeletal disorders and improve overall comfort. Institutions should also establish an ergonomic committee with the responsibility of training faculty members about proper ergonomics as well as conducting regular evaluations of equipment and tools.

Keywords: *Organizational Ergonomics Framework, Business Educators, Job Commitment.*

Introduction

In the last decade, the change in organisational work patterns and expectations of employees has given rise to the development of new working practices. The changing nature of work resulted in an increasing demand for a better workplace as an attractive physical asset that responded to the requirement for creative knowledge workers (Punadi, 2015; Sabir, Maqsood, Tariq, & Devkota, 2019). In order to achieve this competitive environment, some strategic decisions are required by management to improve job commitment and performance. Developing a working system that will fit the job of the employee is an example of these decisions. This innovative management strategic decision is known as ergonomics. Ergonomics is the design of the workplace, equipment, machine, tool, product, environment, and system, taking into consideration the human's physical and physiological capabilities and optimising the effectiveness and productivity of the work system while ensuring the safety, health, and wellbeing of the workers (Kiptum & Murira, 2016).

Vinalanathan and Babu (2017) see ergonomics as a means of equipping employees to improve their performance and also to ensure their safety within the work environment. Ergonomics is an applied science concerned with designing and arranging things employees use so that the employee and things interact most efficiently and safely to produce enhanced performance (Pawar & Khedkar, 2016). Ergonomics is also expressed as a holistic approach in which considerations of physical, cognitive, social, organisational, environmental, and other relevant factors are considered to enhance the design and evaluation of tasks, jobs, products, environments, and systems in order to make them compatible with the needs, abilities, and limitations of employees (International Ergonomics Association, 2017; Akinbola & Popoola, 2019).

Ergonomics is not limited to the improvement of individual employees alone but to an improvement in organisational performance as a whole. Ergonomics aims at making sure that tasks, equipment, information, and the environment fit each worker. The level of motivation of an employee is correlated with his working environment and commitment to his job (Punadi, 2015). Ergonomics is a multidisciplinary science that concerns fitting the job to the operators and fitting products to users' demands to make them more efficient, productive, satisfied, and safer. Ergonomics ensures that workers are comfortable and can work at optimal levels, considering work environment and conditions as well as time spent on the job, thereby enhancing job commitment.

Job commitment of an employee is determined by a lot of factors, ranging from a good work environment, adequate provision of incentives, organisational employee compensation, employee and employee healthy work relationships, and employee training and retraining (Ikpesu & Ornu, 2021). Job commitment in the workplace means employees become attached to the goals of the organisation by following schedules, making communications, and collaborating with colleagues and management. Employee commitment is defined as the psychological attachment that employees have to their jobs. This commitment could be affective due to the emotional attachment of employees to their jobs.

When employees are committed, there is every tendency that they will be affective and normatively attached to the day-to-day accomplishment of their tasks, which in turn leads to productivity and growth. Employee commitment in the workplace means employees will become attached to the goals of the organisation by following schedules, making communications, and collaborating with colleagues and management. Employee commitment is defined as the psychological attachment that employees have to their jobs. This commitment could be affective, due to the emotional attachment of the employee to their job, or it could be continuance, due to the fear of job loss. It deals with the fear of an employee losing their job, considering the pros and cons. It could also be normative, due to the obligation an employee has to achieve organisational goals and objectives. It should be noted that employees are a critical part of every organisation, and employees who report discomfort and stress at work will have their commitment affected because being too hot, too cold, too draughty, harassed through a lack of privacy, or distracted will affect their ability to perform their work properly and optimally (McSmith, 2014).

Job commitment is the extent to which an employee or individual is willing and able to put his or her best effort into ensuring that organisational goals, missions, and visions are achieved. It is the extent to which an employee works very hard to ensure that there are no lapses in his or her unit or department by ensuring that his or her work or job description is mostly delivered. Job commitment is a major requirement for any employee in an organization. Job commitment is triggered in an employee through a number of factors, such as the provision of the right incentive that is needed. These incentives include proper remunerations, a conducive work environment, prompt payment of any form of benefit, promotion as and when due, provision of the right work tools that are needed to make the work easier, effective and efficient promotion, remittance of benefits, on-the-job training, and job satisfaction (Ikpesu & Ornu, 2021). These will prompt employees or business educators to be committed to their jobs.

The teaching staff (business educators) plays one of the most imperative roles in the actualization of business education aims and objectives (Atah, 2019). The extent to which business educators achieve this important role depends on the effectiveness of job performance and commitment.

The production ergonomics system itself is the product of a design process. The design process will shape the eventual production system, which in turn will determine risk factor levels for system operators. The design of the production system is divided into two main areas of concern: the setting of production strategy, primarily the responsibility of corporate management, and the system design process itself. Understanding the design process provides a first step to understanding how designers deal with ergonomic factors in their work. Production ergonomics system design decisions are made within the context of the direction established by the corporation's production strategy. Production ergonomics systems are designed to maximise profits through productivity or quality outputs. This focus often excludes human factors, thus increasing awareness of the strategic value of ergonomics for companies (Dul, 2013). Ergonomics and productivity go hand in hand, which makes sense when you think about it: comfortable workers are better able to perform their tasks, and many of the ergonomic interventions that protect workers also improve productivity. Poor ergonomics in production systems can compromise performance and cause musculoskeletal disorders (MSDs) (Svendsen, Schmidt, Holtermann, &

Rasmussen, 2020; Al Horr, Arif, Kaushik, Mazroei, Katafygiotou, & Elsarrag, 2016), which pose a huge cost to society, companies, and afflicted individuals (Koirala & Nepal, 2022).

A proactive ergonomics process identifies and reduces ergonomic risk factors before injuries occur. It is well established that ergonomics can benefit your organisation in a number of ways. If it is done well, ergonomics can lower costs, boost productivity, increase employee morale, and even improve product quality, to name a few benefits. A proactive ergonomics process doesn't wait for an injury to occur before being implemented. This type of process is embedded deeply into your existing operations to reduce risk and improve performance. Only when you get to this level will ergonomics have a strong impact on your organisation.

Statement of the Problem

Employees are one of the most critical assets of any organization. With positive and creative contributions from employees, the quality of the output of an organisation can give it an immense competitive advantage over its competitors. Therefore, organisations are required to effectively utilise their personnel, especially professionals. But the absence of a flexible work system, a poor workplace environment, and poor social support without necessary motivation in the workplace environment can cause overextension injuries to employees, which can negatively affect them and how they would attach themselves to achieving the organisational goals.

Universities as citadels of learning and research engaged various categories of employees with different tasks to achieve their mission. The importance of faculty members' commitment to their jobs is a panacea in determining whether the university is set to achieve its mission or not. However, it is difficult for an employee to be committed when he or she is physically uncomfortable, particularly in Nigeria, where the workplace environment seems hazardous. Hence, Adaramola (2013) opined that there is a need to develop ergonomics in all sectors of the economy.

Ergonomics is not limited to the improvement of individual employees alone but also to an improvement in organisational performance. Therefore, the adoption of ergonomic design, such as production ergonomics and proactive ergonomics, and its implementation in academic and research environments boost faculty members' commitment to their task, but if not well harnessed, can hinder faculty members' commitment. Hence, this study seeks to investigate the organisational ergonomics framework and Business Educators job commitment at Rivers State Universities.

Research Questions

1. What is the relationship between production ergonomics and business educators' job commitment in universities in Rivers State?
2. What is the relationship between proactive ergonomics and business educators' job commitment in universities in Rivers State?

Hypotheses

1. There is no significant relationship between production ergonomics and business educators' job commitment in universities in Rivers State.
2. There is no significant relationship between proactive ergonomics and business educators' job commitment in universities in Rivers State.

Method

The study adopted the correlational research design. Population of the study comprised of 47 business educators from the three universities in Rivers State. The census sampling technique was used for the study due to its manageable size. Instruments for data collection were self-structured questions titled "Organisational Ergonomics Framework Questionnaire" (OEFQ) and "Business Educator Job Commitment Questionnaire" (BEJCQ) drafted on a four-point rating scale of very high extent (VHE-4 points), high extent (HE-3 points), moderate extent (ME-2 points), and low extent (LE-1 points). The instruments were validated by two experts from business education and measurement and evaluation. The reliability of the instruments was obtained using Cronbach's alpha, and reliability coefficients of 0.93 and 0.76 were obtained, respectively. The instruments were administered and retrieved by the researchers with the help of trained research assistants. Research questions were answered using mean and standard deviation, while the hypotheses were tested using Pearson Product Moment Correlation (r). However, to establish the significance of the correlation coefficient, a post hoc t-transformation test was carried out, where if the t-cal value is greater than the t-crit value at a given degree of freedom and 0.05 level of significance, the null was rejected and alternatively accepted when the t-cal value is less than the t-crit value.

Results

Research Question 1

What is the relationship between production ergonomics and Business Educators' job commitment in Universities in Rivers State?

Table 1: Relationship between Production Ergonomics and Business Educators' Job Commitment in Universities in Rivers State.

Variable	N	$\sum X$	$\sum X^2$	$\sum X \sum Y$	r_{calc}	RMKS
		$\sum Y$	$\sum Y^2$			
Production Ergonomics (X)	47	757	13501			
				15864	0.87	High Positive
Business Educators (Y)	47	989	23983			

Source: Research Data, 2023

The analysis in the table above displays a high correlation value of 0.87, signifying a strong and positive relationship between production ergonomics and the job commitment of Business Educators in universities within Rivers State.

Research Question 2

What is the relationship between proactive ergonomics and Business Educators' job commitment in Universities in Rivers State?

Table 2: Relationship between Proactive Ergonomics and Business Educators' Job Commitment in Universities in Rivers State.

Variable	N	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum X \sum Y$	r_{calc}	RMKS
Proactive Ergonomics (X)	47	1051	28283			
				20247	0.81	High Positive
Business Educators (Y)	47	989	23963			

Source: Research Data, 2023

The data in Table 2 demonstrates a strong positive relationship between proactive ergonomics and job commitment among business educators in universities in Rivers State. This conclusion is drawn from a correlational analysis of 47 responses, which revealed a high correlation coefficient ($r = 0.81$), indicating a clear positive association between these two factors.

Hypothesis 1

There is no significant relationship between production ergonomics and Business Educators job commitment in Universities in Rivers State.

Table 3: Correlation Analysis of the Relationship between Production Ergonomics and Business Educators Job Commitment in Universities in Rivers State.

Variable	N	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum X \sum Y$ Y	Df	α	r_{calc}	r_{crit}	t_{calc}	t_{crit}	RMKS
Production Ergonomics (X)	47	757	13501								
				15864	45	0.05	0.87	0.09	13.61	1.96	Rejected
Business Educators (Y)	47	989	23983								

Source: Field Survey Data, 2023

The findings in Table 3 reveal a strong and statistically significant relationship between production ergonomics and the job commitment of business educators at Rivers State universities. This conclusion is based on the high computed values of r (0.87) and t (13.61), both of which exceed their critical values, leading to the rejection of the null hypothesis.

Hypothesis 2

There is no significant relationship between proactive ergonomics and Business Educators job commitment in Universities in Rivers State.

Table 4: Correlation Analysis of the Relationship between Proactive Ergonomics and Business Educators Job Commitment in Universities in Rivers State.

Variable	N	$\sum X$ $\sum Y$	$\sum X^2$ $\sum Y^2$	$\sum X \sum Y$	Df	α	r_{calc}	r_{crit}	t_{calc}	t_{crit}	RMKS
Proactive Ergonomics (X)	47	1051	28583	20247	45	0.05	0.81	0.09	11.44	1.96	Rejected
Business Educators (Y)	47	989	23963								

Source: Field survey data 2023

Using correlation coefficients and a t-test of correlation significance, Table 4 examines the relationship between proactive ergonomics and job commitment among business educators in Rivers State universities. The results revealed a strong positive relationship, as the calculated correlation value (r_{cal}) of 0.81 exceeded the critical value (r_{crit}) of 0.09. Consequently, the null hypothesis of no significant relationship was rejected. A transformation test further confirmed its significance, with the calculated t value (t_{calc}) of 11.44 exceeding the critical t value (t_{crit}) of 1.96, indicating that this positive relationship is not due to sampling error.

Discussion of Findings

Production ergonomics and business educators job commitment

The findings of this study in Hypothesis 1 revealed that there is a positive and significant relationship between production ergonomics and business educators job commitment. This finding is in agreement with the finding of Laring (2013), who found that there is a general relationship between production ergonomics and product quality. Ergonomics and productivity go hand in hand, which makes sense when you think about it: comfortable workers are better able to perform their tasks, and many of the ergonomic interventions that protect workers also improve productivity.

This supports the assertion of Falck (2014) that ergonomics development is parallel to other aspects of production planning and can lead to economic gains for companies in terms of more efficient task allocation, reduced costs for staff turnover or sick-leave absenteeism, and prevention of potential reduced-quality production caused by poor workplace ergonomics.

Proactive Ergonomics and Business Educator Job Commitment

The findings of this study, as revealed in Hypothesis 2, showed a positive and significant relationship between proactive ergonomics and business educators job commitment. This aligns with the finding of Medical Device Usability (2016) that proactive ergonomics is the practice of planning an ergonomic process early in the job design. A proactive ergonomics process identifies and reduces ergonomic risk factors before injuries occur. It is well established that ergonomics can benefit your organisation in a number of ways. If well harnessed, ergonomics can lower costs, boost productivity, increase employee morale, and even improve product quality, to name a few benefits.

Conclusion

Based on the findings, it is concluded that the organisational ergonomics framework is a comprehensive approach that improves workplace ergonomics by addressing multiple aspects of the work environment, enhancing safety, productivity, and employee well-being. It depends on dedication from educators, administrators, and industry professionals for training, research, collaboration, and monitoring, resulting in benefits like increased productivity, lower absenteeism, reduced risk factors, and improved employee satisfaction. Using correlation coefficients and a t-test of correlation significance, Table 4 examines the relationship between proactive ergonomics and job commitment among business educators in Rivers State universities. The results revealed a strong positive relationship, as the calculated correlation value (r_{cal}) of 0.81 exceeded the critical value (r_{crit}) of 0.09. Consequently, the null hypothesis of no significant relationship was rejected. A transformation test further confirmed its significance, with the calculated t value (t_{cal}) of 11.44 exceeding the critical t value (t_{crit}) of 1.96, indicating that this positive relationship is not due to sampling error.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. University management should provide ergonomic tools and equipment that are adjustable to the individual's body size and capabilities to help prevent musculoskeletal disorders and improve overall comfort.
2. The university management should establish an ergonomic committee responsible for training faculty members on ergonomics and conducting regular evaluations of equipment and tools to ensure they are comfortable for use by faculty members.

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