Performance analysis of selected condominium-hotels (condotels) in Metro Manila

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Abstract

The paper examined the efficiency of four (4) condominium-hotels (condotels) in Metro Manila namely: Lancaster Suites and Hotel (Shaw Boulevard, Mandaluyong City), Astoria Plaza (Ortigas, Pasig City), Citadel Inn (Makati City) and Regalia Park Towers (Cubao, Quezon City). The researcher made a previous study examining the efficiency of the mentioned condotels from 2007-2010, but extended the study from the period of 2007-2014 to know whether time will have the effect on the the results of the previous study or not.

This study focused on the efficiency and productivity of selected condotels in Metro Manila choosing the years 2007-2014 as test period for efficiency. The condotels selected has a rooming capacity of 60-200 units available for hotel accommodation. The panel data were extracted from the financial statements of the four condotels covering the period of 2007-2014. Input variables tested are: 1) property and equipment as proxy for capital, 2) salaries and other labor costs representing labor, and 3) building and occupancy expenses as proxy for operational costs. The total revenue from operations of the selected condotels was considered as output variable.

The use of Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA) were applied to measure the efficiency of the condotels.

Based on the analysis of data, as condotels age, they increase their scale by adding more inputs but failed to manage them well and become inefficient in operations. It does not equate in this study that the more inputs, the more output as well. It is recommended that with the increase in inputs, they must also consider the application of marketing strategies such as giving impeccable customer service and good value to customers to maintain their patronage.

Key Words: efficiency, condotel, DEA, Stochastic Frontier Analysis

Introduction

Condominium-hotels, or aptly known as condotels, are emerging trends of hospitality as well as real estate investments in the Philippines. Investors on this real-estate property were enticed to buy a unit because of the financial returns they can get from renting their property and investments appreciate quickly. Also, the benefit of residing in a building with hotel facilities is a considered an additional perk when owning a unit.

A condotel, it is one in which the units—rooms or suites—are owned by individuals and then are rented out on a daily basis to transient guests (Higley, 2005). In some cases, renting to transient guests is mandatory but in others it is voluntary since the owners may want to use the units for themselves and/or their families year-round. From a legal standpoint, the two key attributes of a condo hotel are: ‘‘(1) the ownership by an individual of a separate interest in a discernible space (a condominium unit), and (2) the ownership of a proportional but undivided interest in the common area. The ‘common area’, owned and operated by condo owners as a ‘common interest development’, is where the hotel operator usually comes into play’’ (Waite, 2005).

In broader terms, condotels can be defined as residential condominium buildings offering the same facilities of a hotel and managed by either a hotel chain or the developer itself. They have comparable services to five-star hotels such as housekeeping, 24-hour telephone operator, laundry, concierge and hotel car services being offered to guests. The classifications of these establishments are mixed-use property model and condominium hotel operations model. The first model has units serving as primary residences to occupants and the rest of the units are dedicated to hotel use. The second model is considered under the hotel operations model since individual units are owned by different buyers and marketed as hotel accommodations. In this model, the condo unit sits empty until rented or occupied. At present, most condotels were being rented on the latter model, where owners let the operators of the condotel managed their properties and remit to them the revenue from rental income after deducting all operating expenses such as garbage fee, real estate tax payments, fire tax and other incidental expenses mandatory to owning a unit.

The condotels are classified by Department of Tourism as “Apartment-hotel” as of June 2012 but condotels covered by the study still fall under the category of hotel. Based on the classification, there are 13 apartment-hotels and 66 hotels in Metro Manila.

Research Objective and Methodology

The researcher previously made a paper in the year 2012 examining the efficiency of four condotels in Metro Manila. These condotels were Lancaster Suites and Hotel (Shaw Boulevard, Mandaluyong City), Astoria Plaza (Ortigas, Pasig City), Citadel Inn (Makati City) and Regalia Park Towers (Cubao, Quezon City). The researcher recommended on the previous study that a longer test period should be done since operations of these establishments might improve over time and efficiency scores will vary. This prompted the researcher to revisit the previous study and include an extended period of 2007 to 2014 (from 2007-2010) focusing on financial performance analysis of the selected condotels so as to know whether the effect of time has change its scale efficiency.

This study focused on the efficiency and productivity of selected condotels in Metro Manila choosing the years 2007-2014 as test period for efficiency. The condotels selected has a rooming capacity of 60-200 units available for hotel accommodation. The panel data came from the financial statements of the four condotels covering the period of 2007-2014. Input variables to be tested are: 1) property and equipment as proxy for capital, 2) salaries and other labor costs representing labor, and 3) building and occupancy expenses as proxy for operational costs. The total revenue from operations of the selected condotels will be considered as output variable.

The use of non-parametric method, Data Envelopment Analysis (DEA) and parametric method, Stochastic Frontier Analysis (SFA) were applied to measure the efficiency of the condotels.

DEA is a non-parametric method (i.e. non-statistical) using linear programming technique that computes comparative ratio of multiple outputs to multiple inputs for each decision-making unit, also known as DMU (Avkiran, 2006). An efficiency frontier is being determined by set of points that shows the efficient combination of input and output that can be obtained in the systems examined (Cooper, Lewin and Seiford, 1994). The efficiency scores can range from 1-100%, where a score less than 100% of a certain DMU can be considered as inefficiency rating matching with other DMUs being studied. The upper limit is considered as 1 or 100% indicating that a DMU cannot exceed 100% efficiency rating.

The development of DEA could be attributed to Charnes, Cooper and Rhodes (1978). It is described as a "mathematical programming model applied to observational data that provides a new way of obtaining empirical estimates of relations, such as the production functions and/or efficient production possibility surfaces, which are cornerstones of modern economics". It is considered as a benchmarking technique to evaluate performance efficiency of selected DMUs. The point of reference in efficiency is the comparison of each DMU with other DMUs and identifying units that are operating efficiently based on a given actual operating results. It also measures the magnitude of inefficiency of the inefficient units as compared to the most efficient unit (Sherman and Zhu, 2006).

SFA is also used in the efficiency estimation and this measurement began with Farrel (1997), who defined a simple measure of firm efficiency that could account for multiple inputs. He pioneered in dividing cost efficiency into technical efficiency and allocative efficiency. Technical efficiency evaluates the ability of the firm to obtain maximal output from a given set of inputs and the allocative efficiency evaluates the ability of the firm to use the inputs in optimal proportions, given their respective prices and production technology. The use of a single example involving firms that use two inputs to produce a single output, under the assumption of constant returns to scale, best illustrates his ideas. (J.L. Hu et. al, 2010).

Significance of the Study

Evaluation of efficiency in hotel industry is very vital because of fierce and cut-throat competition. Understanding the factors that affect efficiency in operations could help operators by understanding the combination of resources that will generate greater output. The long-run

survival of firms will be greatly affected if managers will not comprehend the measurement of efficiency.

Scope and Limitations

In the previous study, the researcher accounted for nine (9) condotels already operating in various locations in Metro Manila. These are: 1) Millenia Suites, 2) Astoria Plaza, and 3) Malayan Plaza in Ortigas City; 4) Lancaster Suites in Shaw Boulevard, Mandaluyong; 5) Regalia Park Towers, and 6) Gardenheights Condominium in Quezon City; 7) Citadel Inn, 8) BSA Mansion and 9) A. Venue Suites in Makati City. The researcher accounted for these establishments by searching the internet for possible condotels in different areas of Metro Manila. Out of these condotels, only four (4) of them has the complete set of data for the period test period of 2007 to 2010 and the rest were excluded. In the extended test period of 2011 to 2014, Regalia Park Towers was eliminated due to constraints in data. Its financial statements submitted at SEC were up to 2012 only.

The requirement of DEA on the application of the procedure is stated and quoted as:

"*.....the number of DMUs is expected to be larger than the product of number of inputs and outputs (Darrat et al. 2002; Avkiran 2001) in order to discriminate effectively between efficient and inefficient DMUs. However, there are many examples in the literature where DEA has been used with small sample sizes. The sample size should be at least 2 or 3 times larger than the sum of the number of inputs and outputs."*

In the case of this study, the number of DMUs is 3 which equals to the product of 3 input variables multiplied to one input variable. The data clearly met the minimum requirement in the application of DEA. The above cited considerations showed that DEA can be used with small sample sizes because the researcher was forced with the availability of the healthiest set of data. What is important is the number of degrees of freedom (d.f.) to be retained. In this study, 1 output multiplied to 3 inputs equals 3. 3 multiplied to 2 are 6 greater than the number of observations (3 condotels and 8 years = 24 observations). Subtracting K=6 from 24 observations, the degree of freedom obtained is 18. This d.f. is important in determining the t-values in the statistical table during the use of SFA.

The basis of the researcher in classifying the condotels' operation is based on their rooming capacity. Based on the study of Jan Warnken et. al about multi-titled accommodation complexes (2008), where an establishment or residential complexes is considered large size if it has building characteristics of more than 60 rooms. These rooms are a mix of serviced rooms, dual and single key apartments and with other facilities such as conferencing. This has become the basis of the researcher in choosing the condotels since the sample respondents has the rooming capacity of 60-200 units. Other establishments mentioned in the study are also excluded since their operations can be considered as small scale in terms of rooms available for hotel operations. Though condotels are not yet classified as high-scale, medium scale and low scale due to its lack of accreditation, the researcher considered the selected condotels as high-scale in operations in terms of their rooming capacity of 60-200 rooms. Lancaster Suites has 200 rooms; Citadel Inn and

Astoria Plaza with 110 rooms, respectively; and lastly, Regalia Park Towers with 60 rooms available for hotel operations.

This study mainly focused on the hotel operations of these condotels though they are operating in a "mixed-use property" model, where some unit owners are living in the facility while other units are turned by the owners for rental to hotel operators.

Performance Efficiency Measurement Practices

In measurement of efficiency, most managers correlate it with productivity. According to Stevenson and Chuong (2014), productivity is an index that measures output (goods and services) relative to the input (labor, materials, energy, and other resources) used to produce them. By getting the productivity ratio, one can gauge whether inputs of production were effectively used.In assessing a firm's efficiency, multiplicity of inputs and outputs need to be considered (Wu, 2006; Cook and Sieford, 2009). Several researchers studied efficiency measurement and the two methods have been used primarily to estimate this, primarily DEA and SFA.

The study of Jia-Jane Shuai and Wei-Wen Wu (2011) evaluated the hotel's websites in Taiwan considered inputs such as number of guestrooms in a hotel, number of full-time employees, and operating expenses (employees' salaries, food and beverage cost, room costs, utilities, maintenance fees and other relevant operating costs). The outputs selected were: (1) total revenues generated from rooms; and (2) total revenues generated from food and beverages. Through DEA analysis, it showed that internet marketing can affect greatly the operating performance of tourist hotels.

The study of Assaf, Barros and Josiassen (2010) mentioned the concept of metafrontier which can "ensure that all heterogeneous firms or groups are assessed based on their distance from a common and identical frontier." The metafrontier can be simply considered as an envelop of all possible frontiers that might arise from the heterogeneity between firms (Rao etal., 2003). Other studies on hotel efficiency combined small and large hotels leading to inaccurate results of DEA and SFA due to different environmental characteristics such size, location and type of ownership. The metafrontier approach, thus, provide a somewhat standardized boundary for all firms with dissimilar and uncontrollable environmental characteristics. This study considered number of rooms as proxy for capital cost, number of full time equivalent employees in the room division, number of full time employees in food and beverage division, and number of full time equivalent employees in other departments. Outputs are total room revenues, total food and beverage revenues, total of other revenues(revenues from lease of store spaces, laundry, swimming pool, ball courts, barber shop, salons and bookstores), market share for each hotel (percentage of hotel guest out of the total guests received) and employees' performance (number of guest per employee). The impact of size of a hotel was a clear determinant of hotel efficiency. Large hotels had higher efficiency and it can be hypothesized that large size has a positive relationship with firm profits and firm success.

In 2011, Assaf and Barros analyzed the performance of Gulf hotel industry using Malmquist index with bias correction. This method is also a DEA approach. Inputs considered are: (1) number of outlets as proxy for capital; (2) number of full-time equivalent employees; and (3)

other operational costs such as administrative costs, utilities and rent. Two outputs considered are: operational revenues, and the annual occupancy rate. The paper came up with a result that increase in revenue for lower occupancy rate and other hotels an increase in occupancy rate for lower revenues. The findings showed that in difficult economic times, hotels usually decrease their room rate in order to maintain high occupancy.

The thesis made by Christine Mercado in 2009 measures efficiency of selected deluxe hotels by using DEA and included input variables such as revenue, food and beverage cost and receivables. Output variables considered are net income, inventory and sales. Finding of her study showed that improvements in the output variables and the reduction in the output variables are essential for the efficiency of the hotels.

The study of Jin-Li Hu et. al (2010) employed one-stage stochastic frontier approach (SFA) to simultaneously estimate cost efficiency scores and factors of cost inefficiency of 66 international tourist hotels in Taiwan during 1997-2006. The three inputs considered are the price of labor, price of food and beverage and the price of other operations. The outputs are the room, revenue, food and beverage revenue, and other operations' revenue. The results showed that Taiwan hotels are 91.15% cost efficient. Chain hotels are more efficient than independent hotels. Location also affects efficiency since those hotels near international airports and conveyance were more cost efficient than hotels located in non-metropolitan area.

Another study in the managerial efficiency of Taiwan hotels by Ching-Fu Chen (2007) uses SFA with three inputs (labor, food and beverage, and materials) and total revenue as output. Findings showed that hotels in Taiwan are 80% efficient in operations. Also, the perspective of product mix and sources of customers revealed that the hotels targeting the leisure market have more advantages than business hotels in effectively utilizing their operations resources and turning into higher managerial efficiency. No difference in efficiency had been found between the large-scale and small-scale hotels.

The review of related journals showed that DEA is extensively used in the study of hotel efficiency and other industries. The use of SFA is not yet widely applied in the hotel industry but rather on other industries. The researcher opted to apply the two methods: DEA, which is a nonparametric, linear programming technique that enables the development of an output-to-input ratio system to handle multiple inputs and outputs (Yu and Lee, 2009); and SFA, on the other measures efficiency in a parametric or statistical method, where deviation from the production frontier is not only accounted by technical inefficiency but also due to measurement errors and statistical noise. Combining the two methods in the evaluation of efficiency will make the study more robust and clear-cut since SFA will validate uncertainties not answered by DEA.

The variables chosen in the study were based on literatures reviewed. Input variables such as "capital," "salaries," and "operating expenses" were derived from the studies of Shuai and Wu (2011), and Assaf et al. (2010). Total revenue as output variable was derived from the studies of Hu et al. (2010) and Chen (2207).

Data Analysis and Discussions

Efficiency of condotel operations

Table 1 shows the summary of condolel's cooperation. The first 4 years (2007 – 2010) showed that the condotels were better off than the last 4 years (2011 – 2014). Astoria Plaza has a better scale condition in the first four years (scale = 1.000) than in the last 4 years (scale = 0.999). Citadel was better off in the last four years (2011 – 2014) of operation than their first four years (2007 – 2010). Its cost inefficiency (crste = 0.904) was caused by bad administration of resource inputs (vrste = 0.905) but maintained an advantageous scale of operation (scale = 1.000).

Lancaster Suites was better off during the first four years of operation (2007 – 2010). The last four years (2011 – 2014) indicated decreasing returns to scale. This means that their total income from operations was declining from 2011 – 2014. It also means that they have increased their level of scale of operation to attract occupancy. Their disadvantageous scale condition was influenced by cost inefficiency and managerial inefficiency in using their inputs. Later on in the succeeding section the inefficient allocation of inputs can be seen.

On the average, the condotels performed better during the first four years than the last four years. Cost inefficiency (crste = 0.953) was caused by inefficient administration of inputs (vrste = 0.959) and disadvantageous scale condition (scale = 0.993), say decreasing returns to scale as represented by increase in overhead costs.

Table 1
Efficiency Summary of the condotel operation

	Efficiency Summary				
Firm	Year	crste	vrste	scale	RTS
ASTORIA PLAZA	2007	0.963	0.963	1.000	-
ASTORIA PLAZA	2008	1.000	1.000	1.000	-
ASTORIA PLAZA	2009	0.986	0.986	1.000	-
ASTORIA PLAZA	2010	0.998	1.000	0.998	drs
2007 - 10	mean	0.987	0.987	1.000	
ASTORIA PLAZA	2011	1.000	1.000	1.000	-
ASTORIA PLAZA	2012	0.991	0.994	0.997	irs
ASTORIA PLAZA	2013	0.918	0.918	1.000	-
ASTORIA PLAZA	2014	0.908	0.908	1.000	-
2011 - 14	mean	0.954	0.955	0.999	
CITADEL INN	2007	0.967	0.968	1.000	-
CITADEL INN	2008	1.000	1.000	1.000	-
CITADEL INN	2009	0.986	0.990	0.997	irs
CITADEL INN	2010	0.946	0.973	0.973	irs
2007 - 10	mean	0.975	0.983	0.993	

Efficiency Summary					
CITADEL INN	2011	0.946	0.948	0.998	drs
CITADEL INN	2012	0.941	0.941	1.000	-
CITADEL INN	2013	0.869	0.869	1.000	-
CITADEL INN	2014	0.861	0.862	1.000	-
2011 - 14	mean	0.904	0.905	1.000	
LANCASTER SUITES	2007	0.960	1.000	0.960	irs
LANCASTER SUITES	2008	1.000	1.000	1.000	-
LANCASTER SUITES	2009	1.000	1.000	1.000	-
LANCASTER SUITES	2010	1.000	1.000	1.000	-
2007 - 10	mean	0.990	1.000	0.990	
LANCASTER SUITES	2011	0.946	0.949	0.996	drs
LANCASTER SUITES	2012	0.941	0.974	0.966	drs
LANCASTER SUITES	2013	0.873	0.900	0.970	drs
LANCASTER SUITES	2014	0.861	0.872	0.988	drs
2011 - 14	mean	0.905	0.924	0.980	
Grand	mean	0.953	0.959	0.993	

Resource use of Condotel

The bad performance of condotels can be illustrated by excess input usage in Table 2. Total income from operations was achieved by the condotels from 2007 to 2014. Property and equipment costs were efficiently allocated (with zero slack). However, all of the condotels incurred excessive use of salaries and other labor costs and building and occupancy expense from the last 8 years.

Astoria Plaza have lesser cost incurred during the last four years (2011 – 2014) because of shifting from decreasing return to scale (drs) to increasing return to scale (irs) coupled with constant returns to scale (crs or dash line) operation. Building and occupancy expenses also decrease from an average of P13,725.97 to P11,752.14. Property and equipment and salaries and other labor costs were efficiently allocated.

Citadel Inn had a good first four years of operation under constant and increasing return to scale. However, Citadel Inn's decreasing return to scale (drs) in the last 4 years caused them to have excessive usage of inputs (salaries & other labor costs and building & occupancy expenses). Salaries and related costs increase from P1,351.80 within 2007 – 2010 to P20,076.11 in the last four years. Building and occupancy expense incurred P7,128.54 excess every year.

Table 2
Summary of Output and input slacks for condotels

Summary of Output and Inputs variables					
Firm	Year	Total Income from Operations	Property and Equipment	Salaries and other labor costs	Building and occupancy expenses
ASTORIA PLAZA	2007	0	0	0.00	27460.54
ASTORIA PLAZA	2008	0	0	0.00	0.00
ASTORIA PLAZA	2009	0	0	2503.85	27443.32
ASTORIA PLAZA	2010	0	0	0.00	0.00
2007 - 10	mean	0	0	625.96	13725.97
ASTORIA PLAZA	2011	0	0	0.00	0.00
ASTORIA PLAZA	2012	0	0	0.00	18668.75
ASTORIA PLAZA	2013	0	0	0.00	14616.00
ASTORIA PLAZA	2014	0	0	0.00	13723.83
2011 - 14	mean	0	0	0	11752.14
CITADEL INN	2007	0	0	814.68	0.00
CITADEL INN	2008	0	0	0.00	0.00
CITADEL INN	2009	0	0	0.00	0.00
CITADEL INN	2010	0	0	4592.51	0.00
2007 - 10	mean	0	0	1351.80	0.00
CITADEL INN	2011	0	0	22991.73	22699.52
CITADEL INN	2012	0	0	18235.52	0.00
CITADEL INN	2013	0	0	18894.31	0.00
CITADEL INN	2014	0	0	20182.89	5814.65
2011 - 14	mean	0	0	20076.11	7128.54
LANCASTER SUITES	2007	0	0	0.00	0.00
LANCASTER SUITES	2008	0	0	0.00	0.00
LANCASTER SUITES	2009	0	0	0.00	0.00
LANCASTER SUITES	2010	0	0	0.00	0.00
2007 – 10	mean	0	0	0.00	0.00
LANCASTER SUITES	2011	0	0	37852.84	51893.34
LANCASTER SUITES	2012	0	0	31759.98	36938.03

Summary of Output and Inputs variables					
Firm	Year	Total Income from Operations	Property and Equipment	Salaries and other labor costs	Building and occupancy expenses
LANCASTER SUITES	2013	0	0	46586.29	20240.24
LANCASTER SUITES	2014	0	0	54348.78	23258.34
2011 - 14	mean	0	0	42636.97	33082.49
Grand	mean	0	0	10781.81	10948.19

Lancaster Suites enjoyed efficient operations at constant returns to scale (dash line) during the first four years (2007 – 2010). It has no excesses in the use of inputs and no shortage in attaining the total income from operation. However, At decreasing return to scale operation, salaries & other labor costs and building and occupancy expense increased drastically to P54,348.78 and P23,258.23 per year respectively.

On the average, a condotel incurred excesses in salaries & other labor cost and building and occupancy expense in the amount of P10,781.81 and P10,948.19 every year, respectively. The above findings implied that condotels were better off operating at constant returns to scale (crs) to bring down their operation costs to zero. The findings showed that condotels have had efficient performance during the first four years (2007 – 2010) than the last four years (2011 – 2104).

The results of this study is the same with the findings of Oliviera et.al in their study on the efficiency of Portuguese Hotels, whereas the hotels show huge levels of inefficiency due to excess use of inputs particularly the number staff employed in operations(Oliveira, Pedro, & Marques, 2013).

Conclusions and Recommendations

The higher scale of operation of the condotel with corresponding excessive allocation of inputs contributed to decline in total income from operation.

The above findings indicated that increasing the use of major inputs (property and equipment, salaries & other labor cost, and buildings and occupancy expense) helps achieve their target total income from operation. But as more inputs were added, specifically salaries and labor, inefficiency in operations will be the result. This was the case of Lancaster Suites where a decreasing returns to scale was experienced due to the excessive use of salaries and building expenses. The more inputs used, revenues were decreased instead of achieving break-even.

As condotels grow older in the business, lesser income was realized. The obsolete technology and refurbishing requirements increased the building and occupancy expenses contributing to a decrease in income. It is also costly to renovate and refurbish old facilities but it could provide greater revenues in the long-run. Establishments with worn-out carpet and furniture received bad reviews from customers, thus decreasing patronage and repurchase intent.

It is recommended that condotels to be cost efficient in operations must have a good management of inputs and continue to retain the good condition of their facilities as they age. Condotels under study incurred excess labor costs due to excessive staffing. It could be inferred that hiring more staff to provide better services can be inefficient in terms of resource use. Thus, condotel operators must be wary on hiring additional staff , particularly on off-peak season since the cumulative effect is labor cost inefficiency.

Also, other factors such as good marketing, service and value to customer must be considered. Marketing efforts should be enhanced through partnerships with travel agencies and transport operators since they can promote these accommodations to tourist availing their services. With service and value, customer service must be enhanced by providing trainings to its staff on how to provide memorable and commendable service. Hotel staffs that are considered as friendly, helpful and efficient are highly appreciated by clients, thus receiving good feedback and could be promoted through reviews mentioned in different social media platforms. With this, they can maintain loyalty of customers and achieve better operations.

However, this paper should be used with caution since condotels were chosen purposively and not randomly. The selected condotels may not represent the universe of the sub-industry and should not be used as the basic guide in making decisions. For future research, the study should include other condotels with small scale operations since the samples were operating in high-scale based on the number of rooms available for occupancy. It is also worth noting that there are new players in the industry and must be included in the study to achieve more robust results.

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