

Patterns of User-Initiated Transformation of Dwelling Units in Selected Public Housing Estates in Lagos, Nigeria

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ABSTRACT

This study examined User-Initiated Transformation (UIT) in selected low-income public housing estates in Lagos, Nigeria with a view to providing information that could assist policy makers in more effective housing delivery. It employed a systematic sampling method to select 315 housing units out of 8938 units from 3 purposively selected estates for questionnaire administration, namely: Abesan (156 units), Isolo (128 units) and Iponri estates (31 units). The findings showed that 79.0% (233 out of 295 retrieved questionnaires) of respondents have transformed their houses one way or the other. The majority of residents (78.40%) engaged in transformation by slight adjustment, such as: painting, re-tiling, and installation of shading devices, burglar proof to openings, and fixtures and fittings. It was also observed that 5.28% transformed by addition of more spaces, 1.42 % by addition of doors and windows, 13.21% by addition of services, and 1.68% by total conversion; but there was no indication of transformation by total reconstruction. The study found that 48.3% and 76.0 % of the respondents were not satisfied with the original plan and level of adequacy of spaces of their houses respectively. These findings implied that the predominant patterns of UIT of dwelling units in the study area were due mainly to residents' dissatisfaction with the level of adequacy of spaces, and with the original plan. The study concluded that greater attention needs to be given to users' preferences through their participation in the decision-making process relating to the design and delivery of public housing.

Keywords: dwelling units, physical transformation, user-initiated transformation (UIT), public housing, Lagos.

INTRODUCTION

Dwellers in public housing sometimes engage in alteration and extension activities aimed at adapting the dwellings to better suit their needs, or as a means of refurbishing housing in poor condition (Tipple et al, 2000; Kallus & Dychtwald, 2010). Understanding this phenomenon is a prerequisite to any attempt to provide more satisfactory housing environments and to improve living conditions in existing ones. Public housing represents a notable proportion of the housing stock in many developing countries (Sengupta & Tipple, 2007; Tipple, 2000a). Its shortcomings have been identified and examined in an attempt to investigate the possibilities of improvements in future projects (Mukhija, 2004; Turner et al, 2009). Habraken (1975) suggested that public housing may not satisfy the needs of the occupants because they are normally built without consulting the future occupants and it is unlikely for people to live satisfactorily within a fixed environment in which they had no input. Moreover, it is often difficult to pre-determine the totality of occupants' requirements, as these would only become apparent through their activities in the dwellings. Perhaps due to this failure, in many instances, of public housing to respond to users' needs, it is usual to see residents engage in informal transformations within the formal housing sector, through a variety of modifications – user-initiated transformation (UIT) – carried out in government-built housing projects (Sibley-Behloul, 2003).

User-initiated transformation (UIT) contrasts with interventions in the form of Government-initiated neighbourhood renewal programmes to improve housing conditions and urban infrastructure (Elazar & Marom, 1992). As Salim (1998) observed, it is common for owner-occupiers, through their own initiatives and efforts, to alter or extend their houses in order to improve their housing conditions or meet the growing needs of their households. Tipple (2000a) notes that housing transformation in developing countries often involves modifications and extensions of the external and internal parts of dwelling units. Much of the transformation is done either by the residents themselves or by small-scale hired contractors and artisans using locally available materials and labour, and is often so extensive that the original dwelling units could hardly be recognized (Tipple, 2000b). Such user-initiated changes can provide useful models for future policies on public housing (Ward & Peters, 2007). It is therefore imperative to examine the modalities and motives behind UIT of dwelling units in public housing estates. This study is considered pertinent as it will increase the understanding of why and how some people effect alterations, extensions, modifications or additions to the original forms, extent, spatial configuration or uses of their housing units, and in some cases, their immediate environment.

LITERATURE REVIEW

Meaning and Conceptualization of User-Initiated Transformation

Transformation of a dwelling has been defined as “an alteration or extension involving construction activity and using materials and technology in use in the locality” (Tipple, 1991:4). *Alterations* refer to “internal changes to the layout of the units without increasing the overall net floor area”; while *extensions* involve built additions, which add at least one functional component per unit (Tipple, 1991:20). UIT describes any change to the original form or spatial configuration of a dwelling unit by the occupants in order to meet current needs and future expectations (Salama, 1999; Kallus and Dychtwald, 2010). Manalang et al. (2002) view UIT as self-built improvement, which helps in understanding the adjustment behaviours of residents, and also indicates how they have augmented for the deficiencies in their current residences. Kim et al. (2005) describes transformation as the remodeling of completed buildings resulting in a change in the appearance or character of the building, its envelope or components. These activities have in some cases resulted not only in an increase of the actual housing stock, but in changing entire housing environments into dynamic, mixed-use developments, where maximum use of the available space and resources is made. Although attitudes to transformation vary, Tipple and Ameen (1999) argued for a change in the often negative official attitude to the phenomenon.

The conceptual basis for UIT resides in the principles of ‘self-help’, such as: ‘the freedom to build’, ‘housing as a verb’, ‘housing as process’, ‘housing by people’ (Turner, 1976). It may be conceptualized as a form of self-help housing, which Harris (1999) views to be valuable in providing inexpensive dwellings and coping with housing deficits in developed and developing countries. Tipple (2000a) and Tipple et al (2000) posit that self-help strategies are useful not only for new-built housing, but also for user-adaptation of government-built housing. Transformation of public housing may take the form of attaching informal developments to the most formally developed neighborhoods (Sibley-Behloul, 2003). It could also be in the alteration of the original internal spatial arrangement of a house to accommodate more spaces, as evident in some low-income public housing. Although many studies on UIT focus on the more intensive, tangible and visible phenomenon of ‘outward extension’, Popkin et al. (2012) describes housing transformation to include activities ranging from the rearrangement of internal furniture and painting a room, to structural amendments such as addition of more rooms or even demolition of parts of some housing units.

The benefits of UIT have been suggested to include: allowing residents to adapt their home environment according to their personal needs and expectations (Sibley-Behloul, 2003); and enabling them to remain in their community rather than move elsewhere, thereby preventing neighbourhood deterioration (Carmon, 2002b). UIT cuts across societal strata, tenure forms, and types (Carmon, 2004). The basic implication however, is that housing transformation is often an initiative of home-owners or occupants who seek to improve their housing conditions or provide more spaces to accommodate changing or increasing household needs. Tipple et. al (2000) based on a four-nation comparative study, affirm that governments and citizens have more to gain by encouraging, rather than preventing transformation. This buttresses the enduring advocacy for responsive public housing (Carmon and Oxman, 1986).

Motivations for User-Initiated Transformation

People may engage in housing modification in a number of ways and for a range of reasons: for self-expression; to make their homes more aesthetically pleasing or more suitable for their needs; to conform to technological requirements or social norms; or due to changes in familial or socio-economic circumstances. Spatial, physical, socio-economic, structuralist, psychological, locational and other pragmatic motives have been offered as explanations for UIT. According to Goodchild (1997), one main factor that contributes to UIT of housing is essentially spatial – the shortage of accommodation and the desire for an increase in the space under the dwellers’ control. Tipple (2000a) posits that transformation was common in public housing because potential residents were rarely involved in the planning and designing of their estates, and as such the dwelling units were neither in tune with their socio-economic, religious and demographic characteristics nor a reflection of their expectations and aspirations. In such situations, the residents found their housing units to be inappropriate to their personal and household needs and ways of life, and thus explored avenues of physically adjusting the units to suit their needs and lifestyles. Tipple et al. (2000) however, found that the dwelling characteristics were more influential in the decision to transform, than the household and housing characteristics. While certain dwelling designs or types may be more prone to being transformed, others may constrain the potential for UIT. Tamés (2004) suggests that UIT is pronounced in public housing because public housing estates are often uniform and monotonous and offer limited opportunities for self-expression by the residents.

The economic perspective views the requirement of extra space for the household, for income-generating activities and home-based enterprises (HBEs) as the main motivations for transformation (Salim, 1998). According to Kellet and Tipple (2000), “A house is a production place, market place, entertainment

centre, financial institution and also a retreat.”Tipple (2000b) notes that many households transformed their dwellings because they needed to work in their homes and let out additional spaces created in the course of the transformation activities, thereby adding value to the existing housing stock. Hasan’s (2006) structuralist explanation asserts that UIT of dwelling units by residents in public housing schemes was a response to the failure of the government-constructed housing to adequately cater for the housing needs of the people. This implies that housing transformation is on the increase due to the perceived gap between what residents need and what they are provided with by public housing providers (Kellet et al,1993). The psychological explanation indicates that transformation activities can enhance residents’ sense of pride, confidence and feeling of attachment to their dwelling units: ‘residents could feel at home and secured when they gradually improve and maximize the space within and around their residences’ (Manalang et al, 2002). It is perhaps on this premise that Turner et al. (2009) conclude that housing transformation helps to improve the value of housing, increase the housing stock within a locality, and attracted more residents into the neighbourhood. Carmon (2002a) posits that self-help housing extensions allow residents to remain in their community while adapting their immediate environment to changing needs. Differences between estates also proved to be significant among the array of factors that may inform the need for UIT (Tipple et al, 2000).

Patterns of User-Initiated Transformation

Originally, most public housing units and apartment blocks appear similar and homogenous, but with time, each building often gains a character of its own, resulting from common tendencies in transformation activities. These tendencies are defined, in this study, as “patterns of transformations”. These may also be viewed as a form of behavioral pattern influenced by not just spatial-related housing needs, but also residential satisfaction, socio-economic factors, demographic changes, level of education and general attitude to housing matters. This implies that, users may transform their dwelling units not only because of their needs but also because they are not satisfied with the spaces as they are and may need to modify these to suit their tastes. This dissatisfaction may be reflected in the act of adding more space within and around the dwelling unit to increase the useable space available to the household. Four patterns of housing transformation have been identified in literature, namely: by slight adjustment, by addition and division, by total conversion and total transformation by reconstruction (Seek, 1983).

- (a) **Transformation by slight adjustment:** is transformation by functional change rather than the physical or spatial modifications of the spaces.
- (b) **Transformation by addition and division:** enables an increase in the number of rooms to satisfy the dwellers’ needs, and especially owners who may sublet their houses. Services are known to have been improved by some ‘transformers’ (Tipple et al, 2000). Additions may provide new services that are compatible with modern lifestyle. Divisions may help to maximize privacy where the dwelling is shared by more than one household.
- (c) **Transformation by total conversion:** involves complete conversion of the residential units for new purposes, especially for commercial use.
- (d) **Transformation by total reconstruction:** involves the demolition and reconstruction of a housing unit in terms of house type, materials and technology. The levels of demolition and reconstruction would reflect how much the people are influenced by the house type, materials, and technology in their housing transformation decisions.

RESEARCH METHODS

This study employed primary and secondary data. Primary data were obtained from a field survey of the study area through the use of structured questionnaire, researcher observation and documentation. Three out of 20 low-income public housing estates in Lagos metropolis were purposively selected for the study, namely Abesan, Isolo and Iponri low-income housing estates, being the largest. The sample frame of these 3 estates comprised of 1261 blocks of flats with 8938 housing units. Using systematic random sampling, one housing unit from every 4th block was selected (See Table 1).

Table 1: List of Selected Low-Income Public Housing Estates

Selected Housing Estates	No. of Units	No. of blocks	One unit in every 4th block
Abesan	4272	624	156
Isolo	3664	512	128
Iponri	1002	125	31
Total	8938	1261	315

Source: Authors' Field Survey, 2017

This amounted to 156 housing units from Abesan, 128 housing units from Isolo and 31 housing units from Iponri low-income housing estates, giving a sample size of 315 housing units. The questionnaires were administered on the household heads of the housing units to elicit information on their socio-economic and household characteristics, housing characteristics, and patterns of housing transformation. Two-hundred and ninety-five (295) questionnaires, representing 93.6% were retrieved for analysis. The primary data were subjected to descriptive and inferential analysis. Secondary data such as drawings, maps, and reports on the public housing estates were obtained from the Lagos State Development and Property Corporation (LSDPC).

The analysis of the patterns of UIT presented in this study required first, that the level and nature of the phenomenon be examined across the three selected estates, in terms of their variation. Furthermore, it was important to define the dominant types of UIT activities. While studies on UIT usually emphasize the more prominent and visible phenomenon of 'extension', less intensive modifications to the original design or use of the housing unit or part thereof would be no less important. For analytical purposes, the possible forms of UIT activities were identified, defined, and classified into five categories, namely: surface, slight, service, spatial, and structural. *Surface* modifications include: painting and finishes such as fresh tiling (on walls, floors, ceilings). *Slight* modification would refer to installations of components and fixtures such as sun-shading devices, burglary proof to openings, fixtures and fittings, doors, and windows. *Service* modification describes any form of addition or improvement on services such as alternative means of water supply, sewage disposal, electricity-generation, that are integrated into the fabric or structure of the housing unit or block. *Spatial* modification describes division, extension, or use-conversion of spaces within or around the house. *Structural* modification would involve fundamental changes to the structure of the house. The third aspect of the analysis involved examining the types of UIT activities in terms of the interior of exterior aspect of the housing unit in which they occurred. These three levels of analysis are presented in the next section.

ANALYSIS, FINDINGS AND DISCUSSION

Transformation across the Estates

Although patterns of UIT varied across the three selected housing estates, the majority of respondents for this study had altered or modified their houses in one way or the other. Table 2 shows the distribution across the estates in terms of the proportion of respondents who had altered or modified their housing units follows: Abesan estate – 71.4% (105 out of 147 respondents); Iponri estate – 95.8% (23 out of 24 respondents); and Isolo estate – 84.7% (105 out of 124 respondents). The result generally revealed a high level of modification in the three estates, but the highest being observed in Iponri and the lowest in Abesan.

Table 2: UIT of Housing Units Across the Selected Estates

S/No	Options	Selected Housing Estates							
		Abesan		Iponri		Isolo		Total	
		Freq	%	Freq	%	Freq	%	Freq	%
1.	Altered, Modified, or Transformed the house in any way	105	71.4	23	95.8	105	84.7	233	79.0
2.	No form of transformation	42	28.6	1	4.2	19	15.3	62	21.0
	Total	147	100.0	24	100.0	124	100.0	295	100.0

Source: Authors' Field Survey, 2017

The overall high level of transformation is perhaps a reflection of the locational impact of the phenomenal urbanization occurring in Lagos mega-city. The estates and their neighbourhoods have transformed from the hitherto highly-organised, isolated, or secluded communes of government housing, to becoming integrated into

and almost indistinguishable from the rest of their urban milieu. In particular, the level of transformation appears to be inversely related to the sizes of the estates: the largest proportion of UIT was reported in the smallest of the three estates (Iponri), while the least proportion was reported in the largest estate (Abesan). The variation in UIT among the three estates may also be a reflection of their unique evolution and locational characteristics. Iponri estate for example, is a highly commercialized estate situated in a major municipal hub of Lagos metropolis, in proximity of the National Stadium and National Theatre. It is planned along a high-traffic route – Western Avenue – one of the major roadways linking mainland to the Island. In contrast, Abesan estate, the largest but least transformed of the three estates is located in a part of the city that was sub-urban at inception. The integration of the estate with surrounding areas remains relatively restricted due to its proximity to the Apapa-Oshodi expressway, which limits the level of pedestrian movement.

Types of Transformation Activities

Table 3 shows the distribution of respondents according to the types of modifications they had effected on their houses, as an indication of the patterns of UIT activities in the selected estates. The most prominent activities observed were surface and slight modifications, each of which accounted for about 40% respectively. Surface modifications included: painting (24.05%) and finishes/tiling (15.27%); while slight modification referred to installations of sun-shading devices (15.01%), burglary-proofs to openings (12.17%), fixtures e.g. screen walls (11.90%), and changes of doors and windows (1.42%). Service modifications through the addition of or improvement of services (water tanks, air-conditioning, and satellite dishes) constituted 13.21%. The least form of modifications was spatial (6.96%): addition of spaces such as entrance foyers, ground floor terraces (5.28%) and functional conversions (1.68%). Cases of structural modifications were not reported or observed in any of the three estates.

The predominance of surface and slight modifications, in contrast with service and spatial changes, reinforces the importance of the design, type and form of dwelling as a potential factor in transformation. This can be explained in terms of the design configuration of the housing blocks – load-bearing wall structures – which practically disallowed any appreciable extension, adjustment to room dimensions and limited multi-functional use of spaces.

Table 3: Types and Locations of UIT activities

Types of Transformation Activities	Living room		Dining		Kitchen		Store		Bedroom		Outdoors		Total	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Surface Modifications														
Painting	303		243		162		3		202		172		1085	24.0
Tiling	230		150		99		2		154		54		689	15.3
	533		393		261		5		356		226		1774	39.3
Slight Modifications														
Sun-shading	235		133		79		1		171		58		677	15.0
Burglary-proof	175		37		65		2		134		136		549	12.2
Fixture/Fittings	115		48		172		1		196		5		537	11.9
Doors/Windows	17		2		5		1		36		3		64	1.4
	542		220		321		5		537		202		1827	40.5
Service Modifications														
Addition of new services	9		1		195		2		146		243		596	13.2
Spatial Modifications														
Addition/Division of spaces	1		0		0		4		16		217		238	5.3
Space Conversion	3		0		0		0		2		71		76	1.7
	4		0		0		0		18		288		314	7.0
Total (%)	24.1		13.6		17.2		0.4		23.4		21.7		100.0	

Source: Authors' Field Survey, 2017

Spatial Distribution of UIT within the housing units

Transformation took place in virtually all the functional spaces in the housing units: living rooms (lounges), dining rooms, kitchens, stores, bedrooms, and outdoor spaces. A wide array of transformation was recorded during the survey. The result of the patterns of transformation of housing units in the study area as shown in Table 3 (bottom total) indicates that living rooms had the highest level of transformation (24.1%), followed by bedrooms (23.4%), outdoor spaces (21.3%), kitchens (17.2%), dining rooms (13.6%), and stores (0.35%).

Transformation in living rooms (semi-public areas) and bedrooms (private areas) involved varied surface, slight, and spatial modifications, which reflected to a great degree users' needs for improvements relating to the aesthetics, comfort, privacy, security, and territoriality of their dwellings, and their desire for increased satisfaction. Also important are transformation activities in outdoor spaces, that is, the immediate envelope and surrounding spaces around the housing blocks: entrance canopy; enclosed entry; covered, balustrade-bounded or screen-walled terraces; ground-floor shops along the length of buildings (wooden structures, steel containers); perimeter dwarf fence; generator house; sunk wells or bore-holes; and covered parking spaces and demarcation of car parks (See Plates 1-5 in the Appendix). These findings suggest that user transformation of public housing projects should not be considered as a simple space enlargement process, but rather as a result of a complex set of inter-related determinants associated with both context and dwelling characteristics.

CONCLUSION

Studies of user-initiated transformation (UIT) seem to indicate its inevitability; hence, the need for a better understanding of the phenomenon, to ensure appropriate design and policy responses. This paper evaluated the patterns of UIT of dwelling units in three public housing estates in Lagos, Nigeria. Using descriptive statistics, it presented summary of the patterns of UIT in the study area. The implication of this study for sustainable housing development is premised on the finding that people engage in UIT of dwellings in an array of ways and for varied reasons, including the need to make the home more aesthetically pleasing, more suitable for their needs, for qualitative improvement, and for economic reasons. Findings corroborate the growing realization that housing, especially among the low-income earners, is not for home life alone, but also for economic production. The spatial attributes of the main activity areas of the dwelling units in the three estates were generally not adequate in meeting occupants' needs and expectations; hence, most of the respondents were not satisfied with these aspects of their dwelling units. Surface, spatial, and service-related transformation by the residents were therefore an attempt to improve the attributes, and by extension enhance their satisfaction levels. Greater attention should therefore be given to users' preferences through their participation in the decision-making process relating to the design and delivery of public housing. Housing providers should pay closer attention to the spatial and related characteristics of specific activity areas in order provide houses that meet users' needs. Housing should be viewed as a process of constant transformation and endless variation, rather than a static artifice or product; and UIT as an unfolding, continuing open-ended process. This paper presented some results from a broader study on the nature and determinants of transformation in public housing. Further research is desirable on the elements and degrees of UIT across income-levels, house types, and in private housing and urban popular settlements. Issues related to home-based enterprises (HBEs), income-generating potential of housing, and their gender and sustainability implications also merit closer investigation. These could provide information that would enhance effective policies and implementation of housing delivery systems, and more responsive public housing.

REFERENCES

- Ahsen, O., and Gulcin, P. G. (2005). Space use, dwelling layout and housing quality: an example of low cost housing in Istanbul: *Ashgate publishing Limited, England*.
- Arimah, B. C. (1999). User modifications in Public Housing Estates: Some findings from the Nigerian Scene. In Awotona, A (Ed). Housing Provision and Bottom – up approaches. *Family Case Studies from Africa, Asia and South –America*, Ashgate, Aldershot, 43-86.
- Aduwo, E. B. (2011). Housing Transformation and Its Impact on Neighbourhoods in Selected Low-Income Public Housing Estates in Lagos, Nigeria. *An unpublished Ph.D thesis submitted to the Department of Architecture, Covenant University, Ota, Ogun State*.
- Carmon, N. (2002a). User-controlled Housing: Desirability and Feasibility. *European Planning Studies* 10(3):285-303.
- Carmon, N. (2002b). The Phoenix strategy for updating housing stock: preventing neighbourhood deterioration and promoting sustainable development. *Journal of American Planning Association*, 68(4): 416-434.
- Carmon, N. (2004). User-controlled updating of existing housing: a prime way to satisfactory affordable housing. In: D. Hulchanski (Ed.), *Adequate and Affordable Housing for All*. University of Toronto Press: Toronto.
- Carmon, N. and Oxman, R. (1986). Responsive public housing: an alternative for low-income families. *Environment and Behavior*, 18(2):258-284.
- Elazar, D. J. and Marom, Z. R. (Eds.) (1992). *Urban Revitalization: Israel's Project Renewal and Other Experiences*. Lanham, MD: JCPA and University Press of America.
- Friedman, A. (1996) Residential Modification of Narrow Front Affordable Grow Homes in Montreal, Canada, *Open House International*, 21 (2); 4-17.
- Goodchild, B. (1997). Housing and the Urban Environment. *A Guide to Housing Design, Renewal and Urban Planning*. Oxford: Blackwell Science Ltd.
- Habraken, N.J. (1975). Supports: An Alternative to Mass Housing, London: Architectural press.
- Harris, R. (1999). Slipping through the cracks: the origins of aided self-help housing, 1918-53. *Housing Studies*, 14(3):281-309.
- Hasan, A. (2006). Scale and Causes of Urban Change in Pakistan; *Ushba Publishing International, Karachi*.
- Kallus, R. and Dychtwald, S. (2010). Effects of User-initiated Extensions in Government-built Housing on the Urban Space: The Case of the Ramdam Neighbourhood in Titar Carmel, Israel. *Journal of Urban Design*, 15(1):69-90.
- Kellet, P. and Tipple, A. G. (2000). The home as workplace: a study of income-generating activities within the domestic setting. *Environment and Urbanization*, 12(1):203-213.
- Kellet, P., Toro, A. and Haramoto, E. (1993): Dweller-Initiated Changes and Transformations of Social Housing: Theory and Practice in the Chilean Context, in *Open House International*, Vol. 18 (4), p. 3-10.
- Kim, S., Yang, I., Yeo, M., and Kim, K., (2005). Development of a Housing Performance Evaluation Model for Multi-family Residential Building in Korea, *Building and Environment*, 40(2005), 1103-1116.
- Korboe, D. T. (1993). The Low-Income Housing System in Kumasi: An Empirical Examination of Two Neighbourhoods,° unpublished doctoral dissertation (University of Newcastle upon Tyne, 1993).
- Manalang, R. T., Munemoto, J., Yoshida, T. and Espina, C. (2002). A Study on Residents' Self built Improvements at MRB Dwelling Units in Metro Manila. *Journal of Asian Architecture and Building Engineering/November 2002/184:177-184*.
- Mukhija, V. (2004) The Contradictions in Enabling Private Developer of Affordable Housing: a Cautionary Case from India. *Urban Studies*. 4(11), 2231-2244.
- Oxman, R. and Carmon, N. (1986). Responsive Public Housing. *Environment and Behavior*, 18(2): 258-284.
- Popkin, S. J., Rich, M. J., Hendey, L., Hayes, C., Parilla, J. and Galster, G. (2012): Public Housing Transformation And Crime- making the case for responsible relocation Cityscape vol.14; no.3 pp137-160.
- Salama, R. (1999). *User Transformation of Government Housing Projects: Case study, Egypt*. Doctoral dissertation, McGill University, Montreal.
- Salim, A. (1998) Owner-occupiers transformation of public low cost housing in Peninsular Malaysia. Thesis report submitted to Newcastle University
- Seek, N. H. (1983). Adjusting Housing Consumption: Improve or Move. *Urban Studies*, 20: 455-469.
- Sengupta, U. and Tipple, A.G. (2007). The Performance of Public –Sector Housing in Kolkata, India in the Post–Reform Milieu. *Urban Studies* 44(10): 2009-2027.
- Sibley-Behloul, M. (2003). Informal transformations of formal housing estates in Algiers and Cairo, *Global Business and Economics Review*, 2(3): 32-41.
- Tamés, E. (2004). Use, Appropriation and Personalization of Space in Mexican Housing Projects and Informal Settlements. *Traditional Dwellings and Settlements Review*, 15(2), 33-48.

- Tipple, G. (1991): Self-Help Transformations of Low Cost Housing. An Introductory Study. CARDO: Newcastle Upon Tyne.
- Tipple, A. G. (2000a). Extending Themselves: *User-initiated Transformation of Government-built Housing in Developing Countries*. Liverpool University Press: Liverpool.
- Tipple, A. G. (2000b) Transformation of formal housing. *Open House International*, Vol.13, No.3, 23-35.
- Tipple, A. G. and Ameen, M. S. (1999). User-initiated extension activity in Bangladesh: “building slums” or area improvement?. *Environment and Urbanization*, 11(1):165-183).
- Tipple, A. G., Masters, G. A. and Garrod, G. D. (2000). An assessment of the decision to extend Government-built houses in developing countries. *Urban Studies*, 37(9):1605-1617.
- Turner, J. F. C. (1976). *Housing by People, Toward Autonomy in Building Environment*. Boyars: London.
- Turner, M. A., Popkin, S. J. and Rawlings, L. (2009): *Public Housing and the Legacy of Segregation*. Washington, DC: The Urban Institute Press.
- Ward, P. M. and Peters, P. A. (2007). Self-help housing and informal homesteading in peri-urban America: settlement identification using digital imagery and GIS. *Habitat International*, 31(2): 205-218.

APPENDIX



Plate 1: Entrance canopy, perimeter dwarf fence wall, car park, change of window materials



Plate 2: Bedroom converted to Home-based enterprise (shop) in Abesan Estate.



Plate 3: Territoriality through covered terrace and enclosing railings in Abesan Estate



Plate 4: Covered terrace, scaffold-supported water tanks, AC unit on walls, and bedroom converted into Home-based enterprise (HBE) in Iponri Housing Estate



Plate 5: Metal barricades and covered terrace and parking spaces in Iponri Housing Estate
Source: Authors' Field Survey, 2017

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