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Assessment of the Effect of Demolition of Owerri Main Market on Commercial Property Values in Works Layout and Relief Market

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Abstract
This study aimed at assessing the effect of demolition of Owerri main market on commercial property values in Works Layout and Relief Market. The objectives were to determine the open market rents and open market values from 2010-2021 and to assess the effect of demolition on commercial property values within the study area. A total number of 240 affected merchants were used for the study and they supplied data on annual rents and market values of commercial property like shops/offices in which they occupied. SPSS version 20 was used to analyze the data. The Mann Whitney U Test and Independent Two Sample T-Test were used to analyze the research questions formulated. From the study it was discovered that there was a significant effect in the demolition of Owerri Main Market on the market rents and values of almost all the shops and offices in both Works layout and Relief Markets. The market rents and values after the demolition of Owerri Main Market were greater than the market rents and values before the demolition. The market rents/values of shops/offices were doubled after the demolition of Owerri main market. It was recommended that government should ensure that there are existing shops/offices where merchants could relocate to before carrying out any demolition exercise.
Key Word*: Effects, Demolition, Commercial Properties, Value, Market.*

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I. Introduction

Market originates from a Latin word 'Mercatus' meaning trade (Nnadi, 2021). According to Robinson (2018), market is a medium through which the goods and services are exchanged by reason of buyers and sellers coming in direct contact with one another, or through mediating agents or Institutions. Markets are located both in rural and urban areas. Usually markets are concentrated more at the Central Business District (CBD). Thus, Owerri Main Market (Ekeukwu Owerri) is a daily market which is located in the CBD of Owerri Municipal.

Due to the location of Owerri Main Market at the CBD, people from different places came to transact business, buy and sell goods. Therefore traders and parks were extended to the main roads resulting in traffic congestion, rampage of touts, refuse dumps and noise pollution that created nuisance to the society. The Imo State Government took a decision and demolished the market on 26th August, 2017, (Nnadi, 2021). After the demolition of Owerri Main Market, commercial property values in Owerri Municipal seemed to have changed tremendously. This is because most shop owners and occupiers were displaced and since there was no adequate arrangement by government to relocate the traders, they had to look for alternatives in makeshift shops/offices or relocate to other markets. Most landlords of residential properties within the area changed the use of their properties to commercial use probably to make more returns. Although currently, many of the marketers have returned to Ekeukwu Owerri, most of them are still trading under the sun or makeshift stalls. Consequently, this work anchored on the assessment of effect of the demolition of Owerri Main Market on commercial property values in works Layout and Relief Market.Owerri Main Market the values of shops and offices in other markets such as Relief market, International Trade Fair market, shops/ offices in the major and feeder roads in the study area had likely gone up.

II. Literature Review

Demolition of markets is not new in Nigeria. Market demolition had earlier been carried out in some states, like Anambra State, Lagos State, Abia State, Abuja and Ebonyi State According to Odife (2018), illegal structures erected along the roads leading to Onitsha main market were demolished because they caused grave danger to business in the markets, as they made entrance to the market impossible thereby scaring away customers from the market. This was because the main market was collapsing; causing people to abandon their

shops, sublet their shops and moved to the streets like Sokoto road, Bida road, Bright Street blocking the way, since they believed that by blocking the roads they would make many sales. Odife (2018) opined that through demolition, illegal structures on Old market road, Ose market, Johnson Street and Bright Street in Onitsha were cleared.

In Abia State, government demolished illegal structures at Ariaria market but before the demolition, the traders had been directed to relocate to the Aba Mega Mall, and legitimate shop owners in the market were assured of getting back their shops after the exercise while illegal owners would forfeit ownership of such illegal structures. The rebuilding of the market took place in phases beginning with the park 1 and 2 areas. According to Nnadi (2021), the State government set up a committee to restore the master plan of the market and upgrade it to the standard of an International market.

The popular Ile-Epo food Stuff Market in Agbado Oke-Odo Lagos State was demolished the government in order to pave way for a befitting modern market. Before the commencement of the demolition, government provided an alternative place for the traders to relocate to. According to Komolofe (2016), the market was not demolished at a go rather; it was done in three phases. The affected traders were be given first consideration at discounted rate to own shops in the market before others at the completion of the market.

A number of studies have been carried out in Nigeria on demolition of structures and rental values. Ogeah (2013), studied on creation and demolitions of illegal structures in Nigeria cities like Benin City. The study showed that, due to poor economic conditions landlords had to restructure and convert their houses into mixed uses in order to make a living. This led to springing up of illegal structure without planning regulations thereby prompting the state government to carry out demolition exercise. Ogeah (2013) concluded that to avoid reoccurrence of similar situation, government should improve on means of livelihood of the people, planning authority should live up to its responsibility and the public must be enlightened on the laws and important of physical planning. However, while this research dwelt on demolition of illegal structures, it was not centered on property values.

Tunde (2016) studied the impact of housing demolition and forced eviction on rental values in Federal Capital Territory (FCT), Abuja. The study centered on Sabon Lugbe which was an informal settlement demolished in 2009. The study assessed the impact of the demolition of Sabon Lugbe on the rental values of residential and commercial properties in FHA estate Lugbe, Abuja. The study showed that the demolition and forced eviction of Sabon- Lugbe village brought about change in the residential property annual rental trends for one bedroom, two bedroom and three bedroom flats respectively in 2009-2010 in the FCT. There was also change in annual rent trend for commercial properties (lockup shops, and offices) experienced in the study area due to high demand brought about by population upsurge from Sabon- Lugbe evirons.

Udokanem, Ighalo and Sanusi (2018), carried out a research on predictive modality of office rent in selected districts of Abuja, Nigeria. The study focused on office rents in selected districts of Abuja namely, Asokoro, Maitama and Utako. The study examined the drivers of office rents in selected districts for the period of 2011- 2012. Single equation regression analysis was used in the study. The developed office rent model accounted for 76%, 72% and 75% of the variation in office property rents in the commercial property market of the selected districts respectively. The study showed that GDP growth and vacancy rate are the major determinants of rental growth in the office property market in the districts of Asokoro and Maitama, while GDP growth is the major driver of office rents in the Utako district.

Momoh, Isabel and Benachi (2018), studied on the aspect of urban development and housing demolition in Abuja city: The benefits of adopting the principles of sustainability. The research critically analyzed the impact of different planning policies and the schemes under which the city has been expanding which included housing demolition to maintain the master plan. The study showed a clear demonstration that the policies regarding the demolition of informal settlements are not the best solution to the Abuja master plan and it is socially/economically unsustainable but rather there are potential benefits in the adaptation of sustainability principles in the urban development of Abuja city. However, the study did not examine the effect of the demolition on property values.

Nwankwo &Nnadi (2021) carried out a comparative study on the rental values of commercial properties in Umuodu Owerri, before and after the demolition of the Owerri main market. Using the Mann Whitney U Test, the study showed that the market rental value after demolition of Owerri main market was greater than the rental value before the demolition at 0.05 significance level. However, the study was limited to rental values of commercial properties in Umuodu, Owerri.

III. Method of Data Analysis

Data for this study were data collected with the use of 240 questionnaires retrieved from affected merchants in the study area and were analyzed with the aid of SPSS (version 20). The research questions formulated was analyzed using different statistical tools, namely: **Independent two samples T test and Mann Whitney U test.**The choice of these tools was as a result of the type of data obtained from the survey.

To assess the effect of the demolition of Owerri Main Market on commercial property values in Works Layout and Relief Market, the significant difference of the shop rents before and after the demolition of Owerri main market were tested. Independent two Samples T test, a parametric test is usually used for this kind of test. An underlying assumption for appropriate use of this test is that the errors of the independent two sample T test are normally distributed or that the samples are sufficiently large (usually $n_1 \geq 30$ and $n_2 \geq 30$) based on the central limit theorem. When comparing two independent samples when the errors are not normally distributed or the samples are small, a non-parametric test is appropriate.

The methods used in analyzing this research work are the independent two samples T test and the Mann Whitney U test. The independent two samples T test is used when the data satisfy the normality assumption while the Mann Whitney U Test is used when the data fail the normality assumption. Mann Whitney U test also called Wilcoxon Rank Sum Test is a non-parametric equivalent to the two samples independent T test to compare outcomes between two independent groups.

The Independent Two Samples T Test

The Independent two samples T test was used to test for the significant difference between two independent groups. The test compared the mean between the two groups. The Statistical Packages for Social Sciences (SPSS) gave out two outputs for each test, the result when equality of variances was assumed and the result when equality of variances was not assumed. The equality of variances using the Levene's test was tested. If the p value was less than 0.05, the null hypothesis was rejected and concluded that the equality of variance assumption is violated. The null and two-sided research hypothesis for the *parametric test* are stated as follows:

H_0: The market rents before and after demolition are not equal at a significant level of 0.05

The Mann Whitney U Test (Wilcoxon Rank Sum Test)

The Mann Whitney U test was used to investigate whether two independent samples were selected from population having the same distribution (they have the same median). The test compares the medians between the two population. The null and two-sided research hypothesis for the *nonparametric test* are stated as follows:

H_0: The market values before and after demolition are not equal at a significant level of 0.05.

Mann Whitney U test tested the null hypothesis that it is equally likely that a randomly selected value from one population would be less than or greater than a randomly selected value from a second population.

Normality test for the independent two samples T test

We tested for the normality assumption using the Normal Probability Plot of the residuals of the independent two samples T test and the Anderson-Darling test statistic. If the data points are aligned on the diagonal line or the p value > 0.05, we concluded that the errors are normally distributed and the data was suitable for the independent two samples T test. If it did not meet the normality assumption, we proceeded to use the Mann Whitney U test.

IV. Presentation/ Result Analysis

Table 1: Annual Open Market Rents on Shops/offices in Works Layout Owerri Municipal from 2010-2019.

Year	13.3225m^2 shops	12.25m^2 shops	2.4025m^2 shops	26.718m^2 shops	2bed flats	3bed flats
2010	125000	67000	54000	440000	165000	245000
2011	125000	67000	64000	440000	165000	245000
2012	125000	67000	64000	440000	165000	245000
2013	125000	67000	64000	440000	165000	245000
2014	125000	67000	64000	440000	165000	245000
2015	175000	65000	78000	570000	250000	325000
2016	175000	65000	78000	570000	250000	325000
2017	175000	65000	78000	570000	250000	325000
2018	270000	160000	97000	610000	380000	480000
2019	270000	160000	97000	610000	380000	480000
2020	270000	160000	97000	610000	380000	480000
2021	270000	160000	97000	610000	380000	480000

Table 1 revealed the annual open market rents on Shops/offices from 2010-2019. These data were extracted from the receipts of the affected merchants (owners/users)of commercial properties in works layout Owerri municipal.

Result of Market Rents on Shops/Offices in Works Layout Owerri Municipal

The normality assumption was tested to know if the data were suitable for the parametric independent two samples T test. If the data failed the assumption, the non-parametric Mann Whitney U test would be used.

Test for Normality for the shops/offices in Works

The table below gave the residual mean, standard deviation (StDev), Anderson Darling (AD) test statistics and the P-Value of the Anderson Darling test statistic. The P-Value of the Anderson Darling test statistic was used to make decision of rejecting or not rejecting the null hypothesis. The null hypothesis was rejected if the $P - Value \ < \alpha$

Table 2: Summary of the Normality Test in Works Layout

	13.3225 m^2	12.25 m^2	2.4025 m^2	26.718 m^2	2bed flat	3bed flat
Mean	-1.94E-11	-3.64E-12	-1.94E-11	2.43E-11	4.85E-11	-5.82E-11
StDev	31322	25630	8172	48075	46555	50778
AD	0.833	1.850	0.524	1.266	0.708	0.847
P-Value	0.022	0.005	0.144	0.005	0.047	0.020

The errors for all the shops/offices are not normally distributed since their p-values in Table 2 are less than 0.05, except the 2.4025 m^2 shops that were normally distributed with p value (0.144) > 0.05. The independent two samples T test was used to test for the significant difference in the 2.4025m^2 shops since the data satisfied the normality assumption. For the other shops and offices, the Mann Whitney U test was used as the data did not satisfy the normality assumption.

Independent two samples T test for the 2.4025 m^2 shops

Table 3: Independent Two Samples T test for Works

		Levene's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
2.4025m^2 (5x5 ft)	Equal variances assumed	.024	.881	-5.306	10	.000	-26628.57143	5018.30120
	Equal variances not assumed			-5.320	8.852	.001	-26628.57143	5005.22176

Equal variance was assumed in this test as the Levene's test for equality of variances was not rejected at 0.05 level of significance since the Levene's p value (0.881) in Table 3 is greater than 0.05. From the Equal variances assumed row, the null hypothesis for the 2.4025m^2 shops/offices was rejected since the p value (0.000) < 0.05 at 0.05 level of significance. Conclusion was drawn that there was an increase effect in the demolition of Owerri Main Market on the market rent of the 2.4025m^2 shops/offices in Works Owerri Municipal. From the result, the market rent after the demolition of the 2.4025m^2 shops/offices were greater than the market rent before the demolition.

Mann Whitney U test for the other shops and offices

Table 4: Mann Whitney U Test Summary for Works Layout

Shops in Works	p-value	Decision
13.3225 m^2	0.005	Reject the null hypothesis
12.25 m^2	0.073	Do not reject the null hypothesis
26.718 m^2	0.005	Reject the null hypothesis
2bed flat	0.005	Reject the null hypothesis
3bed flat	0.005	Reject the null hypothesis

The null hypothesis for all the shops and offices was rejected except for the 12.25m^2 shops with p value (0.073) in Table 4 greater than 0.05 in Works layout and we concluded that there was an effect in the demolition of Owerri Main Market on the market rents of all the shops and offices except for the 12.25m^2 shops. From the result, the market rents after the demolition of Owerri Main Market were greater than the market rents before the demolition at 0.05 level of significance since all the p values in the table above were less than 0.05 except for the 12.25m^2 shops.

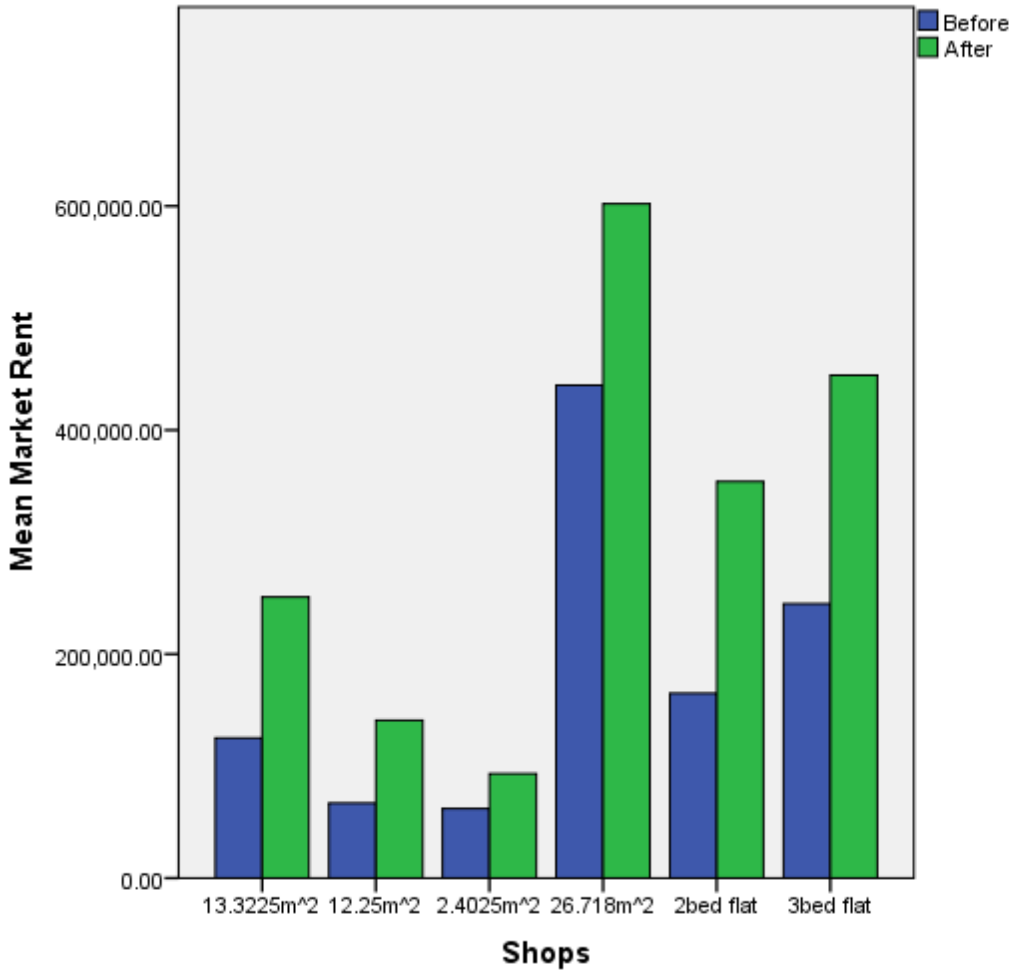

Figure 1: Multiple bar chart showing mean market rents for all the shops/offices in Works Owerri Municipal

The graphs showed that the mean market rents for all the shops and offices in Works Layout Owerri Municipal after the demolition were greater than the mean market rents before the demolition.

Table 5: Market values of shops in Relief market from 2010-2019.

Year	First Floor	Ground Floor	Lock up stores
2010	800000	1000000	100000
2011	800000	1000000	100000
2012	800000	1000000	100000
2013	900000	1200000	100000
2014	900000	1200000	120000
2015	1000000	1500000	120000
2016	1000000	1500000	120000
2017	2000000	2500000	120000
2018	3000000	3500000	150000
2019	3000000	3500000	150000
2020	3000000	3500000	150000
2021	3000000	3500000	150000

Table 5 revealed theMarket values of shops in Relief market from 2010-2019. These data were extracted from the receipts of the affected merchants (owners/users) of commercial properties in the area.

Results of Market Values of Shops in Relief Market

Test for the normality assumption was tested to know if the data were suitable for the parametric independent two samples T test. If the data failed the assumption, the non-parametric Mann Whitney U test would be used.

Test for Normality for the shops in Relief Market

The table below gave the residual mean, standard deviation (StDev), Anderson Darling (AD) test statistics and the P-Value of the Anderson Darling test statistic. The P-Value of the Anderson Darling test statistic was used

to make decision of rejecting or not rejecting the null hypothesis. The null hypothesis was rejected if the $P - Value < \alpha$

Table 6: Summary of the Normality Test in Relief Market

	First Floor	Ground Floor	Lock up stores
Mean	-2.52E-10	-2.72E-10	-4.85E-12
StDev	277746	316228	11305
AD	1.287	0.799	0.858
P-Value	0.005	0.027	0.019

The errors for all the first floor, ground floor and lock up stores are not normally distributed since their p valuesin table 6 are less than 0.05 at 0.05 level of significance. Therefore, the Mann Whitney U test was used as the data did not satisfy the normality assumption for all shops.

Mann Whitney U test for the first floor, ground floor and lock up stores

Table 7: Mann Whitney U Test Summary for shops in Relief Market

Shops in Relief	p-value	Decision
First floor	0.003	Reject the null hypothesis
Ground floor	0.003	Reject the null hypothesis
Lock up stores	0.005	Reject the null hypothesis

The null hypothesis was rejected for the first floor, ground floor and lock up stores in Relief and we concluded that there was an effect in the demolition of Owerri Main Market on the market values of first floor, ground floor and lock up stores. That the market values after the demolition of Owerri Main Market were greater than the market values before the demolition at 0.05 level of significance since the p values in Table 7 were less than 0.05.

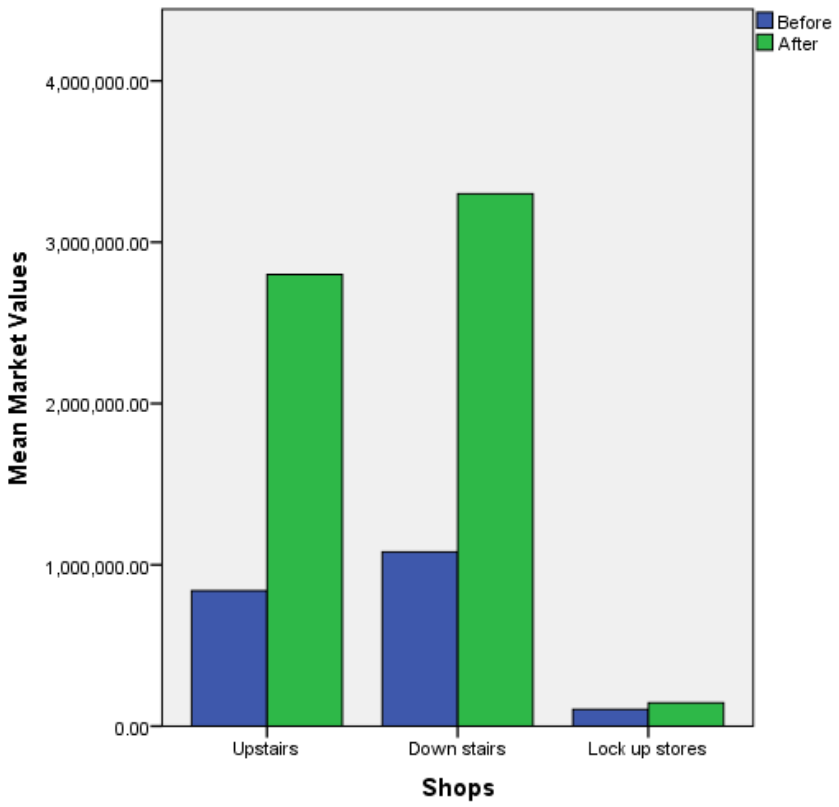

Figure 2: Multiple bar chart showing the mean market values for all the shops in Relief

The mean market values for all the shops in Relief Market after the demolition were greater than the mean market values before the demolition.

V. Conclusion/Recommendations

In works layout, 2.4025m^2 shops/offices have the levene's p. value (0.881) > 0.05. But from the equal variance assumed, 2.4025m^2 shops/offices have the p. value (0.000) < 0.05 at 0.05 level of significance. This implies that the demolition of Owerri main market had an increase effect on the market rents. In the same way the other shops/offices except for 12.25m^2 shops/offices that have p. value (0.073) > 0.05 at 0.05 level of significance. This means that the demolition had no effect on market rent on 12.25m^2 shops/offices in works. This implies that the market rents remain neutral or static.

In relief market, the demolition of Owerri main market had an increase effect on the market values of first floor, ground floor and lock up storessince the p-values are less than 0.05. This may be that the demolition for shops/offices is excessive because relief market is where most of the affected marketer relocated to.

In conclusion, demolition of Owerri main market really affected commercial property values in Works Layout and Relief Market.

Based on the findings made in this study, the following recommendations have been made:

13.3225m^2 shops/offices have the highest mean market rent within the study area. That does not mean that investors should only particularized in investing in 13.3225m^2 shops/offices it is therefore recommended that investors should spread out their hands in investing in other categories of shops/offices where one's hand can reach.

At the data collection stage, it was discovered that ministries in responsible for building and demolition of market were not involved in the demolition exercise by the government. Thus, it was very difficult to acquire data on demolition of market in the state and other states of Nigeria. Therefore, it is recommended that government of the states should always involve ministries such as Ministry Information and Ministry of Lands and Survey in the demolition exercise so as to have information and data in the offices. This will make work easier for future researchers that will carry out work related to the study.

It was discovered that rental/value of shops/offices were doubled after the demolition of Owerri main market. It is therefore recommended that government should make adequate provision for relocation of merchants before embarking on demolition of markets.

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