

Determinants of the Office Space Rent Rate in Jakarta, Indonesia

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Abstract: This study estimates factors affect the rental price of office space in each district in Jakarta, Indonesia namely Central Business District (CBD), Second Central Business District (SCBD), and Outer Central Business District (OCBD). The variables used are the number of lifts, the age of the building, the parking capacity, the height of the floor, the number of public transportation routes that cross the location of the office building, the vacancy rate, the distance to the transportation node, space usage, and the use of electric power. There are differences in significant variables for rental price of space rent. For CBD, significant variables are space usage, the number of routes that cross the location of the building, and the distance to the transportation node. For SCBD, the significant variables are space usage, the number of public transportation routes that pass the office building location, and the distance to the transportation node. For OCBD, the significant variables are parking capacity, space usage, the number of public transportation routes that pass the office building location, the number of passenger lift and Electric Power Usage per unit net floor area.

Keywords: Space Rent, District Location, Jakarta.

1. Introduction

The increasing foreign and domestic investment boosts demand for office space rental (Brounen & Jannen, 2008). The high economic activity will absorb many workers and increase the need for office space as a means to work. In other words, the demand for office space is strongly influenced by macroeconomic variables (Bollenger et al., 1988; Brounen & Jannen, 2008; McCartney, 2010; Frabcesco & Anthony, 2008; Glascock et al., 1993; Sivitanidaou, 1994; Eduonakem et al., 2014). From 2019 to 2021, Colliers International predicts that there will be an additional supply of office space in Jakarta of up to 1.5 million

m². The majority of this rapid growth occurred in 2019 and slowed down in 2020-2021, and thus the vacancy rate was estimated to reach 13.1%. In terms of price, it is estimated that the rental rate for office space will only increase by around 4%-4.5% due to a large number of additional office spaces, especially in the CBD (Central Business District) areas, which are generally of high quality. The CBD area in South Jakarta is still the most targeted. In 2019, the seven new supply buildings in Jakarta were located in Sudirman, Mega Kuningan, Thamrin, and Gatot Subroto (Business Economy, 2019).

Based on data from Coldwell Banker Commercial (2020), the cumulative supply of offices in Jakarta in the third quarter of 2019 reached 8,783,780 m². It included an additional new supply of 147,148 m² from several Grade A buildings in the CBD and TB Simatupang areas. Compared to the third quarter of 2018, additional new supplies decreased by 73%, anticipating the lack of absorption. Tommy said that the absorption of office space showed a positive movement, although it was still at a relatively low level. Until the third quarter of 2019, net absorption reached 137,107 m². Thus, the occupancy rate rose 0.15% compared to the end of 2018. Most of the absorption occurred in office sector A, which was influenced by the increase in the quality of the building. Although the demand showed positive indications, the high level of vacancies in Jakarta's office space had led to a decrease in rental rates. At the end of the third quarter of 2019, the average rental price was IDR 202000 per square meter per month, decreasing by 3.11% compared to the end of last year (medcom.com., 2021).

DKI Jakarta, as the nation's capital, is the area with the highest average economic growth in Indonesia. DKI Jakarta's economy in the first quarter of 2019 grew by 6.23% and 0.29% above the average economic growth of the 34 provinces. Jakarta's economy grew faster than that in the first quarter of 2018, which was 5.95% (Central Bureau of Statistics of DKI Jakarta, 2020). This condition caused the demand for office space rental in DKI Jakarta always to exist. The amount of demand for office space can be seen from the size of the occupancy rate. From 2017 to 2019, the demand for office space was quite positive, supported by technology-based companies such as e-commerce and co-working spaces.

The demand for office space rental generally comes from service companies such as banking, insurance, and high technology industrial companies (Fanning et al., 1994). This is because these types of companies really consider the prestige of their office buildings. However, in recent developments, the demand for office space in the city center has also come from manufacturing companies. Meanwhile, in 2019, in the economy of DKI Jakarta in terms of production, the highest growth was achieved by the financial services business field, which was 5%; and from the expenditure side, the highest growth was achieved by the export component of 35.19%.

According to the publication of Jones Lang LaSalle (JLL) in 2021, the occupancy rate of office space in DKI Jakarta was still relatively high throughout 2020. This was due to the demand from technology companies during a depressed economy due to the Covid-19 pandemic. The occupancy rate of office space in the CBD areas was at 74%, with absorption throughout 2020 covering an area of 33000 m². Grade A office rental rates decreased by 1.7% compared to that of the previous year. In DKI Jakarta, three CBDs dominate the offer of office buildings, namely the Sudirman, MH Thamrin, and Kuningan areas. Meanwhile, in non-CBD areas, the total absorption of office space throughout 2020 was recorded at 22000 m². Even though the rental rate was recorded to be stable, there was a trend of new price offering to encourage

competitiveness (Business Economy, 2020). It is estimated that until 2021, offices in the CBD areas will still be favored by existing companies (The Jakarta Post, 2020).

Like other metropolitan cities around the world, Jakarta has complex problems. This complexity stems from the high level of population density. This has resulted in several issues, including the increasing need for housing, business, government, city facilities, infrastructure, etc. The limited land in Jakarta has implications for the supply of housing and business facilities as well as the necessary public space. This resulted in the continued increase in land prices.

As a result of the continuous increase in land prices, a development pattern that tends to be carried out intensively becomes necessary. The intensive land use in question is the development carried out vertically, replacing the horizontal development patterns. Such conditions result in the pattern of land use in urban areas, which will have implications for the number of floors of the building. The primary consideration theoretically and empirically related to the addition of the number of floors is that vertical buildings will be much cheaper than horizontal ones. Properties that experience a pattern of vertical development in urban areas such as Jakarta almost occur in every type of property, such as residential properties, offices, shops, hotels, etc. The vertical pattern of development like that in Jakarta is the pattern of development of cities worldwide. In fact, the height of buildings in a city often indicates the level of development of that city.

Another phenomenon in urban areas related to the increasing price of land is the growing price of space rental. The increase in rental prices every year is a promising business opportunity for developers. They respond to this situation by constructing many commercial buildings in Central Business District (CBD) areas and other locations. In general, the growth rate of office space demand is influenced by macroeconomic and non-economic variables. In addition to the growth in demand and the rate of office space rental that continues to increase every year, there is another interesting thing: an empirical phenomenon related to the rental rate of office buildings in Jakarta. This empirical phenomenon shows that:

- a. There are differences in rental rates in one office building, among office buildings in one area, and among office buildings in some areas.
- b. The rental price for office space between a floor and the floor above does not differ, except for the ground floor and the mezzanine floor. This does not follow Bargel's (1955) statement in the Height Building Theory, which states that the closer to the center of public space facilities, the higher the rental value. According to this theory, the location of the center of facilities and public spaces is assumed to be on the ground floor, so that the higher the floor, the cheaper the rent will be. This is supported by Marina (2009) and Henry (2003), who find that business firms are only willing to pay lower rental rates for office spaces located on higher floors of office buildings and vice versa. This is because public facilities are always located on the ground floor. However, different results were found in the research of Oven and Pakdemir (2000) and Brotosunaryo (2010).
- c. The tenants of office buildings prefer office buildings with extensive electric power facilities so that for this type of rental space, the rental rate is higher than the energy-efficient rental space. This is contrary to the general assumption, which states that the more efficient a building uses electrical power, the

more expensive the rent will be because buildings built with energy-saving concepts (green building parameters) have higher construction costs than conventional buildings (Azlanshah, 2012).

- d. Office space tenants have a preference for renting office space. The factors influencing this preference include areas with low crime rates, access to public facilities, and traffic conditions (Adnan et al., 2010); the distance to the CBD, the average walking time to the office location, and the area of office space within a two-block radius (Clapp, 1980); as well as the number of public transport routes that pass through office locations and toll road interchange distances (Wheaton et al., 1997).

The need for office space is influenced by increased activity in the industrial sector caused by increasing investment. In this regard, considering that the ownership of commodities including property, is not only freehold but can also be leasehold, in the condition that the commodity is owned on a leasehold, one type of value required in exchange is the rental rate. Individually, each company as a prospective tenant will have a request schedule that contains the rental rate and the desired area of the rented space based on its capabilities. The rental rate for office space will determine the income for both tenant investors and property owner investors. Failure to determine the rental rates can be a source of disappointment for both (Simon et. al., 2015).

One of the rental rate analysis methods based on the cost function approach is Ricardo's theory of rent (1891). Following the classical tradition, Ricardo emphasizes the theory of production costs, in which prices are determined by supply (Skousen, 2009). According to Ricardo, tenants will be willing to pay a maximum land rent value of the difference between total income and total costs, excluding land rental costs. This lease concept was later developed by Von Thunen who stated that land rent is no longer based on fertility level but accessibility. Agricultural products grown on land rented by farmers when marketed require a very dominant cost, namely the cost of transportation to the market. The further away from the market, the higher the transport costs will be. This then results in the concept of proximity to the center of the market and increasing accessibility, which will impact the costs incurred.

The application of Von Thunen's concept, as explained by O'Sullivan (1999), causes retail activities to be located in the city center generally. This is because the highest level of accessibility strongly influences business continuity to achieve maximum profit. A high level of accessibility will attract many consumers so that the level of profit will increase. Therefore, retailers will be willing to pay high rental rates in locations with a high level of accessibility (Brotosunaryo, 2010).

Several theories are in line with Von Thunen's theory regarding land use in urban areas, which is no longer based on the level of land fertility but is based on its unique geographic space (O'Sullivan, 1999; Alonso, 1964; Fujita, 1989). Land use theory explains that cities can be formed as monocentric cities, multicentric cities, and modern multicentric cities. These types of cities are formed due to agglomeration and segregation. Agglomeration and segregation are concepts that are formed in consideration of transportation costs. This is consistent with the traditional urban model, which predicts that office rental rates will be higher in larger and more affluent cities with adequate transportation systems and industrial levels that provide more substantial agglomeration benefits (Bialkowski 2019). Another theory closely related to the concept of rent is the hedonic price theory which explains that consumers try to maximize their utility or

pleasure under their budget constraints. Hedonic price analysis is also in line with the maximization approach (Rosen, 1974).

The construction of an office building by a developer is carried out following the technical provisions of the building and regulations in the field of urban planning. In the optimization analysis, the design of the building is a constraint function. Meanwhile, to maximize profits, developers must try to minimize their cost function. In fact, the rental space is not always fully occupied as often there is still an empty or vacant space. In the practice of the property market, the floor area for rent offered can be determined from the vacancy rate of the office building.

2. Method

The data of this study were obtained from both primary and secondary data. The primary data included those collected from the dependent and independent variables. Meanwhile, the secondary data concerning the number of buildings and the development of supply and demand were obtained from various print and online publications. The primary data of the dependent variable were data on rental rates, while service charge and data on the independent variables such as the amount of electricity consumption, parking capacity, number of lifts, building age, and space usage were obtained directly from the manager of each building. Meanwhile, data regarding the number of floors in the building were obtained through physical observation or direct observation with the assumption that every difference in floor height implied a difference in floor height of five meters. Other primary data, namely the distance to the nearest transportation center and the number of vehicle routes that pass, were obtained through direct observation.

Data on the number of privately owned office buildings that became the population of this study were secondary data obtained from online media publications. However, to validate the data, it was necessary to carry out adequate verification at the location of the building. The verification was carried out by checking the building physically and by checking it with the help of maps, either online or offline maps.

The office buildings that became the population in this study were privately owned office buildings that were built with the primary function as office buildings and that were not mixed with malls, shopping centers, and other business spaces. The population of this study amounted to about 1,500 buildings spread throughout the DKI Jakarta area. The population data were obtained from various sources such as www.alamatku.com using the office building subcategory and direct observation activities. By using the Slovin formula, the number of samples used in this study was 316 office buildings.

The samples of this study were selected using the multistage sampling technique. It is a technique for selecting samples in stages to represent the characteristics of the population. The stages of sample selection in this study included:

1. Grouping office buildings into several business areas. Areas that tended to be homogeneous were grouped into one. The grouping was based on a visible phenomenon, namely the occurrence of agglomeration of tenants. Tenants with certain business sectors rented office

buildings in groups in a specific area. Based on the analysis, three groups of business areas were obtained, namely:

- a. Central Business Districts (CBD), which include Sudirman Street, MH Thamrin Street, Gatot Subroto Street, and Rasuna Said Street, Kuningan;
 - b. Secondary Central Business Districts (SCBD), which include TB Simatupang Street, Fatmawati Street, roads in Menteng area, and;
 - c. Outer Central Business Districts (OCBD), which include office buildings around East Jakarta, West Jakarta, and North Jakarta.
2. Selecting office buildings in each CBD, SCBD, and OCBD area randomly.
 3. Randomly selecting the floor number in each office building that had been selected in the previous stage with a random technique.
 4. Randomly selecting the office space on each floor that had been chosen in the previous stage.

The number of samples in each area was determined proportionally according to the population of office buildings. Areas with the largest population of office buildings would get more samples than other areas. After knowing the number of samples for each area, sampling was carried out in stages, starting from selecting office buildings, floors, and space to be rented. Each stage was carried out using random sampling by utilizing the random generator function.

The data collection in this study was carried out directly by contacting the office building manager, who was selected as the sample of the office buildings. As many as 330 respondents were given a questionnaire to elicit the necessary data. Details of the number of respondents in the three research clusters were 149 samples from the Central Business Districts, 71 samples from the Second Central Business Districts, and 110 samples from Outer Central Business Districts.

Several variables taken by the direct observation method included the distance to the transportation node and the number of public transportation routes passing that building. Observations on the number of vehicle routes were carried out by counting the number of public transport routes that passed on each road lane around the office building. Meanwhile, the distance to the transportation node was calculated using manual measuring instruments, such as measuring tapes and vehicle speedometers. This method was done to ensure the actual distance in the field.

The regression model used in this study referred to that of Frew and Judd (1988) and Fuerst (2007) as follows:

$$\text{LnRent}_i = \alpha + \beta_1 \text{LnLift}_i + \beta_2 \text{LnBuild}_i + \beta_3 \text{LnPark}_i + \beta_4 \text{LnFloor}_i + \varphi_1 \text{VR}_i + \varphi_2 \text{LnEFL}_i + s_1 D_i + \omega_1 \text{LnRoute}_i + \omega_2 \text{LnStp}_i + \varepsilon_i$$

Operationally, the definitions of the variables of this study are as follows:

1. Rent is the rental rate, including service charge, in rupiah per square meter per month.

2. *Route* is the number of public transportation routes that pass the office building location. These routes are those passed by public transportation, such as Kopaja, Mayasari Bhakti, Metromini, city transportation, busway, and other types of public transport.
3. *Floor* is the height of the floor (in meters) measured from the lowest surface to the floor where the rented space that is the object of the study is located. Every one-floor difference in height is assumed to increase or decrease by five meters.
4. *Build* is the age of the building (in years) which is calculated from the time the building was built until the time the research was conducted. If the number of years is not full, rounding is done to the nearest number of years.
5. *Lift* is the number of passenger lifts (in units) located in the office building.
6. *Park* is the parking capacity (in units of cars) inside and outside the office building in one office area, including the parking building and the parking area around the building location.
7. *VR* or vacancy rate (in percent) is the area of vacant rental space divided by the total space rented.
8. *DStp* is the distance from the office building (in meters) to the bus station/sub-station, bus stop, and Jakarta commuter train stations.
9. The dummy variable of space usage. The dummy used is 0 for use as an office space, and 1 for other uses, such as restaurants, boutiques, fitness centers, etc.
10. *EFL* is the variable of Electric Power Usage per unit net floor area. For all sample office building units, this variable is measured in KVA per square meter of net floor area for electricity consumption from State Electricity Enterprise.

This research was designed from relevant theoretical conceptions in determining the amount of office space rental rate. The reasons behind this research design were the various occurring phenomena and the similar findings yielded by previous studies. Empirical phenomena show several things that were different from common sense and the existing theories so that questions arose and required answers to explain these phenomena. Apart from this fact, this research was also motivated by differences in the conclusions of several previous studies.

3. Findings and Discussions

Overall, for all location categories, namely CBD, SCBD, and OCBD, the average rental rate was IDR 287,579/m²/month. The highest rental rate was in the CBD areas, while the lowest one was in the OCBD. The rental rate of office spaces in this study included the service fee charged to the tenant. The rental rate for each category is presented in Table 1.

Table 1: Average, Maximum, and Minimum Rental Rate in Each District Category (IDR*/m²/month)

Rental Rate	CBD	SCBD	OCBD
Average	351265	283708	223022
Maximum	767000	585000	546000
Minimum	110500	84500	71500

Source: Primary Data, Processed

*IDR is The Indonesian Currency

Building facilities used as variables in this study included the number of lifts and car parking capacity. The lifts calculated in this study were only the passenger lifts. Meanwhile, the available car parking capacity in each office building at each location consisted of parking spaces inside the building, those outside the building, and other parking areas. Table 2 below presents data on the number of lifts and parking areas available in the research samples for each category.

Table 2: Average, Maximum, and Minimum of Facilities in Each Location Category

Facilities	Statistics	CBD	SCBD	OCBD
Lift	Average	9 units	3 units	2 units
	Maximum	15 units	8 units	5 units
	Minimum	1 unit	1 unit	0 unit
Parking Capacity	Average	561 cars	254 cars	148 cars
	Maximum	3600 cars	1200 cars	500 cars
	Minimum	60 cars	20 cars	20 cars

Source: Primary Data, Processed

In general, it is agreed that the taller and wider the office building is, the more lifts and parking spaces will be available, and thus the more expensive the rental rate will be. There are various patterns of parking space allocation for office space tenants that apply in Jakarta. These buildings provide ample car parking space for each tenant. In addition, the regulations applied in each car parking space also vary. There are managers who apply a sticker system, and there are also those who use a member system for tenants as residents of fixed parking spaces in the building. Office buildings with high rents generally have ample

parking capacity. This situation is in line with the office building grade classification. Office buildings with grade A or A⁺ can be ascertained to have sufficient parking capacity even in full occupancy.

Theoretically, office buildings that have applied the concept of green building will positively affect the rental rate charged to building tenants. The green building variable in this study was proxied by the installed electric power of State Electricity Enterprise per unit of the net floor area of the office building. Based on the data obtained from the samples collected, the average electrical power installed in office buildings in Jakarta was 9.720 KVA or 9720000 VA. The most significant average use of electrical power occurred in office buildings in the CBD areas, which was 19.480 KVA or 19480000 VA, while the smallest occurred in SCBD, amounting to 3.092 KVA or 3092000 VA. In addition to electric power, each office building in Jakarta has electricity reserves in the form of generators, with an average power installation of 7.089 KVA. The amount of electricity consumption in the office building for each research location is as listed in Table 3 below.

Table 3: Average, Maximum, and Minimum Use of Electrical Power in Each Location
Category (KVA)

Statistics	CBD	SCBD	OCBD
Average	19.480	6.587	3.092
Maximum	100.000	80.000	21.000
Minimum	1.000	1.000	1.000

Source: Primary Data, Processed

Based on the research data, it appeared that electricity consumption in buildings in the CBD was on average higher than that in two other areas. Based on statistics, the average rental rate in the CBD was higher than that in the SCBD and OCBD areas. The comparison between the average electricity consumption and rental rate for each area can be seen in Table 4.

Table 4: Average Electricity Consumption Compared to The Average Rental Rate for Each Area (KVA/m² and IDR/m²)

Areas	Average Electricity Consumption	Average Rental Rate
CBD	3.85	270204
SCBD	2.11	218239
OCBD	3.10	171555

Source: Primary Data, Processed

Accessibility is one of the variables affecting consumer’s preference in selecting an office area. The research variable used to proxy accessibility was the number of public transportation routes passing the building and the distance from the building to the transportation node. The calculation of the number of transportation routes was carried out through direct observation. Meanwhile, to validate the data, the researcher analyzed the secondary data obtained from The Transportation Public Agency of The Province of Jakarta. The average, maximum, and minimum numbers of public transportation routes passing each office building in each area are as presented in Table 5 below.

Table 5: Number of the Routes of Public Transport Services

Areas	Number of the Routes of Public Transport Services		
	Average	Maximum	Minimum
CBD	5	10	1
SCBD	4	8	1
OCBD	3	10	1

Source: Primary Data, Processed

The variable of distance to the nearest transportation node from the office location was obtained by direct measurement and was validated by the measurement results from a digital map. The data shows that, on average, each office building was 472 meters from the transportation node, with a maximum distance of 3,000 meters and a minimum distance of 30 meters. In addition, the types of transportation nodes for each office building varied, ranging from bus stops, bus way stops, bus stations, and train stations. The distance to the transportation node for each area is as presented in Table 6 below.

Table 6: Distance to Transportation Node

Areas	Distance to Transportation Node (Meter)		
	Average	Maximum	Minimum
CBD	252	500	30
SCBD	387	1000	50
OCBD	592	800	50

Source: Primary Data, Processed

The composition of the age of buildings in each area shows the development level of each region. A more significant percentage of new buildings implies that the area is still relatively developing. The Table 7 below present the data about the average age of buildings in each district area.

Table 7: Office Building Age Group (%)

Age Category	Areas			
	CBD	SCBD	OCBD	TOTAL
< 5 years old	4.0	11.3	4.1	6
5 - 10 years old	8.0	6.5	11.2	9
>10 - 15 years old	13.0	22.6	32.7	23
>15 - 20 years old	16.0	9.7	10.2	12
>20 - 25 years old	13.0	30.6	14.3	18
>25 - 30 years old	10.0	11.3	7.1	9
>30 - 35 years old	22.0	4.8	11.2	14
>35 - 40 years old	4.0	0.0	5.1	3
> 40 years old	10.0	3.2	4.1	6
Total	100	100	100	100

Source: Primary Data, Processed

The research data show that 21% of office buildings in Jakarta had spaces for rent for other purposes, besides for office use. These included 1.5% for fitness centers, 97% for food courts, and 1.5% for mini markets. In addition, the study results show that almost all office buildings in the CBD (approximately of 98%) had rental space used for food courts.

In general, offices in the Grade A category were located in the “Golden Triangle” area of the CBD, namely Sudirman Street, MH Thamrin Street, Gatot Subroto Street, and HR Rasuna Said Street. Meanwhile, office buildings with Grade B were in SCBD areas, such as on TB Simatupang Street. Meanwhile, Grade C office buildings were located outside of these locations.

In this study, it was found that there was an agglomeration of tenants based on the type of business. Tenants with specific business sectors rented office buildings in groups in a particular area. For example, agglomeration companies in the mining and mineral sector rented office buildings in the SCBD area, that is TB Simatupang Street. This was because, in general, executives, especially expatriates, lived in the South Jakarta area, such as Pondok Indah, Bumi Serpong Damai, and etc. Meanwhile, companies engaged in finance, insurance, oil and gas, and telecommunications were clustered in the Golden Triangle areas, namely Jenderal Sudirman Street, MH Thamrin Street, Gatot Subroto Street, and HR Rasuna Said Street. Companies engaged in transportation and logistics generally rented buildings

close to Tanjung Priok Port and Soekarno Hatta Airport, such as in Tanjung Priok, Sunter, and Cengkareng areas, including areas on the outskirts of West Jakarta.

Based on the estimation equation formed, it obtained the following estimation results for each district. Briefly it presented in tables below.

Table 8: The Estimation Results for CBD

Variable	Statistics		
	Coefficient	t-statistic	P Value
Constanta	654147.80	9.252334	0.0000
LnLift	3551.22	0.624202	0.5492
LnBuild	-296.17	-0.048884	0.9621
LnPark	1108.68	0.142227	0.8770
LnFloor	-6898.57	-1.210032	0.1766
LnVR	-14808.34	-0.490151	0.6672
LnEFL	4277.76	0.981548	0.2775
D	-32514.58*	-3.036737	0.0154
LnRoute	70569.22*	4.108255	0.0001
LnDStp	-89799.13*	-9.8561017	0.0000
F Statistics	69.33		
P Value	0.0000		
Rsquared	0.8232		

*Denote significantly at $\alpha = 0.01$

Based on the results of the statistical criteria test, with a significance level of $\alpha = 5\%$, it appeared that there were three independent variables and constants that were proven to have a significant effect on the dependent variable, namely R squared. These significant variables are space usage, the number of public transportation routes that pass the office building location, and the distance from the office building (in meters) to the bus station/sub-station, bus stop, and Jakarta commuter train stations. The three variables were significant at a confidence level of 99%. This model had an adequate coefficient of determination with the R squared value of 0.82.

Because the CBD area is usually in the middle of an urban area, it makes sense that the number of public transportation routes that pass the office building location, and the distance from the office building (in meters) to the bus station/sub-station, bus stop, and Jakarta commuter train stations are significant. While for another

significant variable, namely space usage, because in the CBD area, it is usually an option for companies that have developed so that this will require facilities and infrastructure to support their activities. This is certainly a consideration for property rental entrepreneurs to set different rates for various tenants with their type of business. Meanwhile, the results of statistical tests to test the feasibility of the model with the overall test or the influence of the independent variables as a whole showed significant results, with a significance value of 69.33 ($\alpha = 5\%$ and $df = 120.10 = 1.91$). This showed that all regressor variables together could significantly affect the rental rates of office spaces in the CBD areas.

Table 9: The Estimation Result for SCBD

Variable	Statistics		
	Coefficient	t-statistic	P Value
Constanta	11.91446	20.24175	0,0000
LnLift	0.055167	1.050091	0.2979
LnBuild	-0.038536	-0.861831	0.3922
LnPark	0.172430**	2.566725	0.0128
LnFloor	-0.011500	-0.211933	0.8329
LnVR	-0.281050	-0.901384	0.3710
LnEFL	-0.046107	-1.590618	0.1170
D	-0.393464*	-3.793318	0.0003
LnRoute	0.339396*	3.223583	0.0020
LnDStp	-0.163657**	-2.497169	0.0153
F Statistics	69.33		
P Value	0.0000		
Rsquared	0.69		

*Denote significantly at $\alpha = 0.01$

**Denote significantly at $\alpha = 0.05$

Because the location of the OCBD location is still close to the center of the city, so the explanation for the variable space usage, number of public transportation routes that pass the office building location, and the distance from the office building (in meters) to the bus station/sub-station, bus stop, and Jakarta commuter train stations are the same as the explanation for the CBD location. Meanwhile for the parking capacity variable which significantly affects the level of office space rental in SCBD because the location of SCBD which is not only close to urban areas, it is also

not too far from houses that are usually located outside of urban areas, so many office employees choose to drive private vehicles instead of public transportation. so that the parking capacity will be a consideration for office space rental entrepreneurs.

The results of the statistical criteria test using p-value showed that there were four independent variables and constants that are proven to have a significant effect on the rental rate variable. These significant variables are parking capacity, space usage, the number of public transportation routes that pass the office building location, and the distance from the office building (in meters) to the bus station/sub-station. Meanwhile, the results of statistical tests to test the feasibility of the model with the overall test or the influence of the independent variables as a whole showed significant results with a significance value of 69.33 ($\alpha = 5\%$ and $df\ 60.10 = 1.99$). It implied that all regressor variables together significantly affected the rental rates of office spaces in OCBD.

Table 10: The Estimation Result for OCBD

Variable	Statistics		
	Coefficient	t-statistic	P Value
Constanta	11.15679	116.2568	0,0000
LnLift	0.020841**	2.585025	0.0112
LnBuild	-0.000409	-0.149750	0.8813
LnPark	0.001011**	2.572077	0.0116
LnFloor	-0.002659	-1.432565	0.1551
LnVR	0.061216	0.346758	0.7295
LnEFL	0.00240***	1.673918	0.0973
D	-0.1528***	-1.820120	0.0717
LnRoute	0.197810*	9.175304	0.000
LnDStp	4.29E-05	1.418120	0.1593
F Statistics	15.43		
P Value	0.0000		
Rsquared	0.73		

*Denote significantly at $\alpha = 0.01$

**Denote significantly at $\alpha = 0.05$

***Denote significantly at $\alpha = 0.10$

The location of the OCBD which is closer to the employees' housing causes more employees to choose to use private vehicles, so the parking capacity variable becomes a significant variable on the value of office rental space. but this causes the distance node variable to be insignificant. however, because there are still employees who may prefer to use public transportation, the variable number of routes that cross the office location is still significant. For building tenants in OCBD locations, there are more significant variables. This may be because the companies that choose the office location in OCBD are not big companies, so they have to really adjust the rental price for office space with their expected revenue.

Based on data from statistical results with level of p-value criteria, there were three independent variables and constants that were proven to have a significant effect on the rental rate variable. These significant variables are parking capacity, space usage, the number of public transportation routes that pass the office building location, the number of passengers lift and Electric Power Usage per unit net floor area. Meanwhile, the results of statistical testing on the feasibility of the model with the overall test or the influence of the independent variables as a whole showed significant results with a significance value of 15.42835 ($\alpha = 5\%$ and $df\ 120.10 = 1.91$). This shows that all independent variables together significantly affected the rental rates of office spaces in OCBD.

4. Conclusion

The hypothesis that the number of lifts had a positive and significant effect on the amount of office space rental rate was not proven, even though the direction of the coefficient of this variable was in accordance with the theory. This finding confirmed that the greater the number of lifts that reflected the height of the building, the lower the average space rental rate would be. Meanwhile, the hypothesis which stated that the age of the building had a negative and significant effect on the rental rate of office space was not proven even though the direction of the coefficient of this variable was also following the theory that supported it. This finding confirmed the theoretical description in the previous section, that the physical condition, including the design of the building, which could be easily adjusted as needed, made this variable unimportant for tenants. In addition, with the application of the latest building construction technology, the ability of the building structure will remain strong even though the age of the building continues to grow. Thus, if it is assumed that the value of the building is in line with the physical condition of the building, the age of the building will not have a significant effect on the rental rate. The physical condition of the building can be maintained through up-to-date building treatment or maintenance techniques. This treatment technique can maintain the quality and strength of the structure, which in turn will maintain the physical condition of the building. General office building maintenance treatment includes maintenance, renovation, and building restoration that can maintain the physical quality of an office building. This finding corroborates the research results of Shilton and Zaccaria (1994) and contradicts those of Marina (2009), Hough & Kartz (1983), and Slade (2000). They found that the variable of the age of the office building had a negative and significant effect on the rental rate of office space. However, the findings of this study contradict those of Priadi (2011).

The hypothesis that the capacity of the cars that could be accommodated in parking facilities had a positive and significant effect on the amount of office space rental rate was not proven even though the direction of the coefficient of this variable was in accordance with the theory. Similarly, the hypothesis that the floor height had a negative and

significant effect on the amount of office space rental rate was also not proven even though the direction of the coefficient of this variable was in accordance with the theory. This study confirmed the previous theoretical description that the view of space at a certain height would be more taken into account in buildings used for residency. Meanwhile, the threat of danger from disasters such as earthquakes and fires proved not strong enough to affect rent. This was probably due to the increasingly sophisticated firefighting technology and the low frequency of earthquakes occurring in Jakarta.

The location variable, which was proxied by the distance to the transportation node, did not affect the rental rate of office spaces. The findings of this study differed from those of Hough & Kratz (1983), who only used train stations as the transportation nodes. Hough and Kratz's findings showed that the distance to the train station had a negative and significant effect on the rental rate of office spaces.

The use of electric power per m² of the building's net area did not affect the rental rate of office spaces. There was an interesting finding of this study, namely the sign of the coefficient which was contrary to the theory. Based on the theory, the more efficient the use of electrical energy is, the more expensive the rent will be. The description concluded that there were doubts about public behavior regarding their awareness of green buildings. The results of this study confirmed that the community's awareness and mindset about green buildings were still low. In addition, it was indicated that the level of awareness of the need for energy savings as a manifestation of the green building concept had not been properly internalized by the tenants of office buildings in the CBD areas.

This research confirmed the fact that for now, supply was always higher than demand. From these facts, it could be concluded that the vacancy rate was not strong enough to affect the rental rate. The results of this study strengthened those of previous research conducted by Brennan et al., (1984), stating that this variable did not significantly affect the office rental rate. On the other hand, this finding did not support that of McCarthy (2010) and Fuerst (2007).

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