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## **Relationship Between Off- Street Parking Space and Property Values: A Review**

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#### **ABSTRACT**

Parking space for vehicles have becomes a significant component in economic development of land uses especially housing. Governments, corporate organisations and even individuals have invested heavily on road infrastructural development for easy movement of people and good as there are increasing numbers of vehicles in circulation since its invention. Parking space is becoming a serious issue in that when a prospective tenant or occupier who owns a car is looking for accommodation is equally looking for a place to park the car. The issue is whether there exists a consensus among scholars on parking space and real estate and its value? This paper has evaluated a considerable number of literatures on parking space and property value. The general consensus is that off-street parking space can lead to increased in property value or price after controlling for other property characteristics, including on-street parking. That is there is a relationship between building and parking area and property value. In spite of these, sweeping observations can be made: off- street parking research is lacking, the focus is only on on-street parking. Therefore, research gaps still exist and new areas remain un-investigated and calls for more research on parking space felicitities as love of cars is on the increase.

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#### **Keywords:**

*Parking space, property value, Real Estate, Valuation and Housing*

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## 1. Introduction

Ever since the invention of motor vehicles (car, bicycles, etc) and subsequent development of land transportation system, the issues of parking space has become a significant component in economic development of housing. Government at all levels invest heavily on road infrastructural development for easy movement of people and goods by vehicles Oyesiku (2002). In land use planning, road has been described as a king of development in that it provides access to the dwelling units which are used by both pedestrian and motorist. Also in property development parking space for vehicles is a critical characteristic or component of the building. Asiyabola and Akinpelu (2012) believed that parking is an integral component of the transport system. The issue of parking space for cars is becoming an important issue as shelter for human beings. Car owners would also consider where to park their cars when the car is not in use either at home, workplace or shopping centres. Thus property owners construct home for cars as 'garages', thereby sheltering cars as human beings. Parking space is becoming a serious issue in that when a prospective tenant or occupier who owns a car is looking for accommodation is equally looking for a place to park the car. When cars are not in use it occupies a space. Thus, if one multiplies that space by the numbers of peoples who choose to use a car for transportation or who live in an area where they have no choice but to use a car, the impact becomes more complex and significant to explore. It will

not be wrong for one to argue that the day seems not so far away when a home for car in some cities could conceivably cost more than a home for human beings - and push values for houses with parking space so high.

The subjects of parking space and property value have not only captured the attention of researches, development analyst, economist, valuers or appraisers, scientist, technologist, governments, but have generated massive literature on the sectors. Parking space can increase congestion and lower land values (Wilson, 1995), indeed we spend an inordinate amount of money and land to park our cars (Manville and Shoup, 2005) at the expense of the environment and the expansion of public transportation. In the face of huge literature on parking space and real estate there exists no consensus among scholars. In view of this, the article attempts to explore the array of research on the relationship between parking space and real estate values. The significant of the article is that no previous and elaborate attempt has been made to systematically document or review varied literature on the impact of parking facilities on real estate values in Nigeria. This study will provide the feedback necessary to test the usefulness of the effects of researches on the subject, which has remained contentious in the body of knowledge over the years. The article is divided into four separate but related sections. The introductory section discusses the need and outline of the study. Section two presents a general perspective or profile of existing situations on parking spaces in Nigerian cities. Section three takes a look

on parking space planning and requirements in development. Section four examines the impact of parking space on environment. Section five also tries to evaluate the impact of parking space on real estate values. Section six synthesises the knowledge gains as well as gaps in these researches and conclude with recommendation for future researches on the subject.

## **2. A brief profile of parking spaces in Nigerian cities**

In the traditional Nigerian setting shopping by households are often carried out in market places which are located in strategic places. Markets are sometimes located in the open space in front of the Chief's palace (Oba or emir's) or a nodal point, indeed the focal point of the village or town. However, during the pre-colonial time parking space were not problems because motor cars were few and the population were lower than now. In this contemporary Nigeria, the market places have become the nucleus of the town which become the central business district (CBD) where social, economic and political activities take place. With the advent of shopping centres in most Nigerian cities in the late 1960's, adequate land area for customers' parking was easily achieved because many of the shopping centres were located in the outlying areas of the market or central business districts (CBD) of the cities. In recent times, in all Nigerian cities many national and the local businesses had been plagued by inadequate parking in the

central business districts. The idea of building shopping centre with more plentiful parking was a great improvement. Customers could find parking any time at a shopping centre without having to "circle the block" several times for a place to park cars.

Agbo and Isaac (2014) reports that many commercial plazas in Abuja do not have enough space to accommodate the number of cars that visit the plazas daily, as it become a luxury in commercial plazas in Abuja. It is common place to find plazas of about three storey buildings and maybe 70 shops, with enough space to park only 20 cars. Residents now have to spend more when visiting some of the plazas as they would have to park their cars along the streets and pay for the amount of time they would spend, failing which the vehicles risk getting clamped. The situation has had a negative effect on businesses in some plazas as residents refuse to visit them, citing lack of parking space. The study also reveals that for business owners not to lose their customers, owners of plazas have adopted means of renting nearby open space for parking cars. What might probable responsible for this situation is that many residential property owners took advantage of the prime nature of their location and changed the uses of their buildings to purposes that are more commercial in orientation so that they can get certain extra value for the site. But by doing that, they already placed more traffic weight on the property, compared to what was envisaged to be there.

### 3. Planning requirements of parking spaces

The 21<sup>st</sup> century urban dwellers have wide range of places to reside away from their workplaces as compared to the 18<sup>th</sup> century dwellers. Then technology was not advance to provide transportation capable of permitting a suburban pattern of life. As a result of this there was high concentration of industry in particular area which leads to densely packed work class estates. Workers were forced to live directly adjacent to factories and endure the effluence that was produced into air and rivers around them. With advances in transportation technology, urban dwellers can afford to live in suburban areas and commute to the city centres. The advance in transportation technology has its own problems: Noise, vibration, air pollution, dirt, visual intrusion, loss of privacy, changes in the amount of light, neighbourhoods severance, relocation, disruption during planning and construction and general congestion (Foster, 1974). Urban planning within the 18<sup>th</sup> and 19<sup>th</sup> century has grid iron pattern with narrow roads and streets. Most of these streets have been a two lane road with parking on both sides. In Nigeria, Government have decided to eliminate street parking and expanded the roads to dual carriage ways. These situations have reduced the building line of most

properties abutting the roads. This could have detrimental effects on property values. The expansion of roads has created limited parking opportunities to visitors and property owners who owners motor cars for on-street parking. On the other hand as many neighbourhoods main streets are getting revitalized and turning residential homes to commercial property (doctor offices, lawyers, surveyors, property managers etc, in which case, property value would or might increase. Jung (2009) suggests that in general, there are three types of off-street parking: surface, aboveground multi-level, and underground.

In examining what constitute adequate parking space, The Urban Land Institute (1980) conducted a study in the mid 1980's and found that if a shopping centre had 4.85 times as much land area as building area, then the shopping centre could accommodate the peak holiday shopping during Thanksgiving and Christmas when the merchants make up to 50% of their profit for the year. If a business cannot accommodate its customers during that time, then the property may not have adequate parking and the property may suffer from obsolescence. Residential parking requirements specify the number of parking spaces that must be provided when new residential units are built. For examples see table 1.

**Table 1: Current Minimum Parking Requirements for Multi-Family Dwellings\* in Edmonton as Specified in Zoning Bylaw 12800**

Minimum Number of Parking Spaces or Garage Spaces Required Per	Outside the Boundaries of the “Downtown Area Redevelopment Plan”	Within the Boundaries of the “Downtown Area Redevelopment Plan”
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Bachelor Suite and Bed Sitting Room	1 parking space	0.5 parking space
1 Bedroom Dwelling	1 parking space	0.75 parking space
2 bedroom Dwelling	1.5 parking space	1 parking space
3 or more Bedroom Dwelling	1.75 parking space	1 parking space
Visitor Parking (mandatory)	1 per 7 dwelling	1 per 7 dwelling

Source: Jung (2009).

However, the argument is that different retail and office uses may have different requirements for parking. For instance, a grocery store may require the greatest amount of parking because the business is a high volume business and the customers shop at the store for an hour or more. A movie theatre may also require a parking lot to accommodate patronage for two hours or more. On the other hand, a bank, insurance, appraiser or valuers's office may require less parking since patronage of these businesses may conduct most of their business over the telephone. That is to say a retail building or office building may not be suitable for one type of use, but may be quite suitable for another type. Schmick (2000) argued that most building and zoning codes require a minimum parking relationship to the number of fixed seats in the main place of worship. Typically, this ranges between one parking space for every three to four seats in the ratio of 2.7 to 3.7 m<sup>2</sup> of building area per seat, however, modern building has 4.6 to 6.5 m<sup>2</sup> of the building per seat. Therefore, adequate parking space is just as necessary for a church properly as it is for any other property type. However, the question is, how then; do we have loss in value if a property with very little parking

can be used for a church, bank, insurance, or even a valuers office?

Keith (nd) conducted a study to determine loss in value due to inadequate parking space; the result shows that, no loss in value due to inadequate land area for parking appears to exist for properties with a land to building ratio greater than 3:1. This ratio means that the property would have three times as much land area as building area. For instance, a building with 5,000 square feet would need 15,000 square feet to have a 3:1 land to building ratio. This does not mean that a property with a 3:1 land to building ratio would be suited for a competitive grocery store but the market may find another use such as for a valuers office not requiring as much customer parking. Dare (2013) have shown that properties for investment with one or more parking spaces particularly in bustling cities like London and Birmingham will usually command higher rents and help landlords make more money in the long-run. However, he stressed that parking can be a big issue, particularly in new developments as well as old towns. This implies that investors need to consider parking space when choosing which property to invest.

The provision of parking space is a function of planning. The argument is that there is poor use of land in urban area and this could be attributable to lack of encouragement by planners to think creatively about the use of land for parking. Grant (2011) argues that contemporary planners see mixing residential, retail and other compatible uses as an essential planning principle. They explore the challenges that planners, developers and municipal councillors encounter in trying to implement retail uses as part of the mix in suburban areas in three Canadian cities. The study finds that planners employ evolutionary theories of urban development to naturalize their normative visions of walkable and sociable communities. By contrast, developers point to consumer behaviour to explain why planners' ideas on mix do not work. In a society where people shop at big shopping malls, making the local shopping out or bar commercially viable proves increasingly challenging. In many large Cities government impose minimum parking space requirements on multi-family residential developments. Jung (2009) have argued that in North American cities there is concern that the high costs to developers of providing these parking spaces are raising housing prices in such complexes. This is because there is not a well-developed formal market for parking places. These customers, given the choice between shopping in a clean place with free parking versus a gritty one with expensive parking, will usually opt for the former, Smith, (2006). Manville and Shoup (2005) studied how off-street parking

requirements affect urban form. They analyzed the relationship between population density and streets in cities. They find out that denser cities devote a greater share of their land to streets, but also have less street space per person. This relationship results in part from the difficulty of constructing new streets in built-out areas. The amount of street space does not increase as fast as population density, and this in turn helps explain why dense areas have less vehicle travel per person but higher levels of congestion. In contrast to streets, new off-street parking is supplied continually, owing largely to minimum parking requirements that make new development contingent on the provision of parking spaces. But the ample supply of off-street parking makes traffic congestion worse and inhibits street life. They study suggest that either removing off-street parking requirements, or converting them from minimums to maximums parking. The reality is that supply of land does not increase proportionately as demand for land.

Delphin (2013) have argued that despite the population density, level of mixed-use, and transit connectivity of many neighbourhoods in New York City, off-street parking facilities are prevalent throughout the City. This evidence supports the contention that minimum parking requirements significantly increase the amount of parcel area devoted to parking (Bowman, et al.2012).In assess the continuing role for minimum parking requirements in a dense growing city of New York, McDonnell, Madar and Been (2010) reports that many cities throughout the United States require developers of

new residential construction to also provide off-street parking, presumably to ensure that new projects absorb any additional parking demand. They stress that these requirements may potentially increase housing costs directly and indirectly by bundling parking with new housing and reducing the number of unit developers can fit on a lot. They may also reduce the subsequent costs of car ownership, increasing car-use and associated externalities. Shoul (1997) argued that urban planners typically set minimum parking requirements to meet the peak demand for parking at each land use, without considering either the price motorists pay for parking or the cost of providing the required parking spaces. Eliminating minimum parking requirements would reduce the cost of urban development, improve urban design, reduce automobile dependency, and restrain urban sprawl.

By reducing the market price of parking, minimum parking requirements provide subsidies that inflate parking demand, and this inflated demand is then used to set minimum parking requirements. When considered as an impact fee, minimum parking requirements can increase development costs by more than 10 times the impact fees for all other public purposes combined (Should, 1997)

To reduce traffic congestion and air pollution, California has recently enacted legislation requiring employers who subsidize employee parking to offer employees the option to take the cash value of the parking subsidy, in lieu of the

parking itself (Shoul, 1995). If parking requirements reduce congestion, they likely do so not by reducing the number of vehicles in an area but by reducing the densities of housing and people (Manville; Beata, and Shoup, 2013).

#### **4. Parking spaces and environment**

Consideration of environmental quality in the provision of parking facilities, Davis (2010) asserted that urban sprawl is considered by most environmental scientists and urban planners to be a serious environmental problem. Elvridge (2004) buildings, roads, parking lots, etc—constitute a major human alteration of the land surface, changing the local hydrology, climate, and carbon cycling. Umoren and Udoudoh (2017) traffic congestion, inadequate parking spaces, accidents, noise pollution and haphazard display of signposts/billboards were associated with changing land uses. Regulation of off-street parking is not enough Barter (2010) for controlling environmental problems.

However, public perception about parking availability often forces planning offices to recommend parking lot sizes that exceed daily demands. The recent trend of increasing the size of stores, churches and even schools comes with increasing the size of parking lots that service these buildings. Davis (2010) in studying the environmental and economic cost of sprawling parking lots in the United State found that that parking lots cover 5.65 km<sup>2</sup> (1,397 acres) of Tippecanoe County, Indiana which implies that 0.44% of the county area is devoted to parking lots. The

results show that there are approximately 2.2 parking spaces per registered vehicle. That is parking lots make up more than 6.57% of the total urban footprint in the county. This reveals that the area of parking lots exceeded the area of parks in the city. There are arguments that parking lots and structures can lead to increased water and air pollution, Cutter and DeWoody (2010) examined the externalities of parking space on commercial property, the result shows that there is significant complementary relationship between building and parking area on property values. However, the presumption is whether parking reduces congestion, generates external benefits? This is yet to be established.

Chester (2011) estimated the monetized health and environmental costs of parking infrastructure, which represents an important step in developing total transportation cost assessments to inform policy decisions. They found that parking infrastructure costs the United State between \$4 and \$20 billion per year. Per space, this amounts to between \$6 and \$23 per year. The low end of this range represents a parking space constructed in a low-density rural area, whereas the high end typifies a space in a high-density urban environment. Everyone bears this cost in the form of adverse health impacts, building damage, and reduced agricultural production, to name a few. If the effect of parking minimums is to significantly increase the land area devoted to parking, then the increase in impervious surfaces would likely cause water quality degradation, increased flooding, and decreased groundwater recharge

Delphin (2013) examined the role off-street parking and curb cuts play in the Urban Environment of New York City. This study analyzes three areas in the inner ring neighbourhoods of New York City. The result shows that off-street parking facilities greatly impact on the pedestrian streetscape. Each off-street parking facility requires a curb cut in the sidewalk for access between the parking facility and the street. These curb cuts hinder the pedestrian experience and put pedestrians at risk of getting hit by a vehicle. Each additional curb cut increases the risk of a pedestrian-vehicular collision. McDonnell, Madar and Been (2010) explored the role of minimum parking requirements in New York City, given its shortage of affordable housing and the emphasis policymakers have placed on sustainable growth. They use lot-level data to calculate and map two measures of parking requirements to better understand their intersection with transit accessibility and development opportunity. The results indicate that the per-unit parking requirement is generally lower in areas near rail transit, consistent with the City's development goals. However, they also find that the required number of spaces per square foot of lot area is generally higher in transit accessible areas. This raises the possibility that parking requirements are working counter to the city's stated development goals in transit-accessible neighbourhoods.

## **5. Impact of parking space and property values**

One often neglected aspect of homeownership that could be more

valuable than it perhaps is parking space that comes with a property. Families and potential homeowners would rather secure a property with a permanent parking space than become embroiled in any of the nationwide parking scandals with parking firms trying to glean as much in parking fines from residents as they can get away with. Parking spaces are increasingly becoming like the veritable needle in the haystack and more and more homeowners are choosing to convert excess space in their property into valuable parking facilities. Ommeren, Wentink, and Dekkers, (2011) examined the residents' willingness to pay for on-street parking permits and cost of cruising in Amsterdam and find out that the cost cruising is about €1 per day. The residents' willingness to pay for a parking permit is about €10 per day.

Most hypothesis about the relationship between off-street parking and property is that the market value of properties located along the major streets with large frontage for car parks or open space are frequently higher than comparable properties located elsewhere that do not have adequate space. The higher value of these properties means that the users and visitors would not have problems of parking their cars as such the demand of such properties would be higher as against others that do not have such facility. It also means that there would be an increase in the revenue to the users in commercial activities as there would be lot of patronage of their business. The higher value of these properties means that the owners pay higher property taxes. The

increment of those taxes is attributable to the availability of parking space, which has enhanced their value. The increased property tax would be used by the local government to develop or renovate the existing roads in the urban areas. Another hypothesis is that any strip of land taking by road widening will typically result in a reduced building setback, and this will often impact on the on-site parking for the affected properties. The acquisition of land in this case involved taking of strip of land along the front of the site. This would result in reduction in the value of the property and would also decrease property tax. The argument is that many Valuers are often hired by several owners of properties to value their properties that were impacted by a street-widening project.

In respect of the off-street parking facility, Nitzkowski (2010) have shown that, if a property has less than one parking space per 1,000 square feet of building area, it becomes very difficult to find a tenant. That is with a reduction in parking from adequate (5 parking) to almost none (1 parking), the reduction in property value is about 50%, with land value representing up to 50% of property value in the neighbourhood. The study suggests that the contributory value of the improvements by road widening may be reduced to near zero as the number of parking spaces approaches zero. This indicates that the relationship between off-street parking and property value is valid. Parking issues in any neighbourhood clearly influence decisions regarding purchase, tenancy, renovation and new developments. Mills (1992) in analysing

1990 office asking rents in the Chicago metropolitan area, demonstrates that asking rents depend on about fifteen characteristics of the building and specification of its location, which include parking space. Litman (2014) also examined parking requirement impacts on housing affordability in Victoria USA the result shows that based on typical affordable housing development costs, one parking space per unit increases costs approximately 12.5%, and two parking spaces can increase costs by up to 25%. Since parking costs increase as a percentage of rent for lower priced housing, and low income households tend to own fewer vehicles, minimum parking requirements are regressive and unfair. The conclusion of the study is that various parking management strategies can increase affordability of housing, economic efficiency and equity.

Methodologically, Mills (1992) measures the present value of a lease, taking account of important properties of rent offers. This present value is the dependent variable in the statistical analysis. The sample data analyzed pertain to 543 offices that contain about 80% of the office space in the metropolitan area of Chicago. Collecting data on 232 dwelling units sold in 1996 in six San Francisco. Neighbourhoods, Jia and Wachs (1998) matched each sampled real estate transactions with neighbourhood-level characteristics using 1990 census data. In their hedonic model, the housing characteristics employed were: unit size, number of bathrooms, off-street parking availability, unit age, and architectural style. The neighbourhood attributes

selected were: median household income and ethnic composition. They estimated separate models for single-family dwellings and condos. The result is that the availability of off-street parking was statistically significant in both models. Specifically, for single-family dwellings, off-street parking availability was found to increase the price by about 12%, or \$46,000, while for condos the price increase was about 13%, or \$39,000 (both in 1996 US dollars). The conclusion of the study is that if dwellings were built without off-street parking, 16,600 additional households would be able to afford a single-family unit, while 26,800 additional households would afford a condominium. The study also found out that it took on average 41 days longer to sell a condo with parking than a condominium without the feature. This result is contrary to the study by (Klipp, 2005) that condominiums without parking provision were more difficult to sell on the housing market. This portrays the importance of parking space in housing provision and marketing.

Minimum parking requirements are the norm for urban and suburban development in the United States (Davidson and Dolnick (2002). The justification for parking space requirements is that overflow parking will occupy nearby street or off-street parking. Shoup (1999) and Willson (1995) provide cases where there is reason to believe that parking space requirements have forced parcel developers to place more parking than they would in the absence of parking requirements. Litman (2014) tests the hypothesis that parking space

requirements cause an oversupply of parking by examining the implicit marginal value of land allocated to parking spaces. This is an indirect test of the effects of parking requirements that is similar to Glaeser and Gyourko (2003). The result shows that the marginal value of additional parking to the sale price should be equal to the cost of land plus the cost of parking construction. While using the model to estimate the marginal values of parking and lot area with spatial methods using a large data set from the Los Angeles area non-residential property sales and find that for most of the property types the marginal value of parking is significantly below that of the parcel area.

Contemporary property occupiers are living with the consequences of well-intentioned attitude that seek to saddle property owners with the burden of providing parking for occupants and visitors. These attitude, while perhaps fair on theoretical, have had the effect of destroying the value of typical properties in our older commercial areas and making sprawl-style development the only option for many owners. Sorsensen (2015) argues that high density suburbs that are close to where people work are becoming the first choice of many people in Australia. If all thing being equal, high density living, better public transport and growing awareness of the health benefit associated with cycling and walking, owning a car and parking does not matter anymore in modern city life. Smith (2006) has argued that the solution is not, as many have suggested, to turn back the clock to the days before the car. Rather, it is to accept that many people will drive for most trips

and, accordingly, to make communities, not individual shopping centres, their destination.

Jung (2009) estimates the implicit price of parkade-style (aboveground or underground parking garages) parking spaces for condominiums located in central Edmonton, Canada. Using two real estate data sets, he employs the hedonic method and tests for the presence of heteroscedasticity and spatial autocorrelation, when possible. The result for one data set shows that the marginal effect of an additional parkade-style parking space on the predicted condominium price was statistically significant but substantially less than the typical cost of supplying that space. Using the other data set, the result shows that the number of parkade-style parking spaces variable was found to be statistically insignificant, which suggests that this attribute is not an important real housing price determinant and therefore that the marginal implicit value of parkade-style parking spaces is less than the substantial costs associated with providing such spaces. The overall result of Jung (2009) study, suggest that consumers of those spaces are receiving a large discount on bundled parkade-style parking spaces, meaning that if the retail price is increased due to the inclusion of additional parking spaces, the higher price does not fully reflect the cost to the developer of providing those parking spaces. However, in housing affordability parking space may still be adversely affected as developers, who are likely burdened with some of this indirect parking subsidy, may ultimately provide

less housing to the market, thus leading to a higher market-clearing price. Litman (2014) argues that most zoning codes and development practices require generous parking supply, forcing people who purchase or rent housing to pay for parking regardless of their demands. Generous parking requirements reduce housing affordability and impose various economic and environmental costs.

King and Keenan (2012) showed that in vibrant urban areas, land values are influenced by access, regulations and available developable areas, among other important factors. Public policy can influence access through transport investments, zoning regulation and taxation. Cities regulate the supply of off-street parking as an indirect means of controlling traffic, or in the case of Manhattan, to achieve attainment of federal clean air standards. An alternate conception of parking lots in urban areas is that parking lots are a function of the real estate markets, and represent underutilized land which can be easily developed as the market allows. In addressing this, Cutter and DeWoody (2010) measure whether nearby parking availability influences commercial property prices after controlling for property characteristics, including on-site parking. The result is that publicly accessible parking, such as commercial parking garages, generates significant aggregate externalities. This suggests that parking regulation could have a significant impact on property development through its effect on the value of the marginal square foot of building area. Also, King and Keenan

(2012) have argued that as cities struggle to manage traffic, development, environmental and safety concerns, the role of parking remains contentious. However, contention does not mean that parking should be ignored. While severe reductions in auto traffic and parking supply are advocated by planners and officials in many cities, the costs of restricting economically productive yet underutilized land uses must be weighed against the potential benefits of encouraging land assembly that fosters desirable urban scaled development. In a United Kingdom House prices nationwide study, the result shows that the potential increase in value to a property from a garage or double garage has remained constant over the last few years. A parking space with the property would typically add around 8% to the value of a property, whilst a single garage would add a further 3% and a double garage a further 9% to the value of a property. A typical property with a double garage is likely to also benefit from other features which are not easily captured such as a large garden or a driveway.

## 6. Conclusion

This review article has evaluated a considerable number of literatures on parking space and property value. The general consensus is that off-street parking space can lead to increased in property value or price after controlling for other property characteristics,

including on-street parking. That is there is a relationship between building and parking area and property value. In spite of these, sweeping observations can be made: off street parking research is lacking, the focus is only on on-street parking. Even research on on-street parking is limited except for the work of (Mill, 1992; Jia and Wachs (1998; Ommeren, Wentink, and Dekkers, 2011). There is no coherent policy on parking space in building regulation in Nigeria. However, there are lot of it in the advanced countries such United State of American, for example, (Davidson and Dolnick, 2002; Shoup, 1999; Willson, 1995; Jung, 2009; and Glaeser and Gyourko, 2003). The key question in off-street parking research is how does it affect the value or price of the property and its marketability? In other words what is the degree of the effects on property values? Regrettably there are very scanty literatures on this subject in Nigeria. This shows that there are many research gaps still exist and new areas remain un-investigated, for example, the impact of on-street parking and the effects on ambient environment. This great gap in knowledge in this respect need to be filled as this area of study is neglected in property development and valuation practice.

The article recommends that this aspect of property characteristics should be researched upon to contribute to the general debate on parking facilities as the love of car is on the increase. The justification of such research is that there is nothing in property ownership that could be more valuable than perhaps its

parking space that comes with the property if all other factors are held constant.

## Reference

- Agbo, C and, Isaac, N (2014) How Businesses Manage Parking Space Constraint, Leadership Newspaper, <http://leadership.ng/news/356541/>. Retrieved 13/8/2014.
- Asiyanbola, R.A and Akinpelu, A A. (2012) The challenges of on-street parking in Nigerian Cities' transportation routes, International Journal of Development and Sustainability Volume 1 Number 2: Pages 476-48.
- Barter, P A (2010) Off- Street Parking Policy without Parking Requirements: A Need for Market Fostering and Regulation, Transport Review, volume 30, issue 5.
- Bowman, Cutter, W.; et al. (2012) The Uneasy Case for lower parking standard FEUNL working paper series No. 564, 2012.
- Chester, Mikhail, (2011) Parking infrastructure and the Environment; The Magazine of the University of California Transportation Center.
- Cutter IV, B and DeWoody, A (2010) Parking Externalities in Commercial Real Estate, Real Estate Economics, 38 (2) 197-223
- Dare, Z (2013) How to Develop a fine nose for parkers: landlord advice, The Telegraph <http://www.telegraph.co.uk/property/>

- [property-club/10497045/landlord-advice-parking-spaces.html](http://property-club/10497045/landlord-advice-parking-spaces.html)  
Retrieved 13/8/2014.
- Davis, A. Y. (2010) The Environmental and Economic Cost of sprawling lots in the United State of American, *Land Use Policy*, Vol. 27, Issue 2, 255-261. House prices Nationwide Retrieved from [www.nationwide.co.uk/hp1](http://www.nationwide.co.uk/hp1) Retrieved on 12/8/2014.
- Delphin, N (2013) The Role that Off-Street Parking and Curb Cuts play in the Urban Environment, Master thesis Urban Planning Columbia University USA  
<http://hdl.handle.net/10022/AC:P:20647> Retrieved on 12/8/2014.
- Downs, A (2005) Smart growth: why we discuss it more than we do *Journal of the American Planning Association*, 2005, Vol. 71, Issue 4.
- Elvridge, C. (2004) U.S constructed area approaches the size of Ohio *EOS, Transactions, American Geophysical Union*, Vol. 85, No. 24, 2004.
- Grant, J. (2011) Where is the cafe? The challenges of making retail uses viable in mixed-use suburban development, *Urban Studies*, January 2011, Vol. 48, No. 1, 177-195.
- Jia, W and Martin Wachs .(1998). "Parking Requirements and Housing Affordability: A Case Study of San Francisco", University of California Transportation Center (UCTC) No. 380. Berkeley, CA.
- Jung, O (2009) Who is really paying for your parking space? Estimating the marginal implicit value of off-street parking spaces for condominiums in central Edmonton, Canada, Master Thesis submitted to the Department of Economics, The University of Alberta.
- Keith, T J (Nd) Loss In Value Due To Inadequate Parking.
- King, D. A. & Keenan, J. M. (2012) Understanding the role of parking lots in urban redevelopment, the centre for urban real estate GSAPP Columbia University.
- Klipp, L. H. (2004). "The Real Costs of San Francisco's Off-Street Residential Parking Requirements: An Analysis of parking's Impact on Housing Finance Ability and Affordability" Masters in Public Policy. Goldman School of Public Policy, University of California at Berkeley.
- Litman, T.(2014). Parking Requirement Impacts on Housing Affordability Victoria Transport Policy Institute, [www.vtpi.org](http://www.vtpi.org) retrieved on 13/10/14.
- Manville, M; Beata, A and Shoup, D. C (2013) Turning Housing Into Driving: Parking Requirements and Density in Los Angeles and New York, *Housing Policy Debate*, volume 23, issue 2.
- Manville, M. and Shoup, D. (2005) Parking, People and Cities, *Journal of Urban Planning and Development*, 2005, Vol. 131, 233-245.
- McDonnell, S T, Madar J and Been, V (2010) A Continuing Role for Minimum Parking Requirements in a

- Dense Growing City? Evidence from New York, U law and Economics Research Paper No. 10-16 Social Science Electronic Publishing.
- Mills, E S (1992) Office Rent Determinants in the Chicago Area, Real Estate Economics 20 (2) 273-287.
- Nitzkorski, D .(2011). No Parking!Measuring Damages Attributed to Lost Parking, International Right of Way Association, May/June page 26-29.
- Ommeren, J; Wentink, D and Dekkers, D (2011) The real price of parking policy, Journal of Urban Economics, Volume 70, issue 1 pg 25-31.
- Oyesiku, O.O. (2002), From Womb to Tomb. 24th Inaugural Lecture, Olabisi Onabanjo University, Ago-Iwoye, 27th Au
- Shoul, D C (1995) An Opportunity to Reduce Minimum Parking Requirements, Journal of American planning Association, Volume 61, issue 1
- Shoul, D (1997) The High Cost of Free Parking, Journal of planning Education and research, volume 17, issue 1
- Schmick, J T (2000) Adapting Old Theories for New Applications: A New Approach to Church Valuation , being a paper presented at annual meeting of American Real Estate Society held in Santa Barbara, USA from March 29 to April 1
- Smith, M (2006) Onsite Parking: The Scourge of America's Commercial Districts, <http://www.planetizen.com/node/19246> Retrieved on 12/8/2014.
- Sorensen, E (2015). Does paring matters, Realestate.com.au.
- Umoren, V E and Udoudoh, F P (2017) Ethiopian Journal of Environmental Studies & Management 10(1): 11 – 21, 2017.
- Vandell, K D and Lane, J S (2003) The Economics of Architecture and Urban Design: Some Preliminary Findings, Real Estate Economics, Volume 17, Issue 2, pages 235-260.
- Will A Loss Of Street Parking Diminish My Property Values, <http://www.realtor.com/advice/will-a-loss-of-street-parking-diminish-my-property-values/> Retrieved on 12/8/2014.
- Wilson,R., (1995).Suburbanparkingrequirements: atacitpolicyforautomobileuseandsprawl.JournaloftheAmericanPlanningAssociation61, 29–42.