



Unlocking Sustainable Productivity: The Work Environment-Employee Productivity Nexus in a Knowledge Based Economy

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Abstract

The study aims at unlocking sustainable productivity: the work environment- employee productivity nexus in a knowledge-based economy. In today's knowledge-based economy, organizations are increasingly recognizing the critical role that the work environment plays in driving employee productivity and sustainability. This study explores the intricate relationship between the work environment and employee productivity, with a specific focus on knowledge-based economy. The work environment plays a critical role in fostering employee productivity, creativity, and innovation. The research reveals that a conducive work environment, characterized by open communication, opportunities for growth, autonomy, collaboration, and learning opportunities, is a significant predictor of employee productivity, innovation, and job satisfaction. Conversely, productivity gains reinforce a positive work environment, fostering a virtuous cycle. The researchers in the course of their findings indicate that this synergy is a critical driver of sustainability, as productive employees in an organization are more likely to adopt eco-friendly practices, contribute to innovation, and promote organizational citizenship. In conclusion, the work environment-employee productivity nexus is a critical one in today's knowledge-based economy. By recognizing the importance of a well-designed work environment and investing in its creation, organizations can unlock sustainable productivity, drive business success, and gain a competitive edge. It was recommended among others that organizations should map out training programme aimed at optimizing work environment and increasing volume of output. Organizations can also unlock employee potentials, drive business excellence, and underpin the transition to a sustainable knowledge-based economy by relating work environment with employee productivity.

Keywords: Productivity, Innovation, Knowledge-based economy, Sustainability

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Background to the Study

The study was aimed at unlocking sustainable productivity: the work environment- employee productivity nexus in a knowledge-based economy. In today's knowledge-based economy, organizations are increasingly recognizing the critical role that the work environment plays in driving employee productivity and sustainability. This study explores the intricate relationship between the work environment and employee productivity, with a specific focus on knowledge-based economy. Productivity has become an important facet of work culture in the organisation. According to Singh and Chaudhary (2022), in general terms, productivity refers to the conversion of inputs such as human resources, money, time into outputs. Understanding the employee's attitude in today's dynamic work environment poses a challenge for organisations. The concept of employee productivity has been defined by various authors according to their studies. Although there were various studies on productivity, only those related have been included which have depicted the association of employee productivity with different variables. In the light of the above, this study measured employee productivity in terms of quality of work, timeliness and volume of output.

Quality of work refers to an employee executing tasks and responsibilities in conformance to expectations within his/her role or position in an organization. Evaluating and maintaining high employee quality of work is crucial for ensuring organizational productivity (Gregory, 2019). Also, timeliness denotes an employees' ability to arrive at work on time, meet deadlines, and complete tasks within the designated time frame. Timeliness is an essential aspect of productivity as it ensures that work processes run smoothly, projects are completed efficiently, and organizational goals are achieved in a timely manner (Singh & Chaudhary, 2022). Volume of output refers to the amount of work or tasks completed by an individual employee within a specific period of time. Organizations need to ensure that their employees maintain high standards, while increasing their output levels (Lodewijk, 2017). However, among other things, employee productivity is dependent on the work environment practices adopted by management (Omoruyi & Amuen, 2022).

Work Environment refers to the setting, social features and physical conditions in which workers perform their jobs. Work includes all the different characteristics of the job like the way job is carried out and completed, involving the tasks like task activities training, control on one's own job-related activities, a sense of achievement from work, variety in tasks and the intrinsic value for a task (Raziqa & Maulabakhsh, 2015). The work environment can be thought of simply as the environment in which people work. As such, it is a very broad category that encompasses the physical setting (e.g. heat, equipment) characteristics of the job itself (e.g. work load, task complexity). However, this study dimensionalized work environment into training, work life balance and open communication.

Training refers to the teaching and learning activities carried on for the primary purpose of helping members of an organization acquire and apply the knowledge, skills, abilities, and attitudes needed by a particular job and organization. In times when change is more rampant than ever before, it is necessary for organizations to keep abreast with the changes and train their employees accordingly. For instance, technology is evolving so rapidly that what

organisations commonly used ten years ago could be made obsolete today (Duru & Shimawua, 2017). Work-life balance refers to an equilibrium state, where one effectively balances work or career demands and those of their personal life. An individual who lacks a work-life balance has more work and home obligations, works longer hours, and lacks personal time (Laurence, 2022). Open communication refers to creating a culture where people can state their opinion without any fear. It is essential therefore, for staff to discuss the organisation's philosophy, mission and values, from time to time during retreats, meetings etc to ensure everyone knows what they are working for other than their paychecks. Significantly, it happens in a team when its members are empowered to share their thoughts without any fear of repercussions. Having considered the above, the researcher was poised to examine the relationship between work environment and employee productivity.

A knowledge-based economy is an economic system that values and relies on the creation, dissemination, and application of knowledge to drive innovation, growth, and prosperity. It is characterized by: knowledge-intensive industries (e.g., tech, biotech, finance); highly skilled and educated workforce; innovation and R&D investments; intellectual property protection; digital technologies and data-driven decision-making; collaborative and networked approaches; lifelong learning and professional development; knowledge sharing and diffusion; adaptability and responsiveness to change and global connectivity and competitiveness. In a knowledge-based economy, knowledge is recognized as a key asset, and investments are made in: education and training; research and development; innovation and entrepreneurship; information and communication technologies; intellectual property protection; knowledge management and sharing; networking and collaboration; continuous learning and skill development. The knowledge-based economy fosters: innovation and entrepreneurship; economic growth and competitiveness; high-value job creation; increased productivity; improved quality of life; sustainable development and global connectivity and collaboration. A knowledge-based economy has transformed the way we work, learn, and innovate, and has created new opportunities for growth and development of any nation.

Statement of Problem

There seems to be sometimes where organisations experience a decline in employee productivity. This decline among others cuts across poor quality of work, untimely delivery of work and low volume of output. Employees who are less productive in the organisation tend to manifest in terms of errors in tasks, missed deadlines, and lack of attention to detail. They consistently fail to meet deadlines or deliver work within the expected timeframe, resulting in delays and disruptions in the workflow of an organization. They do not produce the expected quantity of work within a given timeframe. It is vital to note that poor employee productivity can have significant negative impacts on the overall efficiency and success of a business. Every organization is set up for a purpose and such purpose which is generally referred to as the objective and this cannot be achieved if the environment looks unhealthy. The absence of a conducive work environment permeates low morale and productivity among employees. There are some workplace settings that are characterized with various negative factors affecting employees' well-being, job satisfaction and overall productivity. Among others, this could be the poor training, unbalanced work-life and rigid communication system.

Some organizations fail to adequately prepare their employees for their roles and responsibilities. Some employees seem to struggle to manage their time and energy between their professional responsibilities and personal life as a result of management's negligence to marrying effectively their work life and personal life. This imbalance leads to increased stress, burnout, decreased job satisfaction, strained relationships, and overall reduced well-being. Misunderstandings and unclear conveyance of messages and instructions during work hours makes employees to feel disconnected, undervalued and demotivated. All these permeate poor employee productivity in the workplace. Thus, understanding the relationship between the work environment and employee productivity is essential if organisations are to attain their predetermined goals and objectives effectively and efficiently. In line with the above, this study examined the relationship between work environment and employee productivity.

Aim and Objectives of the Study

The aim of this study was to examine the relationship between work environment and employee productivity. The specific objectives of this study include:

- i. To determine the relationship between training and quality of work.
- ii. To examine the relationship between work-life balance and timeliness.
- iii. To ascertain the relationship between open communication and volume of output.

Conceptual Review

Concept of Work Environment

This section explored at length the meaning of the effect of work environment and some selected theories of work environment. In addition, brief attention was given to the application of the various existing theories in respect of the Nigerian work environment. Over the years, theories have made series of attempts to unravel the mystery surrounding why people tend to display certain behaviour in a given condition, they believe that every behaviour manifested in the work place or otherwise is a goal directed. Work environment entails its buildings, its furniture, and layout as well as the physical condition under which employee operates (Duru & Shimawua, 2017). Thus, work environment as used in this study refers to the setting, social features and physical conditions in which workers perform their jobs. These elements can impact feelings of well-being, workplace relationships, collaboration, efficiency and employee health (Indeed Editorial Team, 2022). It is also anything that exists around the employee and can affect how he/she performs his/her duties (Khaled & Haneen, 2017). Drawing from the above precedence, the concept of work environment consists of two broader dimensions such as work and context. Work includes all the different characteristics of the job like the way job is carried out and completed, involving the tasks like task activities training, control on one's own job-related activities, a sense of achievement from work, variety in tasks and the intrinsic value for a task. Many research papers have focused on the intrinsic aspect of the job satisfaction. Results have shown that there is a positive link between work environment and intrinsic aspect of the job satisfaction (Raziqa & Maulabakhsh, 2015). Furthermore, they described the second dimension of job satisfaction known as context comprising the physical working conditions and the social working conditions (Skalli et al., 2008).

Work environment has both positive and negative impact on the psychological well-being of the workers. The work environment can be thought of simply as the environment in which people work. As such, it is a very broad category that encompasses the physical setting (e.g. heat, equipment) characteristics of the job itself (e.g. work load, task complexity). More so, work environment is a location where a task is completed. When pertaining to a place of employment, the work environment involves the physical geographical location as well as the immediate surroundings of the workplace; such as a construction site or office building. Work environment typically involves other factors relating to the place of employment, such as the quality of the air, noise level, and benefits of employment such as free child care or adequate parking (Assaf & Alswalha, 2013; Baah & Amoako, 2011). However, not all aspects of the environment are equally important or indeed relevant when considering the psychological environment and how this environment affect workers well-being. Aside the job scope itself, one factor that significantly influences how employees feel about work is the environment. By work environment, it means everything that forms part of employee's involvement with the work itself, such as the relationship with co-workers and supervisors, organizational culture, opportunity for personal development etc. Kochan (1980) considers environment in the following context, economic context, and social and technology context. It could be looked at as the surrounding of all situation, people event etc. that influence life. Thus, people who are working in a good environment exert greater effort to perform than those who work in an unhealthy environment. However, this definition above as related to the following theorist tells us more about work environment.

Work environment is grouped into two; the internal environment and the external environment. However, a positive work environment makes employees feel good about coming to work and this provides the motivation to sustain them throughout the day. When looking for a new job, then assessing the work environment is a crucial step one should not skip (Singh & Chaudhary, 2020; Duru & Shimawua, 2017). After all, it is the place you might be working at in future and would not want to be dragging oneself to work every single morning. Due to the job variety available in the marketplace, this research work is probably a little generic and may not apply to all types of jobs. However, as we shall see below, these qualities are much valued by employees and employers in most jobs. They are pretty universal in that sense, except in a few exceptional cases.

More so, work environment is both an external and an internal condition that can influence working spirit and result in instantly finished jobs. According to Sedarmayanti in Khaled and Haneen (2017), a decent working environment is a condition where individuals can do their jobs in an ideal, secure, healthy, and comfort way. Therefore, many studies classify the work environment into toxic and conducive environments (Yusuf & Metiboba, 2012; Assaf & Alswalha, 2013). An organization's physical environment particularly its layout and design can impact employee behaviour in the workplace. Also, some of the factors that influence the workplace include: cleanliness, water, lighting, colouring, security and music. Many work environment studies have shown that workers are satisfied with reference to specific work environment features. These features preferred by users significantly contribute to their workspace satisfaction and performance. Those features include ventilation rates, lighting,

access to natural light and acoustic environment (Khaled & Haneen, 2017). Lighting and other factors like ergonomic furniture have been found to have positive effect on employees' health and on employees' productivity (Dilani, 2004). Hameed and Amjad (2009) in a survey of 31 bank branches confirmed that convenient and ergonomic office design encouraged the employees and increased their performance significantly. Chandrasekar (2011) also asserts that unhealthy and unsafe work environment in terms of poor ventilation, immoderate noise, inadequate lighting, etc. affect employees' productivity and health.

A company is an organization that has goals to achieve. Company activities to attain these goals require good human resource management so that the company can compete well and its human resources can work more effectively and efficiently (Mushtaq, Ahmed, Fahlevi, Aljuaid & Saniuk, 2022). In carrying out activities to achieve its goals, an organization has interrelated factors that influence each other. Human resource is one of the critical factors used to mobilize other factors. Therefore, organizations are required to manage and optimize human resources. Human resource management itself is essential to a company in addition to other factors such as capital (Ekowati, Abbas, Anwar, Suhariadi & Fahlevi, 2023). HR management is to get reliable employees who can carry out their duties correctly and responsibly, which can increase the organization's effectiveness in achieving its goals (Maskuroh et al., 2023). Human resources are one of the factors directly involved in carrying out company activities and play an essential role in improving the company's work environment in achieving predetermined goals. Human resource managers are required to take advantage of opportunities and meet the demands of needs, especially those that exist or come from the work environment (Shah, Fahlevi, Rahman, Akram, Jamshed, Aljuaid & Abbas, 2023).

Furthermore, in the world of work, the work environment is the main point that companies must pay attention to. Because the work environment is everything around workers that can influence them in carrying out the tasks assigned to them. The work environment in a company is a work condition that provides a comfortable atmosphere and working situation for employees to achieve the goals desired by the company. Of the several factors above, to improve employee productivity, one is paying attention to the work environment, which is a significant factor and hugely influences employee productivity (Anggrainia, 2024). If the work environment is clean, healthy, comfortable, and enjoyable, it will make employees feel at home in their workspace and more enthusiastic about completing their work. On the other hand, if the work environment is less supportive, it will make employees less comfortable and less excited about completing their work. In the light of this research, work environment has been dimensionalized into training, work-life balance and open communication.

i. Training: Training refers to the teaching and learning activities carried on for the primary purpose of helping members of an organization acquire and apply the knowledge, skills, abilities, and attitudes needed by a particular job and organization (Assaf & Alswalha, 2013; Singh & Chaudhary, 2022). In times when change is more rampant than ever before, it is necessary for organizations to keep abreast with the changes and train their employees accordingly. For instance, technology is evolving so rapidly that what organisations

commonly used ten years ago could be made obsolete today (Duru & Shimawua, 2017). Here, training and retraining of employees' will help them to be on top of their jobs and constant updating thereby increasing employee productivity. Adapting to change is never more crucial in this era because those who do not get replaced. This has to do with both the individual and the organisation itself. A training and development focused organisation have a clear roadmap for training their employees to sustain and enhance the productivity of the organisation as a whole. Essentially speaking, there are two kinds of skills that can be developed: hard skill and soft skills. Hard skills: impact work productivity directly e.g. knowledge of a new database management system. Soft Skills are interpersonal skills which could affect the morale of the organisation (Duru & Shimawua, 2017; Chandrasekar, 2011). A positive work environment would have routine trainings to improve efficiency and instill positive attitudes among employees.

ii. Work Life Balance: Work-life balance refers to an equilibrium state, where one effectively balances work or career demands and those of their personal life. An individual who lacks a work-life balance has more work and home obligations, works longer hours, and lacks personal time (Laurence, 2022; Duru & Shimawua, 2017). There has to be some sort of balance between work and personal life. In general, having that sense of balance will improve job satisfaction among employee because they will feel that they are not overlooking the other areas of their lives that are, if not more important to them than work. When employee fulfill their various needs and goals in life, such as those of family, friends, spiritual pursuits, self-growth, etc they can then feel more confident about themselves and perform their best at work (Duru & Shimawua, 2017). Apart from that employees that are exposed to more experience in life outside of work can use what they have gained and apply that to their work. In other words, work-life balance can promote creativity and out of the box thinking, thereby increase productivity in employee. Good employees are often defined as those who put in loads of effort and sacrificed their personal time in order to perform well in their work. Managers have a responsibility to show that this is not right, by rewarding employees who maintain good work life balance habit (e.g. leave work on time) and can still perform well. In this case, the organisation may adopt a firm stance on work-life balance by educating employees on the benefits of having such balance in their lives or even include it under their mission statement (Duru & Shimawua, 2017; Baah & Amoako, 2011).

Work-life balance is crucial in a work environment as it refers to the equilibrium between an individual's professional responsibilities and personal life. Achieving a healthy work-life balance is essential for overall well-being, productivity, job satisfaction, and employee retention. When employees are able to effectively manage their work commitments, while also having time for personal activities, they are more likely to be motivated, engaged, and less prone to burnout (Calvin et al., 2020). Employers who prioritize work-life balance create a positive organizational culture that fosters employee happiness and loyalty.

iii. Open Communication: In essence, a transparent and open form of communication addresses the employee's need to feel that what they have to say has value. It is what makes employees feel that they belong in the organization. Work then becomes meaningful because

the employees know that what they contribute affects the organisation that they are affiliated with. It is essential therefore, for staff to discuss the organisation's philosophy, mission and values, from time to time during retreats, meetings etc to ensure everyone knows what they are working for other than their paychecks. Having open discussion gets people involved and allows them to share their views and perspectives on how to achieve company goals (Duru & Shimawua, 2017; Zúñiga, David & Patricio, 2022). Thereafter, which the management side will give their own perspective on how to fulfill the organisations mission through give and take is a two-way open communication that will eventually break down the hurdles present in hierarchical or bureaucratic organisations. At the end of it all, it promotes trust in day-to-day interaction between co-workers, as well as between subordinates and supervisors. Everyone becomes more united with the organisation's mission in their mind; there is mutual respect among all employees, regardless of their official statuses (Bakker & Arnold, 2014). This is when employee will not be afraid to suggest ideas to improve the work processes, thus benefitting everyone in the organization in return. Finally, open communication is indeed essential in a work environment as it fosters transparency, trust, collaboration, and overall productivity among employees. When there is open communication in the workplace, employees feel valued, heard, and respected, leading to higher job satisfaction and morale (Pimpong, 2023). It also allows for better problem-solving, conflict resolution, and innovation within the organization. Open communication helps in creating a positive work culture where feedback is encouraged, ideas are freely shared, and information flows seamlessly across all levels of the company.

Concept of Employee Productivity

Employee productivity (sometimes referred to as workforce productivity) is an assessment of the efficiency of a worker or group of workers (Massoudi & Hamdi, 2017). It also refers to the conversion of inputs such as human resources, money, time into outputs (Singh & Chaudhary, 2022). Productivity may be evaluated in terms of the output of an employee in a specific period of time. Typically, the productivity of a given worker will be assessed relative to an average for employees doing similar work. Because much of the success of any organization relies upon the productivity of its workforce, employee productivity is an important consideration for businesses. Employee productivity is the efficiency and effectiveness of an employee in achieving their tasks, goals, and responsibilities. Here is a comprehensive note on employee productivity. Employee productivity can be influence by a number of factors such as: motivation, skill and ability, resources and equipment, work environment, leadership and management, communication, feedback and recognition, work-life balance, job satisfaction and physical and mental well-being

Employee productivity can be grouped into the following: task productivity (completing tasks efficiently), goal-oriented productivity (achieving specific goals), creative productivity (generating new ideas and solutions) and innovative productivity (improving processes and methods). Employee productivity is said to be beneficial in a knowledge-based economy through: increased efficiency, improved job satisfaction, enhanced creativity and innovation, better work-life balance, increased employee engagement, improved customer satisfaction, increased revenue and profitability, competitive advantage, improved employee morale and

reduced turnover and absenteeism. By understanding the factors that affect productivity and implementing strategies to improve it, organizations can unlock the full potential of their employees and achieve greater success thereby transforming the organizations. It is important to note that productivity has become an important facet of work culture in the organisation. Understanding the employee's attitude in today's dynamic work environment poses a challenge for organisations. The notion of employee productivity is not new in the field of management as it has become multidimensional in nature (Adeinat & Kassim, 2019). Nowadays, organisations are becoming more and more concerned on how to increase the productivity of employees (Yunus & Ernawati, 2017).

Mainstream research revealed that the productivity of employees is associated with organisation's performance, the higher the employee productivity the better will be the organisation's performance (Yunus & Ernawati, 2017; Iqbal, Mansoor & Matthew, 2019). Yunus and Ernawati (2017) defined Employee productivity as the capability to produce goods and services in order to achieve the goals of the organisation. Similarly, Iqbal et al., (2019) defined employee productivity in terms of impersonal trust therefore, lack of trust between employees and employers can lower the productivity of employees, hindering the organisation's performance. Moreover, the productivity of employees reflects the efficiency level indicating the time taken to perform a particular task. When the employees tend to be productive, they perform a particular task more efficiently and effectively within a given time frame, on the contrary, they take a longer time to perform a particular task costing money if they are unproductive at work.

Employee productivity is a crucial factor in the success and growth of any organization. High levels of employee productivity can lead to increased profitability, improved customer satisfaction, and a competitive edge in the market. On the other hand, low productivity can result in wasted resources, missed opportunities, and decreased overall performance. Productive employees can complete tasks in a timely manner with minimal errors, leading to efficient operations within the organization. Higher productivity means that more work is being done with the same resources, resulting in cost savings for the company (Singh & Chaudhary, 2022). Productive employees are often more focused and attentive to detail, leading to higher quality outputs and services. When employees are productive, they have more time and energy to dedicate to creative thinking and problem-solving, which can drive innovation within the organization. Productivity is closely linked to employee engagement and job satisfaction.

Engaged employees are more likely to be productive and committed to their work. Employee productivity is the heart and soul of any firm. Thus, a firm's success is very much dependent on how its employees perform at the workplace. Employees who put in extra effort often make a vast difference in organisational productivity, hence performance. Increasing workers' productivity is one of the most critical aims of an organisation. The work environment affects employees' behaviour at work. In reality, employees' surroundings and the work environment influence most of their working efficiency. The majority of organizations constantly strive to improve their performance, competency, and production. Employees are at their tasks for an

average of about five hours every day, and companies are paying for that time. But often, the results of an employee's work versus time spent don't exactly match up. A model employee that seems perfectly productive can turn out to be one of the worst offenders (Massoudi & Hamdi, 2017). In the light of the above, this work measured employee productivity in terms of quality of work, timeliness and volume of output.

i. Quality of Work: Quality of work refers to an employee executing tasks and responsibilities in conformance to expectations within their role or position in an organization. It encompasses various aspects such as accuracy, thoroughness, timeliness, creativity, problem-solving abilities, adherence to standards or guidelines, and overall contribution to the organization's goals and objectives. Quality of work is often evaluated based on the extent to which an employee meets or exceeds the expectations and requirements set forth by their job description, supervisor, or company standards. Evaluating and maintaining high employee quality of work is crucial for ensuring organizational productivity, efficiency and success (Hysenlika, 2014; Gregory, 2019). Managers have a task to ensure that all employees work toward achieving the production of quality product and services. Quality contributes to organizational excellence because it ensures competitive position and customer satisfaction. The successful organization tends to produce products that are fit for use, conform to specification and made available to customers at the time needed and at an affordable price (Kolarik in Finklestein & Wong, 2017). Productivity is linked to quality of work and the organizational goals of customer satisfaction, profit, attainment of social and ecological objectives. Improved productivity has to do with improved quality of work and this can be attained through conscious, deliberate and managed process referred to as productivity and quality management. The attitudes and competencies of employees in the organization must be built up through proper training, development and participation.

ii. Timeliness: Employee timeliness is a crucial measure of productivity in the workplace. It refers to employees' ability to arrive at work on time, meet deadlines, and complete tasks within the designated time frame. Timeliness is an essential aspect of productivity as it ensures that work processes run smoothly, projects are completed efficiently, and organizational goals are achieved in a timely manner (Singh & Chaudhary, 2022). When employees are punctual and adhere to schedules, it reflects positively on their work ethics and commitment to their roles. Timely employees are more likely to be reliable, dependable, and efficient in their work performance. In contrast, tardiness and delays can disrupt workflow, cause bottlenecks in operations, and lead to missed opportunities or deadlines (Massoudi & Hamdi, 2017; Zhenjing et al., 2022). Employers often track employee timeliness through attendance records, project timelines, and performance evaluations. By monitoring and addressing issues related to timeliness, organizations can improve overall productivity, employee morale, and customer satisfaction. Finally, employee timeliness plays a significant role in determining individual and organizational productivity levels. By emphasizing the importance of punctuality and time management skills, employers can create a more efficient and effective work environment.

iii. Volume of Output: Output is a function of employee productivity. According to Duggan (2011) output refers to the amount of work, goods or services produced by an individual or employee in a specific period of time. It is a measure of the efficiency and effectiveness of an employee in completing tasks and achieving goals set by the organization. This metric is often used by employers to evaluate the productivity of their employees, identify areas for improvement, and make informed decisions regarding promotions, bonuses or training opportunities. It is important to note that the volume of output directly impacts the productivity of a company. Higher output levels mean that more work is being done in a given period, leading to increased productivity. When employees produce a higher volume of output, it indicates that they are working efficiently and effectively. This can result in cost savings for the company and improved performance. Companies that have employees who consistently produce high volumes of output are more competitive in the market. They can meet customer demands more effectively and stay ahead of their competitors (Kimberlee, 2019). A high volume of output should not come at the expense of quality. Companies need to ensure that their employees maintain high standards while increasing their output levels. Ultimately, the volume of output has a direct impact on the profitability of a company. Higher output levels can lead to increased revenues and profits, making the organization more successful in the long run (Lodewijk, 2017).

Unlocking sustainable productivity requires a combination of strategies that prioritize efficiency, effectiveness, and well-being. The following are important factors for unlocking sustainable productivity:

- i. Clear goals and priorities:** Establish a clear understanding of what needs to be accomplished and focus on high-impact tasks.
- ii. Effective time management:** Use tools and techniques like the Pomodoro Technique to optimize work intervals and minimize distractions.
- iii. Continuous learning and development:** Invest in skills training and knowledge sharing to stay up-to-date with industry trends.
- iv. Collaboration and communication:** Foster open communication channels and encourage teamwork to leverage collective strengths.
- v. Well-being and self-care:** Prioritize physical and mental health through regular exercise, mindfulness, and stress management.
- vi. Technology and automation:** Leverage tools and automation to streamline processes, reduce waste, and enhance efficiency.
- vii. Feedback and evaluation:** Regularly seek feedback and evaluate progress to identify areas for improvement.
- viii. Work-life balance:** Establish a healthy balance between work and personal life to maintain energy and motivation.
- ix. Continuous improvement:** Imbibe a culture of continuous improvement, encouraging experimentation and learning from failures.

Nexus Between Work Environment and Employee Productivity

The relationship between the work environment and employee productivity is a crucial aspect of organizational success. From the different ideas gotten about the effect of work

environment on the productivity of employees, it was observed that on the other hand, the physical work environment has a far-reaching effect on the morale of employees. The literature also revealed that shabby, depressing and dejected work environment reduces employees' morale and promote absenteeism, lateness, low labour turnover, waste of resources and other negative attitude among employees, while the provision of good working environment generates interest and increases productivity (Duru & Shimawua, 2017).

Work environment and employee productivity are closely linked or related in a knowledge-based economy. Therefore, supportive work environment fosters creativity, innovation, and collaboration, leading to higher productivity and better outcomes. Key aspects of the work environment that impact employee productivity in a knowledge-based economy are: Autonomy and flexibility; Access to resources and tools; Opportunities for learning and development; Collaborative culture and teamwork; Open communication and feedback; Recognition and rewards for innovation and creativity; Comfortable and ergonomic physical space; Work-life balance and well-being support; Diversity, equity, and inclusion. In a knowledge-based economy, employees are knowledge workers who require a work environment that stimulates creativity, critical thinking, and problem-solving.

A positive work environment is one that encourages: innovation and entrepreneurship; continuous learning and skill development; collaboration and knowledge sharing; creativity and idea generation; adaptability and resilience; high performance and productivity; job satisfaction and engagement; talent attraction and retention; competitive advantage and market success; positive social impact and reputation. By prioritizing the work environment, organizations in a knowledge-based economy can unlock the full potential of their employees, drive innovation, and achieve sustainable success.

A positive work environment can significantly impact employee productivity, job satisfaction, and overall well-being (Zhenjing et al., 2022). Training is essential for enhancing employees' skills and knowledge, which directly contributes to their productivity. Well-trained employees are more confident in their abilities, leading to improved productivity in terms of quality work, timeliness and volume of output. Training programmes also help employees stay updated on industry trends and best practices, enabling them to adapt to changes quickly and effectively. More so, work-life balance is another critical aspect of the work environment that influences employee productivity. When employees are able to maintain a healthy balance between their work responsibilities and personal life, they are more likely to feel motivated, engaged, and satisfied with their jobs. This, in turn, leads to higher levels of productivity as employees are better able to focus on their tasks without feeling overwhelmed or burnt out. Open communication within the workplace is also key to fostering a productive environment. When there is transparent communication between management and employees, issues can be addressed promptly, feedback can be provided constructively, and ideas can be shared freely. This creates a positive work culture where employees feel valued, heard, and supported, ultimately leading to increased quality of work, timeliness and volume of output.

Empirical Studies

Pimpong (2023) examined the work environment factors that affect employee productivity and explores how these elements can boost employee performance. Data were collected through a survey of 300 randomly selected staff members from three tertiary institutions which are Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development (AAMUSTED), Kumasi Technical University (KsTU), and Kwame Nkrumah University of Science and Technology (KNUST)) in the Ashanti Region of Ghana to test the conceptual framework. The findings revealed a positive relationship between the workplace environment and employee commitment, suggesting that employee commitment partially strengthens the impact of the workplace environment on employee performance.

Massoudi and Hamdi (2017) examined the consequence of work environment on employee's productivity. The research used qualitative approach; the data was collected from a questionnaire distributed to 50 employees working in four foreign banks in the Kurdistan Region of Iraq. The result will show that There is a relationship between office environment and productivity of employees. Behavioural components of office environment have a greater effect on productivity, than the physical components alone. Satisfaction of Employees towards overall Workplace Environment leads to productivity in an organization.

Duru and Shimawua (2017) investigated the effect of work environment on employee productivity using Edo City Transport Service on whether inadequacy of the various conditional factors can affect productivity of employees. The objective of this study therefore, geared towards ascertaining whether the nature of work environment leads to low productivity, absenteeism and lateness among employees. With the objective of the study in mind, this research project work focused on examining the effect of work environment. To achieve the study objectives and for the purpose of this research, secondary data were collected and analyzed as well. From the research findings, if good office environment is provided for employees, it will go a long way to enhance their morale and performance. Also, if office is neat, noiseless, properly arranged well lighted and ventilated, employees will feel a sense of belonging and this will make them to work efficiently and effectively. Good physical working environment inspires workers to spend more time in their various offices, employees responded emotionally better towards the provision of good office environment by not absenting themselves unnecessarily from work, lateness to work and other negative attitude will be drastically reduced. Good working environment increases individual output therefore, leading to growth of the organization.

Omoruyi and Amuen (2022) examined the impact of work environment on employee productivity: a study of business centers in University of Benin Complex. The study employed a descriptive and quantitative approach, as first-hand data was retrieved from the respondents. The study employed the use of questionnaires on a 5-point Likert scale, from the target sample of 147 business centers registered in University of Benin Ugbowo campus. The data were retrieved, cleaned and were analyzed using SPSS software. The data were analyzed via frequency counts and presented in tables and percentages, while advance analysis, the regression t test was also carried out in other to achieve the research objectives. Every

organization sought after a better employee, a high productive employee. Hence, this result will be useful to organizations and employees as well as they both are the prima facie of this study. Every organization and employee in Nigeria and across the world would be enlightened on how their work environment actually affects employee productivity.

Iqra et al. (2019) examined the impact of workplace environment on employee performance: mediating role of employee health. This study adopted questionnaire survey method and data were collected from 250 employees working in software houses in Pakistan. Data were analysed using SPSS and AMOS software. Reliability and correlation analysis were performed by using SPSS while; path analysis was performed using AMOS. Results revealed that one-unit variance in PEF incorporates 35% change in EH, 33% change in EH is caused by one unit increase in BEF and one unit increase in EH leads to 80% increase in EP. Physical and Behavioural Environmental Factors are positively affecting EH and EH is positively affecting EP. Results of the study revealed that: employee health is mediating the relationship between workplace environment factors and employee performance.

Calvin Mutiu and Falola (2020) examined the relationship between work environment and employee performance in Federal College of Education (Technical) Gusau, Zamfara State. The study adopted a quantitative research design and data were collected using structured questionnaire. The staff strength of the college is 520 employees consisting of both academic and non-academic staff. The study used both Pearson Product Moment Correlation Analyses and Multiple Regression Analyses using SPSS 21.0 and EViews 9.0. The correlation revealed that there is a strong relationship between the three dimensions of the work environment and employees' performance. The multiple regression result showed that physical work environment and cordial working relationship have significant effects on employee performance, while training and development were insignificant in predicting employee performance. This study recommends management continuous improvement of work environment dimensions because they influence employee performance.

Anggrainia (2024) examined the influence of the work environment and work motivation on employee performance at PT XYZ Central Jakarta, both partially and simultaneously, and method used is quantitative. The sampling technique used saturated sampling, and the sample obtained in this study is 75 respondents. Data analysis uses validity tests, reliability tests, classical assumption tests, regression analysis, correlation coefficient analysis, coefficient of determination analysis, and hypothesis testing. The results of this research show that the work environment has a significant effect on employee performance. Work motivation has a substantial impact on employee performance. The work environment and work motivation simultaneously and significantly affect employee performance.

Theoretical Framework

The study was theoretically anchored on Social Exchange Theory. The social exchange theory was propounded by George C. Homans, an American Sociologist, in the year 1958. The theory assumes that individuals weigh the potential benefits and costs of their actions in social interactions. According to this theory, individuals engage in relationships and interactions

that they believe will bring them the greatest rewards, while minimizing costs. More so, the theory is based on a core premise that the exchange of material and social resources is a basic form of human interaction (Murdvee, 2020). Emerson in Calvin et al. (2020) observed that social exchange involves two persons, each of whom provides some benefits to the other, and based upon rewards from the other. It emphasizes reciprocation of behaviour, rewards and mutual benefits between two parties. Nunkoo (2016) noted actors in an exchange process are dependent on one another for outcomes they value.

Justification of Social Exchange Theory to the Study

Management of any organization values optimal productivity from employees and will do everything possible to improve productivity at all times. The employees on the other hand, value job resource like conducive work environment, training and development, cordial working relationship, supervisory support, work-life balance, organizational support, open communication, quality and equity reward system, performance appraisal feedback, job crafting and job aid to mention a few. Both parties need trust as important ingredient for the relationship to blossom (Blau in Calvin et al., 2020). There has to be trust in reciprocity, meaning that without trust, a party might not be willing to return the benefits. Holthausen (2013) stressed that trust is a major determining factor of commitment in a relationship and through a trustful exchange relationship, the chance for a continuation of this relationship is higher. Thus, when management of organisations create positive work environment among others which cut across training, work-life balance and open communication, employee morale tends to increase thus enhancing their productivity (quality of work, timeliness and volume of output).

Conclusion

The study aimed at unlocking sustainable productivity: the work environment-employee productivity nexus in a knowledge-based economy. In today's knowledge-based economy, organizations are increasingly recognizing the critical role that the work environment plays in driving employee productivity and sustainability. In conclusion, if conducive work environment is provided for employees, it will go a long way to enhance their morale and productivity. Conducive work environment increases individual output therefore, leading to growth of the organization. For any organization to progress, the employees should be provided with good work environment which will motivate them to greater action so as to attain the set objective of the organization. Based on the content analysis, the study concluded that work environment (training, work-life balance and open communication) enhances employee productivity (quality of work, timeliness and volume of output).

Recommendations

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

- i. Management should map out training programme that would increase employee quality of work.
- ii. Flexible work arrangement should be deployed so as to promote employee work life balance while enhancing their timeliness.

- iii. Management should ensure that there is adequate open communication among employees so as to enhance their morale and increase volume of output.

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