

An Analysis on The Influence of Indoor Environment Quality on Tenants' Satisfaction with Gedung Mandiri Medan

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Abstract: Professional property management for office building has become an absolute need in the future. The factor of indoor environment quality is very important in office building management. It should be highly heeded since 80% of human life is inside buildings. The objective of the research was to analyze the influence of Indoor Environment Quality (IEQ) which included air conditioner, air quality, room layout, building cleanliness, and building maintenance, on tenants' satisfaction. The research was conducted in Gedung Usaha Mandiri at Jalan Imam Bonjol No. 7, Medan. Although it was old, it still had high occupancy rate; it can be seen from the interest of tenants and prospective tenants who rent the building in the midst of the competition in office buildings in Medan. The population was 33 tenants who rented the Gedung Usaha Mandiri, and all of them were used as the samples. The result of the research showed that the factor of air quality, room layout, and building cleanliness had significant influence ($\alpha = 5\%$) on the satisfaction of tenants who had their offices in the Gedung Bank Mandiri. The implication of the result of the research was that maintaining service quality in the three factors above was very important to keep tenants' satisfaction and loyalty.

Keywords: Indoor Environment Quality, Tenants' Satisfaction, Property Management, Office Management

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I. Introduction

When business competition, especially in the field of rental buildings and office space, is getting tighter, new buildings are popping up, where new buildings that have more modern buildings and also have many better facilities compared to office buildings that are fairly old, so this make the building managers must maintain that the quality of office buildings that they manage is still accepted amid the community, especially those who use building rental services or tenants.

Product quality is related to the quality of office buildings such as location, availability of parking lots, security systems, completeness of facilities and availability of janitors. The location of the building in the integrated business center and the surrounding area is still excellent for tenants of office space units. Safety and comfort are the main factors because that can encourage tenants to last longer in the same building.

In addition to paying attention to the quality of office buildings, the management of office buildings must also pay attention to the quality of services provided to tenants and prospective tenants. Because tenants are strategic partners in the office building business. Therefore, the building management must provide services and maintenance for the building. Service quality is a very important factor in creating customer satisfaction with the goods or services paid by these consumers.

Along with the competition in the office industry which is rapidly increasing, each office building manager strives to provide maximum service as one of the strategies in mastering the market share of office buildings. In renting office space, tenants certainly have long-term needs with office buildings, therefore it is only natural for tenants to demand maximum service from office building managers as long as they rent in these office buildings and pre-sale services for prospective tenants who will influence the decision in rent.

From several studies there are several ways to measure tenant satisfaction levels that are seen in terms of asset management and indoor environment. This needs to be done research in order to provide feedback to office building managers in order to be able to fulfill what is desired by the tenants and also can increase the satisfaction of tenants in occupying an office building.

PT. Mandiri Building Business located on Jalan Imam Bonjol No. 7, Medan, North Sumatra, with a total area of 8,000 M2 with a total of 8 floors, which began operations in 1988, is one of the companies engaged in building rental, especially office space, which always pays attention to the quality of service to meet the satisfaction of tenants. The selection of research objects in this building is because the phenomenon of this building is fairly old but the average occupancy rate is still high, this can be observed from the interest of

tenants and prospective tenants to have an office in this building in the middle of competitive office buildings in the city of Medan . The author also conducted observations and direct observations in the field during the period of December 2015 to February 2016, which found air conditions in this building that use central systems and often experience problems such as not functioning and also the level of coolness of the air conditioner is not uniform and does not wanted by tenants. This resulted in complaints and not a few that made the tenants feel hot and sick which resulted in disturbing their activities while in the building.

In addition to other things that were encountered and were of concern during direct observation in the field in December 2015 to January 2016 the author conducted interviews with 5 speakers from 5 different tenants and was informed about the problem of limited parking space in buildings, technical disturbances in elevators and cleanliness buildings especially in the toilet area where this area seems to be less clean and like lack of maintenance. Because phenomena-this phenomenon so that the authors feel the need to conduct research to determine the level of satisfaction of tenants based on their satisfaction with indoor environment quality.

II. Theoretical Review

2.1 Indoor Environment

Indoor Environment or the environment in the building is important in the management of office buildings. Indoor Environment needs to be a concern because almost 80% of human life is in buildings or buildings, indoor environment quality imbalances can give sick building impacts and impact on residents and building structures (Bluyssen, 2009). Indoor environment quality consists of:

a. Air Conditioner

According to Bluyssen (2009) the parameters of an Indoor Environment that determine the comfort of air conditioners are a measure of temperature, air circulation and humidity. Air temperature is the average energy of the microscopic movement of a particle in a measured system per degree of freedom.

b. Air Quality

Indoor air quality is air in a building that is inhabited or occupied for a certain period of at least 1 hour by humans with various different health statuses (Suharyo, 2009).

c. Room Layout

The term office layout comes from English, namely Office Layout or often called layout only. Office space is the arrangement of furniture, machinery, etc. in the available space, office layout is the arrangement of office space along with the tools to provide facilities for employees (Nuraida, 2007).

d. Building Cleanliness

The cleanliness of the building must be maintained so that the age of the building can be long, nice to plant, improve the health of the environment, and can improve the image of the building. Maintenance of building cleanliness both from outside and inside can be done periodically both daily, weekly, monthly, quarterly and semi-annually. According to Minister of Public Works Decree No. 24 / PRT / M / 2008 briefly maintenance of building cleanliness includes the following:

1. Maintenance of toilet cleanliness
2. Maintenance of cleanliness of the basement floor
3. Maintenance of clean concrete roof plates
4. Maintenance of cleanliness of the lobby and elevator
5. Maintenance of partition cleanliness
6. Maintenance of cleanliness of office furniture and equipment
7. Maintenance of clean fire stairs
8. Maintenance of cleanliness of the corridor
9. Maintenance of the cleanliness of the elevator
10. Clean floors, ceramics, cement, carpets, vinyl, wood cleaning.
11. Maintenance of cleanliness of curtains (vertical blinds and gardyn)
12. Maintenance of clean exterior walls both glass, marble, granite
13. Maintenance of clean glass walls and paint walls
14. Maintenance of clean fire fighting equipment.

e. Building Maintenance

Building maintenance and the elements in it are very important and need to be done after the building is built and used for activities and all activities in it, so that the building can provide satisfaction and comfort for

its users. Procedures and methods of building maintenance and maintenance include the activities of inspection, testing, maintenance, and maintenance for all components of the building.

2.2 Understanding of Tenant

Tenant according to Rasila (2010) is the party that rents space in a commercial rental building (renting commercial). Commercial rentals naturally tend to expect long-term relationships. This long-term relationship aims to maintain tenant satisfaction that has implications for good relations between tenants and providers of commercial space. As for Wasden (2016) stated that tenants are people or groups that occupy land, houses, buildings, offices by renting for a certain period of time.

III. Materials and Method

3.1 Types of Research

This type of research is quantitative descriptive research that is research that measures two or more variables. According to Sugiyono (2012) descriptive research is a study that describes systematically, factually and accurately about the facts, traits and relationships between the variables studied. Descriptive research is also a study conducted to investigate the conditions, conditions, the results of which are presented in the form of research reports as they are.

Data that has been collected is analyzed using statistics and econometrics, so it can be concluded that the formulated hypothesis is proven or not (Sugiyono, 2012). The statistics used are statistical inferencing which learns how to draw conclusions about the entire population based on sample data taken (Suliyanto, 2011).

3.2 Location and Time of Research

This research was conducted at the Mandiri Business Building Jalan Imam Bonjol No. 7, Medan, North Sumatra, from February 2016 to May 2016.

3.3 Population and Samples

According to Arikunto (2010) the population is the whole subject of research. The population in this study were all tenants in the Medan Independent Business building, which numbered 33 tenants.

Samples according to Sugiyono (2012) are parts of the population that are used as actual data sources. In other words, the sample is part of the population. Taking part of the population is intended as a representation of the entire population so conclusions also apply to the entire population. According to Arikunto (2010) if the population is less than 100 people, then the total sample is taken as a whole, but if the population is greater than 100 people, it can take 10-15% of the total population. With this statement because the population is not greater than 100, the authors take a sample of 100% of the total population, namely, as many as 30 tenants.

3.4 Data Analysis Method

This study uses descriptive qualitative analysis method to determine the existence of relationships between dependent variables and independent using inductive statistics correlation with multiple regression analysis. The qualitative descriptive objective in this study is to provide a systematic, factual and accurate description of certain facts.

a. Descriptive Analysis

Sugiyono (2012) explains that qualitative research methods are research methods used to examine natural objects, where researchers are key instruments, while data collection techniques are conducted by interview methods, data analysis is inductive, and the results of qualitative research emphasize meaning rather than generalization.

b. Multiple Linear Regression Analysis

This analysis is conducted to see if there is a causal relationship between the two variables or examine how large one variable affects the other variables. Relationship between variables that describe the function, namely: $y = f(x)$. This function explains the relationship between the dependent variable (Y) and the free variable (X). Hypothesis testing using t test, F test, r squared test.

IV. Results and Discussion

Results and Discussion

Satisfaction is the feeling of being happy or disappointed someone who appears after comparing the performance (results) of the product that is thought of to work or expected results. So satisfaction is a function of perception or impression of performance and hope. If the performance is below the expectations of dissatisfied customers. If performance exceeds customer expectations, they are very satisfied or happy Kotler

and Kevin (2007). The operational definition of satisfaction in this study is the quality of the Bank Mandiri indoor environment offered to tenants or tenants. Based on the instrument questions from each variable that affects tenant satisfaction with the indoor environment of Bank Mandiri Building can be described the influence of the still-variable.

a. Effect of Air Conditioner

The aspect of air conditioner in this study was to measure the perceptions of tenants with a Likert scale on air circulation in the work room, room air humidity and overall condition of the air conditioner.

The regression results show that the air conditioner variable has a positive effect, but not significantly towards tenant satisfaction. Based on descriptive statistics, the majority of respondents' answers were 23.23%, being neutral towards the variable air conditioner. This shows, even though the location and position of the office are different, but with an integrated air conditioner system where the Bank Mandiri Building uses a centralized air conditioner system with an office operating temperature of 22°C the tenants have no problems with the building's air conditioner.

The results of this study are different from Bluysen (2009), parameters of the Indoor Environment that determine the comfort of air conditioners are a measure of temperature, air circulation and humidity. Air temperature is the average energy of the microscopic movement of a particle in the system measured per degree of freedom, in his research Assessment of indoor environmental quality in office building, conducting research on building tenants at S headquarters . Corportion, Seoul Korea. Concluding that the air condition, building air quality, tranquility, lighting provide satisfaction to the building tenants except the humidity level of the room.

The air conditioner in this study did not have a significant effect because, although the location and position of the offices varied, tenants did not have problems with the building's air conditioner. The air conditioner system in the Bank Mandiri Building uses a centralized air conditioner system with temperatures at the office operations adjusted to be in the range of 22°C to 24°C. Based on interviews with the Gedung Usaha Mandiri party that the regulation of air conditioner temperature is based on American standards and the Decree of the Minister of Health Number 1405 / Menkes / SK / XI / 2002 concerning the environmental and office health requirements comfortable for working atmosphere in the range of 18°C -28°C. They recommend a comfortable temperature of 22.5°C - 26°C or simplified to 24°C or range from 22°C to 26°C.

b. Effects of Air Quality

The air quality variable instrument in this study is the air quality in the building does not smell and smell, there is no pollution around the room and the air in the room is clean and there is no ash.

The regression results show that air quality has a positive and significant effect on tenant satisfaction in Bank Mandiri Building, meaning that if the quality aspects of air quality are good, it will increase tenant satisfaction at the Bank Mandiri Building on Jalan Imam Bonjol No.7 Medan.

According to Bluysen (2009) air quality in office buildings is influenced by pollution from chemical sources and pollution from sources of living things.

From the results of the research instrument that gives satisfaction to the largest tenants is "the absence of pollution in the building", where 42.4% of respondents argue agree, while the other instruments of respondents who think the majority are 30.3% respondents agree smells and 33.3% of respondents somewhat agree that the air in the room is clean and there is no ash, this shows that the air quality in the Bank Mandiri Building meets the satisfaction of tenants.

c. Effect of Room Layout

The aspect of room layout in this study is to see tenants' perceptions of the amount of space available and storage space in work activities in the work space is fairly good, the level of visual privacy in the independent building space is fairly good and the ease of interaction with coworkers is very easy.

The regression results show that room layout has a positive effect on tenant satisfaction, meaning that if the room layout is well organized, it will increase tenant satisfaction at Bank Mandiri Building.

Based on the results of the study, it was found that the majority of respondents were of the opinion that the room layout in Bank Mandiri Building fulfills tenant satisfaction with an answer percentage of 30.3%.

The results of this study support previous studies, namely Nuraida (2007) which states the regulation of office space along with tools to provide facilities for employees to the convenience of employees and the results which states the determination of space needs and about their use detailed from a space to prepare a practical arrangement of physical factors that are considered necessary for the implementation of office work at a reasonable cost. so the room layout is the preparation of office equipment and equipment in accordance with the wishes of the tenants of the building. Apart from being influenced by tenants' desires, this room layout is also based on aesthetics, art, feng shui, so office workers can get the benefits of satisfaction.

d. Building Cleanliness

Based on the results of linear regression, it is stated that the Air Quality variable has a positive and significant effect on tenant satisfaction. This study supports the research of Khalil and Asrul (2009) in his research on towards indoor evaluation towards occupational evaluation in office buildings, where indoor environment factors must be important attention to meeting tenant satisfaction, conducted a study of how indoor environment quality factors affect the perception of building tenant satisfaction. The building tenant survey was obtained from the University of California and Berkley's Central for Built Environment (CBE) database, concluding from 15 indoor environment quality variables studied, namely air condition, air quality, lighting, visual comfort, noise level, personal comfort, room size, room layout, ease of interaction, furniture suitability, room color and texture, building cleanliness, room cleanliness and building maintenance. of all these factors only 7 (seven) significant factors influence the level of satisfaction of tenants, namely: air condition, room size, furniture suitability, room cleanliness, sound noise, personal visual, room color and texture.

Based on the results of the study also found that the majority of respondents, as much as 27.8% expressed satisfaction with the cleanliness of Bank Mandiri Building, where aspects of building cleanliness in this study were to see perceptions of tenant satisfaction with cleanliness of building lobby, cleanliness of building floors, cleanliness of toilets on each floor, cleanliness stairs / lifts in building space, cleanliness of curtains / curtains and glass and overall tenants are satisfied with the cleanliness of Bank Mandiri Building in general.

e. Building Maintenance

The building maintenance aspect in this study is to see the tenant's satisfaction with the architectural components of the building (roads, glass walls, ceilings, doors) whether it has been considered good, building maintenance carried out by building managers on building structural components (foundations, walls and civil works) whether it is fairly good and building maintenance that is carried out by the building manager on mechanical components (drains, water faucets, air conditioners, elevators).

Based on the results of linear regression, building maintenance components have a positive but not significant effect, where from the descriptive statistical results of the majority of respondents, that is equal to 26.53% being neutral. This shows that the Bank Mandiri Building maintenance system has been running well and based on interviews with Bank Mandiri PT. Building that the Bank Mandiri Building has implemented standards of care issued by the Government of the Republic of Indonesia contained in the Regulation of the Minister of Public Works Number 29 / PRT / M / 2009 concerning building maintenance.

V. Conclusion and Suggestion

Conclusion

The indoor environment quality factor for the opinions of tenants in the Bank Mandiri building significantly affected tenant satisfaction with the R-Square number of 96.6%. Based on the results of the research variables that have a significant effect on tenant satisfaction at the Mandiri bank building Jalan Imam Bonjol No.7 Medan are variable air quality, room layout and building cleanliness so that these variables need to be improved in quality.

1. Air Quality Factors have a positive and significant influence on the level of satisfaction of tenants in accordance with the theory that the better the air quality, it will increase the comfort and satisfaction of tenants.
2. The layout of the room has a positive and significant influence on the satisfaction of tenants, this is in accordance with the theory that the better the layout of the room, will increase concentration and facilitate work so that it will increase the satisfaction of tenants.
3. The same thing with building cleanliness has a positive and significant influence on tenant satisfaction, this is in accordance with the theory that the cleaner the building will increase the satisfaction of tenants.
4. While the factors of air conditioner and building maintenance did not significantly influence the satisfaction of tenants so that it needed special attention for building managers and for tenants based in the Mandiri bank building Jalan Imam Bonjol No.7 Medan in order to increase satisfaction for tenants.
5. Overall the question instrument in this study has a positive and very significant effect on the satisfaction of tenants based in Bank Mandiri Building Jalan Imam Bonjol No.7 Medan with R-Square approaching 1 or 100%. This shows that even though the economic age of the Bank Mandiri Building is getting older, the environmental and building maintenance that has been well implemented by PT. Gedung Gedung Mandiri has made the tenants satisfied with the indoor environment factors.

Suggestion

For Building Management, based on research conducted at the Mandiri Bank building in Medan, it is recommended that the management of PT. Mandiri Building Business to make this research as a basis for input in maintaining and improving service to indoor environment quality factors that are significant to the level of

tenant satisfaction, as well as decision making on matters that affect tenants' interests in partnership with PT. Mandiri Building Business, so that tenant satisfaction can be maintained.

b. Tenants or tenants can participate in order to increase satisfaction by helping building management to improve service even better. Because without the participation of the tenants it would be difficult to get mutual expectations between the building and tenants.

c. For researchers, especially in the field of property management, further research can be carried out so as to obtain more perfect research results by conducting comparative studies among other office buildings to find differences in satisfaction factors among tenants.

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