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SUSTAINABLE PUBLIC HOUSING TRANSFORMATION IN THE CONVERGENCE OF EMIC AND ETIC PARADIGMS

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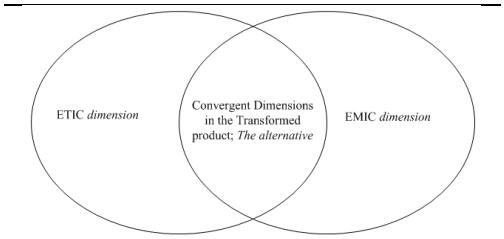
Graphical abstract



The intersection of the etic and emic concept developed convegences with insight to public housing design solutions.

Abstract

Recent studies on the global ideology of public housing are significantly focused on the cultural values of inhabitants. Thus rapid transformation of originally design housing units that are based on modern standards by inhabitants is widespread. The emic and etic principles was used to evaluate existing situation where indigenous culture inclusive housing demand is on the rise. Retrospectively, established principles of emic and etic concept in directing public housing design was measured to test the synthesis- an interphase thought to provide sustainability amidst conflicting indigenous space demand and regulated homogenous designs. The study uncovered a chaotic but culture-specific genesis that comprise of formalized antecedents that can no longer be ignored, but lacks standardisation. Instead, the etic and emic interphase (convergences) remains a delusion proffering unintended solutions. Implacably, rigour in the concept of culture bonds sustainability process in public housing, hence its standardization is required to be undertaken in order to clarify and process the potentials of the alternative (the intersection) to the etic and emic approaches.

Keywords: Etic and emic, transformation, public housing, culture, sustainability

1.0 INTRODUCTION

Public housing research string has upheld culture bond in sustainable development. Sustainable development initiatives seem to de-emphasise the social dimension to sustainable housing. This development has made stakeholders to perceive best practices to exclude indigenous spatial demands. However, the persistence of local features attained through spatial modifications made on existing urban public housing designs raises the question on how to achieve urban sustainability. Yet there is a growing demand by locals of achieving housing consumption that is culture responsive. In recognition of this limitation, an attempt to address the subject via housing transformation phenomenon using the emic and etic concept of cross cultural approach was embarked upon by this study. The emic and etic concept relates general or universal perception with indigenous desires and perception on building practices. Thus it sets to inspire discourse on the commonly accepted interface as the alternative that provides synthesised solution to the encompassing weaknesses and strengths of the etic and emic approaches altogether. Using the concept of emic and etic approach with two illustrations the study observed initial and transformed housing units in selected public housings across northern Nigeria for study. The outcome

suggests the need for standardization of formalised converging attributes which is reflected in the transformed product combining contemporary design standards that blend with local community ideals.

2.0 BACKGROUND STUDIES

2.1 The Emic and Etic Concept

The concept of emic and etic evolved from behavioural psychologist and cultural anthropologist to cross cultural analysis towards addressing limitations of theories and principles often acclaimed to be universal or general but only partially applicable across cultural boundaries [1]. The concept has been considered to create an interface that communicates the engagement of values and standards. In a psychology research work by Helfrich [2], he referred to this interfase as "triarchic resonance" where as in a housing research the intersection was referred to as "recognition space" [3]. Culture responsive indigenous housing is considered to operate the mechanism described within the recognition space (interface) that considers the values, lifestyle of the inhabitants while adopting modern standards [4]. In spite of efforts made in public housing provision informal sector thrives in housing supply in developing countries. For instance, informal sector housing provision accounts for the highest number of urban housing provision among the low income category in Nigeria with 70% of the citizenry constituting the poor population [5]. This accounts for their active participation in housing provision regardless of the quality of the product. According to Lym [6], professional designers concentrate on the visual and formal space ordering in architecture while ignoring the relationship between building devices and the living aspects of potential inhabitants which lay designers tend to focus on. As a result the desire for public housing transformation is grown out of the need to relate spaces with cultural tendencies in tune with indigenous demands.

2.2 Transformation

Housing transformation has been found to be inevitable, because houses grow with changes in the cultural attributes and structure of its inhabitants. Moreover, Tipple [7] affirms that inhabitants are satisfied with benefits derived from housing transformation which includes improved design, participation in the housing process, gaining more spaces for the household with greater economic status. This affirmation is based on the phenomenon uncovered in developing nations of Egypt, Zimbabwe, Ghana, Malaysia and Bangladesh. Although Tipple attributed changing household structure as strong indicator that contributes to transformation practice, he de-emphasised social meaning in the practice as being responsible for the product which this study also attempts to satisfy.

2.3 Public Housing

As investments in the provision of housing by both the public and private sectors grow, the subject of housing transformation can no longer be ignored. Therefore, synthesising housing design by reflecting on the emic and etic perspectives in order to sustain public housing delivery to the low and medium income groups living in the urban environment becomes significant. Because of the continuous strong link they maintain with their root. Norms and physical planning standards in the developing nations are rigid, culturally and socially alien to indigenous concepts of space use [8]. Repelling any form of influence imposed by western conceived design. Hence, series of global permutations over the decades in housing policies have not yielded desired results but rather raising confusion in the concept and criteria for comprehending sustainability issues in housing [9]. It is in this regard that the threshold for accessing housing sustainability towards achieving successful housing consumption is desired to look inwards to the immaterial issues that give meaning to the desired physical form thereby, making tangible the intangible attributes [10]. Although the threshold that determines the level of consideration of social traits in urban housing is yet to be actualised. Culture specific approach in housing research help reduce the emic variables to a projectable threshold common to a given community.

2.4 Context and Sustainability

Sustainability in housing appears to be broadly conceived and even in developed economies there is a growing concern of conceptualising sustainable housing. Rising desire for sustainable building development demands sustainable practices and strategies [11]. According to Winston and Eastaway [12] international organisations in outlining sustainable indicators de-emphasise the socio-economic dimension of sustainable housing. The social dimension which focuses on the social cohesion of households in order to improve interaction, liveability and wellbeing among members require context specificity. Quality and design enhances social impact which maintains cohesiveness and also provides stakeholders with tangible values in sustainable delivery of residential buildings [13]. Community initiatives towards sustainable development strategies in housing particularly for the low income category are applauded. Contextually, the persistence changes inflicted on housing form by users in meeting changing desires and needs appears to modify the layout of designs from initial professionally planned layout to user influenced patterns. This process requires close examination and subsequent analysis. Previous scholars have attributed this scenario to cultural exclusion in the initial design [14]. However, in the quest to satisfy social demands standards are often neglected or unconsciously down played while prioritizing cultural bond. So, it becomes crucial to consider indigenous circumstances in the sustainability stance of housing

development. Moreover, Tipple et al. [15], has applauded several benefits derived by users in housing transformation that remain significant to housing sustainability.

2.5 Cultural Paradigm

Accordingly, there has been a rise in cultural perspective of housing research that necessitates the need to understand human behaviour in its particular context [16]. Human behaviour is grown out of social value systems which are culturally determined [1]. Culture delineates space use by households who establishes changes in space configurations to align with changing needs [14]. This translates the social meaning of households space usage into the household's social pattern of integration reflected as housing consumption that is achievable through transformation mechanism [17]. Van-Gent [18], Identified the need to improve housing quality and the built environment in deprived urban areas. Thus, acknowledged the diversity that explains social pattern of different cities, and the unevenness in globalised standards with respect to concepts that typify, and explain local norms and standard regulations within countries. Thereby, explaining the unique social pattern and spatial differentiation of settings.

3.0 METHODOLOGY

The principle of emic and etic concept in cross cultural housing research was used to examine the cultural spatial traits, public housing transformation attributes and urban housing standards. Utilizing culture as unit of analysis [16] urban space standards and indigenous space uses correlate to create an intersection referred to as convergences.

Etically, the study cross culturally observed the distinction between universal standards in the initial design layouts comparable across cultures while Emically, culture is considered as a factor that binds the integral part of human behaviour as it reflects the indigenous requirements in the transformed layouts. It is determined as a cause of action scaled using methods of reasons that control the action viewed from the participants' point of response. Moreover, practical issues that include regional features are essential in determining sustainable built environment [19].

Operationally, the underlying assumption states that Public housing design layouts are susceptible to culturally influenced modifications which are regarded as the outcome dependent variable. The phenomenon of cultural influence in the transformed layout should explain the behaviour of the users as the independent variable, with regards to space and activity from their culture specific context. Space cognition is measured by the comparison of spaces in the initial design and in the transformed product, thus highlighting the western perspectives while exploring the insight in indigenous cognition of layout modification. Indeed, the cultural attribute that indicates the existence of the phenomenon which shows the specificity in space and activity relations peculiar to the study setting are the measures adopted in the study.

In order to avoid systemic bias where participants' culture with respect to space activity relationship are misinterpreted and subjectivity in relating the universal concepts [2], the research is limited to space uses that the research observed to be in the initial design and globally acknowledged while validating the transformed spaces with space uses that are common at the root background setting under investigation.

3.1 Research Process

By means of suitable principles of etic and emic concept as provided from literature, the study selected and adapted Mantziaris and Martin [3], yielding four principles;

Table 1 Etic and emic principles

Emic	Etic
Family system	Building Standards
Social identities	Consistencies
Traditional law	Regulations
Land ownership	Land procurement

Adapted from Mantziaris and Martin (2000)

However, this study emically considered only family system and social identities while building standards and consistencies were etically considered.

The research proceeded to observe these principles in 12 public housings in northern Nigeria were 42 transformed housing units were randomly selected for observation (Table 2). Hence each house was observed based on the following relative to the principles considered:

Table 2 List of selected public housings in the study..

	State	Description/ Location	Initial design
1.	Niger	Intermediate Housing Estate, opposite polo ground Minna.	3bedroom
2.		Bosso Estate, off Murtala Nyako road Bosso, Minna.	2&3bedroom
3.	Benue	Ankpa Quarters along Naka road Markudi.	1,2& 3bedroom
4.		Lobi Quarters along general hospital road, Markudi.	2&3bedroom
5.	Katsina	Goruba Housing Estate Kabiru Yahaya road, Kastina.	3 bedroom
6.		Sarki Dikko (Barhin) Housing Estate, Mani road Kastina.	2&3bedroom
7.	Adamawa	State low-cost housing estate hospital road, Jimeta-Yola	1&2bedroom
8.		Bekaji Estate, Bekaji road Jimeta-Yola.	3&4bedroom
9.	Sokoto	Bado Housing estate ,along airport road Bado, Sokoto	2&3bedroom
10.		500 housing estate old airport, Sokoto	2&3bedroom
11.	Borno	707 housing estate, along Maiduguri international Airport.	1,2,3 & 4 bedroom
12.		Dikwa-lowcost housing estate, ruwan zafi Maiduguri.	2&3bedroom

- Initial and transformed layout structure.
- Adherence to building standards.
- Convergences in transformed layout.
- Family structure of inhabitants.

a. Layout structure: Initial designs were observed to consist of 1, 2, 3 and 4 bedrooms designed for nuclear families. However, with transformation dwellings were observed to comprise of an average of seven rooms.

b. Adherence to building standards: Apartments were observed to be attached to fences, occupancy rate on the average of 3 persons to a room. Also, due to extensions embarked on fixed plots densification tends to occur.

c. Convergences: Indoor and outdoor space utilization lifestyle was observed. This accounts for the existence of fore and inner courtyards for outdoor activities. Dinning spaces and kitchens located in the main units were converted into additional bedrooms. While the dining space was not replicated, the kitchens were relocated to open to the inner courtyard. Figure 1 illustrates the position of these convergences which are consistent across transformed units and provides alternative dimension to design concepts with potentials for future housing development.

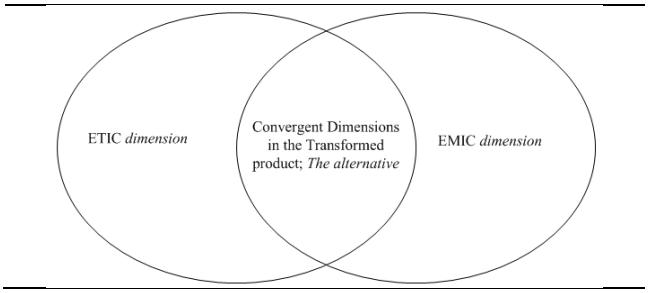


Figure 1 Theoretical concept of the paradigms.

3.2 Two Illustrative Examples

Theoretically, to evaluate the spatial configurations two initial layouts were examined in order to illustrate the etic provisions that are of western perspectives with a single building housing all facilities. The first example of initial layout in Figure 2 has non habitable spaces (services) zooned together and habitable spaces functionally separated. The bedrooms are kept at the rear quite area of the building while the living room is situated at the approach. Basic space provisions and arrangements can be classified as universal with kitchen, store and dining spaces well linked. In Figure 3 however, the initial layout of three roomed apartment lacks dining space and the services are discretely distributed with bathroom and toilet situated at opposite ends to the kitchen and store location. Although the habitable spaces are located on the same row, the living room is centrally situated with a link to the master's bedroom. There seems to have been a tendency of modifying this design, to align with local requirements particularly with the provision of an inner open space enclosed with fencing.

Yet, despite the attempt to align design with perceived users' cultural needs as appeared in Figure 3, transformed units persist. It is of significance that additional buildings are introduced after securing territorial control by fencing the property.

i. Transformed layout 1: The Core areas observed to be transformed include relocation of kitchen opening to a foyer, linking toilets to bedrooms, a guest room accessed from outside of the building and conversion of initial kitchen and dining into living room and a bedroom.

ii. Transformed layout 2: In this case additional apartments are introduced; however the kitchen is detached from the main building, rooms are linked with toilets at almost a ratio of 1:1 as in the first example.

iii. Transformed layout 3: The third situation basically includes adjustment that divided the house into two identical configurations with the introduction of two roomed apartment in each. Each section then accommodates separate nuclear families respectively.

iv. Transformed layout 4: The peculiarity that distinguishes this case from others is the existence of apartment with rooms arranged in a row and opening to the fore courtyard.

After reviewing the transformation attributes, convergent dimensions as contained in Table 3 significantly relate the cultural bond of inhabitants with

space use. As a result, convergences appear to streamline the value systems beyond integration to negotiating standard practices. Essentially, this would validate tangible and intangible emic dimensions towards establishing thresholds.

4.0 DISCUSSION

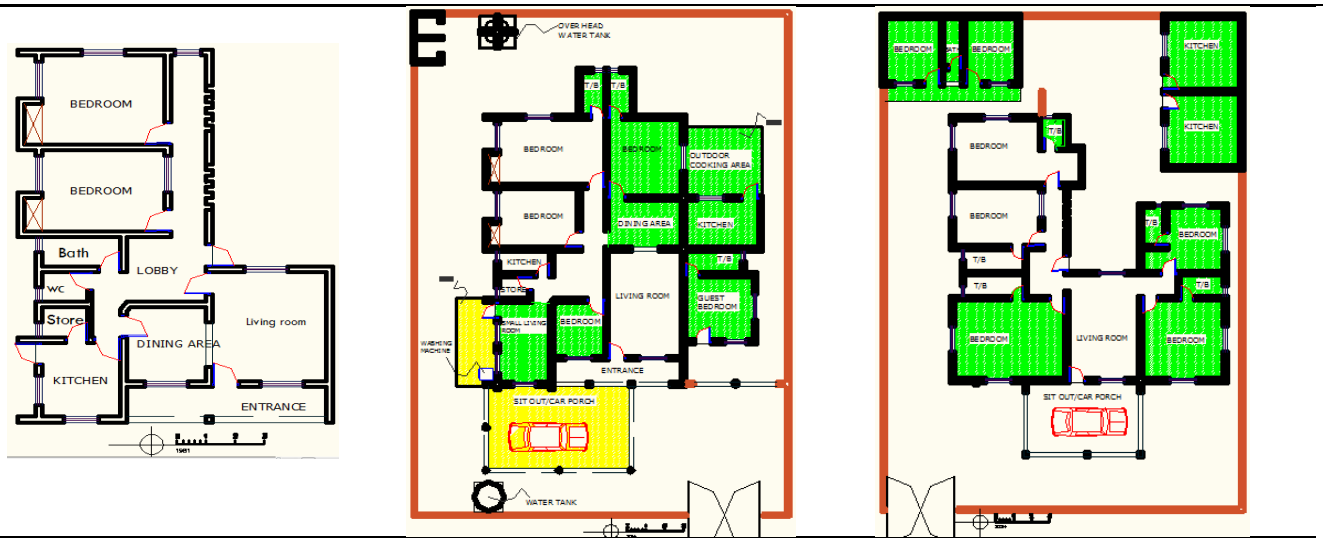
Overlooking the obvious, the synthesis of the etic and emic dimensions created a negotiable interphase as suggested by previous researchers that have investigated these approaches in cross-cultural research.

Although, attributes of urban standards have had influence on transformation outcome, for instance the provision of toilets to each room is not an indigenous norm and negates standard occupancy ratio. Also, building set-backs are ignored as buildings are attached to party fences. However, converging dimensions has proved indoor and outdoor lifestyle which promotes social integration with space and social cohesion among the household. Hence, apartments define the planning structure of functions within housing units. It improves the household liveability, providing sufficient living area thereby improving habitation occupancy rate of two persons to a room as promoted by Millennium Development Goals (MDGs') target11 of United Nations [20]. Harnessing and perfecting the converging dimensions appear to relate the foresight of sustainable development goals- post 2015 target of the MDGs.

These convergences evolved from public housing transformation which centres on users' experience. It provides a design principle that emerges from the observations which suggests further empirical field research towards alternative design concept formulation. This is significant in sustainable urban housing reform. Since urban design requires formalisation and standardisation. This would facilitate intergenerational conservation of cultural systems [21] which is essentially promoted by sustainability advocates.

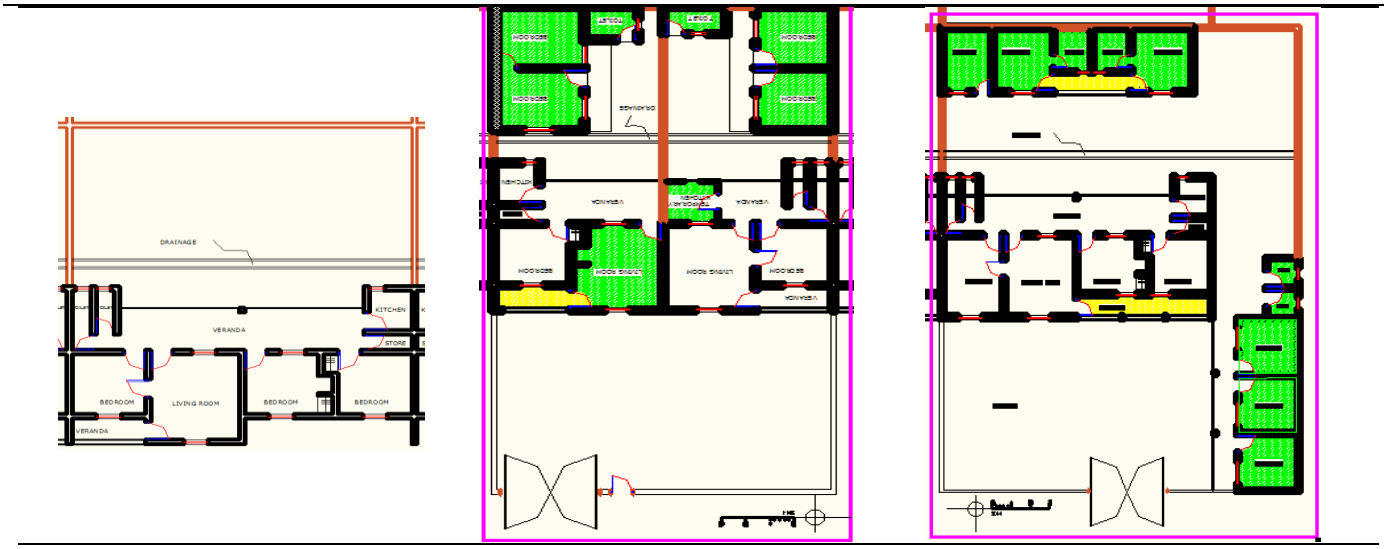
Consequently, common attributes of space organisation common among the ethnic groups includes;

1. Provision of additional room space
2. Conversion of kitchen and dining spaces into bedrooms.
3. Creating fore and inner courtyard spaces.
4. Relocating the kitchen to the inner courtyard.
5. Linking bedrooms with toilets created.



Initial Layout A | Transformed Layout1 | Transformed Layout 2

Figure 2 Illustration of a two roomed apartment with two samples of user initiated transformation.



Initial Layout B | Transformed 3 | Transformed 4

Figure 3 Illustration of a three roomed apartment with two samples of user initiated transformation.

Table 3 Latent attributes of etic, emic and convergent dimensions.

Etic	Convergence	Emic
Living room linked to the dining, to kitchen network. Provision of dining space for eating. Limited room spaces meant for small nuclear family.	Courtyard integrating the dwellings (enclosures open to courtyards). Use of enclosure's external wall for fence. Several apartments in a compound. Detaching the kitchen from the main building.	Fore court and inner court, planning concept. Considers cultural space use. More rooms for habitation corresponding with family structure.
	Linking toilets to bedrooms, Relocating kitchen from the main building, and Undesirability of dining space hence its conversion. Improved occupancy ratio by providing additional rooms.	

5.0 CONCLUSION

Conclusively, this research found public housing transformation to have generated convergence dimensions which is believed to resolve cultural inclusion in public housing. Thus, guides towards reducing the barrier of culture inclusion in sustainable housing delivery. However, the aftermath design (transformed products) requires determining and perfecting adaptive thresholds in order to overcome limitations of user initiated changes. Nevertheless the outcome has highlighted the need to focus design discourse on these subject areas:

a. Refocus public housing design to combine outdoor and indoor spaces as lifestyle

b. Preference while screening households from external sight.

c. Promote household social contact and cohesion in space planning.

d. Culture bond streamlines value system with space use in enhancing environmental sustainability.

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