

## THE ENGAGEMENT OF BUILT-ENVIRONMENT PROFESSIONALS, A FACTOR FOR IMPROVING HOUSING TRANSFORMATION IN PUBLIC HOUSING ESTATES IN OWERRI, NIGERIA

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### Abstract

*The need to improve housing quality in public housing estates has been a matter of concern to housing scholars in developing nations like Nigeria. Consequently, the problem of some residents transforming their houses without engaging built-environment professionals has been identified in literature. The objective of this study was to examine the engagement of building professionals during physical changes and its influence on addition of makeshift structures to public housing estates in Owerri Capital Territory. The study relied on data gathered through a questionnaire survey of 309 residents in the study population. The variables in focus: engagement of building professionals during physical changes and addition of makeshift structures at the fence of public housing estates in the study area were tested using Point Biserial analysis tool and the result showed a significant correlation with  $p < 0.5$ . The implications of the findings were that engagement of relevant building professionals by residents in making physical changes in their housing will reduce the indiscriminate and inappropriate extension of makeshift structures at the fence of their houses. It was recommended that Government and public housing developers should ensure that certified building industry professionals carry out effective development control to mitigate the impact of transformation on housing quality.*

**Keywords:** building professionals, built environment, housing transformation, housing quality

### INTRODUCTION

Housing in urban centres in developing nations has witnessed tremendous changes in the physical elements and spatial attributes of the buildings. The housing environment is transformed for various reasons, which range from economic, technological advancement, household need, religious and other reasons. These transformation activities are most times done by owner-occupiers in order to meet the developing needs of the household (Asa, Lawal, Kabiru & Morakinyo, 2018). These activities have been identified in many public housing estates in many parts of the world, including Nigeria. The existing literature is replete with studies on housing transformation and the need to improve housing quality within the residential environment. Some authors (Fakere & Ayemi, 2018; Mohit, Ibrahim & Rashid,

2010) as cited in Joy, Mohammad, Abdulyabbar & Ibrahim, (2016) posited that housing transformation affords residents the opportunity to bring their housing environments to par with their needs. However, most of the housing transformations carried out in the public housing environment appear to be done without taking into cognisance the impact of the outcome on the scenic value of the physical environment.

Also, other authors were of the view that unguided and unapproved transformations usually not only distort the house type of public housing estates, but render them chaotic and unplanned (Abubakar, Tareef & Abdullah, 2015; Jenny, Joe, Kim, John & David, 2020; Funmilayo & Michael, 2018). Similarly, studies (Ekop, 2012; Olutoyin & Francis, 2018) have also revealed that lack of effective policy on management system, socio-economic characteristics of residents and inefficient infrastructure results in poor housing transformation, which further affects housing quality.

This study is part of a wider research on the impact of housing transformation on housing quality in public housing estates in Owerri Capital Territory. To undergird this research, the theory of housing adjustment was found to be relevant in understanding the phenomenon in focus. This theory was developed by Earl W. Morris and Mary Winter in 1975. It focused on housing adjustment behaviour of families, and they proposed that families evaluate their houses in terms of family norms. The theory affirmed that occupants of public housing constantly evaluate their houses to determine their acceptability in accordance with the family norms, depending on the life cycle stage of the family. If the houses do not fit the normatively derived needs, it is adjudged that a housing deficit exists. Furthermore, it explained the behaviour of occupants whose houses do not meet their norms, noting that this tends to trigger dissatisfaction that will eventually lead to residential mobility or residential adaptation and family adaptation. Also, the theory described the behaviour of families in an attempt to actualise their dynamic needs for housing as an adjustment process. These housing needs may at some point increase or decline (Morris & Winter, 1975).

In the context of housing adjustment theory, housing norm is described as the space, tenure, building type, quality of the building expenditure and the neighbourhood. Housing deficit is said to have occurred when any of the housing norms is not met or provided for in the household's current housing. A deficit in this theory is described as undesirable in comparison with an established norm. Housing adjustment, therefore, promotes satisfaction of the housing need of occupants through the inclusion of cultural identity, changing desires of households for their housing improvement on the quality of housing and infrastructural components of the neighbourhood (Abubakar, Tareef & Abdullah, 2015; Eziyi, Adeboye & Alagbe, 2015). It is expected that housing adjustment (which is synonymous with housing transformation) will occur among occupants of public housing estates, hence there is the need to examine its impact on housing quality.

Occupants of public housing estates in Owerri Capital Territory were observed to transform their buildings and the physical environment while still occupying their dwelling units. Some part of the building intended for transformation, such as the living area, may be under reconstruction, while the occupants would be using the sleeping area and other utility spaces.

While most housing transformation is geared towards the improvement of the quality of the present housing conditions, sometimes, the transformation done negatively affects housing quality. Professionals in the building industry, by their training and role in the housing industry are key drivers of quality control. Their involvement in every part of the process is therefore vital for maintenance of high standards, hence the investigation of the variables in this study.

In a study in Owerri, Nwankwo, Diogu, Nwankwo & Okonkwo, (2014), noticed that transformations done by residents were of poor quality. The increase in transformations in the public housing estates within the study area has shown the proliferation of addition of makeshift structures at the fence of the housing units in the form of stores, canopy overhangs, overhead steel water storage tank stands, various aspects of home-based activities within the fence lines and beyond the fence lines. This proliferation of indiscriminately constructed, makeshift structures raises a serious concern about the needs and housing requirements of the residents, while at the same time, negatively impacting on the physical view, aesthetics, harmony and housing quality within the study area. It is against this backdrop that the study attempts to investigate the problem with the view to providing a solution. In view of the foregoing, this study sought to investigate whether there was a significant relationship between two variables of concern which are the engagement of building professionals in making physical changes to buildings and the addition of makeshift structures at the fence. A null hypothesis was proposed to establish if a significant relationship exists between the two variables. This was that there was no significant relationship between the two.

### **Study Area**

The study area is Owerri Capital Territory in Imo State. Imo State is one of the 36 states of Nigeria and is in the South-Eastern region. Imo State lies within latitudes 4°45'N and 7°15'N and longitudes 6°50'E and 7°25'E, with an area of about 5,100 sqkm. It is bordered by Abia State to the East, Delta State to the West, Anambra State to the North and Rivers state to the South (see Figure 1).

Owerri Capital Territory consists of the following Local Government Areas (LGA): Owerri North, Owerri West, Owerri Municipal and parts of Ikeduru LGA, Mbaitoli LGA, Aboh-Mbaise LGA and Ohaji Egbema LGA (Agoha, 2016) and is located approximately between latitudes 5° 47' 6" and 5° 29' 6" North of the equator and longitudes 7°2'5" and 7.2'6" East of the Greenwich meridian (see Figure 2). Owerri town (within the capital territory) is one of the largest and most populous cities in Southern Nigeria and the largest city in Imo State, with a population of 4,978,758 (National Population Commission, 2006). It has an area of approximately 100 square kilometres (40 square miles), and is located at the intersection of roads from Port Harcourt, Onitsha, Aba, Orlu, Okigwe and Umuahia.



## METHODOLOGY

This study was carried out in the public housing estates in Owerri Capital Territory Imo State. The research design was Survey design. This involved the administration of questionnaires to the target population to obtain data. At the time of the survey there were 1588 housing units in five typologies, within the estates surveyed. The research population was the public housing estates within Owerri Capital Territory Imo State which are: World Bank Estate, Prefab Estate, Aladinma Estate, Uratta Estate, Redemption Estate, Umuguma Estate, Trans-Egbu Estate, Nekede Exclusive Garden Estate and City Garden Estate. A multi-stage stratified random sampling method was adopted in the selection of the study sample. The first stage involved the stratification of the buildings by house types which are homogenous in a stratum and heterogeneous across the strata. This is shown in Table 1. The second stage involved the identification of the number of housing units in each estate and the application of Cochran formula to obtain respondents size.

**Table 1: Stratification of the estates according to house types that exist in them**

S/N	One-bedroom and Two-bedrooms bungalow Three – bedroom bungalow	One-bedroom, Two-bedroom and Three – bedroom bungalow	2-bedroom, and 3 – bedroom bungalows	four-bedroom bungalow, five-bedroom bungalow	four-bedroom, five-bedroom bungalow and Duplex
1	Redemption Estate	World Bank Estate	Uratta Estate	Aladinma Estate	City Garden Estate
2	Trans Egbu Estate	Redemption Estate	Tavron Estate	Uratta Estate	Nekede Exclusive Garden Estate
3					Umuguma Estate
4					Prefab Estate

Source: Fieldwork, 2020

Random sampling by balloting was done in the different stratum to represent the various building types. Based on the stratification, random sampling by balloting was carried out and the following estates were picked from each stratum to represent the various building types.

- (i) 1-bedroom, 2-bedroom and 3-bedroom bungalows - Trans Egbu Estate
- (ii) 1-bedroom, 2-bedroom and 3-bedroom bungalows - World Bank Estate
- (iii) 2-bedroom and 3-bedroom bungalow - Uratta Estate
- (iv) 3 bedroom and 4-bedroom bungalows - Aladinma Estate
- (v) 4-bedroom, 5-bedroom bungalow and duplex - Prefab Estate

Sampling size was derived using Cochran formula for finite population:

$$n = \frac{Z^2 \times \sigma^2 p \times N}{(N-1)e^2 + Z^2 \times \sigma^2 P} \dots\dots(Kothari, 2004)$$

Where;

n=Size of sample for finite population; N= Research population = 1,588 housing units;  $\sigma_p$ = Standard deviation of population assumed = 0.5; e =Significance level (precision and acceptable error) chosen = 0.05; Z=Standard variate at a given confidence level = 1.96 for a confidence level of 95% (Kothari, 2004). Sample size of 309 respondents was derived as shown in Table 2.

**Table 2: Respondents Population in Sampled Estates**

Number	Trans Egbu Estate	World Bank Estate	Uratta Estate	Aladinma Estate	Prefab Estate	TOTAL
Existing	266	500	200	350	272	1,588
Samples	52	97	39	68	53	309

Source: Fieldwork, 2021

## RESULTS AND DISCUSSION

The frequency distribution for each of the variables: ‘*engagement of building professionals during physical changes*’ and ‘*addition of makeshift structures at the fence*’ was done to understand the behaviour and characteristics of the variables as indicated by the respondents. Also, correlational analysis was done using the Point Biserial Correlation analysis tool to test the significant relationship between the two variables.

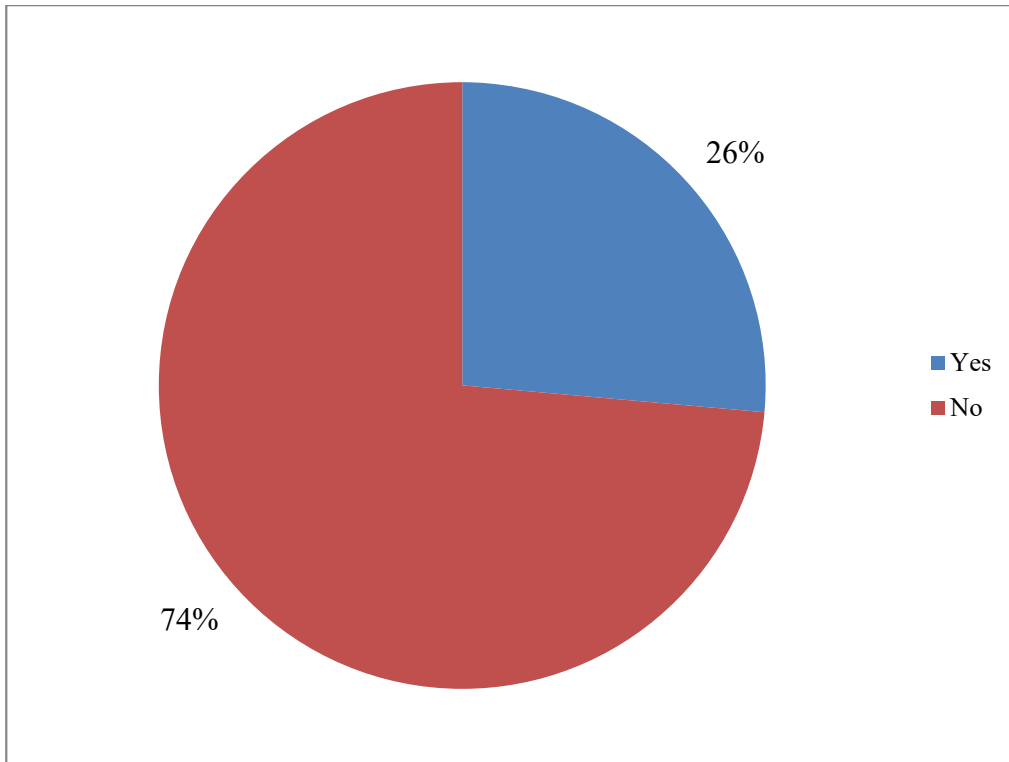
### Engagement of building Professionals during physical changes

Data collected from the respondents revealed that the majority of the residents (73.6%) did not consider the engagement of building professionals when making physical changes to their housing unit. This is further illustrated in Table 3 and Figure 3.

**Table 3: Data on engagement of building professionals during physical changes**

Value label	Frequency	Percent	Cumulative Percent
Yes	79	26.4	26.4
No	220	73.6	100.0
Total	299	100.0	

Source: Fieldwork, 2021



**Figure 3: Engagement of building professionals during physical changes**  
 Source: Fieldwork, 2022

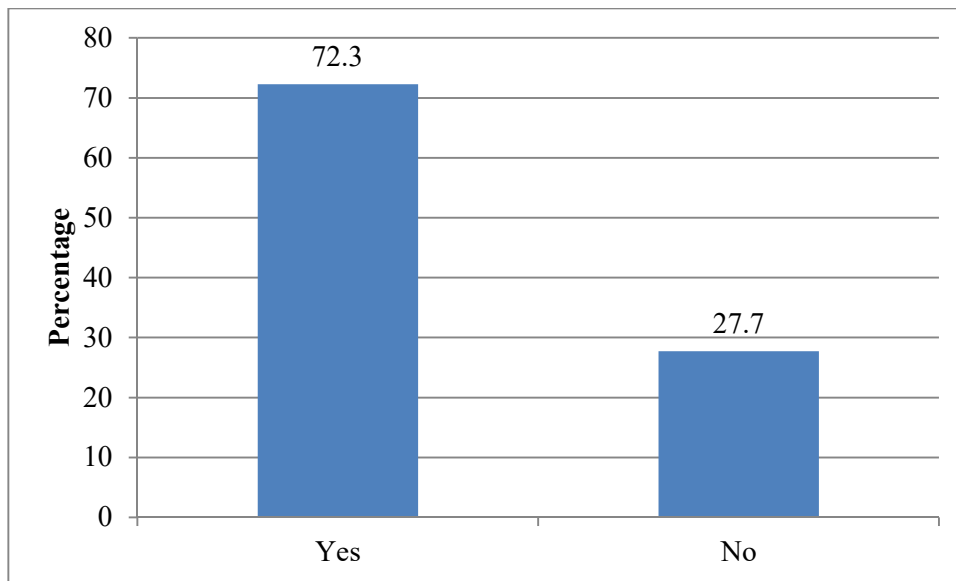
**Addition of makeshift structures at the fence**

Data collected from the respondents showed that almost three-quarters of residents (72.3%) had added makeshift structures to the fences of their houses while about one quarter of them (27.7%) do not have makeshift structures at the fence. This is shown in Table 4 and Figure 4

**Table 4: Data on addition of makeshift structures at the fence**

Value label	Frequency	Percent	Cumulative Percent
Yes	219	72.3	72.3
No	84	27.7	100.0
Total	303	100	

Source: Fieldwork, 2022



**Figure 4: Addition of makeshift structure at the fence**  
 Source: Fieldwork, 2022

### Test of Hypothesis

A null hypothesis was proposed which stated that *there is no significant relationship between engagement of building professionals during physical changes and addition of makeshift structure at the fence in public housing estates in Owerri Capital Territory, Imo State*. The two variables were of nominal and interval categories, respectively, therefore the Point-biserial correlation analysis tool was used to test the significance of their relationship. The result from the analysis showed a P-value of 0.000. This indicated a high, positive correlation. Furthermore, this showed significance at 5%. The null hypothesis is therefore rejected and the alternate accepted. This states that there is a significant relationship between engagement of building professionals during physical changes and addition of makeshift structure at the fence in public housing estates in Owerri Capital Territory Owerri, Imo State. The results are illustrated in Table 4.

**Table 4: Point Biserial Correlation analysis result**

		Addition of makeshift structure at the fence
Engagement of building professionals during physical changes	Chi-square	29.904
	DF	1
	N	.000

Source: Fieldwork, 2022

The results agree with Joachi and Olachi, (2010), as well as Emankhu and Ubangari, (2015) which affirmed that failure of a management system, i.e., where building professionals are not part of the system in regulating housing transformations in public housing estates, will lead to poor housing quality, addition of inappropriate makeshift structures within the housing environment.



## CONCLUSION

The study investigated the importance of engaging building professionals in making physical changes to the buildings in public housing estates in Owerri Capital Territory, Imo State. It found out that the majority of the residents did not engage building professionals during physical changes in the housing. This can, in some measure, explain the observed deterioration in housing quality in many public housing estates. In addressing the impact of housing transformation on housing quality therefore, it is essential that the engagement of relevant and certified built environment professionals should be a major concern for improving housing quality in public housing estates. Hence, there is the need for policy makers to discourage the use of non-certified built environment professionals in the building transformation process. This will mitigate the rate of deterioration in housing quality and lead to more sustainable human settlements.

## RECOMMENDATION

It is therefore recommended that Government and stakeholders in public housing should ensure that only relevant and certified building industry professionals should be allowed to carry out development control in public housing estates so as to mitigate the negative impact of housing transformation on housing quality.

## REFERENCES

- Abubakar, D.I., Tarreef, H.K., & Abdulleh, S.A. (2015). *Design implications: Impact of Socio-physical setting on public Housing Transformation in Nigeria*. Retrieved from <http://dx.doi.org/10.5296/jmr.7i2-6925>
- Agoha, B.O. (2016). *Community Squares: Confluence of formal and informal urban landscape in Owerri Capital Territory, Imo State, Nigeria*. Retrieved online on 20 May 2021 from [www.comnedevin.com](http://www.comnedevin.com).
- Asa, O. A., Lawal, K.O., & Morakinyo, K.O. (2018). Informal Transformation in Public Housing: A case study of Abesan Low Income Housing Estate Lagos, Nigeria. *The Journal of Civil Engineering, Construction and Estate Management*: 6(3), 1-3
- Ekop, G. (2012). An assessment of the interrelationships among housing quality variables sets in Calabar metropolis. *Journal of Geography and Regional Planning* Vol. 5(14), pp. 375-380
- Emankhu, S.E., & Ubangari. A.Y. (2015). Analysis of housing quality in the peripheral Area of Lafia, Town, *International Journal of Geography and Regional Planning Research* Vol. 1, No. 3, pp 9-17.
- everyevery.ng. (2019). *Nigeria administrative map*. Retrieved from everyevery.ng: <https://everyevery.ng/wp-content/uploads/2019/09/nigeria-administrative-map-1024x785.jpg>

- Eziyi, O.I., Adeboye, A.B. & Alagbe, O.A (2015). Similarities and Differences in Residents' Perception of Housing Adequacy and Residential Satisfaction. *Journal of Building Performance*, 6(1), pp 1-4.
- Fakere, A.A. & Ayeni, D.A (2013), Communal Facilities and Residential Neighbourhoods in Akure Nigeria. *Civil and Environmental Research*, ISSN 2222-19 (Paper)ISSN 2222-2863 (online)
- Funmilayo, M.A & Micheal, B.O.A (2018). *Assessment of Housing Quality in Ibeju-Lekki Peri-urban Settlement, Lagos State, Nigeria*. Retrieved on 5, December, 2018 from <http://dx.doi.org/10.18820/24150487/as251/5>, ISN-1023-0564, e-ISSN 2415-0487.
- Jenny, P., Joe, C., Kim, M., John, F. & David, R. (2020). Understanding Changing Housing aspirations: A review of the evidence, *Housing Studies*, 35:187-106, DOI:10.1080/02673037.2019.1584655, Retrieved December 1, 2020 from <https://doi.org/1080/02673037.2019.1584665>.
- Joy J.M., Muhammad A.A., Abdulyabbar A.A., & Ibrahim R.H. (2016). Housing Transformation Trends in Kundila and Takur Site II Estates, Northern Nigeria. *The Journal of the Nigeria institute of building* 6(2)
- Kothari, C.R. (2004). *Research Methodology Methods and Techniques* (2<sup>nd</sup>Ed.) New Delhi: New Age International Ltd.
- Mohit, M.A., Ibrahim, M., & Rashid, Y.R. (2010). Assessment of Residential Satisfaction in Newly Designed Public Low-Cost housing in Kuala Lumpur, Malaysia. *The Journal of Habitat International* (34) 18-27
- Morris, E.W., and Winter, M. (1975). A Theory of Family Housing adjustment *Journal of Marriage and Family*, 37(1), PP. 79-88. Retrieved December 4, 2020 from <https://doi.org/10.2307/35102>.
- National Population Commission, NPC (2006). *National Population Census of Nigeria: Federal Republic of Nigeria*. Retrieved on May 5, 2019 from <https://en.m.wikipedia.org>
- nigeriazipcodes.com. (2023, January). *Imo State Zip Code Map*. Retrieved from Nigeria Zip Code: <https://nigeriazipcodes.com/428/imo-state-zip-code-map/>
- Nwankwo, S.I. Diogu, J.O., Nwankwo, C.V & Okonkwo M.M. (2014). Post-occupancy Evaluation of Modification of Residential Buildings for Effective and Efficient Mass Housing Delivery: Case Study of Owerri Urban, South-Eastern Nigeria. *International Journal of Engineering Research and Applications* ISSN: 2248-9622, Vol. 4 – Issue 2(version 4), Pp. 5-26.
- Olutoyin M.A.& Francis T. (2018). Analysis of Housing Quality and Residential Environment in a Traditional African City: A case study of Ilesa, Osun State Nigeria. *The Journal of Social Sciences and Humanities. Reviews*. 8 (1) 12-17, (ISSN: 2276-8645).