

## **Spatial Analysis at PT ABC**

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### **Abstract**

This study aims to identify and analyze the factors that influence the layout at PT. ABC and determine the obstacles and solutions to the obstacles that occur in the arrangement of office space. The type of research used is qualitative research. Data collection methods include literature studies, observations, interviews, and documentation. Data processing methods include data collection, data reduction, and data presentation as well as drawing conclusions from the data. The results of this study state that the condition of the layout at PT ABC is an open layout. This open office layout is designed so that employees can work together in one room without barriers, supports collaboration and communication between employees, and provides flexibility that often increases creativity and work efficiency. This open space condition certainly has unavoidable obstacles that cause employees to not always work efficiently. The obstacles that arise due to the open office layout show that despite various challenges, employees are able to find effective solutions to work comfortably and productively, and the company also strives to maximize the management of the workspace so that employees always feel comfortable.

**Keywords:** spatial; comfort

### **1. Introduction**

Office layout is a space that is used carefully and effectively to arrange and organize office equipment, taking into account the available area to ensure that employees can work comfortably. Office layout involves arranging machines, furniture, and other equipment in the available space while taking into account building limitations, (Trisna 2022). According to Law No. 26 of 2007 concerning Spatial Planning, space is a container that includes land space, sea space, and air space, including space within the earth as a unified area where humans and other living things carry out activities and maintain their survival.

PT. ABC is a growing national company engaged in mechanical and electrical construction. Planning, construction services, supervision, and maintenance of mechanical and electrical systems in various buildings such as hotels, factories, high-rise buildings, hospitals, warehouses, and residential areas are part of the scope of the company's ongoing business. The company's operational activities carried out in the

office, workplace governance, and employee comfort have an impact on how successfully employees carry out office tasks and how smoothly office operations run.

A good and ergonomic office layout will increase employee productivity and facilitate the completion of work tasks so that their expectations will be met. A neat, uncluttered workspace with complementary colors and lighting can make employees more enthusiastic about working. The layout and facilities help in a fairly successful work mobilization procedure.

Employees who work indoors and outdoors have a division of tasks that suit their abilities, employees who work indoors will feel comfortable while working because they will not be disturbed by things outside the room. Employees who work indoors with open spatial conditions will feel a little disturbed by the activities of other employees (Pide & Makassar, 2023).

## **2. Literature Review**

### **2.1 Understanding Office Spatial Planning**

Office layout is the division of space or division of employee workplaces and the design of all office equipment to create a comfortable atmosphere for carrying out activities in the office and supporting work efficiency. The term office layout itself comes from English, namely "Office Layout" or known as layout only. According to (Ummah, 2022) "Layout" is considered as one of the choices that determines how efficient an organization is in the long term. Meanwhile, according to Armida (2018) "layout" is interpreted as layout or spatial layout, how to place facilities.

Office layout is the arrangement of furniture and equipment on the available floor area (Rusdiana, 2022). (Aulia Rochman, 2019), defines layout as how furniture and equipment are arranged in a workspace in relation to the amount of floor space available to provide facilities for employees. "Office layout is the determination of space requirements and the detailed use of this space to prepare a practical arrangement of physical factors that are considered necessary for the implementation of office work at a reasonable cost" (Yusri, 2020).

Judging from several theories above, it can be synthesized that office layout is the placement of all equipment that is adjusted to the needs and size of the room. To ensure that the layout of the workplace is organized neatly and orderly, the layout must be designed in advance.

### **2.2 Goals and Benefits of Office Spatial Planning**

An efficient and well-organized office layout will facilitate the implementation of office tasks efficiently and well-organized. An efficient workplace design can also help employees complete their work faster. Therefore, a well-planned and well-organized office layout is very important. According to Fitriyanti (2019), explaining the reasons behind the office layout will help employees carry out their tasks faster, ensure smooth administrative operations, utilize the available space to work optimally, maintain employee welfare and job satisfaction, regulate work supervision, and create a positive impression on guests.

According to Rahmawati (2019), the arrangement of office space has a beneficial

purpose for visitors and employees. A well-designed space can make maximum use of the available space, provide a comfortable workplace for employees, give a good impression on the surrounding environment, maintain the effectiveness of the current workflow, and increase productivity. Wildan (2018) explains that the benefits of office space include increasing worker productivity and visitor happiness and providing a healthy and comfortable work environment for employees.

### **2.3 Types of Office Layouts**

Office space planning is very important to create a comfortable working atmosphere that can be felt by all employees. The condition of the available office space can be met by adjusting various office space configurations. According to Alfian (2019), there are four different types of office layouts that can be used by agencies. These types include room layouts, open layouts, decorated or panoramic layouts, and combined layouts that include open and decorated layouts. Meanwhile, according to Ida (2019) explains two types of work layouts, including:

#### **1. Open Office layout**

An open office layout is an office layout model where all employees work together in one large space to achieve company goals. Employee communication is facilitated by the open office layout design that does not separate workers from each other.

#### **2. Closed Office Layout**

A closed office layout is a type of office layout that is designed by dividing areas based on job function and using walls or partitions to separate areas.

From the explanation above, it can be synthesized that each type of office layout, both open and closed office layouts have their own advantages and disadvantages. One of the elements that determines work performance and productivity in an organization is the office layout used, because an inappropriate office layout will result in a mismatch between the expected work results and the actual work results.

### **2.4 Principles of Office Spatial Planning**

According to Dodi Pramana (2020), to achieve effective office design and appropriate office space placement, companies must pay attention to several principles before implementing office layout:

- 1. Principle of Shortest Distance:** Reduces the time required to complete work by placing the items employees need close to where they work.
- 2. Work Sequence Principle:** Matching employee placement to the sequence and execution of tasks, ensuring work always moves forward from start to finish.
- 3. Principle of Use of All Spaces:** Ensure all spaces are used optimally to avoid crowding and ensure there are no unused areas either above or below the floor.
- 4. Principles of Changes in Workplace Arrangements:** Adopt flexibility in the arrangement of spaces, allowing changes as needed without excessive costs.

Richard Muther in Ida Nuraida's book adds six basic principles of good spatial planning, including the principle of shortest distance, work sequence, use of all space, changes in workplace structure, integration of activities, and safety and employee

satisfaction.

Based on these various opinions, it can be concluded that planning and implementing office space arrangements in companies will be more effective by applying these principles. The first step in planning an office layout is to arrange the workplace according to the work being done.

## **2.5 Factors Affecting Office Layout**

A company will rearrange its existing office space. According to Gustiani (2020), offices are influenced by factors such as light, temperature, air, building design, color, sound and local culture. The company strives to create a safe, comfortable and calm office environment. Some factors that influence the office environment include:

- **Light:** Good lighting is needed in the office to increase work productivity and avoid eye fatigue. There are two main sources of lighting, namely natural light from the sun and artificial light such as lamps.
- **Color:** Choosing the right color in a room can create a pleasant atmosphere and improve employee performance. Each color has a different emotional effect on humans, for example red gives enthusiasm, yellow creates joy, and blue gives calm.
- **Air:** Healthy air flow with sufficient oxygen levels affects the physical condition of employees. Good air circulation helps reduce fatigue and improve comfort.
- **Noise:** Sounds in the office environment can disturb concentration. The placement of the room must take into account the type of work being carried out to avoid disturbance due to loud noise.
- **Culture:** A good work culture in the office environment, such as friendly attitude and professionalism, contributes to a positive and productive work atmosphere.

In order to create an effective office environment, companies need to consider all these factors holistically to support employee well-being and productivity

## **3. Material and Method**

### **3.1 Research Design**

This research entitled "Spatial Analysis at PT ABC uses a descriptive qualitative approach. A qualitative approach is a type of research that uses naturalistic to collect information or understanding about phenomena in a particular context (Hasibuan et al., (2022)). Through the use of verbal descriptions and language in natural settings, qualitative research seeks to better understand the phenomena being studied, including actors, perceptions, behaviors, motivations, and phenomena experienced by others as a whole (Mohamed et al., (2019)).

### **3.2 Data Sources and Research Sample**

The data source and research sample in question are informants. According to Sugiono (2019), informants are defined as individuals used to provide data and information regarding the circumstances and background of the research. A purposive sampling strategy was used to collect informants. Informants in this study are research subjects obtained by researchers. Researchers use observation and

interview approaches as data collection techniques. 4 employees of PT ABC act as research informants. This study aims to investigate the application of office layout. Researchers conduct interviews to collect comprehensive and detailed information about current issues.

### **3.3 Data Collection Techniques**

Sugiono (2019) emphasized that the most crucial stage in the data collection process is the selection of data collection methodology. Collection can be done with various methods, various conditions and from various sources. The following data collection used by researchers is interviews, observation, and documentation:

#### **1. Literature Study**

Andriani, n.d. (2020) defines literature study as the process of searching for information or research data in library publications, journals, and reference books. Literature study is used to study reading sources that can provide related information. Literature study involves a number of tasks, such as reading, taking notes, and analyzing source materials.

#### **2. Interview**

One method of data collection for research is conducting interviews. Simply put, interviews can be conducted face-to-face between the interviewer and the respondent. Interviews can be conducted involving two or more people. Sugiyono (2019) stated that if the researcher is sure of the information they want to obtain, then the researcher can use interviews as one method of data collection.

#### **3. Observation**

Sugiono (2019) defines observation as the process of collecting data about objects or people. The type of observation used in this study is passive participant observation. With this observation method, researchers visit the scene of the crime and participate in office tasks carried out in an open room at PT ABC.

#### **4. Dokumentasi**

Sugiono (2019) defines documentation as a written record of historical events, photographs, or important works of art created by someone. In qualitative research, documentation functions as a complement to observation and interview methodologies (Sugiono, 2019). Data is collected with the help of documentation and then reviewed so that the data collected has proper physical evidence, researchers use data collection methods that are equipped with documentation.

### **3.4 Data Validity Techniques**

In qualitative research, data validity is used to verify data and show the scientific validity of the research. According to Sugiyono (2019), data validity testing includes tests of credibility (internal validity), transferability (external validity), dependability (reliability) and confirmability (objectivity). Researchers use triangulation techniques to collect data that has validity and validity values.

#### **1. Credibility (Internal Validity)**

Credibility refers to the extent to which research results reflect the reality or real experiences of participants. To increase credibility, researchers can use

techniques such as triangulation, member checking, prolonged engagement, and peer debriefing (Anwar et al., 2020)

## **2. Transferability (External Validity)**

Transferability refers to the extent to which research results can be applied or transferred to other contexts or situations. To increase transferability, researchers provide detailed and rich descriptions of the research context so that readers can assess the relevance and appropriateness of the findings for other contexts. (Brown et al., 2021)

## **3. Dependability (Reliability)**

Dependability relates to the consistency of research results over time and the extent to which the research process can be repeated with the same results. To ensure dependability, researchers create an audit trail that records all stages and decisions during the research. (Turner et al., 2019)

## **4. Confirmability (Objectivity)**

Confirmability refers to the extent to which research results can be confirmed or validated by others and are free from researcher bias. Techniques used to increase confirmability include audit trails and triangulation (Davis et al., 2022)

### **3.5 Analysis Techniques**

#### **1. Data Collection**

Data collection techniques are used to collect data to be studied by researchers. This technique is used to ensure that the data and theories studied are valid, accurate, and in accordance with reality. To achieve this, researchers must really dive in and study data collection methods directly. At the beginning of the exploration of the social situation and the object being studied, everything that is seen and heard has been recorded. So that researchers will obtain a very large and varied amount of power (Sugiono, 2019).

#### **2. Data Reduction**

Sugiono (2019) emphasized that because the amount of data collected in the field is very large, careful and comprehensive documentation is needed. As previously mentioned, the more time researchers spend in the field, the more detailed and complex the data obtained will be. Therefore, the data needs to be reduced and checked immediately. The process of selecting, emphasizing simplification, and transforming raw data derived from written records is known as data reduction.

#### **3. Data Display**

In qualitative research, data can be presented using various techniques such as flowcharts, charts, and concise descriptions. The most popular data presentation format in qualitative research is narrative text because it makes it easier to understand and allows for planning further activities based on the knowledge gained (Sugiono, 2019).

#### **4. Drawing Conclusion**

Sugiono (2019) emphasized that initial findings are only temporary and can change if further data collection does not produce strong evidence. The conclusions presented are credible conclusions if they are supported by strong and consistent

evidence when researchers return to the field to collect data.

#### **4. Result**

In essence, the office layout must be made comfortable. In line with the opinion of (Herlambang et al., 2023) one of which must be made comfortable. The office layout at PT ABC is the Open Office Layout. According to (Nasir, et, 2023) an open layout is an office layout with a large and spacious room. The room is used by employees and their work is carried out in one room together without any barriers or partitions.

Based on the results of the interview, the implementation of the layout at PT ABC in the form of an open layout concept has various significant advantages and disadvantages. On the one hand, an open office layout supports collaboration and communication between employees, and provides flexibility that often increases creativity and work efficiency. On the other hand, with good design and adequate lighting, an open layout can also create a pleasant and comfortable work environment, which can ultimately increase employee productivity and well-being and facilitate interaction between employees. In line with (Moh et al., 2024) who stated that the open office concept conveyed facilitates interaction between workers, eliminates barriers between non-managerial and managerial workers and encourages cultural transparency. This is supported by (Khoshbakht et al., 2018), also found the same results. However, the open spatial concept resulted in lower complaints of visual privacy from MSE workers due to high density in open office spaces and exposure caused by excessive use of glass partitions. Office layout has a crucial role in creating employee work effectiveness and efficiency. One element that can increase work efficiency is the optimal arrangement of office space. In addition, an explanation of the effective use of space can provide employee satisfaction with their work and create a positive impression for them.

The implementation of open spatial planning certainly has obstacles that come that we cannot avoid. The office as a place to carry out daily activities, of course, occasionally experiences obstacles that can cause employees to not work efficiently. Efficiency means doing something right without wasting time, energy, and money, or it can also be interpreted as the ability to complete tasks well and correctly without wasting resources. Thus, work efficiency generally reflects the implementation of effective and optimal working methods. (Tiyastanti, 2020) states that work efficiency is the best comparison or work with the results achieved by work.

Based on the experiences felt by employees related to the obstacles that arise due to the open office layout, it can be concluded that each employee must have their own solution to overcome this problem. This shows that although the open office layout has various challenges, employees individually are able to find effective ways to work comfortably and productively in this environment.

To overcome stress and increase productivity, employees learn stress management techniques and ensure adequate rest while working. In line with (Muhardi & Surya Perdhana, 2023) which states that the comfort of the workspace atmosphere and the level of brightness of the room need to be managed properly by employees so that employee performance can run well.

The company has also reduced noise with soundproofing materials, creating a

comfortable and conducive work environment. The opinion put forward by (Murwaningsih et al., 2023) is that optimal spatial planning is to use and utilize every available room. Supported by (Mokodongan et al., 2019) companies must create standards that require offices and workspaces to remain neat and tidy at all times. This will improve the health of workers while working and reduce medical costs associated with employee health problems.

In this case, some employees implement appropriate communication policies and use noise-canceling headsets to minimize distractions. This approach helps maintain focus and balance between work and mental health. In addition, the layout of the room must be adjusted to the employee's work flow where the placement is based on the needs of each section. The opinion put forward (Herlambang et al., 2023) In arranging the office layout, it is important to pay attention to three main components: the smooth flow of employee work, the employees themselves, and office furniture and equipment. Although sometimes there are still minor disturbances that occur, employees make them insignificant distractions and do not hinder the completion of daily tasks. On the contrary, these minor disturbances can provide a little variety in the daily routine, which is sometimes needed to maintain work enthusiasm.

## **5. Conclusion, Implication, and Recommendation**

### **1. Conclusion**

Some conclusions that can be drawn from the research on Office Layout Analysis at PT ABC are as follows:

- a. The layout conditions at PT ABC are open layouts. This open office layout is designed so that employees can work together in one room without barriers, supporting collaboration and communication between employees, and providing flexibility that often increases creativity and work efficiency. With good design and adequate lighting, open layouts also create a comfortable and pleasant working environment, which can increase employee productivity and well-being. In addition, optimal office space layout has a crucial role in creating work effectiveness and efficiency, as well as providing satisfaction and a positive impression to employees about their work.
- b. A work environment full of distractions can affect employee concentration and productivity. These distractions create an atmosphere that is less conducive to deep concentration and optimal productivity. In addition, interruptions from coworkers, surprise visits from superiors, or company guests can disrupt the workflow and reduce efficiency. Noise in the work environment not only disrupts focus, but can also negatively impact employees' physical and mental health, reducing efficiency and quality of work. Open office layouts also bring unavoidable constraints, causing employees to not always work efficiently. Work efficiency reflects the implementation of effective and optimal working methods, without wasting resources.
- c. The challenges that arise from open office layouts show that despite the challenges, employees are able to find effective solutions to work comfortably and productively. To overcome stress and increase productivity, employees learn stress management techniques and ensure adequate rest. The company has also reduced noise with sound-dampening materials, creating a comfortable and conducive working environment.

Some employees implement appropriate communication policies and use noise-canceling headsets to minimize distractions, helping to maintain focus and balance between work and mental health. The layout of the office space must take into account the smooth flow of employee work, the employees themselves, and office furniture and equipment. Although there are still minor disruptions, employees consider them to be insignificant distractions and do not hinder the completion of daily tasks. Instead, these minor disruptions can provide variation in the daily routine, which is sometimes needed to maintain work enthusiasm.

## **2. Implication**

Based on the research results that have been explained, the implications of the research can be described as follows.

### **1. Theoretical Implications**

Based on the research results, an open office layout can affect employee performance. Employees feel that communication between employees is stronger. This is proven by the data presented by the researcher. An open office layout can help create a greater sense of involvement among employees. In an open workspace, employees can interact more easily with coworkers and feel more involved in the work.

### **2. Practical Implications**

The research results presented can be used by companies as one of the suggestions in office layout. Based on the data presented, employees feel comfortable with the open office layout. But it takes a little time to be able to focus on a job optimally. The research findings are very valuable to be used as an evaluation tool and to increase comfort in the workspace. Thus, this research not only broadens the understanding of good layout, but also improves a good framework for improving comfortable facilities while working

## **3. Recommendation**

The following are recommendations for further research.

- Conduct research for a long enough time, so that the results obtained can be better and more accurate
- Use more sources to obtain data
- Conduct further research to obtain maximum results

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