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The Interior Design of Workplace and its Impact on Employees' Performance: A Case Study of the Private Sector Corporations in Egypt

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Abstract

In today’s competitive business environment, corporations can no longer afford to waste the potential of their workforce. There are important factors in the employee’s workplace that influence significantly on their level of motivation and performance. The main objective of the study is to understand the relationship between the employees’ performance and their physical work environment. The private sector corporations of Egypt have been chosen as the population for the study. The study took six corporations in Cairo as a sample. The results of the study show that office design has a substantial impact on the employees’ performance.

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1. Introduction

In today’s competitive business environment, corporations can no longer afford to waste the potential of their workforce. There are important factors in the employee’s workplace that influence significantly

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on their level of motivation and performance (Leader Values). It is not just haphazard that new programs concerned with lifestyle changes, work/life balance, health and fitness - formerly not considered important benefits - are now key considerations of potential employees, and common practices among the respectable companies. The literature reveals that good office design has a positive effect on employees' productivity; this hypothesis is being tested in this study. In the context of Egypt, this is a relatively new topic, and there are not any studies in the field of interior design, so the purpose of this paper is to analyze the influence of the workplace interior design factors on employees’ performance in the private sector corporations in Egypt. The study is limited to the interior design of the facility and does not address other aspects of the work environment.

2. Literature Review

A widely accepted assumption is that better workplace produces better results. Mostly the workplace is designed with due importance to the nature of job and individuals that are going to work in that office. At the corporate level, many factors affect productivity such as employees, technology and objectives of the corporation. It is also dependent on the workplace design and its effect on health and employees’ performance.

2.1. Defining Job performance

Campbell, J. P. (1990) defines performance as behavior, It is something done by the employee. This concept differentiates performance from outcomes. Outcomes are the result of a person's performance, but also, there are many factors that assess outcomes than just an employee's behaviors and actions. When Campbell (1990) defining performance as behavior, he allows for exceptions. For instance, he states that performance does not have to be directly observable actions of a person. It can consist of mental productions such as answers or decisions. (Wikipedia).

The measures of this study are based on personnel’s subjective assessments. Wang and Gianakis (1999) have defined subjective performance measure as an indicator used to determine individuals’ aggregated perceptions, attitudes or assessments toward a corporation product or service. Subjective performance data are usually collected using survey questionnaires. Subjective data can also be descriptive or qualitative collected by interviews (Amina Hameed, Shehla Amjad, 2009).

2.2. Workplace interior design

Interior design defined by the National Council for Interior Design Qualification (NCIDQ), as the art and science of understanding people's behavior to create functional spaces within a building through creative and technical solutions. Within a structure, these solutions are applied to achieve a built interior environment, and they are functional, enhance the quality of life and culture of the occupants and are aesthetically appealing.

Workplace design may enhance organizational success by creating workplace that support work quality, quantity and style, while improving turnover and absentee rates (Becker, 1981). Increasingly, architects, interior designers and facilities managers are assuming the new role of strategic consultants familiar with human behavior and organization (Hamilton, Baker & Vlasic, 1997). It is no longer these groups’ jobs to enhance executive egos, but rather enhance productivity. A growing number of companies are using the interior design of workplace as a tool to help attract and keep employees; the latest American Society of Interior Designers (ASID, 1999) research shows the workplace design is a tool that can help corporations successfully meet this challenge. Employees and job seekers said the physical
environment is one of the top three factors that affect their decisions to accept or leave jobs, and it was
tied for second with benefits after compensation.

2.3. Relationship between workplace design and employees' performance

Over the years, many corporations have been trying new designs and techniques in office buildings,
which can promote productivity, and attract more employees (Amina Hameed, Shehla Amjad, 2009).
Many authors have noted that, the workplace design, along with effective management processes, is
playing an important role in increasing employees’ productivity and boosting organizational performance
(Uzee, 1999; Leaman and Bordass, 1993; Williams et al. 1985).

Research by the architects, Gensler (2005) of 200 UK business managers showed that an improved
workplace would boost employee productivity by 19 per cent and their own productivity by 17 per cent.
These improvements have great implications for the economy if proven. Gensler (2006) followed up this
research in a survey of 2,000 office employees in the USA which showed that 90 per cent of the
respondents believed that better interior design and layout result in better general employee performance.

In the heated competition for attracting skilled workers, design professionals will be increasingly
called upon to support an organization’s goals in both performance and attraction/retention. The
American Society of Interior Designers (ASID, 1999) carried out a study and showed that the workplace
design is one of the top three factors, which impact on performance and job satisfaction. The study results
revealed that 31 percent of employees were satisfied with their jobs and had attractive workplace
environment. 50 percent of employees were seeking jobs and said that they would prefer a job in a
corporation where the physical workplace is favourable.

2.4. Interior design factors that impact on productivity and performance

Brill et al. (1984) ranked factors, which impact on productivity according to their significance. The
factors are sequenced based on the importance: Furniture, Noise, Flexibility, Comfort, Communication,
Lighting, Temperature and the Air Quality. Springer Inc (1986) stated that an insurance company in a
study showed that the ergonomic furniture increased performance by 10 to 15 percent. Today's workforce
believes a noisy work environment inhibits effective work. Statistics from the Data Management
Association show that a lack of acoustical privacy in open-plan offices can reduce productivity by as
much as 40 percent and increase errors by as much as 27 percent (McLaughlin, 2000). In recent studies,
Lighting was found to be the main factor, which impact on the daily and general productivity of
employees in workplaces. The Commission for Architecture & the Built Environment and the British
Council for Offices carried out a study revealed that even simple things such as adequate lighting and
having proper daylight can decrease absentee rate by 15 per cent. Also, they increase productivity by
between 28 per cent and 20 per cent.

There is an important effect of temperature and humidity on how tired someone might feel, currently
there are no regulations governing high temperature levels in the workplace and the responsibility of
companies to their employees in this respect, although the World Health Organization recommends a
maximum working temperature of 24°C (Kathy F. Montgomery, 2004). In a study, (ASID, 2002)
employees were asked what they want in their ideal workplace. Thirty percent of the employees
mentioned access as pivotal in the office environment. They relate access to the proximity of things they
need, including access to spaces that accommodate the tasks they need to accomplish, access to office
equipment and access to people. In the same study, employees identified privacy as important to their
ability to work productively.
The opportunity to view natural settings through a window, to human productivity and well-being is the subject of significant research, Roger Ulrich’s (2002), Texas A & M University research team explored the links between flowers and plants and workplace productivity. When plants and flowers were added to the work environment, subjects in the study, both men and women demonstrated more innovative thinking and created innovative solutions to office problems (Ulrich, 2003). Color also can have an important effect on the space users when applied in the interior environment. A study on the effects of color on performance found that cool colors are less arousing (i.e., visually captivating, distracting) than warm colors and a person’s ability to screen out environmental distractions may affect how interior color schemes impact on their work productivity (Inform Design 2009).

3. Methodology

The research work is a descriptive research of both primary data and secondary data. The paper presents the analysis of the workplace interior design at different private sector corporations in Egypt, and the research done to understand the performance level of the employees due to the physical work environment, to be precise, The research paper would seek to fulfill the following listed objectives:

- To understand the relationship between the employees and their physical work environment.
- To analyze the factors of workplace interior design affecting the employee’s performance.
- To assess whether workplace design is one of the factors in affecting employees’ performance.
- To analyze the influence of office design if any on gender or age of employees.

The study has been carried out with 6 private sector corporations with different work areas as a sample, due to the wide spread in the establishment of private sector corporations. These corporations are Dar Al-Handasah consultants, EKH Egypt Kuwait Holding, Gas Chil, Samcrate Engineering and contractors, ECG Engineering consultants Group, KPMG Hazem Hassan Public Accountants & Consultants. A total of 129 employees from these 6 corporations were taken as the sample size.

A questionnaire was used to collect primary data and observation was used to collect information about the interior design. The study used a five point Likert Scale to measure all the variables. The scale varies from 1 (strongly disagree) to 5 (strongly agree) for most of the questions, but the questions in the questionnaire for the subjective performance measurement were in percentages. The statistical techniques were used to analyze the employees’ response towards the workplace interior design and its impact on performance.

4. Results and discussions

The research focused on nine indicators of workplace interior design which considered for study in the survey, and took note into account that these design elements should not be considered the only factors that may have an impact on the performance of the employees in an interior environment. These indicators are furniture, noise, temperature, lighting, spatial arrangement, color, outside view and presence of plants and flowers, (See Fig. 1).
4.1. Influence of workplace design on Employees’ Performance

The data reveal that the vast majority of employees (96%) believe that superior office design leads to superior overall performance, also makes a company more competitive. According to the results in figure 2a, 44% of the respondents believe that their overall productivity will increase more than 50% if the related office design problems are solved, and about 52% of the respondents believe that their performance will be increased from 30% to 10%. However, employees who believe that the workplace design has no effect on their performance were 4%. This indicates that good workplace design can make a substantial difference in staff performance, and consequently has a positive impact on the corporations’ productivity.
Figure 2b shows the mean values of the overall response for each factor. Data was analyzed to identify the factor that has a high effect on decreasing employee’s performance. Different interior design factors such as furniture, temperature noise, lighting, spatial arrangement, outside view, presence of plants and color used to assess the extent of the loss in performance.

The average mean ranking indicates that the variables ‘furniture’ is the most contributing factors which affect the performance of employees with mean value 4.43. This means that Ergonomics of office furniture has great importance because an employee has to work with them all the time that he is on office, and if they are neither comfortable nor user friendly, their working style and efficiency will get hamper considerably. Non-ergonomic office furniture can also affect employees’ health and cause many problems, which have a negative effect on the productivity. Next to the factor furniture, it is temperature with mean value 4.24, as it can have a significant effect on the performance of an employee. In hot environments, it is common for employees to become irritable and less efficient. However, light came in the third rank with mean value 4.22, which is very essential in any office environment.

Contrary to expectations, the presence of plants and flowers has been given fourth rank with mean value 4.10, followed by spatial arrangement. While privacy and noise have gotten less ranking, which indicates that there is a link between flowers and plants, as well as other aspects of nature, and employees’ performance. Outside view with mean value 3.77, and color with mean value 3.70 have been given the lowest significance. This indicates that most of the employees do not consider outside view and color as important factors.

4.2. Satisfaction ratings of different aspects of the workplace environment

Through figure 3a, it is seen that 48% of the respondents gave positive Feedback (13% strongly agree, 35% agree) that overall office environment is suitable for completing their daily task easily. Another 41% gave an unbiased feedback while, only 11% indicates gave negative feedback (9% disagree and 2% strongly disagree). That is indicating that close to a half is satisfied with their workplace; however, the other half needs some improvements at their workplace environment.
Fig. 3. (a) Satisfaction of overall workplace environments; (b) Mean rating of satisfaction with aspects of the physical workplace.
Taking a closer look, employees were asked to rate their satisfaction with aspects of the physical workplace. According to the results in figure 3b, the most dissatisfying is the privacy with mean value 2.89; this is key, given the fact that privacy has a vital influence on job satisfaction. The respondents clarified privacy to mean a space away from distractions, both visual and audio, where they can concentrate. This response would indicate that the corporations may need for different types of workspaces, perhaps available by task, whether a space for "heads down" concentration on a complex assignment, or a more social team project space. Furthermore, the noise with mean value (3.05), the outside view with mean value (3.19), temperature with mean value (3.23), presence of plants with mean value (3.30), and furniture with mean value (3.39) also contributes to the dissatisfaction feedback. However, the three highest satisfaction ranking are lighting with mean value (3.95), followed by access to people and equipments color with mean value (3.72), and color with mean value (3.70). This is indicating that the 6 corporations have proper and adequate light required to illuminate task work, and highly cared about access to the proximity of things employees need, including access to spaces that accommodate the tasks they need to execute. Most corporations use Monochromatic scheme with white or ivory in painting color.

4.3. Overall responses according to gender

The data collected showed that 29 percent respondents were female, and 71 percent were male. The overall mean of all the factors in figure 4 indicates that female employees (4.19) are more affected by the physical workplace than the male employees (4.07), and they are less satisfied with the interior workplace environment (female 3.23, male 3.47). The response for a direct question about the impact of interior workplace design on their performance showed that the female are more affected (female 4.13, male 3.86) and less satisfied (female 3.34, male 3.72) than male. This ensures that female employees are more concerned about their interior workplace environment than male.

![Fig.4. Overall mean according to gender.](image)

The overall response according to the gender is detailed in a table for each gender. There are some differences amongst the responses to different factors in the workplace. The average mean ranking in tables 1 and table 2, indicated that for male and female, furniture was the most influential factor (male 4.48, female 4.45). Male respondents’ results showed that temperature (4.31) has been given the second rate followed by space (4.26); however, color (3.61) has been given the lowest significance. In the same
way, an analysis of female employees’ results, showed that light (4.44) is ranked second followed by temperature (4.41), while outside view has been given the last rank. The comparison of male and female ratings for the aspects of the workplace environment also showed that female were more affected by privacy (4.29) than male (4.01). This may be due to the social traditions in Egypt, since privacy is an important issue.

Table 1. Male response

<table>
<thead>
<tr>
<th>Factor</th>
<th>Furniture</th>
<th>Temperature</th>
<th>Spatial Arrangement</th>
<th>Light</th>
<th>Presence of Plants</th>
<th>Privacy</th>
<th>Noise</th>
<th>Outside View</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Mean value</td>
<td>4.48</td>
<td>4.31</td>
<td>4.26</td>
<td>4.17</td>
<td>4.05</td>
<td>4.01</td>
<td>3.98</td>
<td>3.76</td>
<td>3.61</td>
</tr>
</tbody>
</table>

Table 2. Female response

<table>
<thead>
<tr>
<th>Factor</th>
<th>Furniture</th>
<th>Light</th>
<th>Temperature</th>
<th>Privacy</th>
<th>Presence of Plants</th>
<th>Noise</th>
<th>Spatial Arrangement</th>
<th>Color</th>
<th>Outside View</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Mean value</td>
<td>4.45</td>
<td>4.44</td>
<td>4.41</td>
<td>4.29</td>
<td>4.26</td>
<td>4.12</td>
<td>4.03</td>
<td>3.96</td>
<td>3.72</td>
</tr>
</tbody>
</table>

4.4. Overall responses according to age

According to the data, 55 percent respondents were generation Yers (under 30), 35 percent were generation Xers employees (ages 30-460) and 10 percent respondents were baby boomers (ages 47-66).

The respondents were asked if they can complete their daily tasks easily due to the overall office environment. The results in figure 5 showed that baby boomers had the highest mean (3.86), followed by generation Xers (3.64), then generation Yers (3.43). That is due to the corporations, which usually provide more care for the top positions in terms of furniture, space, privacy, and the other aspects of physical workplace and facilities, and most of the baby boom respondents occupy the top positions, follow them generation X employees.

The results in figure 5 also showed that the baby boom employees and generation Y employees are more concerned about their workplace surroundings than generation X employees, with a high mean for the baby boom employees (4.07) and generation Y employees (4.03); however, generation X employees had relatively low mean (3.83).
In table 3, results revealed that there are differences between the three generations. Temperature (4.45), light (4.25), noise and furniture with the same mean value (4.24) stand out as the most important factors that affect the performance of the baby boom employees. For generation X employees, furniture is the leading factor to affect the performance (4.53), temperature is regarded second with the mean value (4.27), followed by spatial arrangements (4.25). These results agree to a large extent with the generation Y employees’ results; since furniture has the highest mean (4.42), followed by temperature and light with the same mean value (4.36), then the presence of flowers and plants (4.34) which considered a high mean as compared with generation Xers and baby boomers. Most respondents of generation Yers believe that spaces, which contain plants and flowers, is supporting them to focus on the task which requires concentration, while some of generation Yers believe that the light music has an effect on their performance. The data also reveals that outside view ranked as the least factor in both baby boomers and generations Xers; however, it had a high mean (4.01) in generation Yers, comparing with its means in the generation Xers (3.63) and baby boomers (3.02).

5. Conclusion

Analysis of the collected data revealed that the interior design of the workplace had a substantial influence on the employees’ performance. The overall impact of different elements showed that furniture affects the productivity of most employees; therefore, it is recommended that we have to consider ergonomic furniture while buying office furniture. The data also revealed that the majority of respondents lent weight to the presence of plants and flowers. The overall mean of all the factors showed that female
employees are more concerned about their workplace interior design, whereas, male are less concerned with it. The response, according to gender and age showed differences amongst the responses for different elements in the workplace. Male respondents’ results showed that they were more affected by the temperature in their offices followed by the spatial arrangement; however, female more affected by privacy than male. The results also showed that the baby boom employees are more satisfied with their workplace environment; however, generation Y employees are more concerned with the presence of plants and outside view than the other generations.

In conclusion, the majority of respondents believe that good workplace interior design can make a difference in their performance, and consequently have a positive impact on the corporations’ productivity. So the effectiveness of the employee is worth more today than the real estate a company occupies. Design professionals must expand their knowledge beyond real estate issues (efficiency) to understand what makes people perform and happy at work (effectiveness and desirability).

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