

THE DIFFERENT AMENITIES PROVIDED IN APARTMENTS AND SERVICED APARTMENTS

by

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Abstract

Serviced residences by way of apartments and serviced apartments have proliferated around the world including Thailand for the past decades. Although both businesses have been a major attraction for real estate investors, there is still a lack of clarity in terms of the different amenities and services provided. Data was collected from 271 apartments in the central business district of Bangkok from eight districts that were grouped into three zones. Seven types of amenities were ranked the highest in all three sets of data. The findings imply that rents are more likely to be based on amenities provided rather than unit size. This research reconfirms that rent is driven by amenities provided.

INTRODUCTION

For many past decades, Bangkok has become one of the busiest international business capitals in Southeast Asia. This growth has derived the need for accommodations, ranging from daily stay to yearly stay, including apartments and serviced apartments for serving local, expatriate and international businesspeople.

The investment and development of both apartments and serviced apartment projects require not only information regarding the target market and demand-supply but also data on amenities that need to be provided.

While both businesses have been a major attraction for real estate investors and developers, there is still a lack of clarity in terms of the different amenities and services provided. Besides that, there is no clear information about the types and quality of amenities which should be provided in each business. Seeking answers to these questions are the aims of this paper.

Many past researches focused on building amenities and services as other variables to support capital investment decisions on building features (Guntermann & Norrbin, 1987; Sirmans, Sirmans & Benjamin, 1989, 1990). Questions arise on (1) how much investors should spend on creating high quality building characteristics, amenities and decor, to attract target clients, and (2) do such luxury investments on

building features reflect on income in proportion to capital investment, other than apartment location.

RATIONALE:

Apartments and serviced apartments have no standards by which to categorize them by class and grade. Unlike hotels that have standard grades, such as one to five stars hotels, investors who aim to invest in luxury apartments tend to put building amenities that show a luxurious appearance in order to appeal to clients and match high rents. But, is this necessary?

Building characteristics of apartment and serviced apartments can be differentiated by building amenities provided (both building amenities and service amenities), in addition to unit size, number of bedrooms in each unit and number of units per storey.

Many questions arise as follows:

- Should an apartment or serviced apartment provide as many types of amenities as possible?
- Which type of amenity is normal, which one is a must have, and which one is the least necessary?
- Do types of amenities provided reflect rent?
- Or, is location the only consideration for rental rates?

OBJECTIVES:

The main objective of the research is to study the relationship between apartment rent and building amenities. The aim is to support decisions related to apartment capital investment.

LITERATURE REVIEW

Many prior researches have been conducted to investigate several issues related to apartments. Jud, Benjamin, and Sirmans (1996) summarized these researches in the following groups: demand and supply, vacancy rates and market equilibrium, rent control, demographic determinants for apartment demand, the rent or buy decision, apartments and business cycles, hedonic analysis of apartment rents, and other influences on rents.

Many studies employing hedonic and other analytical techniques have been done to explain the determination of market rent by investigating substantial lists. Sirmans and Benjamin (1991) survey three areas of rent determinants including: property-specific factors; rent, rental concessions, property management, taxes and length of residency; and rent and vacancy. Among property-specific factors are amenities, services, and physical characteristics (Guntermann & Norrbin, 1987; Sirmans et al, 1989, 1990, 1994; Rosiers & Theriault, 1996) economic depreciation on aging of property (Malpezzi et al, 1987), location and distance, for example from town center or university, characteristics of renters and their willingness to pay. Some research focused on specific issues such as apartment security (Hardin III et al, 2003), while others conducted analysis using complex characteristics for computing rents (Smith & Islam, 1998).

Many prior research results in this area found that some amenities and services such as covered parking, swimming pool, all utilities paid and modern kitchen (built-in disposal, electrical appliances, etc.) are consistently important and positive determinants to rent (Sirmans et al, 1989). However, some research results shows that characteristics such as patios, playgrounds, barbecue areas, and boat/camper parking do not have significant effects on rent (Sirmans et al, Summer, 1990). Furthermore, microwave and playground are also not significant determinants of rents (Sirmans et al, 1994). Other amenities such as designated parking, main service, and modern kitchen seem to be consistently valued by tenants. Research focusing on maintenance costs also found them to have relationships with some amenities including air conditioning and additional bathrooms (Springer & Waller, 1996).

Besides reviewing previous research within the area of apartments, research in other income-

producing property such as office buildings are worth studying. Tonelli et al (2004) summarize related research in three groups of variables: macroeconomic determinants, industry determinants, and building determinants.

Both research areas in income producing property, apartments and offices, study building characteristics as determinants of rent. This research further explores this notion by using case specific data from Bangkok's central business districts.

RESEARCH METHODOLOGY

The study focused on apartment and serviced apartment projects. The analysis was conducted on a set of secondary data from earlier research work done by the Department of Real Estate, Assumption University. This secondary data collected was performed in the second half of 2003 (Vanichvatana, Neilson & Tongrabin, 2003). This research was sponsored by the World Bank and the Real Estate Information Centre of Thailand (REIC), Ministry of Finance. REIC has authorized the use of such data.

DATA:

The details of the data is as follows:

- a. The data consist of 271 luxury grade apartments and serviced apartment projects.
- b. Collected from 8 central business districts in Bangkok. The data are grouped into three zones, as shown in Figure 1.

Zone A: Vadhana District and Khlong Toei District

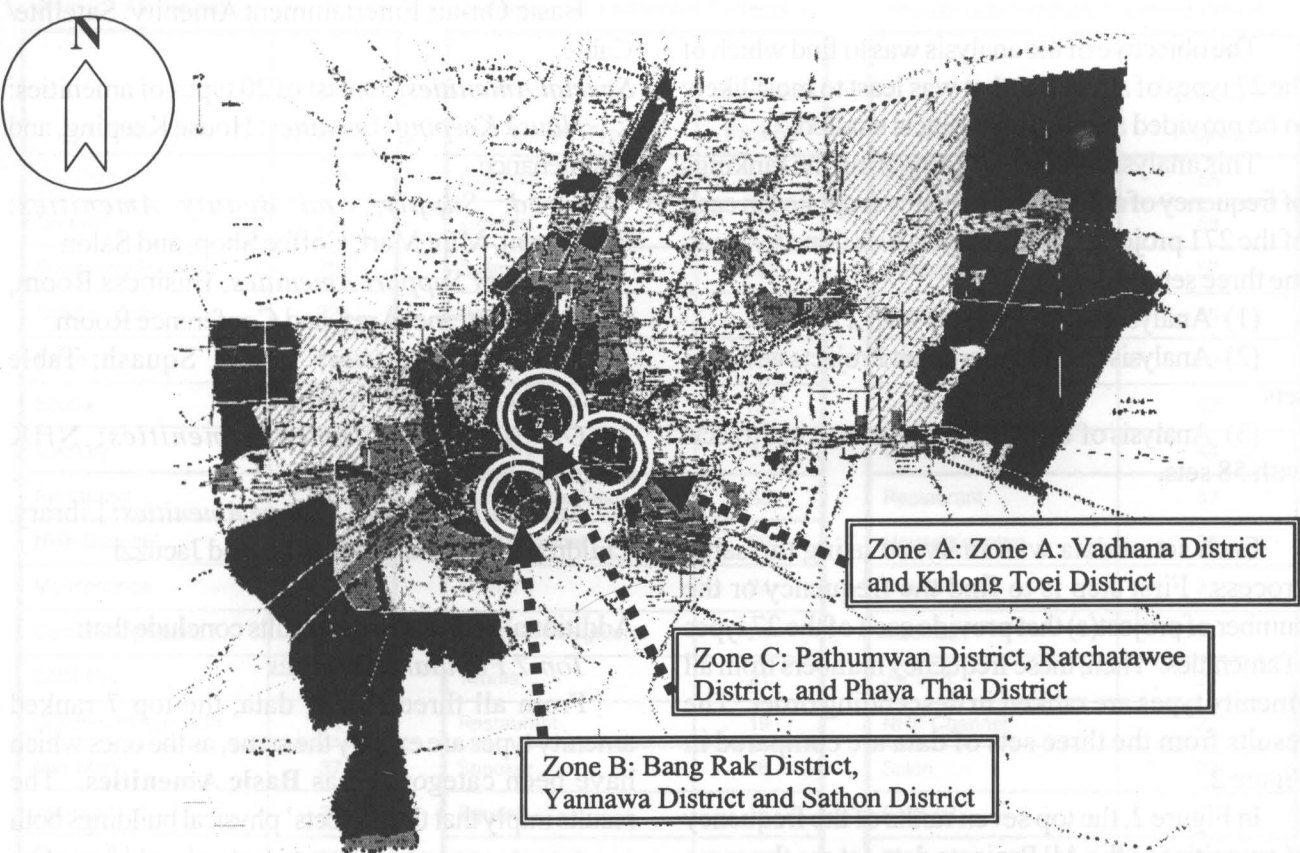
Zone B: Bang Rak District, Yannawa District and Sathon District

Zone C: Pathumwan District, Ratchatawee District, and Phaya Thai District

- c. Dependent variable:

Rents used in this analysis are of average value based on one-bedroom unit. Apartment Rents of each project are collected into five unit types: studio unit type, one bedroom, two bedroom, three bedroom, and four bedroom unit types. Rents from one project with various unit types are transformed into one average value. Rents from Studio and One Bedroom unit types were as is. Whereas rents from Two Bedroom and Three Bedroom units are divided by two and three, consecutively. All rent data from one

Figure 1: The Map of Bangkok Metropolitan Area Showing the Scope of Study in the Three Zones (Total of 8 Districts)



project are then averaged to obtain average rent based on one-bedroom units.

d. Independent variables:
Building characteristic determinants are 27 types of Building Amenities provided.

Building Amenities:
From the previous study, apartment and serviced apartment projects can have as many as 27 types of the following amenities:

Car Park	Satellite/Cable	CNN TV
NHK Channel	Conference Room	Business Room
Guards	House Keeping	Maintenance
Laundry	Mini Mart	Coffee Shop
Restaurant	Computer/Internet Area	Salon
Library	Swimming Pool	Fitness
Sauna	Jacuzzi	Snooker
Tennis	Squash	Table Tennis
Driving Golf	Children Playground	Karaoke

ANALYSIS:

For this paper the following analyses have been conducted:

1. Analysis of Frequency Ranking of all Amenity Types
2. Analysis of Relationship between Amenity Types and Rents
3. Regression Analysis, Test of Correlation between Rents and Types of Amenity, between Rents and Number of Total Amenities, and between Rents and Unit Size.

These analyses have been done through comparison, graphical, and statistical analysis. In the first and the second analysis, the test initially analyzed all data collected, then this set of data was divided into Apartment only data set, and Serviced Apartment only data set. The results from all three sets of data were then compared and analysed. In the third analysis, the test initially analyzed data within each zone to minimize the impact of demand-supply relationship to rentals of different zones. The study then compared the results of the three zones.

1. Analysis of Frequency Ranking of All Amenity Types

The objective of the analysis was to find which of the 27 types of amenities that was least to most likely to be provided among the projects studied.

This analysis is done by comparing the rankings of frequency of amenity types that was applied in each of the 271 projects. This analysis was done by using the three sets of data:

- (1) Analysis of All Projects with 271 sets
- (2) Analysis of only Apartment Projects with 213 sets
- (3) Analysis of only Serviced Apartment Projects with 58 sets.

Each set of data was analyzed using the same process. First step is to find the frequency or the number of project(s) that provide each of the 27 types of amenities. Then, these frequency numbers from all amenity types are ranked in descending order. The results from the three sets of data are compared in Figure 2.

In Figure 2, the top seven ranks of the frequency of amenities in the All Projects data set are the same as those of the other two data sets. These top seven amenities are Car Park, Guards, Swimming Pool, Satellite/Cable, Fitness, Sauna, and Laundry.

Figure 2 is then used for further analysis to compare results between Apartment Project data and Serviced Apartment Project data sets. The results are as shown in Figure 3. In this step, each amenity type between the two data sets is analyzed to see the ascending and descending order of each pair of 20 types of amenities. The results are quite interesting. The pairs of frequency ranking comparison, that run downward from apartment projects to serviced apartment projects, are the groups of sporting amenities and on-air amenities. In contrast, the pairs that are upward from apartment projects to serviced apartment projects, are the groups of house keeping amenities, food, supply, beauty, and business support amenities.

From the results of the two analyses shown in Figure 2 and Figure 3, we can categorize the 27 types of amenities into Basic Amenities and Special Amenities as categorized below:

Basic Amenities, consist of 7 types of amenities:

General Amenities: Car Park, Guards

Basic House Keeping Amenities: Laundry

Basic Sporting Amenities: Swimming Pool, Fitness, and Sauna

Basic On-air Entertainment Amenity: Satellite/Cable

Special Amenities, consist of 20 types of amenities:

House Keeping Amenities: House Keeping, and Maintenance

Food, Supply, and Beauty Amenities: Restaurant, Mini Mart, Coffee Shop, and Salon

Business Support Amenities: Business Room, Computer/Internet Area, and Conference Room

Sporting Amenities: Tennis, Squash, Table Tennis, Snooker, and Driving Golf

On-air Entertainment Amenities: NHK Channel, and CNN TV

Entertainment and Leisure Amenities: Library, Children Playground, Karaoke, and Jacuzzi

Additional analysis of the results conclude that:

Top 7 Popular Amenities

From all three sets of data, the top 7 ranked amenity types are exactly the same, as the ones which have been categorized as **Basic Amenities**. The results imply that the projects' physical buildings both apartments or serviced apartments, should have Car Park, Guard, Swimming Pool, Satellite/Cable, Fitness, Sauna, and Laundry.

Apartment Projects

The results from this set of data are:

- In all 231 apartment projects, no projects facilitate a Business Room and Coffee Shop.
- Sporting Amenities, On-air Entertainment Amenities, and Entertainment and Leisure Amenities are ranked higher in the apartment data set.

This makes sense since leasers of this set tend to be long stay, or with families, or with more leisure time to use amenities that consume time.

- Amenity groups that rank lower are those with serviced amenities including House Keeping Amenities, Food, Supply, and Beauty Amenities, and Business Support Amenities.

- Amazingly, Business Support Amenity like Conference Room has a higher rank in apartment data set.

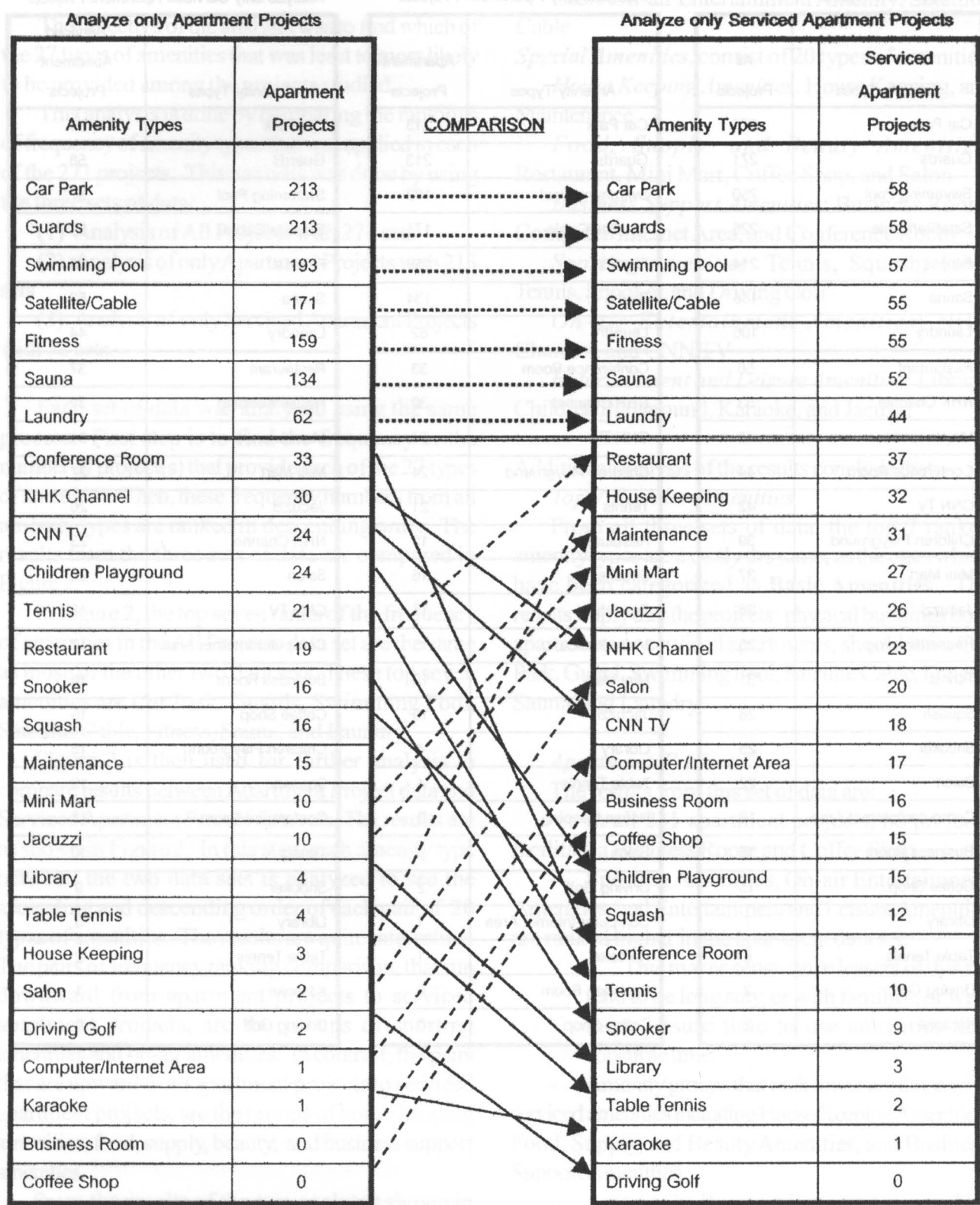
Serviced Apartment Projects

The results from this set of data show:

Figure 2: Comparison of the Number of Projects that Offered Each Type of Amenity (In Descending Order)

Analyze All Projects		Analyze only Apartment Projects		Analyze only Serviced Apartment Projects	
Amenity Types	All Projects	Amenity Types	Apartment Projects	Amenity Types	Serviced Apartment Projects
Car Park	271	Car Park	213	Car Park	58
Guards	271	Guards	213	Guards	58
Swimming Pool	250	Swimming Pool	193	Swimming Pool	57
Satellite/Cable	226	Satellite/Cable	171	Satellite/Cable	55
Fitness	214	Fitness	159	Fitness	55
Sauna	186	Sauna	134	Sauna	52
Laundry	106	Laundry	62	Laundry	44
Restaurant	56	Conference Room	33	Restaurant	37
NHK Channel	53	NHK Channel	30	House Keeping	32
Maintenance	46	CNN TV	24	Maintenance	31
Conference Room	44	Children Playground	24	Mini Mart	27
CNN TV	42	Tennis	21	Jacuzzi	26
Children Playground	39	Restaurant	19	NHK Channel	23
Mini Mart	37	Snooker	16	Salon	20
Jacuzzi	36	Squash	16	CNN TV	18
House Keeping	35	Maintenance	15	Computer/Internet Area	17
Tennis	31	Mini Mart	10	Business Room	16
Squash	28	Jacuzzi	10	Coffee Shop	15
Snooker	25	Library	4	Children Playground	15
Salon	22	Table Tennis	4	Squash	12
Computer/Internet Area	18	House Keeping	3	Conference Room	11
Business Room	16	Salon	2	Tennis	10
Coffee Shop	15	Driving Golf	2	Snooker	9
Library	7	Computer/Internet Area	1	Library	3
Table Tennis	6	Karaoke	1	Table Tennis	2
Driving Golf	2	Business Room	0	Karaoke	1
Karaoke	2	Coffee Shop	0	Driving Golf	0

Figure 3: Comparison of the “Ranking” of the Number of Amenities that are offered in Each Project Between Apartments and Serviced Apartments



- House Keeping Amenities, Food, Supply, and Beauty Amenities, and Business Support Amenities ranked higher in the serviced apartment data group, as opposed to the apartment data set.

- This result supports the notion that leasers of serviced apartments are businesspeople whose lifestyles are busy, who need single occupancy or luxury services.

- Amenity groups that rank lower are those that consume time to use including Sporting Amenities, On-air Entertainment Amenities, and Entertainment and Leisure Amenities, as opposed to the apartment data set.

- Jacuzzi and Coffee Shop only apply to serviced apartments but not in apartment projects.

This may imply that these two types of amenities create a sense of luxury.

- The results do not show reasons why some serviced apartment projects provide the three lower ranked amenity groups in Sporting Amenities, On-air Entertainment Amenities, and Entertainment and Leisure Amenities. It is possible that such investments are poor decisions or such projects position themselves as the gap among leasers who need House Keeping and Sporting Amenities.

Number of Total Amenity Types Provided

In the next step, the paper investigated the total number of amenities that each project provided. The analysis was done by summing up the number of amenity types that each project data had. A frequency comparison is shown in Figure 4. The results are:

- For all projects, the mode of total number of amenities that applied in each project is 6 types.

- For apartments, the total number of amenities that applied in each project is between 2 and 12 types. The mode is 6 types.

- For serviced apartments, the total number of amenities that applied in each project is between 3 and 23 types. The mode is 7 types.

From the above results, one suggestion can be made. That is, if a rented residential project, apartment or serviced apartment, is to be built, the minimum amenities should consist of 6 to 7 types, ranking from: Car Park, Guard, Swimming Pool, Satellite/Cable, Fitness, Sauna, and Laundry.

2. Analysis of Relationship between Rents and Amenity Types

The aim of this analysis is to find rental values of any projects that provide the same particular amenity. The rental value outcomes will be in three interval values: minimum value, average value, and maximum value.

For example, from the 213 Apartment Projects data set, only 10 projects provide Jacuzzi. Using these 10 projects' data, the analysis get the minimum rental value, average value, and maximum value as 18,333 Baht, 31,693 Baht, and 57,500 Baht, as shown in Figure 5.

This analysis was done by using the three data sets: 271 All Projects data set, 213 Apartment Projects only data set, and 58 Serviced Apartment Projects only data set.

Each set of data was statistically analyzed 27 times to examine the relationships between rents and each particular type of amenity.

The analysis on each set of data was done using the same process. First, the data in each set was sorted based on the projects that apply a particular type of amenity. Then, rental values from projects that qualified in the previous step were used to calculate the three interval values: minimum rent, average rent, and maximum rent.

Another example analyzed the relationship between rents of Serviced Apartment Projects that provide Tennis amenity. First, the process sorted data among the 58 projects and found only 10 projects that provide Tennis amenity. Then, the rents of these 10 projects were used to calculate the minimum rent, average rent, and maximum rent of this sub-set of data. The results are 14,342 Baht, 32,657 Baht, and 51,167 Baht, consecutively.

Figure 5 shows the comparison of average rents (in Baht) based on One-Bedroom from the analysis of the three sets of data: All Projects, Apartments only, and Serviced Apartments only.. The value shown in each set of data is based on sorting of the average rents in descending order.

Figure 4: Total Number of Amenity Types Provided in Each Project

Total Number of Amenity Provided in Each Projects	Number of Projects		
	All Projects	Apartments	Serviced Apartments
27	0	0	0
26	0	0	0
25	0	0	0
24	0	0	0
23	2	0	2
22	2	0	2
21	2	0	2
20	2	0	2
19	0	0	0
18	1	0	1
17	2	0	2
16	3	0	3
15	5	0	5
14	3	0	3
13	3	0	3
12	5	1	4
11	6	4	2
10	17	11	6
9	22	19	3
8	33	29	4
7	41	33	8
6	52	49	3
5	32	31	1
4	26	25	1
3	10	9	1
2	2	2	0
1	0	0	0
Total Projects =	271	213	58

Figure 5: Compare of Average Rents (in Baht) for One-Bedroom

Types of Amenity	All Projects			Types of Amenity	Apartment			Types of Amenity	Serviced Apartment		
	min	average	max		min	average	max		min	average	max
Computer/Internet Area	16,000	41,580	71,111	Computer/Internet Area	18,333	48,167		CNN TV	17,250	45,098	80,000
Business Room	15,250	41,288	71,111	Jacuzzi	15,000	31,693	57,500	Conference Room	20,917	43,816	71,111
Coffee Shop	16,000	41,137	71,111	Library	15,000	30,958	41,667	Jacuzzi	16,000	42,015	71,111
Library	15,000	41,036	80,000	Satellite/Cable	7,100	28,735	75,000	Business Room	15,250	41,288	71,111
Jacuzzi	16,000	38,556	71,111	CNN TV	15,500	27,856	75,000	Computer/Internet Area	16,000	41,192	71,111
Salon	16,000	36,258	59,000	Salon	25,000	27,083	29,167	Coffee Shop	16,000	41,137	71,111
House Keeping	6,017	35,697	71,111	Squash	14,167	26,480	45,000	NHK Channel	14,333	39,943	71,111
CNN TV	15,500	34,891	80,000	Mini Mart	7,100	25,902	48,167	House Keeping	15,250	37,919	71,111
Mini Mart	7,100	33,145	80,000	Children Playground	7,100	25,330	49,722	Salon	16,000	37,175	59,000
Maintenance	6,017	32,167	80,000	Snooker	15,500	25,327	45,000	Maintenance	12,500	37,074	80,000
NHK Channel	7,100	31,075	71,111	Fitness	4,400	24,927	80,000	Laundry	12,500	36,526	80,000
Squash	14,167	30,672	51,167	Swimming Pool	6,017	24,443	80,000	Squash	14,342	36,260	51,167
Restaurant	4,400	30,239	80,000	Sauna	4,400	24,367	57,500	Children Playground	14,342	35,680	58,083
Laundry	4,400	29,157	80,000	Conference Room	7,292	24,135	40,000	Restaurant	12,500	35,591	80,000
Children Playground	7,100	29,101	58,083	NHK Channel	7,100	24,028	48,167	Sauna	12,500	35,022	80,000
Conference Room	7,292	29,065	71,111	Laundry	4,400	24,010	57,500	Snooker	16,217	34,750	80,000
Snooker	15,500	28,719	80,000	Car Park	4,400	23,672	80,000	Library	17,333	34,528	45,250
Sauna	4,400	27,346	80,000	Guards	4,400	23,672	80,000	Mini Mart	15,250	34,421	80,000
Fitness	4,400	27,301	80,000	Tennis	7,100	22,900	43,333	Table Tennis	31,250	34,250	37,250
Swimming Pool	6,017	26,583	80,000	Maintenance	6,017	21,948	49,722	Fitness	12,500	34,209	80,000
Satellite/Cable	7,100	26,510	80,000	Restaurant	4,400	20,839	45,000	Satellite/Cable	12,500	34,157	80,000
Tennis	7,100	26,048	51,167	Table Tennis	7,100	20,386	28,056	Swimming Pool	12,500	33,828	80,000
Car Park	4,400	25,873	80,000	Karaoke		18,333		Car Park	12,500	33,697	80,000
Guards	4,400	25,873	80,000	House Keeping	6,017	15,686	22,708	Guards	12,500	33,697	80,000
Table Tennis	7,100	25,007	37,250	Driving Golf	14,250	14,750	15,250	Tennis	14,342	32,657	51,167
Karaoke	18,333	23,417	28,500	Business Room				Karaoke		28,500	
Driving Golf	14,250	14,750	15,250	Coffee Shop				Driving Golf			

The results in Figure 5 turn out to be very interesting. In that, **there seems to be a clear cut line between the average value of rents in Apartments only and the average value of rents in Serviced Apartments only.** "The highest average value of rents of Apartment Projects" is less than "the lowest average value of rents of Serviced Apartment Projects".

In Figure 5, compare data in the 7th column and the 11th column. Data in the 7th column are the average values of rents for Apartment Projects only. Data in the 11th column are the average values of rents for Serviced Apartment Projects only. Notice the upper arrow that points to the average value of rent of Apartment Projects that provide Jacuzzi Amenity, with the value of 31,693 Baht. The other lower arrow points to the average value of rent of Serviced Apartment Project that provides Tennis Amenity, with the value of 32,657 Baht. The highest average value of rents of Apartment Projects which is 31, 693 Baht, is less than the lowest average value of rents of Serviced Apartment Projects which is 32,657 Baht.

The process disregards the average values of rent from Computer/ Internet Amenity in the 7th column and from Karaoke Amenity in the 11th column. The highest average value of rents of Apartment Project at 31,693 Baht is lower than the lowest average value of rents of Serviced Apartment at 32,657 Baht.

The conclusion from this analysis is clear. Average rents of Apartment Projects with any type of amenity are less than average rents of Serviced Apartment Projects with any type of amenity. Investing in projects as Serviced Apartments provide value added to rents.

3. Regression Analysis, Test of Correlation between Rents and Types of Amenity

This last analysis is aimed at examining the correlation between rents and types of amenity. The original All Projects data set is divided into two data sets of Apartment only and Serviced Apartment only. Each data set is then further divided into three Zones: Zone A, Zone B, and Zone C. The location details of each Zone are as explained earlier. The reason for further analyzing by Zone is to minimize the impact of

demand-supply relationship to rentals of different zones.

The regression analysis is run to test the correlation (R value) of the following:

- (1) To test the Correlation between Rents (Baht) and Types of Amenity
- (2) To test the Correlation between Rents (Baht) and Number of Total Amenities
- (3) To test the Correlation between Rents (Baht) and Unit Size (sq. m.)

Figure 6 shows the results of all tests run. Again, the results are quite interesting and can be summarized as follows:

- The correlations between Rents and Types of Amenity is very high, especially in Serviced Apartment Data
- The correlations between Rents and Types of Amenity are higher than the correlations between Rents and Number of Total Amenities in all sets of data.
- The correlations between Rents and Types of Amenity is higher than the correlations between Rents and Unit Size in almost all sets of data
- The correlations between Rents and Types of Amenity in Zone A, Zone B, and Zone C, are high in Serviced Apartment data set, in All Project data set and Apartment data set, and in Serviced Apartment data set, consecutively.

From the above results, the following can be implied:

- Rents are reflected by types of amenity NOT by total number of amenities. That is, providing as many types of amenities as possible does not improve rent.
- Rents are reflected by providing types of amenity rather than size of apartment
- Types of amenity possibly have an influence on rent regardless of location. Provision of types of amenity may be based on the competition within the sub-location.

CONCLUSION

The results from this study show very interesting relationships between rents and types of amenity:

1. The top 7 types of amenities that are the norm in All data, Apartment data only, and Serviced

Figure 6: Comparison of Correlation Between Rents and Amenity Types and Rents and Unit Size

Type of Data	CORRELATION (R Value)		
	Between Rents (Baht) and Amenity Types	Between Rents (Baht) and Total Number of Amenity	Between Rents (Baht) and Unit Size (sq.m.)
All Data	0.577	0.431	0.334
All Data, Zone A	0.611	0.408	0.209
All Data, Zone B	0.998	0.163	0.634
All Data, Zone C	0.744	0.523	0.506
All Apartment Data	0.673	0.175	0.245
Apartment, Zone A	0.504	0.260	0.400
Apartment, Zone B	0.995	0.210	0.950
Apartment, Zone C	0.657	0.027	0.826
All Served Apartment Data	0.831	0.391	0.245
Served Apartment, Zone A	0.983	0.463	0.181
Served Apartment, Zone B	NA *	0.025	0.751
Served Apartment, Zone C	0.997	0.723	0.463

Apartment only data sets are Car Park, Guard, Swimming Pool, Satellite/Cable, Fitness, Sauna, and Laundry.

2. Sporting Amenities, On-air Entertainment Amenities, and Entertainment and Leisure Amenities are ranked higher in apartment data set, as opposed to the serviced apartment data set.

3. House Keeping Amenities, Food, Supply, and Beauty Amenities, and Business Support Amenities ranked higher in serviced apartment data group, as opposed to the apartment data set.

4. The mode of total number of amenity types provided in any set of data is about 6 to 7 types. This range matches the top 7 types of amenities even though the projects that provide 6 to 7 types of amenities, do not provide the same group of amenities.

5. The highest total number of amenities provided in any apartment projects is 12 types.

6. Average rents of Apartment Projects with any type of amenity are lower than average rents of Serviced Apartment Projects with any type of amenity.

7. Correlations between Rents and Types of Amenity is very high and higher than the correlation between Rents and Number of Total Amenity in all sets of data, and also higher than correlations between Rents and Unit Size in almost all sets of data. The implication is that rents may be the result of the combination of amenity types provided, not the result of the number of amenity types, nor of the unit size.

As the research on apartment and serviced apartments in Thailand is limited, the Real Estate Industry can use the results of this study as a guide for apartment project design for proper investment and for optimal rental income. Overprovision of amenities will reflect unwise capital investment, unnecessary operation and maintenance costs.

Further research is necessary to explain the impact of quality of amenities on rent as compared to the quantity of amenities. Also, it will be interesting to see further analysis on the correlation among amenity types. Additionally, further research is required to find out whether amenities provided are the same as those preferred by the renter.

References

- Guntermann, K. L. & Norrbin, S. (1987). Explaining the Variability of Apartment Rents. *AREUEA Journal*, Vol.15, No.4, pp. 321-40.
- Hardin III, William G & Cheng, Ping (2003). Apartment Security: A Note on Gated Access and Rental Rates. *Journal of Real Estate Research*, Vol. 25, No. 2, pp. 145-157.
- Jud, G Donald, Benjamin, D. John & Sirmans, G Stacy (1996). What Do We Know about Apartments and Their Markets? *Journal of Real Estate Research*, Vol. 11, No. 3, pp. 243-257.
- Malpezzi, S., Ozanne, L. & Thibodeau, T. G. (1987). Microeconomic Estimates of Housing Depreciation. *Land Economics*, Vol. 63, No. 4, November, pp. 372-385.
- Sirmans, G Stacy & Benjamin, D. John (1991). Determinants of Market Rent. *Journal of Real Estate Research*, Vol. 6, No. 3, pp. 357-379.
- Sirmans, G Stacy, Sirmans, C. F. & Benjamin, D. John (1989). Determining Apartment Rent: the Value of Amenities, Services, and External Factors. *Journal of Real Estate Research*, Vol. 4, No. 2, pp. 33-44.
- (Spring, 1990). Rental Concessions and Property Values. *The Journal of Real Estate Research*, Vol. 5, No. 1, pp. 141-151.
- (Summer, 1990). Examining the Variability of Apartment Rent. *Real Estate Appraiser and Analyst*, Vol. 56, No. 2, pp. 43-48.
- (1994). Apartment Rent, Concessions and Occupancy Rates. *The Journal of Real Estate Research*, Vol. 9, No. 3, pp. 299-312.
- Smith, Charles A. & Islam, Anisul M. (1998). Apartment Rents - Is there a "Complex" Effect? *The Appraisal Journal*, Vol. 66, No. 3, July, pp. 263-268.
- Springer, Thomas M. & Waller, Neil G. (1996). Maintenance of Residential Rental Property: An Empirical Analysis. *The Journal of Real Estate Research*, Vol. 12, No. 1, pp. 89-99.
- Tonelli, M., Cowley, M. and Boyd, T. (2004). Forecasting office building rental growth using a dynamic approach. *Pacific Rim Property Research Journal*, Vol. 10, No. 3, pp. 283-304.

Vanichvatana, Sonthya, Neilson, Alipreya & Tongrabin, Sayarm (2003). A Data Survey and Research Consultant, Apartment and Serviced Apartment Projects in Bangkok, The Department of Real Estate, Assumption University of Thailand. *The Report Submitted to the Real Estate Information Centre of Thailand, the Ministry of Finance.*

Vanichvatana, Sonthya (2006), Relationship Between Building Characteristics and Rental to Support Serviced Apartment Investment, *Proceedings of the twelfth Pacific Rim Real Estate Society Conference, Auckland New Zealand, 2006.*