Determinants of Market Value for Condominium Properties: Case Study in Dehiwala, Colombo.

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Abstract

Sri Lanka is   one of the fastest growing economies in Asia. In this growing environment, the real estate market has shown a significant growth, with an increase in price levels of real estate assets. The high value segments in this market are luxury apartments and condominium sector. Condominium market shows a significant extend over the past two to three years. Urbanization, land shortage are the main reasons for the increased demand of the condominiums, particularly in the Western Province. When compared to value of real properties, condominiums have higher market value than other real properties. To monitor the condominium market, the first issue is to understand what are the determinants of market value for the condominium properties. There are number of factors affecting the market value of condominiums. Based on these factors market value will be changed from one property to another property. Property market buyers and sellers are highly depending on these factors, when buying and selling condominium units. Therefore, it is important to identify current condominium property market and factors affecting market value of condominiums.

This research conducting based on Dehiwala Mount Lavinia Municipal Council Area. Participants in this survey were condominium housing unit owners in selected case study area. From 650 condominium units, 120 units are randomly selected. Findings of this study highly depend on primary data and it collected from the Structured Questionnaires and Field Visits. Each participant was given a questionnaire which contains demographic information and determinants of market value of condominium properties. Determining criteria divided in to 5 major categories and respondents are select one item from 5-point scale ranging from strongly agree to (1) strongly disagree (5). The data analysis of the study is presented descriptively.

Location is the most significant factor to determine the market value of condominium properties. In additionally, Neighborhood and Community factors are highly affecting to determine the market value of condominium properties.

Keywords: Real Estate, Condominium Market, Market Value, Determining Factors, Factor Analysis

INTRODUCTION

Real estate is the modern term for land and anything that is permanently affixed to it. Fixtures include buildings, fences, and things attached to buildings, such as plumbing, heating, and light fixtures. Simply real estate means land, tangible features on the land and permanent improvements added to it. The rights to real estate may extend downward into the earth and upward into the air. Real property includes real estate and the bundle of legal rights related to the real estate such as air rights, surface rights and etc.

Real estate uses for various purposes. There are 4 major types of real estate. There are, Residential, Commercial, Industrial, and Agricultural purposes. From these categories, Residential real estate is more important than other types of real estates. Residential real estate is a type of property, containing either a single family or multifamily structure, which is available for occupation for non-business purposes. There are different types of residential properties such as, Single family house, Multiple-family house, Condominiums, Town houses, Separate homes, Duplexes, Vacations homes, Modular homes etc. When consider above mention different types of Residential Properties, Condominiums is one of the major and modern categories of Residential Real Estate. The term condominium refers to a system of ownership whereby a unit is owned separately by the individual who purchases it.

LITERATURE REVIEW

Condominium is a western life style of living, brought into urban area of eastern countries due to the lack of serviced land and increasing population density (Siniti, 1990). "Condominium is described as a building or structure of two or more units, the interior space of each unit being individually owned and balance of property being owned in common by the owners of individual units" (Kowshala, 2002).

The owner of condominium unit enjoys common services and amenities at a lesser cost then individual house owners. They jointly own common elements within the condominium property and thus the cost of such services and shared among all owners. Common elements including elevators, halls, roof, stairs, grounds, pools, building structure and etc. Recreation facilities, removal garbage, security services are some of the most commonly shared amenities. The downside of condominium living is the lack of space and the needs to conform to rigid rules (Edirimanna, 2006).

The Condominium Property Act No.12 of 1970 was the first legislation enacted for Condominium properties in Sri Lanka. This was repealed and replaced by the Apartment Ownership Law No.11 of 1973 embodying the current law for registration of multi-story properties capable of being divided into separate units. The Apartment Ownership Law has been amended by the following legislation: Apartment Ownership (Amendment) Act. No: 45 of 1982, Apartment Ownership (Special Provisions) Act No: 4 of 1999, Apartment Ownership (Special Provisions) Act No: 27 of 2002, Apartment Ownership (Amendment) Act No: 39 of 2003. Simultaneously common amenities Board Law of 1973 also has been amended by the following; Common Amenities Board (Amendment) Law No. 46 of 1982 and Common Amenities Board (Amendment) Act No. 24 of 2003.

Sri Lankan condominium market shows significant growth. Increase in population density has prompted high-rise apartments to evolve as a higher growing sector in the area of housing. High-rise condominium living is a relatively new phenomenon in Sri Lanka, with the majority of high-rise buildings becoming part of the Colombo skyline within the last decade. The residential and rental market for high-end condominiums looks very positive. The target groups of high-rise condominiums are foreigners who work in Sri Lanka and non-resident Sri Lankan professionals who invest these properties as retirement option as well (Senevirathna, 2005).

The development of premium condominium projects is most prominent in the Central Business District. The growing demand for condominium properties, particularly in the Western Province has risen. Today there are number of completed condominium projects situated in and around Colombo area. Ex: The Emperor, Crescat Residences, Havelock City, the Monarch, Trillium Residences and etc. However, number of largest projects is started such as, Altair, Shangri-La and Krissh Square will be the largest residential developments in Colombo and one new condominium project start construction work in Kandy.

When absorption rates of allover the condominium market, the Prime Segment units were fully absorbed by the market as well as the low absorption rate for the lower level segment. 8,129 condominium units have been supplied in Colombo during 2005-2011 (JLL, 2012). The total cumulative supply of condominiums in Colombo is 9,429 units, as recorded at 2nd quarter of 2012 (Condominium Management Authority, 2012).

When compare value of other real properties, condominiums have higher market value. When marketing the Condominium properties, buyer and sellers mostly depend on market value. The International Valuation Standards (IVS) definition of market value is "The estimated amount for which a property should exchange on the date of valuation between a willing buyer and a willing seller in an arm's-length transaction after proper marketing wherein the parties had each acted knowledgeably, prudently, and without compulsion". (International Valuation Standard Committee, 2003)

There are three traditional groups of methodologies for determining value. These are usually referred to as the "three approaches to value" which are generally independent of each other, there are: Cost Approach, Sales Comparison Approach and Income Approach. The income approach is most important for value hotels, apartments, condominiums and office buildings. The income approach is computed by taking the net operating income of the rent collected and dividing it by the capitalization rate (the investor's rate of return). It is also called the "Income Capitalization Approach". Therefore, Income Approach and market approach are the most appropriate, to value condominium properties.

To monitor the condominium market, the first issue is to understand the determinants of market value for condominium properties. There are several factors affecting the market value of condominiums. Based on these factors market value or price will be change from property to another property. Property market buyers are highly depending on these factors, when buying condominium units. Based on various studies carried out in in real estate field, there are number of factors affecting to the Market Value of the condominium properties.

Locational Factors

Some earlier studies (G. Stacy Sirmans and John D. Benjamin, 1991; Tom Kauko, 2002; Oyebanji, 2003; Olwanday, 2008; Olayinka, Simon and Ayotunde, 2013) concluded that the location is one of major determinant of market value. Ariyawansa and Udayanthika (2011) said location is one of the determinants of living in condominium in Colombo Sri Lanka. Following researches said, locational attributes like proximity and accessibility to various (dis)amenities including waste sites, power lines, highways, shopping centers, schools, cultural opportunities, airport, public transportation etc. determined the market value.

Physical factors

According to Olayinka, Simon and Ayotunde (2013), Physical attributes likes, Numbers of bedrooms, bathrooms, fireplaces, garages, square footage of house, lot size, age of structure,

existence of pool is also affect to determine the market value of the real property. According to Ariyawansa and Udayanthika (2011), they conduct an analysis of demand for condominium properties in Colombo, facilities like high speed modern lift, swimming pool, gymnasiums, club, restaurant, playground, laundry and etc. is one of determinants of living condominium in Colombo District.

Neighborhood Factors

According to Olayinka, Simon and Ayotunde (2013), the Socio-economic characteristics of neighboring residents, quality of neighboring structures, ownership/rental, and ethnic composition is one of factor affect the determine market value. Also, Sirmans and Benjamin (1991), said neighborhood quality is affected to the value of condominium properties.

Community Attributes

Olayinka, Simon and Ayotunde (2013), also concluded the community attributes like availability of schools, universities, religious palaces, Court ordered service and etc. are affecting the market value of the condominium properties. Also, availability of institutional facilities, social organizations and recreational facilities are the community factors which affect the market value of the property.

Time-related Attributes

Olayinka, Simon and Ayotunde (2013), said details about month and year of sale, number of days on market, age of the building, market value of other properties/ comparable are influence market value of condominium properties. In additionally Investment climate of the country is affect the market value.

Environmental Attributes

Olayinka, Simon and Ayotunde (2013) concluded, environment factors also determine the market value. Those are view from property, noise levels, pollution levels, storm water and recreational facilities etc.

Subjective Factors

This includes factors that special for condominium properties. Such as, Related Laws, Rules and Regulations, Management Corporation related details and etc. Value of the property will be depending on the availability of active management corporation. Passive management will lead to decrease value. Also, availability of insurance cover for the entire condominium is directly affecting the value of the building.

METHODOLOGY

Population: The selected case study area is Dehiwala-Mount Lavinia municipal council area. There are many Condominiums/ Apartments located around Dehiwala Mt. Lavinia. According to the Municipal Council Data there are 22 Condominiums located around this area excluding rented apartments. They are consisting with more than 650 Units.

Sampling and Sample Size: Use Simple Random Sampling Method to select appropriate sample from population. Considering total condominium properties that situated in case study area it is going to select representative sample to do this research. Therefore, randomly select 120 condominium units from total condominiums units located in this area.

Data collection methods: Collected data must be suitable to achieve objectives of the study. Data has been collected using primary and secondary data sources. Especially findings of this study highly depend on analysis of primary data. According to this study, Primary data are collected using following data collection methods: Through the Structured Questionnaires, Field Visits, and Interview. Secondary data has been collected from, Dehiwala -Mt.Lavinia Municipal Council and Divisional Secretaries, Condominium Management Authority, and Management Corporations etc. This study mainly based on questionnaire survey. Each participant was given a questionnaire which contains demographic information and factors affecting to determine market value of condominium properties. Determining criteria divided in to 5 major categories and respondents are select one item from 5-point scale ranging from strongly agree to (1) strongly disagree (5).

Data analysis: Both descriptive statistics and inferential statistics are used to analyze data. Descriptive analysis present using charts, tables specially for demographic information. Inferential analysis used for identify the relationship between independent variables and dependent variable. In this study, market value is the dependent variable and there are six independent variables: locational factors, physical factors, neighborhood factors, community factors, environmental factors and subjective factors. Each of the factors consists with more than two sub factors. Using SPSS software and run descriptive analysis, reliability test, factor analysis and correlation analysis. Results are shown as follows.

DATA ANALYSIS

Age Distribution of Respondents

According to the Table 1, the majority of respondents belong to 30-40 years of age and it can be seen as 49.17% of total respondents. Secondly 35.83% respondents are belonging to 40-15 years of age.

Table 1: Age Distribution of Respondents

Age	Under 30	31 - 40	41 - 50	Above 51
Percentage	6.67	49.17	35.83	8.33

Citizenship of Respondents

According to the Table 2, the majority of condominium owners are Sri Lankans and it represent 94.17% of total respondents. Other 5.83% unit owners are foreigners especially from Australia, India and Maldives.

Table 2: Citizenship of Respondents

Category	Frequency	Percent
Sri Lankan	113	94.2
Foreign	7	5.8

Nationality of Respondents

Following Table 3 shows that the majority of the respondents are Sinhala and it represents 57.50% from total respondents. Second highest respondent is Tamil and it can see as 20% of total respondents. There are 16.67% are Muslims and 5.83% respondents represent other races.

Table 3: Nationality

Nationality	Sinhala	Tamils	Muslims	Others
Percentage	57.50	20.00	16.67	5.83

Education Level of Respondents

Table 4 illustrate that the majority of the unit owners have degree and it is 57.50% from the total respondents. Other 47.50% are passed A/L examination. There are no respondents in other categories.

Table 4: Education Level of Respondents

Category	Pass A/L	Degree
Percent	47.5	52.5

Occupation and Sector of Occupation

Table 5 shows occupation of the respondents. The majority of 35.83% respondents are working in Executive level. Also 34.17% respondents are doing businesses and 27.50% are professionals. In additionally 2.50% respondents are retired people.

Table 5: Occupation of the Owner

Occupation	Professionals	Executive	Business	Others
Percentage	27.50	35.83	34.17	2.50

According to the Table 6, the majority of condo unit owners is working in private sector and is see as a 66.67% from total. There are 22.50% buyers working in government sector and rest of 10.83% working in semi-government sector.

Table 6: Occupational Sector

Sector	Government	Semi - Government	Private
Percentage	22.50	66.67	10.83

Average Monthly Income of Respondents

Table 7 shows the majority of condo owners belong to the income category of Rs. 100,000 to 500,000 and it can be seen as 65% of the total unit owners. Second highest income category belongs to between Below Rs. 100,000 it as represents 31.67% of the total respondents. In addition to that there 3.33% respondent belongs to income category of Rs. 500,000 to 1,000,000 and no respondent in category of Rs. 1,000,000 and above.

Table 7: Average Monthly Income

Income (Monthly)	Rs. 100,000 and Below	Rs. 100,000 – 500,000	Rs. 500,000 – 1,000,000
Percentage	31.67	65.00	3.33

Floor Area of the Condominium Units

According to the Table 8, the Minimum floor area is 650 sq. ft. and Maximum floor area is 1670 sq. ft. The average floor area is 1156.62 sq. ft. in selected 120 condominium units. Accommodations are difference in accordance with the floor area. When there is a large floor area, houses consist with more than 2 Bed rooms, more than 2 bathrooms, large living space as well as private balcony facilities than small floor area.

Table 8: Floor Area

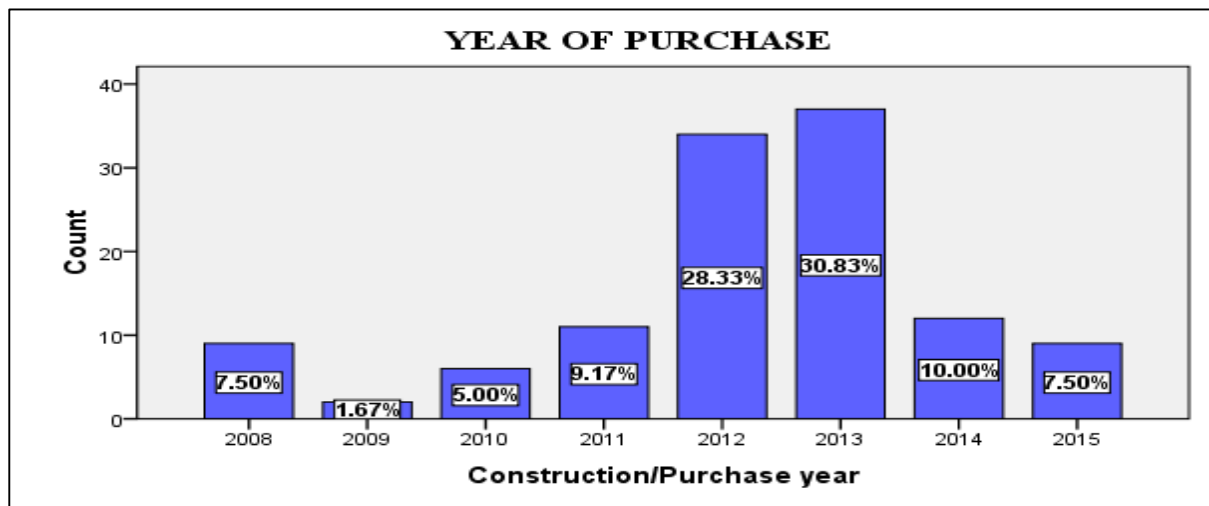|	**No. of Units**	**Minimum**	**Maximum**	**Mean**
Floor Area (Sq. ft.)	120	650	1670	1156.62

Figure 1: Year of purchased condominium unit

Year of Purchase of the Condominium Unit

According to the Figure 1, the majority of condo units purchased in 2013 and it shows 30.83% of total units. There are 28.33% of units purchased in 2012. There are significant trend shows in code market in 2012 and 2013.

Purchased Price of the Condominium Units

According to the Table 9, the Minimum unit price is Rs. 5,000,000/= and Maximum Price is Rs. 28,000,000/=. Also, this is the Dependent Variable of the research study.

Table 9: Purchased Price

	No. of Units	Minimum	Maximum	Mean	Std. Deviation
Market Price	120	5000000	28000000	15060000	5087394

Payment Pattern

Table 10 shows the majority is pay for own money to buy condominiums and it can see as 95% from total respondents. Also 3.3% respondents purchased condominium houses from bank loans and rest of 5% respondents pay from other method. Especially those units are gifted from family relations as a dowry.

Table 10: Payment Pattern

Category	Frequency	Percent
Own Money	110	91.7
Bank Loan	4	3.3
Other	6	5.0

Inferential Statistics

Reliability Test

The reliability of measurement scale was tested by Cronbach's Alpha. Based on the Reliability Statistics Table, Cronbach's Alpha values of all variables should be above 0.7. If get fail Cronbach's Alpha value above 0.7 the factors consist with "Corrected Item-Total correlation" values were less than 0.3 should be deleted.

Table 11: Reliability Statistic Table

Variables	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
Locational Factors		
Proximity to school	.793	
Proximity to Working Place	.784	
Proximity to shopping Center	.754	**0.820**
Proximity to CBD	.768	
Proximity to Waste site	.849	
Proximity to Roads	.792	
Physical Factors		
Size & Accommodations	.743	
Land Information	.730	
Common Elements	.769	**0.804**
Quality of Building	.784	
Architectural Aspects	.803	

Neighborhood Factors		
Infrastructures	.689	**0.764**
Financial Institutions	.692	
Ethnic Mix	.738	
Recreational Facilities	.720	
Community Factors		
Availability of Schools	.748	**0.836**
Availability of University	.752	
Availability of Religious Places	.781	
Residential Development	.869	
Environment Factors		
Pollution Level	.541	**0.774**
Noise Level	.564	
Attractiveness of Area	.984	
Subjective Factors		
Cost of Unit	.538	**0.703**
Land Price	.530	
Management Corporation	.706	
Rules and Regulations	.759	

According to the Table 11, all the factors got Cronbach's Alpha above 0.7 (Location 0.820, Structure 0.804, Neighborhood 0.764, Community 0.836, Environment 0.774 and Subjective 0.703). According to the above analysis, the data is reliable and validate. Therefore, that can use all the items in questionnaire for the Factor Analysis and Correlation Analysis.

Factor Analysis

In hear measure the appropriateness of factor analysis using Kaiser-Meyer-Olkin Measure of Sampling Adequacy Test (KMO Test). Kaiser (1974) recommends accepting values should be greater than 0.5 as acceptable. Furthermore, Value between 0.5 and 0.7 are mediocre, value between 0.7 and 0.8 are good, value between 0.8 and 0.9 are great, values above 0.9 are superb and values below 0.5 as unacceptable.

Table 12: Kaiser-Meyer-Olkin Measure of Sampling Adequacy Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	
Variables	**KMO Test Statistics**
Locational Factors	.767
Physical Factors	.685
Neighborhood Factors	.659
Community Factors	.727
Environment Factors	.571
Subjective Factors	.582

According to the Table 12, the value of the KMO Measure of Sampling Adequacy for these variables is above 0.5. It consists with Location is 0.767 (Good), Physical is 0.685 (Mediocre), Neighborhood is 0.659 (Mediocre), Community is 0.727 (Good), Environment is 0.571 (Mediocre) and Subjective is 0.582 (Mediocre). Therefore, the KMO Measure of Sampling Adequacy meets the minimum criteria and sample can use to examine the Correlation Matrix.

Normality Test

The normality test results indicate whether you should reject or fail to reject the null hypothesis that the data come from a normally distributed population. You can do a normality test and produce a normal probability plot in the same analysis. There are two well-known tests of normality, namely the Kolmogorov-Smirnov Test and the Shapiro-Wilk Test. Shapiro-Wilk Test is more appropriate for small sample sizes (< 50 samples), but can also handle sample sizes as large as 2000.

Table 13: Normality Test

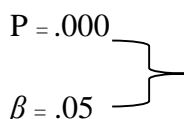| Variables	Shapiro-Wilk Test Value (Sig.)
Locational Factors	.003
Physical Factors	.001
Neighborhood Factors	.000
Community Factors	.000
Environment Factors	.000
Subjective Factors	.000
Market Price	.088

Normality Test,

 H_0 = *Variables are Normally Distributed*

H_1 = *Variables are Not Normally Distributed*

Decision Rule: Reject H_0, If "P value" < "β value"

P = .000

β = .05

P<β; H$_0$ Rejected (It means variables are Not Normally Distributed)

According to the Table 13, all the independent variables (locational, physical, neighborhood, community, environmental and subjective factors) are Not Normally Distributed. But dependent variable (Market Price) is Normally Distributed in 95% confident level. Therefore in this data set in which values not clustered in the middle range and not symmetrically distributed. Therefor Non-Parametric Tests use to examine the correlation of these variables.

Correlation Analysis

According to the following Normality test, the data is not normally distributed. Therefore cannot use person's correlation for measure linear association between two variables. Spearman's correlation can be used when variables are not normally distributed. Therefore, Spearman's correlation uses to measure the association between two variables. It shows in Following Table 14.

According to the Correlation Analysis,

H_0 = There is No Linear Relationship between Independent and Dependent Variable.

H_1 = There is a Linear Relationship between Independent and Dependent Variable.

Decision Rule: Reject H_0, If "P value" < "β value"

P = .000

β = .05

P<β; H_0 Rejected (There is No Linear Relationship between Independent and Dependent Variable)

Table 14: Spearman's Correlation Analysis

Variables	Significant Level	Relationship
Location	.005	Weak positive relationship 0.253
Physical	.807	No close relationship
Neighborhood	.032	Weak positive relationship 0.196
Community	.012	Weak positive relationship 0.229
Environment	.131	No close relationship
Subjective	.015	Weak negative relationship -0.222

Under the test of Spearmen's Correlation analysis, it is accepted that there is a relationship between two variables if the significant level is at or below than 0.5. Its means the error of the

assumption could only be allowed 5% errors in the long term, and then only the relationship between two variables could be established.

According to the Table 14, out of six factors, four factors have significant correlation. The correlation between the Locational Factors and Market value is .253 at 0.05 significant levels. The correlation between the Neighborhood Factors and Market value is .196 at 0.05 significant levels. The correlation between the Community Factors and Market value is .229 at 0.05 significant levels. Also there is a positive relationship between these factors. The correlation between the Subjective Factors and Market value is -.222 at 0.05 significant levels. Accordingly there is a negative relationship between Subjective Factors and Market Value.

CONCLUSION

Condominiums are becoming very popular among developers as well as among high income people nowadays. Associated characteristics of condominium market are analyzed through literature review. In this research study focused the factors/determinants of market value of condominium properties. Through the literature, there are six main factors specified for determine Market value. There are Locational Factors, Physical Factors, Neighborhood Factors, Community Factors, Environment Factors and Subject related Factors. According to the inferential analysis, four factors having significant correlation with market value of the condominium properties. There is Location, Neighborhood, Community and Subjective Factors have positive liner relationship with market Value of the Condominium Houses.

When consider above mention four factors, majority of the condominium residents in the study area highly consider locational factors to determine market price. Locational Factors consist with Proximity to school, working place, shopping centers, major city, waste sites, main roads and high ways. Location is an important aspect of the immovable property. Therefore, Location is the most significant factor for determine market value for condominium property in study area. Additionally Physical factors like size of units, numbers of bed rooms and baths, accommodations, common elements, Neighborhood factors like availability of institutional facilities, infrastructure a lands are important, subjective Factors like Market price, cost of construction and good management corporation are important to determine market value of the condominium property.

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