

# The Impact of Ethno-Religious Crisis on Location Decisions and Values of Residential Properties in Jos, Nigeria

Aliyu Ahmad Aliyu<sup>1\*</sup> Muhammad Umar Bello<sup>1</sup> Rozilah Kasim<sup>2</sup> David Martin<sup>2</sup>

1. Department of Estate Management and Valuation, Faculty of Environmental Technology, Abubakar Tafawa Balewa University, Bauchi, P.M.B. 0248, Bauchi, Bauchi State, Nigeria

2. Department of Real Estate and Facilities Management, Faculty of Technology Management and Business Tun Hussein Onn University of Malaysia, 86400, Parit Raja, Batu Pahat, Darul Ta'zim, Johor, Malaysia  
E-mail: [aaaliyu1978@yahoo.com](mailto:aaaliyu1978@yahoo.com)

## Abstract

Location is among the main determinants of residential property value. It has been realised from the existing literature that location could either be tangible or intangible in nature. Tangible location factors include accessibility, transportation, closeness to central business districts etc. On the other hand, intangible location factors are those attributes of location that are invisible in nature. They include race, ethnic background, crime, safety, skin colour, native inclination, apartheid, cultural background, security, religious inclination, socioeconomic background, indigeneship and the like. This study is intended to examine the effect of these intangible location attributes on the values of residential properties in the study area. The data for this research was sourced through interviews, field survey and questionnaires. Tables and charts were employed in order to analyse the data for the research. Pictures were also taken in order to give pictorial information of what is on ground. In order to arrive at the required sample size for the research, stratified random sampling was adopted. The study area was divided into two clusters, that is, Jos North and Jos South. The outcome of the research revealed that areas that are classified as violent free neighbourhoods command high rental and sales value of land and landed properties. The research discovered that people prefer areas that are predominantly of their religious and ethnic extraction. As a result of that, the residential pattern of the study area was drastically altered. It can be concluded that intangible location attributes play a vital role in dictating the price of land and landed properties. Investors and real estate developers should take into consideration intangible attributes of location when determining the worth of land and landed property in the study area.

**Keywords:** Intangible Location Attributes, Landed Property, Rental Value, Residential Property and Sales Value

## 1.1 Introduction and Theoretical Exploration

Location is in the midst of the most important determinants of residential property value. It is a well documented fact that location could either be viewed as tangible or intangible in its entire ramification. Physical location factors include: closeness to central business districts, accessibility, community facilities, utilities and services, transportation building codes, demand, supply, planning restrictions, population increase, zoning regulation, closeness to place of work, components or elements that form part of a building structure, building codes, environmental protection laws, subdivision regulations, waste dumpsites, and the likes (Aliyu, 2012).

Conversely, invisible attributes of location are those attributes of location that are imperceptible and unseen in nature. They comprise: crime, native inclination, race, religious inclination, safety, cultural identity, ethnic background, security, indigeneship, violent free areas, apartheid, household preference, violent prone areas, socio-economic background, and what have view (Aliyu, 2012). Due to the incessant and ongoing anarchy that has bedevilled the city of Jos for nearly one and half decade, there has been a slow and steady process of residential rearrangement, repositioning and change of ownership in line with ethnic, native, cultural and religious background, which ultimately resulted in splitting the metropolis into like two dissimilar and diverse cities in one municipality by having an region that is exclusively for Muslims and Christians as well (Aliyu, 2012).

A lot of earlier researches in the area of residential property value indicators directed on numerous tangible location attributes which shape the foundation of land and landed property value. Early scholars who excellently did well in this regard are Ricardo (1817) and Von Thunen (1828). In his contention, Ricardo established that the main factors influencing land and landed property value in any given area is nothing rather than the fertility, productiveness or quality of land. He consequently concluded that areas that are more productive command higher value as match up to areas that are infertile. Von Thunen, further extended the theory of location by looking at transportation cost as the main indicator of land and landed property value. Ricardo and Von Thunen's theory are still relevant in the present time but they could only be appropriate in some areas. Their theory was criticised due to advancement in technology as most of the assumptions of these classical theorists were formulated before the industrial revolution

Notable researchers who further explored location theory include: Firey (1974), Hansen (1959), Hoyt (1939), Kauko (1999), Laakso (1992), Tiebout (1956), Wieand, (1973) and Zipf (1949). Other researchers who

supported this claim are Wingo (1961a and 1961b) and Alonso (1964). Alonso's PhD dissertation was published and became available in the 1960s. Wingo and Alonso's main point of contention is that families prefer to reside in neighbourhoods where they are sure of good accessibility, location, and transportation. A family is enthusiastic to expend most of their earnings in order to obtain a residential accommodation that fulfils such qualities.

Subsequent researchers extend that nearness to city centre or inner city, population size, demand, supply, rent, subdivision regulations, zoning regulations, building codes, environmental protection laws and planning restrictions are the most important determinants of land and landed property value. The proponents of this theory include: Leeuw (1971a), Leeuw and Ekanem (1971b), Linneman (1981), Paul and Daniel (1998), Pollakowski and Wachter (1990), Thorsnes (2000) and Thornse and McMillien (1998) among others. Other researchers attribute significance, importance and value to land and landed property as a result of property tax payment. For example, Bramley (1993), Hansson (1987), Larry and Jane (1990), Oates (1969) and Pollakowski (1973) professed that areas that pay property tax command low value according to many urban dwellers and vice versa.

To other professionals concerned with land and landed property valuation, the value of residential property could be arrived at by looking at the structural components or elements that comprise a building. Based on their claim, buildings with magnificent doors, roof, floor, window, finishes and good decorations command high value match up to those lacking these essential qualities. To be more precise, some researchers attribute value to land and landed property due to the inherent quality, machineries or structural mechanisms of the building. Researchers in this regard include David and Peter (1974), Gregory (1971), Hughes and Sirmans (1992, 1993 and 1994), Irwin and Bockstael (2004), Kohlhase, (1991),

In another perspective, some researchers ascribed land and landed property value by taking into cognisance some intangible attributes of location like race or skin colour. Advocates of this thought include: Adelman (2004), Bailey (2004), Bruch and Mare (2005), Bruch (2006), Charles (2002 and 2003), Cheshire (2007), Van Ham and Clark (2009). Furthermore, others consider crime as a factor influencing land and landed property values. For instance, Bello (2011), Bottoms and Wiles (1997), Hellman and Naroff (1979), Gibbons (2003), Goncalves (2009), Linden and Rockoff (2008), Lynch and Rasmussen, (2001), Petras and Greenbaum (2006), and Thaler (1978) and the likes

Alternatively, to other land and landed property specialists, residential property value is determined by looking at the availability, maintenance and provision of the basic public infrastructural utilities, facilities and services that go a long way in making a neighbourhood or a community a liveable environment. In other words areas that have schools, market, shopping malls, hospitals, neighbourhood parks, medical health care, police stations, water, electricity, roads, worshipping places, wholesale and retail shops and so on command high value compare to those areas that lack such public utilities, facilities and services. The proponents of this theory include: Cheshire and Stephen (1995 and 1998), Do, Wilbur and Short (1994), Leggett and Bockstael (2000), Lutzenhiser, Noelwah and Netusil (2001), Paul and Stephen (1998), Quang, Robert, and James, (1994) and Tse (1998).

Numerous scholars have employed records of land and landed property transaction to assess environmental factors and, more importantly, study the influence of harmful waste dumpsites and contaminants on land and landed property values. Many scholars, such as: Garrod and Willis (1994), Greenberg and Hughes (1992), Ketkar (1992), Kiel (1995a), Kiel and McClain (1995b), Kohlhase (1991), have constantly established that nearness to locally unwanted land uses and other harmful waste dumpsites has negatively influenced the values of land and landed properties. Based on the aforementioned models and theories, it is obvious that land and landed property value is determined by many factors. From the foregoing, it could be noticed that the previous researches on the subject matter have many shortcomings as they have given disproportionate attention to physical factors that determine residential property value. Only very few researches were conducted on intangible location attributes as indicators of land and landed property value. It is therefore against this background that the research investigates intangible location attributes as factors that indicate and influence the values of land and landed properties in the study area. The research questions which this study seeks to answer are:

- i. To what extent do the intangible location attributes influence the values of residential properties in the study area?
- ii. How do the intangible location attributes affect the sales and rental values of land and landed properties in the study area?

## 2.1 The Study Area

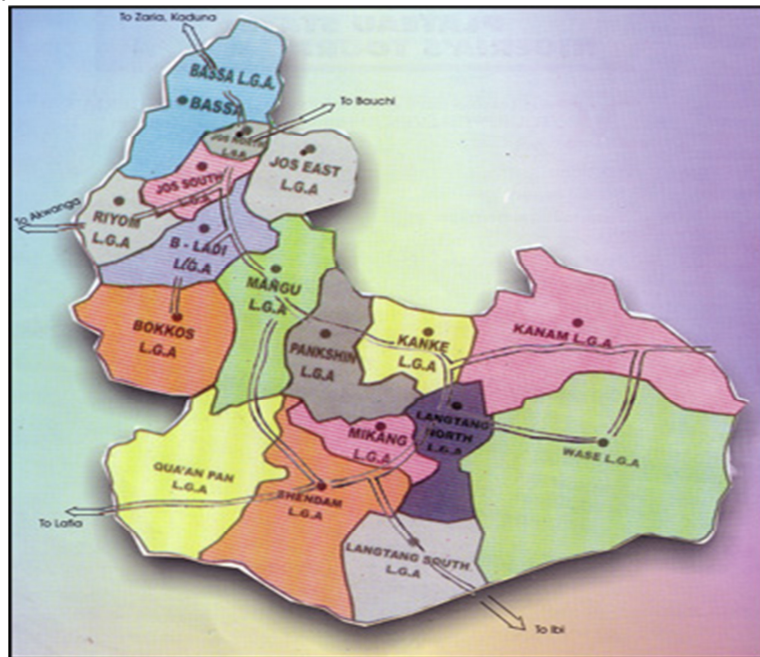
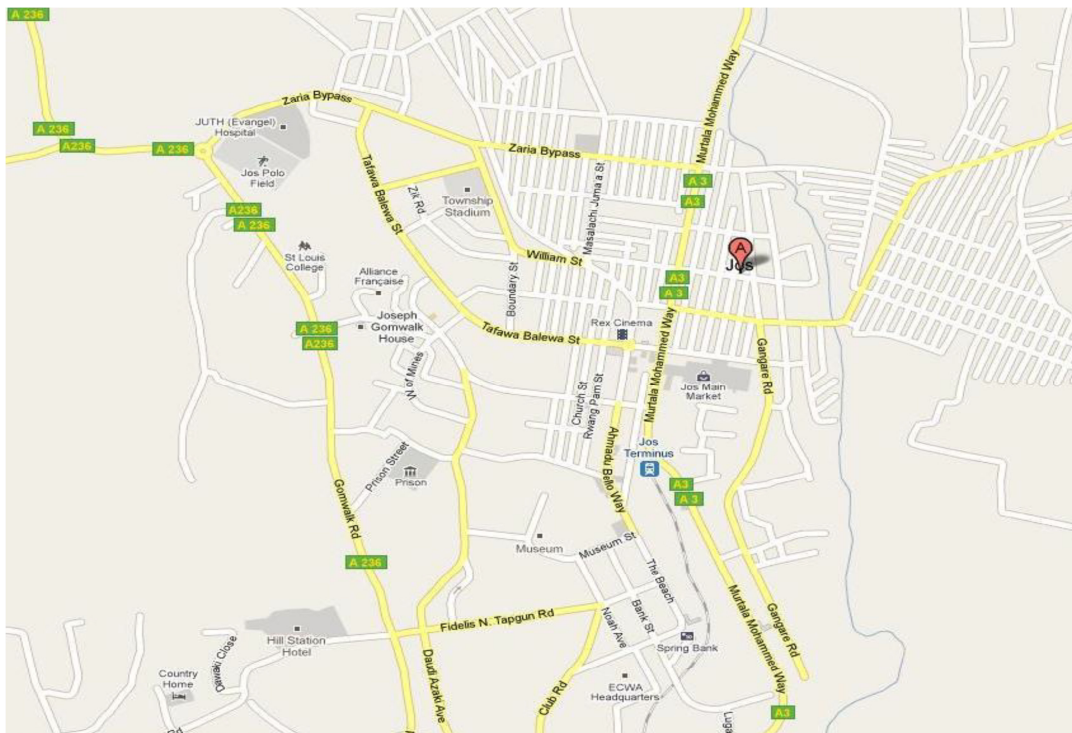


Plate 1: Plateau State Map, (Federal Republic of Nigeria, 2011)



Map 4: Jos, Plateau State Nigeria

Plate 2: Map of the City of Jos, (Plateau State Government, 2011)

## 3.1 Research Methodology

### 3.1.1 Sampling Technique

In order to arrive at a reliable sample and data collection instrument, there is a need to investigate the purpose of undertaken a research (Creswell, 1994 and Crotty, 1998)). Stratified random sampling was also employed in order to generate data from both Muslim's and Christian's residential neighbourhoods as it could be seen in table 1 as well. In a broader perspective, data were collected by field survey, interviews, self-administered surveys through questionnaire and direct observation. Data on property value were obtained from consultancy firms because records of sales and rents transactions are kept in their archives.

### 3.1.2 Instruments for Data Collection

A combination of self-administered questionnaires and semi-structured interview were deemed most suitable as data collection tools for this research due to the advantages obtained from both approaches. The questionnaire make sure that all questions directed to the respondents were consistently phrased, therefore allowing objective judgement of outcome while interviews allow the respondents chance to convey views more lengthily than would be achievable with a closed-ended questionnaire. Furthermore, the interviews allowed elucidation of matters in the questionnaire by the investigator in areas where some respondents may not be totally conversant.

Two types of questionnaires (Questionnaires I and II) were administered. Questionnaire I was addressed to the respondents or occupiers of residential properties, while Questionnaire II was administered to consultancy firms. Out of the questionnaires administered to the respondents, 88% were able to retrieved back. On the part of the consultancy firms, 92% responses were gotten from the survey. Details could be found in table 1.

A total of 1000 questionnaires were administered to the respondents. Out of 1000 questionnaires administered to the respondents, 876 valid responses were used to analyse the information pertaining to the effect of intangible location attributes on residential property value in Jos city. Stratified random sampling was also adopted in order to generate data from the professional estate surveyors and valuers. Out of 30 firms, 10 were chosen and 120 questionnaires were administered to them, that is, 12 for each firm. However, out of 120 questionnaires administered to the professional firms, only 110 were retrieved back. This is necessary to achieve a reasonable spread in the location of interviews and questionnaires to be able to obtain a cross-section of data regarding the impact of intangible location attributes on residential property value in the study area. This is also imperative because of local variations in the metropolis.

**Table 1: Questionnaires Administered to Respondents**

S/N	Type	Respondents	Number of questionnaires administered	Number of questionnaires returned	Response rate (%)
1	Questionnaire I	Occupiers of residential properties	1000	876	88
2	Questionnaire II	Estate surveyors and valuers	120	110	92

Source: Field Survey (2011)

### 3.1.3 Method of Data Analysis

Pictures were taken to depict how houses, shops, market, hospitals, places of worships etc were burnt and razed to ashes in the study area. This is imperative because it helps in displaying how the intangible location factors affect the value of residential properties in the study area. Most of the data presented using simple percentage distribution tables were also complimented with the aid of statistical graphs. For example histogram was employed to analyse some of the data in the research.

## 4.1 Results

### 4.1.1 Variations in the Typical Yearly Rents Collected by House Owners in the Study Area

Considering the nature of the research,, a trend in the average annual rental value of tenement buildings, flats, duplexes, semi-detached houses and four bedroom bungalows is highlighted for low, medium and high density residential neighbourhoods in Jos (Dung-Gwom and Rikko, 2009) from 2001 – 2011 as presented in table 2 and figure 1-5. Although, laws of demand and supply and price of building construction, location, accessibility, element of a building, transportation, neighbourhood utilities, facilities and services greatly affect the values of residential property, it is on the other hand discovered that there was an aloft increase in rent of tenement building, flats, duplex, semi-detach house and four bedroom bungalow from 2001 through 2006 and between 2008 and 2011. These periods were the time when civil unrest repeatedly occurred in Jos as noted by Dung-Gwom and Rikko (2009).

**Table 2: Variations in the Typical Annual Rents Collected by House Owners from 2001-2011 in Jos Metropolis**

Type of Building	Variations in the Average Annual Rents Charged by Landlords from 2001-2011 in Nigerian Money {Naira (₦)}										
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Tenement	30,000	35,000	45,000	53,000	60,000	68,000	75,000	75,000	80,000	85,000	85,000
Flat	50,000	60,000	68,000	75,000	83,000	84,000	90,000	100,000	110,000	120,000	125,000
Duplex	70,000	72,000	76,000	81,000	90,000	98,000	110,000	122,000	126,000	136,000	138,000
Semi-Detached	80,000	88,000	95,000	102,000	110,000	121,000	129,000	140,000	146,000	157,000	157,000
Four Bedroom Bungalow	100,000	105,000	115,000	125,000	140,000	145,000	152,000	160,000	180,000	200,000	230,000

Sourced: Field Survey (2011)

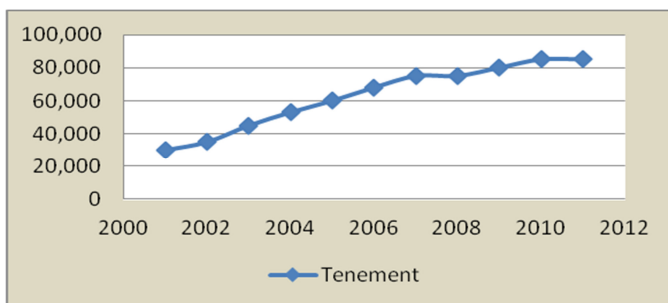


Figure 1: Annual Rent of Six Bedroom Tenement House from 2001 to 2011  
 Source: Field Survey (2011)

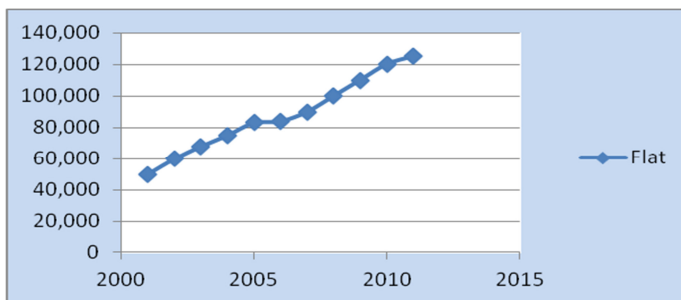


Figure 2: Annual Rent of Three Bedroom Flat House from 2001 to 2011  
 Source: Field Survey (2011)

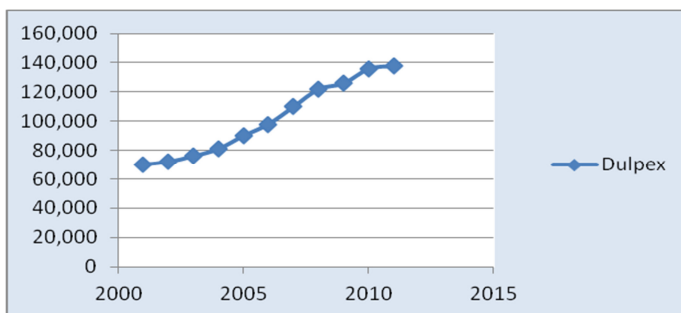


Figure 3: Annual Rent of Duplex House from 2001 to 2011  
 Source: Field Survey (2011)

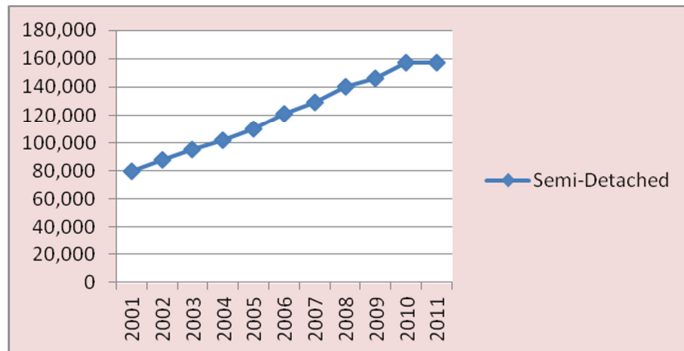


Figure 4: Annual Rent of Semi-Detached House from 2001 to 2011  
 Source: Field Survey (2011)

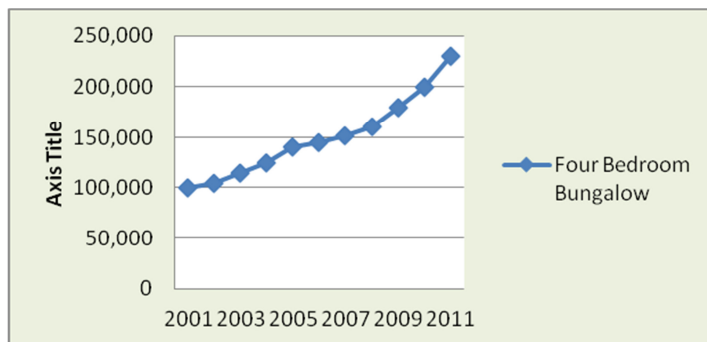


Figure 5: Annual Rent of Four Bedroom Bungalow from 2001 to 2011  
 Source: Field Survey (2011)

The table and figures above present a variation and trends in the rental value of tenement, flat, duplex, semi-detach and four bedroom bungalows for low, medium and high density areas (Dung-Gwom and Rikko, 2009) in Jos between 2001 and 2011. An examination of the above table reveals that rents in the study area maintain an upward movement from 2001 to 2011. This is as a result of frequent crises that take place in the study area (Dung-Gwom and Rikko, 2009).

For instance, rental value of a tenement building in 2001 was ₦30,000, but it increased to ₦85,000 in 2011. The difference between the rental value of tenement building in 2001 and 2011 is ₦50,000. The same goes to flat houses which in 2001, the rent paid was ₦50,000. While in 2011, it increased to ₦125,000. The difference is ₦75,000. Duplex houses were rented at ₦70,000 in 2001, but in 2011 it raises to ₦38,000. The difference is much, ie ₦68,000. The same applies to semi-detached house and four bedroom bungalows which in 2001 the rents paid were ₦80,000 and ₦100,000 respectively. They however increased to ₦157,000 and ₦230,000 respectively.

#### 4.1.2 Variations in the Typical Sales of Residential Properties in Jos Metropolis

The current and estimated rental values were presented per square meter below. The variation and percentage variation were also highlighted.

Table 6: Estimated Rental Values of Residential Properties in the Study Area

Buildings	Current Rent Per Square Metre (₦)	Estimated Values Per Metre (₦)	Rental Square	Variations (₦)	Percentages Variation
l	Y	Y1		Y1-Y	
1	3,000.00	4,106.50		1,106.50	36.88333
2	4,000.00	7,168.49		3,168.49	79.21225
3	3,500.00	(641.13)		(4,141.13)	-118.31800
4	1,000.00	295.00		195.00	19.50000
5	3,000.00	4,806.49		1,806.49	60.21633
6	5,000.00	6,894.18		1,894.18	37.88360
7	4,500.00	6,632.94		2,132.94	47.39867
8	1,000.00	1,701.18		701.18	70.11800
9	3,000.00	4,521.99		1,521.99	50.73300
10	1,000.00	2,563.77		1,563.77	156.37700
11	6,000.00	6,455.97		455.97	7.59950
12	7,000.00	8,256.04		1,256.04	17.94343
13	8,000.00	9,761.84		1,761.84	22.02300
14	6,500.00	7,479.69		979.69	15.07215
15	1,500.00	2,887.05		1,387.05	92.47000
16	6,000.00	6,717.10		717.10	11.95167
17	6,000.00	7,874.12		1,874.12	31.23533
18	6,500.00	7,817.44		1,317.44	20.26831
19	2,000.00	4,608.95		2,608.95	130.44750
20	6,000.00	4,693.30		(1,306.57)	-21.77617
21	4,000.00	4,258.48		258.48	6.46200
22	3,000.00	7,027.37		4,027.37	134.24567
23	1,000.00	3,079.12		2,079.12	207.91200
24	4,000.00	6,894.81		2,894.81	72.37025
25	3,500.00	6,390.31		2,890.31	82.58029

Source: Field Survey (2011)

As it could be seen in the above findings, the rental values of residential properties have increased tremendously due to the influence of intangible location attributes on the values of residential properties in the study area. This is a clear indication that intangible location attributes in the study area determine the rental value of residential properties in areas that are prone to violence. This upward increase is as a result of high demand which people express in searching for accommodation that are located in violent free areas.

Before the violent crises, price of residential accommodation in Jos metropolis stays stable and rising increase since 2001 is witnessed. This is as a result of incessant ethno-religious conflicts that are taking place in the study area. Prior to the fracas, residential accommodations were being sold at a reasonable amount. However, all of a sudden, the price inflated to an alarming rate and later to a stage that is beyond thoughts. Table 3 and figure 6-10 present the trends in the average sales of tenement houses, flats, duplex, semi-detached house, four bedroom bungalow.

This finding also validates the findings of Dung-Gwom and Rikko (2009), in which they discovered that price of residential property has persistently increases from 2001 to 2009. This allow the research to conclude that beside other indicators that are accountable for dictating land and landed property prices, there has been a non-stop rise in demand for tenement, flat, duplex, semi-detached house and four bedroom bungalow from 2001 through 2011 by people dispersed from the central metropolitan areas after 2001, 2008, 2010 and 2011 ethno-religious crisis.

Based on the interview conducted with the respondents, the response obtained from them further validates and confirms the response obtained from the questionnaire survey. The respondents revealed that in the medium density areas there has been a steady acceleration in the sales worth of flats, tenement houses, duplex, four bedroom bungalow and semi-detached houses. They further attribute this to the ongoing crisis in the study area. The high density areas have experienced a very slower increase in the sales values of such category of property. They argue that this scenario emerge because most of the crises that have occurred in Jos for more than a decade often begin from the high density areas which are mostly in the inner city of Jos (Dung-Gwom and Rikko, 2009).

The respondents stress the fact that people in the study area have been compelled to sell their land and landed property in order to transfer to peri-urban areas where they feel safer. Professional consultants disclosed

that price worth of residential properties in areas bedeviled by incessant sectarian violence is not frequently come across through open market value as also noted by Dung-Gwom and Rikko (2009). As such Dung-Gwom and Rikko concluded that residential price arrived at are more often than not ‘forced sale values’ and not ‘open market values’. They further asserted that this is the main reason why the sales of tenement house, flats, duplex, semi-detached house and four bedroom bungalow have not convincingly increased in high and medium density neighbourhoods in Jos metropolis.

Table 3: Variations in the Standard Sales of Residential Accommodations in Jos Metropolis

Type of Building	Variations in the typical Sales of Residential Accommodations in Jos Metropolis from 2001-2011 in Nigerian Money {Naira (₦) (× 1000)}										
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Tenement	300	350	400	400	480	500	540	750	800	850	950
Flat	1,000	1,300	1,500	2,000	2,100	2,500	2,800	3,100	3,500	4,000	4,500
Duplex	1,200	1,500	1,600	2,000	2,000	2,700	3,000	3,700	4,000	4000	4,400
Semi-Detached	2,800	3,300	4,500	4,500	5,000	5,200	5,400	6,000	6,400	6,500	6,800
Four Bedroom Bungalow	3,200	3,900	5,500	5,700	6,000	6,300	6,700	7,400	7,7000	7,200	7,800

Source: Field Survey (2011)

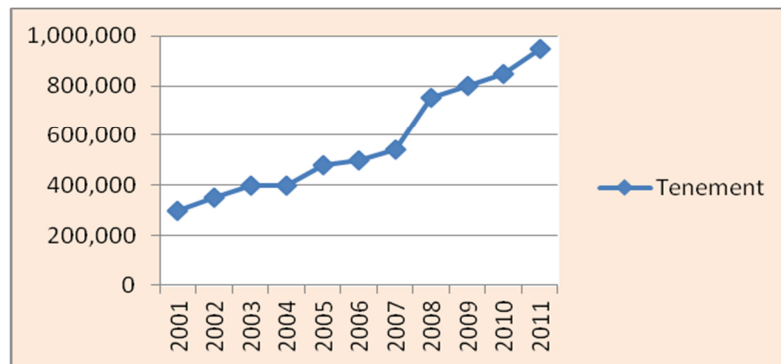


Figure 6: Annual Sales Value of Tenement House from 2001 to 2011  
 Source: Field Survey (2011)

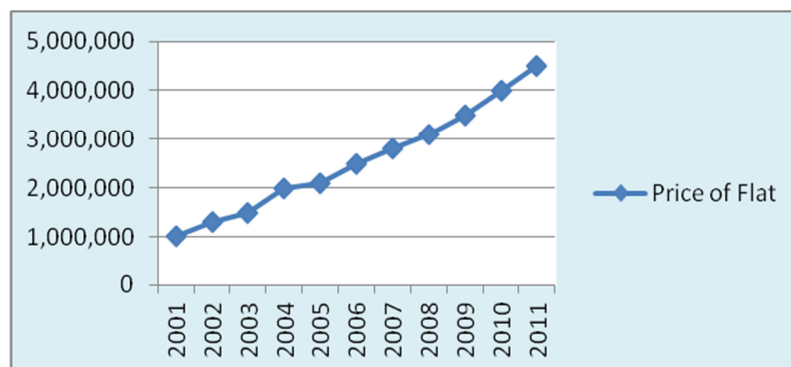


Figure 7: Annual Sales Value of Three Bedroom Flat House from 2001 to 2011  
 Source: Field Survey (2011)



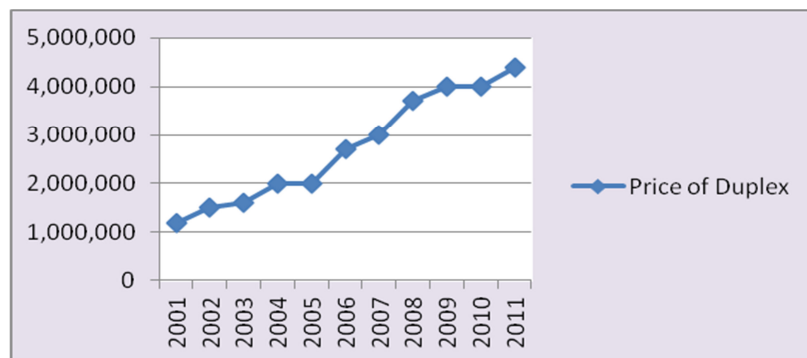


Figure 8: Annual Sales Value of Duplex House from 2001 to 2011  
 Source: Field Survey (2011)

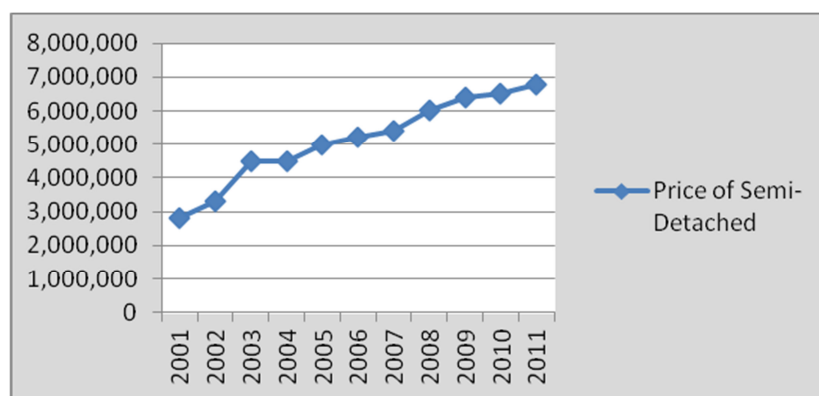


Figure 9: Annual Sales Value of Semi-Detached House from 2001 to 2011  
 Source: Field Survey (2011)

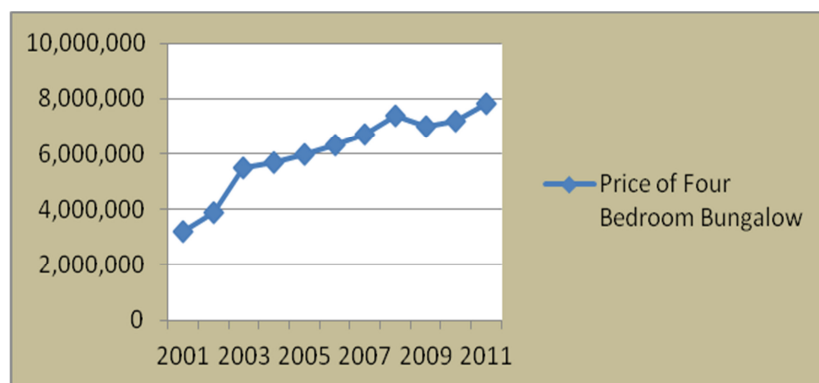


Figure 10: Annual Sales Value of Four Bedroom Bungalow from 2001 to 2011  
 Source: Field Survey (2011)

As it can be seen from table 3 and figures 6-10 above, the sales value of tenement, three bedroom flat, duplex, semi-detached house and four bedroom bungalows increased gradually from 2001 until 2011 when a sharp rise was observed, which continued till 2011 as also documented by Dung-Gwom and Rikko (2009). For instance, in 2001, a complete flat was sold at ₦1, 000,000. However, in 2011, it rises to ₦4, 500,000. This scenario is also applicable to all the rest of the houses surveyed. In 2001, four bedroom bungalow was sold at ₦3, 200,000, while in 2011, the price increased to ₦7, 800,000.

The findings of this study establish that apart from other indicators that are responsible for establishing property values or worth, there has been a persistent increase in demand for tenement, flat, duplex, semi-detached house and four bedroom bungalow from 2001 through 2011 by those respondents that were forced to relocate to the inner city or outskirts areas in the metropolis after 2001 and 2008, 2010 and 2011 ethno-religious crisis as also revealed by Dung-Gwom and Rikko (2009).

Results obtained from field survey and personal interview with consultancy firms and respondents in the course of this study revealed that in the medium density areas there has been a slow increase in the sales

value of flats, tenement houses, duplex, four bedroom bungalow and semi-detached houses. As a matter of fact, the high density areas are experiencing a very slower increase in the sales values of such category of properties (Dung-Gwom and Rikko, 2009). The findings of this study show that in Jos metropolis most of the conflicts have their genesis from the high density areas which are often found in the inner city or central business district of Jos. As a result of the violence, people have been coerced to forcefully sell their landed properties in order to move to the outskirts of the city that are regarded as safe zone areas (Dung-Gwom and Rikko, 2009).

Sales values of property in areas affected by crises are not often established through open market bidding where the buyer and the seller are willing to negotiate without any preconceived idea in the mind of one another. It can, therefore, be concluded that prices of land and landed property that is been arrived at are in most cases ‘forced sale values’ and not ‘open market values’ as disclosed by Dung-Gwom and Rikko (2009). According to the consultants and respondents that were interviewed, this is the main reason why the sales of tenement house, flats, duplex, semi-detached house and four bedroom bungalows have not sufficiently escalated in high and medium density residential neighbourhoods in the study area as also discovered by Dung-Gwom and Rikko (2009).

#### 4.1.3 Variations in the Price of Land in Jos Metropolis

It is a well known fact that, despite the fact that there is incessant violence in the metropolis, the demand for land has upwardly increase in areas that are violent free to the detriment of areas that are violent prone.. Due to the congestion that is being witnessed in the central business district of Jos, people have resorted to perpendicular and vertical expansion in order to get where to live. The price of land has continued to increase upwardly in the suburbs of Jos where the Christians are in the majority. The variation in the price of land that has been discovered in the course of conducting this research is also in line with the findings of Dung-Gwom and Rikko (2009), of which a fluctuation in the standard price of land in some chosen suburb areas which encompass low, medium and high density residential areas is presented in table 4 below.

Table 4: Variations in the Price of Land (50x50 ft) from 2001 to 2011 in Jos Metropolis,

Cost of Land	90	140	150	180	240	270	270	400	700	1,000	1,500
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011

Source: Field Survey (2011)

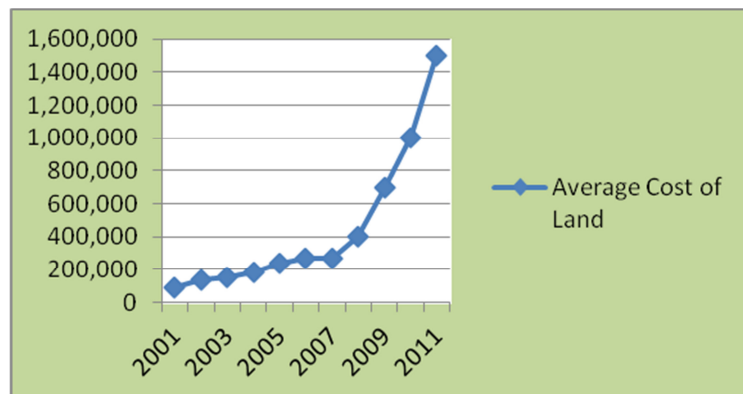


Figure 11: Variations in the Cost of Land (50x50 ft) from 2001 to 2011 in Jos Metropolis Source: Field Survey (2011)

The price of land has increased steadily from 2001 to 2011. For instance, land was sold at ₦90, 000 in 2001. By 2011, the price of similar land increased to ₦1, 500,000. The difference between price of land in 2001 and 2011 is ₦1, 410,000. This is a huge amount compare to what is being witnessed in violent free area in the metropolis as revealed by Dung-Gwom and Rikko (2009).

**Table 5: Residential Relocation in Jos Metropolis**

Issues Observed	Conclusions Drawn
Residential Pattern	The residential pattern was severely distorted. Followers of the two religions started to live in divided areas out of panic of eruption of another upheaval.
Border Demarcation	The Jos foremost road which demarcates Jos North from Jos South, provides a natural boundary for this separation. After the violence, most Christians residing in Jos North migrated to the south of the city across the major dual carriageway, while many Muslims who were inhabitants in the south relocated to the north.
Commercial Activities	However, with the Jos north harbouring most of the most contemporary businesses as well as infrastructural facilities, thousands of Christians on a daily basis troop across the main road to the north to carry out their businesses.
Mass Exodus	This mass evacuation reverses itself towards the close of business every day, as Christians rush to go back to the south, for the reason of security concern.
Traffic Congestion	The traffic jamming and overcrowding on a daily basis witnessed during these two movements is so dense that the travelling, which normally should not take more than twenty minutes, ended up for as much as one and a half hours.

Source: Field Survey (2011)

#### 4.1.4 Jos, Plateau State Turned from Home of Peace and Tourism to Home of Killing and Destruction

Before the crisis, Jos was regarded as a centre of tourism and peace until 7th September 2001 when clashes broke out in Jos, the state capital, between Muslims and Christians. These crises end up in violence through burning houses, shops, farms, Churches and Mosques. Different types of weapons were normally used whenever the violence erupts. Many people were killed and properties worth billions of Nigerian money (Naira) were destroyed. The crises were recorded since 2001 up till 2012. Furthermore, many respondents revealed that many people sought violent free areas by retreating into areas divided based on ethnic or religious background where they have assurance that their life and property would be protected.

#### 4.1.5 Houses and Places of Worship Burnt and Razed to Ashes in Jos South, A Predominantly Christian Area

The incessant violence in Jos culminates into wanton destruction of residential properties. The areas that are badly affected by the violence in both Jos North and Jos South include: Dilimi, Gangare, Sarkin Arab, Abba Nashehu, Rikkos, Nasarawa, Anguwan Rimi, Bukuru, Rafin-Pa, Yan Keke, Anguwan Rogo, ‘Yan Taya, Bauchi Road etc. However, the neighbourhoods that are in Jos South include: Kerana, Anguwan Doki, Sabon Layi, Anguwan Mayangu, Kila Kwata Santa, Kugiya, Gyel, Anguwan Kare, Bwandang, Anguwan Dabba, Keara, Sita, Kayan Ruwa, Cikin Gari, Unguwan Salanken Railway etc. Some of the name of streets in Jos South include: ‘Yan Lilo, ‘Yan Doya, ‘Yan Lemu, ‘Yan Katifa, ‘Yan Wake, Zangon Street and Mallam Idi Street. Plates 1-6 show Muslim houses burnt in predominatly Christian neighbourhoods.



Plate 1: A House Burnt in Jos South, (Field Survey, 2011)



Plate 2: A Mosque Burnt in Jos South, (Field Survey, 2011)

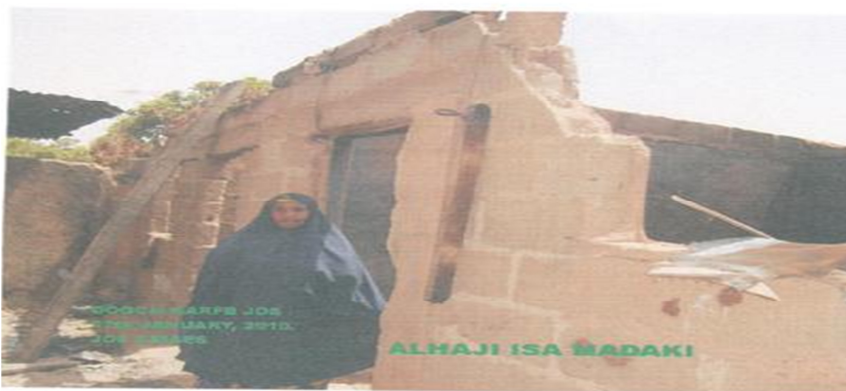


Plate 3: A House Burnt in Jos South, (Field Survey, 2011)



Plate 4: A House Burnt in Jos South, (Field Survey, 2011)



**Plate 5: A Neighbourhood Burnt in Jos South, (Field Survey, 2011)**



**Plate 6: A Mosque Burnt and Razed to Ashes in Jos South, (Field Survey, 2011)**

#### 4.1.6 Houses and Places of Worship Burnt and Razed to Ashes in Jos North, A Predominantly Muslim Area

The plates below (that is, 7-12) indicate how places of worship and residential properties belonging to Christians were razed in predominately Muslim Areas. The areas that form Jos North include: Bauchi Road, Dilimi Street, Nasarawa Gwong, Dutse Uku, Rikkos, Gangare, Sabon Fegi, Unguwan Rogo, Unguwan Rimi, Unguwar Rukuba, Tudun Wada, Janta Adamu, Gada Biyu, Fara Gada, Sabon Layi, Alheri, Tudun Fere and so on.



**Plate 7: A Big Church Burnt in Jos North, (Field Survey, 2011)**



**Plate 8: A Church Burnt and Razed to Ashes in Jos North, (Field Survey, 2011)**



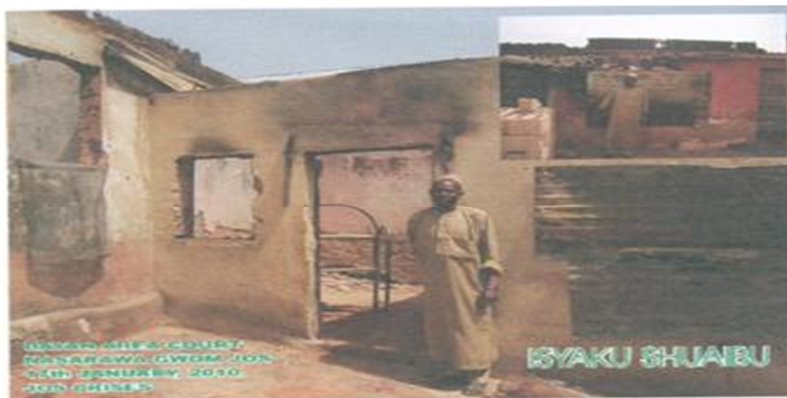
**Plate 9: A Hospital Razed and Destroyed in Jos North, (Field Survey, 2011)**



**Plate 10: A House Burnt in Jos North, (Field Survey, 2011)**



**Plate 11: A House Devastated and Destroyed in Jos North, (Field Survey, 2011)**



**Plate 12: A House Burnt in Jos North, (Field Survey, 2011)**

### 5.1 Conclusions

From these findings, it is established that residential property value is a function of numerous indicators. These factors can either be physical or invisible in nature. Tangible location attributes (transportation, accessibility, demand and supply, nearness to community facilities, utilities and services, elements or components that form part of a building structure, closeness to central business district, zoning regulations closeness to central business district, closeness to waste dump sites, household preference, population of a given area, building codes, environmental protection laws, subdivision regulation, planning restrictions, etc) were found to be of major significance in ascribing land and landed property value in violent free areas (safe zones).

It has also been documented in the course of this research that invisible location attributes (crime, apartheid, ethnic background, race, safety, social cohesion and solidarity, religious inclination, economic status, security of life and property, native inclination, prestige cultural identity, socioeconomic background, violent free areas, norms and values, violent prone areas, skin colour and the likes) are the most important indicators of land and landed property values in violent prone areas (unsafe zones).

It suffices to state that this research extends the existing wealth of knowledge on the determinants of residential property value. Sales and letting values of residential properties have determinedly increased and keep a very high upward movement in areas that are not volatile to violence and vice versa. It has been revealed that the price of tenement, detached house, semi-detached house and bungalows were on the increase.

The repercussion and implication is that intangible location factors have a direct impact on rental value and sales value of residential properties in the study area. Unless strong measures are put in place by those in power, the condition will keep on deteriorating in the near future. There is a strong need on the part of the investors and estate valuers when carrying out feasibility and viability studies or valuation to take into cognisance the invisible location factors in the study area.

### References

- Aliyu, A. A. (2012). *Impact of Intangible Location Attributes on Residential Property Value in Nigeria*, Unpublished PhD Dissertation, Department of Real Estate, University Tun Hussein Onn Malaysia.  
[http://eprints.uthm.edu.my/2913/1/ALIYU\\_AHMAD\\_ALIYU\\_1.pdf](http://eprints.uthm.edu.my/2913/1/ALIYU_AHMAD_ALIYU_1.pdf)
- Alonso, W. (1964). *Location and Land Use: Towards a General Theory of Land Rent*, Cambridge: Harvard University Press.  
[http://books.google.com.my/books/about/Location\\_and\\_land\\_use.html?id=ofROAAAAMAAJ&redir\\_esc=y](http://books.google.com.my/books/about/Location_and_land_use.html?id=ofROAAAAMAAJ&redir_esc=y)
- Anderson, R. J. & Crocker, T. (1972). Air Pollution and Property Values: A Reply. *The Review of Economics and Statistics*, 52(1-4), pp. 54 - 65.
- Bailey, M. (2004). Effects of Race and other Demographic Factors on the Value of Single Family Homes. *Journal of Land Economics*, 2(6), pp. 169-180.
- Bello, V. (2011). *The Impact of Urban Crime on Property Values in Akure, Nigeria*. FIG Working Week 2011.  
[http://www.fig.net/pub/fig2011/papers/ts04d/ts04d\\_bello\\_4775.pdf](http://www.fig.net/pub/fig2011/papers/ts04d/ts04d_bello_4775.pdf)
- Bottoms, A. E. & Wiles, P. (1997). Environmental Criminology. In Maguire, M., Morgan, R. & Reiner, R. (eds.). *The Oxford Handbook of Criminology*. Oxford: Oxford University Press.
- Bramley, G. (1993). The Impact of Land Use Planning and Tax Subsidies on the Supply and Price of Housing in Britain. *Urban Studies*, 30(1), pp. 5-13.
- Bruch, E. E. & Mare, R. D. (2005). *Neighbourhood Choice and Neighbourhood Change*, Los Angeles, CA. California Centre for Population Research University of California.
- Bruch, E. (2006). Residential Mobility, Income Inequality, and Race/Ethnic Segregation in Los Angeles, *Population Association of America (PAA) 2006 Annual Meeting Program*, Los Angeles, CA, Available

- <http://paa2006.princeton.edu/download.aspx?submissionId=60143>.
- Charles, C. Z. (2002). *Comfort Zones: Immigration, Assimilation, and the Neighborhood Racial-composition Preferences of Latinos and Asians*. Paper presented at Annu. Meet. Amer. Soc. Assoc., Chicago.
- Charles, C. Z. (2003). The Dynamics of Racial Residential Segregation. *Annu. Rev. Sociol.* 29(4), pp. 167–207. Doi: 10.1146/Annurev.Soc.29.010202.100002
- Cheshire, P. C. & Stephen, C. S. (1995). On the Price of Land and the Value of Amenities. *Journal of Economica*, 62(127), pp. 247 – 267.
- Cheshire, P. C. & Stephen, C. S. (1998). Estimating the Demand for Housing, Land, and Neighbourhood Characteristics. *Oxford Bulletin of Economics and Statistics*, 60(3), pp. 357-368.
- Cheshire, P. (2007). *Segregated Neighbourhoods and Mixed Communities: A Critical Analysis*. London: Joseph Rowntree Foundation and LSE.  
[http://eprints.lse.ac.uk/19446/1/Segregated\\_neighbourhoods\\_and\\_mixed\\_communities\\_-\\_a\\_critical\\_analysis.pdf](http://eprints.lse.ac.uk/19446/1/Segregated_neighbourhoods_and_mixed_communities_-_a_critical_analysis.pdf)
- Creswell, J. (1994). *Research Design: Qualitative and Quantitative Approaches*, London: Sage Publications, Inc.
- David, G. & Peter, M. (1974). The Determinants of Real Estate Values. *Journal of Urban Economics*, 1(1), pp. 127-146.
- Do, A. Q., Wilbur, R. & Short, J. (1994). An Empirical Examination of the Externalities of Neighbourhood Churches on Housing Values, *Journal of Real Estate and Urban Economics*, 9(1), pp. 127–136.
- Dung-Gwom, J. Y. & Rikko, L. S. (2009). *Urban Violence and Emerging Land and Housing Markets in Jos, Nigeria*. Paper Presented for the ISA Housing Conference, Glasgow, 1-4 September 2009, .pp. 291-311. [http://www.gla.ac.uk/media/media\\_129777\\_en.pdf](http://www.gla.ac.uk/media/media_129777_en.pdf)
- Firey, W. E. (1974). *Land Use in Central Boston*, Cambridge Mass: Harvard University Press.
- Garrod, G. & Willis, K. (1994). An Economic Estimate of the Effect of a Waterside Location on Property Values, *Environmental and Resource Economics*, 4(2), pp. 209-217.
- Gibbons, S. (2003). *The Costs of Urban Property Crime*. London: Centre for Economic Performance.
- Goncalves, J. P. (2009). The Effect of Crime Rates on Home Prices: A Hedonic Study. *Bryant Economic Research Paper* 2(4), pp. 125-145.  
[http://www9.bryant.edu/wps/wcmresources/libfiles/economics/research/Vol\\_2\\_No\\_4.pdf](http://www9.bryant.edu/wps/wcmresources/libfiles/economics/research/Vol_2_No_4.pdf)
- Greenberg, M. & Hughes, J. (1992). The Impact of Hazardous Waste Superfund Sites on the Value of Houses Sold in New Jersey. *Annals of Regional Science*, 26(1), pp. 147-153.
- Gregory, K. I. (1971). A Simulation Model of a Metropolitan Housing Market. Harvard University, Unpublished Ph.D. Thesis.
- Hansen, W. G. (1959). How Accessibility Shapes Land Use. *Journal of the American Institute of Planners*, 25(2), pp. 67-72.
- Hansson, I. (1987). Effects of Policy Changes on Property Prices: A Simulation Model. *Scandinavian Housing and Planning Research*, 4(1), pp. 105-117.
- Hellman, D. A. & Naroff, J. L. (1979). The Impact of Crime on Urban Residential Property Values. *Urban Studies*, 16(1), pp. 105-112.
- Hoyt, H. (1939). *The Structure and Growth of Residential Neighbourhoods in American Cities* Washington: Federal Housing Administration Press.
- Hughes, W. T. J. & Sirmans, C. F. (1992). Traffic Externalities and Single-Family House Prices, *Journal of Regional Science*, 32(4), pp. 487-500.
- Hughes, W. T. Jr. & Sirmans, C.F. (1993). Adjusting House Prices for Intra-Neighbourhood Traffic Differences. *The Appraisal Journal*, 6(2), pp. 533-538.
- Hughes, W. T. Jr. & Sirmans, C. F. (1994). *Measuring the Impact of Externalities on Property Values*. Center for Real Estate and Urban Economic Studies at the University of Connecticut, Working Paper 83.
- Irwin, E. G. & Nancy, E. B. (2001). The Problem of Identifying Land Use Spillovers: Measuring the Effects of Open Space on Residential Property Values. *American Journal of Agricultural Economics*, 83(3), pp. 698-704.
- Kauko, T. (1999). The Effect of the Locational Quality on Property Value: An Expert Interviews Approach. *Conference Proceedings of the Cutting Edge Conference of Property Research, Cambridge, UK*: Published in Internet, pp. 329-342.
- Ketkar, K. (1992). Hazardous Waste Sites and Property Values in the State of New Jersey. *Journal of Applied Economics*, 24(6), pp. 647-659.
- Kiel, K. A. (1995a). Measuring the Impact of the Discovery and Cleaning of Identified Hazardous Waste Sites on House Values. *Journal of Land Economics*, 71(4), pp. 428-435.
- Kiel, K. A. & McClain, K. T. (1995b). House Prices During Siting Decision Stages: The Case of an Incinerator From Rumor Through Operation. *Journal of Environmental Economics and Management*, 28(1), pp. 241-55.
- Kohlhase, J. E. (1991). The Impact of Toxic Waste Sites on Housing Values. *Journal of Urban Economics*, 30(1),



- pp. 1-26. <http://www.sciencedirect.com/science/article/pii/S0094119091900426>
- Laakso, S. (1992). Public Transport Investment and Residential Property Values in Helsinki. *Scandinavian Housing and Planning Research*, 9(3), pp. 217-229.
- Larry, D. S. & Jane, H. L. (1990). An Empirical Examination of the Effect of Impact Fees on the Housing Market. *Land Economics*, 66(1), pp. 82-92.
- Leeuw, F. D. (1971a). The Demand for Housing: A Review of Cross-Section Evidence, *Review of Economics and Statistics*, 53(1), pp. 1-11.
- Leeuw, F. D. & Ekanem, N. F. (1971b). The Supply of Rental Housing. *American Economic Review* 61(5), pp. 806-17.
- Leggett, C. G. & Bockstael, N. E. (2000). Evidence of the Effects of Water Quality on Residential Land Prices. *Journal of Environmental Economics and Management*, 39(2), pp. 121-144.
- Linden, L. & Rockoff, J. E. (2008). Estimates of the Impact of Crime Risk on Property Values from Megan's Laws. *American Economic Review*, 98:3, 1103-1127. <http://www.aeaweb.org/articles.php?doi=10.1257/aer.98.3.1103>
- Linneman, P. (1981). The Demand for Residential Site Characteristics. *Journal of Urban Economics*, 9(1), pp. 129-148.
- Lutzenhiser, M., Noelwah, R. & Netusil, R. (2001). The Effect of Open Spaces on a Home's Sale Price. *Contemporary Economic Policy*, 19(3), pp. 291-298.
- Lynch, A. K. & Rasmussen, D. W. (2001). Measuring the Impact of Crime on House Prices. *Applied Economics*, 33(1), pp. 1981-1989.
- McMillen, D. P. & McDonald, J. F. (2002). Land Values in a Newly Zoned City. *Review of Economics and Statistics*, 84(1), pp. 62-72.
- Oates, W. E. (1969). The Effects of Property Taxes and Local Public Spending on Property Values: An Empirical Study of Tax Capitalization and the Tiebout Hypothesis. *Journal of Political Economy*, 77(5), pp. 957-971.
- Paul, T. & Daniel, M. (1998). Land Value and Parcel Size: A Semi-Parametric Analysis. *The Journal of Real Estate Finance and Economics*, 17(1), pp. 233-244.
- Paul, C. & Stephen, S. (1998). Estimating Demand for Housing, Land, and Neighbourhood Characteristics. *Oxford Bulletin of Economics and Statistics*, 60(1), pp. 357-382.
- Petras, T. L. & Greenbaum, D. (2006). Crime and Residential Choice: A Neighbourhood Level Analysis of the Impact of Crime on Housing Prices. *Journal of Quantitative Criminology*, 22(40), pp. 299 – 317.
- Pollakowski, H. O. (1973). The Effects of Property Taxes and Local Public Spending on Property Values: A Comment and Further Results. *Journal of Political Economy*, 81(1), pp. 994-1003.
- Pollakowski, H. O. & Wachter, S. M. (1990). The Effects of Land-Use Constraints on Housing Prices. *Land Economics*, 66(9), pp. 315-324.
- Quang, A. D., Robert, W. W. & James, L. S. (1994). An Empirical Examination of the Externalities of Neighbourhood Churches on Housing Values. *Journal of Real Estate Finance and Economics*, 9(1), pp. 127-136.
- Ricardo, D. (1817). *On the Principles of Political Economy and Taxation*. New York: Prentice Hall.
- Thaler, R. (1978). A Note on the Value of Crime Control: Evidence from the Property Market. *Journal of Urban Economics*, 5(1), pp. 137-145.
- Thorsnes, P. & McMillen, D. P. (1998). Land Value and Parcel Size: A Semi-Parametric Analysis. *Journal of Real Estate Finance and Economics*, 17(3), pp. 233-244.
- Thorsnes, P. (2000). Internalising Neighbourhood Externalities: The Effect of Subdivision Size and Zoning on Residential Lot Prices. *Journal of Urban Economics*, 48(3), pp. 397-418.
- Tiebout, C. M. (1956). A Pure Theory of Local Expenditures, *Journal of Political Economy*, 24(64), pp. 416-424.
- Tse, R.Y. C. (1998). Housing Price, Land Supply and Revenue from Land Sales. *Urban Studies*, 35(8), pp. 1377-1392.
- Van Ham, M. & Clark, W. A. V. (2009). Neighbourhood Mobility in Context: Household Moves and Changing Neighbourhoods in the Netherlands, *Environment and Planning*. 41(9), pp.1442-1459.
- Von Thunen, J. H. (1828), *Der Isolierte Staat in Beziehung auf Landschaft und ationalökonomie*. Translated by Wartenberg, C. M. (1966) *Von Thunen's Isolated State*. Oxford: Pergamon Press.
- Wieand, K. F. (1973). Air Pollution and Property Values: A Study of the St. Louis Area. *Journal of Regional Science*, 13(1), pp. 91-5.
- Wingo, L. (1961a). *Transportation and Urban Land*. Baltimore, Maryland: The Johns Hopkins University Press.
- Wingo, L. (1961b). An Economic Model of the Utilisation of Urban Land for Residential Purposes. *Papers and Proceedings of the Regional Science Association*, pp. 191-205. New York: Prentice Hall.
- Zipf, G. K. (1949). *Human Behaviour and the Principle of Least Effort*. Addison-Weslan: Reading Mass Publishers.

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