



FACTORS DETERMINING RESIDENTIAL RENTAL PRICES

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ABSTRACT

Due to the high demand for residential apartments, landlords take undue advantage of tenants and increase rent without adhering to rent regulations. A high proportion of the population in Ghana rents than own homes because many cannot afford to own. There is frequent movement of workers from one city to another, especially to urban areas, resulting in increases in demand and price of rented accommodation. This study explores the impact of location and apartment characteristics on rental prices, using a survey of the Accra Metropolitan Area. Data from three contrasting locations in Accra was analysed and the results show that location, number of bedrooms, availability of amenities and facilities, and sharing of facilities are significant in determining residential rental prices. The type of apartment people live in and the kinds of facilities they share with others have implications for health and the environment and require policy response with efforts to improve housing regulations in Ghana.

Keywords: Residential rental prices in Ghana, Suitable accommodation, Sharing of facilities and amenities, Relationship between rent and public health, Reasons for choice of apartment for rent.

INTRODUCTION

At the turn of the millennium, there were about one billion people living in inadequate housing conditions in developing countries. The need for scaling up housing supply has become an urgent focus of policy debate, with the need to expand the role of private markets (Keivani and Werna, 2001). Roughly 40 percent of the world's population lives in rental housing Malpezzi (1993). Far more people rent than own their own home in developed cities in the world, especially among households who opt for apartments (Opoku and Abdul-Muhmin, 2009). About 90% of the residents in Berlin are renters, 85% in Geneva, about three-quarters of the population are renters in Vienna and Amsterdam, and in Paris, more than half the residents do not own their own homes (Benjamin,

2007). In Saudi Arabia, about 67% of low-income households living in apartments prefer renting to buying their own house (Opoku and Abdul-Muhmin, 2009).

All over the world, renting offers a more affordable way for many people to gain access to accommodation. The provision of adequate housing is a very integral part of the needs of every society and has great value for individuals, families, communities, and society at large (Opoku and Abdul-Muhmin, 2009). According to the UN-HABITAT, the incidence of renting in some parts of West Africa is also high. For example, 80% of households in Abijan, Côte d'Ivoire, were tenants in the 1980s. In Port Harcourt, Nigeria, 88 percent of households were renting accommodation in 1984. In South Africa, almost 90 percent of migrants to Johannesburg either rented or shared accommodation upon arrival in the city (UN HABITAT, 2003).

In Ghana, data from the recent Ghana Living Standards Survey shows that about 25 percent of households are renting, 43 percent are living in their own premises, 31 percent are living in rent free apartments and some 0.8 percent are perching (living with a family member or friend without paying rent). In Accra, about 43 percent of the residents are renting, which is higher than the national average. For many households, the challenge is that of sharing the premises and facilities with other households, with 61.4 percent of households in Ghana sharing their dwelling with others. Only 10.2 percent of the population lives in bungalows, semi-detached houses or apartments. Seventy-seven percent live in rooms in compound houses and other dwellings (Ghana Statistical Service, 2007) while some 25 percent sleep in unauthorized temporal structures such as kiosks, shops and containers.

The type of housing people live in is an indication of their level of poverty or wealth and the availability of facilities have implications for health and the environment. Concerns about sanitation arise and there is a challenge of refuse management in growing cities. To some extent, rent has the ability to alter the distribution of population within a society. It tends to reserve some parts of society for particular class of people. In Ghana and in Accra particularly, a proof of this can be seen by observing certain well endowed areas such as Cantoments, East Legon, Labony, some parts of Osu and comparing them to less endowed places such as Chorkor, James Town, and Korle Gonno. Over the years, one variable that has affected demand for accommodation is the price of accommodation (or rent), which is the amount of money paid regularly for the use of someone's land, building or machinery.

Revenue from rent serves as the main source of income for many real estate developers and house owners. The attractive incomes from rent have led to the conversion of various structures into apartments for rent. Rent is becoming a major determinant of place of residence. Though there are differences in inter-city rents, very little is documented about the factors that determine the rental charges of apartments, which can constitute a source of distortion in the setting of rents.

This paper contributes in unique ways. It establishes a relationship between residential rental price, location, availability of amenities and the existence of facilities within a particular piece of accommodation. Three differentiated localities within the Accra Metropolitan Assembly were studied and compared. The study tried to understand the reasons why people prefer one type of apartment over another and in particular locations. Understanding the impact of certain characteristics on residential rental prices provides important information for rent regulations and policy making to guide the rental market of the Ghanaian economy. There are opportunities for landlords to exploit tenants with unrestricted increases in the Accra Metropolitan Area.

Determinants of Rent

The real estate market is complex and challenging in nature. Each piece of property is a unique and multidimensional good differentiated into a bundle of attributes that vary in quantity and quality (Marco, 2008). As such, the mainstream economist's explanation that rent is solely determined by supply and demand seems rather incomplete and sociologically naïve as rents within any particular area are set by landlords whose decisions are shaped by a variety of social as well as economic factors (Gilderbloom, 1985). Economists and financial analysts have therefore invested a tremendous amount of energy and effort in an attempt to explain what determines residential sale and rental prices (Gilderbloom, 1985).

At least, the bundle of factors that determine rent can be broadly classified into economic and non-economic factors. Some of the economic factors are interest rate and income level. (Égert and Mihaljek, 2007) established that a robust negative relationship between real interest rate and housing prices exists. (Égert and Mihaljek, 2007), (Berglund, 2007) and (Marco, 2008) all found that there exists a positive relationship between income and housing prices. This suggests that increases in incomes give incentives to landlords to take advantage of the increased purchasing power of tenants and increase house prices and rents, though this cannot happen in all localities within a city.

Population, as a non-economic factor, is found to have a positive relationship with house prices (Égert and Mihaljek, 2007). Increases in population lead to excess demand for accommodation in the short run and eventually push rent up. Sometimes, the location of an apartment can have a significant impact on the level of rent that a household is likely to pay. In NYC for instance, rent is charged based on location with Manhattan commanding the largest rent (Marco, 2008). In Turkey, rent in urban areas was higher than rural areas by some 26.3 percent (Selim, 2008). Apartments that are between 5-10 years old are less expensive than those that are less than 5 years old by at least 8 percent (Selim, 2008). (Zietz *et al.*, 2007), Selim (2008) and Marco (2008) all found that certain apartment characteristics such as square footage, number of bedrooms, number of other rooms, number of bathrooms and toilets, type of house, type of building, size, and other structural characteristics such as water system, pool, and natural gas had some significant effect on rent. In

this study, number of bedrooms, availability of toilet and water facilities, and location of apartment were analysed.

The Study Area

The study was carried out in three localities in Accra, the capital of Ghana. Accra is Ghana's largest city and is its administrative, communications, and economic centre, situated within the Accra-Tema Metropolitan Area. This area is the biggest, most diverse and most cosmopolitan in Ghana. It is well connected to the outside world by an international airport, and a modern harbour, which is located about 30 kilometers in Tema. Accra is divided into many locations and towns based on different characteristics. East Legon, Osu and Chorkor were selected for the purpose of this study, based on size, and the distribution of rental prices within and among them.

East Legon, the smallest among the three locations in terms of population, is a sparsely populated area, occupied mainly by high-income groups and foreigners. It is classified as a first class residential area. Chorkor is the next smallest of the three areas. It lacks most basic infrastructure, is densely populated, and has a very high percentage of low income earners. The area is classified as a third or fourth class residential area and most of the residents are the Gâ's (the local people), who engage in fishing activities. The third area is Osu, which has a mix of high income, middle income and low income groups of households. It is classified as a second class residential area. The classification of the locations is based on housing characteristic and environmental conditions as has been adopted by the Accra Metropolitan Assembly (AMA) ([Ghana Districts, 2006](#)).

The Data and Methods of Collection

A sample of one hundred (100) households was selected proportionally according to the 2008 AMA estimated population for the areas studied. Ten households were selected from East Legon, 31 households form Chorkor and 59 households from Osu. The three suburbs fall within three rent price categories of high, medium and low rent prices. A transect walk was undertaken in each suburb to familiarize with its layout and to get acquainted with some important landmarks, housing characteristic and environmental conditions. Each suburb was divided into quotas and households living in rented apartments and who were willing to participate in the study were randomly selected. Both closed-ended and open-ended questions were used for the data collection after a pilot test was conducted. A personal interview method of data collection was used to interview the heads of each household. Data was collected in June 2008. The monthly rent as at June 2008, characteristics of the apartment (number of bedrooms, availability of toilet and bathroom facilities, water and electricity supply) were obtained from the household head, and through observation where possible.

Amenities refer to water and electricity supply while facility refers to toilet and bathroom. A standard scoring system was used for coding under the different situations. Some households have

water and electricity; some have only one, while others have neither. Toilet and bathroom facilities are available in some apartments and the number of bedrooms differ.

Analysis of Data

Previous works have used regression as the main tool of analysis (Berglund, 2007; Zietz *et al.*, 2007). In this study, significance was measured using $p < 0.05$. The two-way contingency table was used to cross tabulate different variables to explore the relationship and impact that exists between them. ANOVA was performed to determine the existence of a significant difference in mean rental prices across the three locations. For all statistical procedures, the dependent variable was monthly rent for the household. It was measured on a categorical scale with three levels namely: low rent (GH¢0 to GH¢13.67), medium rent (GH¢13.67 to GH¢30.00) and high rent (GH¢30 and above). The independent variables were also categorical. They include location, availability of amenities, availability of facilities, and the sharing of facilities. Four key hypotheses were tested using the chi-square test of independence. The two-way contingency table with column percentages was used to establish the associations between each of the independent variables and the dependent variable. Then the Pearson's chi-squared value was computed to test the significance of the association. The strength of the associations was verified by computing the Cramer's V. The Cramer's V is used to assess the strength of the relationship between two categorical variables in a contingency table.

The chi-square test of independence was calculated as:

$$\chi^2 = \sum \left(\frac{(o_{ij} - e_{ij})^2}{e_{ij}} \right) \text{ and } e_{ij} = \frac{RT_i - CT_j}{N}$$

Where o_{ij} is the observed frequency in each cell of the table and e_{ij} is the expected frequency in each cell of the table. RT_i is the row total for the i th row and CT_j is the column total for the j th column and N is the total value of all observed frequencies.

The strength of the association between variables as measured with the Cramer's V is given by:

$$V = \sqrt{\frac{\chi^2}{N(k-1)}}$$

Where the N is the total value of all observed frequencies, k is the lesser of the number of rows and columns and χ^2 is the calculated chi-square value.

RESULTS AND DISCUSSION

All respondents were household heads comprising sixty-one percent females and thirty-nine percent males. As at June 2008, 57% of the households had lived in their current apartment for up to 6 years. Another 27 percent had lived between 6 and 12 years while the remaining 16 percent have lived for between 12 to 40 years. More than half of the households (53%) indicated that they are uncertain about the number of additional years they expect to stay in their current apartment.

Some 13% and 17% expect to remain for one and two years respectively, 1% indicated staying for less than one year, and 16 percent indicated staying for additional three to ten years. The greatest challenge of many households for renting their current apartment is the lack of privacy and too much noise, especially within specific neighborhoods. Those who share facilities have limited privacy. Other challenges include ejection threats and poor drainage systems.

Residential Rental Prices

Rent varied across the three locations as expected. Rents in East Legon ranged from GH¢15 to GH¢100 per month, that of Osu ranged from GH¢5 to GH¢90 per month whiles that of Chorkor was from as low as GH¢4.50 to GH¢30 per month. Mean rent in East Legon is GH¢39.4, that of Osu is GH¢28.0 and Chorkor is GH¢14.4. One can observe that on the average, rent in East Legon is approximately three times that of Chorkor while that of Osu is approximately two times that of Chorkor. However, rent in Chorkor showed less variability with a standard deviation of GH¢6.77. This gives an indication that rents in Chorkor are relatively stable than in Osu and East Legon.

An ANOVA¹ showed that there is a significant effect of location on residential rental price. $F(13, 19.679.) = 13.105, p = 0.000$. The distribution of rental prices across the three locations also showed that rental prices are positively skewed, meaning that majority of the residential rental prices are on the increasing side. This gives an indication that there are tendencies that rental prices will become higher and higher but in different magnitudes, depending on location.

Number of Bedrooms

Forty-nine percent of the households are living in single room apartments across the three locations. Twenty-nine percent live in a one bedroom apartment (commonly known as ‘chamber and hall’ in real estate in Ghana). The remaining 22 percent live in two and three bedroom apartments. Chorkor, the least endowed locality, has about 65 percent of the households living in single room apartments and only 3 percent live in two-bedroom apartments. There are more single and one-bedroom apartments available for renting than there are two or three-bedroom apartments. This could have a relationship with poverty as many households cannot afford apartments with more rooms. As expected, there appears to be a strong and positive relationship between number of bedrooms and monthly rent ($r = 0.623$). The more bedrooms, the higher the monthly rent.

Factors Most Considered In Choosing Rental Apartment

Households consider different factors in choosing a rental apartment. Across the three locations, about 40 percent of the households chose their current apartment because of its closeness to their place of work but only 26 percent indicated that they will consider this same factor if they are to rent again. This fall in percentage (from 40% to 26%) suggests that there are other factors that

¹ The assumption of equal variance was violated (Levene Statistic (2, 95) = 13.936, $p = 0.000$) so the Welch F-ratio was reported for the ANOVA.

account for choice of location and not closeness to place of work alone. With the current economic situation in Ghana and the worsening traffic conditions in almost every part of Accra, closeness of an apartment to place of work can be important to many households. Majority of households in East Legon (40%) considered location of the apartment before renting against 6.5 percent in Chorkor and 5.1 percent in Osu. The availability of amenities and facilities were important to households living in East Legon (30%) and Osu (16.9%) but did not matter to households in Chokor (Table 1). This may have a relationship with income levels and ability to choose where to live. Households in Chorkor are concerned with other reasons such as family bonds, while those who live in Osu are more concerned about closeness to place of work.

Table -1. Factors Most Considered In Choosing Rental Apartment

Factors	Location of Apartment (in percentages)			Total
	East Legon	Osu	Chorkor	
Closeness to place of work	20.0	52.5	22.6	40.0
Availabilities of amenities and facilities	30.0	16.9	0	13.0
security (history of theft and armed robbery cases)	0	8.5	16.1	10.0
Location	40.0	5.1	6.5	9.0
Income	0	3.4	16.1	7.0
Other	10.0	13.6	38.7	21.0
Total	100% (10)	100% (59)	100% (31)	100% (100)

Source: Field survey 2008

Figures in parenthesis are counts of responses

Factors Affecting Level of Rent

Four hypotheses were tested and the results reported in the next sections.

Thirty-two percent of the households pay low rent and 23 percent pay high rent (Table 2). No household in East Legon pays a low rent and no household in Chorkor pays high rent. Fifty-one percent of households in Chorkor pay low rent and 50 percent of households in East Legon pay high rent. With $\chi^2 = 19.337$ and $p = 0.001 < 0.05$, the result confirms a significant and strong association (Cramer's V value = 0.311) between rental price and location of an apartment.

Table- 2. Location and Rent level

Level of rent	Location of rented apartment (in percentages)			Total
	East Legon	Osu	Chorkor	
Low rent	0	27.1	51.6	32.0
Medium rent	50.0	42.4	48.4	45.0
High rent	50.0	30.5	0	23.0
Total	100% (10)	100% (59)	100% (31)	100%

Source: Field survey 2008

Figures in parenthesis are counts of responses

Availability of Facilities

There is a relationship between availability of facilities and level of rent (Table 3). Households with both toilet and bathroom facilities are more likely to pay medium rent (42.6%) or high rent (almost 47%). This relationship was verified to be valid at 5 percent level of significance and confirmed to be a strong association with a Cramer's V value of 0.449. Having both toilet and bathroom facilities tend to attract medium and high rental charges. With low rent one gets either none of the facilities or at most one of the two facilities.

Table -3. Availability of facility and Rent level

Level of rent	Availability of Toilet and Bathroom facilities (in percentages)				Total
	Both toilet and bathroom	Only bathroom	Only toilet	No toilet and bathroom	
Low rent	10.6	52.6	0	50.0	32.0
Medium rent	42.6	47.4	0	50.0	45.0
High rent	46.8	0	100.0	0	23.0
Total	100	100	100	100	100

$$\chi^2 = 40.253$$

$$p = 0.000 < 0.05$$

Calculated by authors from field survey, 2008

Availability of Amenities

The results seem to suggest that the availability of amenities (water and electricity supply) also has a significant effect on residential rental charges. Majority of households had both water and electricity supply (57%) and only 8 percent did not have either. Thirty-Three percent of households had electricity only compared to 2 percent who had water only (Table 4). Households prefer the option of having no water to having no electricity supply. The amenities enjoyed by a household determine the level of rent they pay. With a Chi-square analysis, the relationship between

availability of amenity and rent was found to be significant with $\chi^2 = 27.902$, $p = 0.000 < 0.05$.

There was a strong Cramer's V = 0.374, $p = 0.000$.

Table -4. Effects of Availability of Amenities on Rent level

Level of rent (GH¢)	Availability of Water and Electricity supply (in percentages)				Total
	Both Water and Electricity supply	Only Electricity supply	Only Water supply	No Water and Electricity supply	
Low rent	21.1	39.4	50.0	75.0	32.0
Medium rent	38.6	60.6	50.0	25.0	45.0
High rent	40.4	0% (0)	0	0	23.0
Total	100% (57)	100% (33)	100% (2)	100% (8)	100

Source: Field survey 2008

Figures in parenthesis are counts of responses

Sharing of Facilities

From Table 5 below, eighteen percent of households share both toilet and bathrooms with other households and 27 percent did not. Four percent share only their toilet facilities and 30 percent share only their bathroom. Amongst households sharing both facilities, 16 percent pay low rent, 61 percent pay medium rent and 22 percent pay high rent. Some households had exclusive facilities most of them pay high rent, as expected.

Table- 5. Relationship between Sharing of Facilities and Rent level

Level of rent	Sharing both Toilet and Bathroom	Use of Toilet and Bathroom facilities (in percentages)					Total
		Shared Toilet only	Exclusive Toilet and Bathroom	No Toilet with shared Bathroom	No Toilet with exclusive Bathroom	No Toilet and Bathroom to share	
Low rent	16.7	0	11.1	53.3	44.4	50.0	32.0
Medium rent	61.1	50.0	25.9	46.7	55.6	50.0	45.0
High rent	22.2	50.0	63.0	0	0	0	23.0
Total	100.0% (18)	100% (4)	100% (27)	100% (30)	100% (9)	100% (12)	100%

(Cramer's V = 0.478 and p = 0.000); ($\chi^2 = 47.5$ and $p = 0.000 < 0.05$)

Source: Field survey, 2008

Figures in parenthesis are counts of responses

Average residential rental price across the three locations is significantly different. Number of bedrooms had the strongest correlation with residential rental prices. This is followed by sharing of facilities, which had the strongest Cramer's V (0.487), and followed by availability of facilities (Cramer's V = 0.449), availability of amenities (Cramer's V = 0.374) and location of rented apartment (Cramer's V = 0.311). Whether or not facilities are shared has a stronger relationship with residential rental prices than when the facility is not shared. Mean rental price of apartment with both toilet and bathroom facilities are higher than apartments with only one facility or none.

Renting in Chorkor is the cheapest but there is a higher probability that the apartment will lack at least one facility, and even if available, it will be shared with households from other homes. Apartments in East Legon are fitted with most amenities and facilities in most cases for exclusive use but this privacy attracts a higher rental price. The situation in Osu is difficult to predict and will depend on the suburb. Renting around Osu RE, Ako Adjei, Oxford Street and some parts of Kinkawe (near the Ohene Gyan Sports Stadium) offers the kind of privacy that most households desire (exclusive toilet, bathroom, electricity and water supply and so on). These areas also offer proximity to the city center. However, it comes with higher rental prices and uncontrolled noise in these areas.

CONCLUSIONS

The type of housing people live in is an indication of their level of poverty or wealth and the availability of facilities have implications for health and the environment. Concerns about sanitation arise with the challenge of refuse management in growing cities. Housing needs in the Accra Metropolitan area are critical in determining the welfare of tenants. The findings of this study shows that the impact of locational characteristics on residential rental prices is statistically significant, which confirms the findings of [Marco \(2008\)](#) and [Selim \(2008\)](#). The impact of apartment characteristics such as the number of bedrooms, the availability of amenities (water and electricity supply), availability of facilities (toilet and bathroom) is statistically significant in determining rental charges. Sharing of apartment facilities also has a significant impact on residential rental prices.

Closeness of an apartment to place of work is the top priority of most households in considering renting an apartment. The greatest challenge of many households for renting their current apartment is the lack of privacy and too much noise within the neighborhood, when the location is close to the city centre. Households in low income communities are not very much concerned about the availability of amenities in their choice of apartments for rent, but are rather particular about living close to their families. Accommodation at Chorkor is the cheapest but with a high probability of not having the needed facilities and privacy. Household privacy and the use of exclusive facilities are more assured at East Legon but the privacy situation at OSU is varied.

Many urban dwellers have been challenged with finding decent, convenient and affordable accommodation. They are faced with the threats of eviction and uncontrollable increases in rent. The formulation and enforcement of housing policies are to be put in place. The provision of basic facilities in all premises earmarked for renting should be ensured by the Rent Control Department and new structures should meet acceptable housing standards. The indiscriminate conversion of every room and every space into apartments for rental thereby leaving no space for toilet facilities needs to be checked by the appropriate authorities and sanctions levied against all who violate the provisions of the law. The absence of this will result in continual use of the beach and footpaths as places of convenience, which have negative health and environmental implications.

These practices can result in the easy spread of communicable diseases, poor water quality and even unsafe food products, which affects everyone. Those who live in apartments with exclusive facilities also purchase food products from areas that are defecated knowingly or unknowingly. Everyone must all be concerned. The Rent Control Department and the Accra Metropolitan Assembly would need to set up an active monitoring team with the responsibility of inspecting and ensuring that apartments meant for renting have the basic facilities and amenities. Intensive education by the National Council for Civic Education will complement these efforts. Communities can be sensitised to monitor the activities of landlords within their area. The prevalence of threats of eviction, frequent increases in rent charges, demands for advance covering 24 months or more also need to be checked.

To some extent, rent has the ability to alter the distribution of population within a society with a certain class of people living in certain areas. The provision of more housing facilities for households in low income neighbourhoods is becoming increasingly important. In a nation with low income levels, it is important to have policies that ensure that as many people as possible have access to affordable housing. The presence of a large number of people living in single room apartments has implications for public health, especially in areas such as Chorkor.

REFERENCES

- Benjamin, C., 2007. The case for rentals. *The Statesman*. January 25, 2007 edition.
- Berglund, J., 2007. Determinants and forecasting of house prices. Department of Economics.
- Égert, B. and D. Mihaljek, 2007. Determinants of house prices in central and eastern europe. Switzerland: Bank for International Settlements Press & Communications CH-4002 Basel.
- Ghana Districts, 2006. Greater accra region: Accra metropolis. Ghana Districts.com
- Ghana Statistical Service, 2007. Pattern and trends of poverty in ghana 1991-2006.
- Gilderbloom, J.I., 1985. Social factors affecting landlords in the determination of rent. *J. of Contemporary Ethnography*, 14(2): 155-179.

- Keivani, R. and E. Werna, 2001. Modes of housing provision in developing countries. *Progress in planning*. 55: 65-118.
- Malpezzi, S., 1993. Can new york and los angeles learn from kumasi and bangalore? Costs and benefits of rent controls in developing countries. *Housing Policy Debate*, 4(4): 589–626.
- Marco, L., 2008. Determinants of new york city residential rental prices. *Michigan J. of Business*, 1(1): 61-83.
- Opoku, R.A. and A.G. Abdul-Muhmin, 2009. Housing preferences and attribute importance among low-income consumers in saudi arabia. *Habitat International*.
- Selim, S., 2008. Determinants of house prices in turkey: A hedonic regression model. *Dogus University J*, 9(1): 65-76
- UN HABITAT, 2003. Rental housing: An essential option for the urban poor in developing countries". . as at 22/04/2008g countries.
- Zietz, J., E.M. Zietz and G.S. Sirmans, 2007. Determinants of house prices: A quantile regression approach. *J. of Real Estate Finance and Economics*, 37(4): 317-333