# The Influence of Work Environment on Job Performance: A Case Study of Engineering Company in Jordan

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#### **Abstract**

This study aims to investigate the influence of work environment on job performance. An engineering company was taken as a case study with a sample size of 85 employees. A quantitative methodology implying a cross-sectional survey was used to satisfy the study objectives in addition to the literature review. Different dimensions were examined in relation to the work environment factors, including noise; temperature; air; light and colour; space and employers' satisfaction. The collected data was analysed using (SPSS, Version 22). Findings revealed that the situational constrains constituted of factors such as noise, office furniture, ventilation and light, are the major work environment conditions that have negative impact on job performance and should gain more attention. It is suggested that employers should take initiatives to motivate employees by improving their work environment. As employees are motivated, their job performance will increase, and they will achieve the desired outcomes and goals of the job. Thus, increasing the employers' satisfaction.

**Keywords:** Work environments, job performance, employee performance, employees, work environmental factors, Jordan.

#### INTRODUCTION

People are very happy to have a job, but many of them no longer feel that their workplace is a second home, although much of their time is spent in the office. This often leads them to feel forced to accommodate with the uncomfortable environment. An employee's workplace environment is a key determinant of the quality of their work and their level of productivity. How well the workplace engages an employee impacts their desire to learn skills and their level of motivation to perform. In a world of increasingly global competition among companies and even among countries; the good performance of human resources is needed. Researches (Suwati, Minarsih and Gagah, 2016) have shown that the main goal of work for someone is not only to get the salary, but to reach self-satisfaction. Employees performance is influenced by a lot of aspects such as: motivation, work environment and leadership in the agency.

Regrettably, work environments are not without impediments to these lofty aims, the problem is not lack of the institutions and firms, but the poor environment delivery and poor management of the owners. However, since every

organization is a combination of people, it might be logical that people's performance is, as a consequence, organizational performance (Huselid, 1995; Bin Dost, Shafi and Shaheen, 2011; Solomon, Hashim, Mehdi and Ajabe, 2012). In other words, poor performance, or the failure of people who undertake diverse tasks in the four-walls of work is logically the reason for institutional failure. This is stated in the study of Tella, Ayeni, and Popoola (2007) that well-managed organizations usually see median workers as the root sources to gain quality and productivity. Such organizations look to employees not to capital investment, as the fundamental source of improvement. To achieve such improvement there is a rising need to make employees satisfied and committed to their jobs, at the diverse levels, departments, and sections.

# LITERATURE REVIEW

### **Job Performance**

To better understand effectiveness on jobs, it is important to learn about links between job performance, people, and situation factors. Job performance is a very considerable factor influencing profitability of any organization (Bevan, 2012). Performance is important for organizations as employees' performance leads to business success. Also, performance is important for individuals, as achieving tasks can be a source of satisfaction (Muchhal, 2014). Job performance can be defined as behaviours or activities that are performed towards accomplishing the organization's objectives (Motowidlo, Borman and Schmit, 1999). Performance is the result of work of a person or group in an organization at a particular time which reflects how well the person or group reach the qualification of a job in a mission of organization's goal achievement. Many factors could influence the employee's job performance including equipment, physical work environment, meaningful work, standard operating procedures, reward for good or bad systems, performance expectancy, feedback on performance, in addition to knowledge, skills and attitudes (Stup, 2003). The physical work environment and its influence has been vastly studied since the environment can hinder, intervene with, or set limits on the range of work behaviours that are displayed which, in turn, potentially impacts task performance.

#### **Work Environment**

Work environment can be anything that exists around the employee and can affect how he performs his duties. Alex S.Nitisemito (1992) state that working environment is both an external and an internal condition that can influence working spirit and result in instantly finished jobs. According to Sedarmayanti (2003), 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 (Akinyele, 2010; Chaddha, Pandey and Noida, 2011; Yusuf and Metiboba, 2012; Assaf and Alswalha, 2013). McGuire and McLaren (2007) believes that an organization's physical environment particularly its layout and design can impact employee behaviour in the workplace. As indicated by Nitisemito (2001), 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 (Becker, 1981; Humphries, 2005; Veitch, Charles, Newsham, Marquardt and Geerts, 2004; Karasek and Theorell, 1990). Lighting and other factors like ergonomic furniture have been found to have positive effect on employees' health and so on employees' productivity (Dilani, 2004; Milton, Glencross and Walters, 2000; Veitch and Newsham, 2000). 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 assert that unhealthy and unsafe work environment in terms of poor ventilation, immoderate noise, inadequate lighting etc. affect employees' productivity and health.

# Work Environment Factors that Influence the Performance

Based on a description of what is meant by work environment and literature review findings, a strong interaction is found between job performance and physical working environment. The physical environment at work is critical to employees' performance, satisfaction, social relations and health. It is generally understood that the physical design of offices and the environmental conditions at work places are important factors in organizational performance.

It will be able to put forward several factors that are included in the working environment and its effects on job performance. The study of Badayai (2012) has confirmed previous studies and classified five main factors of uncongenial working environment as shown in figure 1. (each one of the factors will be discussed individually using the arguments from different research findings on the related study).

#### (1) Air factor

The air in the work environment especially its components can play a considerable function in relation to the work behaviour, specifically job performance. As indicated by Ossama, Gamal and Amal (2006), indoor air quality is very significant to the health, comfort, and job performance among employees. Indoor contamination levels frequently exceed open air levels and most of the time workers might spend up to 90% of time alone inside. Most possibly perilous indoor air are pollutants radon, asbestos, inorganic material, environmental tobacco smoke, organics, biological and nonionizing radiation. Other pollutants such as odours and dusts can cause critical discomfort and feelings of unwillingness, that may lead to a reduction in productivity and job performance. (Ossama, Gamal and Amal, 2006)

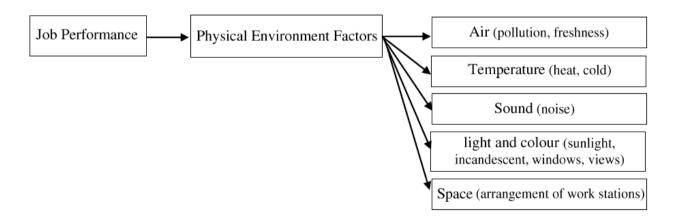


Figure 1: Physical Environment Factors that affect the worker. Source: (The Authors, 2017).

Figure 2: Possible Effects of Temperature Levels that affect job performance. Source: (The Authors, 2017).

#### (2) Temperature factor

Good room temperature increases productivity and reduces stress in workers as it plays notable role in workplace environment. Effective temperature indicates how hot or cold our environment really makes us feel (Aamodt, 2004). High temperatures can affect employee's performance, particularly duties required on cognitive, physical, and perceptual duties. (Badayai, 2012)

Chandrasekar (2011) state that high temperatures can have a direct impact on health and lead to heat stress and heat exhaustion. Furthermore, Sehgal (2012) clarified that according to a thin person, a higher temperature may be better. However, for somebody not as thin, a lower temperature may work better. He also clarified possible effects of temperature as shown in figure 2.

# (3) Sound factor

Noise defined as unwanted sound, is the most common complaint in offices workplace. Many researchers indicate that noisy places and exposing employees to such conditions can affect their job performance quality. Melamed, Fried and Froom (2001) confirmed that exposure to high levels of sound may lead to several diseases such as cardiovascular disease, endocrine and digestive reactions particularly in complex jobs not in straightforward jobs. Companies today tend to use an open-office design to increase teamwork, productivity, and communication; however, researchers' studies indicate that these open interactive spaces boost noise in the workplace. Noise can affect task performance by office workers. According to Kjelberg and Skoldstrom (1991), study showed that assignments needed reading comprehension and memory are the most sensible to noise, specially noise sources related to workers' conversations. Noise can distract office workers more likely when workers do not have control of the noise source and it is unpredictable. The raised noise in the workplace is caused by common office equipment, for example, PCs, printers, phones, copiers, heating and air conditioning unites, and conversations of office workers. (Maxwell, 2001) The study of Mital, McGlothlin, and Faard (1992) found that significant noise sources were individuals arriving/departing, keyboard sounds, and ventilation equipment. While conversations and PC/printer beeping

sounds were accounted for to be the most irritating by 90 of the study respondents.

# (4) Light and colour factor

Regardless of fitout design or building type, daylight, is considered to be the number one wanted natural feature in the workplace as researchers always discovered that exposure to natural light in an office space impacts employees' quality of life. The amount of light needed in the workplace depends on the kind of tasks being performed, either outdoors or indoors, or when they are performed, in the day, or at night. As a consequence, it will either increase or decrease the performance. Inconvenient lighting is a source of distress, thus leading to poor job performance. That happens when the employee is exposed to uncomfortable working environment in which there is a high glare, or dim bulk, or a lack of natural light in the office. (Schultz and Schultz, 2006). The brightness of office light influences concentration, alertness, and task performance. Modifying the quality and nature of light can appreciably enhance working experience and productivity. (Sehgal, 2012)

Moreover, colour has been found to increase productivity and performance, and raise employees' spirits. It plays a role in the workplace by simply providing a pleasant working environment. Mental reviews have showed that colours can impact individuals' mood and stimulate feeling (Carruthers, Morris, Tarrier and Whorwell, 2010). Cool colours might awaken unhappy and depressive feelings, while warm colours generally motivate a warming and positive emotions. (Ching and Binggeli, 2012)

# (5) Space factor

The actual physical layout of an office is highly important when it comes to maximizing productivity among employees. Nowadays, work environments support new ways of working and flexible workplaces which displays ease of communication and interpersonal access contrasted with fully enclosed private offices, and this change to open plan office has boosted employee's productivity paralleled to closed office spaces (Becker, 2002). The individual workstation that is too crowded and restricted, will lead to stress, pressure and other psychological effect. An individual employee may feel unstable and have lack of freedom and motivation, on the

short-run, it may lead to a very stressful environment, which decreases the quality of the job performance.

Gifford (1996), stressed that employees whose work requires supervisory-professional and privacy are unhappy with an open-plan office. Employees adapt to uncongenial work space when spatial arrangements are inappropriate, and they may even not realize their surroundings could be better.

According to Sehgal (2012), space components like office furniture comprises of desks chairs, the filing system, shelves, drawers, etc., have a specified part to play in the productivity and the efficiency of the employees and the suitable functioning of any office. Also, one of the most essential things to be guaranteed is whether the workplace furniture is ergonomic or not. Ergonomic office furniture guarantees that every worker gels well with the things around him, like chairs, desks, PC arrangement and even environmental factors.

#### MATERIALS AND METHODS

This study employed a cross-sectional survey to investigate the influence of work environment on job performance with its related factors. These factors included: Noise; temperature; air; light and colour; space. The participants of this study were employees at an engineering company in Jordan. The selection of research objective is by the consideration that the data and information is easy to be obtained and relevant to the main problem of the research object. A well-designed questionnaire was distributed to 85 employees at the company. The collected data was then analysed using (SPSS, Version 22).

The primary source for determining the content of the questions was the current literature; most of questions used in this study were based on the previous studies. The questionnaire included a letter that explained the purpose of the survey and guaranteed confidentiality. The survey consisted of two major sections. The first section is asked about the working conditions and employee performance and were measured on a five-point Likert scale ranging from 1 "strongly disagree" to 5 "strongly agree". In the second section employers were asked to rate their satisfaction of their workers' job performance on a five-point Likert scale ranging from 1 "highly dissatisfied" to 5 "highly satisfied". In the following section, the analysis of results for the collected data is presented.

# RESULTS AND DISCUSSIONS

#### **Appraising Workplace Environment Factors**

# (1) Ventilation and indoor air quality

76.0% of respondents feel that their work environment has an adequate ventilation. Moreover, when asking employees about the most pollutant indoor source, the results were as follows: (a) For low concentration of adequate oxygen , the highest percentage reached 40.0% for scale "Strongly Disagree", (b) For smoking, the highest percentage reached 72.0% for scale "Strongly Disagree", (c) For dust, the highest percentage reached 80.0% for scale "Strongly Disagree", (d) For bad

smells (like food...etc.), the highest percentage reached 52.0% for scale "Strongly Disagree", (e) For other pollutants, the highest percentage reached 72.0% for scale "Strongly Disagree". Finally, the highest percentage of respondents' ranks reached 32.0% for scale "neutral" among the influence of poor ventilation affecting their job performance.

Based on the findings above, it can be concluded that, the highest ratio of poor ventilation comes from low concentration of adequate oxygen and imply a slightly negative impact on employees. This is in line with Ossama, Gamal and Amal (2006) that indoor air quality is very significant to the health, comfort, and the job performance among employees.

# (2) Temperature

56.0% of respondents feel that their work environment is thermally comfortable, while the other 44.0% relate the discomforts to cold temperature as they always must maximize the amount of clothing once they arrive at work (during cold weather). Finally, the highest percentage of respondents' ranks reached 68.0% for scale "Strongly Disagree" among the influence of temperature affecting their job performance.

Based on the findings above, it can be concluded that, temperature factor has no noticeable impact on job performance of employees and its influence can be neglected. This is in line with Sehgal (2012) that which temperature works best for one's productivity depends on one's body. The impacts of temperature itself are complex and can't be easily understood. There is a need for studying the amount of clothing worn, the type of work being done, etc. Thus, according to this study, temperature factor has no noticeable impact on job performance.

# (3) Noise

100% of respondents agree that there is a noise in their work environment, 44.0% of them must yell in order to communicate with a person standing right next to them. Moreover, when asking employees about the most annoying source of noise, the results were as follows: (a) For work telephones, the highest percentage reached 48.0% for scale "Strongly Disagree", (b) For copiers, the highest percentage reached 88.0% for scale "Strongly Disagree", (c) For computers, the highest percentage reached 80.0% for scale "Strongly Disagree", (d) For printers, the highest percentage reached 80.0% for scale "Strongly Disagree", (e) For heating and air conditioning unites, the highest percentage reached 48.0% for scale "Strongly Disagree", (f) For conversations of office workers, the highest percentage reached 60.0% for scale "Strongly Agree". Finally, the highest percentage of respondents' ranks reached 40.0% for scale "Strongly Agree" among the influence of noise affecting their job performance.

Based on the findings above, it can be concluded that, the highest ratio of noise comes from conversations of office workers and imply a highly negative impact on almost half of employees. This is in line with Melamed, Fried and Froom (2001) that noisy places and exposing employees to conditions can affect their job performance quality, and with Kjellberg and Skoldstrom (1991) that assignments needed reading comprehension and memory are the most sensible to noise, specially noise sources related to workers' conversations.

# (4) Light and colour

60.0% of respondents feel that their work environment is provided with efficient lighting as the ample amount of light comes from artificial light, while the other 40.0% agree that inconvenient lighting affects their enthusiasm for work and causes significant discomfort with reaching 32.0%. Moreover, 60.0% of respondents agree that the spatial arrangement of their office allowed them to be exposed to adequate lighting in their day-to-day work, while 56.0% don't sit near the window. Finally, the highest percentage of respondents' ranks reached 36.0% for scale "neutral" among the influence of poor lighting affecting their job performance.

Based on the findings above, it can be concluded that, the highest ratio of poor lighting comes from natural light and imply a slightly negative impact on employees. This is in line with Schultz and Schultz (2006) who confirmed that inconvenient lighting is a source of distress, thus leading to poor job performance. That happens when the employee is exposed to uncomfortable working environment in which there is a high glare, or dim bulk, or a lack of natural light in the office.

76.0% of respondents agreed that their work environment has an appropriate colour which is apricot. 60.0% of them feel the colour is bright and can bring positive feelings during working. Finally, the highest percentage of respondents' ranks reached 28.0% for scale "Strongly Disagree" and "Neutral" among the influence of indecent colour affecting their job performance.

Based on the findings above, it can be concluded that the work environment has an appropriate colour which feels bright and has no negative impact on employees. This is in line with Ching and Binggeli (2012) that warm colours generally motivate a warming and positive emotions.

# (5) Space and spatial arrangement

84.0% of respondents agreed that their workplace is flexible and well planned to facilitate communication between staff. 80.0% of them feel that the spatial arrangement gives them the motivation and joy of doing work. Moreover, 92.0% of respondents assert that their own office has sufficient size, and 84.0% of them agreed that their office has an appropriate size and number of shelves and drawers. 60.0% of respondents feel that their sitting chair and office furniture are comfortable (no pain or discomfort while you are seated all day). Finally, the highest percentage of respondents' ranks reached 32.0% for scale "Strongly Agree" among the influence of the discomfort of used furniture affecting their job performance.

Based on the findings above, it can be concluded that, the highest ratio affecting employees' performance comes from the discomfort of used furniture and imply a highly negative impact on employees. This is in line with Sehgal (2012) that one of the most essential things to be guaranteed is whether the workplace furniture is ergonomic or not. Ergonomic office furniture guarantees that every worker gels well with the things around him, like chairs, desks, PC arrangement and even environmental factors. If the employee is uncomfortable due to any reason, his work will get affected

# Assessment of Employers' Satisfaction among Employees

Another important finding of the study was the overall satisfaction of employers. The study results showed that 80.0% of employers were dissatisfied with employees' job performance, while the highest percentage reached 60.0% for scale "dissatisfied". Dissatisfaction was related to low employees' achievements of required tasks and all the side talk going on between the employees.

This study aimed to examine the influence of work environment on job performance among employees in engineering company. Results showed that employers dissatisfaction is consistent with results from previous findings that work environmental factors have sensible impact, and lead to decline in performance. While the most obvious factor of the negative impact is noise coming from conversations of office workers. Second, the discomfort of used furniture of office. Third, the poor ventilation comes from low concentration of adequate oxygen in office. And finally, the poor lighting comes from natural light.

# CONCLUSION

Job performance is the result of an employee's motivation and ability, and how he/she adapts to the situational constrains and the uncongenial environment. This cannot be neglected as it leads to the behavioural disturbance; specifically referred to as the decrease in job performance.

The present findings show that the situational constrains are constituted of multiple variables such as noise, office furniture, ventilation and light. These are the major physical conditions that should gain more attention. It is suggested that employers should take initiatives to motivate employees by improving work environments. As employees are motivated, their job performance will increase, and they will achieve the desired outcomes and goals of the job. Thus, the increasing of employers' satisfaction.

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