Impact of Office Design on Employees’ Productivity: A Case study of Banking Organizations of Abbottabad, Pakistan

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Abstract

Increased personal control and comfort needs of employees triggered the concern among organizations to provide them with an environment and office design, which fulfills the employees’ needs and helps to boost their productivity. The main objective of this study is to find out the relationship between office design and productivity. For this purpose, 31 bank branches of 13 banks were contacted and studied. The findings of this study show that office design is very vital in terms of increasing employees’ productivity. Comfortable and ergonomic office design motivates the employees and increases their performance substantially.

Keywords: Productivity; Office Design; Ergonomics.

1. Introduction

Most people spend fifty percent of their lives within indoor environments, which greatly influence their mental status, actions, abilities and performance (Sundstrom, 1994). Better outcomes and increased productivity is assumed to be the result of better workplace environment. Better physical environment of office will boosts the employees and ultimately improve their productivity. Various literature pertain to the study of multiple offices and office buildings indicated that the factors such as dissatisfaction, cluttered workplaces and the physical environment are playing a major role in the loss of employees’ productivity (Carnevale 1992, Clements-Croome 1997).

Hughes (2007) surveyed 2000 employees pertain to various organizations and industries in multiple levels. The reported results of these survey showed that nine out of ten believed that a workspace quality affects the attitude of employees and increases their productivity. Employees in different organizations have different office designs. Every office has unique furniture and spatial arrangements, lighting and heating arrangements and different levels of noise. The purpose of this study is to analyze the impact of the office design factors on employees’ productivity. The literature reveals that good office design has a positive affect on employees’ productivity and the same assumption is being tested in this study for the banking sector of Pakistan. This study will try to find out the effects of office design on employees’ productivity. The area chosen is the banking sector of Abbottabad District, Pakistan. The study will be based on primary data collected through a structured questionnaire (Appendix 1).

2. Significance of the Study

The impact and significance of office design on employees’ productivity is addressed in this study. Human resource professionals in the organizations are well aware of the importance of this issue. In the context of Pakistan, this is a relatively new topic. Very few researchers addressed in the context of human resource management. Very few researches can be found in the field of Human Resource Management, this huge gap needs to be filled by new research scholars.

In Pakistan, workplace environment and its related issues are significantly neglected. It is evident that there is less importance to office design, incentives and assisting facilities and also it is not available to the employees. The situation is that they cannot even complain about them. These circumstances are affecting the performance of the employees greatly, in the form of delay in work completion, frustration, effect on personal growth etc. This study will try to find out the effects of office design in terms of furniture, noise, lighting, temperature and spatial arrangement on employees’ productivity.
3. Literature Review

A widely accepted assumption is that better workplace environment produces better results. Mostly the office is designed with due importance to the nature of job and the individuals that are going to work in that office. The performance of an employee is measured actually by the output that the individual produces and it is related to productivity. At corporate level, productivity is affected by many factors such as employees, technology and objectives of the organization. It is also dependent on the physical environment and its affect on health and employees’ performance.

3.1 Defining Office Design

Office design is defined by BNet Business Dictionary (2008) as, “the arrangement of workspace so that work can be performed in the most efficient way”. Office design incorporates both ergonomics and work flow, which examine the way in which work is performed in order to optimize layout. Office design is an important factor in job satisfaction. It affects the way in which employees work, and many organizations have implemented open-plan offices to encourage teamwork. Office design is very vital in employee satisfaction, and the broad concept of office design also includes the workflow. The work is analyzed initially and it is identified that how it is accomplished and then the overall setting of the office is made according to that flow. This ensures the smooth running of work in the office without hindrances.

3.2 Defining Productivity

Rolloos (1997) defined the productivity as, “productivity is that which people can produce with the least effort”. Productivity is also defined by Sutermeister (1976) as, “output per employee hour, quality considered”. Dorgan (1994) defines productivity as, “the increased functional and organizational performance, including quality”. Productivity is a ratio to measure how well an organization (or individual, industry, country) converts input resources (labor, materials, machines etc.) into goods and services. In this case, we are considering performance increase as when there is less absenteeism, fewer employee leaving early and less breaks; whereas in a factory setting, increase in performance can be measured by the number of units produced per employee per hour. In this study, subjective productivity measurement method is used. The measures of this method are not based on quantitative operational information. Instead, they are based on personnel’s subjective assessments. Wang and Gianakis (1999) have defined subjective performance measure as an indicator used to assess individuals’ aggregated perceptions, attitudes or assessments toward an organizations product or service. Subjective productivity data is usually collected using survey questionnaires. Subjective data can also be descriptive or qualitative collected by interviews. (Clements-Croome and Kaluarachchi 2000) Subjective productivity data is gathered from employees, supervisors, clients, customers and suppliers.

3.3 Workplace and Productivity

Over the years, many organizations have been trying new designs and techniques to construct office buildings, which can increase productivity, and attract more employees. Many authors have noted that, the physical layout of the workspace, along with efficient management processes, is playing a major role in boosting employees’ productivity and improving organizational performance (Uzee, 1999; Leaman and Bordass, 1993; Williams et al. 1985).

An independent research firm conducted a research on US workplace environment (Gensler, 2006). In March 2006, a survey was conducted by taking a sample size of 2013. The research was related to; workplace designs, work satisfaction, and productivity. 89 percent of the respondents rated design, from important to very important. Almost 90 percent of senior officials revealed that effective workplace design is important for the increase in employees’ productivity. The final outcome of the survey suggested that businesses can enhance their productivity by improving their workplace designs. A rough estimation was made by executives, which showed that almost 22 percent increase can be achieved in the company’s performance if their offices are well designed.

But practically, many organizations still do not give much importance to workplace design. As many as 40 percent of the employees believe that their companies want to keep their costs low that is why their workplaces have bad designs; and 46 percent of employees think that the priority list of their company does not have workplace design on top. When data was summarized, almost one out of every five employees rated their workplace environment from, ‘fair to poor’. 90 percent admitted that their attitude about work is adversely affected by the quality of their workplace environment. Yet again 89 percent blamed their working environment for their job dissatisfaction (Gensler, 2006).
3.4 Relationship between Office Design and Productivity

The American Society of Interior Designers (ASID, 1999) carried out an independent study and revealed that the physical workplace design is one of the top three factors, which affect performance and job satisfaction. The study results showed that 31 percent of people were satisfied with their jobs and had pleasing workplace environments. 50 percent of people were seeking jobs and said that they would prefer a job in a company where the physical environment is good.

Brill et al. (1984) ranked factors, which affect productivity according to their importance. The factors are sequenced based on the significance: Furniture, Noise, Flexibility, Comfort, Communication, Lighting, Temperature and the Air Quality. Springer Inc (1986) stated that “an insurance company in a study revealed that the best ergonomic furniture improved performance by 10 to 15 percent.

Leaman (1995) conducted a survey which is briefly highlighted here. Author attempted to find the relationship between indoor environment, dissatisfied employees and their productivity. The results revealed that the productivity of the work is affected because the people were unhappy with temperature, air quality, light and noise levels in the office. The productivity level was measured by the method of self reported measurement, which is a 9 point scale from greater than -40 and less than +40 percent (loss/gain). The scale was associated with the question: “Does your office environment affect your productivity at work?” (Leaman, 1995). The data collected was correlated and results said that the coefficient of correlation \( r = 0.92 \) and the correlation exists between people who showed dissatisfaction with their indoor environment and those reporting that their productivity is affected by the office environment. The significant level p-value is 0.0034.

4. Research Methodology

The purpose of the study is to find out the relationship between office design and employees’ productivity and the impact of office design on employees’ productivity. The objectives of the study include:

- To analyze office design of banks in Abbottabad, Pakistan.
- To analyze the features that employees value in the workplace.
- To assess whether office design is one of the factors in affecting employees’ productivity.
- To determine the impact of office design on employees’ productivity.
- To analyze the impact of office design if any on gender of employees.

The Banking sector of Abbottabad, Pakistan has been chosen as the population for the study. Out of 31 bank branches, 21 bank branches in Abbottabad, Pakistan were taken as sample. A total of 105 employees from these 21 branches were taken as the sample size. The distribution of sample among banks and number of employees taken from each bank are given.

Primary data was collected through a structured questionnaire. Observation was also used to collect information about the office design. The Questionnaire consisted of 24 questions; 4 questions on each variable. Out of these, 4 questions were on productivity, based on the technique of subjective productivity measurement. Subjective productivity data was gathered from the employees, supervisors, clients, customers and suppliers. A direct subjective productivity measurement is a survey question concerning an employees’ own productivity. For example, such a question might be, on a scale of 1-4, “how your productivity changed during the last year” (Black and Lynch, 1996 and Laitinen et al. 1999). Data was collected from the sample of 13 banks (105 employees). A five point Likert Scale was used to measure all the variables. The scale varies from 1 (strongly disagree) to 5 (strongly agree) for most of the questions. A few questions were measured by the five point Likert Scale ranging from 1 (not at all) to 5 (always). The questions in the questionnaire for the subjective productivity measurement were in percentages.

5. Conceptual framework

Based on the literature review, the relationship between office design and productivity can be conceptualized and depicted in Figure (1). The relationship is defined in such a way that the set of factors impact on an individual, which in turn determine the final outcome in terms of increased or decreased productivity of that individual. These factors have different impacts on different employees based on their gender.
Figure 1. Conceptual Framework


dependent variable

Independent Variables (Office Design)  
Furniture  
Noise  
Lighting  
Temperature  
Spatial arrangements  

Productivity

6. Research Findings

Five indicators of office design such as furniture, noise, temperature, lighting and spatial arrangement are considered for study. The overall response for each factor was analyzed and the mean and standard deviation values are shown in the Table 1. Data was analyzed to identify the factor that the relatively high tendency towards decreasing productivity. Different office design factors such as furniture, noise, lighting, temperature and spatial arrangement were used to determine the extent of the loss in productivity.

Table 1. Mean of factors

<table>
<thead>
<tr>
<th>Factors</th>
<th>Total number of respondents</th>
<th>Mean (SD) for Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furniture</td>
<td>105</td>
<td>3.70 (0.63)</td>
</tr>
<tr>
<td>Noise</td>
<td>105</td>
<td>3.67 (0.62)</td>
</tr>
<tr>
<td>Lighting</td>
<td>105</td>
<td>3.23 (0.77)</td>
</tr>
<tr>
<td>Temperature</td>
<td>105</td>
<td>3.86 (0.44)</td>
</tr>
<tr>
<td>Spatial arrangement</td>
<td>105</td>
<td>3.41 (0.63)</td>
</tr>
</tbody>
</table>

SD = Standard deviation
The prime factor which affects the productivity of employees is lighting in the office. Next to the factor lighting, it is spatial arrangement. Then the importance sequence is noise, furniture and temperature. Both natural and artificial light is very essential in any office environment. It gives a sense of energy and affects the mood of the employees. Hawthorne effect is the best example of benefit of lighting in productivity. Accomplishment of daily tasks in workplaces with less or dim light is difficult for employees. Working in dim light leads to eye strain and thus causing headaches and irritability. Due to this discomfort, productivity is very much affected causing overall decrease in employee’s performance.

According to the data collected, 26.6 percent respondents were female employees and 73.3 percent were male employees. The overall response according to the gender and the mean and productivity for male and female employees is detailed in Table 2.

Table 2 Overall Responses According to Gender

<table>
<thead>
<tr>
<th>Factors</th>
<th>Mean (SD) for Male employees</th>
<th>Mean (SD) for female employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furniture</td>
<td>3.68 (0.64)</td>
<td>3.77 (0.61)</td>
</tr>
<tr>
<td>Noise</td>
<td>3.84 (0.46)</td>
<td>3.21 (0.77)</td>
</tr>
<tr>
<td>Lighting</td>
<td>3.26 (0.82)</td>
<td>3.13 (0.59)</td>
</tr>
<tr>
<td>Temperature</td>
<td>3.84 (0.46)</td>
<td>3.92 (0.36)</td>
</tr>
<tr>
<td>Spatial arrangement</td>
<td>3.49 (0.61)</td>
<td>3.21 (0.66)</td>
</tr>
<tr>
<td>Overall mean</td>
<td>3.62</td>
<td>3.45</td>
</tr>
<tr>
<td>Overall Productivity</td>
<td>3.62</td>
<td>3.23</td>
</tr>
</tbody>
</table>

SD = standard deviation

According to the results in Table 2, male employees are affected by the furniture in their offices (3.68); their productivity is also affected by the furniture they are using or which surrounds their workplaces (3.62). Along with this the results also show that female employees are less affected by the furniture in their work area (3.77) and their performance also remains unaffected with uncomfortable furniture (3.23). If only the performance of both male and female employees is compared then we can see that male employees perform less than female employees due to bad furniture, which they use in their workplaces.

While analyzing the means of Noise obtained from the data, it was revealed that male employees were not much affected by noise (3.84) but due to even a little noise their productivity was affected (3.62). On the other hand, the female respondents’ results show that there are many noise distractions in their workplace (3.21) and in their surroundings. But due to this noise productivity of female employees is not affected (3.23). Because female employees are always chatting, therefore, they can work in noisy surroundings. Comparing the productivity of male employees (3.62) and female employees (3.23) with respect to noise, productivity of male employees is more then female employees.

One of the most important features in office design is light. Both natural and artificial light is needed in a proper and adequate amount to carry out normal activities of everyday office work. This factor was analyzed in my research. Results revealed that male employees show a low mean (3.26), which means that lighting is not proper in offices and when we see the productivity of male employees against this mean it is high (3.62). So, the conclusion can be made that due to improper lighting in offices male employees have difficulty in completing and concentrating on their work and their productivity (3.62) is affected. In the same way when female employees’ results were analyzed, and it transpired that they were affected (3.13) a little more than male employees, but their productivity (3.23) is not affected by lighting around their workplace. On comparing, only the productivity of male employees (3.62) and female employees (3.23) the result shows that lighting affects male employees more while working in offices then female employees.
Temperature affects productivity the most. Female respondents’ results show that the temperature conditions of their offices are good (3.92) in both summers and winters. Due to the pleasant temperature in summers and winters there is no adverse effect on their productivity (3.23). Similarly, the mean value for male employees is (3.84), which means that temperature is not irregular in their offices. But a little irregularity in temperature affects their productivity (3.62). Another major aspect of the way in which the workplace aids productivity is in supporting work processes through the way that space is arranged. According to the results female employees are more conscious about the arrangement of space in their workplaces (3.21) but due to this their productivity is not affected (3.23), it is satisfactory. In case of male employees, they are far less affected (3.49) by the spatial arrangement than female employees but their productivity (3.62) is affected by this.

The overall mean of all the factors show a low mean for female employees (3.45) and a relatively high mean for male employees (3.62). This means that female employees are more concerned about their workplace surroundings than male employees.

Differences are found amongst the responses to different factors in the workplace. Male employees’ results show that they are more concerned about the lighting in their offices then the spatial arrangement and other factors.

There is a direct relationship between office Design and productivity. This relationship between office design and productivity was determined by using the Pearson’s Correlation in standard statistical software “Statistical Package for Social Sciences” (SPSS). Pearson’s Correlation is a measurement of the strength of a linear or straight line relationship between two variables. The Correlation Coefficients indicate both the direction of the relationship and its magnitude (Table 3).

Table 3 Correlation between Elements of Office Design and Employee Productivity

<table>
<thead>
<tr>
<th>Office design Elements</th>
<th>Pearson Correlation (r)</th>
<th>Significance (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Furniture</td>
<td>.194(*)</td>
<td>.047</td>
</tr>
<tr>
<td>Noise</td>
<td>.429(**)</td>
<td>.000</td>
</tr>
<tr>
<td>Lighting</td>
<td>.720(**)</td>
<td>.000</td>
</tr>
<tr>
<td>Temperature and Air Quality</td>
<td>.467(**)</td>
<td>.000</td>
</tr>
<tr>
<td>Spatial arrangement</td>
<td>.380(**)</td>
<td>.000</td>
</tr>
</tbody>
</table>

r is Pearson correlation coefficient
*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed).

The analysis of the results indicate a positive correlation between furniture and productivity (r = 0.194) and is significant at 0.05. This shows that when the furniture of the office is not comfortable and according to the needs of the employees their productivity is affected. There is a positive relationship between Noise and Productivity. The correlation coefficient (r=0.429) is significant at 0.01.

The positive relationship between lighting and productivity (r = 0.720) at 0.01 shows that employees' productivity highly correlates to the lighting conditions in the offices. The results of temperature reveal its significant correlation with productivity (r=0.467) at p=0.01. Spatial Arrangement is the space factor in office design; when the correlation was calculated in SPSS it gave a positive relation with productivity (r=0.380) where p=0.01. It means that the spatial arrangement has a considerable effect on the employees’ productivity (Table 4).
Table 4. Regression Results of Model

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.759(a)</td>
<td>.576</td>
<td>.555</td>
<td>.51525</td>
</tr>
</tbody>
</table>

R= Correlation coefficient

a. Predictors: (Constant), Spatial arrangement, Noise, Furniture, Lighting, Temperature

Source: Survey

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>35.717</td>
<td>5</td>
<td>7.143</td>
<td>26.907</td>
<td>.000(a)</td>
</tr>
<tr>
<td>Residual</td>
<td>26.283</td>
<td>99</td>
<td>.265</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>62.000</td>
<td>104</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

df= degree of freedom , F=regression mean square/residual mean square ,Sig=P-value

a. Predictors: (Constant), Spatial arrangement, Noise, Furniture, Lighting, Temperature

b. Dependent Variable: Productivity

Source: Survey

The coefficient of determination R. square = 0.576. This gives us the ratio of explained variation to total variation. On converting the R. square value to percentage it comes to be approximately 58 Percent. From this percentage it is concluded that 58 percent of the variability of employees’ productivity is accounted for by the variables in this model.

The regression co-efficient for the predictor variables; furniture, noise, lighting, temperature and spatial arrangements are 0.015, -0.068, 0.739, and 0.021 and 0.162, respectively. The coefficient values show, the change in productivity with a unit change in a variable value, when all the other variables are held constant. When we analyze the coefficient value for the variable, 'lighting' we can say that there is an increase of 0.739 in the productivity of an employee for every unit increase (betterment) in the lighting conditions of the office, keeping all the other variables constant.

The Regression Equation:

\[
\text{Employee Productivity} = -0.645 + .015 F - 0.068 N + 0.739 L + 0.021 T + 0.162 SA
\]

(Where F=furniture, N=noise, L=lighting, T=temperature and SA=spatial arrangements)

7. Discussion of the Findings

Analysis of the collected data revealed that office design has a substantial impact on the employees’ productivity. The overall impact of different elements showed that lighting affects the productivity of most employees. The overall mean of all the factors show that female employees are more concerned about their workplace surroundings, whereas, their male counterparts are less concerned with it.

The overall response, according to gender, showed differences amongst the responses for different elements in the workplace. Male respondents’ results show that they are more concerned about the lighting in their offices, followed by the spatial arrangement.

There is a direct relationship between office design and productivity. The Relationship between Office design and Productivity was determined by using the Pearson’s Correlation in SPSS. A strong correlation exists between elements of office design and productivity of office design. The regression analysis of the data shows that the coefficient of determination R. square = 0.576, so, it can be concluded that 58 percent of the variability in employees’ productivity is accounted for by the variables in this model.
7.1 Implications for Management

Based on the findings, following are the implications of the study.

- Lighting was found to be the major factor, which is affecting the daily and overall productivity of employees in offices. Therefore, it is recommended to have proper and adequate artificial as well as natural light to improve the office design for better performance.
- Most of the organizations do not give importance to office design; this study will give them ample reasons to consider office design as an important factor in increasing their employees’ productivity.

7.2 Limitations of the Study

Following are a few limitations of the study

- The sample size was not diverse enough to give the image of all organizations functioning in Pakistan.
- The data collected was based on subjective productivity measurement; some other objective method of collecting data can also be used.
- Data was collected by employing the simple method of structured questionnaires; other methods could have been used for collecting data.

7.3 Direction for future Research

In order to establish a greater understanding of these relationships research, which combines human resource management, workplace layout and performance management, needs to be developed. Within the indoor environment, lighting and thermal environment have the biggest influence on employees’ productivity. It would therefore make sense to develop, in the near future, a validated human model in which at least the thermal environment in combination with the lighting conditions can be evaluated in terms of comfort and loss of productivity.

References


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Appendix 1
Questionnaire for Research study on
“Impact of Office Design on Employees’ Productivity”

INSTRUCTIONS:
Please READ each question carefully.
ENCIRCLE the option you think best suits you.
Encircle only ONE option for each question.

Name: _________________________ Designation: _________________________
Bank’s Name: ________________ Branch’s Name: ________________
Age___ Gender___________

Furniture

1. My furniture is flexible to adjust, rearrange or reorganize my workspace.
   1- Not at all
   2- To some extent
   3- Almost
   4- Fairly enough
   5- Completely flexible

2. My furniture is comfortable enough so that I can work without getting tired till 5pm.
   1- I strongly disagree
   2- I disagree
   3- I’m neutral
   4- I agree
   5- I strongly agree

3. The physical conditions at work influence my productivity.
   1- Not at all
   2- To some extent
   3- Often
   4- Mostly
   5- Always

4. Adequate and comfortable furniture will affect my productivity positively.
   1- I strongly disagree
   2- I disagree
   3- I’m neutral
   4- I agree
   5- I strongly agree

Noise

5. My work environment is quiet.
   1- Not at all
   2- To some extent
   3- Often
   4- Mostly
   5- Always

6. I am able to have quiet and undisturbed time alone.
   1- Not at all
   2- To some extent
   3- Often
   4- Mostly
   5- Always
7. My workspace has many noise distractions.
1- I strongly disagree
2- I disagree
3- I’m neutral
4- I agree
5- I strongly agree

8. Noise free environment will increase my productivity.
1- 10%
2- 20%
3- 30%
4- 40%
5- 50% or more

**Temperature**

9. To what extent your room temperature affects your normal level of productivity.
1- No effect
2- Positive effect
3- Normal effect
4- Quite good effect
5- Bad effect

10. The overall temperature of my workspace in winters is
1- Cold
2- Cool
3- Pleasant
4- Slightly warm
5- Warm

11. The overall temperature of my workspace in Summers is
1- Cold
2- Cool
3- Pleasant
4- Slightly warm
5- Warm

12. I am able to control temperature or airflow in my office.
1- I strongly disagree
2- I disagree
3- I’m neutral
4- I agree
5- I strongly agree

**Lighting**

13. My workspace is provided with efficient lighting so that I can work easily without strain on my eyes.
1- I strongly disagree
2- I disagree
3- I’m neutral
4- I agree
5- I strongly agree

14. Do you have control over the lighting on your desk (i.e. adjustable desk light on desk)?
1- Not at all
2- To some extent
3- I don’t need desk light
4- Mostly
5- Completely

15. Ample amount of natural light comes into my office.
1- Not at all
2- To some extent
3- Often  
4- Mostly  
5- Always  

16. Number of windows in my work area complete my fresh air and light need.  
1- Not at all  
2- To some extent  
3- Did not notice  
4- Mostly  
5- Always  

Spatial Arrangement  
17. My office/branch is open enough to see my colleagues working.  
1- I strongly disagree  
2- I disagree  
3- I'm neutral  
4- I agree  
5- I strongly agree  

18. My work area is sufficiently equipped for my typical needs (normal storage, movements, etc).  
1- Not at all  
2- To some extent  
3- Often  
4- Mostly  
5- Always  

19. I am satisfied with the amount of space for storage and displaying important materials.  
1- Extremely dissatisfied  
2- Dissatisfied  
3- Neutral  
4- Satisfied  
5- Extremely satisfied  

20. My workspace serves multi purpose functions for informal and instant meetings.  
1- I strongly disagree  
2- I disagree  
3- I’m neutral  
4- I agree  
5- I strongly agree  

Productivity  
21. Favorable environmental conditions(less noise, suitable temperature etc) in the office building will increase my productivity at work  
1- No effect  
2- Increase by 20%  
3- Increase by 30%  
4- Increase by 40%  
5- Increase by 50% or more  

22. Unfavorable environmental conditions(noise distractions, unsuitable temperature etc) in the office building will Decrease my productivity at work  
1- No effect  
2- Decrease by 20%  
3- Decrease by 30%  
4- Decrease by 40%  
5- Decrease by 50% or more  

23. Due to overall office environment can you complete your daily tasks easily?  
1- Not at all
2- To some extent
3- Often
4- Mostly
5- Always

24. By what percentage your overall productivity would increase if the related office environment problems are solved.

1- No change
2- 10%
3- 20%
4- 30%
5- 40% or more