Model for Determining Rental Values of Commercial Properties: Case Study in Boralesgamuwa Urban Council Area

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Abstract

The rental value of a property is a function of many factors. To calculate the rental value, identification of those factors is very important. The factors that influence the rental value are different in different areas while there are some common factors. The degree of contribution of those factors is also different from one area to another. In valuing a commercial property, rent is essential component for valuers as applying valuation methods. Assessment of accurate rental value for the subject property is based on collecting the rental value details of the property. To make necessary adjustments valuer should have a thorough understanding regarding the factors affecting rental values within the particular area and the relationship between those factors and rentals. Therefore, this research intends to identify the factors affecting commercial property rental values. With the model developed for showing factors affecting commercial property rental values and their relationships, valuers can determine rental values easily and more accurately. This kind of model also enrich as the scientific nature of the valuation process. This model will also help land lords and tenants when determining rental value of commercial properties. Further the findings of this research will help decision makers and policy makers when taking decisions and formulating policies.

Key words- Rental Value, Commercial Property, Clustered Properties, Affecting factors to commercial Rental Value, Rental Value Model

Introduction

Real estate comes in many forms and types, while commercial real estate is specific from and Rental value of a commercial property is determined by combining the different degrees of affection of various factors. Since the rental value does not depend on a single unique factor, determining the rental value for a particular commercial property is not a simple task. The rent paid by the tenant or the rent received by the owner is a function of many complex factors (Olawande, 2009).

Finding the accurate and fair rental (market rental value) value of a commercial property is essential when valuing a commercial property. For the estimation of commercial property value, the "investment method" can be used as an appropriate method. According to the investment method of valuation the value is determined by multiplying net income of the property into suitable years purches (YP). Thus, the most important task that the valuer has to do is determining the accurate rental value (market rental value)   for the subject property which is going to be valued (Nick, 2008).

To arrive at the accurate rental value (market rental value) for a particular property, valuer has to do a scientific analysis by using relevant and accurate data. Since there are no two

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identical properties in all the aspects, valuer has to do adjustments for comparable. When doing such adjustments, valuer should have a wider understanding regarding the factors affecting the rental values within the particular area. Then only the valuer is able to make adjustments for those factors in order to determine accurate rental value (market rental value) for the subject property. Accordingly the valuer should have a clear idea regarding the factors affecting the rental values and the amount of impact of those factors on rental values.

There are several common factors that affect the rental values in every city or town such as accessibility (special and general), size and frontage etc. There may also be special factors that affect the rental values which are unique for a particular city or town. Hence, understanding all of these factors is needed. The next important thing is making adjustments for each identified factor. This adjustment should be scientific and also not subjective. It seems that no commonly accepted method for such adjustments in deriving rental values. The amount/degree of adjustments is based on the valuers' personal judgments. Therefore the amount/degree of adjustment for the same factor may be different from valuer to valuer.

It can be argued that the adjustments become more scientific and trustable if it is based on a commonly accepted method/model. With the help of such a model valuer can understand the factors affecting the commercial property rental values of that particular city or town. Then that model can be used as efficient tool in determining rental values of properties. With the current system of valuation, if ten valuers derive rental values for the same property at a given time, the result may be ten various rental values. With the help of a model the differences between those rental values derived by different valuers for the same property at a given time can be reduced.

The relationship between factors and the rental values vary for town to town or city to city. Therefore, it is not practical to develop a single model for every country, city or town. But it is possible to derive a single model for a particular area such as town or city.

When valuing a commercial property by using the income approach, a valuer has to determine the rental value of the subject property by means of comparable rental data and necessary adjustments. Such adjustments may be different according to the valuer's personal judgment. That leads to a confusion of the client.

Objectives of the Study
This research mainly aims to develop a model useful for determining rental values of commercial properties based on Sri Lanka experience. To achieve this main objective it focuses on following specific objectives.
- To determine factors affecting commercial property rental values
- To derive a model useful for determining commercial property rental values

Methodology
The primary data were obtained through a questionnaire survey on and unstructured interviews with the occupants of the commercial property. Secondary data were collected from the institutions such as, Urban Development Authority (UDA), Divisional Secretariat Office of study area.

Population of the study consists of all the commercial properties facing to the main roads within above mentioned physical boundary (1meter from the town center). A sample was selected only considering the ground floor of the commercial properties facing to the main

roads (only ground floor of the properties was concerned in multi storied buildings). The total number of population studies was 391 properties and out of that 50 properties were selected (13%) as the sample for the study. Multiple Regression Model was used to develop model and SPSS was used as a tool for analysis. EXCEL and ARCGIS 9.3were used for the analysis.

Review of the Literature
Conventional Theories on the Factors Affecting Land Use
Conventional economic theories mentioned that at all times the land value is based on the accessibility. Even the 'Von Thunen's model prove that the land use pattern of early agriculture era was based on the transport cost from the central market. Later its principle of "general accessibility" for "transport cost" was possibly applied to urban areas. Burgess (1925) Concentric Zone model, RM Hiag (1926) radial development and H Hoyt (1939) theory etc. discussed the land use pattern.

The Multiple Nuclei Theory which was introduced by C D Harris and E L Ullman is another different view regarding land use. This theory is departed from the earlier patterns of concentric zones arranged around the single centre. They said that large cities have a structure which is essentially cellular.

Most of the above discussed theories highly concerned on the impact of transportation. However, according to the economic, political and cultural situation the land use pattern may vary from city to city. There are several other factors affecting the land use which are common for almost all the cities. According to those factors various people make decisions and according to those decisions land use pattern is determined. Land values and land uses are determined simultaneously.

Factors Determining Urban Land Use
Harvey (1994) pointed out that mainly location of commercial properties is focused on areas where they can maximize the profits and households locate where they can maximize the residential benefits. Accordingly major 4 factors determine urban land uses such as;

General Accessibility: This means the advantage of particular location in terms of movement cost and it largely depends on the transport facilities. The centre of the urban area has the greatest general accessibility and great demand for different land uses.

Special accessibility: This refers to the matter of complementary uses. That means complementarily land uses tend to cluster to get the advantage of agglomeration. Complementarily may have deferent aspects. Shops selling comparison goods are clustering together to tap each other's trading market and enhancing the reputation of the locality for a particular good through greater choice offered to customers.

Additional Factors:
    i.   Historical Development
   ii.   Topographical features
  iii.   Size

Dynamic Changes: Changes in real income and technical development both have an effect on the pattern of urban land values. On the demand side, with the ownership of the car and

new retailing techniques, there is an increase in the land values in the suburbs relative to the inner urban area.

Institutional Factors: Central government and Local government can influence the location decision through policies, taxation, infrastructure etc

Commercial location can be categorized by various functions of the land use. In this case different kinds of goods and shops need to be identified and classified accordingly;

    (i)   Specialty goods
           E.g. Jewelers, Oriental carpets, Work of arts, Ladies fashions, Musical instruments.
    (ii)   Shopping goods
           E.g. Furniture, Carpets, Coats, Dresses, Cameras, Radio &Television
    (iii)   Convenience goods
           E.g. Groceries, Fruits & Vegetables, Confectionery, Tobacco and Newspapers, Hardware

The type of goods sold influences the shop location. Specialty and shopping goods are purchased frequently and irregularly but account for a significant proportion of people's income and usually high income elasticity of demand. Harvey (1994) mentioned accessibility, land values and type. In 1994 Harvey explored this situation using the following figure. Accessibility, land values and type of shop in the CBD
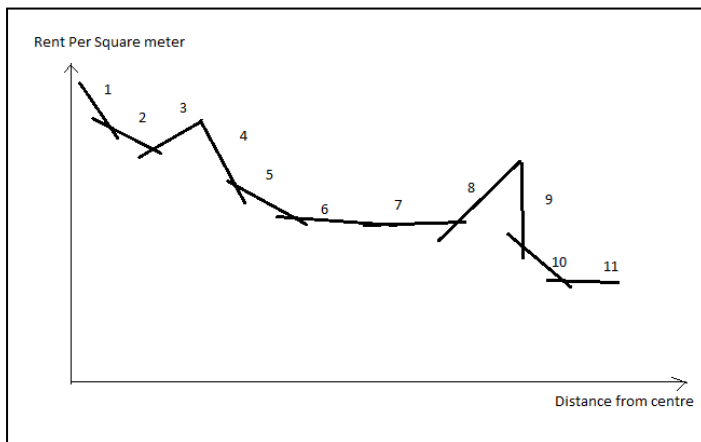
1. Departmental and multiple shops	6.Jewellers 11.Grocers
2. Women's fashion	7.Furniture
3. Camera	8. Corner site
4. Foot ware	9. Men's clothing
5. Women's clothing	10.Furniture

Source: Harvey (1994)

Hence accessibility and the type of shops are also correlated to sales turnover, shop's rent and intensity of development, all diminish outward from the Central Business District (CBD). Indeed even within the central business area (and within some of the larger suburban centers) there is a correlation between distance from the point of greatest accessibility and land

values. "Department stores and other key traders occupy most accessible and valuable locations for they enjoy a high sales turnover and intensity of shopping. On the other hand, furniture and grocery shops are on the periphery of the centre since turnover is less. The precise location of shops depends also on the flow and character of pedestrian traffic, the current nature of adjacent development and the availability of vacant sites on the "right side" of the street on a corner" (Harvey, 1994). The development out of the town shopping centers disturbs the usual correlation between accessibility and values. For an out of town centers to be visible accessibility must be high, yet values and sales turnover per square meter and intensity of development are low compared with central business areas

Land Use and Land Values
Urban land use pattern is determined according to the various decisions taken by firms, households and government. In market economy price of land is determined as the other goods by interacting demand and supply in the market. Then land is limited in supply specially lands which are located in the centre of an urban area. But the supply of land is not totally inelastic. Numbers of the sites are increased with the distance from the centre (Harvey, 1994).

On the other hand demand for land is made by the households and firms according to their utility and profitability. The rent or price is the payment for a particular use to prevent the site going for other use. The use which can outbid all other users can secure the site for that use. That means the lands are converted to their most profitable uses in the market economy.

When there is an imperfection in the market, government has to interfere into the land market. Different locations have different use capacity and accordingly different rents emerge. Land values and land uses are determined simultaneously. It can be explained as follows;
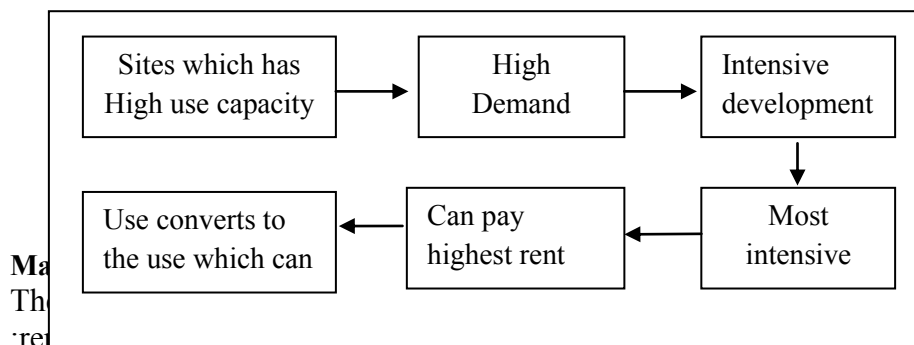
Location
Oxford Dictionary (2006) defines location as 'a place where something is located'. In considering the location distance from the city center is the most important factor to the commercial properties due to the reason of probability. Distance measures, it is the 'relative accessibility', and it is defined as the degree to which two places or points on the same surface are connected. Schiller (2001) pointed out that rent of the property is depending on the location and within the short distance rents may be largely different.

Size
The size means the no of square foot available in shop. " the rent is not tend to increase as the total number of square foot available in the shop because of the Harving Back Principle" (Schiller, 2001).

Frontage
Frontage is the display area which is very important to attract the shoppers. Therefore, willing to pay for the shop which have wide frontage is higher (Tahsin, 2004).

Facilities Available
The availability of facilities such as water, electricity, telephone and parking facilities has huge impact on the rent (Tahsin, 2004).

Condition
The willingness to pay for shops which is in good condition is higer. Condition is determined by considering the building materials, roofing materials, floor covering, types of door and etc… (Tahsin, 2004).

Case Study
Introduction
Borallasgauwa Urban Council Area was selected for the case study which is located in Colombo District, Land about 12 km away from the city of Colombo. The extent of the Urban Council area is 13.5 sq.km and it is divided into eighteen Grama Nilidari Divisions. Boralesgamuwa is a medium sized town in this urban council area and it is situated in the main junction who intersects two main roads namely Colombo-Horana and Dehiwala Maharagama roads. Total population of Boralasgamuwa Urban Council in 2011, is 71200 and population density is 55 persons per sq.km.

When considering the Barelasgamuwa area, Borallasgamuwa East B has the highest population density. Since there are paddy fields in the Borallasgamuwa West B and Borallasgamuwa West C, the population density is lower in that area with compared to the other two.Main commercial development of the study area spread along main roads from the main junction. The distribution pattern of commercial properties, which are facing the main roads limit to the boundry of four main Grama Niladari (GN) Divisions namely Borallasgamuwa East A, Borallasgamuwa West A, Borallasgamuwa West B, Borallasgamuwa West C. The following figure shows the location of these areas:

Figure 1: Commercial Land Use
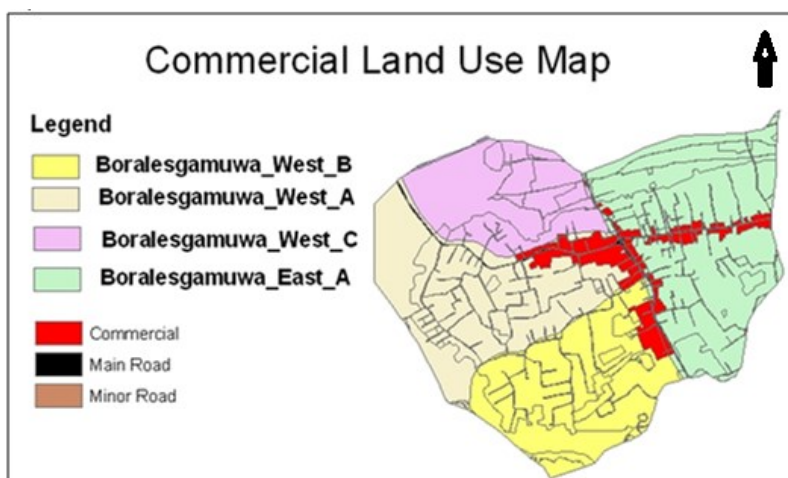
For the purpose of recognition sides of the two main roads named from A to H and the following figure indicates it.

Figure 2: Map of Main Roads in Boralesgamuwa
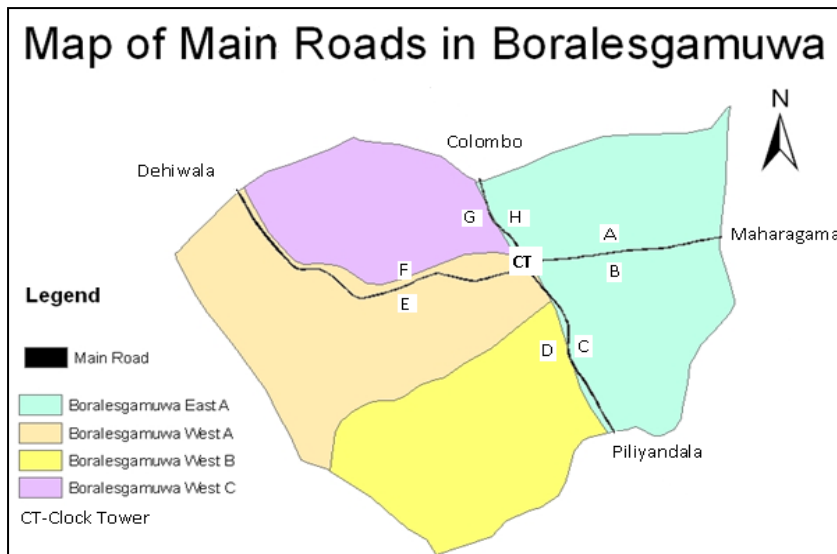
The number of commercial properties with 10 meter buffer within main roads from A to H are shown in the following table.

Table 1: Number of Commercial Properties along the Road Side

Source: Field survey 2011

Road Side	Number of commercial properties fronting to the main road
A	74
B	53
C	65
D	55
E	62
F	53
G	14
H	15
Total	391

Data Analysis

Step 1- Determination of Factors Affecting Commercial Property Rental Values

Identification of the factors affecting commercial property rental value is the main task of the study. Hence, the research is designed to obtain this information from occupants in commercial properties and unstructured interviews were conducted as data collection methods. Accordingly randomly selected twenty commercial property occupants were interviewed. Sample selected was as follows;

Table 2: Category of interviewees

Type of commercial activity	No of interviewees
Grocery	3
Hardware	2
Saloon	2
Food shops	3
Jewelry and pawning centre	2
Vehicle spare part selling and repairing	3
Communication and Photocopy centre	3
Cloth shop	2

Total	20	**Source: Compiled by author**

Results of the interview highlight the following factors which influence the property rental values:

Table 3: Factors which Influence the Property Rental Values

Type of commercial activity	Factors
Groceries	1.Distance to the main road intersection 2.Fronting to the main road 3.Display area of the property 4.Distance to a bus stand 5. Nearness to the place where minor road connects to the main road.
Hardware	1.Distance to the main road intersection 2.Fronting to the main road 3.Size of the premises 4.Availability of parking facilities
Saloons	1.Fronting to the main road 2.Availability of parking facilities 3.Size of premises
Food shops	1.Fronting to the main road 2.Distance to the main road intersection 3.Availability of separate toilet facilities 4.Frontage 5. Availability of parking facilities
Jewelry and pawning centers	1.Distance to the main road intersection 2.Fronting to the main road 3. Safety of the building (Building with concrete slab and Rolling or collapsible door.)
Vehicle spare part selling and repairing centers	1. Fronting to the main road 2.Distance to the main road intersection 3.availability of parking 4.Size of the premises 5. Nearness to the place where minor road connects to the main road.
Communication and Photocopy centers	1.Distance to the main road intersection 2.Fronting to the main road
Cloth shops	1.Distance to the main road intersection 2.Fronting to the main road 3.Display area of premises 4.Availability of parking facilities 5.Availability of separate toilet facilities 6.Size of the property 7.Condition of the building (floor material, roof and Door)

Source: Field Survey 2011

According to the analysis of the results of unstructured interviews, most of the people in different categories identified the following 8 factors.
1. Distance to the main road intersection
2. Facing to the main road
3. Display area of the property/ frontage
4. Nearness to the place where minor road connects to the main road.
5. Size of the premises (number of square feet)
6. Availability of parking facilities
7. Availability of separate toilet facility
8. Physical condition of the property (roof material, floor material and type of door).

Step 2- Prioritize Factors Affecting Commercial Rental Value
The second step focuses on the questionnaire survey to prioritize the above 8 factors affecting commercial property rental values and the sample of 50 was used. It is shown in the following table:

Table 4: Factor Prioritizing

	Factor	Rank							Total	Avg	Rank
		1	2	3	4	5	6	7			
A	Distance to the main road intersection	37	13	0	0	0	0	0	50	1.24	1
B	Display area of the property/ Frontage	2	12	7	3	2	13	11	50	4.16	5
C	Nearness to the place where minor road connects to the main road.	0	3	6	1	6	11	23	50	5.76	7
D	Size of the premises	4	5	11	9	10	9	2	50	4.00	4
E	Availability of parking facilities	7	9	8	13	9	2	2	50	3.48	3
F	Availability of separate toilet facility	0	2	4	2	18	13	11	50	5.38	6
G	Physical condition of the property	0	6	14	22	5	2	1	50	3.42	2
	Total	50	50	50	50	50	50	50			

Source: field survey 2011

Above table indicates the prioritized factors affecting the commercial rental values. The ranks were given from 1-7 and 1 represented the most important factor and gradually 7 represents the least ranking factor. Numbers of responses given to different factors are indicated under factors A-G. For example out of 50 respondents, 37 respondents have ranked factor A (distance to the main road intersection) as the most important factor when selecting a commercial property, 13 respondents have ranked factor A as the second most important factor.

Finally the average rank of the 8 different factors was obtained and it is mentioned as AVG. According to the average the factor "Distance to the main road intersection" is the most important factor and the factor "Nearness to the place where minor road connects to the main road" is the least important factor that affect to the rent.

Step 3- Correlation of Eight Factors
Next task is to find out the relationship between rent and other factors and correlation is performed to find out this relationship. The results of the correlation are indicated in the following table;

Table 5: Correlation between Dependent Variable and Independent Variables

Dependent Variable	Independent Variable	Pearson Correlation	Sig.(2-tailed)	
Rent	Distance	-0.635	0.000	**. Correlation is significant at the 0.01 level (2-tailed).
	Minor Road	0.150	0.297	
	Physical Condition	0.315	0.026	*. Correlation is significant at the 0.05 level (2-tailed).
	Frontage	0.253	0.027	*. Correlation is significant at the 0.05 level (2-tailed
	Size	-0.213	0.137	
	Separate space of parking	0.245	0.090	
	Separate toilet	0.052	0.718	

According to the analysis there are 3 significant correlations between rent and distance, rent and physical condition and also rent and frontage. Out of the seven factors considered, two factors have a significant correlation. The correlation between the distance to the main road intersection and the rent is -0.635 at 0.01 significant levels. The correlation between the physical condition of the property and the rent is 0.315 at 0.05 significant levels. The correlation between frontage and the rent is 0.253 at 0.05 significant levels. Accordingly there is a strong negative correlation between distance to the main road intersection and the rent.

Commercial Rental Value Model
Regression Model
The regression model of commercial rental value was derived as follows;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7$$
$$Y = 78.180 - 0.044 X_1 + 3.581 X_2 + 9.579 X_3 + 6.859 X_4 - 0.014 X_5 + 1.242 X_6 + 0.489 X_7$$

Where,

X_1 = Distance to the main road intersection

X_2 = Nearness to the place where minor road connects to the main road.

X_3 = Physical condition of the property (Roof material, Floor material and Type of door).

X_4 = Frontage

X_5 = Size of the premises

X_6 = Availability of parking facilities

X_7 = Availability of separate toilet facility

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.780[a]	.609	.542	11.11855

Note: a. Predictors: (Constant), Toilet, Distance, Parking, Frontage, MinorRoad, PhyCondition, Size

In the consideration of the entire variables fitted in the model, R^2 (0.609) it is shown that about 60.9% of the variation in rental value are jointly accounted for the variables. According to the variables fitted to the regression model it is represented that R^2 (0.609) shows that

about 60.9% of the variations in rental value are mutually accounted for by the variables considered in this analysis.

The standard coefficients (Beta) value of the independent variable that depicts the degree of each variable that influence to the rental value of commercial property in the area. It is shown in the following table.

The standard coefficients (Beta) give a picture of the relative importance or influence of the independent variables on the rental value. The higher the magnitude of Beta, more the influence of the variable. Hence according to the analysis distance to the main road intersection is the most significant factor to the rental value of commercial property rental value.

Table 6: Standard Coefficient

standard Coefficients					
	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
(Constant)	78.180	13.764		5.680	0.000
Distance	-0.044	0.007	-0.685	-6.061	0.000
Minor Road	3.581	4.118	0.092	0.870	0.390
Phy Condition	9.579	4.939	0.246	1.939	0.050
Frontage	6.859	3.358	0.207	2.043	0.048
Size	-0.014	0.019	-0.147	-0.729	0.470
Par King	1.242	0.906	0.272	1.371	0.178
Toilet	0.489	1.506	0.041	0.325	0.747
Source: Compiled by author Note: a. Dependent Variable: Rent					

Conclusion

Commercial properties of the study area are concentrated facing the major roads. The major road intersection is the place where the highest accessibility. The commercial properties are clustered around the intersections found and located along the major roads. There is a special categorical pattern of commercial property distribution and eight factors were identified as affecting the commercial property rental values based on the study area. They are, distance to the main road intersection, display area of the property/ frontage, nearness to the place where minor road connects to the main road, size of the premises (number of square feet), availability of parking facilities, availability of separate toilet facility and physical condition of the property (roof material, floor material and type of door).

According to the public point of view "Distance to the main road intersection was identified as the most significant factor for the rental value. Second important factor is "Physical condition of the property (roof material, floor material and type of door)". Third important factor is "Availability of parking facilities". Considering the relationship between these, correlation was conducted. The correlation between the distance to the main road intersection, physical condition of the property, frontage are significant in relation to the rent. There is also a strong negative correlation between distance to the main road intersection and the rent.

According to the variables fitted to the regression model, 60.9% of the variations in rental value are mutually accounted for by the variables considered in this analysis. The standard coefficients (Beta) value of the independent variable depicts the degree of each variable that influence the rental value of commercial property in the area. Hence, according to the analysis distance to the main road intersection is the most significant factor affecting the rental value of commercial property.

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